

Leban On Track



2024-2044 Long-Range Transportation Plan



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Lebanon County, Pennsylvania

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EXECUTIVE SUMMARY

Lebanon County’s long-range transportation plan (LRTP) establishes goals and objectives and identifies projects aimed at improving the County’s transportation system, consistent with the county’s overall long-term goals and state and federal priorities. The LRTP considers a 20-year planning horizon (through 2044) and provides a framework for prioritizing transportation investments and policies in support of the county’s desired future.

To achieve the county’s long-term goals, the LRTP identifies multimodal transportation improvements, including those for highway/bridge, rail, air, transit, bicycle, or pedestrian facilities. It also identifies key policy recommendations that will guide, support, and expand the Metropolitan Planning Organization’s current efforts.

The plan is a policy statement of the Lebanon County Metropolitan Planning Organization (LEBCO MPO), serving several key functions, including:

- The transportation element of the current Lebanon County Comprehensive Plan
- Guiding the MPO’s TIP-based project prioritization decisions
- Advising county municipalities on local and regional transportation planning decisions
- Fulfilling federal and state transportation requirements; and
- Reflecting the needs and priorities of Lebanon County’s current and future residents, visitors, and businesses.

Inclusive Outreach Program

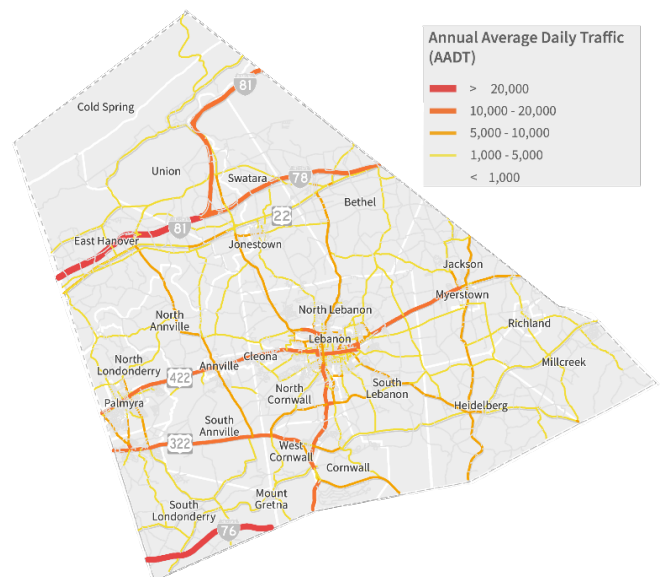
LRTP public outreach efforts were focused through two public meetings, LRTP Steering Committee meetings, focus groups, and virtual engagement tools. Public input was driven through a public-facing project survey and an interactive online

mapping tool (Wikimap) that allowed county residents to identify the location of concerns or issues. A total of 386 survey responses were received along with 152 Wikimap comments. A locally representative LRTP Steering Committee was convened to provide the project team with local expertise and feedback on project milestones and deliverables.

Stakeholder and public input were amplified through a series of focus group forums involving subsets of local representatives with specific local knowledge of three key activity groups: pedestrians and cyclists, schools, and freight.

Key Modal Elements

Eighty-eight percent of Lebanon County residents commute by personal vehicle, either driving alone or carpooling, making Lebanon County’s roadways key to the county’s transportation network. The framework of this network is built upon major roadways that bisect the county, including I-78, I-81, US 322, US 72, US 422, and other significant U.S. and state roadways.



Lebanon County is uniquely positioned between the Lehigh Valley and Carlisle, two of the most important freight nodes within the region. Lebanon County is within a few hours' drive from the Port of Newark/Elizabeth (New Jersey), the largest port on the East Coast. The increased presence of freight development within Lebanon County is reflected in the County's participation in the Eastern Pennsylvania Freight Alliance.

Lebanon County continues to expand its built infrastructure to provide connectivity for bicycle, pedestrian, and buggy use. The county's urban centers, particularly the City of Lebanon, have a network of sidewalks and crosswalks to provide pedestrian circulation on major commercial corridors. The Lebanon Valley Bicycle Coalition (LVBC) partnered to create the Lebanon County Bicycle Transportation Map, updated in March 2024. The Lebanon Valley Rail Trail (LVRT) is one of the most popular pieces of bicycle and pedestrian infrastructure in the county with more than 350,000 users in 2023.

Investing in Lebanon County's Future

	TIP (2025-2028)	TYP (2029-2036)	Long-Range (2037-2044)	Total (2025-2044)
Bridges	\$23,778,498	\$73,639,129	\$63,078,133	\$160,245,627
Safety, Multimodal, and Trails	\$15,631,669	\$24,928,302	\$25,231,253	\$65,691,171
Highway Resurfacing	\$11,333,803	\$6,738,838	\$12,615,627	\$30,638,241
Highway Construction	\$12,486,359	\$17,960,221	\$18,923,440	\$49,294,980
Transit Capital	\$33,180,000	\$13,735,000	\$13,900,000	\$60,815,000
Transit Operations	\$21,044,296	\$51,155,346	\$66,333,346	\$138,532,988
Other	\$3,851,006	\$5,191,000	\$6,307,813	\$15,324,806
Totals	\$121,295,828	\$193,347,836	\$206,389,612	\$521,042,078

The LRTP influences the development of the biennial Unified Planning Work Program (UPWP), the Transportation Improvement Program (TIP), transportation studies, and programs throughout the region. Federal law requires that the LRTP project list be fiscally constrained—the projected cost of projects in the plan must not exceed anticipated future funding levels. Existing funding levels and projections provided by PennDOT and

Lebanon Transit were used for this LRTP: The total reasonably anticipated funding for the 20-year Lebanon County LRTP is **\$521,042,078**, as outlined above.

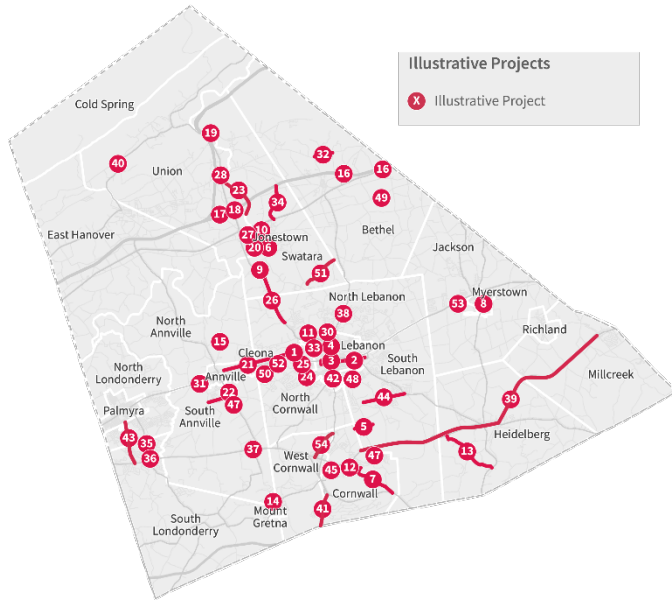
In addition to these traditional federal and state funding sources, the MPO should continually work to identify other possible federal, state, and local funding such as grants, loans, private-sector contributions, etc. The MPO should maintain a prioritized list of projects that are “shovel-ready” and can be rapidly advanced if additional funding becomes available.



The total estimated costs of the projects listed in an LRTP may not exceed the funding that can be reasonably expected within the planning horizon. Projects that are expected to be able to be implemented using available funds form the foundation for the MPO's biennial Transportation Improvement Program (TIP) and its Twelve-Year Program (TYP).

Projects included within an MPO LRTP must be fiscally constrained and are subject to Clean Air Act requirements. However, federal transportation law does allow for the listing of “illustrative” projects, that advance a long-range vision but lack funding to advance, design, and implement. **The list is “illustrative” of the need for investment in Lebanon’s transportation system that exceeds**

reasonably anticipated forecasted funds in this plan. Such projects require continuous, strong support from municipalities and other stakeholders to seek out funding opportunities to plan, design, and/or implement.



The list of illustrative projects was derived from a combination of sources, including:

- An analysis of data presented in the Transportation System Overview section.
- Public and stakeholder involvement including public meetings, online and paper surveys, and online mapping.
- Municipal comprehensive plans, official maps, and other studies conducted by local government.
- A call for projects to municipalities and other stakeholders for the LRTP.

This LRTP update proposes reducing the number of implementation actions, instead identifying nine action-oriented priorities that provide direction to the MPO on how to support the long-term health of the county’s transportation system.

1. **Increase staff capacity** at the MPO to keep pace with county growth and development demands.
2. Provide **additional opportunities for ongoing collaboration** among municipalities and between municipalities and the MPO.
3. Develop **guidance for municipalities** that are considering **freight management tools** such as changes to truck parking and/or implementing transportation demand management tools.
4. Dedicate resources to support **Eastern PA Freight Alliance**.
5. Encourage **direct warehouse access to rail** lines through local land use ordinances and planning.
6. Support a **community-led bicycle/pedestrian advisory group** – include coordination on resurfacing opportunities and set up recurring coordination with advisory group at MPO meetings.
7. Develop an investment strategy for the **County Liquid Fuels** program to provide funding for the county bridges and other local infrastructure needs.
8. Work to advance an **MPO Congestion Monitoring Process** to evaluate the county’s roadway network and work to reduce congestion.
9. Track county progress on LRTP goals through an **interim review of performance measures** between LRTP publications.

INTRODUCTION

What is the Lebanon County Long-Range Transportation Plan (LRTP)?

The long-range transportation plan (LRTP) establishes goals and objectives and identifies projects aimed at improving Lebanon County’s transportation system, consistent with the county’s overall long-term goals and state and federal priorities. The LRTP considers a 20-year planning horizon and provides a framework for making transportation decisions that will support the county’s desired future through 2044.

Specifically, the LRTP inventories and assesses current land uses, transportation patterns, community development, and the facilities and operations of each transportation mode in the county. To achieve the county’s long-term goals, the LRTP identifies needed improvements to the multimodal transportation system—highway/bridge, rail, air, transit, bicycle, and pedestrian facilities. It further identifies key policy recommendations that will guide or support and expand the Metropolitan Planning Organization’s current efforts.

The plan is guided by the Lebanon County Metropolitan Planning Organization (LEBCO MPO), which is supported by Lebanon County Planning Department staff. The LRTP serves several key functions, including:

- Serving as the transportation element of the current Lebanon County Comprehensive Plan, and any future updates;
- Guiding the MPO’s decisions on project prioritization for the Transportation Improvement Program (TIP);
- Advising the county’s 26 municipalities on local and regional planning decisions that impact transportation, particularly those that lack a current municipal comprehensive plan;
- Fulfilling federal and state transportation requirements; and
- Reflecting the needs and priorities of Lebanon County’s current and future residents, visitors, and businesses.

What is a Metropolitan Planning Organization?

An MPO is a transportation policy-making body comprising representatives of local government and transportation agencies that own, operate, and fund transportation infrastructure. Federal law requires the formation of an MPO in any urbanized area with a population greater than 50,000; Lebanon County became an MPO due to population growth reflected in the 2000 U.S. Census. MPOs ensure that decisions and spending on transportation projects and programs are based on a “continuing, comprehensive, and cooperative” (3C) planning process that reflects the needs and priorities of the



region. MPOs administer federal and state funding for transportation projects and programs, consistent with the region's approved LRTP.

Why is the LRTP Important for Lebanon County?

Developing and regularly updating an LRTP is a prerequisite to receiving federal transportation funding. Further, it helps ensure that transportation investment decisions are made strategically and considered in light of their near-, mid-, or long-term effect on the region. Transportation decisions profoundly shape the direction and growth of the county. For instance, how has residential construction impacted the county's roadway network? Or how can the county better link vulnerable populations that lack transportation options with the many services they need? An LRTP helps provide a blueprint for future investments that can guide the county in a cohesive and focused direction for the future.

How Will Lebanon County Implement the LRTP?

The LRTP is a collaborative and inclusive document that lays the foundation for coordinated plan implementation. Several major stakeholders support the LEBCO MPO, including Lebanon County Planning, the county's municipalities, transit providers, the Pennsylvania Department of Transportation (PennDOT), the Federal Transit Administration (FTA), and the Federal Highway Administration (FHWA). Each partner plays a direct or indirect role in implementing this plan and helping to achieve its goals.

The MPO and PennDOT will give priority consideration to projects identified in this LRTP as they develop and update the regional Transportation Investment Program (TIP), which documents funded transportation projects expected to be undertaken within the next four years.

The MPO and PennDOT will refer to the goals and principles established in this plan to guide development and prioritization of additional projects as needs arise. For example, an emphasis on asset management would prioritize timely repairs to existing roads and bridges.

Each implementation partner will be guided by the list of recommended actions as they advance the plan's goals. This includes identifying additional sources of funding, preserving right-of-way for future projects, or providing guidance or support to other stakeholders. Lead entities are identified and represent a range of partners who influence transportation, land use, funding, utilities, economic development, and other related areas.

The Lebanon County Planning Department should review and reference (if appropriate) the LRTP as part of its Municipalities Planning Code (MPC) responsibilities. This will inform municipalities that their decision will affect LRTP projects and goals.

Each municipality should refer to the LRTP to ensure that near-term projects complement future plans. For example, as part of the land development and subdivision approval process, municipalities should require that setbacks, right-of-way dedication, utility placement, stormwater facilities, sidewalk connections, bicycle facilities, and driveway access points accommodate planned roadway improvements.

PennDOT's District 8-0 will use the LRTP as the cornerstone of its "PennDOT Connects" meetings that convene state, county, and municipal representatives to discuss potential projects well in advance of construction. This statewide initiative is aimed at coordinating work (such as completing utility upgrades before repaving roadways), considering and mitigating the range of potential impacts, and optimizing the project for the community.

The LRTP guides decision-makers in undertaking cohesive improvements toward a transportation future that supports a thriving county. To ensure steady progress toward shared goals, it is recommended that the MPO track actions and results through annual LRTP implementation performance reports and through regular reporting to its Policy Board and Technical Planning Committee.

More detail on how the LRTP should be used to guide day-to-day decision-making is provided in the chapters on implementation: Transportation Projects and Asset Management, and Implementation Action plan.

VISION, GOALS, AND PERFORMANCE MEASURES

Lebanon County’s overall transportation vision is established in its 2007 comprehensive plan¹, as follows:

The transportation system of Lebanon County will safely, efficiently, and effectively serve the mobility, access, and travel needs of all current and future users.

The 2024-2044 LRTP update has been developed to support this long-term vision and the necessary interrelationships among stakeholders. The goals and actions of the MPO LRTP must align with the Lebanon County Comprehensive Plan goals, which are shown below in Figure 1.

Figure 1 – Lebanon County Comprehensive Plan Goals

Provide transportation choices for residents, businesses, and visitors.	<ul style="list-style-type: none">• Maintain a safe, efficient, interconnected, and accessible transportation system.• Enhance and expand the variety of travel modes in existing and future development, with particular emphasis on energy efficiency.• Target transportation investment for maximum local and regional benefit.• Maintain and improve the existing transportation system first; focus on affordable operational improvements second.• Encourage local and private financial support to help expedite transportation project delivery.
Encourage distinctive, attractive communities with a strong sense of place.	<ul style="list-style-type: none">• Direct development toward existing communities and utilities to strengthen and revitalize them.• Encourage the appropriate redevelopment of existing vacant, blighted, or underutilized sites.• Discourage zoning that encourages sprawl.• Coordinate land use, utility, and transportation planning to make development and redevelopment attractive to developers and sustainable by local government.

¹Lebanon County Comprehensive Plan, December 2007: <https://www.lebanoncountypa.gov/getmedia/41829b87-6312-4bf9-a6e4-5e17031746c6/Planning-Comprehensive-Plan.pdf>

Plan for economic growth and development that expands employment, sustains businesses, and provides family-sustaining jobs.

- Enhance the stability of the local economy through business retention, expansion, and diversification efforts.
- Prepare “shovel-ready” sites for target industries.
- Provide an educated, trained workforce sufficient to maintain economic prosperity and meet modern technological demands.
- Implement multifaceted strategies to enhance the agricultural and forestry industries through land protection, workforce training, and sustainable production and harvesting practices.

Protect the natural and cultural landscape that defines our local identity as Lebanon County.

- Acknowledge, enhance, and protect the open space, farmland, scenic views, historic resources, and critical environmental areas that are important to the county.
- Facilitate acquisition or preservation of key sites.
- Link these resources with existing communities through open space planning, conservation greenways, and recreational paths and trails, where appropriate.
- Enhance this green infrastructure by conserving and managing vegetation in greenways and woodlots; by establishing street trees in developments; and by restoring vegetation along stream banks.
- Encourage the continued use of historic building patterns and designs with modern materials. Promote an understanding of these resources among citizens.
- Protect threatened natural features and implement appropriate restoration for damaged resources, with emphasis on water resources.
- Enhance and restore the interconnections of natural systems to sustain them.
- Coordinate conservation and preservation activities on a resource scale, by watershed, mountain range, or other holistic approaches.

Encourage compact building and development designs.

- Mix compatible land uses, especially within larger developments or revitalization projects, to reduce vehicular travel and encourage walkable business and residential neighborhoods.
- Promote energy-efficient site design to reduce energy consumption for heating and cooling.
- Promote the use and production of alternative energy sources.

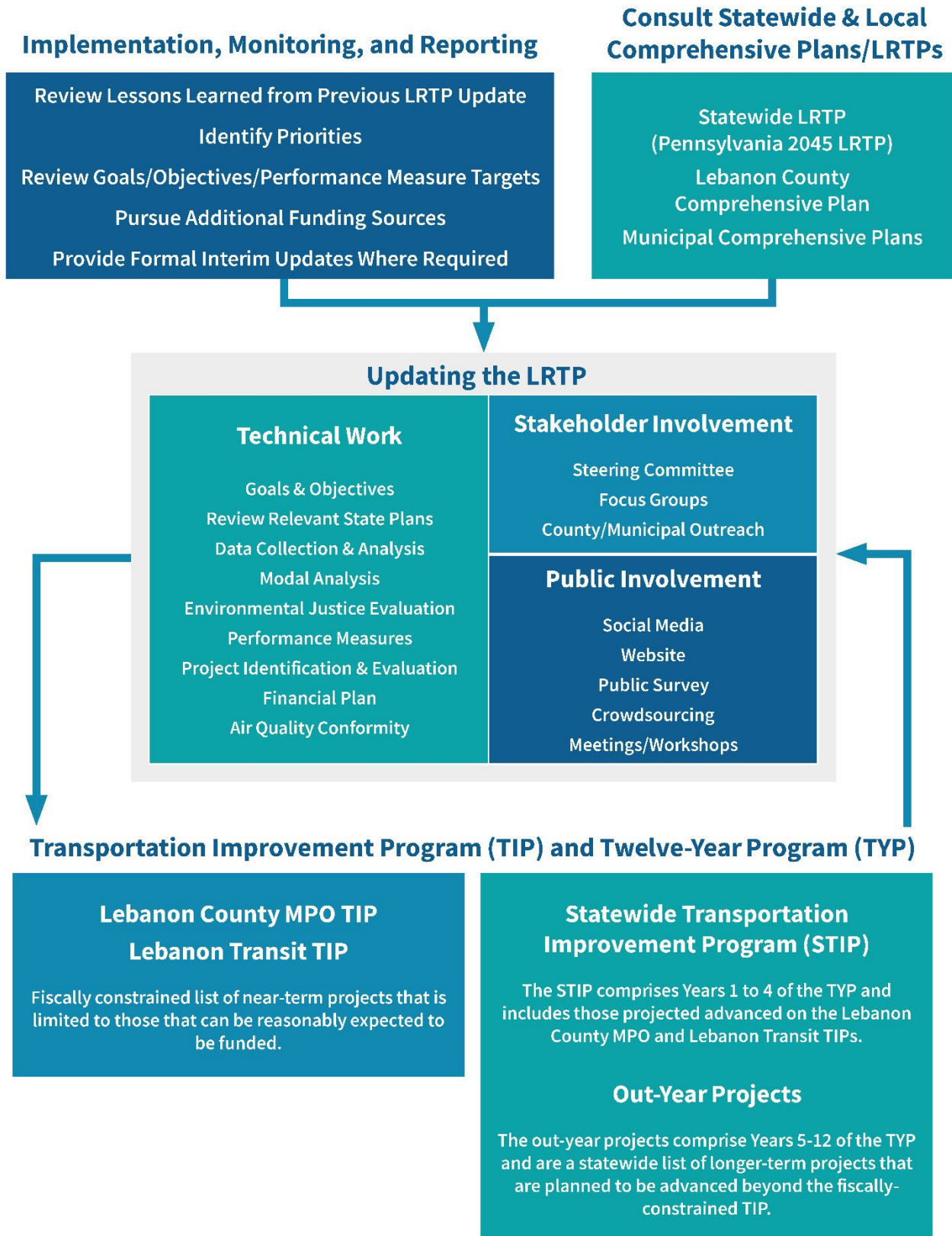
Broaden the range of housing opportunities and choices.

- Encourage sound maintenance and modernization of existing housing units, as well as the utility infrastructure that serves them.
- Increase the range of housing types in new housing construction.
- Encourage development that provides housing, business, and employment opportunities close to one another.

<p>Provide adequate, cost-effective public services to meet the needs of the community.</p>	<ul style="list-style-type: none"> • Expand recreation programs and services for all ages. • Increase local parkland and interconnect parks with trails. • Maintain and expand services to protect human health, safety, and welfare. • Share service contracts, where cost-effective.
<p>Think, communicate, and plan regionally; implement locally.</p>	<ul style="list-style-type: none"> • Share knowledge and strive for effective public communication. • Encourage continuous dialogue among municipalities, government agencies, and school districts regarding community growth and resource conservation. • Encourage community and stakeholder communication and collaborative decision-making. • Develop partnerships among public and private sectors—public–public, public–private, and private–private—to make community planning and associated projects affordable.

Figure 2 illustrates the Lebanon County transportation planning and project programming process and indicates how the LRTP is consistent with statewide, county, MPO, and municipal plans. It also depicts how projects listed in the LRTP are prioritized into the LEBCO TIP, which becomes part of the Statewide Transportation Improvement Program (STIP).

Figure 2 – Transportation Planning and Programming Relationships



Note: The TIP and STIP encompass projects funded by FHWA and FTA. Projects funded by the Federal Aviation Administration are prioritized through a different process.

L RTP Goals

The MPO planning team established nine high-level transportation goals to shape the L RTP in support of the Lebanon County transportation vision. The goals, listed in Figure 3, are consistent with state, regional, county, and municipal plans, reflect the Steering Committee’s priorities and other public input (discussed in the Public Participation section), and support the federal planning factors established under the FAST Act (Fixing America’s Surface Transportation Act) of 2015 and continued under the IIJA/BIL of 2021 listed in

Figure 4.

Figure 3 – L RTP Goals and Objectives

<p>SAFETY & SECURITY</p> <p>Improve safety and security for all modes and users.</p>	<ul style="list-style-type: none"> • Prioritize investments that improve safety and security for all users. • Partner with transportation providers to identify and implement safe and secure facilities and services.
<p>PERSONAL MOBILITY</p> <p>Create a multimodal transportation system that provides reliable, efficient, and convenient mobility for current and future residents and visitors.</p>	<ul style="list-style-type: none"> • Improve transportation choices within and between urban, suburban, and rural communities. • Prioritize investments that improve multimodal access to opportunities, jobs, and school. • Improve transportation experience for all users. • Ensure municipalities are aware of and consider transportation technologies that may impact personal mobility.
<p>FREIGHT MOBILITY</p> <p>Support reliable freight mobility, access, and freight experience for providers and residents.</p>	<ul style="list-style-type: none"> • Improve reliability (predictable travel times) of freight trips. • Improve first- and last-mile intermodal access and connections. • Prioritize investments that efficiently and appropriately connect freight providers to and from critical destinations. • Prioritize projects that incorporate county-wide or regional engagement in mitigating freight-related impacts.
<p>EQUITY</p> <p>Ensure the transportation system fairly meets the needs of county residents, including disadvantaged communities.</p>	<ul style="list-style-type: none"> • Improve transportation opportunities for disadvantaged communities. • Reduce transportation-related emissions, especially in disadvantaged communities.
<p>LAND USE & ENVIRONMENT</p> <p>Promote transportation and land use planning practices that enhance the county’s natural and built environments.</p>	<ul style="list-style-type: none"> • Support clean air initiatives, including electric vehicle charging and other energy-efficient transportation. • Ensure transportation improvements protect the county’s natural, cultural, and historical resources.

<p>GROWTH MANAGEMENT</p> <p>Meet the challenges and opportunities of growth through collaborative planning, funding, and project implementation.</p>	<ul style="list-style-type: none"> • Promote consistency between transportation planning, housing development, and economic investment at the county level and with its municipalities. • Continue hosting Municipal Meetings and Conferences to facilitate cooperation, coordination, and information exchange. • Support and provide technical assistance and training to municipalities for zoning initiatives that increase zoning capacity along major transportation corridors.
<p>ECONOMIC GROWTH</p> <p>Facilitate and support the economic vitality of the county.</p>	<ul style="list-style-type: none"> • Support tourism, businesses, and industry by improving transportation access.
<p>ASSET MANAGEMENT & RESILIENCE</p> <p>Preserve existing transportation assets and improve the multimodal transportation system’s ability to withstand, respond to, and recover from environmental and other hazards.</p>	<ul style="list-style-type: none"> • Maintain state-of-good repair initiatives for all modes. • Prioritize projects and initiatives that improve system operations and energy efficiency. • Include resilience, particularly stormwater mitigation, in all transportation project designs.
<p>FUNDING</p> <p>Utilize all available funding sources and target investments for maximum local and regional benefit and impact.</p>	<ul style="list-style-type: none"> • Develop and advance a project investment plan that maximizes benefits to local and regional users and achieves the goals of this plan. • Establish and maintain a database of potential funding sources and public/private grant opportunities. • Create an application schedule for public/private grant opportunities. • Develop and implement a county/municipal Liquid Fuels program that supports county and local priorities.

Federal law requires that the 10 planning factors identified by the FHWA and codified through the FAST Act be addressed in all MPO LRTPs. The PennDOT Statewide 2045 LRTP establishes additional goals for Pennsylvania MPOs, which must be addressed in their respective LRTPs. The factors and goals are listed in Figure 4.²

² “Scope of the Metropolitan Transportation Planning Process,” 23 CFR 450.306. <https://www.ecfr.gov/current/title-23/chapter-I/subchapter-E/part-450#450.306>

Figure 4 – FAST Act Federal Planning Factors and PennDOT Statewide 2045 LRTP Goals

Federal Planning Factors

- 1 Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
- 2 Increase the safety of the transportation system for motorized and non-motorized users.
- 3 Increase the security of the transportation system for motorized and non-motorized users.
- 4 Increase accessibility and mobility of people and freight.
- 5 Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
- 6 Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
- 7 Promote efficient system management and operation.
- 8 Emphasize the preservation of the existing transportation system.
- 9 Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
- 10 Enhance travel and tourism.

PennDOT Statewide 2045 LRTP Goals

<p>Safety</p> <p>Enhance safety and security for both motorized and non-motorized modes.</p>	<p>Performance</p> <p>Improve the condition and performance of transportation assets.</p>	<p>Resilience</p> <p>Strengthen transportation resilience to climate change and other risks and reduce transportation’s environmental impacts.</p>
<p>Equity</p> <p>Improve transportation access and equity.</p>	<p>Mobility</p> <p>Strengthen transportation mobility to meet the increasingly dynamic needs of residents, businesses, and visitors.</p>	<p>Resources</p> <p>Structure transportation funding and finance approaches that allocate sufficient resources for system safety, maintenance, preservation, and improvement.</p>

Figure 5 shows how Lebanon County’s LRTP goals align with the federal and state planning factors. The implementation of the planning factors is woven throughout this plan.

Figure 5 – LRTP Goals and Relation to State/Federal Planning Factors

Lebanon LRTP Goals	State LRTP Goals						Federal Planning Factors
	Safety	Mobility	Equity	Resilience	Performance	Resources	
Safety & Security	●						2, 3, 4
Personal Mobility		●	●				2, 4, 5, 6
Freight Mobility		●	●				2, 4, 5, 6
Equity			●				4, 6
Land Use & Environment		●		●			1, 5, 9, 10
Growth Management		●	●				1, 5, 7
Economic Growth		●					1, 5, 10
Asset Management & Resilience				●	●		7, 8
Funding						●	7, 8

Performance Measures

Performance measures help quantify progress toward LRTP goals to monitor plan effectiveness and to ensure that resources are producing the desired results. The Lebanon County MPO has adopted the PennDOT performance measures for safety, pavement condition, and system reliability, and intends to continue partnering with PennDOT to adopt statewide performance targets for each measure.

Federal regulations (23 CFR 450.324(f)(3-4) require that MPOs report on the progress and implementation of adopted performance measures. Specifically, the requirements include a system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the performance targets described in Section 450.306(d), including:

- i. Progress achieved by the metropolitan planning organization in meeting the performance targets in comparison with system performance recorded in previous reports for all applicable performance measures; and
- ii. For metropolitan planning organizations that voluntarily elect to develop multiple scenarios, an analysis of how the preferred scenario has improved the conditions and performance of the transportation system and how changes in local policies and investments have impacted the costs necessary to achieve the identified performance targets.

The 2020 LRTP (LebanOnward 2045) included 11 performance measures in addition to the PennDOT statewide performance measures adopted by the MPO. Table 1 shows the progress made on each of the 11 LRTP measures; progress on the statewide measures between the 2020 baseline and 2024 data is reported in the next section. It is important to note that some data is on a lag—for example, system safety and security baseline data for this 2024 plan is from 2018-22. Performance is specific to Lebanon County unless otherwise noted.

Table 1— 2020 LRTP Performance Report

2020 LRTP Goal	2020 LRTP Performance Measure	2024 Performance Report
Safety and Security	Reduce transportation system fatalities	Average annual number of fatalities is up from 17.0 in 2014-18 to 18.6 in 2018-22.
	Reduce serious injury crashes	Average annual number of serious injuries is up from 57.4 in 2014-18 to 70.2 in 2018-22.
	Reduce bicyclist, pedestrian, or buggy crashes	Average annual number of non-motorized fatalities and serious injuries is up from 6.4 in 2014-18 to 9.4 in 2018-22.
Personal & Freight Mobility	Increase percentage of person-miles on Interstate roadways that are reliable	Interstate reliability is up from 89.8% in 2017 to 92.8% in 2021 (statewide).
	Increase percentage of person-miles on non-Interstate roadways that are reliable	Non-Interstate reliability is up from 87.4% in 2017 to 92.6% to 2021 (statewide).
	Reduce number of substandard bridge under-clearances	No change: 10 bridges had substandard under-clearances in both 2018 and 2023.
	Improve County Health Ranking among Pennsylvania counties	Lebanon dropped in the ranking from #20 (2019) to #26 (2023) out of 67 counties in Pennsylvania.
Land Use & Environment	Meet or exceed CMAQ emission targets	Emissions were reduced for 4 of 5 tracked emission types from 2018 to 2021 through CMAQ projects (statewide).
Asset Management	Increase percentage of roadway pavement classified as fair or better	NHS Interstate pavement improved from 0.4% poor in 2017 to 0% poor in 2023. NHS non-Interstate pavement worsened from 2.3% poor in 2017 to 5.5% poor in 2023.
	Reduce the number of poor bridges	The number of bridges in Poor condition increased from 34 bridges in 2018 to 39 bridges in 2023.
	Reduce the number of load-restricted bridges	Load-restricted and closed bridges decreased from 30 (8.1% of all bridges) in 2018 to 25 (6.5%) in 2023.
Economic Growth	Increase annual number of visitors to Lebanon County	Visitor spending in Lebanon County increased from \$256.6 million in 2019 to \$296.4 million in 2022.

Sources: PennDOT, Federal Highway Administration, VisitPA, County Health Rankings & Roadmaps

Each LebanOn Track LRTP goal has been linked with appropriate objectives and potential performance measures. While these measures cannot reflect all progress made toward the plan’s goals and objectives, they build upon the performance measures advanced by PennDOT and adopted by the MPO. The LRTP performance measures are listed by goal in Table 2 — 2024 LebanOn Track LRTP Performance MeasuresTable 2.

Performance measurement areas for the National Highway System are commonly referred to as: Safety (PM1), Asset Condition (PM2), and System Performance Reliability (PM3). Performance measures are labeled as applicable.

Table 2 – 2024-2044 LebanOn Track LRTP Performance Measures

Goal Area	PM #	Performance Measure	Baseline	Near-Term Target	Long-Term Target
1. Safety and Security			2018-22	2022-26	2040-44
	PM1	Number of fatalities (annual average)	18.6	1% reduction every rolling 5-year period	
	PM1	Fatality rate	1.6	1% reduction every rolling 5-year period	
	PM1	Number of serious injuries (annual average)	70.2	1% reduction every rolling 5-year period	
	PM1	Serious injury rate	5.9	1% reduction every rolling 5-year period	
	PM1	Number of non-motorized fatalities and serious injuries (annual average)	9.4	1% reduction every rolling 5-year period	
		Number of rail safety incidents in the county	3	2	2
2. Personal Mobility			2021	2025	2044
	PM3	Interstate reliability	92.8%	92.8%	92.8%
	PM3	Non-Interstate reliability	92.6%	92.6%	92.6%
		Commute modeshare: Transit	0.8%	1%	2%
		Commute modeshare: Bicycle	0.1%	0.2%	.3%
		Commute modeshare: Walk	2.8%	3%	4%
			2022	2026	2044
		Number of transit trips	187,099	278,899	400,000
		Number of paratransit trips	39,202	53,719	70,000
3. Freight Mobility			2023	2027	2044
		Number of substandard bridge under-clearances	10	9	0
		Number of organizations, businesses, and goods movement providers engaged in county-led freight forums	n/a	15	50
4. Equity			2024	2028	2044
		Amount of investment in projects serving USDOT-designated Disadvantaged Communities	\$232,808,985	\$350,000,000	\$500,000,000
5. Land Use and Environment			2021	2025	2044
	PM3	VOC emissions reduction (statewide)	360.220	93.000	N/A
	PM3	NOx emissions reduction (statewide)	1644.620	785.000	N/A

Goal Area	PM #	Performance Measure	Baseline	Near-Term Target	Long-Term Target
	PM3	PM2.5 emissions reduction (statewide)	269.080	36.000	N/A
	PM3	PM10 emissions reduction (statewide)	0.000	0.000	N/A
	PM3	CO emissions reduction (statewide)	3791.360	0.000	N/A
			2021	2025	2044
		Percentage of non-single-occupancy (SOV) commutes	21.7%	17.0%	20.0%
			2023	2027	2044
		PA County Health Ranking	26 (of 67)	20	15
6. Growth Management			2024	2028	2044
		Number of municipalities, businesses, and other stakeholders engaged in county-led meetings and conferences	n/a	10	30
		Number of municipalities receiving technical assistance and training on land use and transportation planning	n/a	5	10
7. Economic Growth			2022	2026	2044
		Visitor spending in the county	\$296.4 million	\$325 million	\$400 million
8. Asset Management & Resilience			2023	2027	2044
	PM2	Number of state-owned bridges in poor condition	23	15	10
	PM2	Number of local bridges in poor condition	15	14	10
		Number of load-restricted or closed bridges	25	23	18
	PM2	National Highway System (NHS) Interstate Pavement: Percentage not in good or excellent condition	11.1%	10%	8%
	PM2	NHS Non-Interstate Pavement: Percentage in poor condition	5.5%	5%	5%
9. Funding			2024	2028	2044
		Number of grant applications submitted per year (average)	n/a	5	10
		Amount of grant funding awarded annually (average)	n/a	\$100,000	\$200,000

Sources: PennDOT, Federal Railroad Administration, Federal Highway Administration, VisitPA, County Health Rankings & Roadmaps, American Community Survey Data

PUBLIC PARTICIPATION AND ENVIRONMENTAL JUSTICE

Public Participation

Public participation for this plan included in-person public meetings, focus groups, and steering committee meetings in addition to engagement through online tools.

The Lebanon County Metropolitan Planning Organization (LEBCO MPO), as required by federal regulations, adopted an official Public Participation Plan (PPP) in September 2003 and updated the document in June 2016. The PPP outlines the MPO’s vision for outreach practices, ensures transparency and awareness of the MPO’s inclusive strategies, and provides several flexible methods to address and embrace environmental justice principles. Public outreach efforts related to the development and adoption of the L RTP are in compliance with the current PPP.

LEBCO MPO’s L RTP public outreach efforts were focused through two public meetings, L RTP Steering Committee meetings, focus groups, and virtual engagement tools. The Lebanon County L RTP website (<http://lebanoncountylrtp.com/>) was used to provide Lebanon County residents with updates about the plan, local transportation issues, and links to additional outreach components, including a project survey and interactive mapping tool. A public-facing project survey was primarily deployed electronically via SurveyMonkey. Paper copies were made available at the first public meeting. Both the project website and survey were available in both English and Spanish. The project team also used Wikimapping, an interactive online mapping tool that allowed county residents to identify the location of concerns or issues and offer comments on specific locations. The Wikimap website included both English and Spanish text. A total of 386 survey responses were received along with 152 Wikimap comments. A summary of survey and Wikimap results follows.



L RTP project staff also reviewed the results of public engagement efforts by Lebanon Transit (LT) during LT’s recent service review. Engagement consisted of a rider survey conducted by service review staff and transit center staff both on buses and at the transit center. In all, 175 responses were collected, which is 23 percent of average daily fixed-route boardings.

Steering Committee

A locally representative L RTP Steering Committee was convened to provide the project team with local expertise and feedback on project milestones and deliverables. The Steering Committee was comprised of a variety of professional staff and volunteers, including representatives from Lebanon County, LT, Lebanon Valley Chamber of

Commerce, City of Lebanon School District, Lebanon Valley Rail Trail, PennDOT, FHWA, and stakeholders from many of the county's municipalities. The Steering Committee formally met three times during the LRTP process:

- Meeting 1 – October 26, 2023: This meeting introduced the LRTP update process, project team members, outreach plan, and a discussion of plan goals, objectives, and measures.
- Meeting 2 – January 17, 2024: The second steering committee meeting focused on the results of the modal analysis, updates on public outreach progress, and the launch of the LRTP Call for Projects.
- Meeting 3 – March 12, 2024: The third and final steering committee meeting focused on LRTP outcomes, including projects (funded and illustrative) and implementation actions.

[LRTP Survey](#)

A public survey was developed to identify concerns and opinions regarding transportation in Lebanon County. The survey was deployed electronically in English and Spanish using SurveyMonkey. Paper copies were provided at the first public meeting. The survey was promoted through several e-mail blasts and numerous social media postings by stakeholders on several platforms.

The survey received 386 responses, providing feedback on past, current, and future transportation trends within Lebanon County. Several open-ended questions invited respondents to make specific comments on needed transportation projects and services. Key themes that were commonly seen within the survey responses included:

- Commute and travel patterns have changed since before the COVID-19 pandemic, with more hybrid or fully remote workers in the county.
- Lebanon County has a substantial population that walks and bikes; There is a need/desire for improved bicycle/pedestrian infrastructure.
- Respondents are concerned about roadway condition.
- Warehousing development and increased truck freight has contributed to congestion.

A complete summary of the survey responses is included in Appendix B.

[Wikimap Responses](#)

The project team used Wikimapping, an online, interactive mapping tool, to obtain targeted public comments on Lebanon County's roadways and trail network. The publicly accessible and bilingual map (<https://wikimapping.com/lebanoncountytransportationplan2024.html>) was promoted through e-mail and social media postings by stakeholders on several platforms. The wikimap received 152 comments. Users were provided with two categories on which to provide comments about specific intersections/locations or longer corridors/areas. The categories included:

- Project Idea – Opportunity for a new project
- Transportation Safety Issue – Known crash or potential crash locations or areas where circulation is problematic due to a perceived hazardous condition

The responses provided numerous targeted locations where residents or visitors identified concerns within Lebanon County. These locations were considered during the project development portion of the LRTP. A complete summary of the Wikimap responses is included in Appendix C.

