

Lower Mount Bethel Township



**Comprehensive Plan
December 12, 2022**

2022 Lower Mount Bethel Township Comprehensive Plan

ACKNOWLEDGMENTS

This 2020 Comprehensive Plan Update is the direct result of the generously donated time and effort expended by the Lower Mount Bethel Township Comprehensive Plan Update Ad Hoc Committee. This document reflects their hard work and difficult decisions. The Committee, which included representatives from the Township's Board of Supervisors, Planning Commission, Environmental Advisory Council, Open Space Committee, and Recreation Board, as well as farmers, business representatives, and a cross-section of numerous other residents, spent an intensive twelve months reviewing the 2007 plan, analyzing data, reviewing maps, and discussing the most appropriate methods for managing Lower Mount Bethel Township's future growth and protecting its natural and cultural resources.

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CHAPTER 1 INTRODUCTION

Lower Mount Bethel Township, located in northeastern Northampton County, Pennsylvania, is part of the Lehigh Valley region. Major interstates between Pennsylvania, New Jersey, and New York City continue to carry new residents and employers to the Lehigh Valley in search of quality of life, relatively inexpensive land, and affordable labor markets.

As many formerly rural municipalities within the region have quickly begun to be transformed by considerable suburban housing and employment development, Lower Mount Bethel Township has remained primarily rural in character, with low population growth.

Travelers entering the township on Uhler Road from Forks Township to the south view a rolling, open, and undeveloped landscape. Traveling on toward Martins Creek, the township's open landscape is basically divided, from east to west, into the Delaware River and its floodplain lands; prime farmlands located on a "terrace" of the river floodplain; a sharply ascending landscape leading from the terrace; and finally, moderately sloping, higher elevation lands leading to the western boundary with Washington Township. Slicing through these features are roughly a half-dozen creeks, some much more pronounced than others, all leading either directly, or underground through sinkholes, to the Delaware River. Martins Creek, a unique and historic village with the greatest concentration of township residents and businesses, lies in a valley of the Martins Creek watershed.



Cultivated river terrace in eastern Lower Mount Bethel Township

Historically, most of the township's non-farm residential development is in the form of relatively small, isolated pockets of old and a few more recent single-family detached homes. Some of these areas lie along the Delaware River and along Route 611. Martins Creek, Riverton, Sandts Eddy, and a loose assemblage of more rural homes known as Mount Pleasant are residential areas of note. No significant retail shopping opportunities, or public utilities (water, sewer, and storm sewer), and few major roads exist within the Township.

Lower Mount Bethel Township has much to be proud of. It has the highest percentage of permanently protected farmland in Northampton County, testimony to the commitment of many landowners to preserve the Township's agrarian roots. In 2006, an overwhelming majority of township residents supported a municipal open space referendum that provided for dedicated tax revenue to fund further conservation of the Township's valuable agricultural and other open space resources. In recent years, the Township has acquired substantial passive open space and trail resources.



Church in the village of Martins Creek

The Township has partnered with other agencies and organizations to see the designation of the Lower Delaware River National Wild and Scenic River, the state designation of the Delaware River Valley Scenic Byway, and development of appropriate corridor management plans.

Beginning with the development of the preceding 2007 Comprehensive Plan, Lower Mount Bethel Township has completed an impressive number of significant planning efforts that further the Township's objectives to conserve the rural landscape context. These include the following:

- 2010, Comprehensive Agricultural Preservation Zoning Ordinance (CAPZO), amendment to pre-existing Zoning Ordinance;
- 2010, revised 2011, Lower Mount Bethel Township Open Space Plan;
- 2011, Delaware River Valley Scenic Byway Corridor Management Plan;
- 2013, Community Recreation Update;
- 2013, Subdivision and Land Development Ordinance, entirely new ordinance;
- 2014, Act 167 Stormwater Management Ordinance;
- 2022, new Zoning Ordinance and Map, adopted July 11, 2022;
- 2022, participation in completion of draft Plan Slate Belt, multi-municipal comprehensive plan.

Why does this new Comprehensive Plan Update matter?

The Pennsylvania Municipalities Planning Code (MPC) requires that every municipality review its Comprehensive Plan every ten years. This requirement recognizes that change is constant, even when relatively slow: changes in people, their diversity and their lifestyles; changes in the landscape and development patterns; changes in resource management; changes in accessibility and demands for services. Each change brings new challenges. Facing challenges requires vision. The Township recognizes and seeks to protect the natural, historic and rural features of the landscape, and promote a vibrant community that can be sustained over time. Lower Mount Bethel Township is worthy of continued special efforts to carefully guide changes and preserve the most important features of the community. Changes and growth can be carefully managed so that they enhance community character, quality of life, and community goals. This is the purpose of the Comprehensive Plan.

What is the Comprehensive Plan?

This Comprehensive Plan Update is intended to guide the development and preservation of Lower Mount Bethel Township over the next 20 years as per the goals, objectives and strategies included herein. This Plan establishes implementation recommendations for future land uses, natural and cultural resource conservation, open space preservation, parks and recreation, transportation, and community facilities. The Plan serves as a foundation for revisions to the Township's land use regulations. The Township's main sets of regulations for land use are the Zoning Ordinance and the Subdivision and Land Development Ordinance (SALDO). While the Comprehensive Plan provides guidelines, the Zoning Ordinance primarily controls the types and intensities of the various land uses and design standards for their existing use and future development. The SALDO primarily establishes the procedures for approving new lots and other land developments. The SALDO also establishes design standards for the construction of roads, stormwater management and other improvements. The other land use regulation, not used to date, but which is recommended by this Comprehensive Plan Update, is the Official Map, which will offer the Township a means to formalize the potential set-aside of lands for public purpose.

This new Comprehensive Plan Update has been prepared under the direction of the Lower Mount Bethel Township Board of Supervisors, Planning Commission members, and an Ad-Hoc Committee of Township residents and business owners. Technical support has been provided by Township staff, and Township consultants.

This Comprehensive Plan Update has been prepared in conformance with the provisions of Article III of the MPC, as amended, which establishes the parameters for preparing a municipal comprehensive plan. This Comprehensive Plan Update, which consists of text and maps, conforms to the requirements of the MPC by providing an assessment of the community which identifies current land uses including agricultural operations, commercial, industrial, institutional and recreational uses, environmental, geological, natural and historic resources, and land uses in adjacent communities. A statement of objectives concerning the future development of the community provides for the preservation and protection of prime agricultural lands and the compatibility of future land uses with existing agricultural operations; the housing needs of present and future inhabitants, a range of community facilities and utilities to serve present and future inhabitants, the protection of historic and environmental resources including woodlands,

steep slopes and wetlands, aquifer recharge areas and water bodies; the compatibility of proposed future land uses with uses in adjacent municipalities; and proposed strategies for the current and future challenges related to the transportation of people and goods.

This Comprehensive Plan Update has been prepared in conformance with “FUTURELV: The Regional Plan,” which serves as the Comprehensive Plan for both Lehigh and Northampton Counties, prepared by the joint-county Lehigh Valley Planning Commission (LVPC) and adopted in November of 2019. This Plan also conforms with the new draft “Plan Slate Belt,” the Slate Belt multi-municipal comprehensive plan, completed in draft by LVPC in July of 2022.

Although specific in its recommendations, this Comprehensive Plan Update should not be viewed as a rigid mold for the future. It is intended that the information included herein will provide a vision for the future of Lower Mount Bethel Township. Planning is an on-going process. At a minimum, this Plan should be reviewed in ten years and updated as appropriate. Periodic updating will help ensure that land-use and other related policies continually address current issues and provide for future township generations.

What is included in this Comprehensive Plan Update?

The 2022 Lower Mount Bethel Township Comprehensive Plan Update is divided into eleven chapters and one appendix. Many of the chapters include color maps, figures, and tables to help convey important information, and contribute to the overall development of the plan on a topical basis.



View northward near Martins Creek – Belvidere Highway; compatible agricultural practices and regional energy facilities

Chapters 2 and 3 present the wealth of natural and cultural resources that underpin the quality of life in Lower Mount Bethel Township and suggest means to promote their conservation and sustainable use. Chapter 3 also presents demographic characteristics regarding population, housing, and employment and summarizes key demographic issues for future planning.

Chapter 4 presents an inventory of the Township’s existing land uses, including agricultural, residential, commercial, institutional and industrial land uses, and parks and protected lands. Chapter 4 also presents an analysis of the Township’s new 2022 Zoning Ordinance, followed by a “build-out analysis,” which indicates how the

Township meets its fair share of uses protected by the MPC and is consistent with case law to date.

Chapter 5 establishes updated community development objectives and strategies for the Township.

Chapter 6 establishes the Future Land Use and Housing Plan, looking at the impact of the regulatory role played by the Township and the means to meet emerging needs while protecting community character.

Chapters 7 and 8 describe existing and anticipated needs for Transportation and Community Facility infrastructure and recommend specific improvements.

Chapter 9 is the Open Space, Natural and Cultural Resources Protection Plan, drawing on the inventories in Chapters 2, 3 and 4, and promoting on-going and sustainable conservation. This chapter also details potential use of the Official Map tool, as recommended by this Plan.

Chapter 10 summarizes the regional planning context, looking at relevant planning efforts of LVPC, Northampton County, and adjoining municipalities, and demonstrating concurrence in relation to Lower Mount Bethel Township's planning efforts.

Chapter 11 presents the Plan's summary implementation recommendations, stemming from the recommendations in the prior chapters, and is divided into immediate, short-term, and long-term recommended actions.

Also included as an appendix is an inventory of historic resources within the Township.

CHAPTER 2 NATURAL RESOURCES

Natural resources should be used to help frame a logical pattern of development and open space within the Township. Geology, topography, soil type, and the presence of wetlands or floodplains can provide constraints and challenges to development. Other natural resource features are worth conserving for their benefit to the community, including woodlands and productive agricultural soils. When the natural resources of a community are reviewed together, areas that are appropriate for development and conservation can be identified. The following inventory locates and evaluates Lower Mount Bethel Township's natural resources.

Geology

Analysis of the geology of an area is important from both a landform and community development perspective. In addition to explaining the shape of the landscape, geologic information is used to determine the availability and safety of groundwater supplies, the presence of mineral resources, and the ability of bedrock to support development.

Lower Mount Bethel Township lies on rock laid down over 400 million years ago during the Lehigh Valley Sequence of the Ordovician geologic period. Much more recently, glaciers covered the entire Township and extended as far south as Easton. Workable deposits of glacial sands and gravel are generally sparse with the exception of areas along the Delaware River. For example, substantial deposits of gravel and sand are present in a terrace on the Delaware north of Martins Creek, where deposits 40 to 50 feet thick lie upon limestone bedrock. Other minor deposits are found within the Delaware's floodplain.

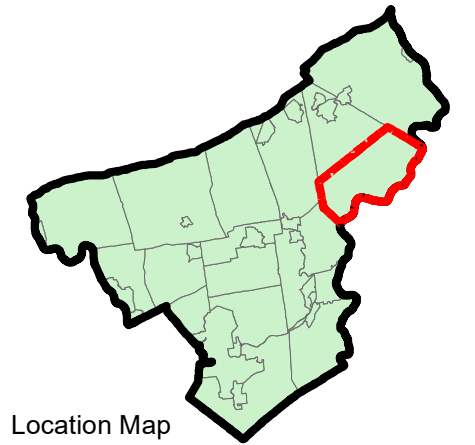
Basic geologic information has not changed since the preparation of the Lower Mount Bethel Comprehensive Plan of 2007. Five basic geologic formations underlie Lower Mount Bethel Township and are depicted by location in Figure 2-1, Geologic Resources:

- *Jacksonburg Limestone (Ojk)* – The presence of this high-grade crystalline limestone, which underlies approximately 3,526 acres of the Township, has had a major impact on the community's physical and economic development. Varying in width from 2,500 to 7,500 feet, it runs in a northwesterly direction from Lower Mount Bethel's border with Forks Township to Riverton. Pure Jacksonburg limestone typically ranges from 75 to 200 feet in thickness, but depth in this part of Northampton County can range from 250 to 600 feet. Due to its carbonate composition, limestone has an extensive subsurface drainage system and carries significant potential for sinkhole formation. Small quantities of groundwater are available in zones of weathered material or cleavage openings. It is possible to drill down into pure limestone to find more reliable groundwater supplies. The presence of solution channels in Jacksonburg limestone makes groundwater susceptible to contamination.

