

6 TRANSPORTATION



OUR TRANSPORTATION SYSTEM

Transportation infrastructure in the Region consists of the street and highway network serving motorized and non-motorized (bicycle and pedestrian) travelers; Norfolk Southern's Harrisburg Line; transit service provided by Lebanon Transit; and sidewalk systems in a limited number of neighborhoods. The Lebanon Valley Rail Trail passes through the region, offering a daytime transportation and recreation corridor. There are no public aviation or passenger rail facilities. This composition is typical of a rural transportation system, however it is increasingly inadequate for the needs of this diverse, growing region.

LEBANON COUNTY METROPOLITAN PLANNING ORGANIZATION

This same challenge of a rural system serving an urbanizing region exists for the county as a whole. Since 2003, the Lebanon County Metropolitan Planning Organization (LEBCO MPO) has provided continuous attention to the transportation needs of Lebanon County to help the county prosper. The MPO Policy Board and Technical Committee include representatives from county and local government (elected officials, planning department, emergency management), local transit, aviation, and trail organizations, business and industry (including agriculture and tourism), as well as state and federal transportation agencies. The agency prepares short- and long-range transportation plans, conducts associated public involvement activities, and provides a collaborative planning forum to address countywide and regional transportation-related issues through discussion, training, studies, and planned projects. In addition, the MPO serves as a liaison to PennDOT county maintenance, District 8-0, and central office staff, as well as to the Federal Highway Administration and Federal Transit Administration.

The MPO also serves as a liaison to PennDOT's Local Technical Assistance Program (LTAP). Municipalities can request LTAP planners and engineers to evaluate an intersection or bridge. Requests can be made through the MPO, or municipalities may contact LTAP directly. A local example includes an assessment performed in the City to explore improved access to Coleman Park.

INCREASING TRAVEL DEMAND AND EXPANDING STREET/HIGHWAY SUPPLY

STATE-OWNED HIGHWAYS

Data from PennDOT's Bureau of Planning and Research indicate that travel demand on the state-owned roadway network within the region increased slightly for the ten year period ending 2009, to a total of nearly 470,000 daily vehicle miles of travel (DVMT), as shown in Table 6-1 and Figure 6-1. A decline in Cornwall Borough due to changes in the traffic volumes on US Route 322 were offset by growth in other municipalities.

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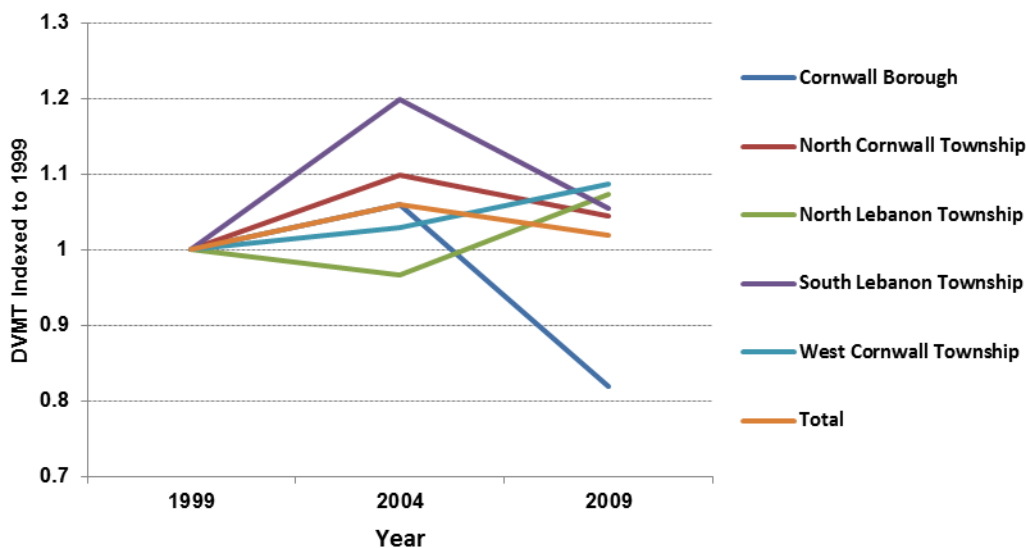
Changes in travel demand on the state-owned roadway network have remained nearly the same over the past decade. (The amount of travel on local roads is not recorded by PennDOT, so travel demand for local networks is not available.) It should be noted that travel demand nationally was down in 2008-09 due to the weak economy.

Table 6-1 Daily Vehicle Miles of Travel (DVMT) on State-owned Roadway, Various Years

Municipality	1999	2004	2009
CLSD Region	459,741	487,142	468,174
Cornwall Borough	86,786	91,929	71,004
North Cornwall Township	84,853	93,210	88,676
North Lebanon Township	129,061	124,773	138,408
South Lebanon Township	80,711	96,738	85,107
West Cornwall Township	76,331	78,488	82,970

Source: PennDOT Bureau of Planning and Research

Figure 4-1 Change in Daily Vehicle Miles of Travel, 1999, 2004, 2009



Source: PennDOT Bureau of Planning and Research

Data from PennDOT's Bureau of Planning and Research indicate that the heaviest traveled state-owned roadways within the region are numbered routes such as US 322, US 422 and PA 72. Table 6-2 lists 2009 and 2002 traffic volumes for selected state highway in the region. The data show that increases in traffic volume are generally in line with the state average of 2 to 2½ percent annually, though several roadways exhibited decreases in traffic volume.

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Table 6-2 Annual Average Daily Traffic on Selected, High-Volume Roadways

Roadway	Location	Annual Average Daily Traffic (AADT)		
		2009	2002	Change
US 422	E. of Lebanon City	15,000	19,000	- 4,000
PA 72	S. of Lebanon	14,000	13,000	1,000
PA 72	N. of Lebanon	13,000	11,000	2,000
Cornwall Road/SR2001	North Cornwall Twp	8,900	7,200	1,700
Rocherty Road/Evergreen Road/SR 2002	Cornwall Road to State Drive; Village of Midway	7,700	11,000	- 3,300
7 th St / PA343	N. Lebanon Twp	7,400	8,200	- 800
US 322	S. of Cornwall	6,800	12,000	- 5,200
PA 241	Village of Rocherty	6,800	7,100	- 300
PA 897	South Lebanon Twp	6,400	6,800	- 400
Oak Street/SR3004	North Cornwall	6,100	6,400	- 300
Sandhill Road/Grace Avenue/SR 1003	Village of Sand Hill	5,800	4,600	1,200
Cornwall Road/SR2001	West Cornwall Twp	4,100	3,800	300
State Road/ SR2003	South Lebanon Twp	4,700	4,000	700

Source: PennDOT Bureau of Planning and Research

LOCAL STREETS AND HIGHWAYS

The region has a large and growing roadway network—more than 250 miles of public streets and highways. More than 200 miles of the network are locally-owned and maintained by the municipalities. North Lebanon and South Lebanon have the largest networks at approximately 60 miles each.

For the 10-year period ending 2009, the region added nearly 19 miles to its street and highway network. (Pennsylvania municipalities, on average, add an additional 272 linear miles each year to the public highway network. The mileage of state-owned roadway in the region has remained constant since 1999.) The largest increase was in North Lebanon Township, which added over six miles to its locally-owned roadway network. Table 6-3 lists local roadway mileages and increases by municipality.

Table 6-3 State and Locally-owned Roadway Network (in Miles), Various Years

Municipality	State-Owned Roadway (2009)	Locally-owned Roadway		
		1999	2004	2009
CLSD Region	50.71	183.13	189.75	202.08
Cornwall Borough	8.9	30.22	30.22	32.12
North Cornwall Township	8.82	35.25	37.83	39.68
North Lebanon Township	20.22	55.5	57.49	61.57
South Lebanon Township	20.82	51.88	53.23	57.43
West Cornwall Township	12.77	10.28	10.98	11.28

Source: PennDOT Bureau of Planning and Research

MORE MAINTENANCE WITH SAME OR LESS FUNDS

Road maintenance is a significant service in each municipality. Minor maintenance, including paving and repair, seasonal roadside mowing and brush/tree trimming, and winter snow removal and salting are handled by municipal staff. For these services, opportunities for cost sharing and reduction include

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equipment purchase and maintenance, equipment sharing (if use can be scheduled over a reasonable period), materials purchases, and staff training.