[Municipal and Stakeholder Outreach](#)

Municipal input was pursued throughout plan development. This included direct e-mail communications soliciting input to identify transportation needs and shape LRTP goals and objectives. Focused municipal input

directly for the LRTP also helped the project team keep local elected officials informed on the LRTP status and content. Additional outreach efforts were conducted throughout the development of the LRTP. These included Environmental Justice (EJ) populations, Plain Sect populations, and tribal consultation.

Focus Groups

LRTP outreach efforts were further supplemented by a series of stakeholder focus group forums involving three subsets of local representatives with specific local knowledge of the various transportation modes addressed in the LRTP. The three sessions included pedestrians and cyclists, schools, and freight, and consisted of stakeholders and advocates for each subject. A brief summary of each is included below; full summaries, including a list of focus group attendees, are included in the Appendix.



Schools

- Severe congestion impacts and during pick-up and drop-off times
- Difficult to hire bus drivers



Freight

- Increasing number of warehouses leads to increasing congestion
- A model ordinance or overlay developed by the county for municipalities could be helpful



Bike/Ped

- Safe and clear access to trails is vital
- Opportunities for improved coordination with MPO and bicycle/pedestrian community, particularly around paving

Public Meetings

Due to the COVID-19 pandemic, the public engagement during the previous plan did not include in-person public meetings. For this plan, the project team encouraged in-person conversations via two public in-person meetings. The first was an open house with boards and conversations with project staff on February 27, 2024. The second public meeting was a presentation followed by Q&A and discussion on April 2, 2024. The materials presented at each of these meetings are included in Appendix A.

Public Meeting #1 Takeaways:

- Concern about truck traffic with growing warehouse presence.
- Interest in an expanded trail network.
- School drop-off and pick-up times are challenging and at times unsafe.
- Interest in expanding inter-city transit, potentially with a rail option.

Public Meeting #2 Takeaways:

- Strong interest in inter-municipal collaboration in addition to better collaboration between municipalities and LEBCO MPO.
- Concern about freight with warehousing growth, particularly on US 422.
- Interest in PennDOT materials and policies on pedestrian and bike users.

Environmental Justice

Guidance from the federal government on environmental justice ensures planning decisions are based on an understanding of communities that have been historically burdened by environmental hazards. Lebanon County, especially the City of Lebanon, includes disadvantaged communities and will need direct outreach and resources to equitably meet the transportation needs of these residents.

State and federal governments have long been committed to Environmental Justice (EJ), ensuring that those who are most at risk from the burdens associated with environmental impacts from transportation infrastructure have a voice in the planning and decision-making process for their communities. In 2021, the federal government reinforced this commitment to EJ through the Justice40 initiative, which aims to ensure equitable distribution of benefits by channeling 40 percent of the overall federal investments to disadvantaged communities. This initiative will help address the legacy of underinvestment and invest in communities that have been historically overburdened by negative transportation-related environmental impacts.

The White House Council on Environmental Quality (CEQ) created the Climate and Economic Justice Screening Tool, which identifies nine categories of burden to identify these disadvantaged communities. Communities are considered disadvantaged if they are in a census tract with one or more of the following characteristics:³

1. **Income:** The census tract is at or above the 50th percentile for low income.
2. **Climate Change:** The census tract is at or above the 90th percentile for expected agriculture loss rate OR expected building loss rate OR expected population loss rate OR projected flood risk OR projected wildfire risk.
3. **Energy:** The census tract is at or above the 90th percentile for energy cost OR PM2.5 (particulate matter) in the air.
4. **Health:** The census tract is at or above the 90th percentile for asthma OR diabetes OR heart disease OR low life expectancy.
5. **Housing:** The census tract has experienced historic underinvestment OR is at or above the 90th percentile for housing cost OR lacks green space OR lacks indoor plumbing OR lead paint is present.
6. **Legacy Pollution:** The census tract has at least one abandoned mine OR Formerly Used Defense Site OR is at or above the 90th percentile for proximity to hazardous waste facilities OR proximity to Superfund sites (National Priorities List (NPL)) OR proximity to Risk Management Plan (RMP) facilities.
7. **Transportation:** The census tract is at or above the 90th percentile for diesel particulate matter exposure OR transportation barriers OR traffic proximity and volume.
8. **Water and Wastewater:** The census tract is at or above the 90th percentile for underground storage tanks and releases OR wastewater discharge.
9. **Workforce Development:** The census tract is at or above the 90th percentile for linguistic isolation or low median income OR poverty OR unemployment AND more than 10 percent of people ages 25 years or older do not have a high school diploma.

³United States Environmental Protection Agency, CEJST Mapping Tool (2024 version), EJScreen, retrieved: March 2024 from <https://screeningtool.geoplatform.gov/en/methodology#4.1/27.42/-95.75>

In addition, the US Department of Transportation (USDOT) released the Equitable Transportation Community (ETC) Explorer, a complement to the CEQ’s screening tool. This tool identifies communities that have been burdened by underinvestment in transportation. This ensures that USDOT investments are addressing the transportation-related causes of disadvantage. The tool identifies the following components as contributing to transportation disadvantage⁴:

1. **Transportation Insecurity:** Measures of peoples’ abilities to get where they need to go to meet the needs of their daily life regularly, reliably, and safely.
2. **Climate and Disaster Risk Burden:** Measures of sea level rise, changes in precipitation, extreme weather, and heat, which pose risks to the transportation system.
3. **Environmental Burden:** Measures of pollution, hazardous facility exposure, water pollution, and the built environment.
4. **Health Vulnerability:** Health effects from exposure to air, noise, and water pollution, as well as lifestyle factors such as poor walkability, car dependency, and long commute times.
5. **Social Vulnerability:** Measure of socioeconomic indicators that have a direct impact on quality of life (lack of employment, educational attainment, poverty, housing tenure).

Additionally, Lebanon County’s PPP identifies the specific needs of Plain Sect members, noting the “unique transportation and land use issues that need to be factored into the overall planning for any community within which they live and work.”

The following figures map the factors affecting social vulnerability and workforce development in Lebanon County. Low-income populations identified for Lebanon County are shown below in Figure 6. Low-income populations are defined by the FHWA as per FHWA Order 6640.23A for transportation planning purposes as persons whose median household income is below the poverty guidelines set by the Department of Health and Human Services (HHS). The 2023 HHS poverty guideline for a family of four is \$30,000. In Lebanon County, several areas were identified with elevated percentages of households falling into this category. Median household incomes are lowest in Lebanon, Palmyra, and Myerstown. The 2023 American Community Survey estimates 10.8 percent of all people in Lebanon County are living below the poverty level. In addition, the high share of the population without a high school diploma or a GED, as shown in Figure 7, makes it challenging to develop a workforce with higher paying jobs.

⁴ USDOT Equitable Transportation Community (ETC) Explorer, retrieved March 2024, <https://experience.arcgis.com/experience/0920984aa80a4362b8778d779b090723/page/ETC-Explorer---Homepage/>

Figure 6 – Median Household Income by Census Tract (2021)

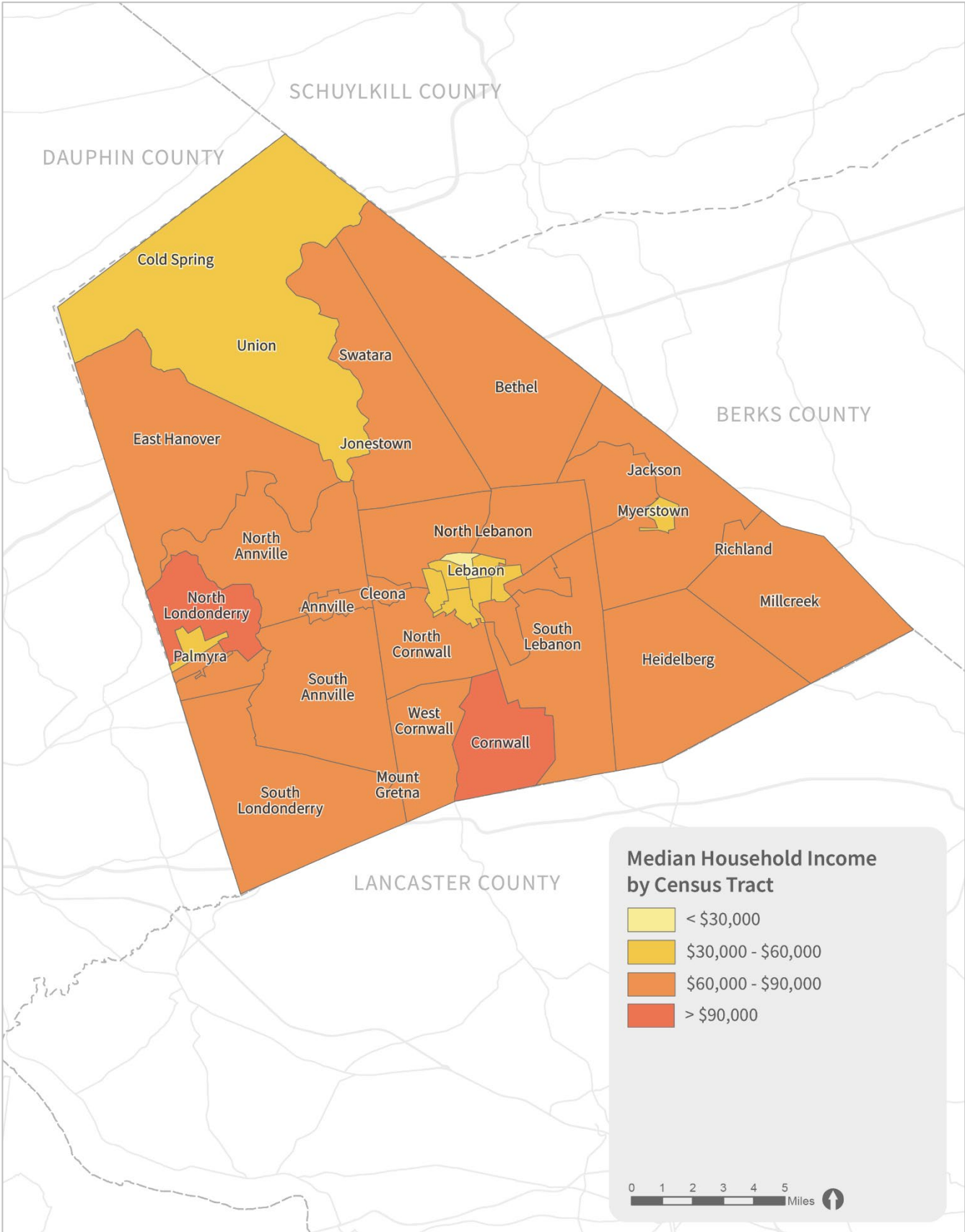


Figure 7 - High School Educational Attainment by Census Tract

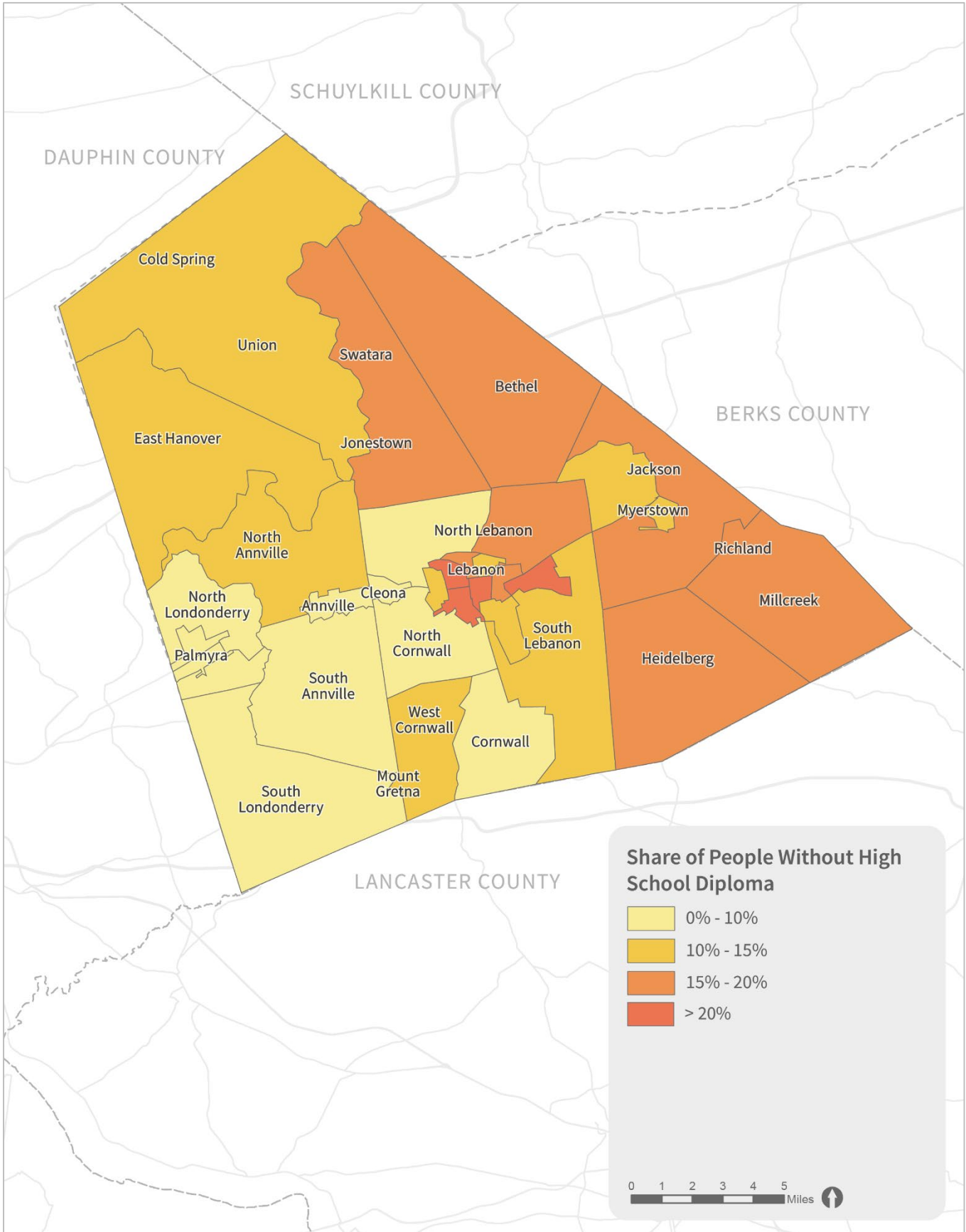


Figure 8 - Share of Households with Limited English Proficiency

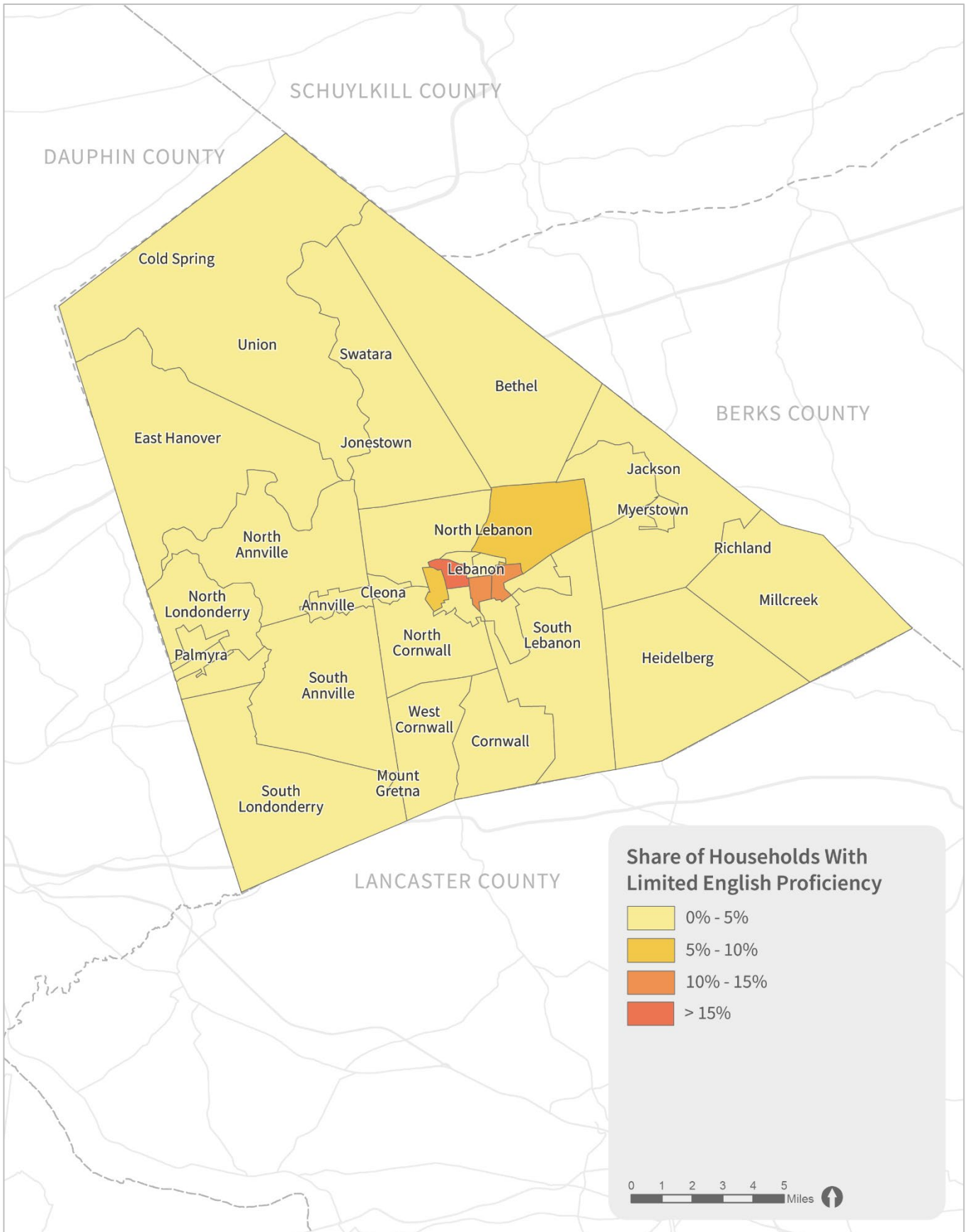


Table 3 – Racial and Ethnic Composition

Race	% of Lebanon County Population (2012)	% of Lebanon County Population (2021)	Change (2012 - 2021)	% of PA Population (2012)	% of PA Population (2021)	Change (2012 - 2021)
White	89.4%	84.3%	-3.1%	81.9%	78.3%	-3.6%
Black or African American	1.9%	2.2%	+0.3%	11.0%	11.0%	0.0%
American Indian/Alaskan Native	0.1%	0.1%	0.0%	0.2%	0.2%	0.0%
Asian	1.0%	1.5%	+0.5%	2.9%	3.6%	+0.7%
Native Hawaiian or Other Pacific Islander	0.0%	0.1%	+0.1%	0.1%	0.1%	0.0%
Two or More Races	2.5%	5.3%	+2.8%	1.8%	4.3%	+2.4%
Hispanic or Latino	9.4%	14.1%	+4.7%	6.1%	7.9%	+1.8%
White alone, not Hispanic or Latino	86.7%	80.5%	-6.2%	79.4%	75.0%	-4.36%

Source: U.S. Census Bureau, American Community Survey, 2008-2012 & 2017-2021

The share of households in the City of Lebanon experiencing linguistic isolation corresponds to the growing share of residents who identify as Hispanic or Latino, as shown in Table 3. Based on input from census data and the Lebanon County Planning Department, the majority of the Hispanic population in Lebanon County resides in the City of Lebanon (see Figure 8). Therefore, the project team ensured that the outreach programs were distributed widely in Spanish.

Benefits and Burdens Analysis

USDOT’s Equitable Transportation Community (ETC) Explorer was used to identify disadvantaged communities to determine the benefits and burdens of programmed transportation investments identified on the TIP and TYP. The data and maps shown in Figure 9 and Figure 10 were evaluated to identify potential adverse impacts or notable positive benefits for each programmed project. Most projects on the LEBCO TIP and TYP are asset-management-focused efforts that address bridge or pavement rehabilitation or replacement needs that involve little or no right-of-way impacts. TIP and TYP projects that are located within disadvantaged communities are summarized in Figure 11 – TIP Projects – Census Tracts that Exceed the Regional Threshold for Minority and Below Poverty Population (2021)

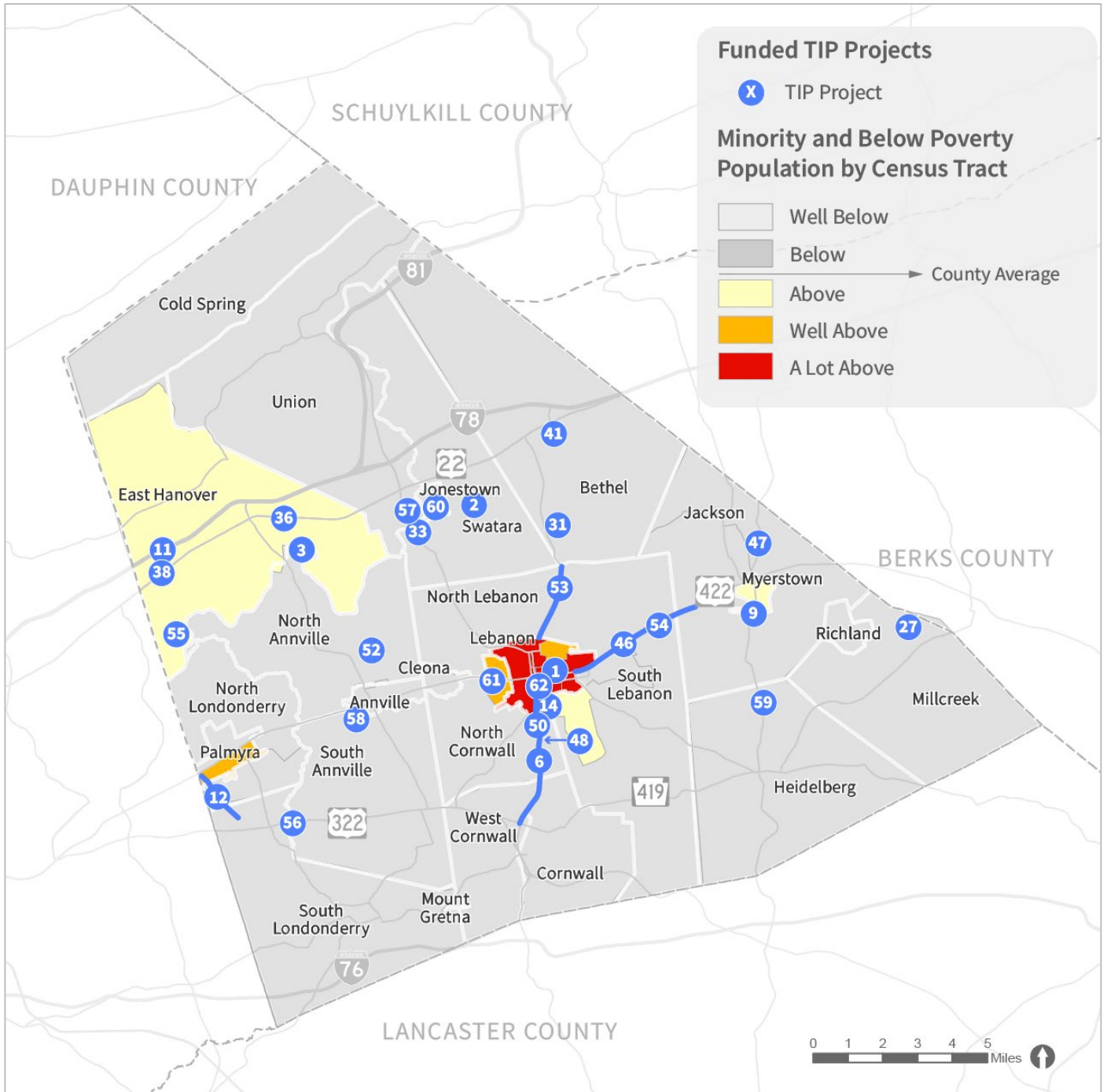


Table 4. An analysis of these projects has determined there would be no disproportionate burdens on disadvantaged communities and, in many cases, the projects would result in a benefit to these communities.

Transportation investments were also reviewed in areas identified as having a high percentage of minority populations or households below the poverty line. These areas have been defined as census tracts that have either a concentration of racial or ethnic minority groups greater than or equal to the county average (19.5 percent) or a concentration of below poverty population greater than or equal to the county average (10.84 percent). Figure 11 shows these areas overlaid with the funded TIP projects.

Figure 9 – TIP Projects – Benefits/Burdens – USDOT Disadvantage Communities (2023)

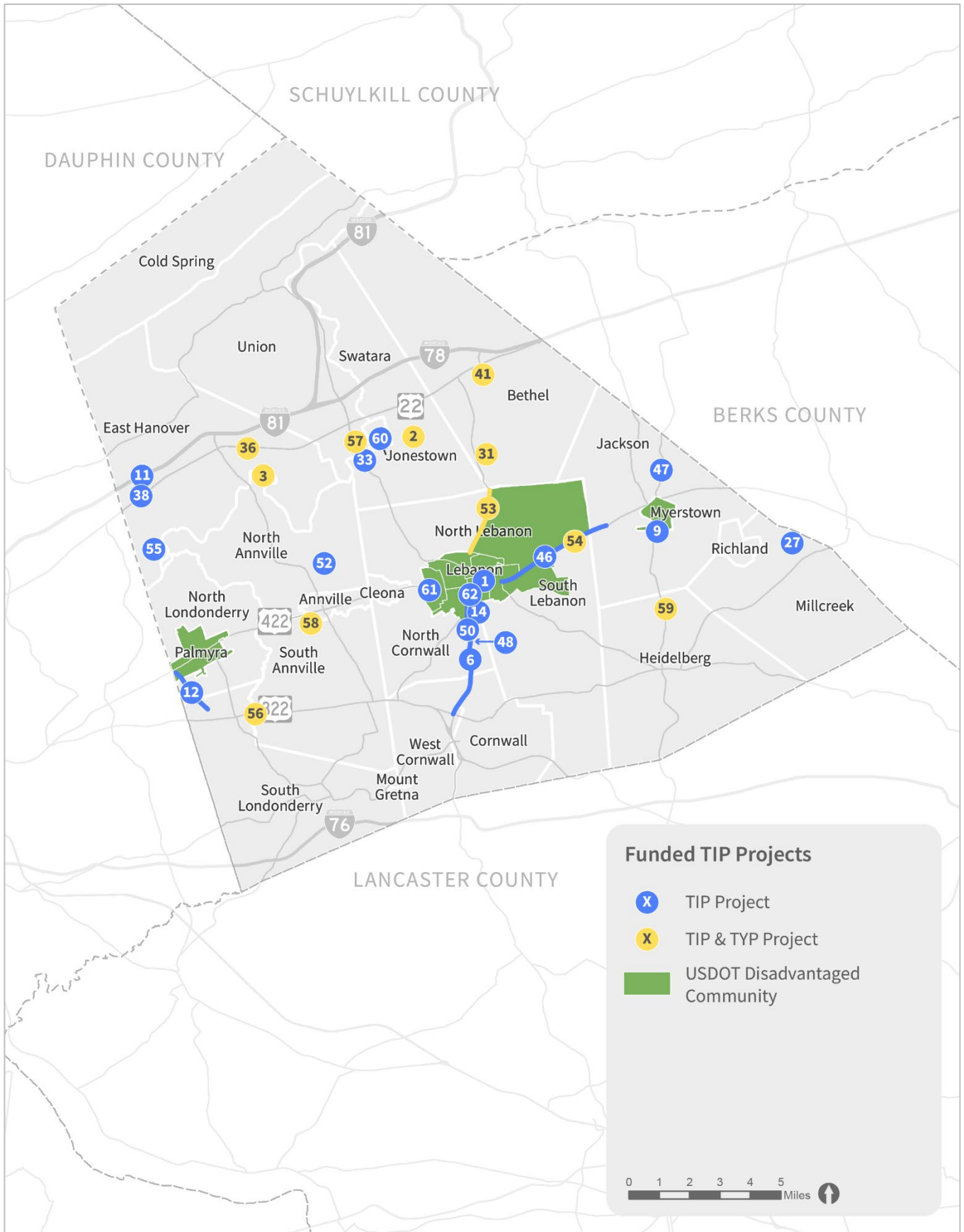


Figure 10 – TYP Projects – Benefits/Burdens – USDOT Disadvantage Communities (2023)

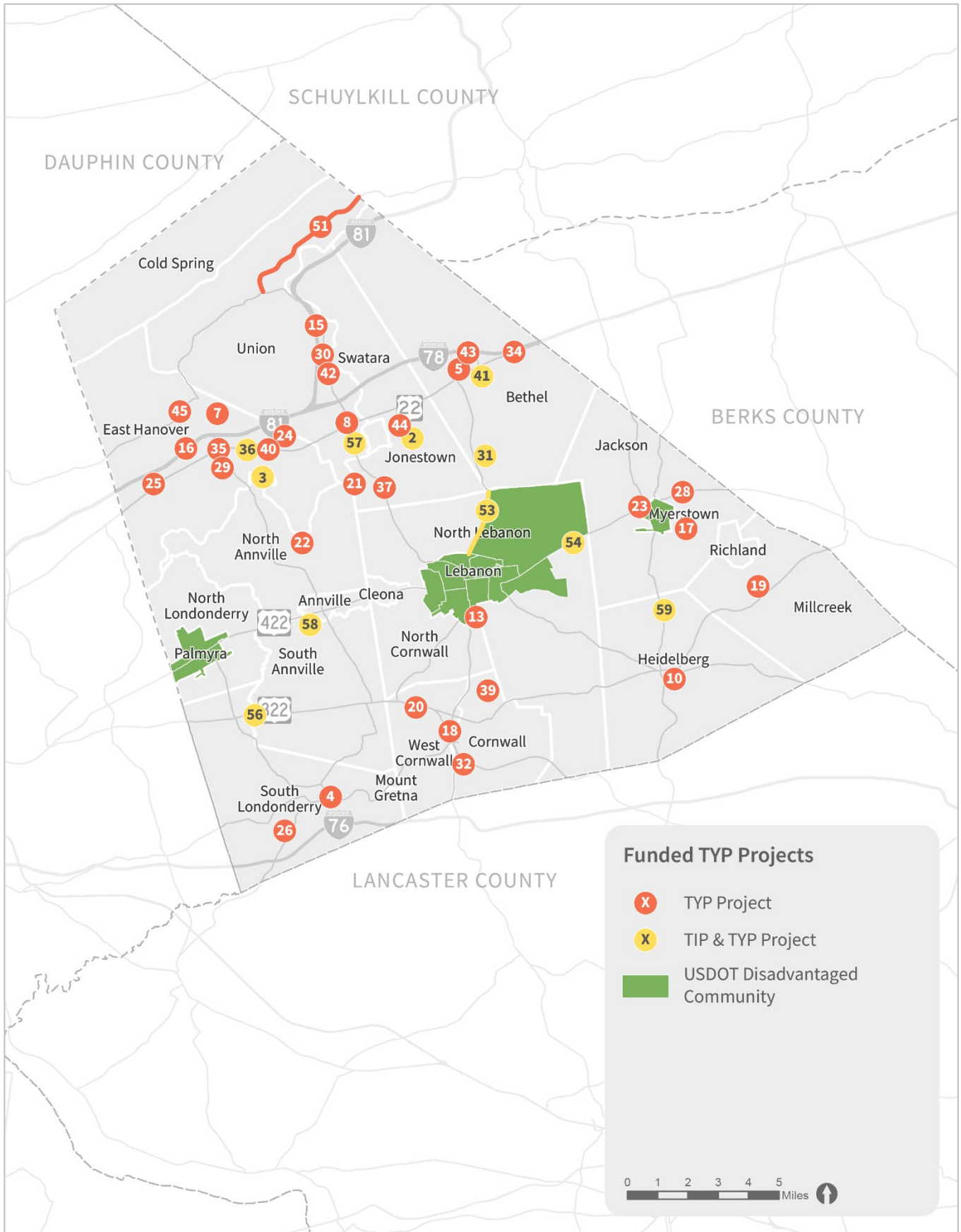


Figure 11 – TIP Projects – Census Tracts that Exceed the Regional Threshold for Minority and Below Poverty Population (2021)

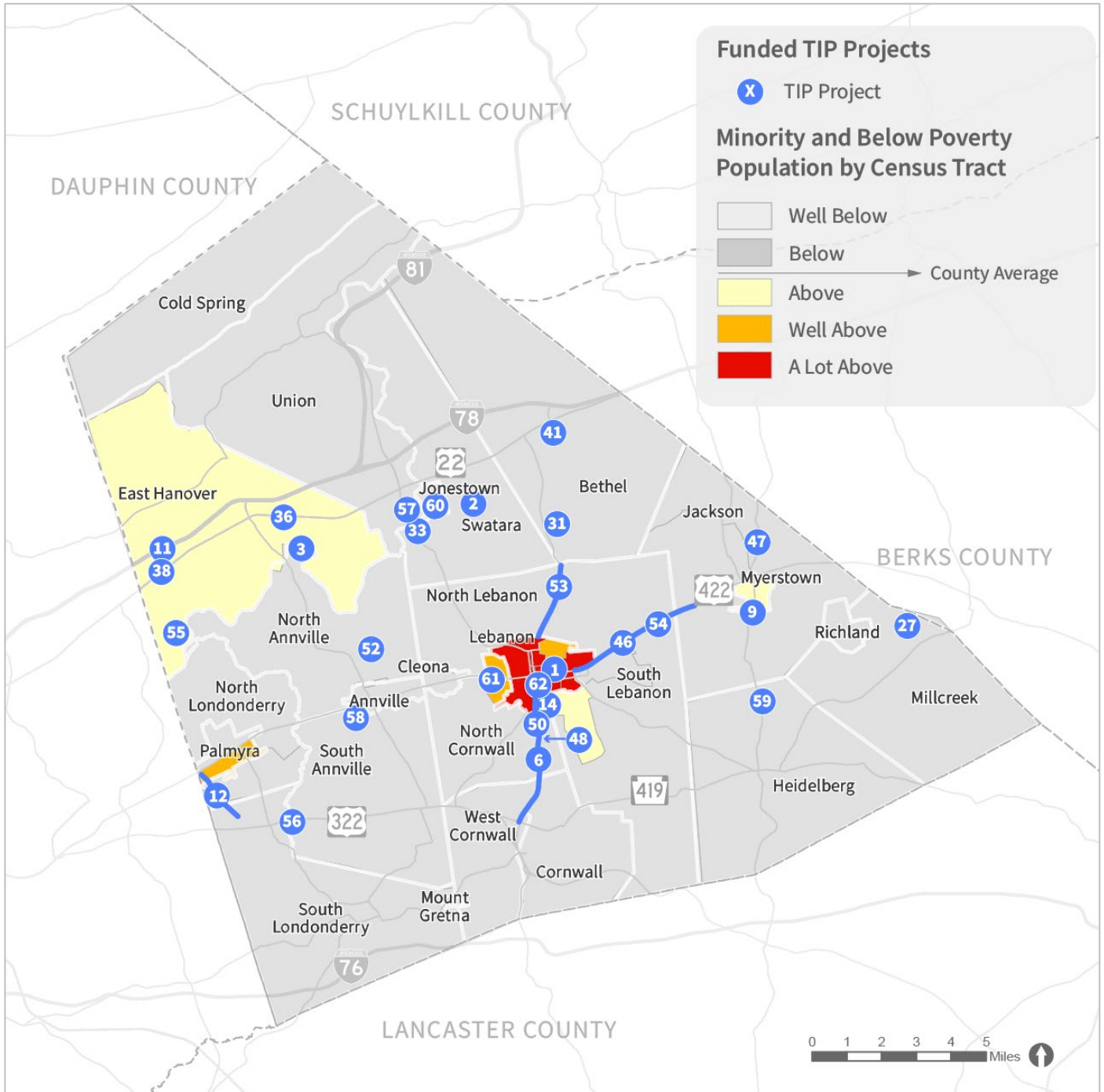


Table 4 – Benefits and Burdens Analysis: Projects Serving Disadvantaged Communities

Map ID	MPMS	Project	Municipality	Summary
1	20217	N Lincoln Ave Leb-5	Lebanon	This bridge replacement project will maintain circulation for all users.
9	91346	PA 501 Bridge-B	Myerstown	This bridge replacement project will maintain circulation for all users.
12	97153	Lingle Avenue Reconstruct	Palmyra, North Londonderry, and South Londonderry	This project is aimed at improving congestion and will benefit adjacent communities through reduced emissions. Resurfacing will also be beneficial to all populations.
13	97161	Cornwall Traffic Signals	North Cornwall and Lebanon	This safety-focused project will not expand capacity but will benefit local communities through improved operations.
14	99081	Cornwall & Wilhelm Inters	North Cornwall & Lebanon	This safety-focused project will benefit local communities through improved operations.
23	100305	Cumberland St Bridge 2	Jackson	This bridge replacement project will maintain circulation for all users.
48	106537	PA72/Isabel Drive Improvements	North Cornwall	This safety-focused project will benefit local communities through improved operations.
50	113297	PA 72 Quentin Rd Resurface	North Cornwall, West Cornwall, and Cornwall	This resurfacing effort will be beneficial for all populations.
53	116163	PA 343 Seventh Street Improvement	North Lebanon	This safety-focused project will benefit local communities through improved operations.
54	116164	US 422 Cumberland St and Prescott Rd Int	North Lebanon and South Lebanon	This safety-focused project will benefit local communities through improved operations.
61	118512	Jonestown Borough Ped Improvements	Jonestown	This Bicycle/Pedestrian project is a benefit to users who rely on these modes for transportation
52	118513	Quittapahilla Creek New Bridge	North Lebanon and West Lebanon	This safety-focused project will benefit local communities through improved operations.
N/A	111910	Lebanon City Resurfacing Phase 4 - Cumberland St	Lebanon	This project will improve pavement conditions, benefitting residents through improved operations.
N/A	Multiple	Lebanon Transit Operations and Capital Funding	Primarily Lebanon and adjacent municipalities	These projects will ensure maintenance of existing operations for Lebanon Transit, benefitting residents through transit availability.

Tribal Consultation

As part of the LRTP development and public outreach process, consultation with federally recognized tribes that once resided in Lebanon County was initiated by e-mail to tribal leadership. Several environmental laws require tribal consultation during project development. Although Pennsylvania does not have current tribal lands, historic properties may be located on ancestral, aboriginal, or ceded lands affected by PennDOT projects. Fourteen federally recognized tribes have been identified by PennDOT and FHWA for consultation purposes in Pennsylvania. The following tribes have been identified as having possible historical ties to Lebanon County and were notified by e-mail on March 6, 2024, and March 20, 2024.

- Absentee-Shawnee Tribe of Oklahoma
- Delaware Nation
- Delaware Tribe
- Eastern Shawnee Area of Interest
- Oneida Nation of Wisconsin
- Oneida Indian Nation
- Onondaga Nation
- Seneca-Cayuga Tribe of Oklahoma
- Shawnee Tribe

No tribes provided a response to the project team.

TRANSPORTATION SYSTEM OVERVIEW

Understanding Lebanon County’s existing transportation system provides the baseline from which we can envision future improvements. This section presents an inventory of existing transportation in Lebanon County and an analysis of its strengths and weaknesses. This section is the baseline used to determine the county’s current transportation usage, future transportation needs, how limited funding should be allocated, and the key measures planners should use to monitor this LRTP’s implementation.