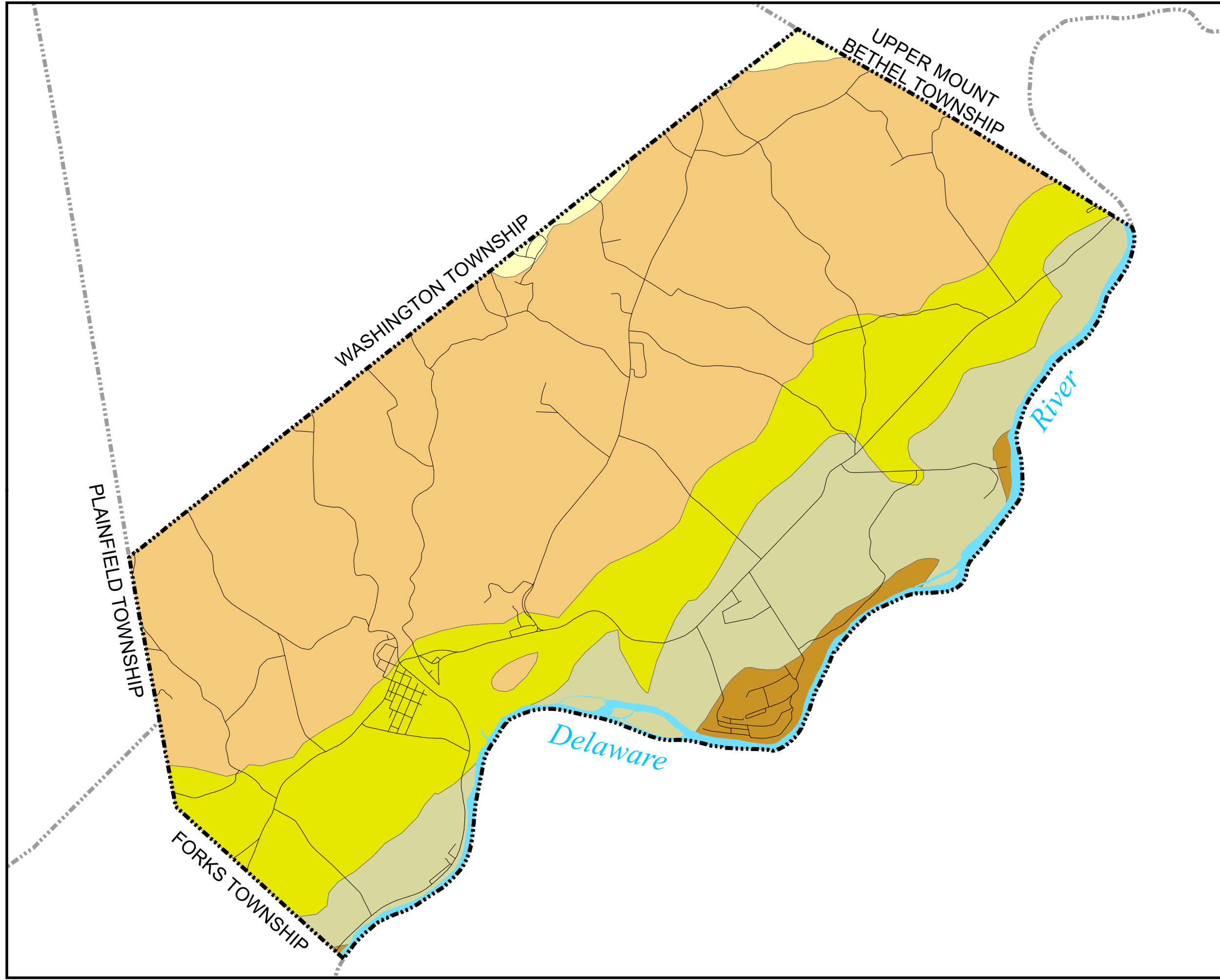
Also known as "cement rock," Jacksonburg limestone provides the basis for Lower Mount Bethel Township's limestone quarrying activities. It also underlies much of the Township's prime agricultural soils.

- *Epler Limestone (Oe)* – Abutting the southern edge of the Jacksonburg limestone band, Epler limestone is one of two elements of the Beekmantown Group of the Lehigh Valley Sequence.

Figure 2-1
Geologic Resources
Lower Mount Bethel Township
Comprehensive Plan

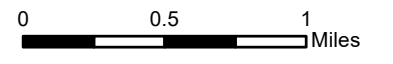


Location Map



Legend

- Lower Mount Bethel Township
- Adjacent Townships
- Roads
- Geologic Resources**
- Jacksonburg Limestone
- Epler Limestone
- Rickenbach Dolomite
- Martinsburg Shale-Ramseyburg Member
- Martinsburg Shale-Bushkill Member



Data source: Base data from Lehigh Valley Planning Commission, 2005
Northampton County GIS Dept., 2022.

Map created: June 14, 2022

Underlying roughly 2,745 acres of the Township, the Epler formation is comprised of thick-bedded, finely crystalline limestone. Deposits of iron ore can be found where limestone is closely folded or faulted. As with the Jacksonburg limestone, the Epler formation's carbonate geology makes it prone to sinkhole formation and groundwater contamination. Groundwater obtained from the Epler formation is generally known for having high mineral content and poor clarity.

- *Rickenbach Dolomite (Ori)* – Two areas of Rickenbach dolomite totaling 438 acres lie between the Delaware River and the Epler limestone. This formation consists of gray, finely to coarsely crystalline laminated dolomite. Potential water supplies exist within Rickenbach dolomite. It has been quarried extensively for crushed stone.
- *Martinsburg Shale (Om)* – By far the largest and most economically important geologic formation in the Township, Martinsburg shale is the basis for Northampton County's successful slate industry. This "slate belt" contains two elements present in Lower Mount Bethel Township: the *Bushkill Member* (8,909 acres) and the *Ramseyburg Member* (143 acres). Martinsburg shale consists of black to gray carbonaceous fissured shale that has metamorphosed to slate in some areas of the Township, particularly in the northwest. It ranges from 2,000 to 3,000 feet in depth and contains relatively reliable supplies of groundwater. While wells in slate generally yield larger quantities of groundwater, the chances of obtaining a producing well in shale are better.

Carbonate geology presents unique challenges to planning and development. Carbonate rocks – limestone and dolomite – contain minerals that will dissolve in weak acidic solutions, such as runoff percolating through rich organic soils. This may result in the creation of caves, cavities, pinnacles, irregular bedrock surfaces, and other voids in bedrock which greatly impact landform and the flow of surface water. Sinkholes form when soils collapse or are eroded into bedrock openings. For example, Mud Run (a "vanishing stream") does not directly enter the Delaware River but drains through a series of sinkholes.

Valleys underlain by carbonate geology are considered to have "karst" topography. Contaminants introduced at or below ground level in karst valleys can rapidly migrate and damage groundwater supplies. In addition, sinkhole formation can seriously damage or destroy buildings, utilities, and other structures. With its recent shift towards infiltration, carbonate geology poses significant challenges to stormwater management. If infiltration best management practices (BMPs) are proposed, additional testing may be required to determine the infiltration capacity of soils. Special buffers from carbonate geological features may also be necessary to prevent groundwater contamination and sinkhole formation.

Key Findings

- There are five basic geologic formations within the Township (see Figure 2-1). Limestone and shale are the predominant bedrock types.
- Carbonate geology or "Karst topography" underlies approximately 40 percent of the Township.
- Limestone is conducive to groundwater recharge, yet groundwater in carbonate areas is highly susceptible to contamination due to the presence of solution channels.

- Limestone formations are subject to sinkholes which are hazardous to development.
- The presence of limestone improves the ability of agricultural crops to acquire needed nutrients and counteracts the acid-intensifying effects of soils, producing higher crop yields with the use of less fertilizer.
- Most of the geological formations in the Township provide adequate water supplies for domestic use.

References

- *Lower Mount Bethel Township Comprehensive Plan, 2007.*
- *Geologic Survey of Pennsylvania, 1980.*
- *Soil Survey of Northampton County, Pennsylvania, 2021.*

Topography

Lower Mount Bethel Township is bounded to the southeast by the Delaware River. The relatively flat plain along the river is narrow from the Forks Township boundary to just east of Martins Creek, where it then widens into a broader plain. Steep slopes rise up from the Delaware River, Martins Creek, and Mud Run to flatter upland areas. The highest point in the township is in its northern corner, roughly 820 feet above sea level. Basic topographic information also has not changed since the preparation of the Lower Mount Bethel Comprehensive Plan of 2007.

A delicate balance exists between slope, soil type, and vegetation. Maintaining this balance reduces the threats to public health and safety posed by disturbed hillsides. Generally, as slope increases, soil depth and the ability of soil to support structures and sustain re-vegetation decreases. Because of this delicate balance, steep slopes are more susceptible to erosion than other areas. In addition, certain species of flora and fauna are endemic to the unique environment created by steep slopes.

Slopes are measured as a ratio of vertical rise over horizontal distance. A 15-foot vertical rise across a horizontal distance of 100 feet equals a 15 percent slope which, for the purposes of this plan, is considered a steep slope. Moderate slopes are considered to be between 8 percent and 15 percent. Gentle slopes are considered to be any slope less than 3 percent.

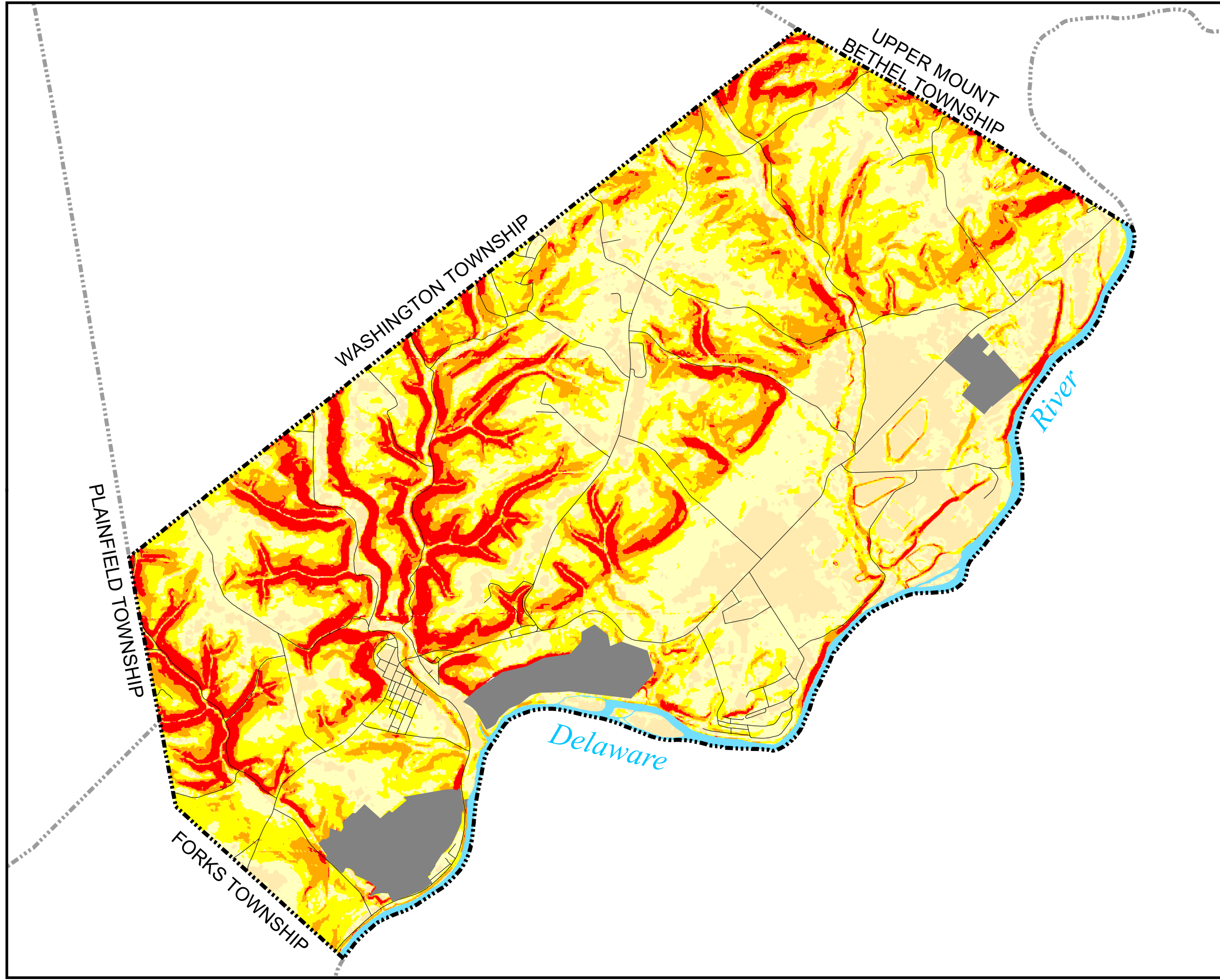
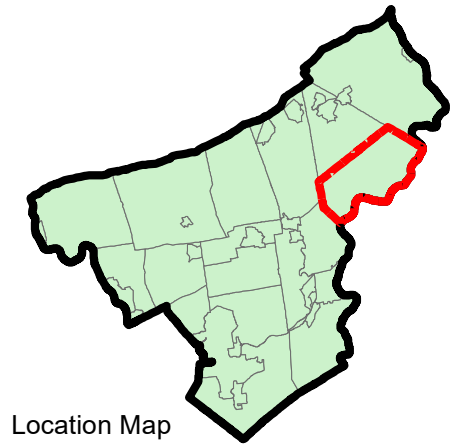
Table 2-1 lists the amount of township land in each slope category, and Figure 2-2 presents a slope analysis. Slopes were derived from 5-foot contour data provided by the Lehigh Valley Planning Commission (LVPC). A relatively large proportion of the Township, just over one quarter, is steeply sloping. These areas are concentrated in the valleys adjacent to Mud Run, Martins Creek, and Oughoughton Creek.