Larger road maintenance and rehabilitation projects and bridge inspections are contracted. Where maintenance/rehabilitation project sites are near a municipal border, the home and neighboring municipality could discuss if maintenance/rehabilitation is needed in nearby areas and, if so, consolidate the projects.

Line painting, street sweeping, sign and signal maintenance, and stormwater facility maintenance services are performed by a mix of municipal staff and contractors. There may be opportunities to share line painting and street sweeping equipment, as well as staff trained to operate them, and to jointly purchase new equipment, including battery back-up systems for traffic signals, both desired by North Cornwall and North Lebanon.

Roadside litter pickup is provided by volunteers through PennDOT's Adopt-a-Highway program. This service beautifies the community and reduces wear and tear on roadside mowing equipment (or the municipal staff time). North Lebanon Township has a similar program for township roads.

Staffing of the road/public works department is similar in Cornwall, North Cornwall, and North Lebanon. South Lebanon supplements its full-time staff with part-time staff and West Cornwall relies primarily on part-time staff. Average hourly wages are similar in value except in West Cornwall, which may be affected by the nature of its part-time staff.

These services rely heavily on their Liquid Fuels Allocations (LFA) from the state for non-staff expenditures and on their General Funds for wages, benefits, and expenses beyond the LFA revenue. Each municipal allocation is determined by a legislated formula, based on population and municipal roadway mileage. The formula for this disbursement is steady but the total disbursement amount varies from year to year based on miles traveled by the public, which generates the gas tax revenues that fund the program.

Table 6-4 Municipal Liquid Fuels Allocation, 2008-11

Municipality	2008	2009	2010	2011
CLSD Region	\$771,402	\$819,878	\$789,507	\$810,378
Cornwall Borough	\$108,860	\$116,789	\$112,176	\$115,210
North Cornwall Township	\$142,730	\$152,245	\$146,297	\$149,784
North Lebanon Township	\$284,806	\$274,872	\$264,099	\$270,373
South Lebanon Township	\$215,211	\$227,773	\$220,623	\$227,598
West Cornwall Township	\$45,536	\$48,199	\$46,312	\$47,413

Source: PennDOT Bureau of Municipal Services

Local disbursements have varied slightly in recent years, from FY 2011's total of \$810,378, which was up 2.7 percent from 2010, yet down overall from 2009's total of \$819,878, as shown in Table 6-4. Overall, LFA revenues have been declining in recent years as travel, fuel consumption and associated gasoline taxes by the statewide public have declined in response to a weak economy, higher fuel prices, and increasing efficiencies in vehicle fuel consumption. (Note: The state gasoline tax has not affected the change in fuel prices. This state tax of \$0.32 per gallon has not changed since 1997.) Though overall travel is down, road maintenance needs continue to accrue since residents still utilize their local roads on a daily basis.

Maintenance and improvement to local roadways is a major cost for municipalities. The source of funding for road work is generally limited to liquid fuels allocations and local general fund revenues from local tax

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receipts. Considering the current financial environment, the goal of most municipalities is to maintain the existing conditions or to extend the life of the roadways through relatively low cost maintenance activities, such as cleaning and sealing cracks in bituminous pavements. In many cases, repair and reconstruction are performed only on an as-needed basis due to insufficient funding to undertake major resurfacing projects. As major roadway repair and reconstruction projects are deferred, the financial needs to repair and maintain the local roadway system will become greater over time.

Data from the Pennsylvania Department of Community and Economic Development (DCED) demonstrate how far liquid fuels allocations go toward meeting the transportation system needs of the region. Table 6-5 shows total spending on public works projects for 2007 to 2009, as reported by the municipalities to DCED. The data show that the region spent \$2.7 million in 2009 to maintain and operate its transportation infrastructure. In the same year, LFA generated \$819,878, only 30.1 percent of highway expenditures.

Table 6-5 Spending on Public Works: Highways and Streets, 2007-09

Municipality	2007	2008	2009
CLSD Region	\$2,912,156	\$2,521,398	\$2,719,334
Cornwall Borough	\$415,122	\$345,344	\$335,977
North Cornwall Township	\$835,066	\$564,393	\$702,069
North Lebanon Township	\$737,121	\$635,822	\$735,149
South Lebanon Township	\$779,476	\$801,324	\$708,428
West Cornwall Township	\$145,371	\$174,515	\$237,711

Source: PA Department of Community and Economic Development

FAVORABLE LOCAL BRIDGE CONDITIONS

There are 14 locally-owned structures in the region that are greater than 20 feet in length, as listed in Table 6-6. All bridges greater than 20 feet in length are required by federal law to be inspected every two years, regardless of ownership. PennDOT monitors Pennsylvania's bridge program, including location inspections, through its Bridge Management System (BMS). Comprehensive data for locally-owned bridges, culverts and other structures less than 20 feet in length is not included in BMS.

The region's locally-owned bridge inventory has an average age of 52, which is in line with the statewide average. The condition of locally-owned bridges compares very favorably with the rest of the state, where 34 percent of such structures are classified as being structurally deficient (by number), and 30 percent by deck area. For the planning area, those rates are 7 and 3 percent, respectively. Only one of these structures has been classified as being structurally deficient and functionally obsolete, namely the Chestnut Street bridge over Quittapahilla Creek. This bridge also has the lowest sufficiency rating of any locally-owned bridge and is the oldest. It is listed on the TIP for replacement, including a wider span and higher elevation, by 2013.

IMPROVING MOBILITY ACROSS RAIL LINES

The Norfolk Southern Harrisburg Line currently passes through the City of Lebanon at-grade, which creates an impediment to emergency responders and an inconvenience for travelers at large, including Cornwall-Lebanon school buses, when trains are passing through the City. The Bridges over Norfolk Southern Project, initiated in 1999, is in the process of constructing bridges on 9th and 10th Streets (PA 72 North and South) to accommodate the continuous flow of traffic. Right-of-way acquisition is underway. Construction began in 2011, with completion anticipated in 2014. Construction costs are estimated at \$23.5 million.

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Table 6-6 Locally-owned Bridges > 20 Feet in Length

Municipality	Route	Feature Intersected	Length	Deck Area	Year Built	Sufficiency Rating	AADT
Cornwall Boro	Burd-Coleman Rd	Snitz Creek	22'	660.0	1930	90.5	450
Cornwall Boro	N Cornwall Rd	Snitz Creek	23'	717.6	1993	97.0	100
N Cornwall Twp	Dairy Rd	Quittapahilla Creek	24'	996.0	2005	92.6	1500
N Cornwall Twp	Dairy Rd	Snitz Creek	29'	1044.0	1993	83.0	500
N Cornwall Twp	Reist Rd	Beck Creek	30'	972.0	1974	86.9	400
N Cornwall Twp	Bricker	Beck Creek	25'	770.0	1973	96.9	500
N Cornwall Twp	Chestnut St	Quittapahilla Creek	28'	504.0	1910	49.2	800
N Cornwall Twp	Walnut St	Snitz Creek	72'	2412.0	1960	88.2	1000
N Cornwall Twp	Rocherty Rd	Snitz Creek	31'	1100.5	1962	93.0	800
N Cornwall Twp	Oak St	Beck Creek	33'	1612.8	1937	67.5	900
N Cornwall Twp	Oak St	Snitz Creek	66'	2349.6	1955	85.6	1000
N Lebanon Twp	Halfway	Tulpehocken Creek	26'	657.8	1930	87.5	150
S Lebanon Twp	Walnut St	Quittapahilla Creek	30'	1170.0	1961	82.6	4000
W Cornwall Twp	Zinns Mill Rd	Snitz Creek	34'	1200.2	1940	97.0	375

Source: Source: PennDOT, Report B for Internet, PA Highway Bridges, Bridges on Local Route System, Length 20' or Greater, 3/30/11

AFFORDABLE TRANSPORTATION THROUGH TRANSIT

More people in Lebanon County are riding the bus for their daily travel needs. Ridership on Lebanon Transit has increased 28 percent over the past three years. Rising fuels costs that have made automotive travel cost-prohibitive, or at least restrictive, for county residents have spurred much of the increase. Continued development in planned development areas, as advocated by the Lebanon County Comprehensive Plan (2007), will support further ridership increases and help to expand transit services. Transit-supportive development includes higher density residential neighborhoods, commercial destinations, and mixed use developments, like North Cornwall Commons, with walkable pedestrian patterns. In fact, developers of North Cornwall Commons have agreed to pay for the added cost of buses circulating through the site, enabling shoppers to reach stores within a few steps of the bus, rather than requiring them to cross the parking lot from Cornwall Road to the storefronts.