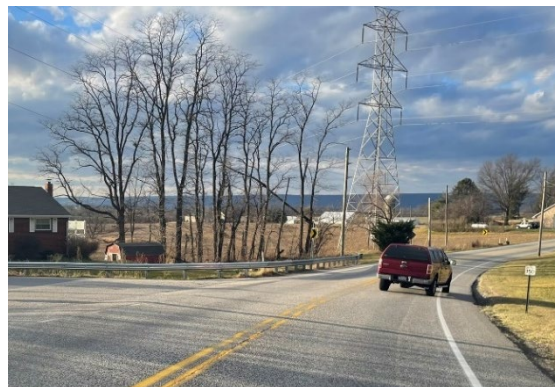
Highways and Bridges

Lebanon County’s transportation infrastructure primarily comprises roadways, highways, and bridges. Traffic volumes have risen since the COVID-19 pandemic and dipped to 2013 levels, mirroring the statewide traffic volume trends.

Eighty-eight percent of Lebanon County residents commute by personal vehicle, either driving alone or carpooling,⁵ making Lebanon County’s roadways key to the county’s transportation network. The framework of this network is built upon major roadways that bisect the county, including I-78, I-81, US 322, US 72, US 422, and other significant U.S. and state roadways. Additionally, the Pennsylvania Turnpike (I-76) generally follows the southern boundary of the county and is linked to the county’s roadway network via Interchange 266 (Lebanon-Lancaster). The highway and bridge network forms the backbone of transportation infrastructure within and throughout Lebanon County, serving freight, agriculture, public transit, national defense, and commerce.

Roadways

As of 2022, Lebanon County’s roadway network comprised a total of 1,239 linear miles of roadway. Of that total, 69 percent of roadway miles are locally owned, 30 percent are PennDOT-owned, and the remaining 1 percent are owned by other state agencies, including the Pennsylvania Turnpike Commission (PTC). Though local municipalities maintain the greatest share of roadway mileage in Lebanon County, three-quarters of all daily vehicle-miles traveled (DVMT) in the county occur on PennDOT-owned roadways. This increases further to 82 percent when including DVMT on the Pennsylvania Turnpike and roadways owned by other state agencies.

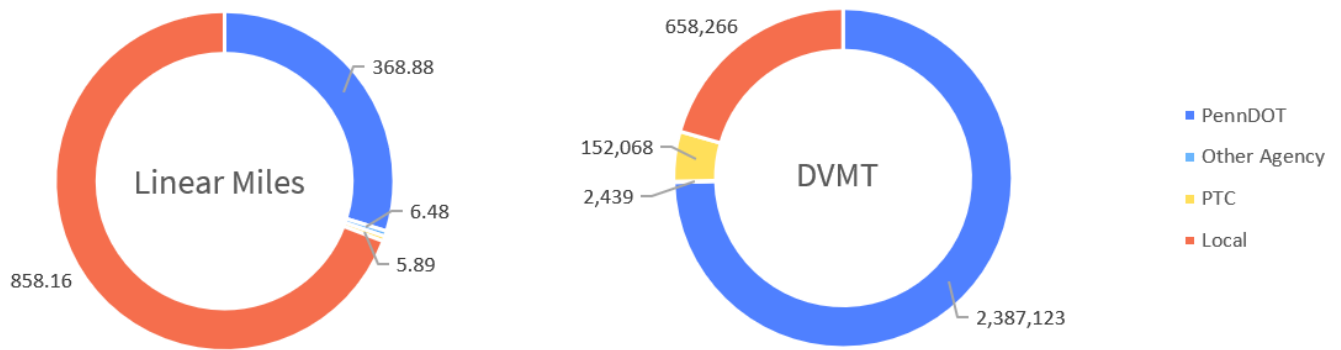


88% of Lebanon County residents commute by personal vehicle ... making Lebanon County’s roadways key to the county’s transportation

Figure 12 illustrates the linear mileage of each type of roadway and its associated DVMT as of 2022.

⁵ U.S. Census Bureau, American Community Survey, 2017-2021

Figure 12 – Lebanon County Roadway Network by Jurisdiction (2022)



Source: PennDOT, Pennsylvania Highway Statistics, 2022

Functional Classification and Federal-Aid System

Each roadway is classified based on its function and a range of characteristics, including daily traffic volume, intended purpose, design characteristics, and location. Functional classification determines funding eligibility as well as design standards and planning considerations such as access points and setbacks. The functional classification system includes the following hierarchy of roads:

- **Interstate Highways:** The highest classification of roadways, these limited-access facilities are designed for long-distance, high-speed travel. Interstate highways offer a high level of mobility and link major urban areas. These highways are the first choice for major freight operators, and accordingly many trucks within Lebanon County use I-78, I-81, or I-76 at some point in their journey.
- **Other Freeways and Expressways:** These roadways operate in a similar fashion to Interstate highways. They are also characterized by limited access with no abutting land uses, though occasional at-grade intersections may exist. No roadways in the county are classified as an Other Freeway or Expressway, however the segment of US 322 that operates concurrently with PA 72 is an example of this type of facility.
- **Other Principal Arterials:** These roadways serve major centers of metropolitan areas and offer a high degree of mobility. Unlike Interstate highways, these roadways may serve abutting land uses directly. At-grade intersections and driveways to specific parcels are characteristic of these roadways. Examples of Other Principal Arterial roadways are US 422, US 322, and PA 72.
- **Minor Arterial:** These roadways provide service for trips of moderate length, serve smaller geographic areas than principal arterials, and offer connectivity to principal arterials and Interstate highways from collectors and local roadways. Minor arterials in rural settings are typically spaced on intervals based on population density and help connect small rural communities to larger towns nearby. Interference to through movement is typically limited and high travel speeds are easily reached. Examples include Lehman Street and Lincoln Avenue in Lebanon, PA 501, and US 22.
- **Major Collector:** Major collector roadways provide intra-county travel at lower speeds than arterial roadways. Major collectors gather traffic from local roads and funnel vehicles to the arterial network.

Major collectors offer direct access to large residential neighborhoods, industrial areas, and agricultural facilities. Examples include PA 419, PA 897, PA 343, and PA 934.

- **Minor Collector:** Minor collectors are typically shorter than major collectors, have lower travel speeds, are spaced closer to each other, have lower annual average traffic volumes, and have fewer travel lanes. Minor collectors serve smaller neighborhoods and developments than major collectors. Examples include PA 241, PA 341, and PA 443.
- **Local:** Local roads provide direct access to individual properties and land uses. They are not designed for through traffic, so they are typically the slowest and narrowest roadways. Local roadways are classified by default in that any federally classified roads that have not been classified as arterials or collectors are automatically considered local roadways. These roadways are generally neighborhood streets and rural back roads. The term “local” in functional classification does not imply local government ownership of the roadway; it refers to the features and functions of the roadway only.

As of 2022, Lebanon County had federally classified roadways in all classifications with the exception of Other Freeway/Expressway. As shown in Table 5, the majority of roadways in Lebanon County are classified as local, accounting for 70 percent of all linear mileage. With just 2 percent of all linear mileage, Interstate highways account for nearly 33 percent of all daily vehicle mileage in the county, as shown in

Figure 12. Table 5 illustrates that as functional classification increases, the daily vehicular miles traveled per linear mile of roadway generally increase (i.e., one would expect more traffic on Interstates than local roadways). Although linear mileage statistics do not account for variations in the number of lanes on a roadway, the DVMT/Linear Mile metric offers insight into roadway utilization throughout the county. With fewer users to accommodate and more linear miles than all other roadway types, local roads tend to be the most utilized. All classifications of roadways other than local and rural minor collectors are eligible for federal highway funding and represent the county’s Federal-Aid Highway System. These roadways are mapped on Figure 13.

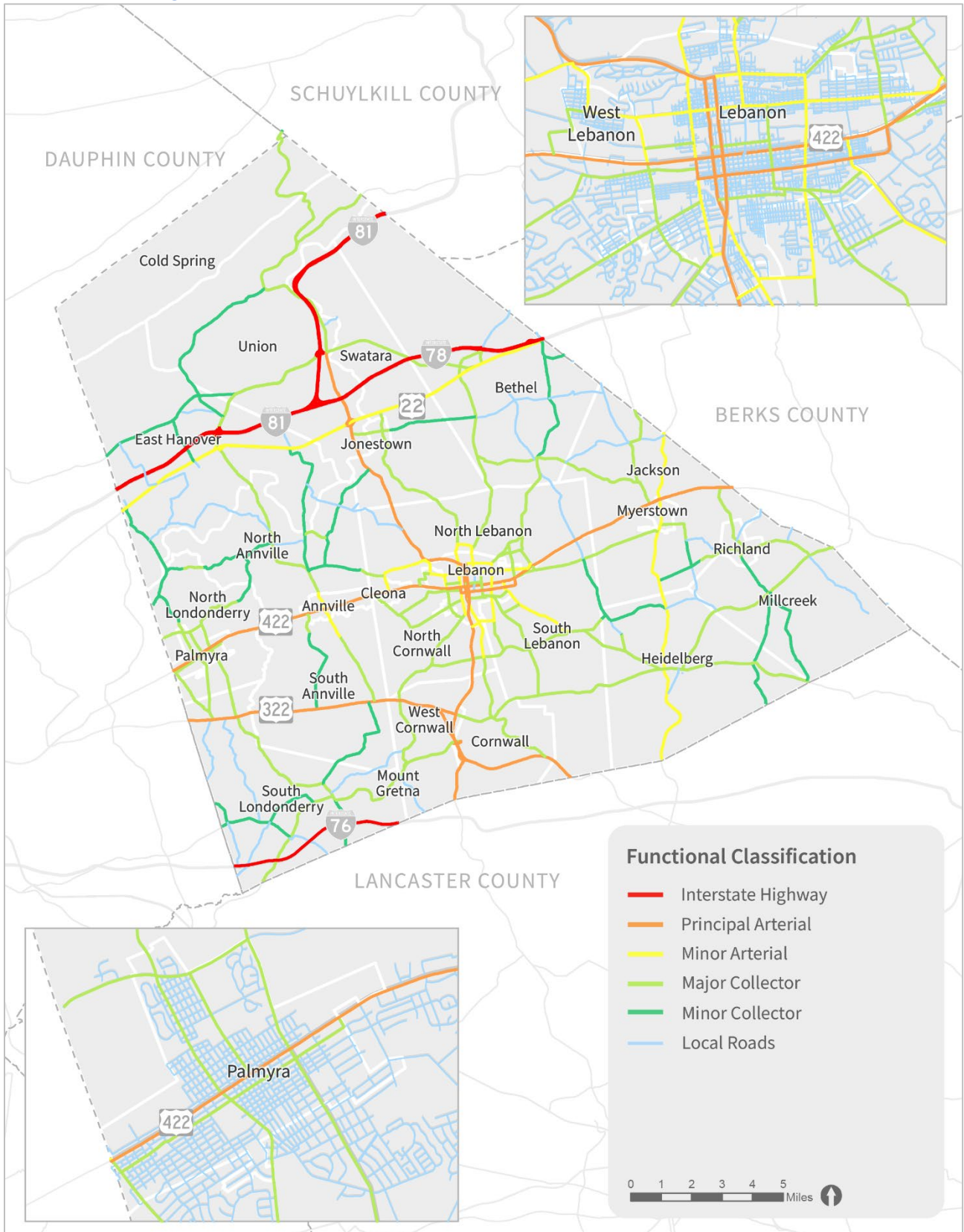
Table 5 – Lebanon County Roadway Network by Functional Classification (2022)

Classification	Federal Aid?	Linear Mileage	DVMT	DVMT/Linear Mileage
Interstate	Yes	29.5	916,219	31,058
Other Freeway/Expressway	Yes	0	0	
Other Principal Arterial	Yes	54.8	692,216	12,632
Minor Arterial	Yes	46.6	361,362	7,755
Major Collector	Yes	164.5	638,589	3,882
Minor Collector	Only “urban”	70	129,351	1,848
Local	No	874.0	462,159	529
Total	-	1,239.4	3,199,896	2,742

Source: PennDOT, PA Highway Statistics 2022

** Federal aid is available for Urban Minor Collector roadways but not Rural Minor Collector roadways. Bridges 20 feet or greater are eligible for Federal aid regardless of classification.

Figure 13 – Federal Functional Classifications of Lebanon County Roadways



Source: PennDOT, 2022

Traffic Volumes

Traffic volumes in Lebanon County are heaviest on Interstate and arterial roadways. Interstate 81 carries the highest traffic volumes in the county, followed by I-78, I-76 (Pennsylvania Turnpike), and US 322. Non-Interstate volumes are concentrated around major commercial centers near Lebanon and Palmyra.

Table 6 details the segments with an Average Annual Daily Traffic (AADT) over 15,000, and compares that figure with the AADT of that segment in 2018. In general, traffic volumes have increased on US 422, and on certain segments of PA 72, but have decreased on major highways such as I-78, I-84, and I-76. Figure 14 displays AADT data for all roadways in the county on which traffic counts are conducted.



Table 6 – Lebanon County Average Annual Daily Traffic, Segments with AADT Over 15,000

Roadway	Segment	Municipality	Count Year	AADT	AADT Change Since 2018
I-81	From Dauphin County Line to I-78 Junction	East Hanover, Union	2022	49,745	▼
I-78	From Berks County Line to Exit 8	Bethel	2023	33,889	▼
I-76	Dauphin County Line to Lancaster County Line	South Londonderry	2022	25,818	▼
PA 72	From Lancaster County Line to US 322 Junction	Cornwall	2023	19,491	▲
US 422	From North Annville and South Annville Municipal Line to Mill St	North Annville, South Annville, Annville	2023	18,237	▲
US 422	From PA 117 to North Annville and South Annville Municipal Line	Palmyra, North Londonderry	2023	18,183	▲
US 422	From Mill St to PA 934	Annville	2023	18,183	▲
US 422	12th St from US 422 to US 422 (Walnut St)	Lebanon	2023	17,506	▲
US 322	From PA 934 to PA 241	South Annville	2023	16,537	▼
US 322	From PA 934 (Fisher Ave) to PA 241	West Cornwall, South Annville	2022	16,371	▼
PA 72	From US 322 Junction to E Main Street	Cornwall	2023	16,271	▼
US 322	From Schoolhouse Rd to PA 117 Junction	South Londonderry	2023	16,239	▲
PA 72	From PA 241 to Lebanon Municipal Line	Lebanon	2023	16,236	▼
US 422	From Railroad St (SR 3019) to N Forge Rd (PA 117)	Palmyra	2023	16,127	▲
PA 72	Exit from US 322 to Lebanon Municipal Line	Cornwall	2023	15,460	▼
US 422	From Lancaster County Line to Railroad St (SR 3019)	Palmyra	2023	15,278	▲



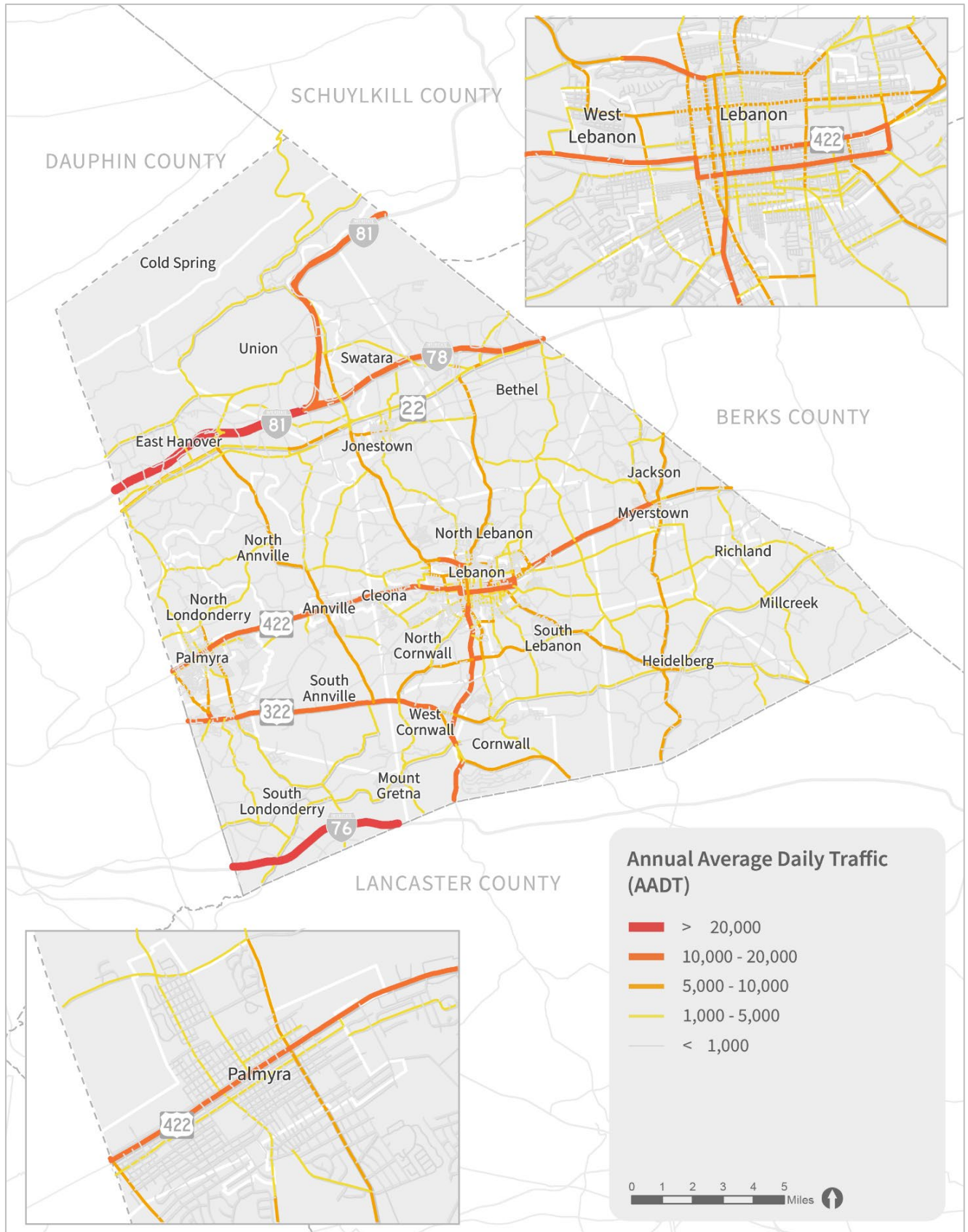
Increase in AADT since 2018



Decrease in AADT since 2018

Source: PASDA

Figure 14 – Lebanon County Traffic Volumes (2023)



Source: PASDA, PennDOT

Travel Trends

While AADT data provides a snapshot of traffic volumes at specific locations along roadways, the Daily Vehicle-Miles Traveled (DVMT) metric multiplies the AADT by the roadway segment length, allowing volumes to be summed and analyzed based on roadway jurisdiction, geographic location, and other attributes. Analyzing DVMT allows jurisdictions to prioritize the most heavily used roadways for the greatest return on repair investments. DVMT data also plays a role in determining the functional classification of roadways, federal funding allocation for roadway repairs, and the material composition required for pavement longevity.

In 2020 during the COVID-19 pandemic, Lebanon County roadways were less affected and saw less of a decrease in DVMT than the rest of Pennsylvania.

Travel trends changed nationwide as a result of the COVID-19 pandemic. Data from the PennDOT Highway Statistics Reports (2013 to 2022) show DVMT by functional classification and total DVMT for each year. DVMT by functional classification for the most recently available five-year period is shown in Table 7. Between 2017 and 2018, the number of road miles in Lebanon classified as “Other Freeway/Expressway” dropped to zero, meaning the DVMT on roadways classified as “Other Freeway/Expressway” also became zero. While all functional classifications experienced changes as part of the COVID-19 pandemic, interstates have seen the greatest overall decrease since 2013, with 2022 being the lowest DVMT since 2013, despite significant population growth in the county. In contrast, DVMT on local roads has increased since 2019, while all other functional classifications have decreased.

Table 7 – Lebanon County DVMT by Functional Classification

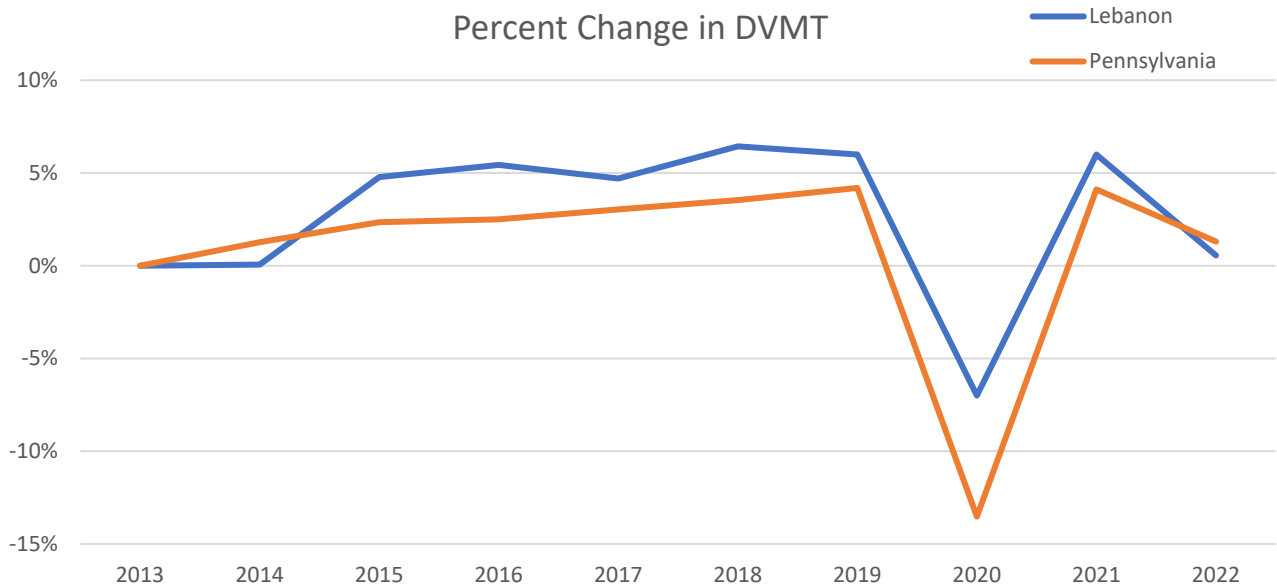
Record Year	Federal-Aid DVMT					Non-Federal-Aid DVMT		Total Linear DVMT
	Interstate	Other Frwy/Expwy	Other Principal Arterial	Minor Arterial	Major Collector	Minor Collector	Local	
2013	968,657	11,608	659,868	348,160	610,776	141,029	442,211	3,182,309
2014	982,796	11,727	651,875	350,447	599,311	143,114	445,110	3,184,381
2015	1,144,526	13,416	651,706	326,737	610,656	127,686	459,697	3,334,424
2016	1,099,921	13,639	660,458	326,726	635,947	122,699	495,851	3,355,242
2017	1,115,160	8,927	674,664	332,956	634,705	125,098	440,432	3,331,942
2018	1,127,343	0	697,174	347,535	645,375	124,589	445,075	3,387,090
2019	1,086,641	0	694,543	356,479	655,918	130,064	449,602	3,373,247
2020	1,067,593	0	579,530	300,309	535,706	112,012	364,476	2,959,626
2021	1,082,681	0	714,497	361,147	646,172	125,868	442,709	3,373,074
2022	916,219	0	692,216	361,362	638,589	129,351	462,159	3,199,896

Source: PennDOT, PA Highway Statistics 2013-2022

As illustrated in Figure 15, Lebanon County’s DVMT increased between 2013 and 2019 at a slightly higher pace than statewide DVMT. In 2020 during the COVID-19 pandemic, Lebanon County roadways were less affected and saw less of a decrease in DVMT than the rest of Pennsylvania. Both Lebanon County and Pennsylvania statewide

saw an increase back to prepandemic levels in 2021, and a second decrease in 2022 overall, almost returning to their 2013 DVMT.

Figure 15 - Percent Change Since 2013 in Linear DVMT (Daily Vehicle-Miles Traveled)



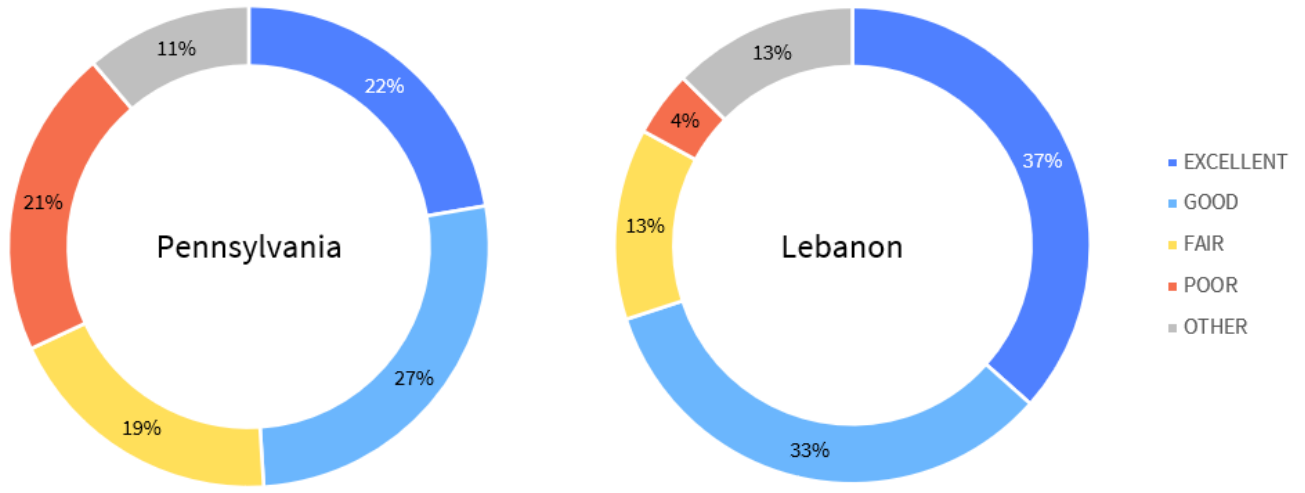
Source: PennDOT, PA Highway Statistics 2013-2022

Pavement Performance

Pavement performance and management is important to preserving the county’s existing transportation assets. As with all transportation assets in a limited funding environment, pavement repairs must be prioritized by return on investment. PennDOT evaluates pavement condition using the International Roughness Index (IRI), a global standard for measuring pavement smoothness. IRI measures pavement roughness by the number of inches per mile that a laser (mounted in a special vehicle) moves vertically as it is driven down the road. The lower the IRI number, the smoother the ride and the better the pavement condition. As of 2024, 70 percent of all National Highway System (NHS) mileage in Lebanon County had an IRI rating of good or excellent. This data does not include state highways within Lebanon City that are under municipal jurisdiction. Figure 16 compares the IRI rating for NHS roadways in Lebanon County with statewide ratings. Pavements in Lebanon County are in better condition than pavements statewide, as a whole. Figure 17 maps the IRI ratings for roadways in Lebanon County. Local pavement data, particularly for roadways within the City of Lebanon, were not available.

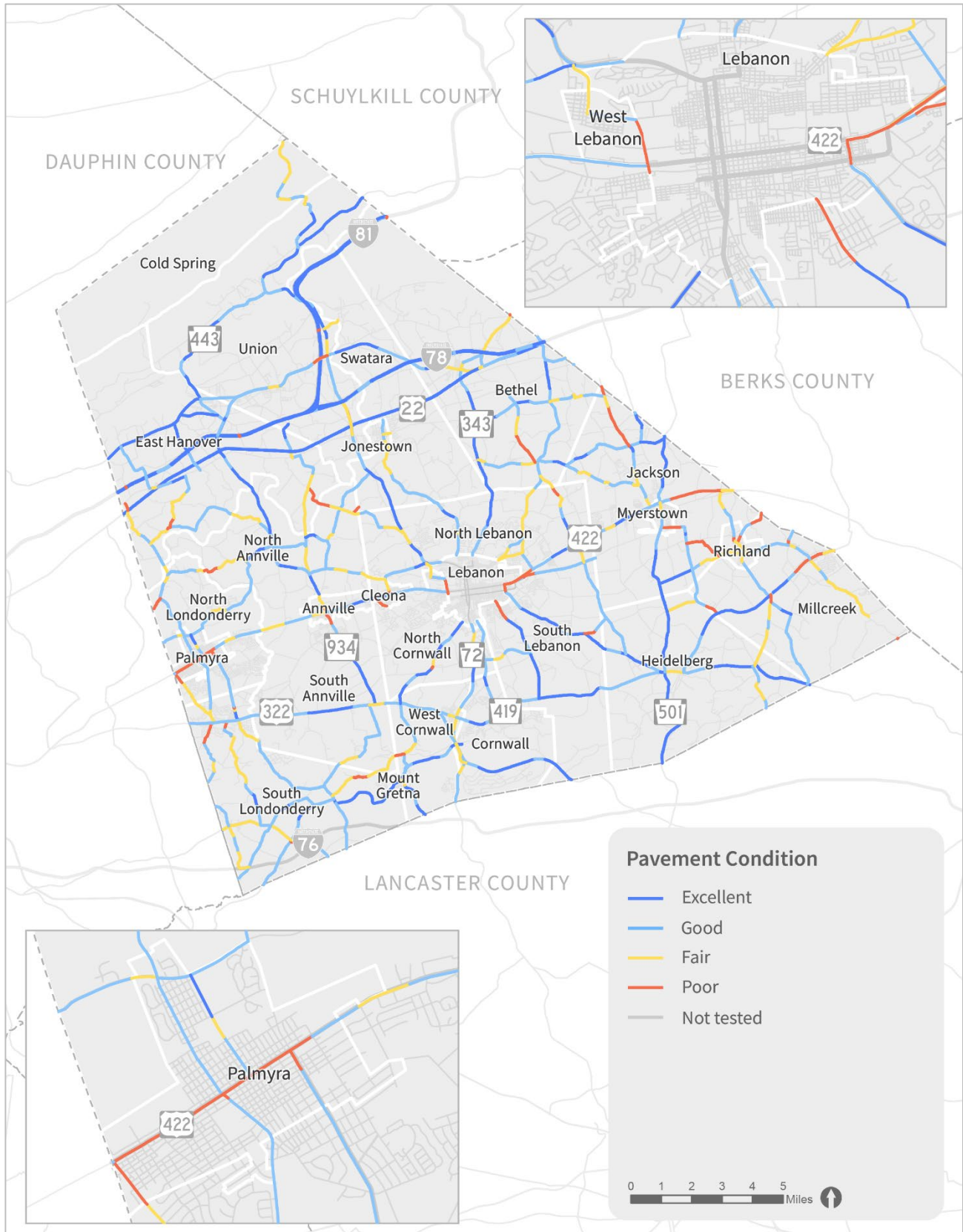
Lebanon County’s roadways are in better condition than other Pennsylvania roadways, on average.

Figure 16 – International Roughness Index Ratings on NHS Highway Miles (Interstate and Non-Interstate)



Source: PennDOT, RMS Data, 2024

Figure 17 – Lebanon County Pavement Condition Map



Source: PennDOT, RMS Data, 2023

Congestion

Roadway performance was reviewed using the National Performance Management Research Data Set (NPMRDS). This is a data source produced by FHWA that reports travel times on the NHS at five-minute intervals. The NPMRDS includes 24-hour average vehicle travel speeds on the NHS, which can be used to identify locations of recurring congestion. Congestion can result in lost travel time, reduced productivity, increased air pollution, higher incidences of road rage, and impacts to adjacent roadways. Further, increased congestion often results in a higher number of crashes, particularly same direction rear-end crashes. Figure 18 shows the results of a user delay cost analysis using NPMRDS data. These costs are a common tool to measure congestion and combine probe speed data, volume data, and hourly costs of delay by commercial and passenger vehicles and provide indications on where bottlenecks are impacting drivers the most.

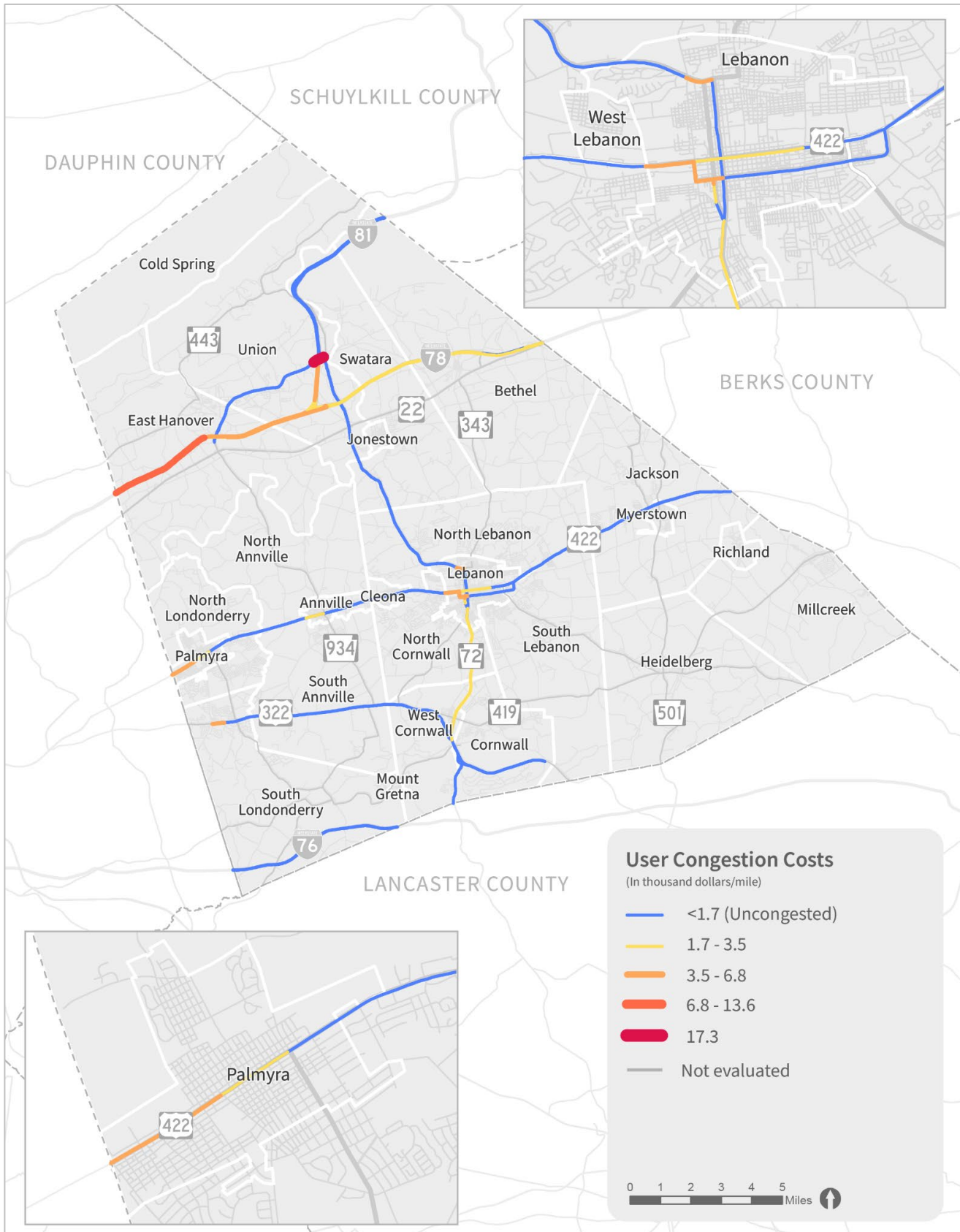
The roadway with the highest user congestion cost is Fisher Avenue between PA 72 and I-81. This segment carries significant traffic volumes, with a high freight percentage. Interstate 78 exhibits congested or mildly congested conditions throughout the county, particularly west of I-81 where they are co-located.

There is additional mild congestion at the crossroads of Lebanon County—US 422 in the City of Lebanon, and PA-72 from US 422 to US 322. These segments not only carry substantial traffic volumes, but they also serve the most densely developed portions of the county. Additional segments that exhibit mild congestion include US 422 in downtown Palmyra and Annville and US 322 in Campbelltown. While these levels of congestion impact travel conditions, given the existing density at these locations, additional capacity is unlikely to be feasible, nor would it have a positive impact on travel conditions throughout these longer corridors. Opportunities related to Travel Demand Management at these locations, including signal coordination, access management, or roundabouts, may be particularly effective considering these are the county’s most heavily traveled corridors.

Beyond those identified segments, conditions in Lebanon County generally exhibit uncongested conditions during typical operating periods. This does not account for non-recurring congestion caused by incidents or shorter-duration periods of congestion attributed to specific land uses, particularly schools.

Conditions in Lebanon County generally exhibit uncongested conditions during typical operating periods.

Figure 18 – Lebanon County User Congestion Costs



Bridges

The PennDOT Bridge Management System (BMS) includes state bridges at least 8 feet long and local bridges at least 20 feet long. Federal legislation (Surface Transportation Assistance Act of 1978) requires that all bridges 20 feet or longer must be inspected every two years. As of 2023, data from the BMS indicated that Lebanon County has a total of 462 bridges, including 237 state bridges and 208 local bridges. Of the local bridges, 110 are shorter than 20 feet and thus are not inspected regularly.

PennDOT calculates a sufficiency rating to quantify the physical condition of BMS bridges and help prioritize repairs. Several components are inspected, including the bridge deck, superstructure, and substructure. The bridge is then classified as Good, Fair, or Poor.



In general, locally owned bridges in Lebanon County are in comparable condition to locally owned bridges

Table 8 provides the number and jurisdiction of Good, Fair, and Poor bridges in PennDOT’s BMS system for Lebanon County. Figure 19 shows the conditions of locally maintained bridges in Lebanon County compared to locally maintained bridges across the state. In general, locally owned bridges in Lebanon County are in comparable condition to locally owned bridges statewide. Bridges within the county are mapped in Figure 20. Improvements to these bridges should be prioritized on routes where traffic volumes are highest or limited parallel alternative connections exist. Further, regular maintenance on locally owned bridges require a substantial portion of local public works outlays. In certain cases, a complete replacement or major repair of these structures may allow communities to better deploy limited local maintenance budgets in the long term.