Key Findings

- Roughly 28 percent of the Township contains slopes greater than 15 percent.
- Slopes greater than 15 percent are highly susceptible to erosion.
- Slopes greater than 15 percent provide unique habitats for plants and wildlife.
- Though susceptible to erosion, moderate slopes provide opportunities for agriculture, development, and groundwater recharge.

Figure 2-2
Slope Analysis

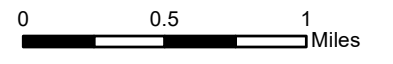
Lower Mount Bethel Township
Comprehensive Plan



Legend

- Lower Mount Bethel Township
 - Adjacent Townships
 - Roads
 - Active quarry locations
- Slopes**
- 0-3% - 2,835 acres (18%)
 - 3-8% - 4,269 acres (27%)
 - 8-15% - 4,258 acres (27%)
 - 15-25% - 2,534 acres (16%)
 - >25% - 1,847 acres (12%)

Note: The slopes within the quarry locations are not shown as they are constantly changing



Data source: Base data from Lehigh Valley Planning Commission, 2005
Northampton County GIS Dept., 2022.

Map created: June 14, 2022
Last revised: September 26, 2022

Table 2-1: Slope Analysis, Lower Mount Bethel Township

Slope Category	Acreage of Township	% of Township
0 to 3 percent	2,835	18.0
3 to 8 percent	4,269	27.1
8 to 15 percent	4,258	27.0
15 to 25 percent	2,534	16.1
25 percent and greater	1,847	11.7

Source: Lower Mount Bethel Township Comprehensive Plan, 2007.

References

- Geographic Information Systems (GIS) data published by LVPC.

Soils

The Soil Survey for Northampton County identifies over 50 distinct soil types in Lower Mount Bethel Township. Many of these soil types cover only a few acres and are located in a handful of locations. The majority of the Township’s soils (roughly 80 percent) are components of the major soil groups or “series” listed below.

- *Berks Series* – This series is generally found in uplands and is characterized by moderately deep, well drained soils. Formed in material weathered from glacial till or frost-churned shale, Berks series soils have moderately rapid permeability and moderate to low moisture capacity. Shallowness to bedrock and high content of coarse fragments limit Berks soils for many uses.
- *Conotton Series* – This series is generally located in the Delaware River floodplain between Riverton and Oughoughton Creek. It consists of deep, well-drained soils formed in stratified glacial drift. Conotton soils have low available moisture capacity and rapid permeability. Lower Mount Bethel Township’s Conotton soils have slightly greater moisture capacity than Conotton soils found elsewhere in Northampton County.
- *Ryder Series* – Found primarily in upland areas south of Martins Creek, this series consists of moderately deep, well drained soils formed from weathered limestone and shale. Ryder soils have moderate available moisture capacity and moderate permeability.
- *Smartswood Series* – Also common in uplands, Smartswood soils are well-draining soils formed in compact glacial till composed of weathered shale, quartzite, siltstone, sandstone, and limestone. They are primarily found over shale and slate uplands. Smartswood soils have low available moisture capacity and moderate permeability.
- *Washington Series* – This series is found along the Delaware River floodplain south of Oughoughton Creek. Washington soils are well-drained soils formed in mildly karst uplands. They have high available moisture capacity and moderate permeability.
- *Weikert Series* – An upland series generally found between Martins and Oughoughton Creeks, Weikert soils are shallow and well-drained with low moisture capacity and

moderately rapid permeability. Formed in material weathered from glacial till and frost-worked shale, they are somewhat limited for agricultural and development uses because of their shallow depth to bedrock and high coarse fragment content.

The soils most suitable for on-lot sewage disposal are located along the lowlands adjacent to the Delaware River, along the Forks township line, and in the northwestern portion of the Township. Several areas along the Delaware River are not classified due to disturbance because of residential, industrial or quarrying operations.

Prime Agricultural Soils

The agricultural capability of soil is based on a combination of physical and chemical factors including fertility, depth to bedrock and water table, texture, erodibility, and slope. The term “prime agricultural land” is used to distinguish soils that are especially productive for agricultural use from other, less productive soils. As defined in the Municipalities Planning Code, prime agricultural land is, “land used for agricultural purposes that contains soils of the first, second, or third class as defined by the United State Department of Agriculture natural resources and conservation services county soil survey” (Municipalities Planning Code (MPC), Article I, Section 107). Class I, II, and III soils were mapped as prime agricultural in the 2007 Comprehensive Plan. However today, despite no change in the MPC definition, the Soil Survey now considers Classes I and II as “prime agricultural soils” and Class III as “soils of statewide significance.” So this change is reflected in our mapping on Figure 2-3. Soil Resources.

The Soil Survey also groups soils according to their productivity. Generally, Classes I and II, (“prime agricultural soils”) and Class III soils (“soils of statewide significance”) are well-drained and are gentle to moderately sloping. These soils have the combination of physical and chemical properties and growing conditions needed to sustain high crop yields when farmed in accordance with acceptable farming practices.

As seen in Table 2-2, most of Lower Mount Bethel Township (62 percent) consists of prime agricultural soils and soils of statewide significance. The Class I soils are concentrated in the lowlands along the Delaware River in the Oughoughton Creek watershed. While Class I soils comprise only 8 percent of the Township’s land area, this percentage is high in comparison to statewide figures.

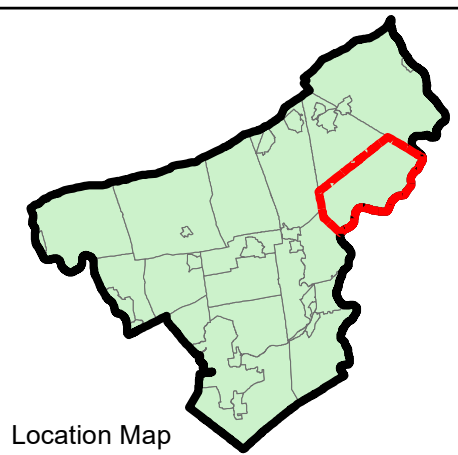
Table 2-2: Prime Agricultural Soils and Soils of Statewide Significance (Class III), Lower Mount Bethel Township

Capability Class	Acreage	% of Township
Class I	1,179	8
Class II	4,628	29
Class III	4,019	25

Source: Soil Survey of Northampton County, 2021

Figure 2-3
Soil Resources

Lower Mount Bethel Township
Comprehensive Plan

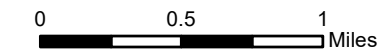


Location Map

Legend

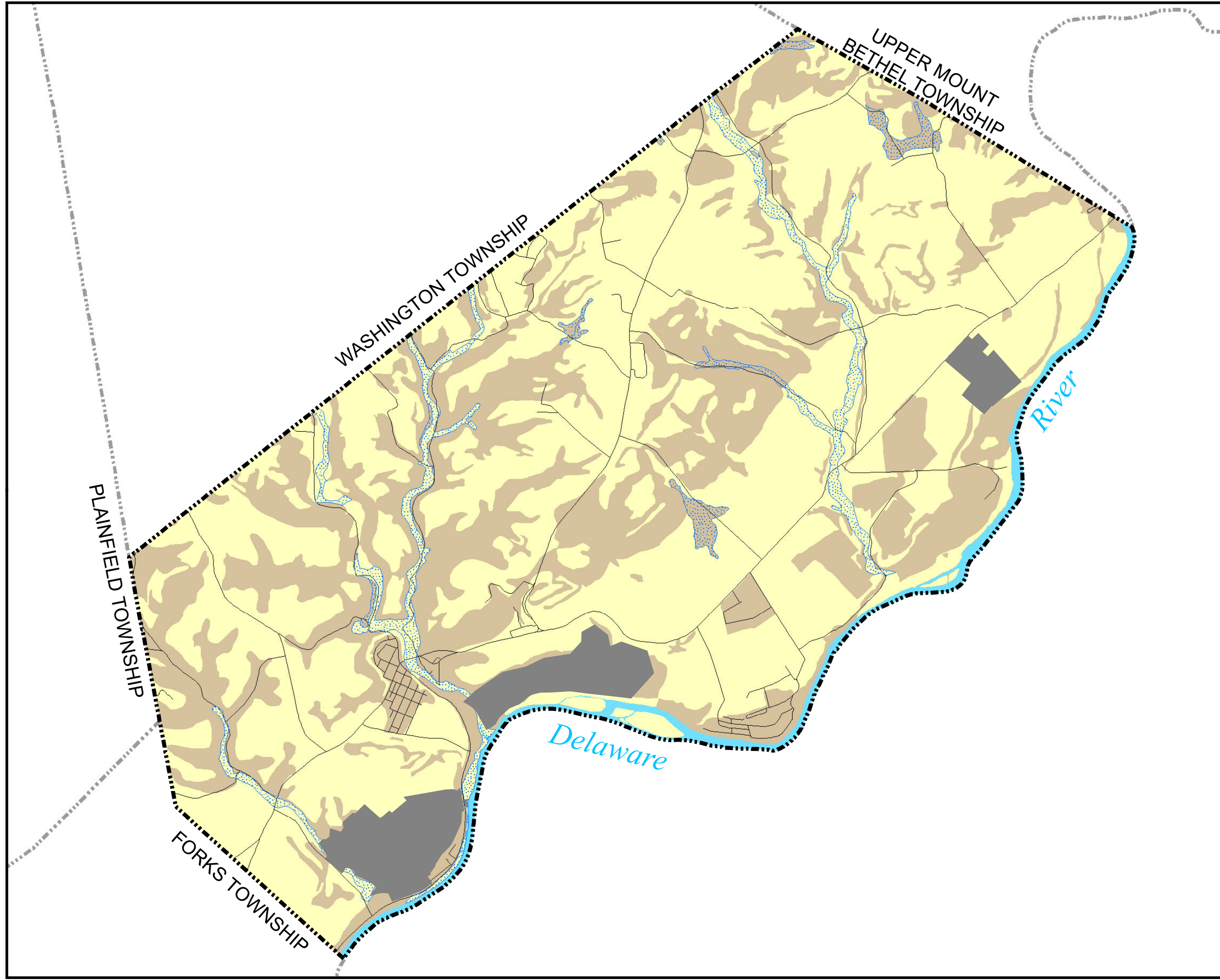
- Lower Mount Bethel Township
- Adjacent Townships
- Roads
- Prime Agricultural Soils and Soils of Statewide Importance
- Not prime farmland
- Hydric soils
- Active quarry locations

Note: The soils within the quarry locations are not shown due to their removal



Data source: Base data from Lehigh Valley Planning Commission, 2005
Northampton County GIS Dept., 2022.