A 2011 Regional Transit Coordination Study⁴ for a nine county service area recommended US 422 as a key first corridor for regionalized transit service from Lebanon to the Reading area. This corridor (the so-called "Brown" Corridor) was selected as one to study in more detail as a potential pilot for coordinated transit service, namely extending certain LT and BARTA runs to the short segment they are not currently serving along US 422.

⁴ The study was sponsored by the Pennsylvania Department of Transportation (PennDOT) through the Berks Area Regional Transit Authority (BARTA) and the nine participating counties: Adams, Berks, Cumberland, Dauphin, Franklin, Lancaster, Lebanon, Perry, and York.

ASSESSING BICYCLING SAFETY

Roads in the Cornwall-Lebanon region are particularly critical to bicycle travel as they connect many centrally-located destinations and provide through routes across the county. Some roads have poor conditions for cyclists and motorists: narrow, collapsing shoulders; overgrown vegetation; etc. Others have good shoulder and pavement conditions but no “Bikes May Use Full Lane” signs and increasing numbers of motorists who are not knowledgeable on how to travel safely alongside cyclists. Other significant safety concerns include the granting of Highway Occupancy Permits and reconstruction of intersections without consideration for bicyclists.

A Lebanon County Bicycle Transportation Map has been developed by the Lebanon Valley Bicycle Coalition with the technical and financial assistance of LEBCO MPO and PennDOT. The purpose of the Map is to identify the roads most commonly used by bicyclists and that should be improved for bicyclists when resurfaced, rehabilitated, or reconstructed. At the same time, these identified roads should not become less safe due to changes in traffic volumes and operations. Roads and road segments that have a minimum shoulder width of four feet, per FHWA and AASHTO guidelines, are also shown. The map is available at <http://www.lebcounty.org/Planning/Pages/MPO.aspx>.

BUILDING A TRAILS SYSTEM

LEBCO MPO has dedicated most of its Transportation Enhancement funds to the development of the Lebanon Valley Rail Trail (LVRT) in recent years. While the MPO is committed to the completion of the LVRT, this commitment does not preclude support for other well-designed and locally supported trails. The South Lebanon Trail presented a good opportunity to link the LVRT with South Hills Park and the Cornwall-Lebanon Middle and High School campus and included a long range goal of extension to South Lebanon Elementary School in Iona. Other trail proposals that provide connection among community destinations or loop trails that feature community resources and that have local support are considered.

The so-called “Alcoa Spur” is right-of-way that the LEBCO MPO and the Lebanon Valley Rails to Trails have been trying to acquire. The spur traverses a business park that is almost fully built out, with workers who bicycle to the plant. The effort will be coordinated with South Lebanon Township in developing points of access to the proposed trail.

North Cornwall Township has developed a non-motorized trail plan that outlines on-road and off-road trail routes connecting neighborhoods, recreation sites, and shopping areas, as well as coordination with municipalities to the west on a streamside route to the Quittie Nature Park in Annville Township. Certain routes are recommended for township-led master planning, design and construction, while others are recommended for private development in conjunction with future land development plans. Priority routes connecting Pleasant Hill, present and future parks, and the Lebanon Plaza are designated.

FINDINGS ON TRANSPORTATION

1. The Region’s composition of streets and highways, single rail line, and limited bicycle, pedestrian and transit facilities is typical of a rural transportation system, however it is increasingly inadequate for the needs of this diverse, growing region.
2. The region has a large and growing roadway network—more than 250 miles of public streets and highways. Travel demand on state-owned roadways within the region over the past ten year period

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ending 2009 to a total of nearly 412,000 daily vehicle miles of travel. The heaviest traveled roadways within the region are numbered state highways such as US 322, US 422 and PA 72.

3. More than 200 miles of the network are locally-owned and maintained by the municipalities. In the past 10 years, nearly 19 miles were added to the local network. Maintenance and improvements to locally-owned network are funded by PennDOT's Liquid Fuels Program allocations and local general fund revenues. The combination of a weak economy, coupled with increasing efficiencies in vehicle fuel consumption, has negatively impacted liquid fuels revenues and municipal allocation statewide.
4. Locally-owned bridges compare favorably with the rest of the state, with only 7 percent of structures classified as structurally deficient by number, and 3 percent by deck area. A pair of new state-owned bridges over Norfolk Southern's Harrisburg line on 9th and 10th Streets will improve north-south access while the rail line is in use.
5. Ridership on Lebanon Transit has increased 28 percent over the past three years. Rising fuels costs that have made automotive travel cost-prohibitive, or at least restrictive, for county residents have spurred much of the increase. Land use and development patterns will further influence the efficiency of transit service in the future.
6. Within the past five years, the LEBCO MPO provided funding for the construction of a park and ride lot near Interstate 81 to serve transit riders bound for Harrisburg. Additional park and ride lots near heavy commuting corridor may be needed.
7. Roads in the Cornwall-Lebanon region are particularly critical to bicycle travel as they connect many centrally-located destinations and provide through routes across the county. A countywide assessment of road conditions for cyclists will provide LEBCO MPO and municipalities with information needed to plan improvements that address all roadway travelers and their safety.
8. North Cornwall Township has developed a non-motorized trail plan for on-road and off-road trail routes connecting neighborhoods, recreation sites, and shopping areas.
9. The MPO is committed to the completion of the LVRT and encourages will consider funding for other trail concepts that provide connection among community destinations or loop trails that feature community resources, especially where there is local support.

LOCATIONS OF LOCAL CONCERN

As a result of growing travel demand, several segments, intersections, and other locations were identified as problems in the transportation system. They are listed in no priority order.

1. **Congestion on (US) Route 422.** This is a corridor-wide concern, extending beyond this region's borders. Traffic volume and the abundance of access points (driveways) to the corridor slow travel times. A congested corridor improvement program (CCIP) study was completed in 2006. Following the study, North Cornwall and North Lebanon adopted access management provisions for the corridor to reduce the number of access points as lands along the corridor are redeveloped. Access management will also benefit bicyclist and pedestrians, who already use this corridor without designated bicycle lanes or sidewalks. Sidewalks are a significant component of the Route 422 Beautification Project.

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The County recently performed a Roadway Safety Audit (RSA) in the eastern part of the county. The MPO routinely works with PennDOT and municipalities on RSAs. Typically, the MPO make recommendations to the PennDOT District office safety staff, which determines whether or not it would be appropriate to perform an audit at a certain location. The County receives many competing requests for audits. Requests may not always lead to audits, but to incremental improvements.