Table 8 – Lebanon County Bridges and PennDOT BMS Condition by Jurisdiction

Jurisdiction	Good	Fair	Poor	Unknown	Total
State	63	143	23	8	237
Turnpike	2	4	0	0	6
Agency	1	0	1	0	6
Local	25	58	15	110	208
Other/Unknown	1	1	0	7	9
TOTAL	92	206	39	125	462

Figure 19 – Condition Ratings of Lebanon County Local Bridges and Pennsylvania Local Bridges (2023)

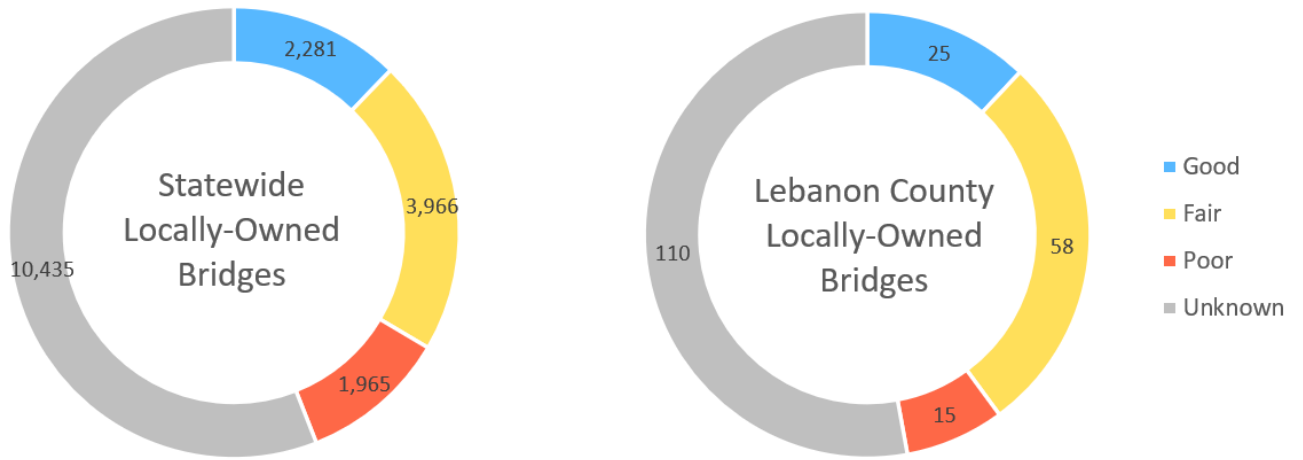
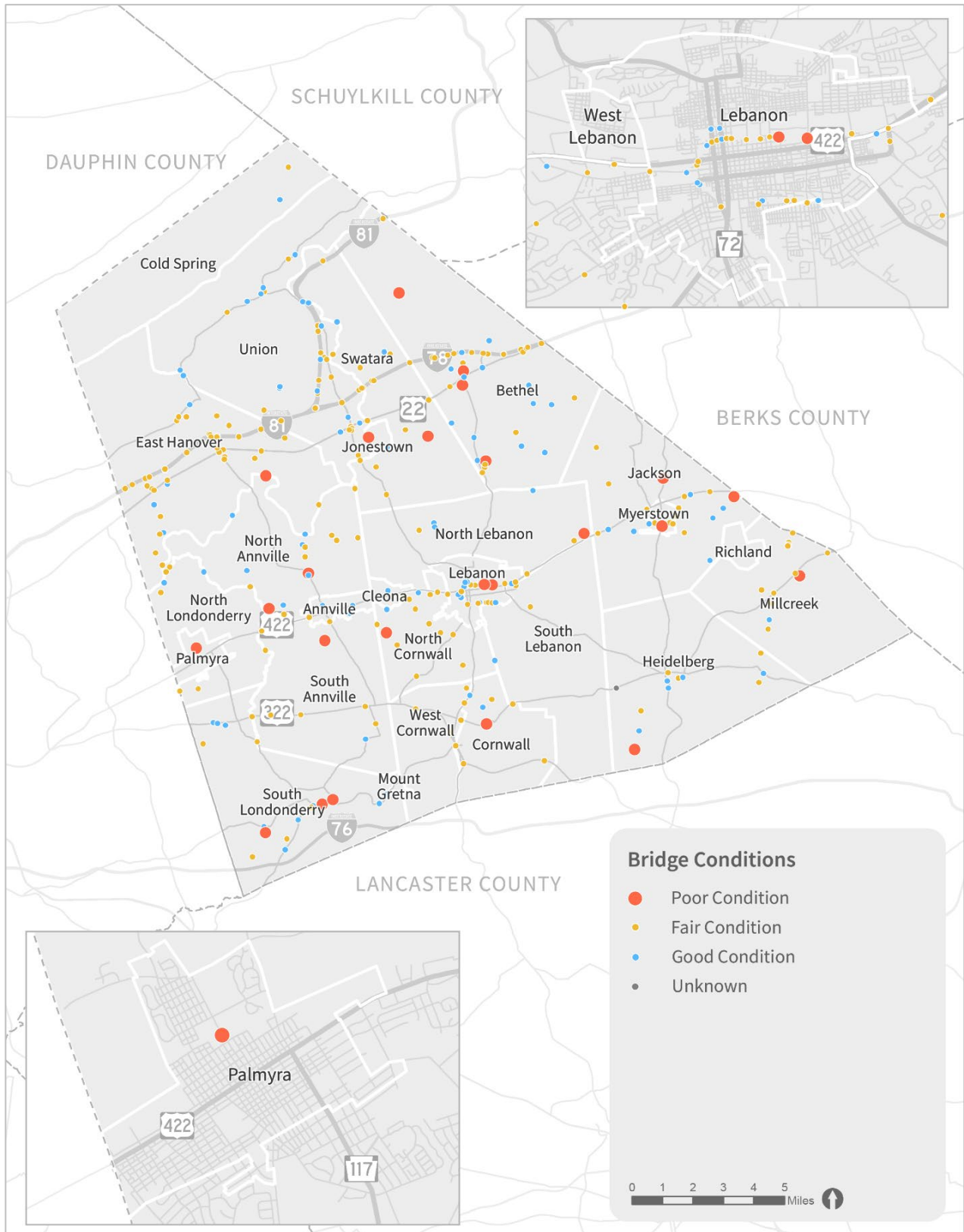


Figure 20 – Lebanon County Bridge Conditions (2023)



Transit

Lebanon Transit has a high customer satisfaction rate. Having recently undergone a service review in 2022-23, the agency is making small efficiency adjustments to many routes in 2024. Due to current growth patterns in the county, Lebanon Transit has no plans to expand service.

Lebanon Transit (LT), the county’s local public transportation agency, operates fixed service routes, including a weekday express service to Harrisburg, along with a shared-ride program that provides paratransit service. On an average weekday, Lebanon Transit typically has 1,648 riders on its route and express services. Lebanon Transit is nearing completion of a service review, which is a state-funded effort that began in 2022 and aims to survey riders, review existing services, analyze the potential rider market, review route design and operation, and make recommendations. This will result in some proposed route changes, anticipated to roll out in 2024 and are shown and detailed later in this section.

Most new development in Lebanon County is in isolated locations outside of its core centers, making new developments difficult to serve from a transit perspective.

The ridership survey, conducted in October 2022 as a part of the service review, received 175 responses. The survey found that a typical Lebanon Transit rider is aged 40-60 and has a household income less than \$25,000 per year. More than 30 percent of surveyed riders identified as being Hispanic or Latino, while the general population of Lebanon County is only 14 percent Hispanic or Latino. Students do not typically ride Lebanon Transit, making up only 3 percent of surveyed riders.

Generally, riders are very satisfied with fares, bus service, and bus operators. They are the least satisfied with the frequency of weekend service and the lack of nighttime service. The report also concluded that although Lebanon County’s population has grown, most new development is in isolated locations outside of historic core areas of the county. This makes these new developments difficult to serve from a transit perspective. Furthermore, the

number of households without a vehicle has decreased, both in Lebanon County and in the City of Lebanon. There are no plans to expand service currently beyond returning some routes to higher (30-minute) frequencies. Many routes had frequency reductions during the COVID-19 pandemic, though Lebanon Transit is near to returning all service to pre-pandemic frequencies.

Figure 21 and

Figure 22 map the future transit network and changes from the previous network. Figure 23 shows average weekday ridership. These are aggregated to the nearest stop because Lebanon Transit operates a flag-stop system, meaning riders can flag down a bus at any



location along its route. The data is aggregated into official bus stop locations.

Figure 21 – Lebanon Transit Route Updates (City of Lebanon)

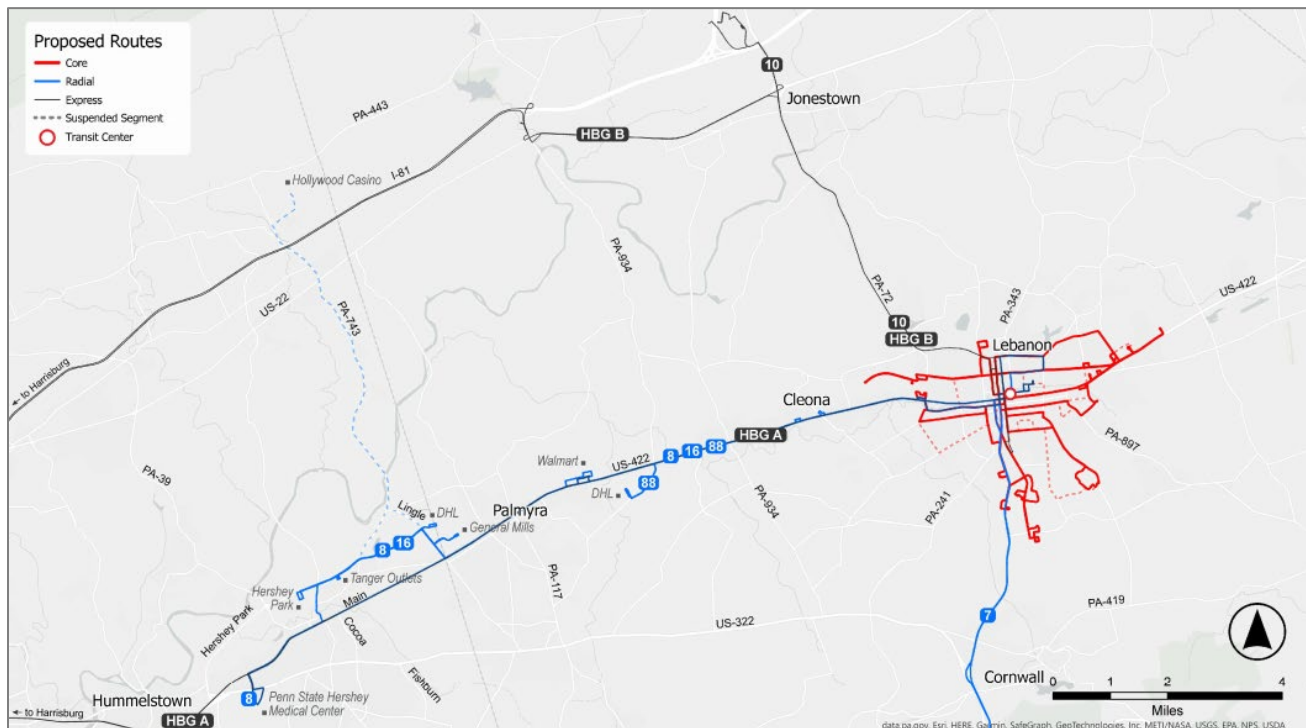
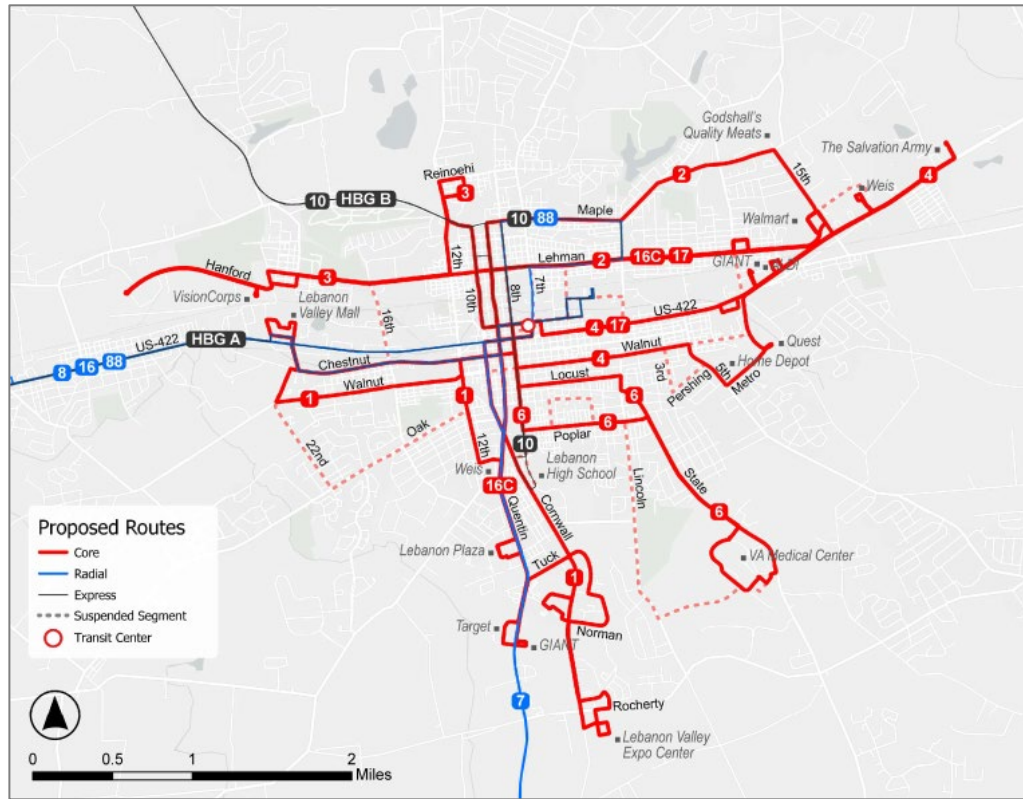


Figure 22 - Lebanon Transit Route Updates (Systemwide)

Routes

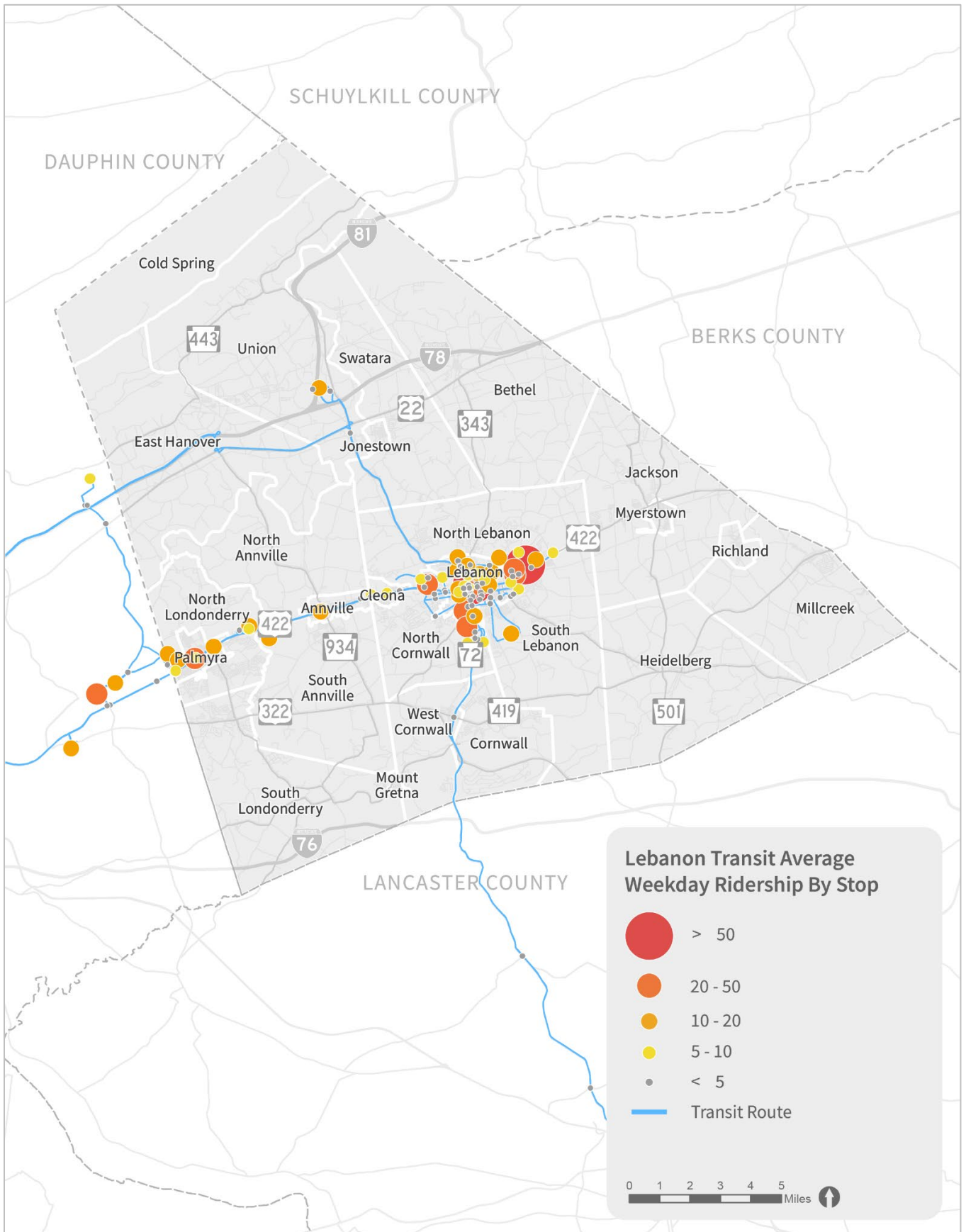
LT's fixed bus routes are described below with anticipated 2024 changes. Italicized parentheses describe the differences from the prior route.

- **Route 1:** Operates in a loop from 7th Street and Willow Street in Downtown Lebanon to Lebanon Valley Mall, Weis Markets, Lebanon Plaza, K-Mart/Lowe's, Mussers, Manor Care, Quentin Circle, and Quality Inn. Route 1 runs from 6:30 AM to 5:30 PM on weekdays and from 8:00 AM to 5:00 PM on Saturdays. (*Changes include extending service to the Lebanon Expo Center and North Cornwall Commons; eliminating Oak and 22nd streets and instead looping from Walnut Street down Chestnut Street to accommodate the forthcoming Chestnut View Apartments.*)
- **Route 2:** Operates in a loop from 7th Street and Willow Street in Downtown Lebanon to the senior center on 8th Street and Maple Street, Weavertown Terrace, Walmart, and Lebanon Village. Route 2 runs from 7:00 AM to 5:30 PM on weekdays and 8:00 AM to 4:30 PM on Saturdays. The route will remain interlined with Route 3 until the return to 30-minute service. (*Changes include crossing the railroad on 9th Street outbound and 10th Street inbound, instead of on 8th Street, to avoid rail delays.*)
- **Route 3:** Operates in a loop from 7th Street and Willow Street in Downtown Lebanon to the Alley Blind Center, Brookside Apartments, Webster Manor, and Townhouse Apartments. Route 3 runs from 6:30 AM to 5:00 PM on weekdays and from 8:30 AM to 5:00 PM on Saturdays. (*Changes include eliminating a portion of the route on 7th Street, instead traveling north on 9th Street to avoid rail delays.*)
- **Route 4:** Operates in a loop from 7th Street and Willow Street in Downtown Lebanon to Cedar Court, Quest, Salvation Army, Home Depot/Dollar Tree, and Weis Markets. Route 4 runs from 6:30 AM to 5:30 PM on weekdays and from 8:00 AM to 4:30 PM on Saturdays. (*Changes include adding a stop at Weis Markets east of Lebanon City, while eliminating the stop at Aldi already served by Route 17. Changes also eliminate the portion of the route on 3rd Avenue and Pershing, instead utilizing 5th Avenue.*)
- **Route 6:** Operates in a loop from 7th Street and Willow Street in Downtown Lebanon to GSH Dialysis, VA Medical Center, Zweiwers Market, and GSH Hospital. Route 6 runs from 6:30 AM to 5:30 PM on weekdays. (*Changes include eliminating service near Lebanon High School and a portion of the route on Oak Street and Lincoln Avenue. Route 6 will operate both ways on State Drive to/from Lebanon VA Medical Center, where it makes a complete loop of the campus.*)
- **Route 7:** Operates in a loop from the LT park-and-ride on Schneider Drive to Park City Mall. This route only runs on Saturdays between 8:30 AM and 5:15 PM. (*Change includes changing the name from SS, the Saturday Special, to Route 7.*)
- **Route 8:** Operates in a loop from 7th Street and Willow Street in Downtown Lebanon to Cleona Square Mall, Pinnacle Health, Annville Square, Palmyra WalMart, Palmyra Dialysis, Palmyra Square, A&M Pizza, General Mills, Excel Logistics, Tanger Outlets at Hershey, Hershey Park Service Center, and Hershey Medical Center. Route 8 currently only runs on Saturdays. (*As a part of 2024 changes, the Route 8 Eastbound return trip from Hershey will use Route 422 to provide service to Downtown Hershey.*)
- **Route 10 Old Forge Road Express:** Operates in a loop from the LT Transfer Station to Hutters, DHL, Mattel, and Mastronardi Produce. Route 10 runs two trips on weekday mornings at 5:15 AM and 6:15 AM and three trips on weekday evenings at 3:00 PM, 3:45 PM, and 5:15 PM. (*No change*)
- **Route 16:** Operates in a loop from 7th Street and Willow Street in Downtown Lebanon to Lebanon Valley Mall (Park & Ride), Pinnacle Health, Annville Square, Palmyra Walmart (Park & Ride), Excel Logistics, Holiday Inn, Tanger Outlets, and Hershey Park Service Center. Route 16 runs from 3:00 PM to 12:00 AM on

weekdays and from 3:00 PM to 12:00 AM on Saturdays. *(Changes eliminate service to Hollywood Casino while the remainder of route remains the same. This elimination allows additional trips and more destinations on Route 16C.)*

- **Route 16C:** Operates in a loop from 7th Street and Willow Street in Downtown Lebanon to Walmart. Route 16C runs three trips, each 30 minutes at 6:00 PM, 9:00 PM, and 9:30 PM on weekdays and Saturdays. *(Changes increase the number of trips each day from one to three. The updated route serves Lebanon Walmart first after departing the transfer station and adds service to Lebanon Plaza. Route 16C will also utilize PA 72 to travel north and south, and Lehman Street to travel east and west, eliminating portions of the route on 16th and Walnut streets.)*
- **Route 17:** Operates in a loop from 7th Street and Willow Street in Downtown Lebanon to Lebanon Village, Walmart, Aldi, Weis Markets, and Giant. Route 17 runs from 6:30 AM to 5:30 PM on weekdays and from 8:30 AM to 5:00 PM on Saturdays. *(Changes will connect with Route 2 at Lebanon Walmart, no longer extending to Weis (served by Route 4). Route 17 will also bypass the Schneider Drive park-and-ride, add a stop at Aldi, and utilize 9th Street out of the transfer station instead of 4th Street to avoid rail delays.)*
- **Commute King – Express Service to Harrisburg:** Operates in a loop from the park-and-ride at Schneider Drive to the LT Transfer Center, Lebanon Valley Mall Park-and-Ride, Annville Square, Palmyra Walmart, Houlihan’s in Hershey, Hershey Medical Center, Amtrak Rail Station Harrisburg, Capitol Building Harrisburg, PennDOT Administrative Building, PHEAA Building Harrisburg, PA Farm Show Complex, and HACC Campus Harrisburg. The Express Service to Harrisburg runs in two patterns: Schedule A, which operates via US 422 and follows the above pattern; and Schedule B, which operates via I-81 and stops at the same destinations in the reverse order. Each pattern has two morning trips between 6:00 AM and 6:30 AM and two afternoon trips between 3:00 PM and 3:30 PM. *(No change)*

Figure 23 - Lebanon County Transit Weekday Ridership (2022)



Commuting and Employment

Lebanon County’s workforce continues to primarily rely on private automobiles for commuting, although the share of workers has decreased due to changing work patterns from the COVID-19 pandemic. A majority of workers who live in the county also work within the county or work in directly adjacent counties.

Modes of Transportation

The majority of Lebanon County’s workforce commutes to work by private automobile. Between 2012 and 2021, the share of workers commuting by single-occupant private automobile decreased by 3 percent, from 81 percent to 78 percent, likely due to the increase in workers who work from home after the COVID-19 pandemic. Workers commuting by bicycle and walking decreased. Workers commuting by public transportation, carpool, and working from home represent a small mode-share compared to automobile trips, but all three increased between 2012 and 2021. Mode-share for Lebanon County and Pennsylvania is shown between 2012 and 2021 in Table 9. With the exception of the share of workers who commute by public transportation, Lebanon County is comparable with the state overall.

Table 9 – Commute Mode-Share in Lebanon County, Workers Age 16 and Older (2012-2021)

Commute Mode	% of Lebanon County Workers (2012)	% of Lebanon County Workers (2021)	% Change (2012 - 2021)	% of PA Workers (2012)	% of PA Workers (2021)	% Change (2012 - 2021)
Drive Alone	81.3%	78.3%	+3.0%	76.5%	72.6%	+0.9%
Carpool	10.1%	9.6%	+1.8%	9.2%	8.0%	-7.9%
Public Transportation	0.6%	0.8%	+35.1%	5.4%	4.7%	-8.0%
Bicycle	0.3%	0.1%	-68.1%	0.5%	0.4%	+5.1%
Walk	3.5%	2.8%	-15.4%	3.9%	3.4%	-8.7%
Other Means	0.1%	0.1%	+39.0%	0.9%	1.2%	+43.1%
Work from Home	3.4%	7.4%	+134.4%	3.7%	9.8%	+180.5%

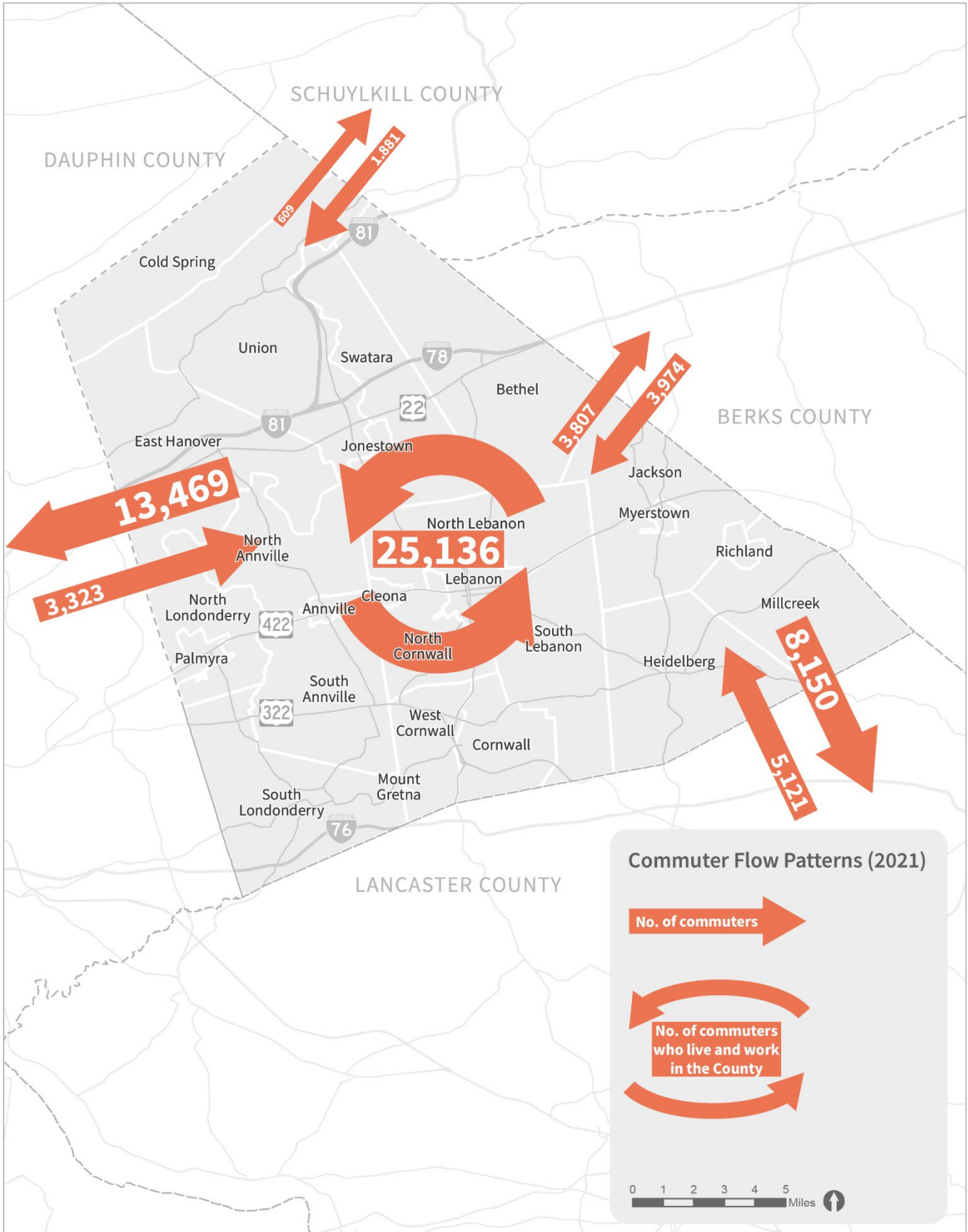
Source: U.S. Census Bureau, American Community Survey 5-Year Estimates 2021, B08006

Commuter Flows

Commuter flows were analyzed for Lebanon County for data year 2021 using Longitudinal Employment-Household Dynamics (LEHD) data from the U.S. Census Bureau. The majority (51 percent) of Lebanon County’s workforce also resides within the county. The remaining workforce primarily resides in surrounding counties. The counties with the highest number of residents commuting to Lebanon County are Lancaster County (10.4 percent), Berks County (8.1 percent), Dauphin County (6.7 percent), Schuylkill County (3.8 percent), and York County (2.6 percent).

Conversely, 61.3 percent of Lebanon County residents work outside the county. These workers are primarily employed in Dauphin County (20.8 percent), Lancaster County (12.6 percent), Berks County (5.9 percent), Cumberland County (3.2 percent), and York County (2.3 percent). Commuter flows are illustrated in Figure 24.

Figure 24 – Lebanon County Regional Commuter Flow Patterns (2021)



Source: U.S. Census Bureau, LEHD, OnTheMap.ces.census.gov

Employment

Lebanon County has several large employers, including wholesale poultry retailers (Farmers Pride), medical organizations (Good Samaritan, WellSpan), freight and logistics providers (Swift), retailers (Walmart), and state and federal government offices. Four of the top 10 major employers, shown in Table 10 and in Figure 25, are located in the City of Lebanon. Federal and state government employees work in various locations. federal employees are typically located at the Lebanon VA Medical Center in South Lebanon, or at Fort Indiantown Gap in Union and East Hanover Townships. The remaining major employers are distributed throughout the county, typically along US 422, I-81, and I-78.

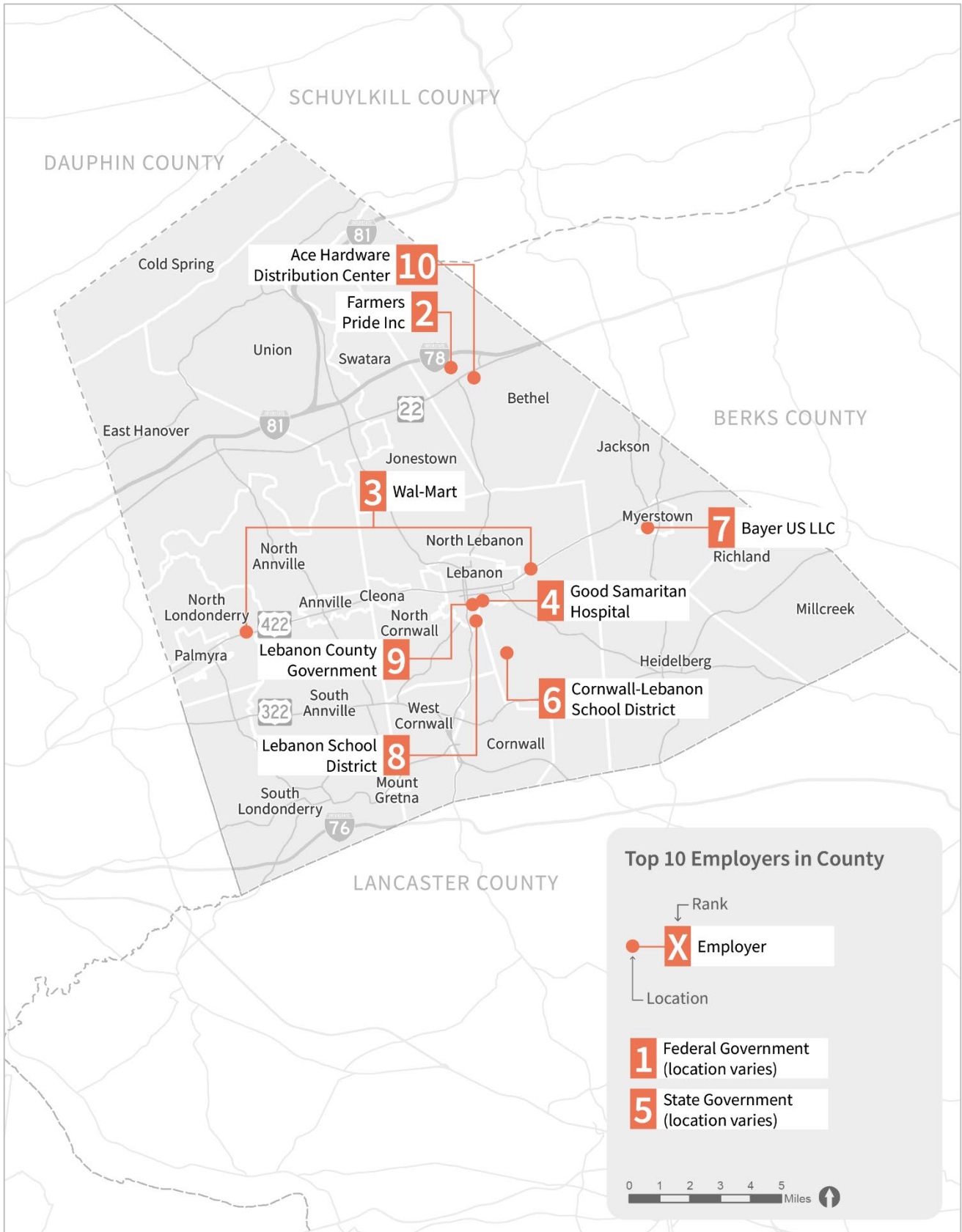
Table 10 – Top 10 Employers in Lebanon County (2023)

Rank	Employer
1	Federal Government
2	Farmers Pride Inc.
3	Walmart Associates Inc*
4	Good Samaritan Hospital*
5	State Government
6	Cornwall-Lebanon School District
7	Bayer US LLC
8	Lebanon School District*
9	Lebanon County Government*
10	Ace Hardware Distribution Center

* Employer located in the City of Lebanon

Source: Pennsylvania Department of Labor & Industry, Center for Workforce Information and Analysis, 2023 Q2

Figure 25 – Top 10 Employers in Lebanon County (2023)



Source: Pennsylvania Department of Labor & Industry, Center for Workforce Information & Analysis

Rail and Freight

Lebanon County is uniquely positioned as an optimal location for industrial or freight developments within the state. However, increasing warehouse or distribution center development has led to increased freight truck traffic, impacting county roadways and residents.

Lebanon County is uniquely positioned between the Lehigh Valley and Harrisburg, two of the most important freight nodes within the region. While Lebanon County's roadways do not handle the substantial freight volumes seen within those two regions, the county nonetheless has a locational advantage that serves several key industrial areas. The

county has seen increasing warehouse development and subsequent freight traffic in recent years, a trend that is expected to continue under current municipal regulations. Lebanon County is within a few hours' drive from the Port of Newark/Elizabeth (New Jersey), the largest port on the East Coast. The northern portion of the county is directly served by I-81, the primary north-south freight corridor in the Northeast. Interstate 78, which directly serves the Lehigh Valley and Northern New Jersey, terminates at I-81 within Lebanon County. These key assets have made Lebanon County a target for growth in freight and warehousing activity. The increased presence of freight development within Lebanon County is reflected in the County's participation in the Eastern Pennsylvania Freight Alliance (EPFA), a consortium of five Metropolitan Planning Organizations (MPOs): Lackawanna/Luzerne Transportation Study (LLTS), LEBCO, Lehigh Valley Transportation Study (LVTS), Northeastern Pennsylvania Alliance (NEPA), and Reading Area Transportation Study (RATS). This region has joined to address the unique opportunities and challenges associated with freight industry growth, focused on impacts to mobility, safety, land use, and overall state of good repair of the transportation infrastructure.

Lebanon County is within a few hours' drive from the Port of Newark/Elizabeth (New Jersey), the largest port on the East Coast.

Rail Network and Crossings

Within Lebanon County, Norfolk Southern owns and operates the Harrisburg Line, which is part of the railroad's Harrisburg Subdivision. Through Lebanon County, the Harrisburg Line serves as a high-capacity freight corridor, featuring double-track infrastructure and up to 75 trains per day. The Harrisburg Line functions as Norfolk Southern's primary freight corridor connecting the Midwestern United States and Western/Central Pennsylvania to the ports and commerce of Philadelphia, northern New Jersey, and the New York City metropolitan area. In the City of Lebanon, Norfolk Southern maintains the Lebanon Yard featuring a small switching yard and crew base. Several industrial tracks and sidings also serve many industries adjacent to the Harrisburg Line in Myerstown, Richland, and Palmyra.

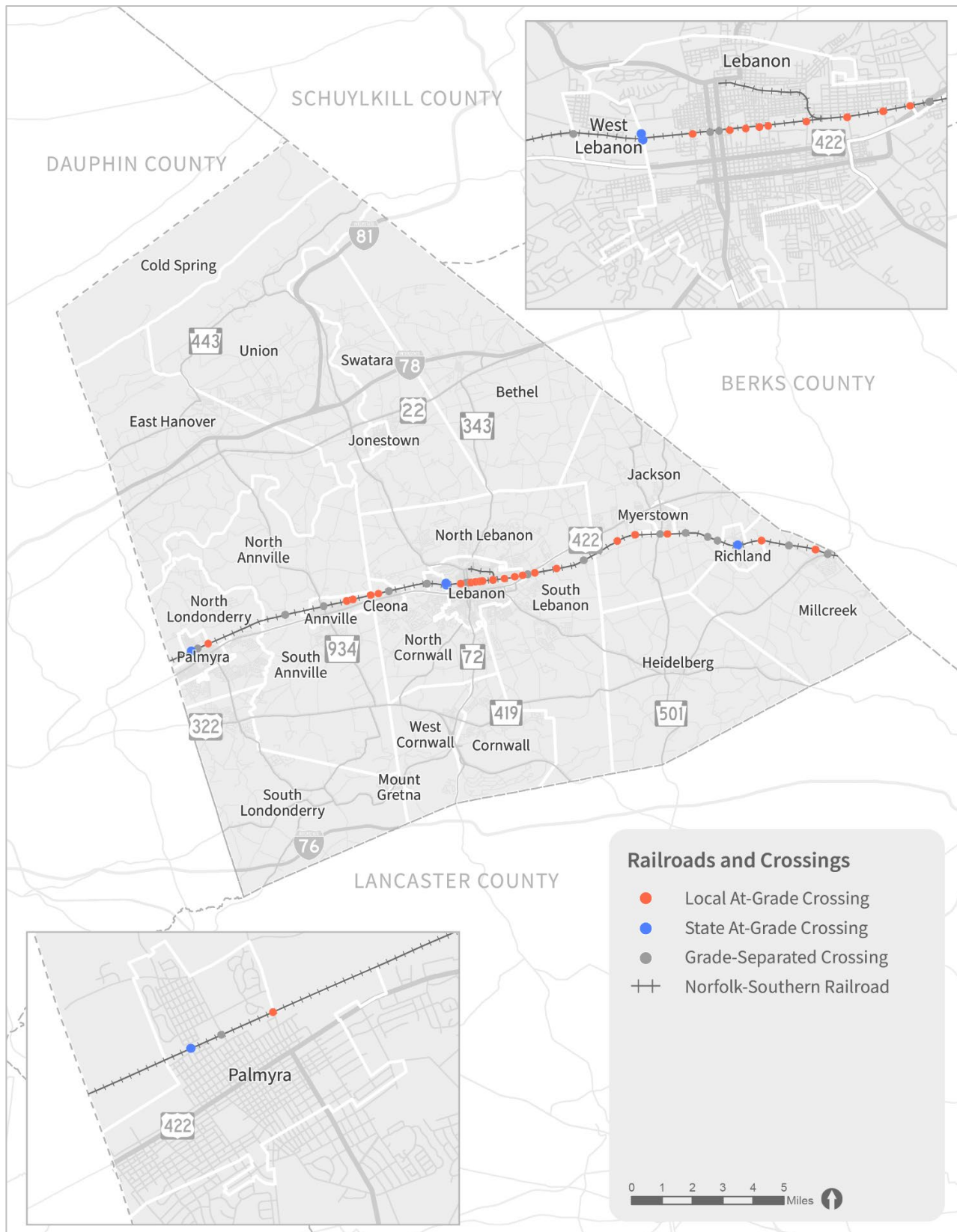
As illustrated in

Figure 26, the Harrisburg Line features 27 at-grade crossings, many of which are concentrated in Lebanon. Twenty-one of the at-grade crossings are on local roads and the remaining four are on state roads. All at-grade crossings are owned and maintained by Norfolk Southern. Several existing grade-separated roadway tunnels provide



substandard vertical clearances or roadway widths, limiting the movement of trucks along these routes.