Map created: June 14, 2022
Last revised: September 26, 2022



Class I soils are the most productive and have the least limitations in terms of their use for agriculture. Class II and III soils, also highly productive, face more limitations and may be better equipped for certain crops or require specific conservation practices (See Figure 2-3).

Hydric Soils

Hydric soils are found in upland depressions and along the fringes of or within floodplains, and often within or adjacent to wetlands. They exhibit shallow depth to water table and occasionally display standing water. Many hydric soils support the growth of wetland vegetation. Those that do not may have been drained for agricultural use. More than an indicator of wetland conditions, hydric soils often indicate former wetland locations. Hydric soils within floodplains are typically soils which have been deposited by flowing water and are generally unstable as a result of their texture and composition. They often form aquifer recharge areas.

Hydric soil locations in Lower Mount Bethel Township are mapped in Figure 2-3 and include: Brinkerton-Comly silt loams (BtA, BtB); Chippewa silt loams (ChA, ChB, CkB); and Holly silt loam (Ho). These soils comprise approximately 602 acres and generally coincide with wetland areas, stream corridors and floodplains.

Soil Suitability for On-Lot Sewage Disposal

In many areas of Lower Mount Bethel Township, on-lot sewage disposal poses a problem due to its potential for ground water contamination. Contamination of wells in the villages of Martins Creek and Riverton – both of which rely entirely on on-lot disposal to meet their wastewater needs – attests to this potential.

The suitability of soil for on-lot sewage disposal is a function of soil depth, drainage, and permeability. Generally, the deeper and better draining the soil, the more suitable it is for subsurface disposal. However, soils that drain rapidly and/or have high permeability may fail to treat effluent before it reaches groundwater supplies. Similarly, soils with high water tables are already saturated and lack the capacity to retain and treat effluent. Steep slopes also pose challenges to on-lot disposal because of their implications for drain field design.

The design of on-lot sewage disposal systems should be tailored to the unique characteristics of each soil type. While the County soil survey may be used as a general guide to determine suitability, on-site soil tests will always be required to ensure soils are capable of treating wastewater and that on-lot systems are designed to respond to particular soil characteristics.

The areas of the Township with the fewest soil limitations for on-lot sewage disposal are generally those that are the most productive for agricultural use. The installation of on-lot systems in areas of hydric soils, alluvial soils, and steep slopes should generally be avoided.

Key Findings

- The six major soil associations found in the Township can be characterized as moderately deep to deep, well-drained soils.
- The majority of the Township (62 percent) consists of “prime agricultural soils” or “soils of statewide significance.”
- The soils most conducive to agriculture are also the most suitable for groundwater recharge and on-lot sewage disposal.

- Hydric soils are indicative of wetland conditions, former wetland locations and floodplains. These environmentally-sensitive resources should be protected from disturbance.
- Soil suitability for on-lot sewage disposal is a function of soil depth, drainage, and permeability. On-lot sewage disposal systems should not be installed in areas with high water tables, steep slopes, hydric soils, or alluvial soils.

References

- *Lower Mount Bethel Township Comprehensive Plan, 2007.*
- *Soil Survey of Northampton County, Pennsylvania, 2021.*

Streams, Rivers, and Watersheds

Lower Mount Bethel Township has approximately 49 linear miles of streams, including 8.5 miles of frontage on the Lower Delaware River. Part of the broader Martins/ Jacoby Creek watershed, the Township straddles 6 sub-watersheds of varying size and land use, all of which empty into the Delaware River. The Oughoughton Creek sub-watershed occupies the largest area in the Township (4,681 acres), followed closely by the Martins Creek (4,328 acres) and Delaware River (4,106 acres) sub-watersheds. The Mud Run sub-watershed (1,621 acres) and the watersheds for two intermittent streams (339 acres) drain the rest of the Township's land area (see Figure 2-4, Surface Water Resources).

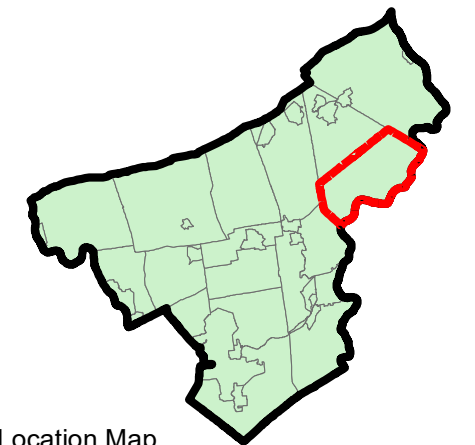


Streamside vegetation in the Martins Creek watershed

Due to its topography, significant portions of Lower Mount Bethel Township's sub-watersheds are "headwaters areas," the watersheds of first order streams. These are the first branches or tributaries of any stream above the confluence with another branch and also may be termed "headwaters streams." These areas are very sensitive to land disturbance in their vicinity due to their small base flows, sourced from springs. Headwaters areas are also mapped on Figures 2-4 and 2-5.

Pennsylvania Department of Environmental Protection (DEP) rates all streams on the basis of water quality related to stream use as "attaining or non-attaining" relative to DEP water quality standards. DEP assesses streams for compliance with the U.S. Clean Water Act, Sections 305(b) and 303(d). PA Four stream water uses are protected, with specific standards: aquatic life, fish consumption, potable water supply, and recreation. If a stream segment is not attaining any one

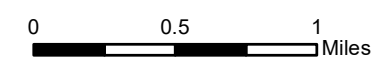
Figure 2-4
Surface Water Resources
Lower Mount Bethel Township
Comprehensive Plan



Location Map

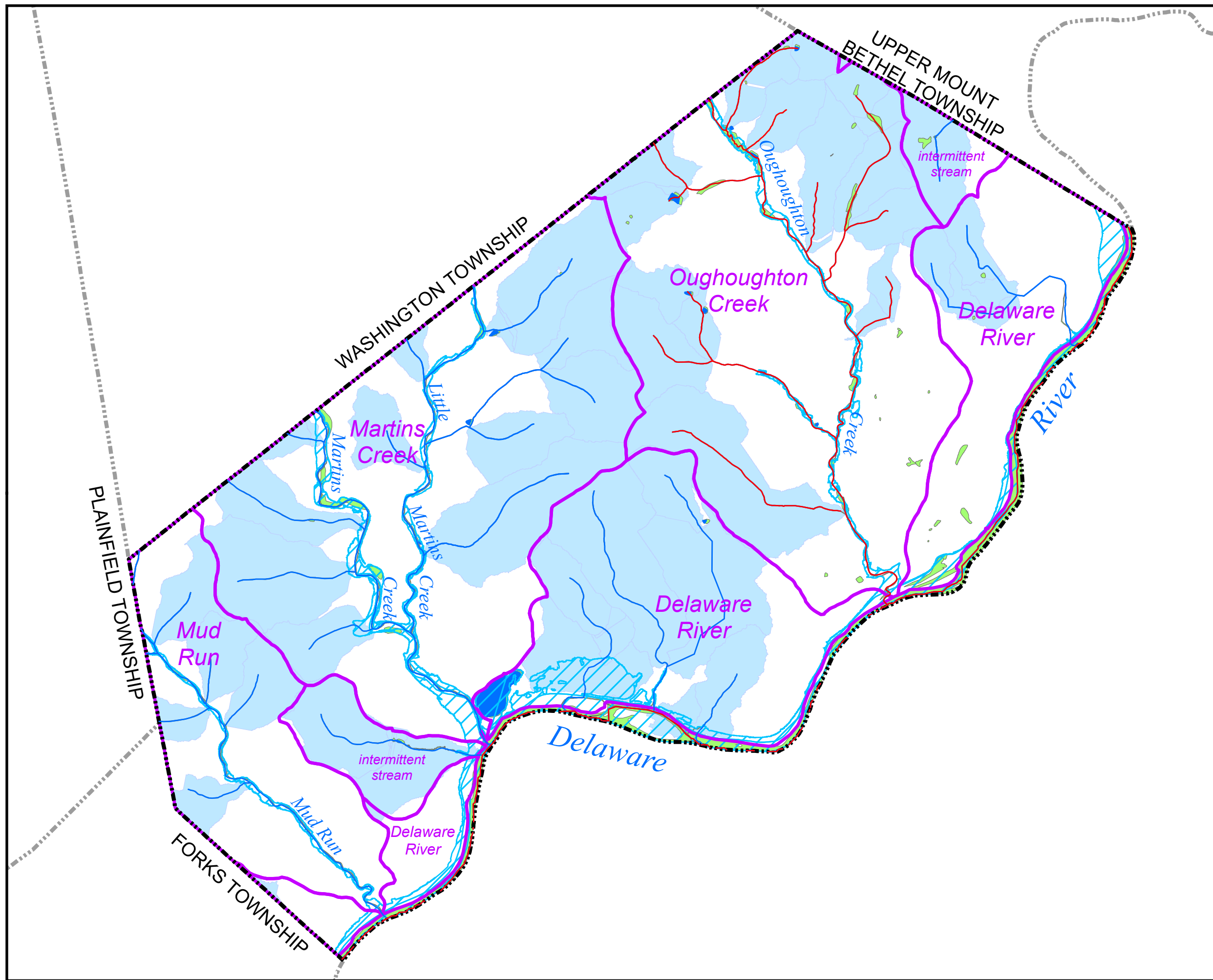
Legend

- Lower Mount Bethel Township
- Adjacent Townships
- Watershed Boundaries
- Floodplains
- Bodies of Water
- Wetlands
- Headwaters areas
- Streams**
- Non-Attaining
- Attaining



Data source: Base data from Lehigh Valley Planning Commission, 2005
Floodplains from FEMA, 2014. Wetlands from NWI, 2022.
Attaining and Non-attaining streams from PA DEP, 2022.
Headwaters areas from USGS NHD Plus HR, 2018.

Map created: June 22, 2022
Last revised: October 12, 2022



of its four uses, it is considered impaired or “non-attaining.” The streams and tributaries in the Oughoughton Creek sub-watershed and the Delaware River are designated as “non-attaining,” while all other streams in Lower Mount Bethel Township are designated as “attaining” (see Figure 2-4).

Pennsylvania DEP also classifies streams on the basis of fishing quality. With the exception of Martins Creek and the Delaware River, all streams in the Township are classified for Cold Water Fishes (CWF). Martins Creek and its tributaries (excluding Little Martins Creek and its tributaries) are designated for Trout Stocking Fishes (TSF). The portion of the Delaware River adjacent to the Township is classified as for Warm Water Fishes (WWF). DEP also considers these designations when evaluating permit applications (see Figure 2-5, Surface Water Quality).

Unfortunately, only one of the Township’s streams, Martins Creek main stem, receives DEP’s more stringent water quality designation of High Quality (HQ). None of the other streams or tributaries receive either of DEP’s most stringent water quality designations: High Quality (HQ) and Exceptional Value (EV). HQ and EV streams are “special protection waters” subject to specific anti-degradation rules. A number of the Township’s stream segments could possibly be upgraded to HQ status, provided more thorough biological or chemical assessments are completed and submitted to DEP. The Township should explore potential opportunities for stream quality assessments that may lead to further streams achieving HQ designation.

Under normal flow, as opposed to storm flow, Mud Run and Oughoughton Creek are intermittent streams that do not drain directly into the Delaware, but percolate into groundwater through sinkholes and other carbonate geologic features. Ghost lakes, which rise and fall with the water table, are also present in the Township. Residents have noted that the channel and riparian corridor of Little Martins Creek have changed substantially over time, as a result of erosion and inadequate stormwater management on farms.