2. **Congestion on (PA) Route 72.** The LEBCO MPO recognizes that travel times along Route 72 and Cornwall Road have increased and intends to study these corridors and potential improvements as the commercial area along Route 72 is built out. Signal synchronization has been suggested but no improvements have been evaluated to date. Funding has been allocated for this future CCIP study. A scope has been prepared and money budgeted for it in the TIP. The MPO will wait until after the area has built out and new signals have been added to the network. The limits of the study will extend from the City through Cornwall Borough and West Cornwall Township.
3. **Congestion at Route 322 East at PA 72 South.** This left turn is difficult due to traffic volumes. Additional demand for left turns at this location will occur as the Preserve at Historic Cornwall is built and occupied. The developer of the Preserve will be required to improve this intersection as latter phases of the project are built.
4. **Congestion on Rocherty Road and Evergreen Road (SR 2001) from PA 72 to State Road.** This heavily traveled segment is used by South Lebanon Township residents; the school district buses, students, and employees; staff and patients of the Lebanon VA Hospital; and staff and visitors to the Lebanon Expo. Peak demand is typically early, as a result of the school traffic, e.g. 7:30am to 8am and 2:30pm to 4pm. Improvements to shoulder conditions along this segment have improved safety for bicyclists | The developer of North Cornwall Commons will be required to make improvements, i.e. turning lanes, at the intersection of Cornwall Road and Rocherty Road/ Evergreen Road and at the project's entrances.
5. **Cornwall Road (SR 2001).** Traffic volumes on Cornwall Road have increased as local travelers have sought less congested secondary roads as an alternative to Route 72.
6. **Kimmerlings Road/Kochenderfer Road at 7th Street.** Visibility at this intersection is difficult, safety particularly from Kimmerlings Road and Kochenderfer Road looking south. Incremental improvements , including an intersection warning signal on northbound Route 343 and cautionary signage to drivers stopping on Kimmerlings Road and Kochenderfer Road to cross or turn, have been made, but safety remains a concern.
7. **East Lehman at 15th Avenue (SR 1011)** in front of WalMart – circulation pattern
8. **Intersection of PA 72 with Tunnel Hill Road (SR 4002), Hill Street, and North 22nd Street.** The alignment of this intersection has been a challenge for many years. Alignment and turning patterns were improved in 2005. The subsequent development of the Lebanon Rails Business Park has resulted in increased truck traffic traveling through the intersection. Further improvement of the intersection will be negotiated as more businesses locate in the business park and the MPO finds funds. This is another developer-sponsored project.
9. **One lane tunnel under NS Harrisburg Line on 25th Street.** This tunnel is used by locals as the rear entrance to the Lebanon Valley Mall. 25th Street also accesses the Lebanon Rails Business Park. The

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structure is owned by Norfolk Southern, not North Lebanon nor West Lebanon Townships. The Lebanon Valley EDC pays to operate the traffic signal at the tunnel. The LEBCO MPO has a project placed in the out years of the county's long range plan to make the tunnel a two-lane underpass.

10. **Intersection at Cornwall Center.** This intersection also has an unconventional alignment with Route 419 "turning" from Freeman Drive to Cornwall Road as the through movement, while traffic on Burd Coleman Road and Cornwall Road are stop-controlled. This intersection was also identified as a location of safety concern in the Cornwall-Lebanon Scenic Byway Modified Corridor Management Plan, due to its unusual alignment, heavy use, and potential promotion to unfamiliar travelers. The intersection will be further impacted by traffic to and from the Preserve at Historic Cornwall and its improvement will be required by the developer.
11. **Intersection of Fonderwhite Road at Evergreen Road.** This intersection is a safety concern due to poor visibility constrained by existing buildings, topography and vegetation, and increasing travel to and from residential neighborhoods in South Lebanon.
12. **Bridges and road alignment on Mill Street (SR 3023).** Two single-lane bridges cross the Quittapahilla Creek south of Cleona in North Cornwall Township. The bridges date to circa 1920 and 1930. The road alignment reflects a similar age when travel was slower and short distance visibility was sufficient for safety. The bridges are listed for replacement on the MPO's TIP for \$1.3 million, however the road alignment is as much of a concern as the bridge conditions but is constrained by existing structures. The bridges will go to bid letting in early 2012 and will be replaced at their existing locations, and will go to two lanes.
13. **Bridge gap on Zinns Mill Road.** This non-functioning bridge over the Lebanon Valley Rail Trail was removed as a safety precaution when this segment of the Rail Trail was constructed in 2003. At the time, this portion of Zinns Mill Road carried little traffic. Re-connecting Zinns Mill Road could provide an alternative route and help to alleviate congestion on Rocherty Road/Evergreen Road, parallel to the north. This concept would require study of the potential impacts to intersections with Cornwall Road and PA 72 to the west and Lincoln Avenue and State Drive to the east.

Improvements to the highway system are planned as a result of large developments occurring in the region. The transportation improvement requirements used in Lebanon County since the 1990s require developers to fund and construct improvements at the outset of development. This model results in improvements but fails to recognize the timing or cumulative impacts of multiple development proposals that affect the same roads and intersections. The LEBCO MPO is working with PennDOT to establish an Alternative Transportation Plan, whereby concurrent developers share in the cost and coordinate the construction of required improvements and improvements are phased with construction and occupancy. Such an approach provides a reduced-cost incentive for developers to invest in targeted locations and the needed improvements for that location. The MPO will likely be taking the same approach in Cornwall Borough with H&K.

BETTER PLANNING, BETTER MAINTENANCE AND IMPROVEMENTS

“ASSET MANAGEMENT”

PennDOT continues to work with its planning partners (including the LEBCO MPO) to improve its planning processes. “Linking Planning and NEPA”⁵ has been a recent initiative to improve transportation program development and project delivery. This initiative has emphasized the need for earlier identification of potential environmental impacts and project alternatives to reduce the costly time and effort of alternative re-design. However, this new process will result in more clearly defined, realistic projects where new impacts are anticipated.⁶ In the short term, the LEBCO MPO continues to focus on maintenance projects, which typically have fewer, smaller environmental impacts.

In coming years, PennDOT will extend its asset management philosophy to its planning partners, particularly for locally-owned facility data. While there is much data and information available on state-owned transportation infrastructure, very little is known about their locally-owned counterparts, such as roadways, bridges, and traffic signals. In 2011, PennDOT initiated a pilot data collection strategy for its planning partners, including the LEBCO MPO, to compile existing municipal data regarding any transportation infrastructure inventory and condition data in 2012. (PennDOT has already requested some asset information, e.g. traffic signal locations, and notification when equipment upgrades are installed.) Accessible data should help policy makers and the public alike understand the magnitude of local and county-wide transportation challenges and be an aid to prioritizing limited resources.

“SMART TRANSPORTATION”

LEBCO MPO expects that PennDOT will prioritize projects that demonstrate smart transportation principles, land use and transportation to create better communities, and regional planning perspectives in future state funding programs. In 2008, PennDOT set aside \$60 million in federal/state transportation funds to establish the Pennsylvania Community Transportation Initiative (PCTI). This program awarded funds to local government for projects that:

1. Support local economic or community development projects and that encourage walkable, multimodal, mixed use developments or corridors, or incorporate brownfield or greyfield redevelopment opportunities.
2. Enhance the existing transportation network infrastructure capacity to reduce the demand on the region’s transportation network.
3. Improve regional connectivity, e.g., more integrated use of arterials and secondary roads to relieve congestion on state highways; multimodal circulation improvements; sidewalks and paths.
4. Improve roadside conditions for transit riders, bicyclists and pedestrians.
5. Support transit oriented, brownfield and greyfield developments.

⁵ The National Environmental Policy Act, also used as “shorthand” in reference to the advanced environmental studies that are required in moving a project proposal through the project delivery process.

⁶ For the 2013 TIP, the LEBCO MPO will not be requiring municipalities to complete Level 1 screening forms, as the MPO is financially constrained. The MPO and PennDOT District office will be handling Level 2 screening forms.

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A good example of a PCTI-funded project includes the new park and ride facility at the intersection of PA 934 and Mill Road. Lebanon Transit is now running express bus service from the area. The lot is also available for workers who want to vanpool and carpool. The LEBCO MPO is always looking for candidate park-and-ride lots and ways to enhance the county's transit services.

The program was continued in 2010 with another \$12 million in federal/state transportation funds. A third round of PCTI is uncertain at this point, however new or revised programs will likely offer communities some form of financial assistance in improving local transportation options. Whether through local projects or the MPO's long range transportation plan (LRTP) and transportation improvement program (TIP), the Cornwall-Lebanon Region should identify and prioritize eligible, competitive projects that would improve or enhance travel in the region.

RAIL FREIGHT INFRASTRUCTURE FOR ECONOMIC GROWTH

Municipalities can support maintenance and construction investments in rail freight through advocacy or through their capital investments with finding assistance from the Pennsylvania's Rail Freight Assistance Program and Capital Budget. The Rail Freight Assistance Program offers competitive, matching grants to railroad companies, transportation organizations, rail users, municipalities and municipal authorities whose proposals meet certain eligibility requirements. The program is currently funded at \$10.5 million. Funding assistance through the Capital Budget program, which is funded at \$20 million, requires a line item proposal.