Figure 26 – Lebanon County Freight Rail Network and Crossings



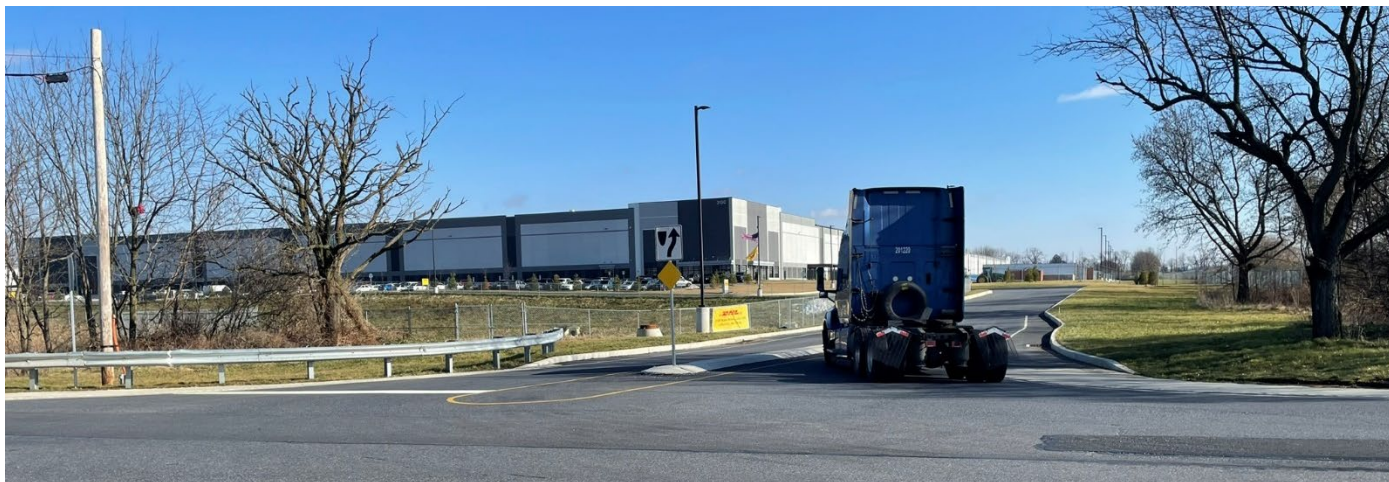
Source: PennDOT Pennshare

Warehouse Development and Freight Traffic Generators

Lebanon County’s proximity to key freight routes, including Interstates 81 and 78, the Pennsylvania Turnpike, as well as US Routes 22, 322, and 422 and PA Routes 72 and 501, all provide local and regional connections for the goods movement industry. As illustrated in Figure 28, many of the county’s freight-focused land uses are located on or near these routes.

Three substantial clusters of freight land uses are present within the county. The Lebanon Valley Business Park is located in South Lebanon Township and includes numerous facilities, including Trublu Logistics, Schott Pharma, and Mr Brands, among many others. In 2022, DHL and Menasha Packaging occupied a newly constructed, nearly one million square foot facility south of the Lebanon Valley Business Park. Several warehousing and distribution center clusters are present along I-78. Approximately 10 large (greater than 250,000 square feet) facilities are located in the vicinity of the interchange of Interstates 78 and 81, including Ingram Micro, Sherwin Williams, and Mattel. Traveling east, at Interchange 6, Bridgestone, Ace Hardware, Sherwin Williams, and Bell and Evans operate large warehouse/production facilities. Southeast of Interchange 10, a cluster of six distribution center/warehouse facilities includes Saddle Creek Logistics and Max Finkelstein. Walmart recently occupied a 400,000 square foot consolidation center located on PA 72 in North Lebanon Township. Finally, several large developments are underway along US 422 in South Annville Township.

Additional freight uses are clustered along US 422 and the NS Harrisburg Line, including the Lebanon Rails Business Park, which includes facilities for Valspar Inc, Always Bagels, and Vision Corp. Warehouses like these, which are connected to rail, typically generate far less truck freight traffic than those served by roadways only. Agricultural uses, which generate varying levels of heavy truck trips, are located throughout Lebanon County as well.



Truck Volumes

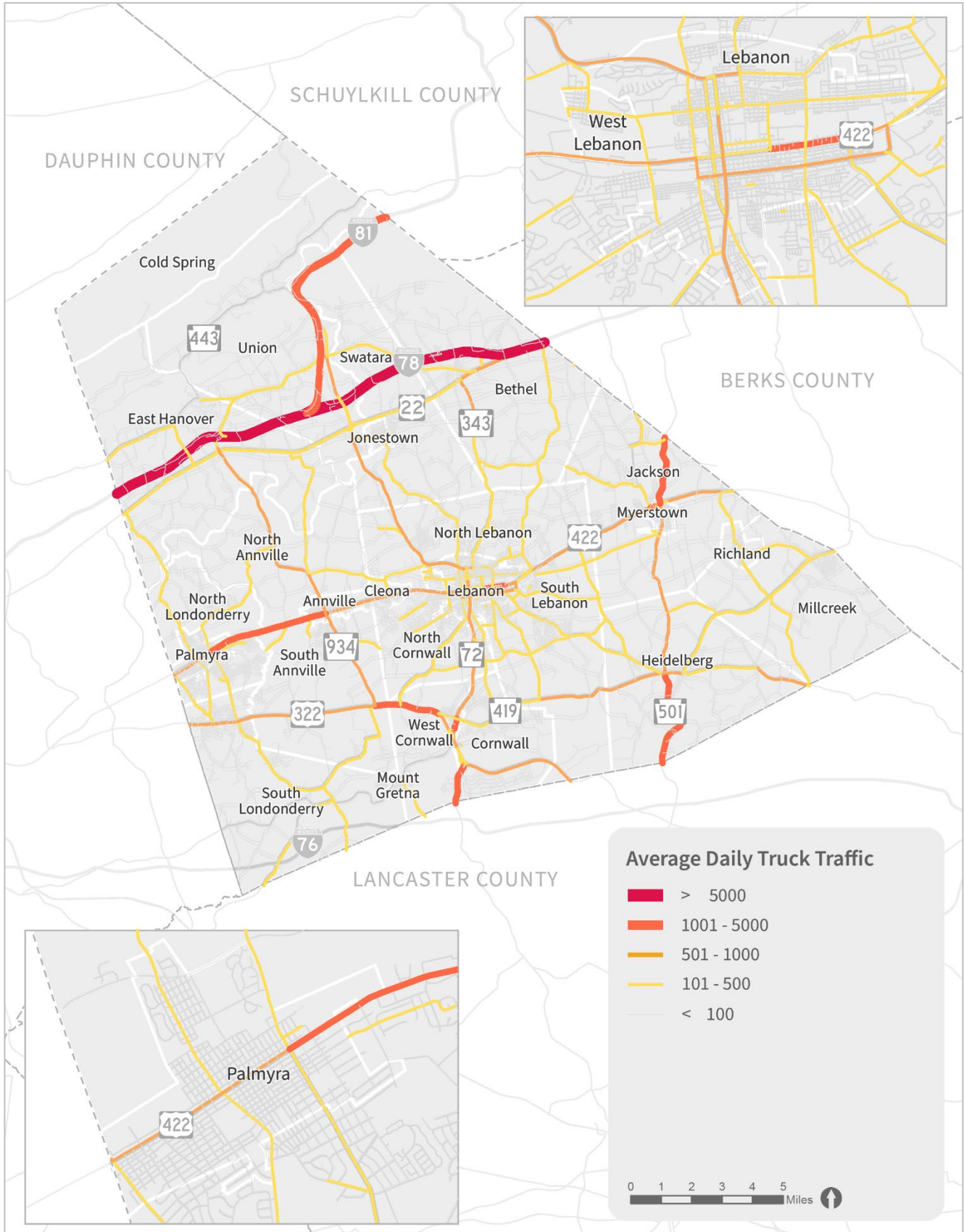
Truck traffic is present throughout Lebanon County, and 2023 traffic data, illustrated in Figure 27, indicates that truck traffic is highest along key corridors within the county. Interstates 78 and 81 show the most substantial truck percentages, which reflects the importance of Lebanon County’s geographic location relative to major highways. Beyond these routes where truck percentages would be expected to be highest, truck percentages throughout the rest of the county are generally dispersed along U.S. and state routes.

Truck volumes on county roads are of increasing concern to county residents, as heard through public engagement. To map out the areas of highest concern, Figure 28 shows minor roads, which are defined as major collectors, minor collectors, and local roads, where more than 10 percent of all vehicles are trucks. While Interstate and major arterial roads are designed to handle heavy freight loads, minor roads are not typically designed with freight in mind, which can lead to greater wear and tear on roadways. Trucks can particularly lead to decreased pavement conditions and increased maintenance cost on roadways without turning radii and pavement composition designed to heavy truck standards. Anecdotally, participants flagged PA 419 and PA 343, both of which appear in Figure 26, as roadways that have seen significant increases in freight traffic. While this analysis does not look at the growth of truck traffic within the County, particularly growth in the hinterlands, it can serve as a baseline for future reviews, including those associated with future efforts advanced by the EPFA.



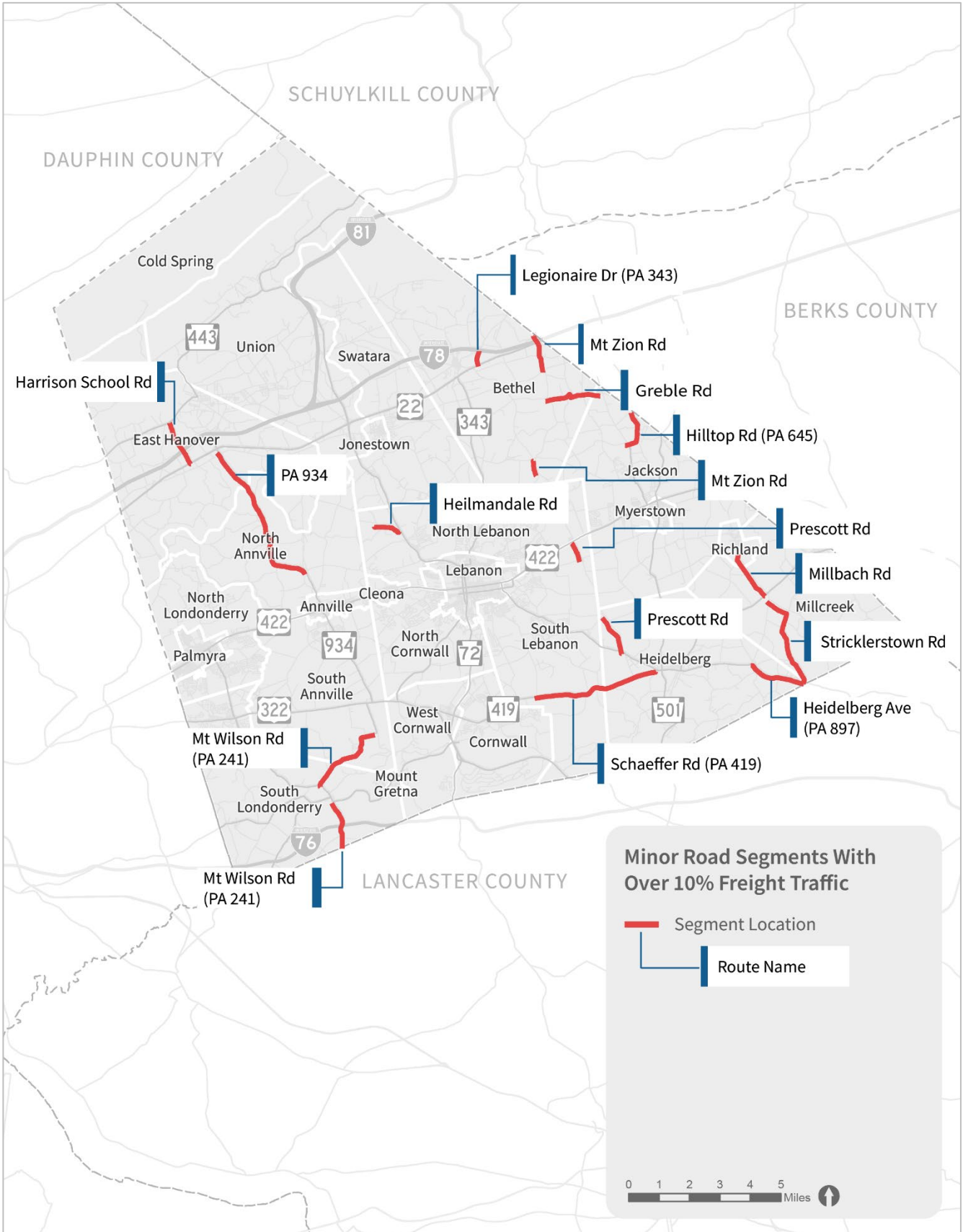
County residents noted that PA 419 and PA 343 have seen significant increases in freight traffic.

Figure 27 – Lebanon County Truck Volumes



Source: PASDA

Figure 28 – Collector and Local Roads with Over 10% Truck Traffic



Non-Motorized Transportation

Through projects like the Lebanon Valley Rail Trail and the Lebanon County Bicycle Transportation Map, Lebanon County continues to expand its network of safe and well-connected pedestrian, cyclist, and horse-and-buggy infrastructure.

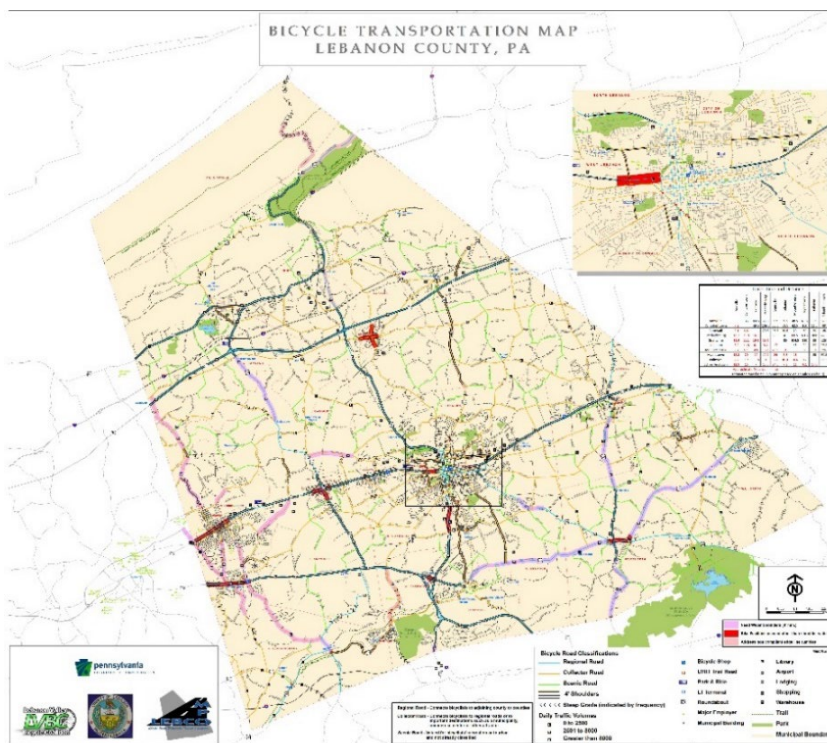
Connected and accessible circulation options for non-motorized transportation modes, particularly bicyclists and pedestrians, are critical for a fully functioning transportation network. Cyclists, pedestrians, and horse-drawn buggies are all frequently used modes throughout the county. Targeted improvements for these modes can significantly improve safety and mobility, while also expanding opportunities for upward economic mobility.

PennDOT's Active Transportation Plan reinforces the department's commitment to non-motorized mobility and provides direction for the role that MPOs/RPOs play in this planning process.

Lebanon County continues to expand its built infrastructure to provide connectivity for bicycle, pedestrian, and buggy use. The county's urban centers, particularly the City of Lebanon, have a network of sidewalks and crosswalks to provide pedestrian circulation on major commercial corridors. The Lebanon Valley Bicycle Coalition (LVBC), the LEBCO MPO, and PennDOT partnered to create the Lebanon County Bicycle Transportation Map, pictured in Figure 30 and available online at the LEBCO MPO website.⁶ Updated in March 2024, the map identifies the roads in Lebanon County that are most frequently used by bicyclists. The Lebanon Valley Rail Trail (LVRT) is one of the most popular pieces of bicycle and pedestrian infrastructure in the county. In 2023, the trail had more than 350,000 users, with the number of users projected to increase as trail construction continues. The LVRT, when completed, will run from the southwest corner of South Londonderry, northeast to Pine Grove in Schuylkill County. The Bicycle Transportation Map and growth of the LVRT indicate the county's desire to become a community that embraces bicycling and walking—not

The Lebanon Valley Rail Trail is one of the most popular pieces of bicycle and pedestrian infrastructure in the county. In 2023, the trail had more than 350,000 users.

Figure 29 - Lebanon County Bicycle Transportation Map (2024)



⁶ Bicycle Transportation Map, Lebanon County, PA. https://www.lebanoncountypa.gov/getmedia/0446a36e-9054-4d25-9a18-1f1942e2efe4e/LebanonCountyBike_0324.pdf

only to improve health and mobility, but also to have positive community impacts with respect to the environment and economy. The locations of the trails and bike routes are mapped in Figure 30.

Future efforts to further the development of infrastructure for non-motorized transportation should consider the variety of current and potential road users. This includes understanding locations where safety improvements—including safety infrastructure such as bicycle-compatible rumble strips—are most needed and using tools such as PennDOT’s Vulnerable Road Users safety assessment. Employers, stakeholders, and the Commuter Services of Pennsylvania should also be consulted to identify how to improve transportation options for employees and other Lebanon County residents without access to a personal vehicle. All these improvements should be coordinated with Highway Occupancy Permits (HOP) and municipal driveway permit design decisions to ensure smooth project implementation.

Figure 31 shows the locations of schools within Lebanon County. Schools are a key generator of pedestrian and bicycle traffic, although the number of people traveling by non-motorized transportation varies by the accessibility of each school. Providing connections between schools and residential communities is essential to increase opportunities for safe travel on foot or by bicycle. Additionally, congestion during school pick-up and drop-off could be reduced with increased cycling or walking accommodation within the school communities.

Figure 32 illustrates the share of zero-car households by census tract within the county. Households without regular access to a personal automobile often rely on alternative modes of transportation. Providing bicycle and pedestrian connections is most critical in these areas to improve access to jobs, transit, services, or shopping.

While the number of people traveling by non-motorized transportation varies by the accessibility of each school, providing connections between schools and residential communities provides opportunities for safe travel on foot or by bicycle.

Figure 33 maps roadways with high-frequency horse-and-buggy traffic. These roadways are concentrated around Myerstown and Schaefferstown, as well as in the southwest corner of Lebanon County near South Londonderry and West Cornwall. These roads will require additional considerations for these users, especially regarding potential maintenance or traffic management.

Figure 30 – Trails and Bike Routes in Lebanon County

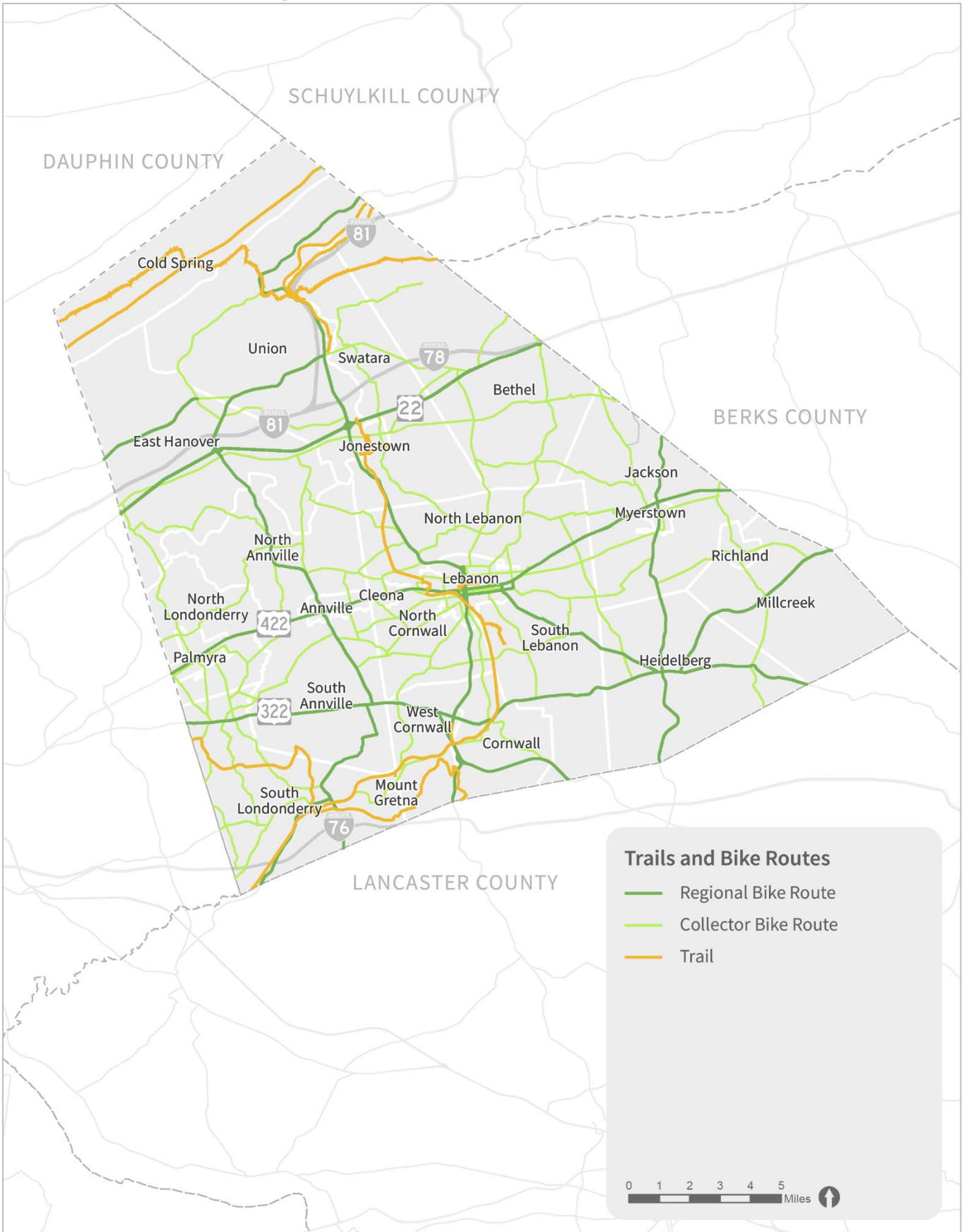


Figure 31 – Schools, Lebanon County

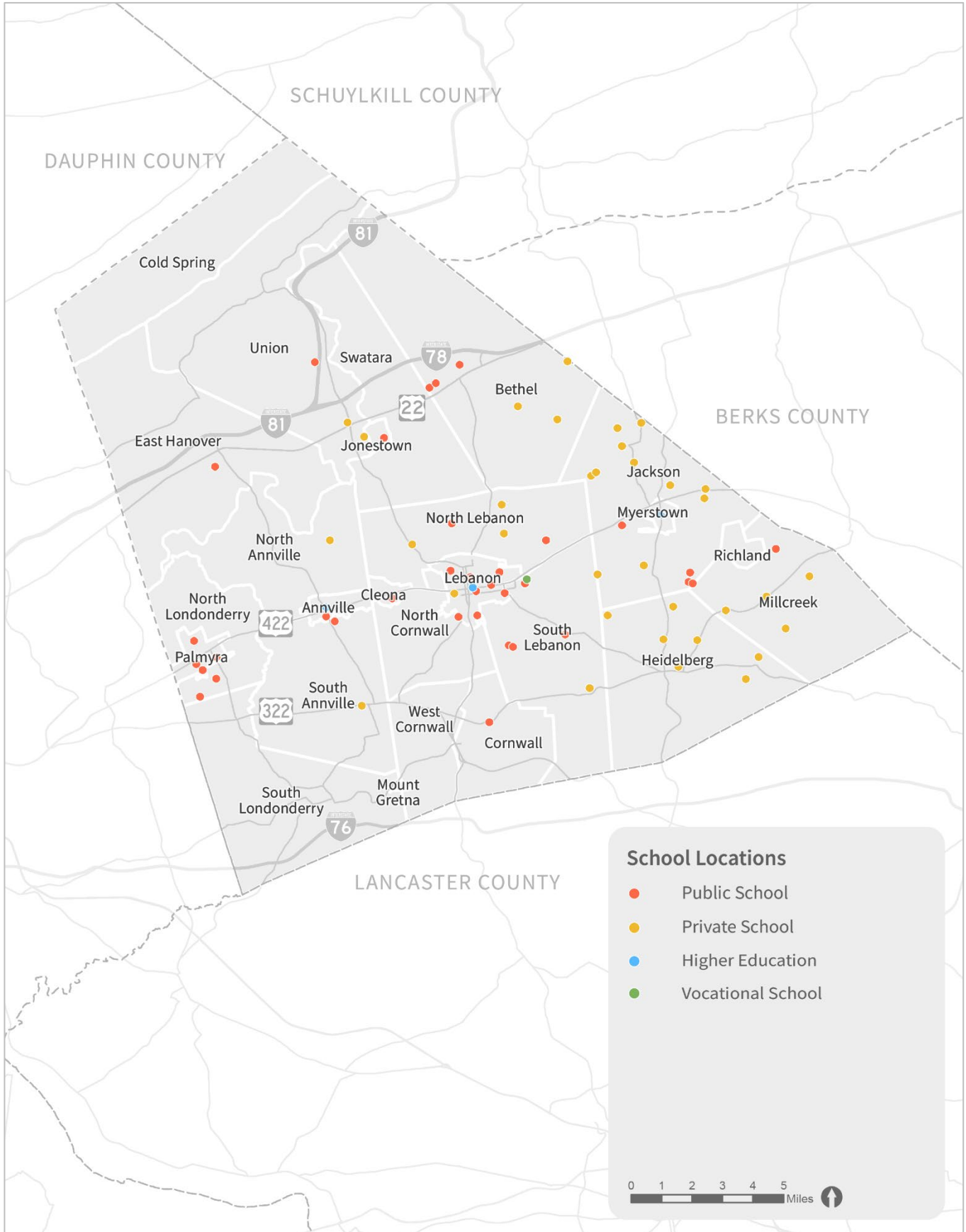


Figure 32 – Zero-Car Households, Lebanon County (2021)

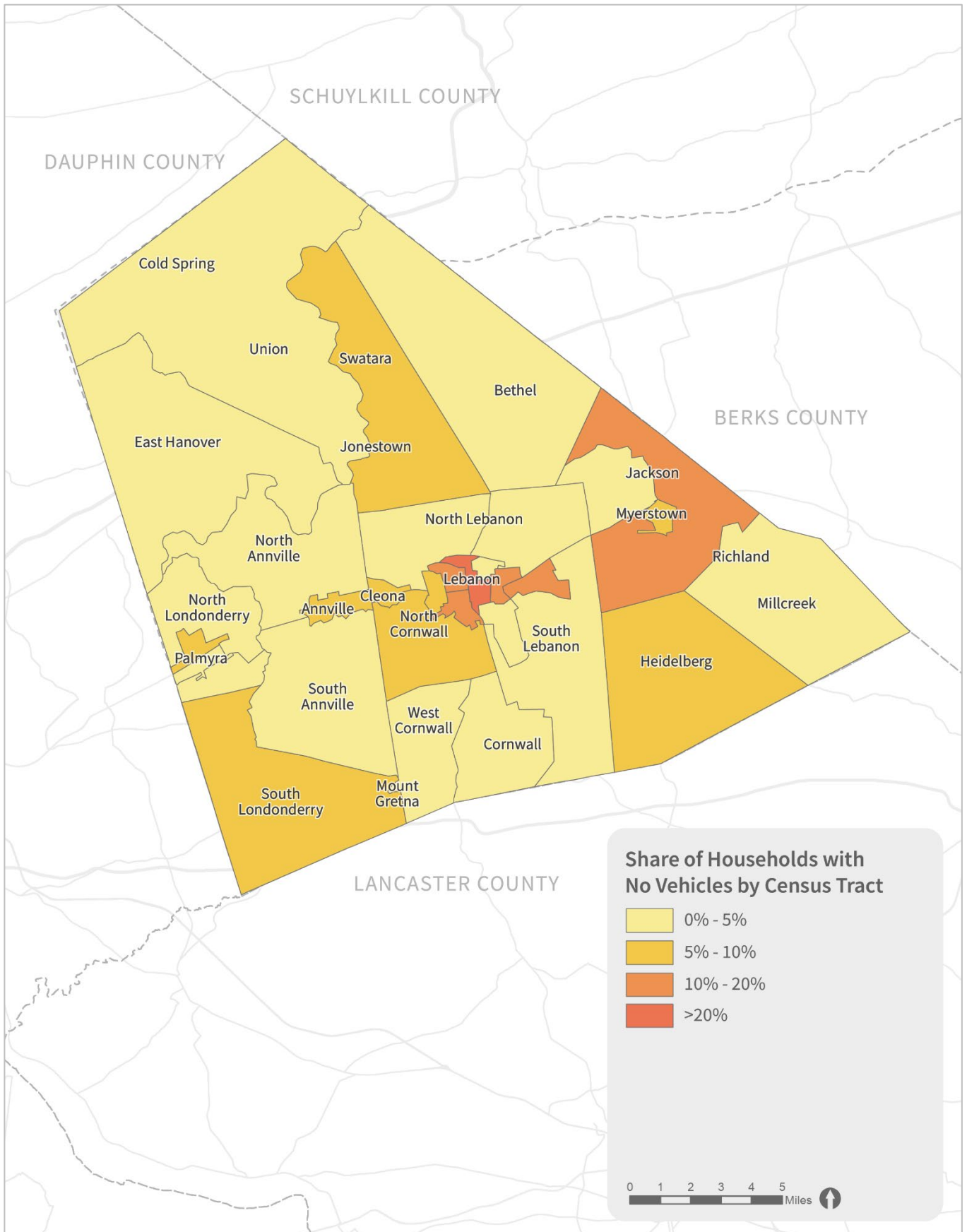
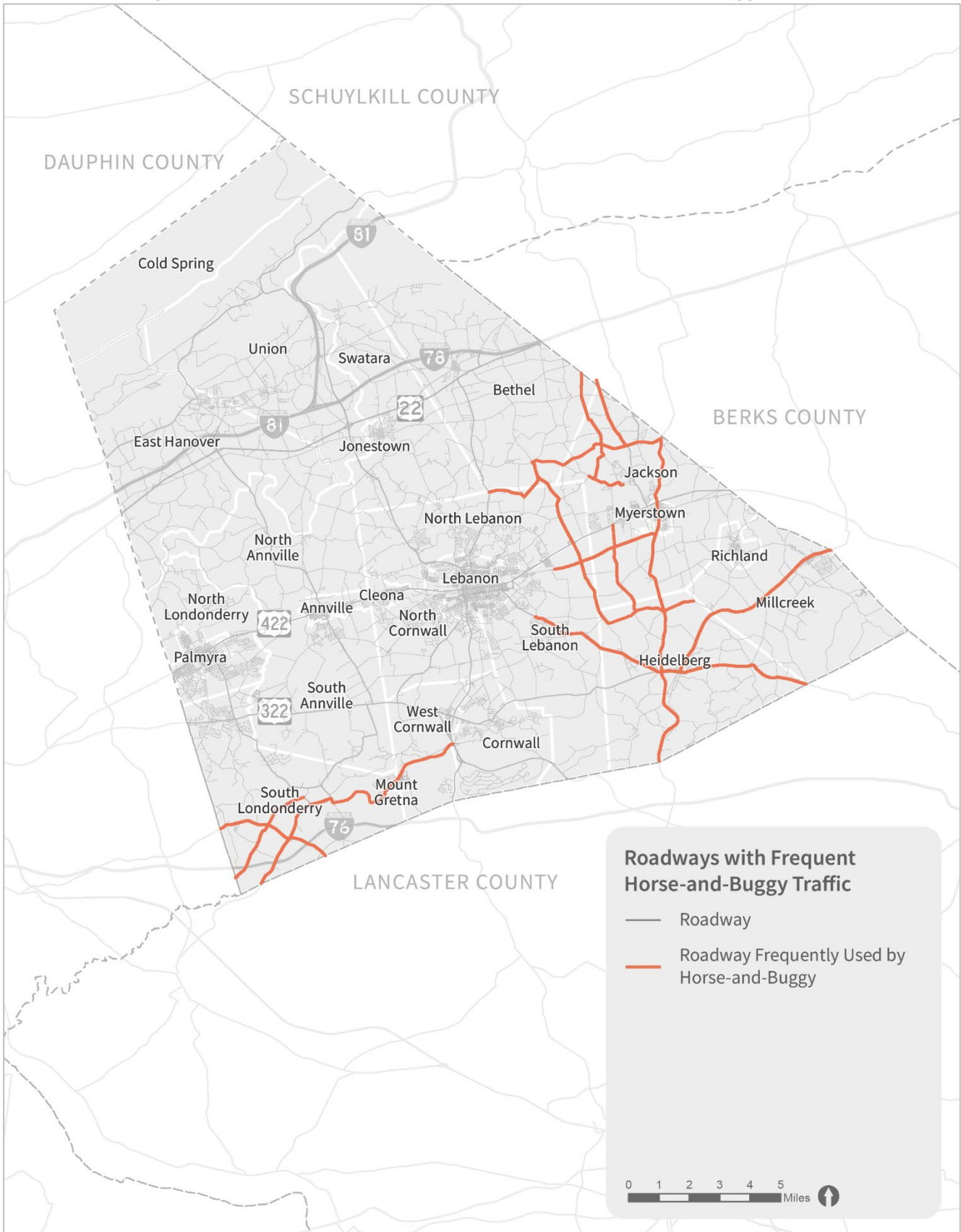


Figure 33 – Lebanon County Roadways with Frequent Horse-and-Buggy Traffic



Source: Lebanon County Stakeholders

Safety

From 2018 to 2022, the number of car, heavy truck, and pedestrian crashes and fatalities in Lebanon County trended upward. These crashes are concentrated on highways, as well as on the local roads in the cities of Lebanon and Palmyra.

A countywide crash analysis was performed using PennDOT crash data for the five-year period between 2018 and 2022 (inclusive). Statewide crash data comes from police reports taken at the scene of “reportable” crashes.⁷ Unreportable crashes are not tracked by PennDOT and are not included in this report. This includes minor crashes where no police report is filed, and police-reported crashes where there is no injury to either party and vehicle(s) do not require towing.

The number of fatalities on Lebanon County’s roadways rose each year from 2018 through 2021 before dropping in 2022.

The analysis identified crash hotspots within the county and various statistics about the nature of crashes in Lebanon County. The total number of crashes decreased by 18 percent from 2018 to 2020 but rose by 22 percent in 2021. As shown in Figure 34, the number of crashes generally corresponds with DVMT—decreasing through 2020 because of reduced travel during the COVID-19 pandemic and rising in 2021 following the subsequent return to more traditional travel patterns.

In contrast to number of crashes, the number of fatalities rose from 2018 through 2021 before dropping in 2022, for an average of 18.6 fatalities per year. Table 11 summarizes all crashes in Lebanon County, including pedestrian fatalities and alcohol- and drug-related fatalities. The table compares county statistics with statewide numbers.

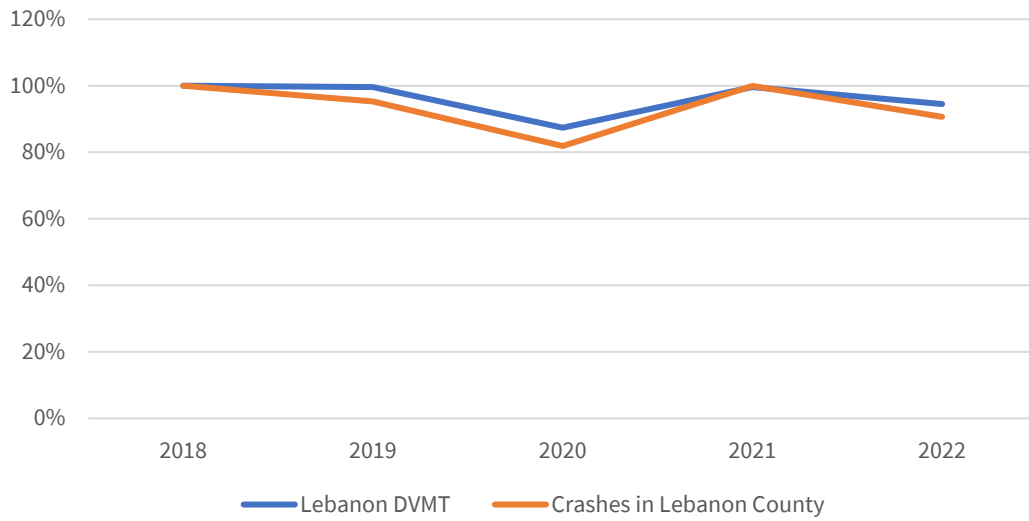
Table 11 – Lebanon County and PA Crash Statistics

Year	Crashes		Fatalities		Pedestrian Fatalities		Alcohol- or Drug-Related Fatalities	
	Lebanon	PA	Lebanon	PA	Lebanon	PA	Lebanon	PA
2018	1,611	128,420	15	1,190	4	201	14	311
2019	1,535	125,267	19	1,059	5	154	5	299
2020	1,319	104,475	22	1,129	1	146	7	293
2021	1,610	117,899	26	1,230	2	182	11	311
2022	1,460	115,938	11	1,179	0	184	8	320
Average	1,507	118,399.8	18.6	1,157.4	2.4	173.4	9	306.8

Source: PennDOT, 2018-2022

⁷“Reportable” crashes are those that occur on public property and result in an injury, fatality, or vehicle damage that requires towing.
Lebanon County 2024-2044 Long-Range Transportation Plan

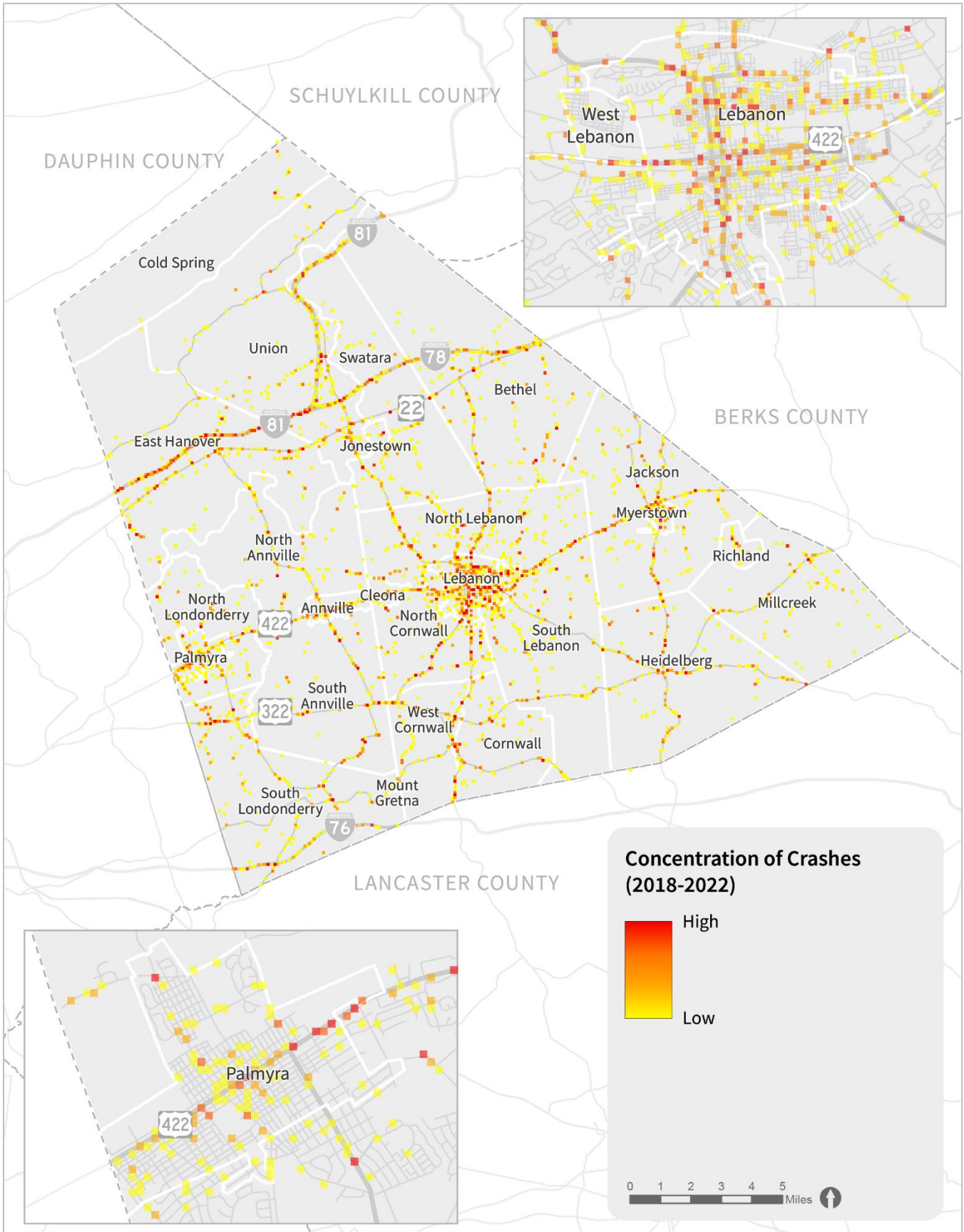
Figure 34 – Change in DVMT & Number of Crashes in Lebanon County (2018–2022)



Source: PennDOT, Pennsylvania Highway Statistics, 2018-2022

Figure 35 is a hot-spot crash map depicting the general location and density of reported crashes. Crashes are concentrated in Lebanon and to a lesser extent in Palmyra. In Lebanon and West Lebanon, crashes are clustered along US 422 with hotspots at Walnut Street, Lincoln Avenue, and 9th, 10th, and 12th streets. Crashes are also clustered on Lehman Street (east-west), and north-south corridors such as 9th, 10th, 12th, and many smaller residential streets. In Palmyra, crashes are mostly concentrated along US 422 with smaller clusters on PA 117.