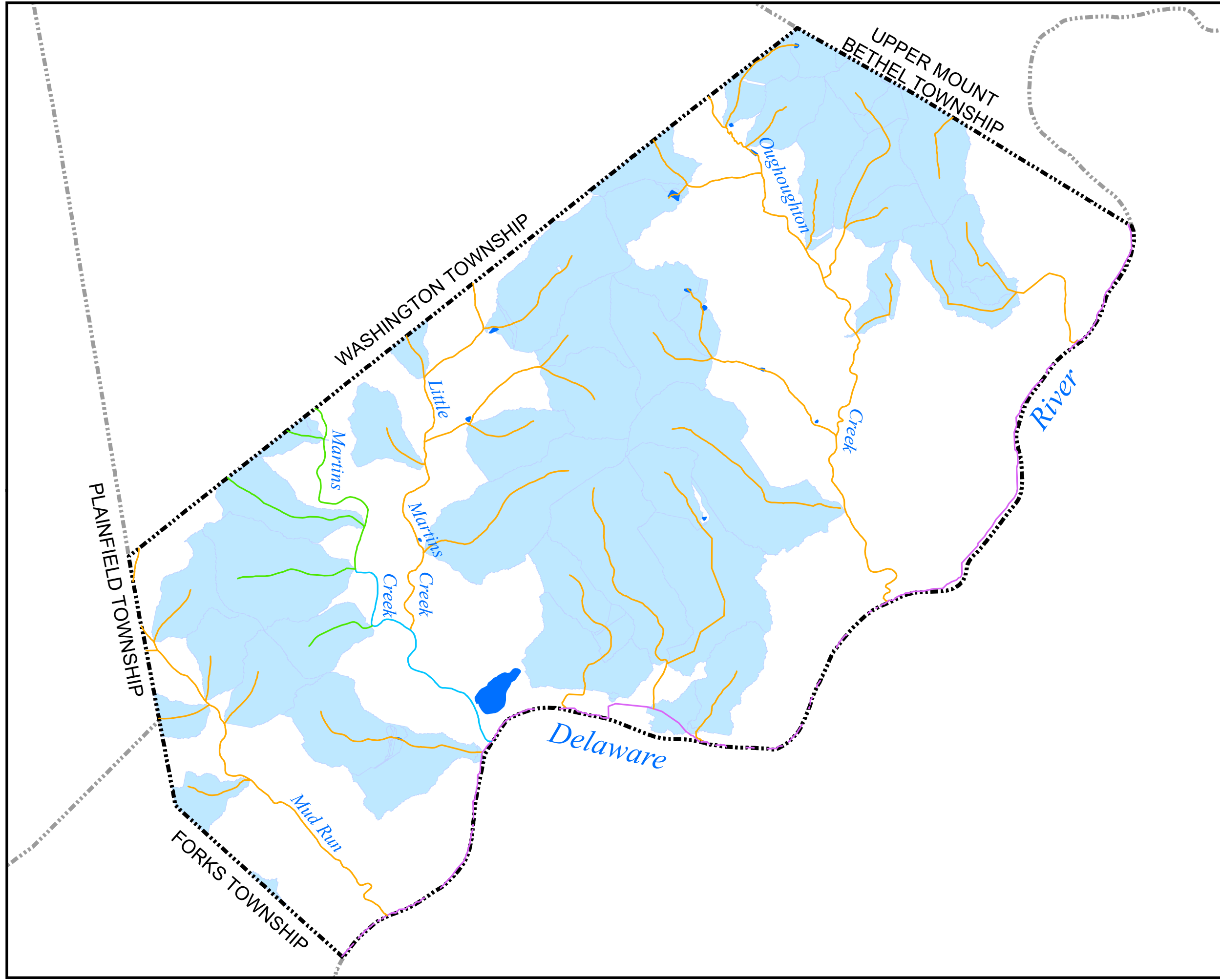
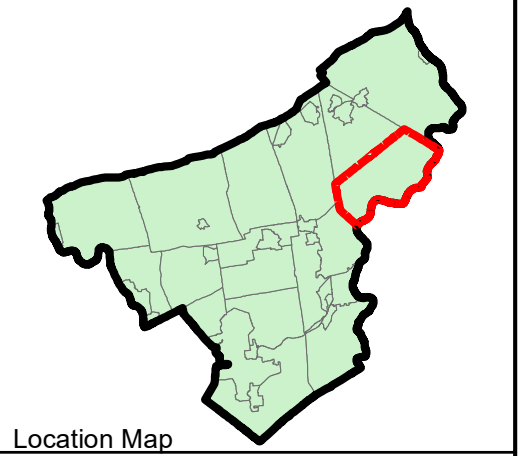


Lower Mount Bethel’s view of the scenic Delaware River at “low water”

Lower Mount Bethel Township's most valuable natural resource is its 8.5 miles of frontage on the Lower Delaware River. As noted also in Chapter 3, under Scenic Resources, a portion adjacent to the Township has been designated as the Lower Delaware Scenic and Recreational River, a unit of the National Park System’s national Wild and Scenic River system.

Wild and Scenic designation was the outcome of the Lower Delaware River Management Plan. Various sections of the River were identified as special study areas based on their natural resource and recreation value. These include Foul Rift, Sandt’s Eddy, and Northampton County’s Mud Run Park.

Figure 2-5
 Surface Water Quality
 Designated Use
 Lower Mount Bethel Township
 Comprehensive Plan



Legend

- Lower Mount Bethel Township
- Adjacent Townships
- Bodies of Water
- Headwaters areas

Ch. 93 Designated Use

- CWF(COLD WATER FISHES)
- HQ-CWF(HIGH QUALITY-COLD WATER FISHES)
- TSF(TROUT STOCKING)
- WWF(WARM WATER FISHES)

BRANDYWINE
 CONSERVANCY

Data source: Base data from Lehigh Valley Planning Commission, 2005
 Floodplains from FEMA, 2014. Wetlands from NWI, 2022.
 Attaining and Non-attaining streams from PA DEP, 2022.
 Headwaters areas from USGS NHD Plus HR, 2018.

Map created: June 22, 2022
 Last revised: October 12, 2022

The Lower Delaware River National Wild and Scenic Rivers Management Plan Area extends west of the river corridor in a band 3,000 to 8,500 feet wide. The designated area contains Martins Creek, Little Martins Creek, Oughoughton Creek, and Mud Run, as well as a few unnamed and intermittent streams. The River is classified by the National Park Service as a “Partnership” Wild and Scenic River. Though Wild and Scenic status prohibits the Federal government from assisting in water resources projects (issuing permits, funding, construction, etc.) that would have an adverse effect on the river or its “outstandingly remarkable resources,” management of Partnership Rivers is the joint responsibility of local, state, and federal authorities.

Key Findings

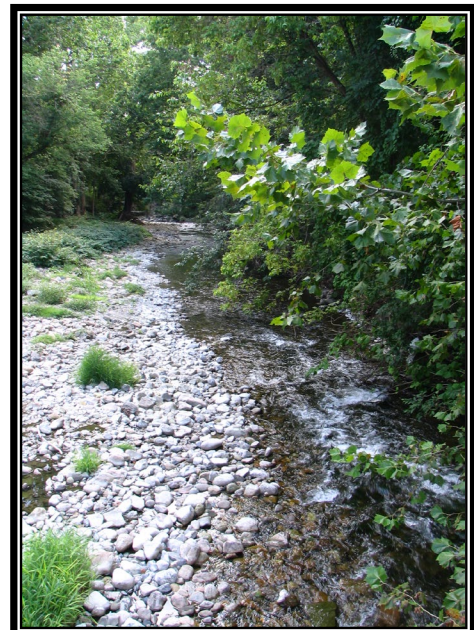
- Lower Mount Bethel Township has 49 linear miles of streams, including 8.5 miles of frontage on the Lower Delaware River, a National Wild and Scenic River.
- The Township is part of six, largely agricultural, sub-watersheds, of which significant portions are headwaters areas.
- The streams and tributaries in the Oughoughton Creek sub-watershed and the Delaware River are designated as “non-attaining,” while all other streams in Lower Mount Bethel Township are designated as “attaining,” in regard to PA DEP water quality standards.
- Martin’s Creek is designated for Trout Stocking Fishes. Other streams are designated for Cold and Warm Water Fishes.
- A portion of Martins Creek has received a High Quality (HQ) designation. It is possible, with additional research and application to PA DEP, that other stream segments may qualify.
- A portion of the Township lies within the Lower Delaware River National Wild and Scenic Rivers Management Plan Area. Wild and Scenic designation may offer protections from potentially adverse projects involving federal permits or funding.

References

- *Lower Mount Bethel Township Comprehensive Plan, 2007.*
- *Pennsylvania Department of Environmental Protection, 2022.*
- *Lower Mount Bethel Township 2022 mapping efforts.*

Floodplains and Wetlands

Floodplains and wetlands provide valuable ecological services and pose significant constraints for development. Although they may coincide geographically, they also may be found in entirely different environments. Wetlands, for example, may be present in upland depressions, far from the flood-prone areas adjacent to streams and rivers.



Both floodplains and wetlands function as surface water storage areas, helping mitigate the erosive impact of peak storm flows and encouraging groundwater recharge. They also provide habitat for the variety of plants and animals that rely on their unique hydrologic regimes. Wetlands play a major role in improving water quality by allowing for the deposition of sediment and plant uptake of nutrients and other contaminants. The value of floodplains and wetlands for stormwater management will only increase as development occurs in once pristine watersheds.

Floodplains in Lower Mount Bethel Township may be found adjacent to almost every watercourse and those mapped can be viewed in Figure 2-4. Federal Emergency Management Agency (FEMA) designated Flood Hazard Areas are mapped in Figure 2-4 and encompass roughly 7 percent (1,140 acres) of the Township. These include lands inundated by the 100 and 500 year floods. Flood hazard areas are most prevalent along the Delaware River and the lower reaches of Martins Creek.

The location of wetlands is far more variable, as shown in Figure 2-4, in part due to the regulatory definition of wetlands. The Environmental Protection Agency and Army Corps of Engineers have defined wetlands as, “Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Some wetlands are easily recognizable because the presence or influence of water is obvious. Certain types of vegetation are only found in wetlands, which can also make identification easy. Yet many wetlands are subject only to seasonal flooding or may never be flooded at all, but have soils that are saturated long enough to support the growth of wetland or “hydrophytic” vegetation. Ultimately, it takes a professional to properly delineate wetland boundaries.

Figure 2-4 displays the location of wetlands identified in the National Wetland Inventory (NWI). NWI wetlands occupy 632 acres or 4 percent of the Township, including the Delaware River. Some of those wetlands are not functional wetlands as they are within the areas of quarry operations subject to change. Even so, wetlands identified by the NWI are sparse within Lower Mount Bethel as they have been mapped through the manual interpretation of aerial photography. Thus, the NWI generally underestimates the true extent of wetlands. For planning purposes, hydric soils are better indicators of wetlands than the NWI.

Key Findings

- Floodplains and wetlands provide critical habitat for wildlife and are important areas for controlling the effects of stream erosion and promoting groundwater infiltration.
- FEMA Flood Hazard Areas encompass 7 percent of the Township. Development should be limited in these areas due to their environmental sensitivity and inherent safety concerns.



- NWI wetlands occupy 4 percent of the Township, though the actual extent of wetlands is probably much larger. Wetlands should be left undisturbed because of the unique ecological functions they provide.

References

- *Lower Mount Bethel Township Comprehensive Plan, 2007*
- *Federal Emergency Management Agency (FEMA), 2014*
- *National Wetland Inventory (NWI), 2021*

Woodlands and Natural Areas

Woodlands serve many purposes, both functional and aesthetic. They are the best type of land cover for watershed management since trees absorb large amounts of water through their roots which is stored in the stem and leaves and released as evapo-transpiration. Stands of trees also provide natural erosion and flood control by decreasing the speed and amount of stormwater runoff.

Woodlands provide habitat for wildlife, provide natural riparian buffers for streams, natural protection for critical headwaters areas, and offer recreational opportunities. Even narrow wooded corridors provide windbreaks, prevent erosion, and provide cover for wildlife movement, shelter, and migration. The species of tree found within woodlands depends on soil type, slope, and orientation. Different species of trees attract different types of wildlife. Most native plants and animals are adapted to life in or near woodlands. Many beneficial species (e.g., pollinators), soil organisms, and natural predators (e.g., insect-eating birds) live and breed in such areas.