GOAL, OBJECTIVES AND RECOMMENDATIONS

GOAL 3. MAINTAIN CIRCULATION SYSTEMS; EXPAND TRAVEL OPTIONS, ESPECIALLY WITHIN THE PLANNED DEVELOPMENT AREA.

In addition to the transportation recommendations below, see *Map 12 Transportation Issues* and *Table 6-7 Transportation Issues and Approaches* (page 76) for locations recommended for study, improvement, or referral.

Objectives

A. Improve the Region's transportation asset management practices.

Rec 8. Install municipal signing that meets the latest MUTCD requirements.

As municipalities change and update their sign inventories through regular maintenance activities, new signs should satisfy the latest federal standards as required through the Manual on Uniform Traffic Control Devices (MUTCD). (See <http://mutcd.fhwa.dot.gov/index.htm>.) Compliance dates to the federal standards have been dismissed, but the new standards remain.

Time for Action:	Short Term (0-2 years) and Ongoing in compliance with current federal standards
Lead Partners:	Municipal Engineers and Roadmasters
Support Partners:	n/a
Funding Sources:	Liquid Fuels; General Funds

Rec 9. Improve sub-base and width of roadway shoulders and maintenance practices to accommodate non-motorized travel on local roadways. Advocate the same on state Betterment projects.

Improved shoulders can alleviate the operational complications caused by slow moving horse-drawn buggies and bicyclists along state highways. Wider shoulders is also a significant safety benefit to motor vehicle traffic, particularly in areas surrounded by farmland where slow moving farm equipment is typically present.

Begin with Sites C, D, E, and F on Map 2, Transportation Issues and Concerns, and others that are part of the bicycle route network, shown on Map 3. Where funding is limited, adding or improving shoulders on uphill sections first will give slower moving bicyclists and buggies needed maneuvering space and decrease conflict with faster moving motor vehicle traffic. Roadways with higher AADT (e.g., >1,000) could also be made a priority over lower volume roadways. The AASHTO Guide to the Development of Bicycle Facilities can provide technical guidance for these kinds of improvements.

Time for Action: Ongoing

Lead Partners: Municipal Engineers and Roadmasters

Support Partners: LEBCO MPO; PennDOT District 8-0

Funding Sources: Liquid Fuels; General Funds; Betterment funds (state projects)

Rec 10. Review the list of regional transportation issues and concerns annually. Update sites, conditions and actions as new data becomes available. Advance eligible projects to LEBCO MPO and state highway maintenance concerns to PennDOT District 8-8 (County Maintenance).

Community leaders, engineers and planners should maintain an inventory of local and regional transportation deficiencies. This inventory will then provide a ready list of projects for municipal maintenance and improvement as well as candidate projects for the biennial transportation improvement program or TIP update for at high crash locations prepared by the LEBCO MPO and PennDOT District 8-8 (County Maintenance). Condition data should be shared with LEBCO planning staff for awareness as they coordinate with PennDOT District 8-0 in preparing updated TIPs and locally-owned transportation asset inventories.

Municipalities should submit candidate projects that are eligible to receive state and federal funds to the LEBCO MPO during the summer of odd-numbered years (e.g., 2013, 2015, etc.). Projects eligible for Highway Safety Improvement Program (HSIP) funding should be aimed at contributing to a reduction in traffic fatalities and serious injuries on state roads through the implementation of medium cost infrastructure-related highway safety improvements. In addition to new candidate projects, municipalities should continue their support for projects listed on each current TIP, such as the Chestnut Street bridge replacement, as priorities are reevaluated.

Maintenance concerns on the state transportation system could include pavement condition, substandard shoulders, pavement markings, drainage, sight distance concerns, and signing issues and should be shared with the county maintenance manager.

Time for Action: Ongoing

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Lead Partners:	Municipal Managers, Engineers, and Planning Commissions
Support Partners:	LEBCO MPO planning staff
Funding Sources:	n/a

Rec 11. Be responsive to the LEBCO MPO's efforts to develop a county-wide inventory of locally-owned transportation infrastructure.

PennDOT is working with its planning partners at the regional and county levels in developing an inventory of locally-owned transportation infrastructure. Pilot programs are underway across the state. As these conclude, further statewide guidance, e.g. for the LEBCO MPO, is expected, followed by direction to collect local data.

Time for Action:	Short Term (0-2 years)
Lead Partners:	Municipal Managers and Engineers
Support Partners:	Municipal Planning Commissions; LEBCO MPO
Funding Sources:	n/a

B. Diversify travel options.

Rec 12. Complete the Lebanon Valley Rail Trail through the Region.

The Lebanon Valley Rail Trail complements the Region's transportation system, providing nearly 15 miles of off-road recreation and transportation opportunities. While it is unclear if federal Transportation Enhancement funding will continue under successor legislation to SAFETEA-LU, completion of this spine is an important step in establishing an off-road trail network in Lebanon County. Completed and planned segments are shown on Map 2, Transportation Issues and Concerns.

Time for Action:	Long Term (0-10 years)
Lead Partners:	Lebanon Valley Rail to Trails, Inc.; LEBCO MPO
Support Partners:	Municipal Officials
Funding Sources:	LEBCO MPO Transportation Enhancement (TE) funding

Rec 13. Develop a plan for a regional trail network.

A regional trail plan should designate both on-road and off-road routes that link retail establishments, neighborhoods, schools, recreational areas, major employment areas, and other desired destinations. The LVRT can act as the spine of the off-road trail network with spurs and loops extending to destinations.

North Cornwall already has a Master Plan for Non-Motorized Trail Connections. Priority trails from this plan and the completed and planned route of the South Lebanon Trail are shown on Map 2, Transportation Issues and Concerns. North Lebanon would like to explore a trail route from Lenni Lenape Park to the Union Canal Elementary School.

A planning process should engage the public in the identification of desired linkages and identify an implementation agent or group to lead trail development.

Time for Action:	Medium Term (0-5 years)
Lead Partners:	Municipal Officials and Planning Commissions
Support Partners:	LEBCO MPO
Funding Sources:	PA DCNR

Rec 14. Enforce sidewalk and alternative pedestrian facility requirements; consider enacting bicycling facility standards.

The subdivision and land development ordinance is the primary tool for municipal officials and planners in ensuring that pedestrian linkages such as sidewalks and off-road connections are provided as new neighborhoods are built. Where such provisions are in place, their enforcement is important in providing safe travel facilities for persons of all ages and abilities. Where provisions are lacking or perhaps limited to traditional sidewalks where they may not be appropriate, provisions should be added or updated. All facilities should be compliant with the Americans with Disabilities Act (ADA). Bicycling facilities, e.g. lane striping and bike racks, should be specified in the ordinance. Both AASHTO and the Association of Pedestrian and Bicycle Professionals have design guidance for these types of facilities.

Time for Action:	Ongoing
Lead Partners:	Municipal Officials, Engineers, and Planning Commissions
Support Partners:	Lebanon County Planning Department
Funding Sources:	Private funding

Rec 15. Construct, and where necessary reconstruct, sidewalks in existing neighborhoods through public projects or property owner incentives.

Sidewalks are an important element of a public transportation system. They meet a need for safe travel routes for those who do not or cannot drive. Their construction and maintenance must be supported and backed by municipal leaders. Sidewalk construction or reconstruction is an eligible use of CDBG funds where the residents meet the program criteria. Municipalities can also create a revolving loan fund that would provide low-interest loans to property owners looking to construct or reconstruct their sidewalks. East Lehman Street (from 11th Ave to Wal-mart; Site 23), Main Street in Quentin (Map 2, Site I), Freeman Drive in Quentin (Site F), and Rexmont (Site K) are priority locations. See also Recommendation 7.

Time for Action:	Medium Term (0-5 years)
Lead Partners:	Municipal Officials, Managers and Engineers
Support Partners:	Municipal Planning Commissions; PA DCED
Funding Sources:	Private funding; Community Development Block Grants (CDBG)

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C. Improve safety.