Figure 35 – Lebanon County Crash Concentration (2018-2022)



Network Screening

In January 2016, PennDOT began using Pennsylvania Safety Performance Functions (SPFs) to screen the statewide transportation network and identify high-frequency crash areas. Analysts used the Highway Safety Manual’s (HSM’s) Excess Crash Frequency method, which calculates the difference between expected crash frequency (based on crash data for all PA roadways with similar characteristics) and predicted crash frequency (based on historical crash data at that location). The “excess” crash frequency value, also known as Potential for Safety Improvement (PSI), is the expected crash frequency value minus the predicted crash frequency value. A location with a PSI score greater than zero indicates that the location has a higher crash frequency than models predict for a similar roadway. A higher PSI value indicates the location has more potential for safety improvements than a location with a lower value. Any location with a value below zero has a crash frequency below (better than) model predictions.

PennDOT District 8-0 provided updated HSM-based network screening data for Lebanon County roadway segments and intersections. An analysis of the highest PSI value locations indicated several key focus areas. These areas were used to inform the development of illustrative projects and actions identified later in this report. The segment and intersection reports are included in Appendix G.

Truck Crashes

Between 2018 and 2022, 802 crashes involving heavy trucks⁸ were reported in Lebanon County. Crash clusters were identified at the I-81/PA 72 junction, along I-81 and I-78, along US 422 in Lebanon and Palmyra, and on PA 501 south of Myerstown. Figure 36 illustrates the location of heavy truck crash locations in Lebanon County. Table 12 indicates the severity of heavy truck crashes during the analysis period. The number of fatalities from heavy truck crashes remained stable each year except for 2020, where the count doubled, potentially due to increased speeds from reduced traffic volumes during the pandemic. Injuries also increased in 2020 and in 2022.

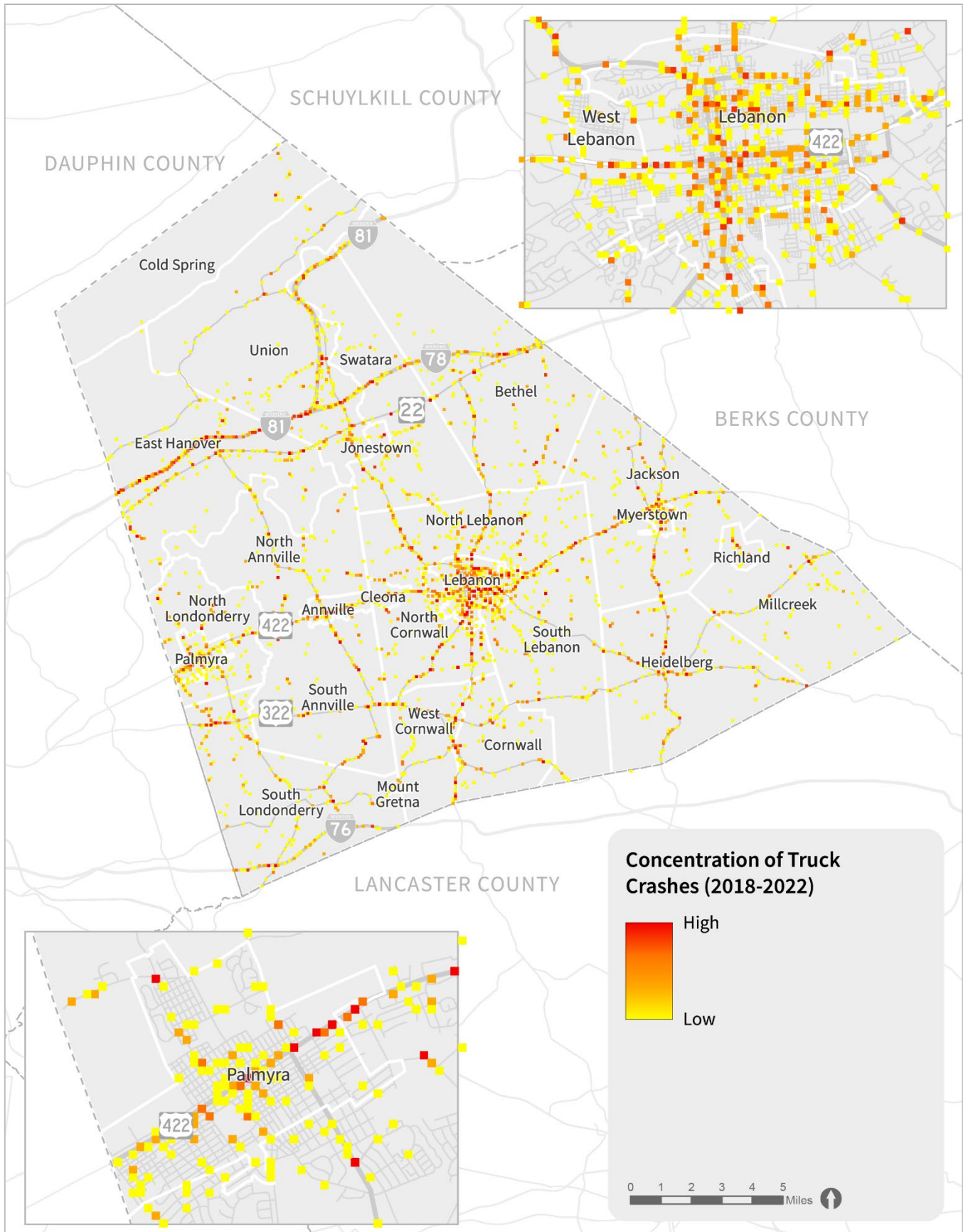
Table 12 – Lebanon County Heavy Truck Crash Statistics (2018-2022)

Year	Total Crashes Involving Heavy Trucks	Total Fatalities	Total Injuries
2018	127	3	68
2019	137	3	70
2020	187	8	94
2021	159	3	72
2022	192	4	102

Source: PennDOT, 2018-2022

⁸ For the purposes of this analysis, PennDOT classifies a “heavy truck” as a “single vehicle or tractor-trailer combination designed for carrying a heavy load of property on or in the vehicle. Includes: single-unit trucks (e.g., coal truck), tractor-trailers, motor homes, etc.”

Figure 36 – Lebanon County Heavy Truck Crash Locations (2018-2022)



Crashes at Railroad Crossings

A review of crashes at Lebanon County at-grade railroad crossings indicates that over the five-year analysis period (2018-2022), there was only one vehicle crash at an at-grade railroad crossing. The crash occurred in 2019 at the Norfolk Southern railway crossing at Race Street and Main Street in Richland. No fatalities or serious injuries occurred. In addition to this vehicle crash, there were two non-vehicle related safety incidents, making a total of three rail safety incidents in the county.

Crashes Involving School Buses

Between 2018 and 2022, 45 crashes involving school buses were reported in Lebanon County. Crashes were clustered in the City of Lebanon, where there is the highest concentration of schools. Figure 37 illustrates the location of school bus crash locations in Lebanon County. Table 13 indicates the severity of school bus crashes during the analysis period. The numbers of crashes, injuries, and fatalities have remained relatively stable over the analysis period, with the exception of 2020, when remote schoolwork due to the COVID-19 pandemic reduced the need for school bus trips.

Between 2018 and 2022, 45 crashes involving school buses were reported in Lebanon County.

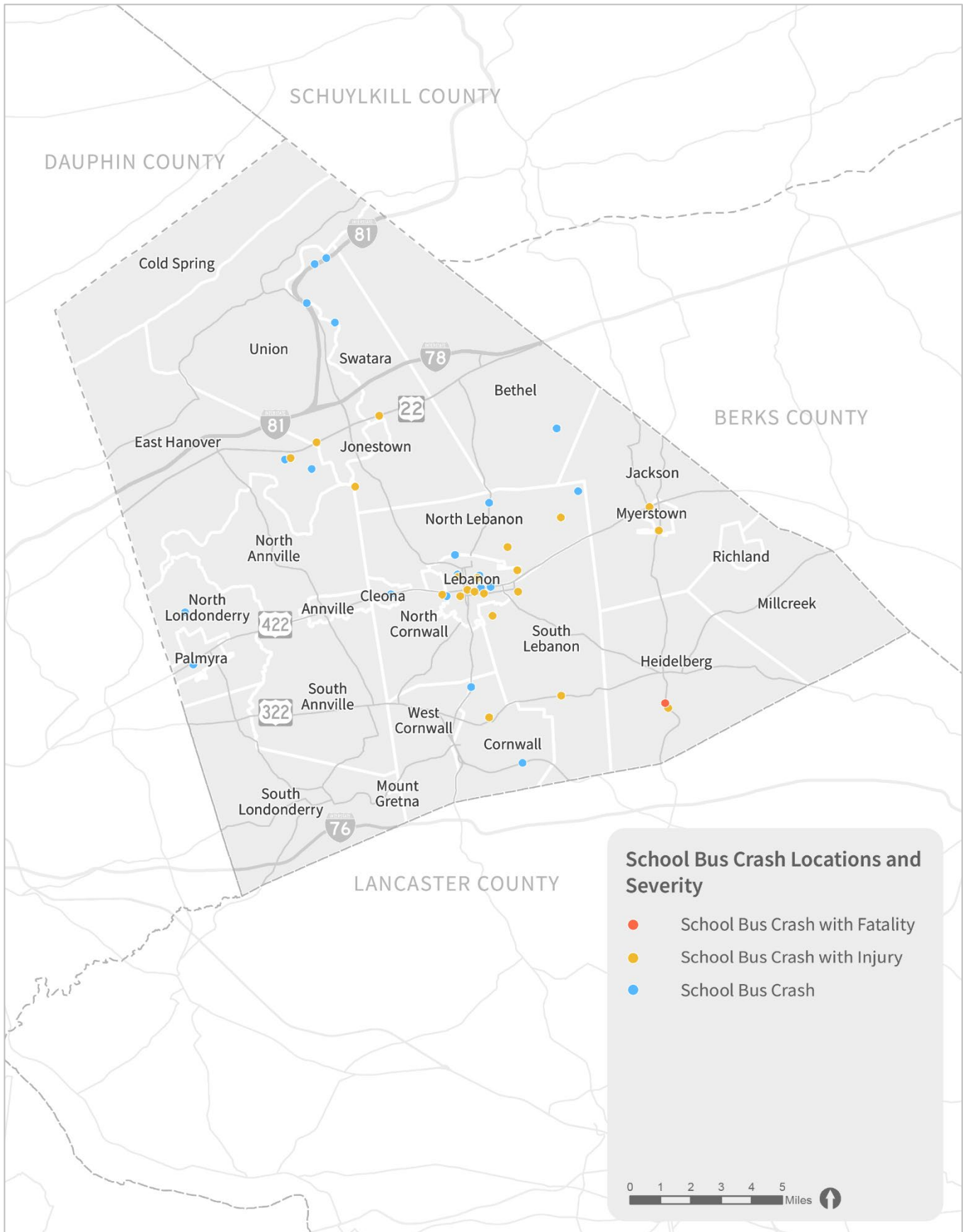
There was one fatal crash involving a school bus during the study period. A car hit a school bus near the intersection of PA 501 and Michters Road in Heidelberg Township, killing the school bus driver.

Table 13 – Lebanon County School Bus Crash Statistics (2018-2022)

Year	Total Crashes Involving School Buses	Total Fatalities	Total Injuries
2018	10	0	16
2019	11	0	10
2020	4	0	2
2021	9	1	16
2022	11	0	16

Source: PennDOT, 2018-2022

Figure 37 – Crashes Involving a School Bus (2018-2022)



Bicycle and Pedestrian Crashes

Between 2018 to 2022, 75 bicycle/motor vehicle crashes and 140 pedestrian/motor vehicle crashes were reported in Lebanon County. Of these, 48 bicycle crashes and 84 pedestrian crashes occurred at intersections, while the remaining crashes occurred at mid-block locations. No bicyclist fatalities were reported between 2018 and 2022, but 12 pedestrian fatalities were reported during this time. Table 16 provides brief descriptions of the seven pedestrian fatality crashes between 2018 and 2022 in Lebanon County. Bicycle and pedestrian crash statistics are provided in Table 14 and Table 15. Bicycle and pedestrian crashes are mapped in Figure 38. Most bicycle and pedestrian crashes occurred in Lebanon and, to a lesser extent, in Palmyra. Chestnut Street, Maple Street, 10th Street, Walnut Street, 8th Street—all in the City of Lebanon—had the highest number of both pedestrian and bicycle crashes between 2018 and 2022.

Zero bicyclist fatalities were reported between 2018 and 2022, but 12 pedestrian fatalities were reported during this period.

Table 14 – Lebanon County Bicycle Crash Statistics (2018-2022)

Year	Bicycle Crashes	Total Fatalities	Total Injuries
2018	14	0	1
2019	14	0	2
2020	12	0	0
2021	19	0	1
2022	16	0	4
Average	15.2	0	1.6

Source: PennDOT, 2018-2022

Table 15 – Lebanon County Pedestrian Crash Statistics (2018-2022)

Year	Pedestrian Crashes	Total Fatalities	Total Injuries
2018	32	4	4
2019	39	5	7
2020	19	1	5
2021	25	2	5
2022	25	0	3
Average	28	2.4	4.8

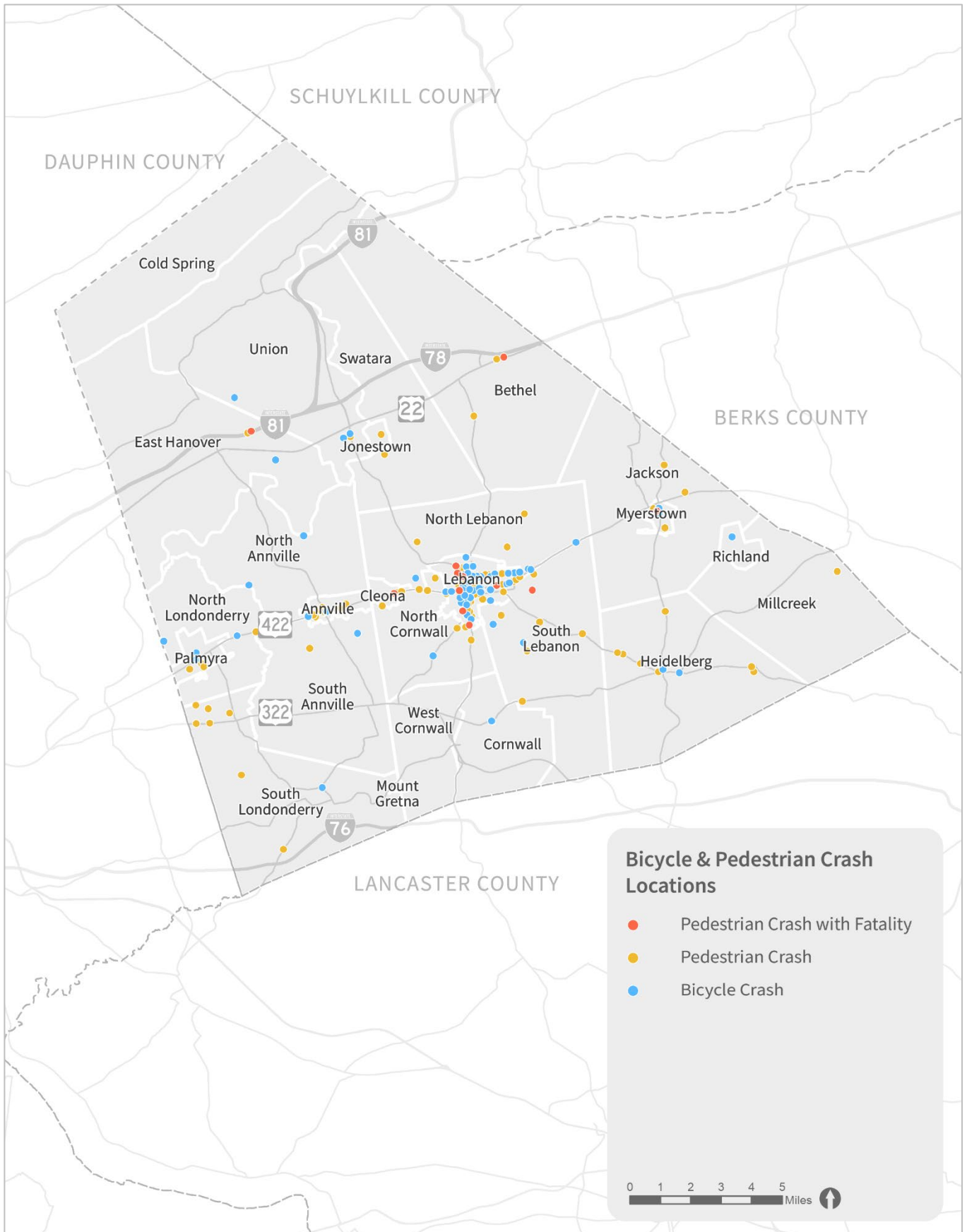
Source: PennDOT, 2018-2022

Table 16 – Lebanon County Pedestrian Fatality Crashes (2018-2022)

Year	Crash Record Number	Description
2018	2018019077	Small truck hit and killed pedestrian crossing W Maple St between Steel St and N 12 th St (in Lebanon) at 11AM.
2018	2018060787	Automobile hit and killed a pedestrian crossing N 12 th St between Crowell St and Mifflin St (in Lebanon) at 9PM.
2018	2018082577	Commercial truck struck and killed another commercial truck driver pulled over on I-81 (in East Hanover Township) between Indiantown Gap Rd and Awol Rd.
2018	2018091065	Automobile hit and killed pedestrian crossing the intersection of Rockledge Dr and Progress Ave (in Avon) at 3PM.
2019	2019025612	Automobile hit and killed pedestrian crossing US Highway 422 (in Lebanon) at N 12 th St at 6PM.
2019	2019051950	SUV hit and killed pedestrian crossing US Highway 22 (in Bethel Township), east of Blue Mountain Rd at 11PM.
2019	2019118536	Automobile hit and killed pedestrian in the roadway on US Highway 422 (in Cleona) between N Garfield St and Beech St at 6PM.
2019	2019126428	SUV hit and killed pedestrian on W Main Ave (in Myerstown) in the roadway between S Goodwill St and S College St at 8PM.
2019	2020000627	Commercial truck struck and killed pedestrian on PA Highway 72 (in Lebanon) between Summit St and Duke St at 6AM.
2020	2020081459	Automobile struck and killed pedestrian on 12th St (in Lebanon) between Miller St and Woodland St at 1PM.
2021	2021053173	Automobile struck a pedestrian and their child crossing the street at the intersection of Lehman St and N 10 th St (in Lebanon) at 11AM, injuring the pedestrian and killing the child.
2021	2021089737	Small truck hit and killed pedestrian in the roadway on US Highway 422 (in Lebanon) between N 2 nd Ave and Sarah St at 7AM.

Source: PennDOT Crash Records, 2018-2022

Figure 38 – Lebanon County Bicycle and Pedestrian Crash Locations (2018–2022)



Aviation

Lebanon County has four public-use airports and several even smaller private airports. None have regularly scheduled commercial service.

Primary Airport Profile

There are four privately owned, public-use airports in Lebanon County (shown in Figure 39). Reigle Field is located two miles south of Palmyra on PA 117. The 42-acre airport features a 1,950-foot asphalt runway that is 40 feet wide and is primarily used by general aviation aircraft. Several storage and hangar buildings on site accommodate aircraft operations and the 65 single-engine airplanes based at the airport.



Deck Airport is located one mile southwest of Myerstown on S Ramona Rd. The 92-acre airport features a 3,786-foot asphalt runway that is 50 feet wide and is primarily used by general aviation aircraft. The airport offers a few storage and hangar buildings on site to accommodate the 58 aircraft based at the airport.

Keller Brothers Airport is located five miles southeast of Lebanon on PA 419. The 25-acre airport features a 2,692-foot turf runway that is 120 feet wide and is primarily used by general aviation aircraft. Several small buildings are present on site, accommodating 29 aircraft based at the airport.

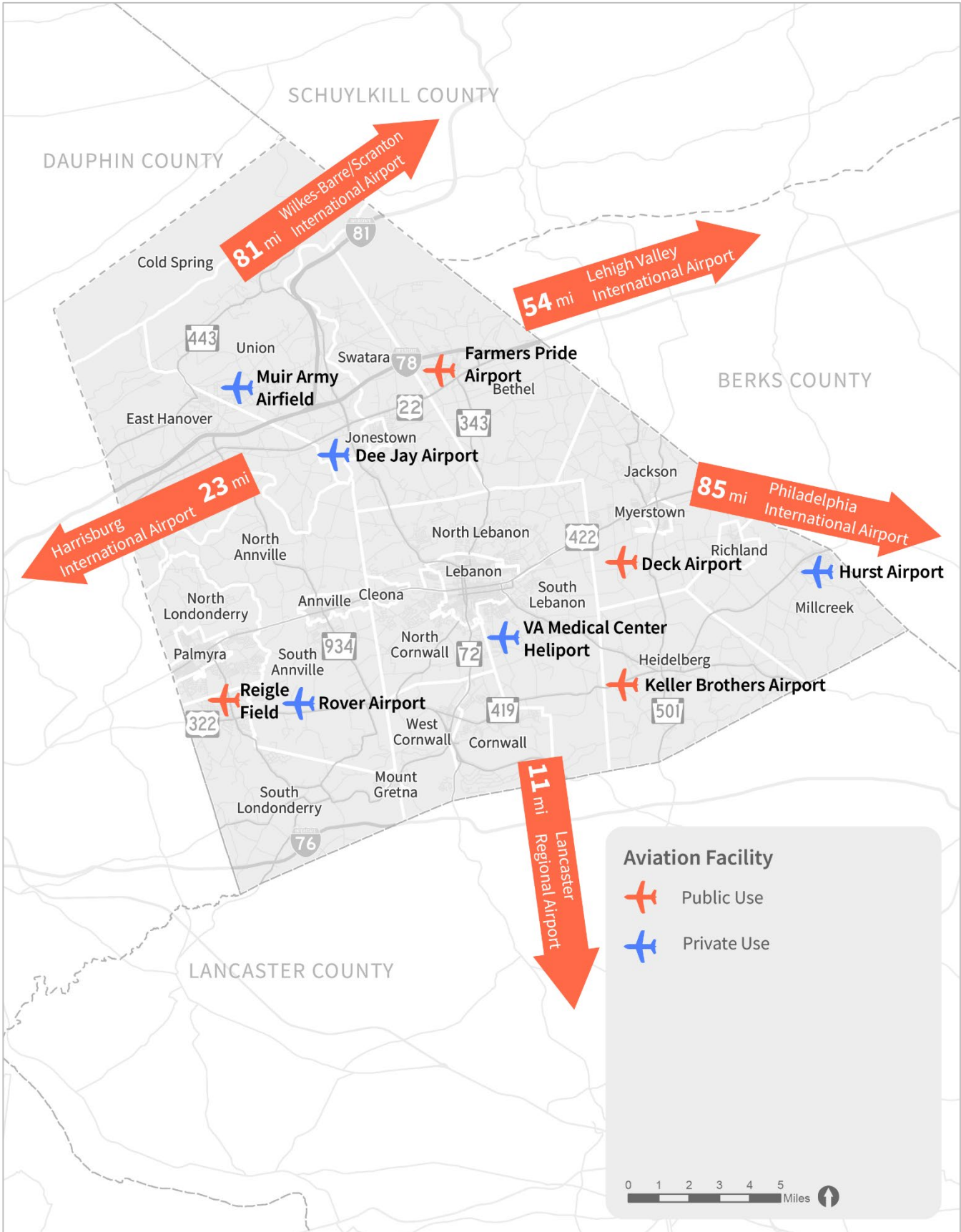
Farmers Pride Airport is located in Fredericksburg on Airport Road. The 46-acre airport features a 3,410-foot turf runway that is 150 feet wide and is primarily used by general aviation aircraft. The airport includes storage and hangar buildings to accommodate 52 aircraft based at the airport.

In addition to the four privately owned public-use facilities, Muir Army Airfield operates privately at Fort Indiantown Gap. There are also several small private-use facilities throughout the county.

The closest commercial airport to Lebanon County with substantial scheduled passenger service is Harrisburg International Airport (HIA), located 23 miles southwest of the county line. The airport serves as Central Pennsylvania's primary regional commercial airport, providing commercial passenger and freight services to several domestic markets. The airport is owned and operated by the Susquehanna Area Regional Airport Authority. Lancaster Regional Airport (LNS) is the closest airport with any regularly scheduled passenger service. It is approximately 11 miles south of Lebanon County, with daily service to Washington-Dulles and Pittsburgh. Additionally, American Airlines currently provides coach bus service connections between LNS and Philadelphia International Airport.

Other proximate commercial airports include Lehigh Valley International Airport (54 miles ENE), Wilkes-Barre/Scranton International Airport (81 miles NE), and Philadelphia International Airport (85 miles SE).

Figure 39 – Lebanon County Aviation Facilities



ENVIRONMENTAL, HISTORICAL, AND CULTURAL IMPACTS

Lebanon County is home to environmentally, historically, and culturally sensitive areas. Future projects should be analyzed for conflicts and avoid or mitigate these constraints.

It is important for any planned transportation project to be considered in light of its impact on environmental, historical, and cultural resources. Projects should be designed to avoid or minimize impacts to important resources. Therefore, it is critical that constraining resources be identified as early in the planning process as possible. Resources may include prime agricultural land, wetlands, floodplains, geological hazards (particularly sinkholes), threatened flora and fauna, bridges, buildings and landscapes of historical value, archeological sites, or public lands such as schools, parks, game lands, and forests. Additionally, transportation projects should not disproportionately impact disadvantaged communities.

Although many of these resources and locations are identified and mapped in other elements of the Lebanon County Comprehensive Plan, Figure 40 and Figure 41 depict resources that constrain transportation plans and projects. Individual project ideas can be evaluated using Geographic Information Systems (GIS) mapping where constraints can be identified for further analysis and avoidance or mitigation. A summary presentation was made at PennDOT’s Agency Coordination Meeting in summer 2024 to coordinate these resource avoidance and mitigation methods for future large-scale projects.

Protected Lands

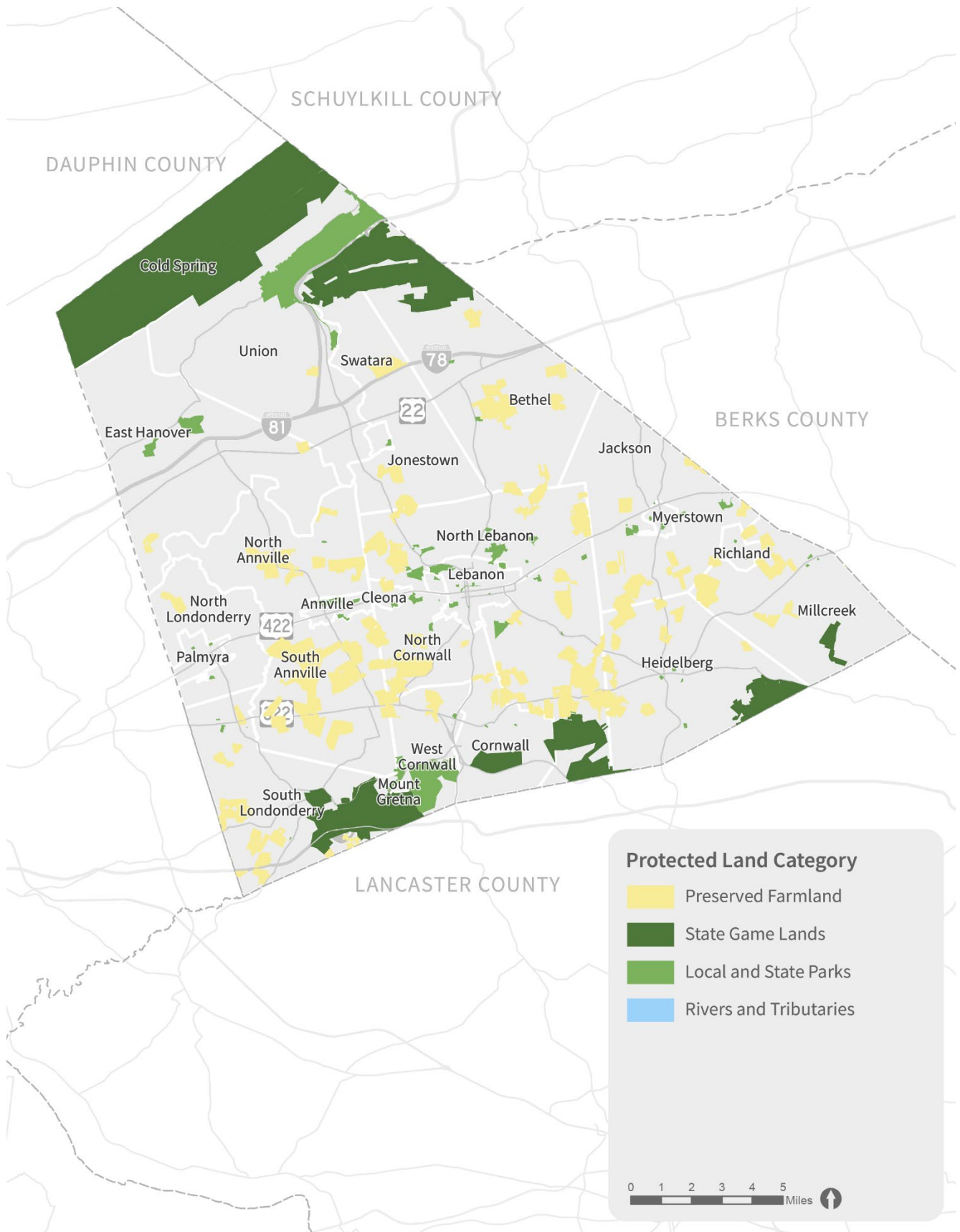
Lebanon County’s protected lands include preserved farmland, local and state parks, and a large area of state game lands. Together, these protected lands comprise just over 32 percent of all land area within the county, as shown in Table 17 and Figure 40. Projects that take place on these sensitive lands must undergo a stringent review process and may require additional permits to proceed. In some cases, disturbing protected lands may not be allowed.

Table 17 – Lebanon County Protected Lands (2022)

Protected Land	Square Miles	% of Total Land in Lebanon County
Preserved Farmland	28.0	7.7%
Local & State Park	14.2	3.9%
State Game Land	74.4	20.5%
Total	116.6	32.1%

Source: PASDA

Figure 40 – Lebanon County Protected Lands (2022)



Environmental and Geological Constraints

In addition to protected lands, physical constraints dot the landscape of Lebanon County. Sinkholes, flood hazard zones, rivers and tributaries, wetlands, and hydric (permanently saturated) soils are all major natural obstacles to new development. Projects that intersect these constraining features require special considerations and additional permitting. These environmental constraints are mapped in Figure 41.

Sinkholes are a particularly significant geological hazard in Lebanon County, particularly around PA 72 in the City of Lebanon and the US 422 corridor west of Lebanon.

Sinkholes are a particularly significant geological hazard in Lebanon County, particularly around PA 72 in the City of Lebanon and the US 422 corridor west of Lebanon City. Sinkholes must be carefully considered in the design and construction of any project with this area. Stormwater management also must be carefully considered in this geologic area. Sinkholes are also a significant drain on state and local resources, given the cost of efforts to prevent, manage, and mitigate sinkhole problems. Sinkholes represent a constant cost to repair on several state and municipal roadways.

Environmental Protection and Agency Coordination

The LEBCO MPO recognizes the importance of identifying all environmental and cultural resources that may be impacted by projects identified on the TIP and within the LRTP. The ultimate goal is to develop and implement projects that meet the transportation needs of the county but avoid or mitigate environmental or cultural resource impacts. The MPO will identify and coordinate with the appropriate resource agencies and rely on the agencies' expertise to facilitate project development that is sensitive to any potentially impacted resource. This includes federal agencies (U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service, U.S. Department of the Interior agencies, and the U.S. Army Corps of Engineers (USACE)) and state resource agencies (PA Game Commission, PA Fish and Boat Commission, PA Department of Environmental Protection (DEP), and the PA Historic and Museum Commission). The MPO will also rely on the expertise of PennDOT to facilitate the environmental process. Finally, the MPO expects to update its comprehensive plan by 2025. During that update, the county anticipates updating all applicable environmental mapping for use in future analyses.

Clean Air Act Amendments of 1990

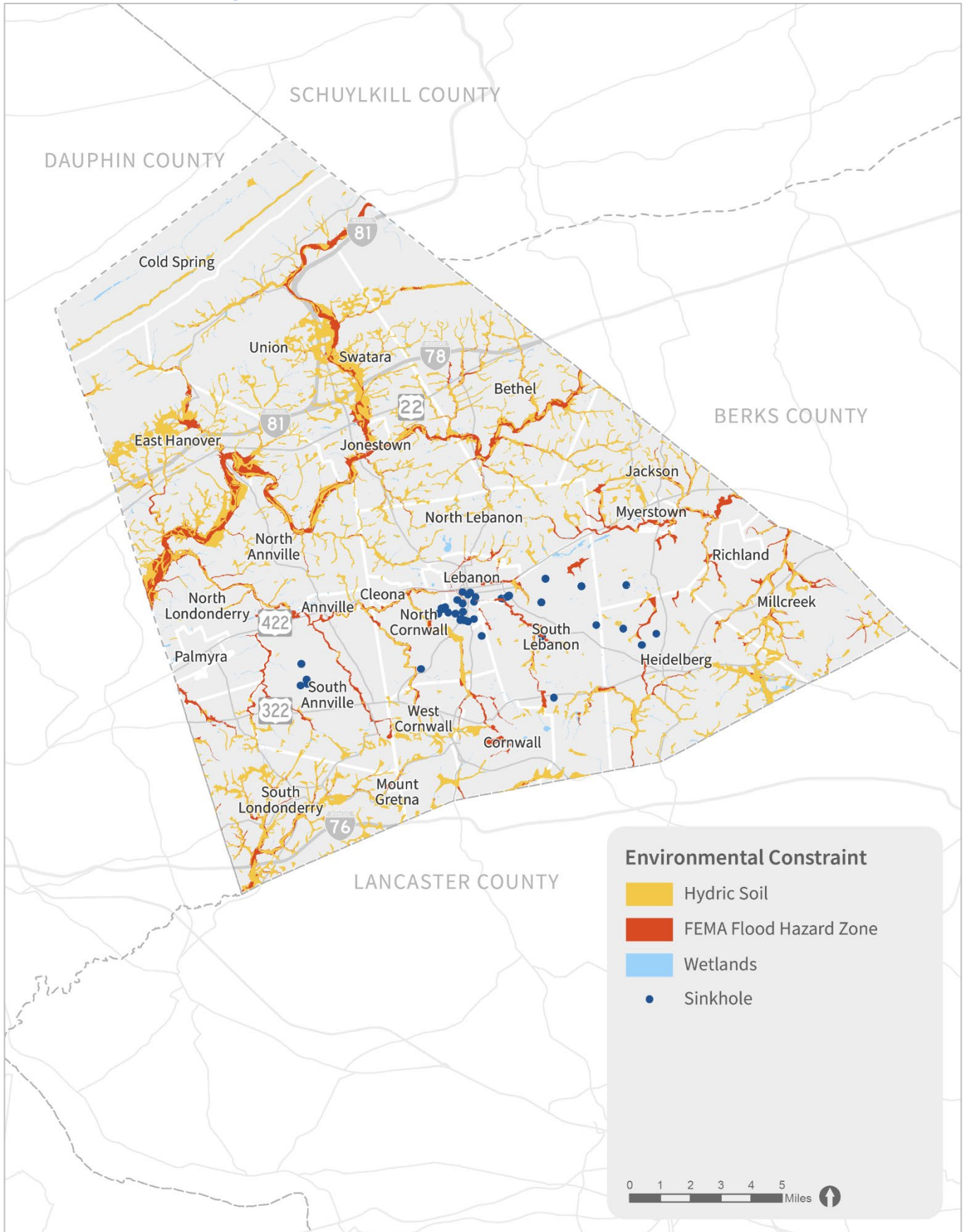
The Clean Air Act Amendments of 1990 (CAAA) require Lebanon County transportation planning and programming, including the LRTP, to be consistent with federal air quality goals. Lebanon County is considered a non-attainment area—a geographic area that does not meet the federal air quality standards for eight-hour ozone and/or PM_{2.5} (particulate matter less than 2.5 micrometers in diameter). “Transportation conformity” is a process that ensures federal funding from FHWA and the FTA is directed to projects that are consistent with air quality standards. Air quality evaluations for an LRTP determine the total emissions projected for on-road mobile sources identified in the plan. This evaluation dictates whether transportation control measures must be implemented to meet conformity standards set by the EPA. Due to the fiscal limitations of the MPO's TIP and LRTP, the majority of projects are maintaining (not expanding) the current transportation system and have no impact on emissions.

Lebanon County is included within the Harrisburg–Lebanon–Carlisle maintenance area under the 1997 8-hour ozone National Ambient Air Quality Standard (NAAQS) and the Harrisburg–Lebanon–Carlisle–York maintenance area under the 2006 24-Hour PM_{2.5} NAAQS. Lebanon County is designated as a single-county maintenance area

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for the 2012 annual PM2.5 NAAQS. The county is in attainment for all other NAAQS. Air quality conformity determinations are a required part of adopting all transportation programs and plans for the purpose of ensuring that projects continue to maintain NAAQS and the county remains within acceptable air quality standards. It is the intent of the MPO to adopt programs and plans that reduce mobile emission pollutants and assist with the implementation of State Implementation Plans (SIP) for air quality.