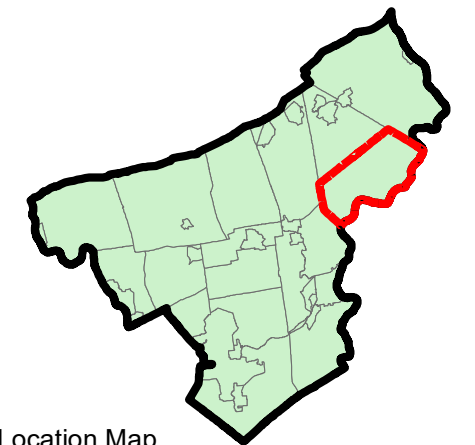
Woodlands function as natural barriers by reducing the unwelcome impact of noise and of strong winds and wind-transported substances (e.g., dust, snow) and by screening unsightly areas. They also function to reduce temperature extremes and moderate evaporation, acting as the “lungs” of the Township. Woodlands also have aesthetic and commercial values, including both passive and active recreation, timber harvesting, etc.

The spatial configuration of woodlands also has important implications for biodiversity. The smaller and narrower the woodland, the more likely it will suffer from “edge effects” such as sunlight, noise, wind, and predation by domestic animals. Edge effects encourage invasive species growth. Changing agricultural practices have resulted in the loss of smaller wooded areas as smaller fields have been consolidated into larger, more economically viable fields.

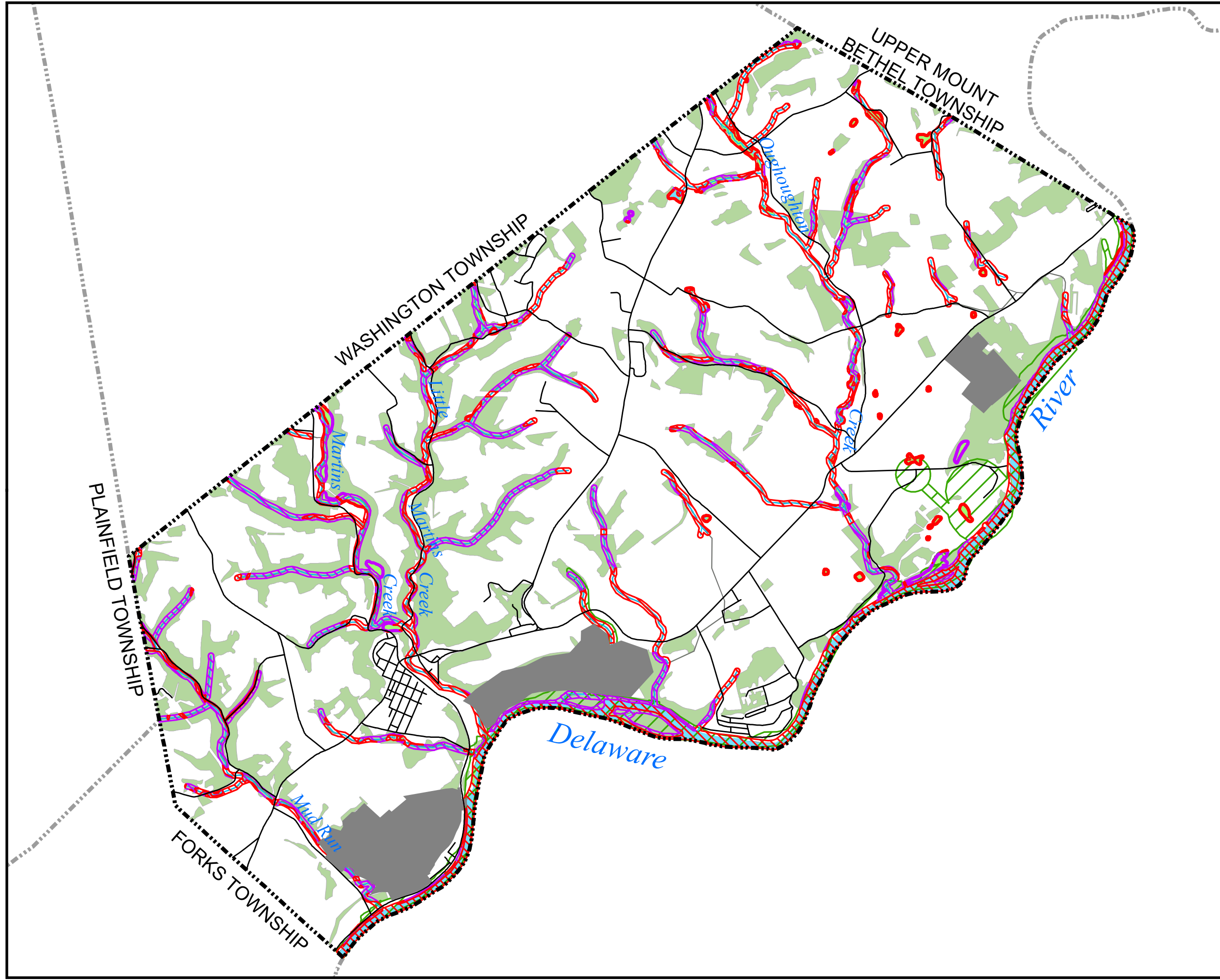
Woodlands encompass approximately 23 percent of Lower Mount Bethel Township and can be generally located on Figure 2-6, Biotic Resources. They are found primarily on steep slopes, adjacent to watercourses, and in wetlands—places where agriculture is generally not productive. There are three major woodland associations in the Township:

- *Floodplain Association* – This woodland association occurs primarily on floodplain soils. Mature trees typically consist of: silver maple/black walnut/sycamore; ash/red maple/elm; red maple/white oak/ pin oak; silver maple/red birch; or silver maple/sycamore/elm.

Figure 2-6
 Biotic Resources
 Lower Mount Bethel Township
 Comprehensive Plan



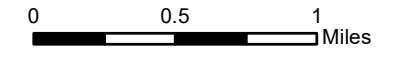
Location Map



Legend

- Lower Mount Bethel Township
- Adjacent Townships
- Roads
- Streams
- Natural Areas Inventory
- Bodies of Water
- Wetlands
- Woodlands
- Active quarry locations
- Riparian Buffer (100' from each bank and 60' from wetlands)**
- Un-wooded riparian buffer
- Wooded riparian buffer

Note: The biotic resources within the quarry locations are not shown as they are constantly subject to change



Data source: Base data from Lehigh Valley Planning Commission, 2005
 Floodplains from FEMA, 2014. Wetlands from NWI, 2022.
 Attaining and Non-attaining streams from PA DEP, 2022.
 Map created: June 22, 2022
 Last revised: October 11, 2022

- *Meisic Association* – This woodland association occurs on poorly drained soils. Beech trees will dominate the canopy over time. Mature trees include: sweet gum/red maple; red maple/ash/tulip poplar; oak/sweet gum/red maple; oak/red maple/ash/tulip poplar; or oak/hickory/beech.
- *Upland Association* – This woodland association occurs on slightly drier and better draining soils. Over time they will consist primarily of mixed oaks. Mature trees include black locust or oak/hickory.

Forested riparian buffers, where woodlands are located along and often shade streams, are one of the simplest and most effective water quality BMPs available. Riparian buffers, defined in the 2022 Zoning Ordinance as a 100-foot buffer on either side of a watercourse, or 60 feet around a wetland, are also mapped on Figure 2-6. Roughly 40 percent of the Township’s riparian buffers are wooded, while some 60 percent are un-wooded.

Lower Mount Bethel Township has four Natural Heritage Areas containing PA-rare, threatened, and/or endangered species. Core Habitat Areas are mapped at: Foul Rift, the Delaware shore near Keifer Island, the Delaware River-Oughoughton Creek Watershed, and the Delaware River in Northampton County, including the entirety of the Delaware River long the boundary of Lower Mount Bethel (see Figure 2-6).

Key Findings

- The largest woodlands in Lower Mount Bethel Township are associated with stream corridors, wetlands, and steep slopes. These areas are unsuitable for development.
- Though they once covered the entire Township, woodlands occupy approximately 23 percent of the Township’s land area.
- Some small wooded areas have been lost as farms expand.
- About 40 percent of the Township’s riparian buffers are forested.
- The Township has four designated Natural Heritage Areas containing PA-rare, threatened, and endangered species.

References

- *Lower Mount Bethel Township Comprehensive Plan, 2007*
- *Available aerial photography for woodland measurement from 2018 and 2020*
- *Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania – Update 2013.*

Natural Resource Summary

Based upon the above data the following general findings have been made:

- The geologic formations that contain limestone – underlying 40 percent of the Township – are highly beneficial for groundwater recharge. Because limestone bedrock is easily susceptible to contamination, provisions should be made to protect recharge areas from development.

- Over one quarter of the Township consists of slopes 15 percent or greater. These slopes are prohibitively steep for land development and should be left undisturbed.
- Most of the Township's soils are well or moderately-well draining, making them attractive for both development and agriculture.
- 62 percent of the Township is comprised of prime agricultural soils or soils of statewide significance. Protection of these soils is essential to the continued viability of local agriculture.
- Many of the soil types in Lower Mount Bethel, including hydric soils and floodplains, pose significant challenges for land development and the siting of on-lot sewage disposal systems.
- Lower Mount Bethel Township is part of the Martins Jacoby Creek Watershed and has six sub-watersheds of varying land use, with significant portions in headwaters areas.
- The streams and tributaries in the Oughoughton Creek sub-watershed and the Delaware River are designated as "non-attaining," while all other streams in Lower Mount Bethel Township are designated as "attaining," in regard to PA DEP water quality standards.
- A portion of Martins Creek has received a High Quality (HQ) designation. It is possible, with additional research and application to PA DEP, that other stream segments may qualify.
- A portion of the Delaware River adjacent to the Township is a National Wild and Scenic River. Lower Mount Bethel should actively participate in the implementation of the Lower Delaware River Management Plan to ensure the success of the "partnership" management concept.
- Roughly 23 percent of the Township is wooded, including 40 percent of riparian buffers being forested.
- A variety of unique and rare plant and animal species may be found within the Township, including four designated Natural Heritage Areas, particularly along the Delaware River corridor.

References

- References are noted in each subsection above.

CHAPTER 3 CULTURAL RESOURCES AND DEMOGRAPHICS

HISTORIC RESOURCES

Community History

Pennsylvania was formally founded by William Penn after receiving a grant in 1681 from King Charles II of England, assigning a large piece of the holdings of the Duke of York (the future King James II) to Penn. European activity in the region preceded that date, starting with colonization by the Dutch in 1643. Previously, the larger region was home to the Lenape, Susquehannock, Iroquois, Erie, Shawnee and other Native American tribes, the first of which may have arrived as early as circa 12,000 BCE. The earliest inhabitants were highly mobile nomadic hunters and gatherers, moving in small bands across the late Ice Age glacial landscape and leaving almost no trace. With the retreat of the Ice Age, and adaptation to a more temperate climate, came the rudimentary development of Pennsylvania's first distinct societies, or tribes.

Local archeological sites dating from circa 1000 BCE (Before Common Era or BC) to 1000 CE (Common Era or AD) indicate increasingly stable lifestyles, with some evidence of local agriculture and long-distance trade among dispersed groups of people. After 1000 CE, and until European contact, the people of the Delaware Valley lived in villages, raised corn, beans and squash, and governed themselves with an egalitarian tribal system. Here, they referred to themselves as the Lenni-Lenape (the "true people"). With the arrival of Europeans, their traditional way of life was dramatically changed to the point of elimination. Many were driven off or reduced to remnant populations as a result of diseases, such as smallpox, that swept through beginning with the first arrival of Europeans.

The English took control of the region in 1667. William Penn, a Quaker, established his colony based on religious tolerance, and it was quickly settled by many Quakers as well as other Europeans seeking religious tolerance, notably Scotch-Irish, German, Moravian, and later many other immigrants.

The colony offered inexpensive land along with religious freedom and liberal government. William Penn's diplomatic talents resulted in a peaceful relationship between the Lenni-Lenape and early European settlers. Until the



Preserving the rich history of the Martins Creek valley

controversial “Walking Purchase” of Lenni-Lenape lands by Penn’s sons in 1737, the land of what is now Northampton County was Lenni-Lenape territory and part of Bucks County. Northampton County would not become a separate county until 1752.

The first wave of permanent settlers began to arrive in the Lehigh Valley in the early 1700s. In 1730 some thirty families of Presbyterian Scotch-Irish origin settled in an area north of the Forks of the Delaware River, helping found the villages of Martins Creek, Richmond, and Mount Bethel. These were known as the Hunter Settlements, named after local Presbyterian leader Alexander Hunter. The Lenni Lenape were still the principal inhabitants of the area and would remain so some years after the loss of their lands in 1737. Archeological sites within the Township document the history of Lenni Lenape movement and activity in the region.