Rec 16. Request a traffic safety analysis of the intersection of PA 72 and Tunnel Hill Road.

The intersection of PA 72 and Tunnel Hill Road is characterized by awkward roadway geometry – a challenge for motorists, bicyclists and pedestrians. A traffic safety analysis of the intersection would identify near- and long-term improvements. Near-term improvements could be addressed by PennDOT maintenance forces (signing/pavement marking improvements, minor capacity upgrades), while longer-term fixes such as major geometric improvements or capacity upgrades, could be addressed through the TIP.

Time for Action: Short Term (0-2 years)

Lead Partners: Municipal Officials; Municipal Engineers; PennDOT District 8-0

Support Partners: Planning Commission Members; Adjacent Property Owners

Funding Sources: General funds and/or Liquid Fuels, depending on the scope of the project

Rec 17. Request corridor safety audits from PennDOT for PA 343 and PA 419.

Safety audits are performed by teams of PennDOT District and County staff, in conjunction with local leaders, to identify major and minor improvements that could reduce crashes and improve safety [for all modes traveling](#) specific roadway sections.

Time for Action: Short Term (0-2 years)

Lead Partners: Municipal Officials, Engineers and Roadmasters

Support Partners: Municipal Planning Commissions; LEBCO MPO; PennDOT District 8-0 and 8-8

Funding Sources: PennDOT Planning funds

Rec 18. Enact airport hazard zoning provisions in South Lebanon Township to protect the approaches to Keller Brothers Airfield.

Airport Hazard Zoning seeks to promote compatibility of adjacent land uses with the sustained operation of an airfield. Zoning is the municipality's only means to control the height of buildings, other structures, and even vegetation that may encroach upon the flight path and become a detriment to the ongoing viability of the airport itself. PennDOT's Bureau of Aviation has developed a model airport zoning ordinance to serve as a guideline. Review the provisions adopted by other Lebanon County municipalities with airfields, including North Lebanon, or visit the Aviation homepage of PennDOT's website for links to the model ordinance and other resources.

Time for Action: Medium Term (0-5 years)

Lead Partners: South Lebanon Officials and Planning Commission

Support Partners: Lebanon County Planning Department; PennDOT Bureau of Aviation

Funding Sources: General funds

Rec 19. Enact access management provisions for all major roadways.

Access management provisions of a subdivision and land development ordinance represent an inexpensive technique for managing public safety and traffic flow. Such provisions manage (in many cases, reduce) the number and placement of driveways or decision points along the roadway, increasing safety for motorists, pedestrians, and bicyclists. In addition to safety, improved access management can enhance roadway capacity by removing slow moving and turning traffic. North Cornwall and North Lebanon have adopted access management provisions into their subdivision and land development ordinance or supplemental standards to manage congestion along state highways. Access management applied in advance of development could prevent or mitigate congestion from occurring later on. Lebanon County provisions apply to new development and redevelopment of lots with frontage on arterial or major collector roadways within Lebanon County that are under the jurisdiction of the Lebanon County Planning Department, namely those in North Lebanon and North Cornwall in this Region. See PennDOT Publication #574 for PennDOT's model access management ordinance and the AASHTO publication *A Policy on Geometric Design of Highways and Streets*.

Time for Action: Medium Term (0-5 years)

Lead Partners: Municipal Planning Commissions

Support Partners: Lebanon County Planning Department; PennDOT District 8-0

Funding Sources: General funds

Rec 20. Conduct safety audits of pedestrian and bicycle routes to schools, parks and trails.

While the Cornwall-Lebanon School District busses 100% of its students to and from school, citizens undoubtedly walk and bike to nearby schools for recreational activities after hours and on weekends. Whether conducted under the federal/state Safe Routes to School program or as a local safety audit, this process should consider bicycle and pedestrian safety factors such as the availability and condition of sidewalks and crosswalks, signing, pavement markings, fixed objects in the pathway, and traffic control within walking and biking distances of schools, parks and trailheads. The National Center for Safe Routes to School provides a variety of tools that could support a community-led safety audit: walkability checklist, bikability checklist, instructions for audits, etc. This recommendation could be carried out by members of the municipal planning commissions, with involvement by a municipal or traffic engineer or accomplished through a citizen task force with oversight from the planning commission.

Particularly along these areas where bicycling is more common, and perhaps across the entire region, local police should collect data on non-reportable crashes that involve bicyclists and pedestrians. Analysis of this data could help to identify needs for improved facilities and/or education initiatives.

Time for Action: Short Term (0-2 years)

Lead Partners: Municipal Engineers, Planning Commissions, and Park and Recreation Board/Committees

Support Partners: Lebanon County Planning Department; School District

Funding Sources: LEBCO MPO Transportation Enhancement (TE) funding

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D. Increase efficiency, connectivity, and accessibility.

- Manage access and improve connectivity.
- Make public transit feasible within Planned Development Areas.
- Address congestion bottlenecks and other impediments to freight movement on the highway network.
- Follow Smart Transportation principles (e.g., Complete Streets) in highway planning and design.

Rec 21. Retime traffic signals on a 5-year cycle and upgrade, as needed.

PennDOT's Bureau of Highway Safety and Traffic Engineering has calculated annual estimated costs for properly maintaining and operating traffic signals. This includes the standard that every signal should be retimed every five years based on current traffic demands. Proper maintenance is not occurring on many traffic signals, and very few traffic signals are retimed to optimize operations. This is particularly critical on suburban arterials that span multiple municipalities. Typical traffic signal maintenance costs, as reported in the Pennsylvania Transportation Advisory Commission's Transportation Funding Study (2010) are \$3,500/year for maintenance, \$1,500/year for operating efficiency (energy) and \$7,500 once every five years for retiming. Recent upgrade traffic signals to LED lighting are expected to have a positive impact – estimated at \$3,000 for on maintenance costs and \$900 for operating efficiency.

Time for Action: Short Term (0-2 years) to establish ongoing 5year cycle

Lead Partners: Municipal Managers and Engineers

Support Partners: Municipal Officials

Funding Sources: PennDOT CMAQ, Automated Red Light Enforcement (ARLE) Funding Program; Liquid Fuels; General Funds

Rec 22. Expand the congested corridor study of US 422 eastward through central Lebanon County and conduct a congested corridor study of PA 72.

While PennDOT's Congested Corridor Improvement Program (CCIP) no longer exists, studies should still be undertaken to examine congested corridors across jurisdictional boundaries. Proposed improvements should address roadway geometry, traffic signal operations, access management, multi-modal initiatives, ITS, transportation demand management measures, and planning and zoning practices that are appropriate for a particular transportation corridor.

Lebanon County's Congestion Management Process has identified several corridors that experience recurring congestion, including US 422, PA 72 and Rocherty/Evergreen Roads. Spot locations of concern include the intersection of PA 343 with Kimmerlings Road in North Lebanon Township, and various crash cluster locations along PA 241 in North Cornwall Township. LEBCO MPO has set aside money for a study of the PA 72 corridor (to include synchronization of traffic signals). Municipalities should work through the LEBCO MPO to identify candidates for study.

Time for Action: Medium Term (0-5 years)

Lead Partners:	Municipal Officials and Roadmasters
Support Partners:	Municipal Planning Commissions; LEBCO MPO; PennDOT District 8-0
Funding Sources:	Studies funded by PennDOT, with engineering and construction costs through the 12 Year Plan.

Rec 23. Observe travel demand through the 25th Street underpass to establish baseline data and operational trends.

This one-lane tunnel under the Norfolk Southern Keystone Line (Map 2, Site O) is a bottleneck for local traffic accessing the Lebanon Valley Mall, the Lebanon Rails Business Park and Union Canal Tunnel Park with a sight distance limitation. A 2005 traffic signal investigation prior to the development of the Lebanon Rails Business Park documented the physical conditions, including the 90-degree turn immediately on the south side of the underpass, and typical use as limited to vehicular traffic. The underpass was rated at level of service B (reasonable free-flow operations) for morning and evening peak in both directions. The report recommended a traffic signal to address the safety (sight distance) concern. As additional parcels in the business park are developed and generate traffic, this location should be monitored to assess any future need for and scale of improvement. Since the structure is owned by Norfolk Southern, its replacement is subject to NS decision-makers. Having accurate information will be necessary to request an improvement or to partner with NS on the replacement.