Figure 41 – Lebanon County Environmental Constraints (2022)



Environmental Mitigation Strategies

Transportation projects must be developed and constructed in an environmentally sensitive manner. The LEBCO MPO recognizes the impact transportation decisions have on the environmental, historical, and cultural assets of the county. The MPO will continually strive to avoid, mitigate, and/or enhance the environment through the planning and project development process. Additionally, the 2007 Lebanon County Comprehensive Plan includes specific natural resource goals that relate to transportation. These goals, listed below, will be implemented through the MPO LRTP:

1. Maintain and enhance the quantity and quality of water resources.
2. Protect and preserve Lebanon County's diverse ecologically sensitive areas.
3. Protect prime farmland, sustain the agricultural economy, and promote the rural heritage of Lebanon County.
4. Encourage a healthy balance between the economic benefits of forestry and mineral extraction and the sustainability of the operation and associated effects on the natural environment.
5. Achieve and maintain EPA's attainment status for air quality in Lebanon County.

The LEBCO MPO is committed to implementing the above strategies through direct mitigation measures and actions. The MPO will also achieve the implementation of these strategies through specific actions such as:

- Continually update GIS environmental layers with the most recently available data.
- Ensure that municipal transportation projects and maintenance activities are environmentally sound through programs such as PennDOT's Local Technical Assistance Program (LTAP) and the Dirt, Gravel & Low Volume Road Maintenance program.
- Participate and assist PennDOT, the Pennsylvania Turnpike Commission (PTC), and others throughout the project planning and development process.
- Continually coordinate with appropriate resource agencies on all plans and projects.
- Encourage the maintenance and/or upgrading of existing stormwater systems and promote best management practices.
- Ensure that projects are designed and built in a manner that is sensitive to the context of the area.
- Ensure that transportation emissions do not exceed EPA/Department of Environmental Protection (DEP) budgets.
- Avoid or minimize the impact of transportation on agricultural and protected lands.

TRANSPORTATION FUNDING

Transportation projects are funded through a variety of revenue sources, from local general funds to the federal highway trust fund. The LRTP documents anticipated transportation funding and expenditures, including forecasted state and federal formula spending, over the next 20 years in a Fiscally Constrained Plan.

The LRTP is the overarching document that influences the development of the biennial Unified Planning Work Program (UPWP), the Transportation Improvement Program (TIP), transportation studies, and programs throughout the region. This 2024-2044 LEBCO LRTP covers a 20-year planning period from 2025-2044. Federal law requires that the LRTP project list be fiscally constrained—the projected cost of projects in the plan must not exceed anticipated future funding levels. Existing funding levels and projections provided by PennDOT and Lebanon Transit were used for this LRTP.

Highway/Bridge Funding

Highway and bridge capital funding, transit capital, and transit operating assistance funding projections are provided in Table 18, Table 19, and Table 20. This funding includes federal formula funding from FHWA and state highway/bridge funding from PennDOT. These funds are distributed to Lebanon and other regions based on various factors:

- **NHPP:** National Highway Performance Program federal funds distributed by PennDOT based on the regional share of bridge deck area, highway lane-miles, highway vehicle-miles traveled (VMT), truck highway VMT, and asset management scores.
- **STP:** Surface Transportation (Block Grant) Program federal funds distributed by PennDOT based on regional share of bridge deck area, highway lane-miles, highway VMT, and truck highway VMT.
- **State Highway Capital:** Distributed by PennDOT based on regional share of VMT, truck highway VMT, and highway lane-miles.
- **State Bridge:** Distributed by PennDOT based on regional share of bridge deck area.
- **Off-System Bridges:** Distributed by PennDOT based on regional share of bridge deck area.
- **HSIP:** Highway Safety Improvement Program federal funds distributed based on crash severity weighting for reported crashes in the county, plus a base amount to each region to address systemic safety projects.
- **Bridge Formula:** Federal bridge investment program funds distributed by PennDOT based on the regional share of bridge deck area and asset management scores.
- **CMAQ:** Congestion Mitigation and Air Quality federal funds distributed based on air quality classification factors.
- **Carbon Reduction:** Carbon Reduction Program funds allocated by population.
- **RBR:** The Rapid Bridge Replacement Project funds the repair and replacement of bridges statewide.

Due to the relatively small size of Lebanon County's geographic area and population, the County receives one of the smallest shares of transportation funding. This small allocation makes it difficult for the County to keep up with its transportation needs. This small allocation is not proportional to the County's transportation system, since the county is along one of the busiest freight and travel corridors in Pennsylvania.

The allocation included in this plan does not include funding designated for Lebanon County for routine maintenance of bridges and highways such as snow removal, pothole patching, line painting, small-scale paving, drainage improvements, etc. Routine maintenance is funded by the county and municipal share of the gasoline/diesel taxes known as County Liquid Fuels (CLF) and Municipal Liquid Fuels (MLF) funds. CLF and MLF funds are distributed by formula derived by state law.

Maintaining Lebanon County’s existing highway/bridge and transit system in a state of good repair and operating transit service at the current levels will consume virtually all of the reasonably expected funding, leaving very limited resources to undertake capacity-adding projects.

Table 18 – Lebanon County Highway/Bridge Financial Projections (\$000), 2025-2044

Year(s)	NHPP	STP	State Highway (Capital)	State Bridge	Off-System Bridges	HSIP	Bridge Formula Program	CMAQ	Carbon Reduction	RBR	Total
2025	\$2,115	\$2,199	\$3,149	\$1,547	\$1,396	\$1,324	\$1,474	\$1,426	\$634	\$59	\$15,323
2026	\$1,998	\$2,037	\$3,519	\$1,546	\$1,396	\$1,357	\$1,474	\$1,462	\$649	\$59	\$15,497
2027	\$1,769	\$2,037	\$3,958	\$1,522	\$1,396	\$1,357	\$1,474	\$1,462	\$649	\$60	\$15,683
2028	\$1,598	\$2,036	\$4,327	\$1,521	\$1,396	\$1,357	\$1,474	\$1,462	\$649	\$60	\$15,879
2029	\$1,598	\$2,036	\$4,327	\$1,521	\$1,396	\$1,357	\$1,842	\$1,462	\$649	\$60	\$16,248
2030	\$1,598	\$2,036	\$4,327	\$1,521	\$1,396	\$1,357	\$1,842	\$1,462	\$649	\$60	\$16,248
2031	\$1,598	\$2,036	\$4,327	\$1,521	\$1,396	\$1,357	\$1,842	\$1,462	\$649	\$60	\$16,249
2032	\$1,598	\$2,036	\$4,327	\$1,521	\$1,396	\$1,357	\$1,842	\$1,462	\$649	\$61	\$16,249
2033	\$1,598	\$2,036	\$4,327	\$1,521	\$1,396	\$1,357	\$1,361	\$1,462	\$649	\$61	\$15,766
2034	\$1,598	\$2,036	\$4,327	\$1,521	\$1,396	\$1,357	\$1,361	\$1,462	\$649	\$61	\$15,767
2035	\$1,598	\$2,036	\$4,327	\$1,521	\$1,396	\$1,357	\$1,361	\$1,462	\$649	\$61	\$15,767
2036	\$1,598	\$2,036	\$4,327	\$1,521	\$1,396	\$1,357	\$1,361	\$1,462	\$649	\$62	\$15,767
2037-2044	\$12,784	\$16,288	\$34,616	\$12,168	\$11,168	\$10,856	\$10,888	\$11,696	\$5,192	\$500	\$126,156
Totals	\$33,048	\$40,885	\$84,183	\$30,471	\$27,920	\$27,106	\$29,596	\$29,202	\$12,964	\$1,224	\$316,599

2025-36 funding projections from PennDOT, updated to include Lebanon’s Draft 2025 TIP; sums reflect rounding

In addition to the continuing sources above, the LRTP includes other funding to fully fund specific highway/bridge projects in the TIP. This funding is project-specific, and not allocated to Lebanon by formula. These project-specific funds include:

- Surface Transportation Program – Urban: \$2,018,632
- Transportation Alternatives Program: \$2,356,500
- Local Funds (as match funding): \$719,890

This brings the total funding in the LRTP for highways/bridges to **\$321,694,090**.

The Lebanon County MPO, municipal government, and other stakeholders will need to make the case for PennDOT to allocate funds to implement any needed new projects—a lack of available funding will not allow the county to undertake expansion and congestion-mitigating projects.

Public Transportation Funding

Lebanon Transit receives funding for capital improvements and operating assistance from the Federal Transit Administration (FTA) and PennDOT, as well as local funds.

Federal funds are allocated to the state and are passed through to small urban areas such as Lebanon to be used for both capital and operating expenses. The funding of capital projects is discretionary and is allocated on an annual basis. These funds consist of Section 5307 which may be used for both capital and operating costs. Section 5310 funds are to be used for paratransit services and again are discretionary. Section 5309 funds are also discretionary and are generally used for capital projects. It is anticipated that this funding will only experience minor increases for the purposes of fiscal projections for this plan.

Like federal funding, state funds are allocated to transit operations based on both formula and discretionary needs. On the operating side, state funds are used to make up the difference between farebox and other revenue such as service contracts and advertising. State capital assistance is based on the expected amount requested by Lebanon and the other state transit providers. However, this amount is determined by annual state budget appropriations. Again, it is assumed for the purposes of this plan that this funding will remain flat over the life of the plan.

Local funds are provided by Lebanon County and are used to match federal and state funds as well fund other transit needs not covered by federal or state funds.

The total transit capital and operating assistance forecast for the 20-year LRTP is **\$199,347,988**.

Table 19 – Lebanon County Transit Capital Financial Projections (\$000) (2025–2044)

Year(s)	Federal Section 5307	State Section 1516-CTC	State Act 44 Section 1514 Discretionary	County Act 44 Section 1514 Discretionary	Total Capital (Federal & State)
2025	\$7,500	\$280	\$7,592	\$103	\$15,475
2026	\$7,500		\$7,592	\$103	\$15,295
2027		\$300	\$92	\$3	\$395
2028	\$1,100	\$600	\$392	\$23	\$2,115
2029		\$350	\$92	\$3	\$445
2030			\$1,373	\$47	\$1,420
2031		\$370	\$2,629	\$91	\$3,090
2032		\$380	\$1,566	\$54	\$2,000
2033			\$116	\$4	\$120
2034		\$390	\$1,469	\$51	\$1,910
2035		\$400	\$2,146	\$74	\$2,620
2036		\$410	\$1,663	\$57	\$2,130
2037-2044		\$2,400	\$11,000	\$500	\$13,900
Totals	\$16,100	\$5,880	\$37,722	\$1,113	\$60,815

Source: Lebanon Transit; sums reflect rounding

Table 20 – Lebanon County Transit Operating Assistance Projections (\$000) (2025–2044)

Year(s)	Federal Section 5307	State Section 1513	Shared Ride Lottery	Shared Ride PWD	Local	Total Operating Assistance
2025	\$1,593	\$2,792	\$373	\$102	\$151	\$5,011
2026	\$1,641	\$2,875	\$392	\$104	\$158	\$5,167
2027	\$1,691	\$2,962	\$411	\$113	\$166	\$5,341
2028	\$1,741	\$3,050	\$432	\$118	\$174	\$5,517
2029	\$1,793	\$3,142	\$454	\$124	\$183	\$5,697
2030	\$1,847	\$3,236	\$476	\$131	\$192	\$5,883
2031	\$1,903	\$3,333	\$500	\$137	\$202	\$6,075
2032	\$1,960	\$3,433	\$525	\$144	\$212	\$6,274
2033	\$2,019	\$3,536	\$551	\$151	\$223	\$6,480
2034	\$2,079	\$3,642	\$579	\$159	\$234	\$6,693
2035	\$2,141	\$3,752	\$608	\$167	\$245	\$6,913
2036	\$2,206	\$3,864	\$638	\$175	\$258	\$7,141
2037-2044	\$20,203	\$35,392	\$6,400	\$1,755	\$2,583	\$66,333
Totals	\$42,817	\$75,011	\$12,341	\$3,385	\$4,980	\$138,533

Source: Lebanon Transit; sums reflect rounding

The total reasonably anticipated funding for the 20-year Lebanon County LRTP is **\$521,042,078**, which will primarily be used to fund operations and maintenance of existing assets and services as detailed in the following section on Transportation Projects and Asset Management.

Seeking Additional Funding

In addition to these traditional federal and state funding sources, the MPO should continually work to identify other possible federal, state, and local funding such as grants, loans, private-sector contributions, etc. The MPO should maintain a prioritized list of projects that are “shovel-ready” and can be rapidly advanced if additional funding becomes available.

The Bipartisan Infrastructure Law (BIL) / Infrastructure Investment and Jobs Act (IIJA) of 2021 authorized \$1.2 trillion for transportation and infrastructure spending with \$550 billion of that figure going toward “new” investments and programs. Some of these new programs that may be useful to Lebanon County include:

- The [Safe Streets and Roads for All Grant](#) (SS4A) Program is a discretionary grant program to improve roadway safety by significantly reducing or eliminating roadway fatalities and serious injuries through safety action plan development and implementation focused on all users, including pedestrians, bicyclists, public transportation users, motorists, personal conveyance and micromobility users, and commercial vehicle operators. This is a new program that was enacted as part of the IIJA, which authorized \$5 billion in competitive grants per year over five years in advanced appropriations. The SS4A funds two types of grants: Action Plan Grants (for comprehensive safety action plans) and Implementation Grants (to implement strategies or projects that are consistent with an existing action plan).

- The [Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation \(PROTECT\)](#) Grant Program is a formula and discretionary grant program that helps support resilience improvements. This is a new program that was enacted as part of the IIJA, which authorized a total of \$8.7 billion for this program over the next five years. The program includes \$7.3 billion in formula funding that will be distributed to States while \$1.4 billion will be available in the form of competitive grants. Pennsylvania is estimated to receive more than \$301 million in formula funding over the five years. The IIJA authorizes \$250 million in competitive grants annually. Eligible projects include the use of natural infrastructure or construction, or modification of storm surge, flood protection, or aquatic ecosystem restoration elements related to highway projects, public transportation facilities, intercity rail facilities or service, or port facilities. The federal share is 80 percent but can be modified based on certain criteria.
- The [Railroad Crossing Elimination Grant Program](#) is a discretionary grant program to fund highway-rail or pathway-rail grade crossing improvement projects that focus on improving the safety and mobility of people and goods. This is a new program that was enacted as part of the IIJA, which authorized \$600 million in competitive grants per year over the next five years in advance appropriations for this program. Congress may also choose to authorize up to an additional \$500 million per year over the next five years. Eligible projects include: a grade separation or closure; track relocation; the improvement or installation of protective traffic control devices to increase safety; or other safety improvements.

TRANSPORTATION PROJECTS AND ASSET MANAGEMENT

The LRTP serves as the blueprint for transportation investment throughout the county. This includes a fiscally constrained set of projects for the next 20 years, the asset management needs of the MPO, and the not-yet-funded (illustrative) projects that should be considered to achieve the long-term goals and vision set forth within the plan.

Fiscally Constrained Projects

Federal laws and regulations require that MPO long-range plans be fiscally constrained. The total estimated costs of the projects listed in an LRTP may not exceed the funding that can be reasonably expected within the planning horizon. Unfunded projects are considered “illustrative” and are listed in subsequent sections of this plan. Table 23 through Table 26 include the projects that are expected to be able to be implemented using available funds. These projects form the foundation for the MPO’s biennial Transportation Improvement Program (TIP) and its Twelve-Year Program (TYP), both of which are included in the Statewide Transportation Improvement Program (STIP) and the Commonwealth’s TYP. Figure 43 and Figure 44 map the TIP and TYP projects, respectively.

LEBCO receives one of the smallest allocations of transportation funding in Pennsylvania. Therefore, only the projects on the TIP and TYP (years 1 through 12) are programmed for purposes of the LRTP. The identification, selection, and programming of projects for LRTP years 13 through 20 (2036–2044) will be decided based on reasonable funding expectations as time passes. LEBCO has used this planning process to establish programmatic investment categories (line-item amounts) for years 13 through 20. These categories support the goals of the LRTP, reflect the priorities identified through LRTP engagement activities, and reflect the constraints of the funding sources included in the funding forecast.

A summary of identified expenditures on the TIP and TYP, as well as expected long-range programmatic investments, is provided in [Table 21](#) and [Figure 42](#).

The fiscally constrained project listing is also subject to the CAAA conformity requirement. Because Lebanon County does not meet Clean Air Act minimum air quality standards, these projects are subject to a Conformity Analysis. Any project that is anticipated to increase or decrease auto emissions must be examined to ensure that the project does not further degrade air quality standards. As new projects are identified for inclusion on the fiscally constrained program of projects, the MPO must determine and demonstrate CAAA conformity compliance.

Lebanon Transit (LT) is subject to Federal Transit Administration (FTA) guidelines surrounding Transit Asset Management and Public Transportation Safety Management Systems, and the Lebanon County LRTP fiscally constrained investment program is informed by these planning processes.

Transit Asset Management (TAM) a systematic process that enables public transportation agencies to maintain assets in a state of good repair. This FTA-required process accounts for the entire life cycle of an asset used for public transportation, from procurement through operations and maintenance to disposal. LT’s TAM Plan goal is to reach and maintain a State of Good Repair for all its capital assets through the Performance Based Planning and Programming process using performance goals. Lebanon Transit’s goals for FY 2024 include having 31% of

their facilities rated less than a 3.0 on the Transit Economic Requirements Model scale, having only 28% of their buses, 62% of their vans, and 59% of their cutaways, 46% of their automobiles, and 24% of their trucks exceeding the Useful Life Benchmark. To meet these goals Lebanon Transit will be replacing vehicles and equipment that are exceeding their useful life over the next several years. On an annual basis, PennDOT will provide an Asset Performance Report to transit agencies that measure performance against established targets for the previous fiscal year. New Performance Goals for the upcoming fiscal year will then be established. The implementation of the proposed projects included in the FFY 2025-2028 are expected to assure Lebanon Transit achieves its goal of maintaining its facilities, vehicles and equipment in a State of Good Repair and achieving the current or higher Performance Goal ratings.

Lebanon Transit adopted its Public Transportation Agency Safety Plan (PTASP) on October 23, 2019, as required by 49 CFR Part 673. The PTASP includes safety performance targets based on the federal measures established in the National Public Transportation Safety Plan and agency metrics. These goals track fatalities, serious injuries, safety events, system reliability, and wheelchair tip-overs that occur on Lebanon Transit vehicles, stations, or facilities. These targets are updated and tracked annually, and guide Lebanon Transit decision making in regard to projects to ensure that Lebanon Transit is within compliance and is providing a safe system.

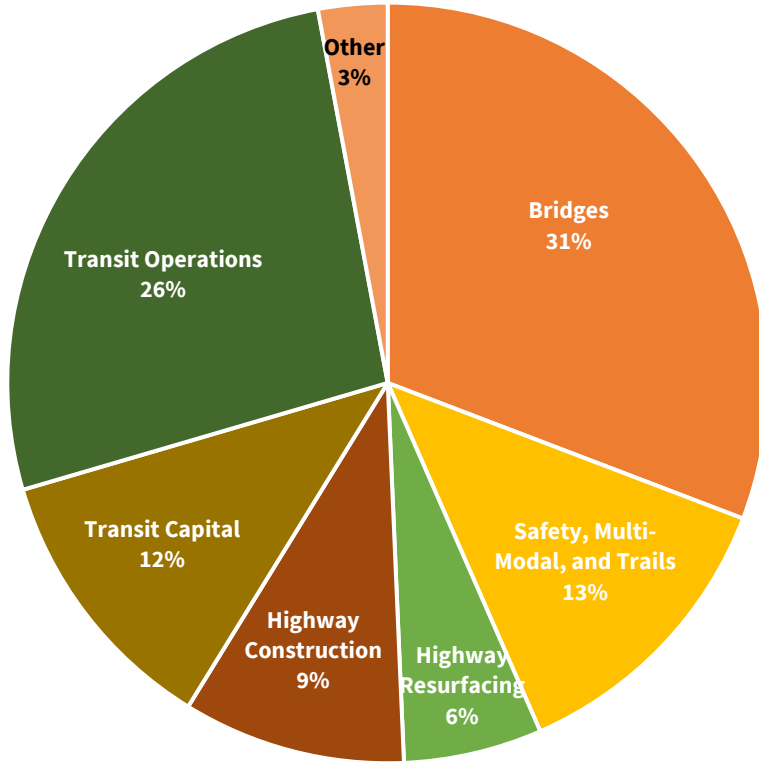
Table 21 – Total 20-Year Fiscally Constrained Investment Program, by Planning Period and Category

	TIP (2025-2028)	TYP (2029-2036)	Long-Range (2037-2044)	Total Investments (2025-2044)
Bridges	\$23,778,498	\$73,639,129	\$63,078,133	\$160,495,760
Safety, Multimodal, and Trails	\$15,631,669	\$24,928,302	\$25,231,253	\$65,791,224
Highway Resurfacing	\$11,333,803	\$6,738,838	\$12,615,627	\$30,688,268
Highway Construction	\$12,486,359	\$17,960,221	\$18,923,440	\$49,370,020
Transit Capital	\$33,180,000	\$13,735,000	\$13,900,000	\$60,815,000
Transit Operations	\$21,044,296	\$51,155,346	\$66,333,346	\$138,532,988
Other	\$3,851,006	\$5,191,000	\$6,307,813	\$15,349,819
Totals	\$121,305,631	\$193,347,836	\$206,389,612	\$521,042,078

Sums reflect rounding



Figure 42 – Total 20-Year LRTP Investments by Category



Asset Management

Asset management is the practice of cost-effectively maintaining the current transportation system—particularly the pavement and bridges that are critical to keep people and goods moving. In addition to improving safety, asset management is a top priority of the federal government, PennDOT, and the MPO. Funding for asset management projects comes from a variety of sources including federal, state, and county/municipal agencies. Larger-scale projects such as roadway rehabilitation and reconstruction, bridge replacement, and major repairs usually are funded through the TIP and TYP and municipalities. Smaller-scale projects on state-owned roadways are generally state-funded with work completed using PennDOT maintenance staff or contractors. These smaller-scale projects generally are not included on the TIP due to the nature of the funding and their minor project scopes. Failure to develop and implement sustainable asset management practices will lead to deteriorating facilities and ultimately more expensive and extensive rehabilitation or replacement projects.

Public transit systems also understand the importance of asset management. In order to effectively and efficiently provide reliable and affordable transportation, transit vehicles and facilities require timely maintenance to extend overall asset life and reduce or delay the need for costlier repairs.

Finally, the Lebanon Valley Rail Trail (LVRT) is owned by the County and is supported by a maintenance agreement with Lebanon Valley Rails-to-Trails. Much like a public park it must be maintained and the County and Lebanon Valley Rails-to-Trails have developed an LVRT Asset Management Plan to guide those efforts.

The MPO will need to serve as champion for the illustrative projects identified in this plan and pursue additional funding options such as spike funds, Public–Private Partnerships, or grant funding. As this plan is routinely updated and refined, the MPO will make the case to further define project needs and funding opportunities.

County Liquid Fuels

Lebanon County received \$218,238 in formula Liquid Fuels funding in 2023. The funding is used by the county to inspect and maintain county-owned bridges and to replace bridges when needed. Additionally, the county routinely passes through a portion of its allocation to its municipalities to assist them with funding local transportation needs. Lebanon County’s allocation represents about 0.8 percent of the total allocation to Pennsylvania’s 67 counties.

Motor License Fund

Lebanon County as well as its municipalities are annually allocated funding from the state Motor License Fund (MLF) for locally owned roadways and bridges. Most of the funding is used to maintain the current system and to replace aging infrastructure. There are many state regulations on how this funding is distributed as well as how it may be used. MLF funding cannot cover all costs of maintaining the local system and many municipalities must augment state roadway and bridge funding with general tax revenue. Because MLF funding is tied to the amount of fuel tax collected by the Commonwealth, it is projected to decrease by 2 percent per year as more electric vehicles that do not pay gasoline taxes become part of the vehicle fleet.

Lebanon County’s 26 municipalities are allocated MLF funding based on a formula of each municipality’s ratio of population and municipal roadway mileage to the total state population and municipal mileage. The 2023 allocations by municipality are presented in Table 22.

Table 22 - Municipal Motor License Fund (MLF) Allocations (2023)

Municipality	2023 Allocation	Municipality	2023 Allocation
Annville	\$121,908	Myerstown	\$87,786
West Lebanon	\$26,506	North Annville	\$116,158
Bethel	\$247,618	North Cornwall	\$271,619
Cleona	\$61,000	North Lebanon	\$422,371
Cold Spring	\$1,060	North Londonderry	\$303,302
Cornwall	\$186,518	Palmyra	\$222,256
East Hanover	\$210,119	Richland	\$44,826
Heidelberg	\$208,328	South Annville	\$152,977
Jackson	\$341,471	South Lebanon	\$374,367
Jonestown	\$56,112	South Londonderry	\$279,134
Lebanon	\$753,331	Swatara	\$209,522
Millcreek	\$197,421	Union	\$152,015
Mount Gretna	\$13,966	West Cornwall	\$72,068
2023 Municipal Total	\$5,133,780		

Source: PennDOT; sums reflect rounding

[Act 13 Bridge Funding, Act 44, and Act 89 Funding](#)

There are other state funds that are distributed to the county and local jurisdictions that are used for asset management efforts for eligible County and Municipal infrastructure projects. This includes:

- Act 13 Bridge Funding: These funds are distributed to counties and are to be used to fund the replacement or repair of locally-owned at-risk, deteriorated bridges.
- Act 44 and Act 89 Funding: A portion of these funds are used for local maintenance of county and municipal roads and bridges

Figure 43 – Lebanon County 2025 Transportation Improvement Program Projects

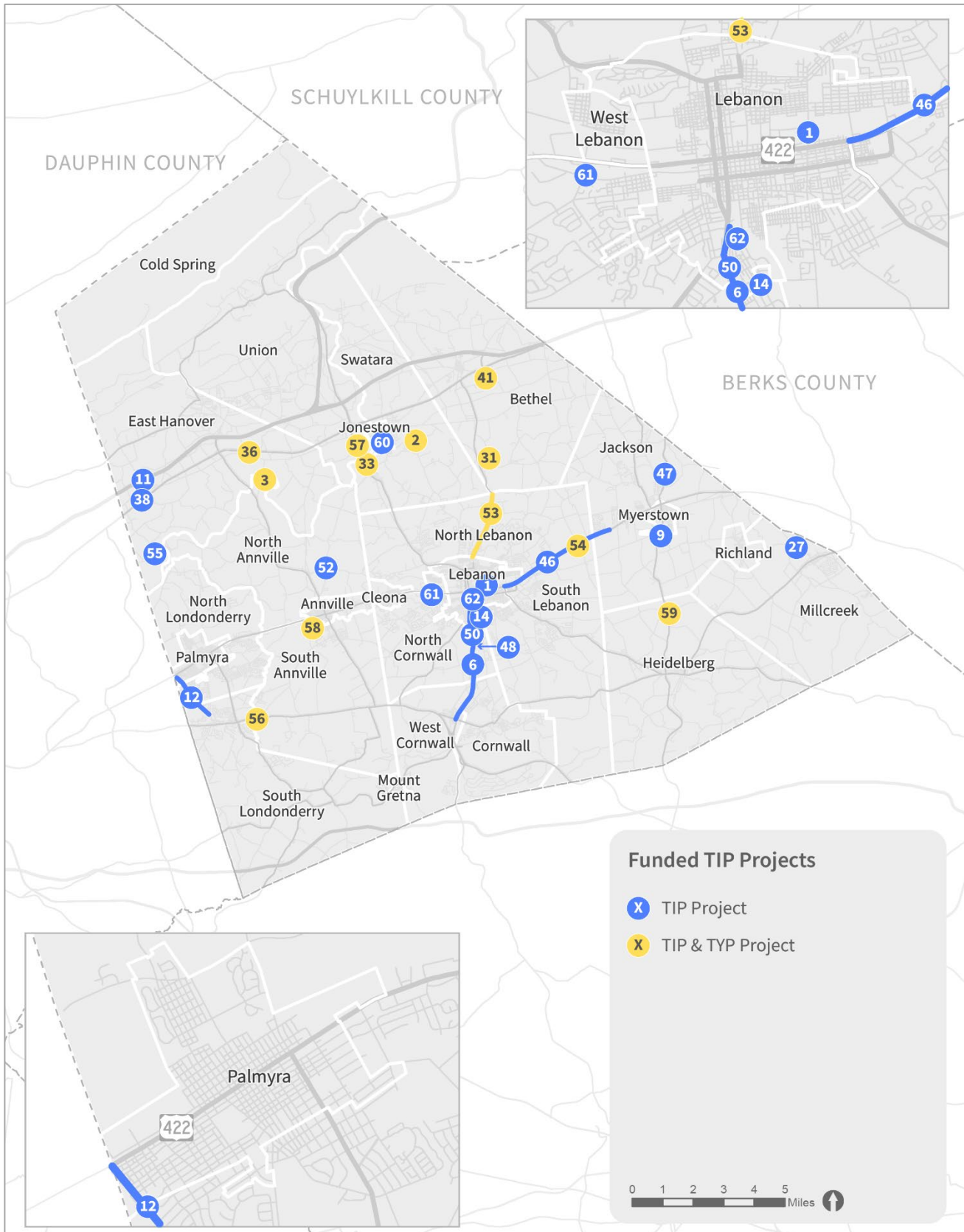


Figure 44 – Lebanon County Twelve-Year Plan Projects

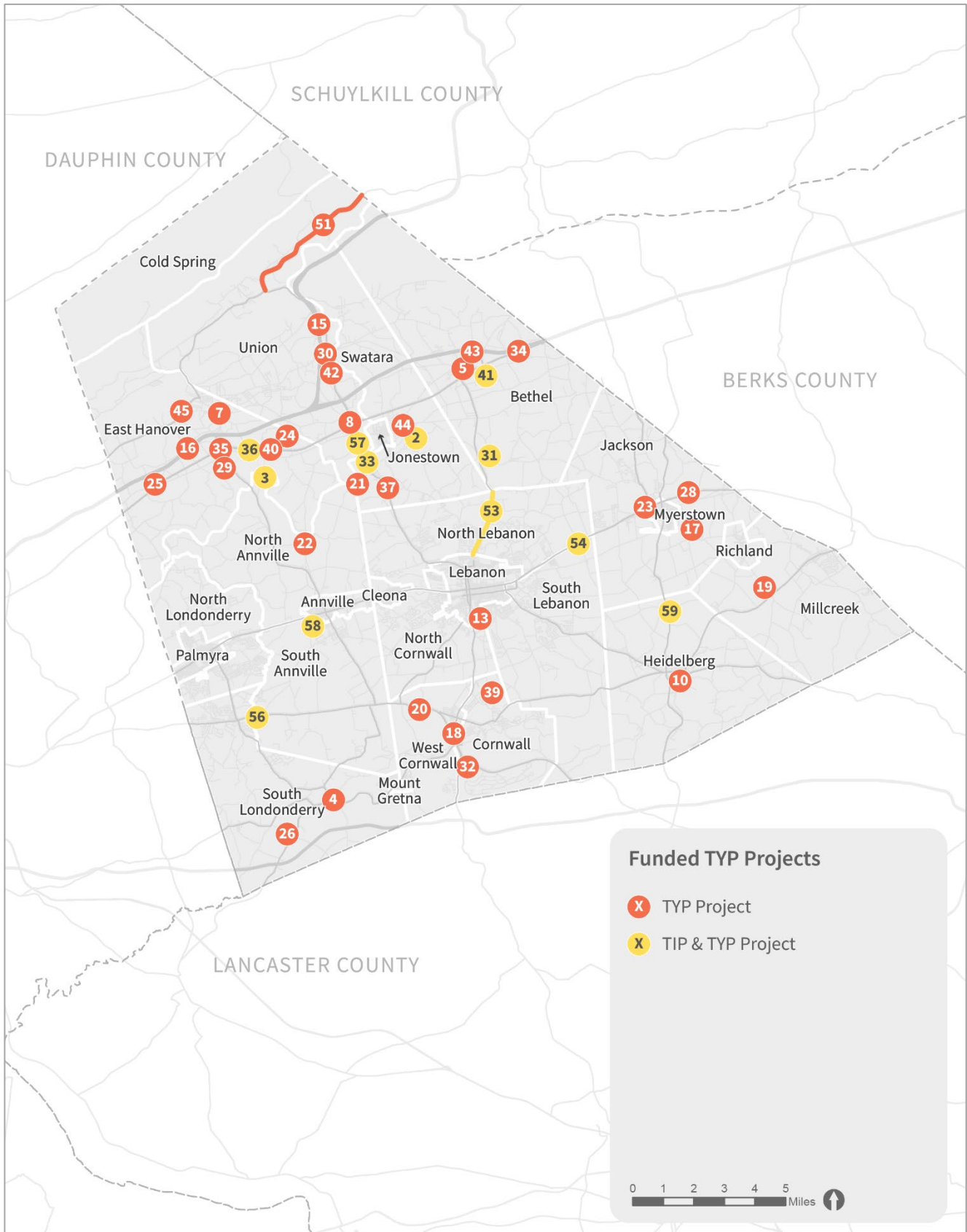


Table 23 – Lebanon County MPO Transportation Improvement Program (TIP) Projects (2025-2028)

Key to Phases: C = Construction; F = Final Design; P = Preliminary Engineering; R = Right-of-Way Acquisition; U = Utilities; S = Study

Project Type	Project #	Project Name	Map Ref #	Municipality	Phase	Project Cost (2025)	Project Cost (2026)	Project Cost (2027)	Project Costs (2028)	Total TIP Cost
Bridge	20217	N Lincoln Ave Leb-5	1	Lebanon (City)	C	\$858,749	\$306,543	\$473,799		\$1,639,091
Bridge	20299	Levan's Iron Bridge CO-5	2	Swatara (TWP)	F	\$350,000				\$1,115,136
					C			\$545,750	\$219,386	
Bridge	20364	Yortys Bridge Road CO-22	3	North Annville (TWP)	F		\$350,000			\$775,310
					C				\$425,310	
Other	82375	SRTP Rideshare Program			P	\$97,114	\$98,655	\$98,164	\$99,145	\$393,078
Bridge	87835	Bridge Reserve			C	\$434,692	\$2,121,002	\$607,472	\$431,964	\$3,595,130
Highway Construction	87838	Highway Reserve			C		\$245,258	\$642,346	\$4,631,783	\$5,519,387
Safety	87841	CMAQ Line Item			C	\$562,385	\$1,363,345	\$1,363,836	\$1,362,855	\$4,652,421
Highway Construction	87842	Delivery/Consult Assist			P	\$400,000	\$400,000			\$1,200,000
					C	\$200,000	\$200,000			
Other	88741	PA 72 Congested Corr Study	6	Cornwall (Borough) & North Cornwall (TWP) & Lebanon (City)	S	\$300,000				\$300,000
Bridge	91346	PA 501 Bridge-B	9	Myerstown (Borough)	C	\$937,480	\$937,480			\$1,874,960
Bridge	91351	Pleasant View Rd over Trib to Raccoon Ck	11	East Hanover (TWP)	F	\$33,000	\$170,000	\$2,000		\$1,285,488
					C				\$1,080,488	
Highway Construction	97153	Lingle Avenue Reconstruct	12	Palmyra (Borough) & North Londonderry (TWP) & South Londonderry (TWP)	C	\$1,882,056	\$2,326,975	\$1,557,941		\$5,766,972
Safety	99081	Cornwall & Wilhelm Inters	14	North Cornwall (TWP) & Lebanon (City)	C	\$591,131				\$591,131
Bridge	100312	Sheridan Rd over Mill Cr	27	Mill Creek (TWP)	F	\$220,000				\$1,727,056
					C			\$753,528	\$753,528	
Bridge	100328	Golf Rd over Little Swatara Ck	31	Bethel (TWP)	F	\$350,000				\$2,953,748
					C			\$858,749	\$1,744,999	

Project Type	Project #	Project Name	Map Ref #	Municipality	Phase	Project Cost (2025)	Project Cost (2026)	Project Cost (2027)	Project Costs (2028)	Total TIP Cost
Bridge	100331	Ebenezer Rd/Swatara Cr	33	Union (TWP) & Swatara (TWP)	C	\$1,515,000	\$629,009			\$2,144,009
Bridge	100337	US 22 Allentown Bl over Deep Run	36	East Hanover (TWP)	P	\$232,000	\$100,000			\$532,000
					F			\$200,000		
Bridge	100343	Allentown Blvd/Trib Racc	38	East Hanover (TWP)	C	\$483,000				\$483,000
Bridge	100350	Pine Grove St over Elizabeth Run	41	Bethel (TWP)	P	\$225,000				\$225,000
Highway Resurfacing	105343	US 422 Cumberland St Resurfacing	46	South Lebanon (TWP) & North Lebanon (TWP) & Jackson (TWP) & Lebanon (City)	C		\$1,494,793	\$1,951,010		\$3,445,803
Bridge	105802	College St over Trib to Owl Cr	47	Jackson (TWP)	F		\$125,000			\$1,376,172
					C			\$990,255	\$260,917	
Safety	106537	PA72/Isabel Drive Improvements	48	North Cornwall (TWP)	C	\$175,370				\$175,370
Highway Resurfacing	111910	Lebanon City Resurfacing Phase 4 - Cumberland St			C	\$903,000				\$903,000
Highway Resurfacing	113297	PA 72 Quentin Rd Resurface	50	North Cornwall (TWP) & West Cornwall (TWP) & Cornwall (Borough)	C	\$2,172,589	\$2,208,347	\$2,604,064		\$6,985,000
Safety	114554	Hill Church Rd Safety Imp	52	North Annville (TWP)	C	\$805,016	\$779,335	\$757,144	\$604,305	\$2,945,800
Safety	116163	PA 343 Seventh Street Improvements	53	North Lebanon (TWP)	F		\$225,000			\$1,852,335
					R		\$250,000			
					U		\$150,000			
					C			\$600,000	\$627,335	
Safety	116164	US 422 Cumberland St and Prescott Rd Int	54	North Lebanon (TWP) & South Lebanon (TWP)	F	\$250,000				\$2,788,112
					R	\$260,000				
					U	\$300,000				
					C		\$600,000	\$357,000	\$1,021,112	
Bridge	117410	Gravel Hill Rd ovr Trib to Swatara Ck	55	East Hanover (TWP)	F		\$150,000			\$664,358
					C				\$514,358	

Project Type	Project #	Project Name	Map Ref #	Municipality	Phase	Project Cost (2025)	Project Cost (2026)	Project Cost (2027)	Project Costs (2028)	Total TIP Cost
Bridge	117411	US322 Horsheshoe Pk ovr Killinger Crk	56	South Annville (TWP)	F			\$125,000		\$125,000
Bridge	117412	PA72 Ebenezer Rd over Trib to Swatara Crk	57	Union (TWP)	P	\$150,000				\$275,000
					F			\$125,000		
Bridge	117488	US 422 Main Street over Quittapahilla Creek	58	Annville (TWP)	P	\$350,000				\$600,000
					F			\$250,000		
Safety	117496	PA 501 Stiegel Pk and Reistville Rd	59	Jackson (TWP) & Heidelberg (TWP)	F	\$150,000				\$1,350,000
					C			\$400,000	\$800,000	
Safety	118512	Jonestown Borough Ped Improvements	61	Jonestown (Borough)	C	\$1,056,500				\$1,056,500
Bridge	118513	Quittapahilla Creek New Bridge	62	North Cornwall (TWP) & North Lebanon (TWP) & West Lebanon (TWP)	C		\$400,000	\$900,000		\$1,300,000
Bridge	119212	Lebanon MPO TIP Funded Bridge Maint Contract			P		\$50,000			\$850,000
					C			\$400,000	\$400,000	
Safety	119254	Orange St and Cornwall Rd Intersection			C	\$220,000				\$220,000
Other	119290	Carbon Reduction Program (CRP) Lebanon MPO			C	\$634,000	\$649,000	\$649,000	\$649,000	\$2,581,000
Other	88057	STU (HATS)			C	\$34,555	\$35,229		\$507,144	\$576,928
Bridge		Rapid Bridge Replacement Program			C	\$59,190	\$59,420	\$59,600	\$59,830	\$238,040
Total Hwy/Bridge TIP						\$17,191,827	\$16,424,391	\$17,071,658	\$16,393,459	\$67,081,335