Agriculture has been the predominant livelihood and land use in Lower Mount Bethel Township throughout much of its history. Both the Scots-Irish and German settlers came from agricultural backgrounds, and the Germans were particularly skilled farmers. The well-drained soil of Northampton County’s limestone belt is the most fertile in the county. For two centuries, local residents engaged in subsistence farming, raising the foods and animals needed to sustain themselves and their families. Until the early twentieth century, farms were relatively small family-operated enterprises of between 100 and 250 acres.

Farmsteads typically contained ten or twelve specialized buildings situated near a water source and pastures, with higher ground reserved for crops. Along with a house, barn, and various outbuildings, farms usually included fields, orchards, pastures, woodlands, a vegetable garden, and an array of livestock, including horses, cows, chickens, ducks, geese, sheep, and pigs. Without modern refrigeration or running water, a springhouse was an important feature.

Farming practices underwent major changes both locally and nationally during the first half of the twentieth century. During the early 1900s, farming shifted away from the small, diversified family farms raising subsistence crops toward larger, specialized commercial operations focused on one or a few particular types of crops, such as dairy, poultry, fruit, or produce. Specialized farming soon became prevalent and remains so today. The advent of automobiles in the 1910s and modern mechanized farm equipment in the 1930s, particularly tractors and automatic milkers, revolutionized agriculture. Trucks could get farm products to market much more quickly than horses and wagons. Farmers were able to cultivate much larger land areas using tractors and heavy machinery than they could with horse-drawn equipment and human labor. Beginning in the mid-1940s, farmers with tractors began to practice contour farming, reducing erosion, increasing crop yield, and changing the appearance of the agricultural landscape from the rectangular fields of past eras.

The village of Martins Creek (named after Colonel William Martin) was the first permanent settlement in the area, developing around the intersection of an important through-road (now Route 611) and its namesake creek. The region’s rich and easily cultivated farmland ensured the development of a prosperous agricultural economy. Tax records from 1780 show that the main industry in Mount Bethel Township was farming, with other ancillary industries supporting the community. These included sawmilling, carpentry, weaving, wheelwrighting, blacksmithing, tanning, gristmilling, and innkeeping. Many of the buildings that housed these industries still exist.

The Presbyterian Church of Mount Bethel was founded in 1738. The present church was erected in 1838. The oldest cemetery in the Township is the Presbyterian cemetery at Church Hill, where the earliest gravestone inscription is recorded as 1763. Forty Revolutionary War soldiers are buried in this cemetery. The Reverend David Brainard, an evangelical preacher, lived in a cabin near the site of an old cotton mill. Employed by the Missionary Society of Scotland, he exercised significant influence on Presbyterianism in the area.

Lower Mount Bethel Township was separated from Mount Bethel Township on March 11, 1787. The first school house in Lower Mount Bethel was built around 1803. By 1870 Lower Mount Bethel boasted two post offices, three hotels, and cotton factories at the mouth of Martins Creek.

In addition to excellent agricultural resources, Lower Mount Bethel Township contains outstanding mineral resources in the form of hydraulic limestone. Martins Creek lies within an area commonly known as the Cement Belt. Quarrying of limestone eventually became a major industry in the Township, especially during the early part of the twentieth century. The Alpha Portland Cement Company operated a quarry and cement plant adjacent to the Delaware River, later bought by Eastern Industries (now New Enterprise Stone & Lime) and is no longer operational. However, New Enterprise operates a limestone quarry in the Jacksonville Limestone area to supply local cement plants. The aggregate from the New Enterprise quarry also supplies construction companies for building construction and roadway and other infrastructure repair.

Lehigh Cement also operated in Martins Creek. In 1925 they purchased a partially constructed plant at Sandts Eddy from the Bath Portland Cement Company. This plant, located directly adjacent to Route 611 in the southwest corner of the Township, is now owned by Ardent Mills, which operates a grain milling business on the premises. The quarry located to the east of the former Lehigh Cement plant at Mud Run is currently owned by Haines and Kibblehouse, which quarries limestone and manufactures concrete blocks.

The presence of the quarrying and cement industries in the area brought an influx of Italian immigrants to Lower Mount Bethel in the beginning of the twentieth century. The Italian Social Hall is listed as a historical site on the Northampton County Historic Resource Survey.

Pennsylvania Power and Light (PPL) began operations in the Township in the 1950s following the construction of Martins Creek Steam Electric Station. It housed the largest single turbine generator on the PPL system and was PPL's first plant designed for bituminous coal. The Martins Creek plant also pioneered the company's community development program and was one of the first "outdoor" type steam electric stations built in the northeast.

Lower Mount Bethel's connections to history are diverse and numerous and the community understands well the importance of preserving historic



Regional tourist accommodations in Riverton near the Delaware River

resources. The thriving Hunter-Martin Settlement Historical Society enjoys a membership which extends into many states, following the westerly path many of the original settler families took when they left the Township to seek new lands.

A more extensive review of the history of Lower Mount Bethel Township can be found in the Delaware River Valley Scenic Byway Corridor Management Plan, prepared by Lardner/Klein Landscape Architects, P.C. in 2011.

Historic Resource Inventory

Most structures in Lower Mount Bethel Township were constructed over fifty years ago and may be considered of potential historical significance. Other sites of historical interest can be found throughout the community. According to the Pennsylvania Historical Museum Commission (PHMC), 12 sites are eligible for listing on the National Register of Historic Places. Eligible properties have received an official Determination of Eligibility (DOE) from the National Park Service, the first step of the National Register nomination process. No structures are currently listed on the National Register in Lower Mount Bethel. Additional historical resource information, gathered by Carter Van Dyke Associates in preparation of the 2007 Comprehensive Plan, is included as an appendix to this Plan. That information does not appear to have been updated and does not reflect more recent information from PHMC included here. Further historic resource inventory and establishment of a Township Historical Commission should be considered.

The DOE properties are listed as follows, and include archeological sites for which no specific address is published to prevent artifact seekers from desecrating them. However, it has been noted that the Sandts Eddy Archeological Site has been documented as a significant permanent prehistoric settlement occupied for many centuries.

Table 3-1: National Register Eligible Properties, Lower Mount Bethel Township

Name/Number	Address	Status
1. Delhaven Log House	Delhaven Road	Eligible
2. Garrison Property	Martins Creek-Belvidere Hwy.	Eligible
3. Butz Property	Gravel Hill Road	Eligible
4. Shumaker Property	Martins Creek-Belvidere Hwy.	Eligible
5. Fries Property	Martins Creek-Belvidere Hwy.	Eligible
6. Beck Property	Martins Creek-Belvidere Hwy.	Eligible
7. Lehigh & New England Railroad	Forks Twp. to Martins Creek	Eligible
8. Belvidere Bridge	Riverton to Belvidere	Eligible
9. Sandts Eddy Archeological Site	Specific site not published	Eligible
10. Padula Archeological Site	Specific site not published	Eligible
11. Howell Road Archeological Site	Specific site not published	Eligible
12. Unnamed Archeological Site	Specific site not published	Eligible

Source: PHMC, Bureau of Historic Preservation, 2022

Key Findings

- Because of the minimal amount of development that has occurred in Lower Mount Bethel Township over the last several years, a high percentage of historic buildings remain intact. Many of these retain their original scenic landscape context.
- A number of potential Lenni-Lenape archeological sites still exist in the Township.
- The first “industry” in Lower Mount Bethel, agriculture, has evolved continuously through history and remains the most prominent land use.
- Many of the Township’s historic buildings are significant reminders of the industry that brought people to the area.

References

- *Lower Mount Bethel Comprehensive Plan, 2007*
- *Delaware River Valley Scenic Byway Corridor Management Plan, 2011*
- *Pennsylvania Historical and Museum Commission, 2022*

SCENIC RESOURCES

Much of what defines Lower Mount Bethel’s rural character and desirability as a place to live and recreate is the wide range of highly scenic landscapes, vistas, and contributing resources present today. Bucolic farms, evergreen and hardwood forests, dramatic changes in elevation, pristine stream valleys, and expansive views of the Delaware River valley are abundant to the eye. While a township-wide scenic resource analysis was not conducted for this comprehensive



Scenic Delaware River looking south from the Township park and Riverton

plan update, economic benefits accrued to communities that are characterized by visually significant resources are documented throughout planning, community development, and environmental literature.

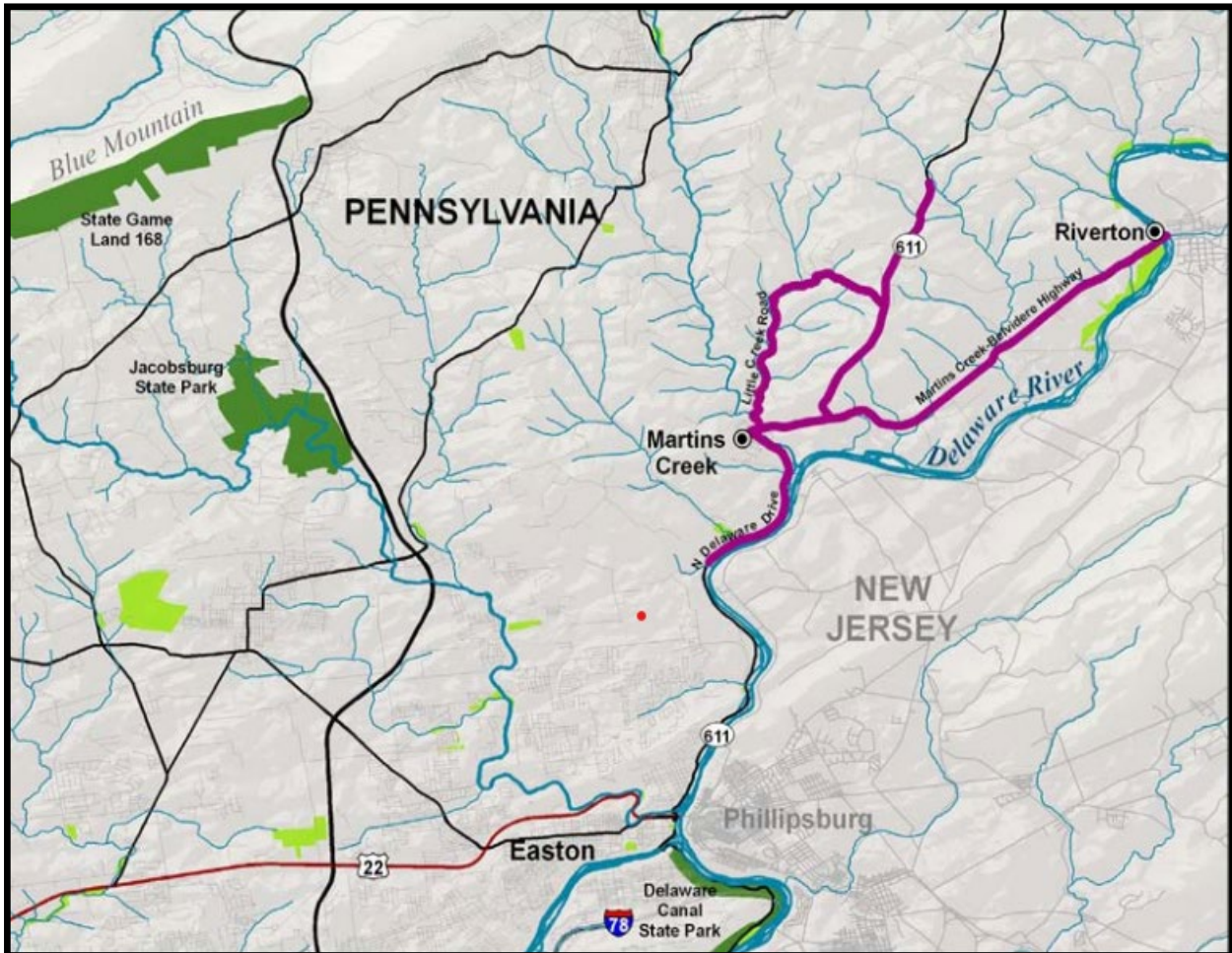
The Delaware River is the largest free-flowing river in the eastern United States, and runs past forests, farmlands, and villages. It also links some of the most densely populated regions in America.