North Lebanon should observe demand at this location and track congestion and complaints. When either observations or complaints begin to demonstrate a sustained problem or severe threat to safety, the Township should contact the LEBCO MPO for technical assistance.

Time for Action:	Long Term (0-10 years)
Lead Partners:	North Lebanon Township
Support Partners:	LEBCO MPO; PennDOT District 8-0
Funding Sources:	n/a

Rec 24. Address the Route 72/Zinns Mill Road intersection and the missing link of Zinns Mill bridge as traffic conditions warrant.

Since the removal of the Zinns Mill Road bridge in 2003, traffic has increased on surrounding roadways. Reconnecting Zinns Mill Road could provide an alternative route and help to alleviate congestion of Rocherty Road/Evergreen Road to the north. A study to determine the impacts of replacing the bridge and restoring this corridor is needed. The study should include the potential impacts to the intersections with PA 419 to the west, and Cornwall Road, Lincoln Avenue and State Drive to the east. This study could be performed in conjunction with a congestion study of the PA 72 corridor as described above.

Time for Action:	Long Term (0-10 years)
Lead Partners:	Municipal Planning Commissions
Support Partners:	LEBCO MPO planning staff; PennDOT District 8-0
Funding Sources:	PennDOT

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Rec 25. Evaluate the need for park and ride lots throughout the region.

Park and ride facilities are an essential, yet often overlooked, element of our transportation infrastructure. Growing ridership on Lebanon Transit's "Commute King" corridor from the Allen Biehler park and ride lot at the I-81/PA 934 interchange to Harrisburg attests to the lot's value in facilitating intermodal transportation. As interest in public transportation and ridesharing continues to grow, it is essential to provide facilities and services that are convenient to and valued by the public. A study could be conducted locally with windshield surveys at ad hoc park and ride locations, or through the use of more sophisticated, analytical tools, such as GIS, in collaboration with Lebanon Transit.

Time for Action:	Medium Term (0-5 years)
Lead Partners:	Municipal Managers, Engineers and Planning Commissions
Support Partners:	LEBCO planning staff; Lebanon Transit; PennDOT District 8-0
Funding Sources:	PennDOT Congestion Mitigation/Air Quality (CMAQ) funding

Rec 26. Enact transit-friendly land development standards into the respective county/municipal subdivision and land development ordinances.

Land use and land development patterns can support or discourage the availability of transit service and ridership. Along a given corridor, zoning determines what uses and how many destinations may develop, suggesting whether or not the general public would have interest in service to this corridor. Land development standards influence how accessible and convenient that corridor and its development are to transit service. For example, buildings with large setbacks create long walking distances from transit stops along the roadside to the building entrance. A lack of sidewalk to the building entrance and shade near the transit stop create further disincentives for transit riders. In addition, Section 605 of the MPC further provides for the implementation of transportation-based zoning overlay districts in order to manage the traffic generation characteristics of new uses along a transportation corridor.

The *LANTA Land Use Toolkit* was prepared to help the Lehigh and Northampton Transit Agency and its service area municipalities understand how to improve development standards in support of transit serviceability, where desired, and incorporate agency review. Its principles, including transit agency review of land development plans in existing and planned transit service areas, are readily transferable to Lebanon Transit's service region.

Time for Action:	Long Term (0-10 years)
Lead Partners:	Municipal Planning Commissions
Support Partners:	LEBCO MPO staff; PA DCED
Funding Sources:	n/a

Rec 27. Promote ridesharing services.

Commuter Services of Pennsylvania promotes ridesharing to reduce congestion across a 9-county region that includes Lebanon County. For workers, it hosts an online database of commuters looking to rideshare based on destination/travel route, workday schedule, and

flexibility. The non-profit organization also works with employers to market its services at the workplace.

Municipalities can connect residents and local employers to Commuter Services by providing information in municipal newsletters, and posting information about their services and programs at municipal buildings and libraries.

Time for Action: Short term (0-2 years) and Ongoing

Lead Partners: Municipal Managers

Support Partners: Local Employers; LEBCO MPO staff, which maintains a leadership role with Commuter Services

Funding Sources: n/a

Rec 28. Encourage expansion and interconnectivity of the road network, including connector roads between major roadways and parallel service roads to reduce demand on primary roadways.

Traffic congestion occurs where there is high demand and few, if any, alternative routes. Planning and developing an interconnected network of roadways provides travel route options at least for those traveling to local destinations. Connectivity is most easily illustrated with a grid pattern, whether rigid with streets intersecting at 90-degree angles or curvilinear, adapted to local topography and other barriers. Roadway connectivity can be achieved through formal plans, such as use of the official map to identify planned roadway and utility locations (See Recommendation 2), or through negotiations with developers.

Service or marginal access roads can greatly improve safety and mobility along a highway corridor. They typically run parallel to a primary highway corridor, providing often stop-controlled or signal-controlled access to intensive development at cross streets rather than at multiple driveways. Development of marginal access roads also avoids the purchase of access rights during highway widening and/or upgrades; and positively affects land values and development patterns.

Time for Action: Ongoing

Lead Partners: Municipal Officials and Planning Commissions

Support Partners: Property owners; PennDOT District 8-0

Funding Sources: Private

Rec 29. Consider innovative alternatives in transportation problem-solving, including alternatives for travel mode (e.g. bicycling vs. automotive) and design solutions (e.g., roundabouts and other unconventional treatments, etc.)

The current funding environment at the state and national level has placed more incentive on engineers and planners to explore more cost-effective approaches to addressing transportation deficiencies. New methodologies will be needed in coming years to improve safety and capacity without the traditional reliance on the capacity-adding, expensive TIP projects of the past. The planning area municipalities should offer education for its planning commission members on cost-effective historic and emerging planning techniques, particularly those espoused by PennDOT and its growing emphasis on "Smart Transportation". Municipalities

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can offer training opportunities to its volunteer planning commission members, or periodically invite subject matter experts to deliver presentations for education and awareness.

Time for Action: Ongoing

Lead Partners: Municipal Officials and Planning Commissions

Support Partners: Municipal Managers

Funding Sources: General Fund, though some education activities may be free of charge

E. Coordinate transportation improvements with land use, infrastructure, and other community development decisions.

Rec 30. Revitalize business districts with streetscape improvements.

Existing business districts in the region include the Route 422 corridor west of Lebanon in North Lebanon and North Cornwall (Map 2, Site A), the Route 422 corridor east of Lebanon in North Lebanon and South Lebanon (Map 2, Site B), the Route 72 corridor through North Lebanon and North Cornwall (Map 2, Site G), Main Street in Quentin (under recommended rezoning) (Map 2, Site I), and Cornwall Center (under recommended rezoning).

Improving streetscapes in the business districts can positively impact the appearance, vitality and economic impact of the district. Streetscape elements include pedestrian elements such as sidewalks and crosswalks, sidewalk lighting, street trees and planters, benches and trash/recycling receptacles, bicycle racks, and façade conditions, bearing relationship to the surrounding development and circulation patterns. Improvements can add or update any of these as well as street paving, street lighting, and signing. Any improvements should serve to increase not only the visual appearance of the street, but also its accessibility and walkability. Municipalities should work with merchants in each district to develop a prioritized inventory of improvement needs.

In the case of districts along Routes 422 and 72, these locations are also gateways between the City of Lebanon and the surrounding region. North Cornwall has conceptual plans for a Route 422 Beautification Project that should be advanced under this recommendation. North Cornwall should partner with the City of Lebanon (and North Lebanon and West Lebanon, depending on the project boundaries) to organize a Gateway Enhancement Project Implementation Group charged with verifying gateway sites, identifying and prioritizing improvements, and exploring funding sources with the LEBCO MPO and PennDOT.

Time for Action: Long-term (0-10 years)

Lead Partners: Municipal Managers and Engineers

Support Partners: LEBCO MPO; PennDOT District 8-0

Funding Sources: PA DCNR TreeVitalize; Business Improvement District or Transportation Development District; Liquid Fuels; General Funds; Community Development Block Grants

F. Plan, design, and construct projects collaboratively.

Rec 31. Develop and maintain a multi-municipal, 5-year Capital Improvement Program.