Table 24 – Lebanon Transit Transportation Improvement Program (TIP) Projects (2025-2028)

Project #	Project Name	Project Costs (2025)	Project Costs (2026)	Project Costs (2027)	Project Costs (2028)	Total Costs
115618	LT Admin Building	\$15,100,000	\$15,100,000			\$30,200,000
121067	Operating Assistance (2025-28)	\$5,011,222	\$5,174,083	\$5,342,455	\$5,516,536	\$21,044,296
121071	Replace 2 Paratransit Vehicles	\$280,000				\$280,000
121072	Replace 2 Paratransit Vehicles			\$300,000		\$300,000
121073	Replace 4 Paratransit Vehicles				\$600,000	\$600,000
121077	Replace Computers/IT	\$20,000	\$20,000	\$20,000	\$20,000	\$80,000
121078	Misc. Maintenance	\$75,000	\$75,000	\$75,000	\$75,000	\$300,000
121086	Replace 2 Fixed-Route Vehicles				\$1,420,000	\$1,420,000
Lebanon Transit TIP Total		\$20,486,222	\$20,369,083	\$5,737,455	\$7,631,536	\$54,224,296

Table 25 – Lebanon County MPO Twelve-Year Program (TYP) Projects (2029-2036)

Key to Phases: C = Construction; F = Final Design; P = Preliminary Engineering; R = Right-of-Way Acquisition; S = Study; U = Utilities

Project Type	Project #	Project Name	Map Ref #	Municipality	Phase	Project Cost (2029-32)	Project Cost (2033-36)	Total TYP Cost
Bridge	20299	Levan’s Iron Bridge CO-5	2	Swatara (TWP)	C	\$1,638,864		\$1,638,864
Bridge	20364	Yortys Bridge Road CO-22	3	North Annville (TWP)	C	\$4,290,000		\$4,290,000
Bridge	78751	SR 117 Over Conewago Crk	4	South Londonderry (TWP)	P	\$150,000		\$307,712
					C		\$157,712	
Bridge	87477	East Main Street Bridge	5	Bethel (TWP)	P	\$117,000		\$949,064
					C		\$832,064	
Bridge	87835	Bridge Reserve			C	\$7,783,348	\$5,139,879	\$12,923,227
Highway Construction	87838	Highway Reserve			C	\$12,883,361	\$5,076,860	\$17,960,221
Safety	87841	CMAQ Line Item			C	\$5,521,000	\$3,241,588	\$8,762,588
Safety	87847	HSIP Line Item			C	\$2,714,000	\$5,427,000	\$8,141,000
Bridge	88973	SR 4019 over Vesle Run	7	East Hanover (TWP)	P	\$400,000		\$2,035,018
					C		\$1,635,018	
Bridge	90340	Ebenezer Road Bridge	8	Union (TWP)	P	\$150,000		\$1,323,972
					C		\$1,173,972	
Bridge	91347	PA 501 Bridge 2	10	Heidelberg (TWP)	P	\$121,000		\$910,435
					C		\$789,435	
Safety	97161	Cornwall Traffic Signals	13	North Cornwall (TWP) & Lebanon (City)	P	\$327,000		\$2,931,412
					C		\$2,604,412	
Bridge	100262	Bohns Lane over I-81	15	Union (TWP)	P	\$357,000		\$1,915,674
					C		\$1,558,674	
Bridge	100264	Harrison Road over I-81	16	East Hanover (TWP)	P	\$200,000		\$1,373,972
					C		\$1,173,972	
Bridge	100279	Weavertown Road over NS	17	Jackson (TWP)	P	\$293,574		\$1,248,588

Project Type	Project #	Project Name	Map Ref #	Municipality	Phase	Project Cost (2029-32)	Project Cost (2033-36)	Total TYP Cost
					C		\$955,014	
Bridge	100282	US322 over Quentin Rd	18	West Cornwall (TWP)	P	\$150,000		\$511,222
					C		\$361,222	
Bridge	100283	Millbach Road ov Mill Cr	19	Mill Creek (TWP)	P	\$150,000		\$962,750
					C		\$812,750	
Bridge	100291	Horseshoe Pike ov Beck Cr	20	West Cornwall (TWP)	P	\$150,000		\$1,053,056
					C		\$903,056	
Bridge	100294	SR 4005/Trib Swatara Cr	21	North Annville (TWP)	P	\$150,000		\$1,053,056
					C		\$903,056	
Bridge	100302	Harrison Rd ovr Spring Cr	22	Annville (TWP)	P	\$150,000		\$1,233,667
					C		\$1,083,667	
Bridge	100305	Cumberland St Bridge 2	23	Jackson (TWP)	P	\$150,000		\$1,685,195
					C		\$1,535,195	
Bridge	100306	Lincoln Schl Rd/Mill Cr	24	East Hanover (TWP)	P	\$150,000		\$1,233,667
					C		\$1,083,667	
Bridge	100309	Jonestown Rd/Raccoon Cr	25	East Hanover (TWP)	P	\$150,000		\$1,504,583
					C		\$1,354,583	
Bridge	100311	Lawn Rd over Conewago Crk	26	South Londonderry (TWP)	P	\$150,000		\$1,685,195
					C		\$1,535,195	
Bridge	100317	Lincoln Avenue Bridge	28	Jackson (TWP)	P	\$150,000		\$1,956,111
					C		\$1,806,111	
Bridge	100326	Fisher Avenue/ Swatara Cr	29	East Hanover (TWP)	P	\$482,000		\$2,829,945
					C		\$2,347,945	
Bridge	100327	Fisher Ave over Forge Ck	30	Union (TWP)	P	\$150,000		\$2,136,722
					C		\$1,986,722	
Bridge	100328	Golf Rd over Little Swatara Ck	31	Bethel (TWP)	C	\$1,985,705		\$1,985,705
Bridge	100330	Horseshoe Pike/Quentin Rd		Cornwall (Borough)	P	\$150,000		

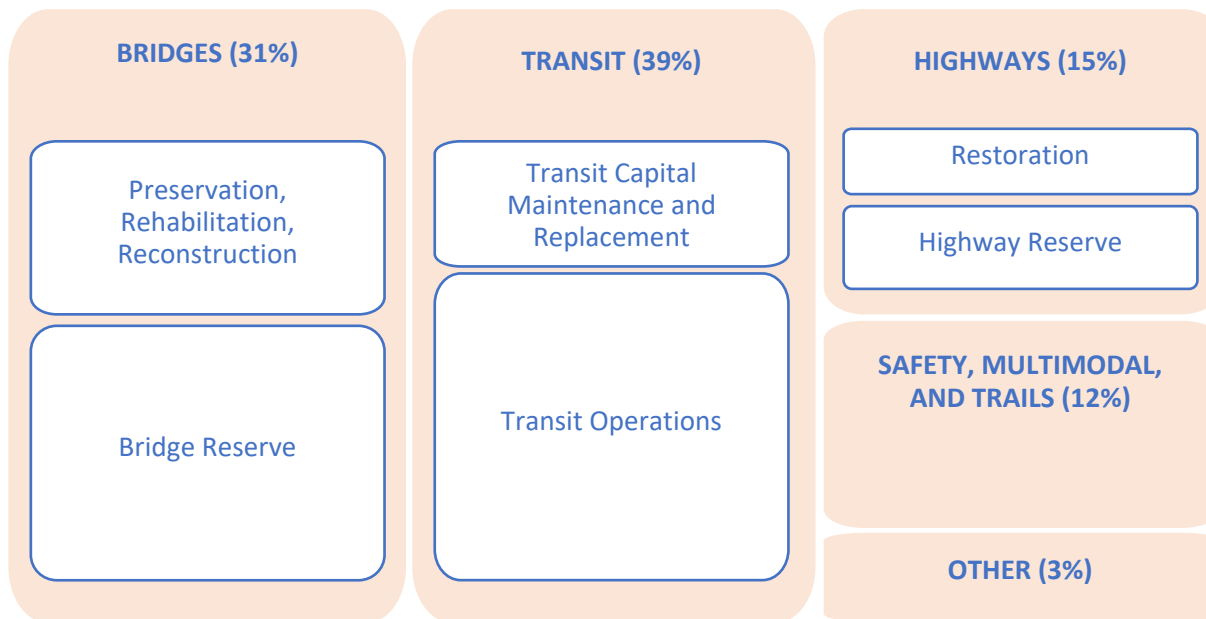
Project Type	Project #	Project Name	Map Ref #	Municipality	Phase	Project Cost (2029-32)	Project Cost (2033-36)	Total TYP Cost
			32		C		\$361,222	\$511,222
Bridge	100332	Earlkill Run Bridge	34	Bethel (TWP)	P	\$150,000		\$2,317,333
					C		\$2,167,333	
Bridge	100333	Allentown Blvd/Fisher Ave	35	East Hanover (TWP)	P	\$150,000		\$1,179,483
					C		\$1,029,483	
Bridge	100337	US 22 Allentown Bl over Deep Run	36	East Hanover (TWP)	C	\$2,406,863		\$2,406,863
Bridge	100338	Ebenezer Rd/Snitz Cr	37	Swatara (TWP)	P	\$150,000		\$1,053,056
					C		\$903,056	
Bridge	100347	Cornwall Rd ovr Snitz Ck	39	Cornwall (Borough)	P	\$150,000		\$1,414,278
					C		\$1,264,278	
Bridge	100349	US 22 over Reeds Ck Brdg	40	East Hanover (TWP)	P	\$150,000		\$4,484,667
					C	\$424,862	\$3,909,805	
Bridge	100350	Pine Grove St over Elizabeth Run	41	Bethel (TWP)	C		\$1,140,609	\$1,140,609
Bridge	100351	Ebenezer Rd over Forge Ck	42	Union (TWP)	P	\$150,000		\$1,053,056
					C		\$903,056	
Bridge	100352	Beach Run Bridge	43	Bethel (TWP)	P	\$150,000		\$1,143,361
					C		\$993,361	
Bridge	100353	Greble Road Bridge	44	Swatara (TWP)	P	\$150,000		\$1,143,361
					C		\$993,361	
Bridge	100354	Mountain Road Bridge	45	East Hanover (TWP)	P	\$150,000		\$1,233,667
					C		\$1,083,667	
Highway Resurfacing	113316	PA 443 Old State Rd Resurface	51	Union (TWP)	C	\$6,738,838		\$6,738,838
Safety	116163	PA 343 Seventh Street Improvements	53	North Lebanon (TWP)	C	\$2,444,228		\$2,444,228
Safety	116164	US 422 Cumberland St and Prescott Rd Int	54	North Lebanon (TWP) & South Lebanon (TWP)	C	\$1,467,691		\$1,467,691

Project Type	Project #	Project Name	Map Ref #	Municipality	Phase	Project Cost (2029-32)	Project Cost (2033-36)	Total TYP Cost
Bridge	117411	US322 Horsheshoe Pk ovr Killinger Crk	56	South Annville (TWP)	C	\$556,764		\$556,764
Bridge	117412	PA72 Ebenezer Rd over Trib to Swatara Crk	57	Union (TWP)	C	\$451,610		\$451,610
Bridge	117488	US 422 Main Street over Quittapahilla Creek	58	Annville (TWP)	C	\$4,316,499		\$4,316,499
Safety	117496	PA 501 Stiegel Pk and Reistville Rd	59	Jackson (TWP) & Heidelberg (TWP)	C	\$1,181,383		\$1,181,383
Other	119290	Carbon Reduction Program (CRP) Lebanon MPO			C	\$2,596,000	\$2,595,000	\$5,191,000
Bridge		Rapid Bridge Replacement Program			C	\$241,190	\$244,710	\$485,900
Total TYP						\$65,389,780	\$63,067,710	\$128,457,490

Table 26 – Lebanon Transit Twelve-Year Program (TYP) Projects (2029-2036)

Project Name	Project Costs (2029-2032)	Project Costs (2033-2036)	Total Costs
Replace 15 Fixed-Route Vehicles (2029-36)	\$5,400,000	\$5,100,000	\$10,500,000
Replace 12 Paratransit Vehicles (2029-36)	\$1,100,000	\$1,200,000	\$2,300,000
Replace Computers/IT (2029-44)	\$80,000	\$80,000	\$160,000
Misc. Maintenance (2029-44)	\$375,000	\$400,000	\$775,000
Operating Assistance (2029-44)	\$23,928,437	\$27,226,909	\$51,155,346
Lebanon Transit TYP Total	\$30,883,437	\$34,006,909	\$64,890,346

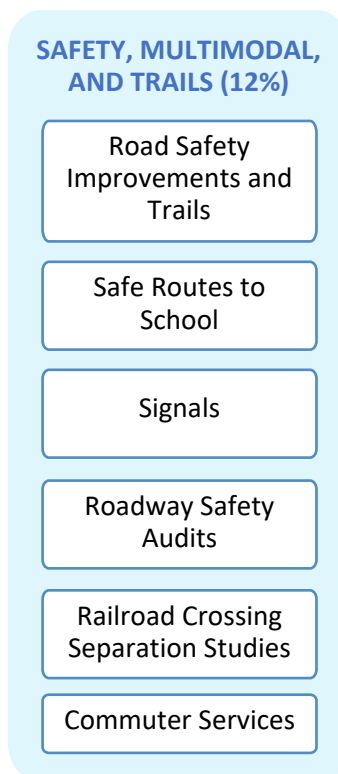
Programmatic Investment Categories (2037-2044)



The last eight years of the LRTP, 2037 through 2044, do not have specific projects programmed given the small amount of funding available to Lebanon County and the uncertainty of precise needs 12 years into the future. These programmatic investment categories are meant to demonstrate the types of investments the MPO will fund with those revenues. These are based on:

- **Funding source eligibility**, with certain sources restricted to specific project types (e.g., Highway Safety Improvement Program (HSIP) funds must go to infrastructure safety improvements).
- The **LRTP Goals** established by the Steering Committee with input from public engagement.
- Needs identified by the **LRTP modal analysis**, the county, municipalities, and state.
- Priority investment types identified by the community through **LRTP outreach**.

This figure is meant to give an idea of the relative size of each investment category (not to precise scale). It is important to note that the **need for investment in every category is greater than the forecasted funding availability**. The municipalities, MPO, PennDOT, and other project partners should work together to help bring



additional revenues for transportation projects to Lebanon County.

Illustrative Projects

Projects included within an MPO LRTP must be fiscally constrained and are subject to Clean Air Act requirements. However, federal transportation law does allow for the listing of “illustrative” projects. Illustrative projects are those projects that are identified to advance a long-range vision but lack funding to advance, design, and implement. **The list is “illustrative” of the need for investment in Lebanon’s transportation system that exceeds reasonably anticipated forecasted funds in this plan.** Such projects require continuous, strong support from municipalities and other stakeholders to seek out funding opportunities to plan, design, and/or implement.

The list of illustrative projects was derived from a combination of sources, including:

- An analysis of data presented in the Transportation System Overview section.
- Public and stakeholder involvement including public meetings, online and paper surveys, and online mapping.
- Municipal comprehensive plans, official maps, and other studies conducted by local government.
- A call for projects to municipalities and other stakeholders for the LRTP.

The illustrative projects are listed in Table 27 and mapped in Figure 45. Many of these illustrative projects are conceptual and will require additional study and analysis to define the project need, scope, cost, and schedule. Project costs have been estimated where practical. As funding is identified, Lebanon County can choose to prioritize these ideas over time, conduct feasibility/needs studies, consider environmental impacts, identify available funding, determine implementation responsibilities, and develop a feasible schedule for construction.

Table 27 – 2024-2044 LRTP Illustrative (Unfunded) Projects

Project Name	Map Ref #	Municipality	Scope of Work	Total Project Cost	Project Source
25th Street Bridge Feasibility Study	1	North Lebanon (TWP)	One-year detailed study	\$750,000	2024 Call for Projects
422 East	2	Lebanon (City)	Repaving	\$3,400,000	2020 LRTP Municipal Project
72 North	3	Lebanon (City)	Repaving	\$3,200,000	2020 LRTP Municipal Project
72 South	4	Lebanon (City)	Repaving	\$3,700,000	2020 LRTP Municipal Project
Alcoa Spur Trail	5	South Lebanon (TWP)	To establish an east-west spur for LVRT to connect various commercial/industrial developments off State Drive	\$800,000	2024 Call for Projects and 2020 LRTP Illustrative Project
Blackberry Street	6	Jonestown (Borough)	Repaving		2020 LRTP Municipal Project
Boyd Street Spur Trail	7	Cornwall (Borough)	To establish a spur for LVRT to a nearby existing residential development and camp, and to connect with future Byler development	\$1,000,000	2024 Call for Projects
Center Avenue	8	Myerstown (Borough)	Reconstruction	\$140,000	2020 LRTP Municipal Project
Center Avenue	8	Myerstown (Borough)	Milling/overlay	\$68,000	2020 LRTP Municipal Project
Center Street, Church Street, Broad Street	9	Swatara (TWP)	Resurface	\$80,000	2020 LRTP Municipal Project
Chestnut Street	10	Jonestown (Borough)	Repaving and ADA ramps		2020 LRTP Municipal Project
Coleman Memorial Park / Union Canal Tunnel Park Spur Trail	11	Lebanon (City) & West Lebanon (TWP) & North Lebanon (TWP)	To encourage people to visit the parks on foot or by bicycle	\$800,000	2024 Call for Projects
Cornwall Spur Rail Trail	12	Cornwall (Borough)	Construct trail along abandoned Norfolk Southern line from Cornwall Trail head to Cornwall Furnace Historic Site	\$100,000 - \$500,000	2020 LRTP Illustrative Project
Distillery Road	13	Heidelberg (TWP)	Roadway improvements	\$100,000	2020 LRTP Municipal Project
Downtown Streetscape		Lebanon (City)	Pedestrian improvements	\$2,400,000	2020 LRTP Municipal Project
Governor Dick Spur Trail	14	West Cornwall (TWP)	To establish a spur to the well-used Governor Dick Park and to provide a safe crossing of PA 117	\$200,000	2024 Call for Projects

Project Name	Map Ref #	Municipality	Scope of Work	Total Project Cost	Project Source
Hill Church Road (SR 4004) at Thompson Avenue (SR 4005)	15	North Annville (TWP)	Roadway Safety Audit	\$30,000	2020 LRTP Illustrative Project
I-78	16	Bethel (TWP)	Complete the interchanges at Exits 6 and 8	>\$50,000,000	2020 LRTP Illustrative Project
I-78 & I-81	17	Union (TWP)	Extend the left lane merge lane from I-78 West to I-81 South	\$1,000,000 - \$5,000,000	2020 LRTP Illustrative Project
I-78/PA 72	18	Union (TWP)	Construct new interchange	\$30,000,000 - \$50,000,000	2020 LRTP Illustrative Project
Inwood Iron Bridge Pocket Park Spur Trail	19	Swatara (TWP)	Short spur trail to encourage people to visit the pocket park and learn about the historic truss bridge	\$300,000	2024 Call for Projects
Jonestown Park Walking Trails	20	Jonestown (Borough)	Paving of park trails		2020 LRTP Municipal Project
Jonestown Spur Trail	20	Jonestown (Borough) & Union (TWP)	To establish an east-west spur for LVRT to connect with the community park and other key destinations in Jonestown Borough and Union Township	\$750,000	2024 Call for Projects
Lebanon Valley College (LVC) East-West Spur Trail	21	North Lebanon (TWP) & Cleona (Borough) & Annville (TWP) & North Annville (TWP) & South Annville (TWP)	To establish an east-west connector trail to key destinations in the county.	\$8,000,000	2020 LRTP Illustrative Project
Lebanon Valley Rail Trail (LVRT) Asset Management		County-wide	Implement 2020 asset management plan and update the plan in 2030	\$100,000	2020 LRTP Illustrative Project
Louser Road at PA 934	22	South Annville (TWP)	Install traffic signal		2020 LRTP Municipal Project
Louser Road/Reigerts Lane	22	South Annville (TWP)	Widen and resurface		2020 LRTP Municipal Project
LVRT Phase 10B*	23	Swatara (TWP) & Union (TWP)		\$3,490,000	2020 LRTP Illustrative Project; 2024 Call for Projects

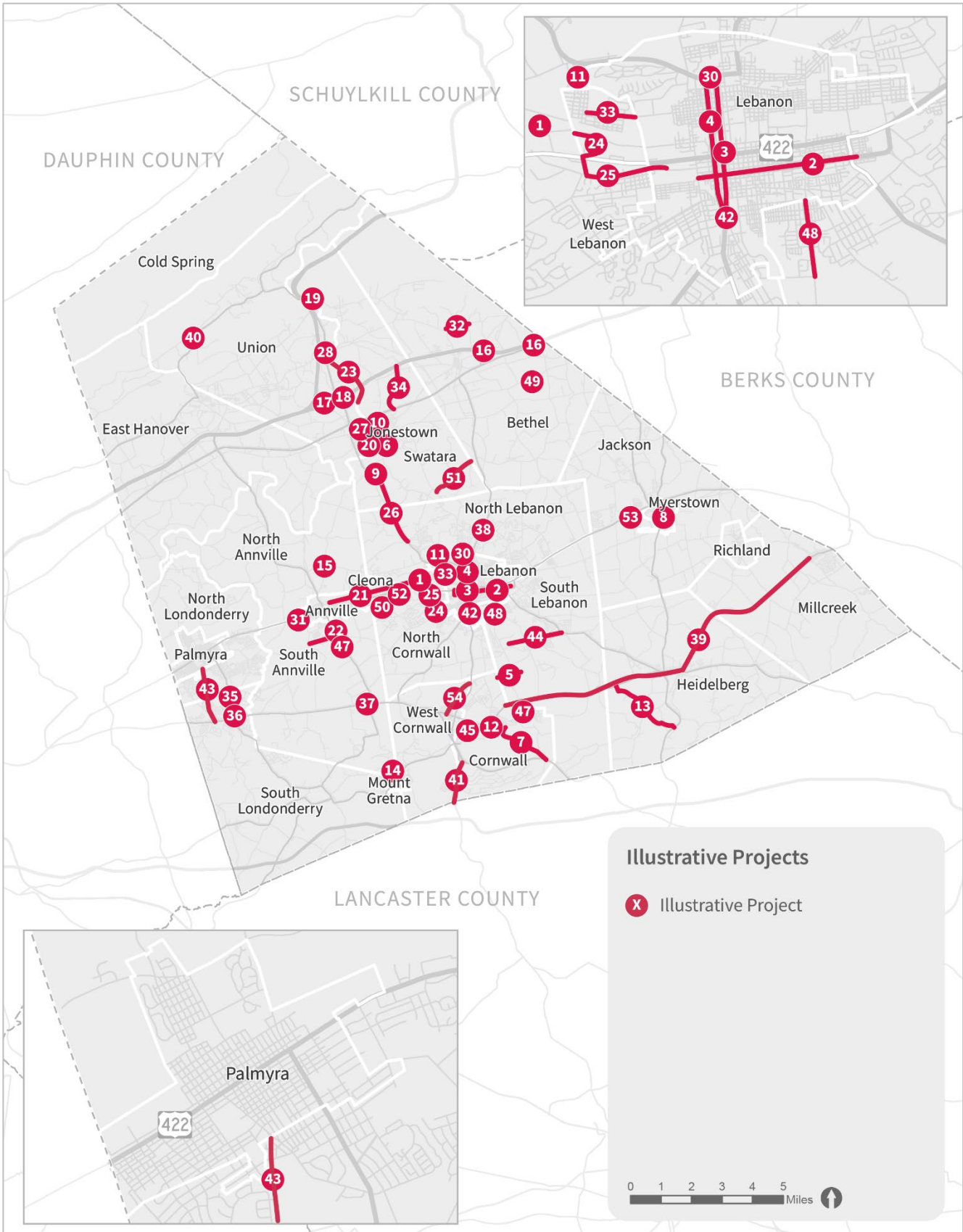
Project Name	Map Ref #	Municipality	Scope of Work	Total Project Cost	Project Source
LVRT Phase 6C	24	North Cornwall (TWP)	The rail-trail will run on the west side of S. 22nd Street. A new bridge will be built and from that new bridge the roadway will be relocated to a new and safer connection with southbound 22nd Street. The project is being tied into the ongoing stormwater management project for the Quittapahilla Creek so roadway flooding will be greatly reduced. Lebanon Transit and emergency vehicles also use S. 22nd Street. There will also be intersection safety and access improvements at US 422 and S. 22nd Street.	\$4,970,000	2024 Call for Projects
LVRT Phase 6D	25	West Lebanon (TWP) & North Lebanon (TWP)	This will be an easement through the LV Mall property; new demand actuated signals for the underpass to let bicyclists and pedestrians pass through the tunnel while opposing traffic is stopped. The last piece of Phase 6D will be located on the west side of 25th Street to a connection with existing Phase 7.	\$500,000	2020 LRTP Illustrative Project; 2024 Call for Projects
LVRT Phase 8	26	North Lebanon (TWP) & Swatara (TWP)	From the northern-most part of the completed Phase 7 at Long Lane; using the former rail bed going north to the existing tunnel under PA 72; and just north to where Phase 8 will tie into the existing Phase 9 in North Lebanon and Swatara Townships, a distance of 2.80 miles.	\$4,100,000	2020 LRTP Illustrative Project; 2024 Call for Projects
LVRT Rectangular Rapid Flashing Beacons (RRFBs)		Jonestown (Borough) & North Lebanon (TWP) & Lebanon (City) & Cornwall (TWP) & Mt. Gretna (Borough) & South Londonderry (TWP)			2020 LRTP Illustrative Project; 2024 Call for Projects
LVRT Section 9 Tunnel Repair	27	Swatara (TWP)	Repair leaks in tunnel	\$175,000	2024 Call for Projects
LVRT Trailhead Development	28	Union (TWP)	Develop trailhead along PA 72 in Union Township	\$50,000	2020 LRTP Illustrative Project
LVRT User Survey and Economic Impact Analysis			Study/analysis	\$125,000	2024 Call for Projects

Project Name	Map Ref #	Municipality	Scope of Work	Total Project Cost	Project Source
Madison Alley	8	Myerstown (Borough)	Oil and chip	\$6,000	2020 LRTP Municipal Project
Main Avenue	8	Myerstown (Borough)	Repaving	\$82,000	2020 LRTP Municipal Project
Maple Street	30	Lebanon (City)	Convert 900 block of Maple St from one-way to two-way operations	\$100,000	2020 LRTP Illustrative Project
Mount Pleasant at US 422	31	South Annville (TWP)	Relocate traffic signal		2020 LRTP Municipal Project
Mountain Drive (Mechanic St to Snow Dr)	32	Bethel (TWP)	New base and overlay pavement	\$250,000	2020 LRTP Municipal Project
N 16th Street at Lehman Street/N 22nd Street at Lehman Street	33	West Lebanon (TWP)	Signal and widening	\$750,000	2020 LRTP Municipal Project
North Locust Street	8	Myerstown (Borough)	Oil and chip/ADA improvements	\$45,000	2020 LRTP Municipal Project
North Mill Street	34	Swatara (TWP)	Resurface	\$175,000	2020 LRTP Municipal Project
PA 117 at Airport Road	35	South Londonderry (TWP)	Intersection Improvement - Signal/Roundabout		2020 LRTP Municipal Project
PA 117 at Hinkle Road	36	South Londonderry (TWP)	Realignment project		2020 LRTP Municipal Project
PA 241 at US 322	37	West Cornwall (TWP)	Signal upgrade	\$70,000	2020 LRTP Municipal Project
PA 343 at Kimmerlings Road	38	North Lebanon (TWP)	Roadway Safety Audit	\$30,000	2020 LRTP Illustrative Project
PA 419 Scenic Byway Improvements	39	Cornwall (Borough) & South Lebanon (TWP) & Heidelberg (TWP) & Millcreek (TWP)	Widen shoulders or consider sidepath from Cornwall to Newmanstown	\$1,000,000 - \$5,000,000	2020 LRTP Illustrative Project
PA 443 at Ridge Road	40	Union (TWP)	Bridge replacement	\$270,000	2020 LRTP Municipal Project
PA 72	41	Cornwall (Borough) & West Cornwall (TWP)	Continue truck climbing lane and provide turning lanes from the Lancaster County line to US 322	\$5,000,000 - \$15,000,000	2020 LRTP Illustrative Project
PA 72 Roundabout	42	Lebanon (City)	Construct roundabout at the intersections of South 9th & 10th Streets/Poplar Street, Quentin Rd	\$1,000,000 - \$5,000,000	2020 LRTP Illustrative Project
Palmyra to Campbelltown Active Transportation Connection	43	Palmyra (Borough) & North Londonderry (TWP) & South Londonderry (TWP)	Provide north-south shared-use path to serve as spine for non-motorized users to link to existing east-west facilities	\$1,000,000 - \$5,000,000	2020 LRTP Illustrative Project

Project Name	Map Ref #	Municipality	Scope of Work	Total Project Cost	Project Source
Phase 2 South Lebanon Township Trail	44	South Lebanon (TWP)	Construct trail from CLSD High School to CLSD Elementary School	\$650,000	2020 LRTP Illustrative Project
Quentin Spur Trail	45	Cornwall (Borough) & West Cornwall (TWP)	To establish a north-south spur for LVRT to connect with current and future development in Quentin and to tie in to the sprawling Alden Place 55+ residential development	\$350,000	2024 Call for Projects
Railroad Street	8	Myerstown (Borough)	Repaving	\$128,000	2020 LRTP Municipal Project
Railroad Street	8	Myerstown (Borough)	Cold in-place recycling	\$220,000	2020 LRTP Municipal Project
Rexmont Spur Trail	46	Cornwall (Borough)	To establish an east-west spur that connects two very important local parks to LVRT	\$750,000	2020 LRTP Illustrative Project
Royal Road at PA 934	47	South Annville (TWP)	Install traffic signal		2020 LRTP Municipal Project
S Lincoln Ave Pedestrian Safety Project*	48	South Lebanon (TWP)	S Lincoln Avenue from Township line to Wilhelm Ave in South Lebanon Township	\$525,369	2024 Call for Projects
Shirksville Road/Earlakill Run	49	Bethel (TWP)	Replace bridge deck and support beams	\$200,000	2020 LRTP Municipal Project
South Broad Street	8	Myerstown (Borough)	Repairs	\$15,000	2020 LRTP Municipal Project
South Broad Street	8	Myerstown (Borough)	Fibermat	\$100,000	2020 LRTP Municipal Project
South Locust Street	8	Myerstown (Borough)	Microsurface	\$16,300	2020 LRTP Municipal Project
South Wilson St and East Walnut St	50	Cleona (Borough)	Repair and resurface	\$200,000	2020 LRTP Municipal Project
Troy Avenue	51	Swatara (TWP)	Widen and resurface	\$370,000	2020 LRTP Municipal Project
US 422 from Mill St to Christian St	52	Cleona (Borough)	Proposed improvements include restriping, RRFBs and curb extensions at 4-6 key intersections, emergency beacons at 2 unsignalized intersections, signal upgrades at Center and Mill St, improved lighting, and a potential gateway treatment near Christian	\$1,815,895	US/SR 422 Complete Streets Study, 2023
West Main Avenue	53	Jackson (TWP)	Culvert replacement	\$77,000	2020 LRTP Municipal Project
Zinns Mill Road	54	West Cornwall (TWP)	Overlay	\$200,000	2020 LRTP Municipal Project

*In Spring 2024, these projects were awarded TASA funding from PennDOT. These projects will advance and be amended into the 2025-28 TIP as necessary.

Figure 45 – Lebanon County Illustrative Projects



IMPLEMENTATION ACTION PLAN

As noted in the Vision and Goals section, nine specific transportation goals were established to direct the future of transportation within Lebanon County. These goals were developed as a collaborative effort between the MPO and stakeholders, in harmony with overall statewide long-range plan goals. They are intended to ensure that resources are directed to the types of projects and actions that will move Lebanon County toward its long-range transportation vision.

Due to chronic capacity and funding constraints, little progress has been made on implementation actions from the previous plan (a list of the 2020 LRTP implementation actions is included in Appendix E). This LRTP update streamlined the number of implementation actions, in dialogue with stakeholders and the public, and identified nine action-oriented priorities that represent consensus on approaches to advancing the transportation goals and vision of this plan. The nine actions included here provide direction to the MPO and its partner agencies and stakeholders on how to support and facilitate the long-term health of the county's transportation system. While the MPO is a lead or support agency for many of these actions, successfully meeting each of the critical path items should not be beholden to current MPO staff. Many of these actions will only be achieved with additional staff capacity and active stakeholder leadership and participation.

These actions were identified through extensive data analyses (System Overview), municipal outreach, public involvement, and stakeholder outreach. Each action is paired with a "critical path" table that lists next steps, lead organizations, and approximate timelines. The actions and critical path tables are shown in Table 28. These actions are intended to promote continued and represent aspirations for the future of the County. The MPO and its stakeholders should systematically report the status of the relevant action implementation and continually identify new actions as warranted.

Table 28 – Implementation Actions

1. Increase staff capacity at the MPO to keep pace with county growth and development demands.

Critical Path Item	Lead	Timeline
1.1 Meet with FHWA, PennDOT, and Lebanon County Commissioners to discuss Lebanon County growth and need for more staff capacity, including for LRTP implementation.	LEBCO MPO	Fall 2024
1.2 Solicit applications, interview, hire, and onboard qualified candidate(s).	LEBCO MPO	Winter 2024/2025
1.3 Assign the execution and supervision of the LRTP Implementation Actions to new staff.	LEBCO MPO	Spring 2025

2. Provide additional opportunities for ongoing collaboration among municipalities and between municipalities and the MPO.

Critical Path Item	Lead	Timeline
2.1 Supplement existing annual municipal meeting with quarterly meetings for interested municipalities to encourage inter-municipal collaboration.	LEBCO MPO & Municipalities	Semi-annual or annual
2.2 Consider featuring select municipalities at each monthly MPO meeting on a rotating schedule. <i>Ex. – February’s meeting features representatives from Cleona Borough and Annville Township.</i>	LEBCO MPO & Municipalities	Monthly

3. Develop guidance for municipalities that are considering freight management tools such as changes to truck parking and/or implementing transportation demand management tools.

Critical Path Item	Lead	Timeline
3.1 Using the Northampton County Freight-Based Land Use Management Guide as an example, partner with a municipality to provide guidance for developing model ordinances and model land use overlays.	LEBCO MPO & Partner Municipality	Fall/Winter 2024
3.2 Hold focus groups with municipalities to draft freight guidance and solicit feedback.	LEBCO MPO & municipalities	Spring 2025
3.3 Present guidance for model ordinances and land use overlays to municipalities at annual municipal meeting. LEBCO to provide support for follow-up and questions.	LEBCO MPO & municipalities	Fall 2025

4. Dedicate resources to support Eastern PA Freight Alliance.

	Critical Path Item	Lead	Timeline
4.1	Participate in regularly scheduled Eastern PA Freight Alliance meetings.	LEBCO MPO and Eastern PA Freight Alliance	Fall 2024
4.2	Leverage Regional Action Plan within Eastern PA Freight Infrastructure Plan to prioritize freight infrastructure investments and policy decisions.	LEBCO MPO	Ongoing

5. Encourage direct warehouse access to rail lines through local land use ordinances and planning.

	Critical Path Item	Lead	Timeline
5.1	Partner with the Lebanon Valley Chamber of Commerce to support guidance for the identification and development of rail-served sites for customers that need rail access, with the goal of limiting development of these sites for non-rail customers.	LEBCO MPO & Lebanon Valley Chamber of Commerce	Fall 2024

6. Support a community-led bicycle/pedestrian advisory group – include coordination on resurfacing opportunities and set up recurring coordination with advisory group at MPO meetings.

	Critical Path Item	Lead	Timeline
6.1	Invite interested parties to discuss the potential role of a bicycle/pedestrian advisory group.	LEBCO MPO	Fall 2024
6.2	Formalize bicycle/pedestrian advisory group goals, activities, members.	Advisory Group and LEBCO MPO	Winter 2024, recurring biannual
6.3	Coordinate with advisory group to include agenda items at MPO meetings.	Advisory Group and LEBCO MPO	Recurring monthly

7. Develop an investment strategy for the County Liquid Fuels program to provide funding for the county bridges and other local infrastructure needs.

	Critical Path Item	Lead	Timeline
7.1	Evaluate condition of county bridges and determine funding required for maintenance and repair.	LEBCO MPO	Annual
7.2	Proactively coordinate with municipalities to develop list of priority projects. Identify which are eligible for Liquid Fuels Program funding and identify additional outside sources (including IIJA/IRA opportunities) of funding when appropriate.	LEBCO MPO & municipalities	Annual
7.3	Optional: Develop a high-level schedule of upcoming opportunities with lead time for grant application development.	LEBCO MPO	Ongoing

8. Work to advance an MPO Congestion Monitoring Process to evaluate the county’s roadway network and work to reduce congestion.

	Critical Path Item	Lead	Timeline
8.1	Develop a list of areas of congestion concerns from LRTP update process and ongoing public/stakeholder feedback.	LEBCO MPO	Fall 2024, ongoing updates
8.2	Identify congestion metrics using NPMRDS user congestion costs. Establish thresholds to monitor roadway congestion.	LEBCO MPO	Winter 2024/2025, then annually
8.3	Annually review congestion metric across county roadways to determine which roadway segments are exceeding thresholds.	LEBCO MPO	Spring 2025, then annually
8.4	Present congestion findings at annual municipal meeting and discuss potential project ideas and next steps (such as corridor studies, traffic signal improvements).	LEBCO MPO	2025, then annually

9. Track county progress on LRTP goals through an interim review of performance measures between LRTP publications.

	Critical Path Item	Lead	Timeline
9.1	Compile relevant data and evaluate performance measures progress every two years (between LRTP updates).	LEBCO MPO	2026, then biennially between LRTPs
9.2	Present interim performance measure progress biennially at MPO meeting.	LEBCO MPO	2026, then biennially between LRTPs

LIST OF ACRONYMS

AADT	Annual Average Daily Traffic	LT	Lebanon Transit
ACS.....	American Community Survey	LTAP.....	Local Technical Assistance Program
BMS.....	Bridge Management System	LVBC.....	Lebanon Valley Bicycle Coalition
CAAA	Clean Air Act Amendments	LVRT.....	Lebanon Valley Rail Trail
CLF	County Liquid Fuels	MAP-21.....	Moving Ahead for Progress in the 21st Century Act of 2012
CMAQ	Congestion Mitigation and Air Quality	MLF	Municipal Liquid Fuels
CO	Carbon Monoxide	MPO	Metropolitan Planning Organization
DBE	Disadvantaged Business Enterprise	NAAQS	National Ambient Air Quality Standard
DEP	Pennsylvania Department of Environmental Protection	NHS.....	National Highway System
DVMT.....	Daily Vehicle-Miles Traveled	NOx	Nitrogen Oxides
EJ	Environmental Justice	NPMRDS.....	National Performance Management Research Data Set
EPA.....	U.S. Environmental Protection Agency	NS	Norfolk Southern
FAA.....	Federal Aviation Administration	PennDOT	Pennsylvania Department of Transportation
FAST	Fixing America's Surface Transportation Act of 2015	PM	Particulate Matter
FHWA	Federal Highway Administration	PPP	Public Participation Plan
FTA.....	Federal Transit Administration	PTC	Pennsylvania Turnpike Commission
GIS.....	Geographic Information Systems	SPF.....	Safety Performance Functions
HHS.....	Health and Human Services	SR.....	State Route
HIA	Harrisburg International Airport	STIP.....	State Transportation Improvement Program
HSM.....	Highway Safety Manual	TIP	Transportation Improvement Program
IIJA.....	Infrastructure Investment and Jobs Act of 2021	TYP	Twelve-Year Program
IRA.....	Inflation Reduction Act of 2022	UPWP	Unified Planning Work Program
IRI.....	International Roughness Index	VOC	Volatile Organic Compound
LEBCO MPO ..	Lebanon County Metropolitan Planning Organization		
LEHD	Longitudinal Employer-Household Dynamics		
LEP	Limited English Proficiency		
LRTP.....	Long-Range Transportation Plan		