Future capital (non-recurring) projects and purchases are often in the minds of municipal officials and staff but rarely written down. Capital improvements programming simply means writing down and prioritizing these needs and then determining the financing means and schedule to pay for them. Of course, conditions and priorities change, so the capital improvements program (CIP) is updated each year, deleting the past year and adding a new year to the end of the program.

Capital improvements programming is a planning activity and can be conducted by planning agencies (i.e. municipal planning commissions) and recommended to the governing body under the MPC Section 209.1 (b) (7). The Pennsylvania DCED has developed guidance on developing CIPs as part of its Planning Series publications. See www.newpa.org > Planning Series No. 1 – Local Land Use Controls in PA.

Time for Action: Long-term (0-10 years)

Lead Partners: Municipal Officials, Managers, and Planning Commissions

Support Partners: Municipal Engineers; LEBCO planning staff; PA DCED

Funding Sources: n/a

Rec 32. Consider pooling a portion of Liquid Fuels allocations to address locations of regional concern.

Collectively, the five municipalities within the Region receive approximately \$805,000 annually (April 1) in Liquid Fuels funding. (This does not include Liquid Fuels funding received by Lebanon County, which may also be spent in the planning area.) The programming of Liquid Fuels funding against a prioritized listing of locally owned transportation infrastructure would give the municipalities within the planning area another tool to address transportation concerns that cannot be funded through the TIP. PennDOT Publication 9 includes policies and procedures for use of Liquid Fuels funding. Municipal solicitors should also review the intent of this plan recommendation.

Time for Action: Long Term

Lead Partners: Municipal Officials and Planning Commission Members

Support Partners: PennDOT Bureau of Municipal Services; LEBCO MPO Planning Staff

Funding Sources: n/a to this coordination effort

Rec 33. Negotiate with developers to maintain, and where practical to improve, the transportation system.

A functional transportation system is an asset to both current and future citizens; a congested, hazard-prone system is not. In principle, municipal zoning should not underestimate its capacity to serve permitted development and developers should help to expand and enhance the community and its infrastructure. Traffic impact fee ordinances are authorized in Pennsylvania but are often costly to prepare. In lieu of this expense, municipalities and private

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developers should collaborate to design, schedule, and at times to fund transportation improvements to maintain the level of service or, where practical, to improve it for all practical modes of travel. Consider a roundtable discussion on the topic of negotiating with developers to explore each other’s experience, as well as the experience of other municipalities.

Time for Action:	Ongoing
Lead Partners:	Municipal Officials, Staff, and Planning Commission Members
Support Partners:	LEBCO MPO Planning Staff
Funding Sources:	n/a to negotiations

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Table 6-7 Transportation Locations of Local Concern and Potential Approaches

Corridor	Location	Description	Potential Approach to Solution
A	US 422/W Cumberland St	Commercial strip proposed for gateway improvement	Advance the Route 422 Beautification Project; explore funding sources with the LEBCO MPO and PennDOT; partner with the City of Lebanon and West Lebanon, if appropriate
B	US 422/E Cumberland St	Moderate congestion	Ask LEBCO MPO continue to monitor this as a corridor in the county-wide Congestion Management Process (CMP) for potential traffic system management (TSM) improvements; continue enforcement of access management
C	Reist Rd	No shoulder	Paved shoulder should be 4 feet in width; any additional shoulder width is better than none at all. Refer to AASHTO's <i>Policy on Geometric Design of Highways and Streets</i> . " Bikes May Use Full Lane " signs and sharrows (shared lane markings) could be considered for PA 241, where widening it unlikely .
D	Royal Rd	No shoulder	
E	Forney Rd	No shoulder	
F	PA 241/Colebrook Rd	Narrow shoulder	
G	PA 72/Quentin Rd	Traffic congestion	A comprehensive corridor study of PA 72 and Cornwall Rd has been fully funded and programmed for FFY 2016
H	Cornwall Rd	Increasing traffic volumes	
I	Main St/Quentin	Poor sidewalk conditions	
J	Freeman Dr	No sidewalks	
K	Boyd St/Miners Village	Poor sidewalk conditions	Consider sidewalk construction as a public project; alternatively, provide no- or low-interest loans to property owners for sidewalk repair and/or construction
L	Evergreen Rd	Peak period congestion	Consider including Evergreen Rd as part of above-referenced comprehensive corridor study of PA 72 and Cornwall Rd
M	Evergreen Rd	Poor shoulder conditions	
N	PA 343	Shoulder conditions and other safety concerns	Request a Roadway Safety Audit from PennDOT District 8-0. Contact County Maintenance Manager to address near-term safety improvements.
O	Zinns Mill Road east of PA 72	Possible east-west congestion alternate	Consider including Zinns Mill Rd as part of the recommended PA 72 and Cornwall Rd corridor study
Site	Location	Description	Potential Approach to Solution
1	PA 72/Tunnel Hill Rd	Truck traffic concerns	Monitor truck traffic volumes as business park expands; Request a traffic safety analysis from PennDOT; explore a traffic study of PA 72 intersection w/public-private partnership
2	25 th St Underpass	Single lane underpass	Coordinate with LEBCO MPO in programming a project that would create a two-lane underpass
3	Quittapahilla Creek bridges on S Mill St	2, single-lane, state-owned bridges (SR 3023) with Sufficiency Ratings below 50; over 80 years old	Monitor construction of these replacement structures; notice to proceed is expected in March 2012
4	Int. of PA 72/PA241	No signal actuation for bicyclists	Example site for broader bicycle network improvements. (City of Lebanon to) Explore installation of video detection of bicyclists .

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Corridor	Location	Description	Potential Approach to Solution
			Bicyclist-actuated buttons may be an alternative but not a substitute for detectors.
5	US 422/E. Cumberland St	Poor traffic circulation	Include this intersection in the request for LEBCO MPO monitoring (see Corridor B)
6	E Evergreen Rd/ Fonderwhite Rd	Limited sight triangle/distance (safety concern)	Address sight limitations (clear sight triangles and regarding) in collaboration with surrounding property owners
7	Industrial park	Truck circulation	Ask the LEBCO MPO to update its CMP to include an examination of goods movement and localized freight issues and concerns, including spot locations such as the industrial park
8	Main St/Quentin	Vertical sight distance	Continue enforcement of Main St speed limit. Request a Roadway Safety Audit for Route 419 from PennDOT District 8-0.
9	PA 419 at Alden St	Intersection geometry	Explore reconfiguration of intersections; public/private partnerships maybe needed
10	PA 419 at Cornwall Rd	Intersection geometry	
11	Rail trail crossing at PA 419	Safety concern	Monitor use and consider use of roadway pavement markings 100 ft from crossing and additional signing (W11-15; W11-15P; W16-2aP) 300 ft from crossing
12	PA 419, east of Willow St	Horizontal sight distance	Request a Roadway Safety Audit for Route 419 from PennDOT District 8-0. Contact County Maintenance Manager to address near-term safety improvements.
13	PA 419	Poor drainage	
14	PA 419 at State Dr	Wide, unmarked shoulder	
15	PA 419	Horizontal sight distance	
16	PA 419	Horizontal sight distance	
17	PA 419 at Rexmont Rd	Horizontal sight distance	
18	PA 419 at twp line	Horizontal sight distance	
19	US 322 WB at PA 72 SB	Difficult left turn	
20	PA 72 and Spring Hill Ln	Poor sight distance	Contact PennDOT County Maintenance Manager to address
21	Zinns Mill Road missing link	Bridge gap	Consider including Zinns Mill Rd as part of the recommended corridor study of PA 72 and Cornwall Rd
22	PA 343 at Kimmerlings Road	Vertical sight distance	Include intersection in Route 343 corridor safety audit (Corridor N)
23	East Lehman Street (11 th Avenue to Wal-mart)	No sidewalk	Consider sidewalk construction as a public project; alternatively, provide no- or low-interest loans to property owners for sidewalk repair and/or construction