In 2000, the National Wild and Scenic River System incorporated key segments of the lower

Delaware River as the Lower Delaware Scenic and Recreational River, a unit of the National Park System, including the entire frontage along Lower Mount Bethel Township south/southwest of Del Haven Road to the Forks Township boundary.

The Delaware River Valley Scenic Byway was designated by the state as a Pennsylvania Scenic Byway. The Corridor Management Plan for the Byway in Lower Mount Bethel Township was finalized in 2011. The route of the Byway in Lower Mount Bethel extends for a total of 17 miles, beginning at the southern corner of Lower Mount Bethel Township's boundary on PA 611 and travels north through Martins Creek and comes to a first fork, with one branch continuing north along Little Creek Road and the other traveling northeast following PA 611. This portion of the route forms a loop as the two branches reconnect further up PA 611 and the route continues to the Township's northern boundary. Shortly after the first fork on PA 611, a second fork on the PA 611 branch extends an arm along Martins Creek-Belvidere Highway northeastward all the way to Riverton, where the Riverton-Belvidere Bridge crosses over to Belvidere, New Jersey.

The Byway route highlights extended scenic views, giving the traveler a true sense of the Delaware River Valley and its complex agrarian and rural industrial heritage. Local landmarks along the route include the Delaware River, Native American village sites, historic churches and cemeteries, and the ruins of lime kilns, cotton mills, and grist mills. Other well-known Byway sites include the Hunter-Martin Historical Museum, former cement plants, and recreational resources such as the Martins Creek Environmental Preserve and the Sandts Eddy Boat Access and Public Fishing connection to the Delaware River Water Trail.



Delaware River Valley Scenic Byway

The purpose of the Byway Corridor Management Plan is to help Lower Mount Bethel Township conserve and preserve the rich natural and cultural resources found throughout the corridor. The Byway can play an important role in helping to maintain the character-defining features of the Township. Of particular importance is the role that Byway funding programs can play in leveraging the Township's agricultural land preservation activities and watershed management activities. In addition, the approval of the plan provides PennDOT with a clear statement about the Township's desire to protect and maintain its rural character, giving designers the reference point they need to apply more flexibility in the engineering design process for bridges and safety projects, and for meeting pedestrian needs in the Township.

Key Findings:

- Scenic resources are critical to the quality of life in Lower Mount Bethel Township.
- Portions of the Township are included in the Lower Delaware Scenic and Recreational River, a unit of the National Park System, and in the Delaware River Water Trail.
- The entirety of the area covered by the 2011 Delaware River Valley Scenic Byway Corridor Management Plan is located in Lower Mount Bethel Township. The Plan can help leverage funding for agricultural preservation and watershed management activities.

References

- *Lower Mount Bethel Comprehensive Plan, 2007*
- *Delaware River Valley Scenic Byway Corridor Management Plan, 2011*

POPULATION

Demographic characteristics and trends can be indicators of the current and future resource demands of a geographic area. The following is a summary of the demographic composition of Lower Mount Bethel Township, including population, housing, income and employment. Evaluation of this information provides a basis for understanding the existing and future planning needs within the Township.

Quantity and Change

According to United States Census data, Lower Mount Bethel Township had a 2020 population of 2,921 persons and a population density of 120.8 persons per square mile. The 2020 population is a decrease of 180 persons or 5.8 percent from the 2010 population, and a decrease of 307 or 9.5 percent from the 2000 population. These decreases are an anomaly relative to the Lehigh Valley and Northampton County as a whole, as well as most surrounding townships. No other neighboring municipality lost population between 2000 and 2010 and only Upper Mount Bethel also lost population between 2010 and 2020. As a whole, the Lehigh Valley grew dramatically during these two decades, notably between 2000 and 2010, and even more dramatically among neighboring municipalities, like Forks Township. Table 3-2 below records population totals for 1980-2020, while Table 3-3 indicates the percentage change in population over the same periods.

Table 3-2: Population, 1980 to 2020.

Place	1980	1990	2000	2010	2020
Lehigh Valley	497,767	538,235	579,156	647,232	687,508
Northampton County	225,418	247,105	267,066	297,735	312,951
Lower Mount Bethel	2,745	3,187	3,228	3,101	2,921
Upper Mount Bethel	4,247	5,476	6,063	6,706	6,439
Plainfield	4,833	5,444	5,668	6,138	6,263
Washington	3,205	3,759	4,152	5,122	5,148
Forks	4,612	5,923	8,419	14,721	16,074

Source: US Census Bureau; Lehigh Valley Planning Commission

Table 3-3: Population Change, 1980 to 2020

Place	1980-1990		1990-2000		2000-2010		2010-2020	
	#	%	#	%	#	%	#	%
Lehigh Valley	40,468	8.1	40,921	7.6	68,073	11.8	40,276	6.2
Northampton County	21,687	9.6	19,961	8.1	30,669	11.5	15,216	5.1
Lower Mount Bethel	442	16.1	41	1.3	-127	-3.9	-180	-5.8
Upper Mount Bethel	1,229	28.9	587	10.7	643	10.6	-267	-4.0
Plainfield	611	12.6	224	4.1	470	8.3	125	2.0
Washington	554	17.3	393	10.5	970	23.4	26	0.5
Forks	1,311	28.4	2,496	42.1	6,302	74.9	1,353	9.2

Source: US Census Bureau; Lehigh Valley Planning Commission

Forecasts

The most recent population forecasts prepared by the Lehigh Valley Planning Commission (LVPC) indicate growth returning to Lower Mount Bethel over the next 20 years. It is notable that the LVPC forecasts, made after the actual 2010 Census, did not yet take the 2020 Census into account and rather, showed projected numbers for 2020, as well as 2030 and 2040. The actual 2020 Census showed a decrease in population in Lower Mount Bethel since 2010, continuing the decline since 2000 and resulting in an actual population 500 persons fewer than the LVPC forecast. The LVPC forecast predicts a population of 4,263 in Lower Mount Bethel Township in 2030 and a population of 4,901 in 2040. This would represent a 67.7 percent increase over 20 years in Lower Mount Bethel, based on the actual 2020 Census count. In light of recent actual census counts, that increase is probably unrealistic.

The LVPC rate of increase forecast for Lower Mount Bethel for 2020 – 2040 was 43.3 percent, yet when applied to the significantly higher forecast population for 2020, resulted in estimation of much higher growth. If the same forecast percentage rates are applied to the actual 2020

population count, it would result in an estimated population of 3,640 in 2030 and 4,186 in 2040 in Lower Mount Bethel. These numbers may be more reasonable planning targets but are still probably high.

Forecasts in adjacent municipalities predicted stronger growth over the same 2020 – 2040 timeframe, yet also missed the actual 2020 counts by a significant margin. The actual 2020 Census showed even greater growth in Forks Township but less than had been predicted for Plainfield, Upper Mount Bethel, and Washington Townships. The LVPC 2020 forecast for the Lehigh Valley as a whole, was only off target by 0.4 percent, and the forecast for Northampton County was actually very slightly lower than the actual census result. The LVPC forecasts are presented in the table below. The 2010 forecasts shown below were those available at the time of the 2007 Lower Mount Bethel Comprehensive Plan and also missed actual 2010 Census counts by considerable margins, except in Washington Township. Population projections at that time turned out to be notably low for the Lehigh Valley overall, and high for all of the local townships.

Table 3-4: LVPC Population Projections, 2010-2040

Place	2010 forecast	2010 actual	2020 forecast	2020 actual	2030 forecast	2040 forecast
Lehigh Valley	620,471	647,232	690,374	687,508	760,326	813,187
Northampton County	290,919	297,735	311,406	312,951	347,494	372,793
Lower Mount Bethel	3,389	3,101	3,421	2,921	4,263	4,901
Upper Mount Bethel	7,124	6,706	7,298	6,439	8,820	9,959
Plainfield	6,866	6,138	6,751	6,263	8,301	9,024
Washington	5,161	5,122	5,830	5,148	7,214	7,620
Forks	10,543	14,721	15,576	16,074	18,164	20,069

Source: US Census Bureau; Lehigh Valley Planning Commission

The 2007 Lower Mount Bethel Comprehensive Plan went beyond the LVPC projections to use a “Trended Ratio-Share” projection method. That method was based on projecting the Lower Mount Bethel population as a proportion of the total projected Northampton County population using the trending ratio-share of the county population 1960 – 2000, and based on LVPC projections for Northampton County at the time. The Lower Mount Bethel share of the county population ranged from 1.1470 percent in 1960 to a high of 1.2897 percent in 1990, with the share at the last census reported in the 2007 Plan in 2000 at 1.2087 percent. The 2007 Plan only projected for 2010 and 2020, for which we now have actual census results. The Trended Ratio-Share for Lower Mount Bethel was projected as 1.2081 percent in 2010, resulting in a projected population of 3,515. The actual 2010 Census reported a population of 3,101 which represented a ratio-share of 1.0415 percent. The Trended Ratio-Share for Lower Mount Bethel was projected as 1.2311 percent in 2020, resulting in a projected population of 3,891. The actual 2020 Census reported a population of 2,921 which represented a ratio-share of 0.9333 percent. In keeping with the methodology of a “trended ratio-share,” the average actual ratio-share of the Northampton County population for Lower Mount Bethel, 2010-2020, was 0.9874.

It is clear that both the LVPC projections for 2010 and 2020 available in 2007, and the Trended Ratio-Share projections in the 2007 Lower Mount Bethel Comprehensive Plan for those years were not met by actual census counts. In fact, the actual census counts were significantly lower than both sets of projections.

The chart below compares the current LVPC projections for 2030 and 2040 with the same projections adjusted to reflect the actual 2020 base population in Lower Mount Bethel and the Ratio-Share projections adjusted to reflect the current LVPC projections for Northampton County using the average of the actual ratio-share for Lower Mount Bethel in 2010 and 2020. It is suggested that the target population for Lower Mount Bethel probably lies in the realm of these adjusted figures, and most likely will correspond with the lower adjusted Ratio-Share projections, as the actual ratio-share is likely to continue to decline with limited development potential in Lower Mount Bethel and ongoing growth in Northampton County as a whole. But for long-term planning purposes, it is not unreasonable to use the average of the two figures, as the new 2022 Lower Mount Bethel Zoning Ordinance does provide for potential new development.

Table 3-5: Lower Mount Bethel Population Projections, 2020-2040

Lower Mount Bethel Twp.	2020 Actual	2030 forecast	2040 forecast
LVPC recent projection	2,921	4,263	4,901
Projected percent change from prior decade (actual change based on 2020 census base population)	1.3%	24.6%	15.0%
Projection adjusted to reflect actual 2020 population	-	3,640	4,186
2007 Projected Ratio-Share population	3,891	-	-
2007 Projected Ratio-Share %	0.9333%	-	-
Projected Ratio-Share population adjusted to actual 2010-2020 average Ratio-Share (0.9874)	-	3,431	3,681
Average of adjusted LVPC and adjusted Projected Ratio-Share projections	-	3,536	3,934

Source: US Census Bureau; Lehigh Valley Planning Commission; 2007 Lower Mount Bethel Comprehensive Plan

Age Characteristics

In addition to overall population size and rate of growth, it is important to understand the age composition of a community when planning for its future land use and community facility needs. The median age of Lower Mount Bethel Township residents in 2020 was 52.3 years, a significant increase since 2000 when the median age was 40.3 and notably higher than the 2020 median age in Northampton County at 42.2. The U.S. Census indicates that 61 Township residents (2.1 percent) are under 5 years of age, 412 (14.1 percent) are under 18 years of age, and 707 persons (24.2 percent) are over 65 years of age.

The following table presents a breakdown of the different age groups in Lower Mount Bethel Township in 2020 and compares them percentage-wise with Northampton County in 2020 as well as with the census numbers of 2000, reported in the 2007 Comprehensive Plan.

Table 3-6: Population by Age Group, 2020 compared to 2000

Age Group	Lower Mount Bethel 2000		Lower Mount Bethel 2020		Northampton County 2020 Percent
	Number	Percent	Number	Percent	
0 to 4 years	167	5.2	61	2.1	4.9
5 to 17 years	617	19.2	351	12.0	15.0
18 to 64 years	2,011	62.2	1,802	61.7	61.1
65 + years	433	13.4	707	24.2	19.0
Total	3,228	100.0	2,921	100.0	100.0

Source: US Census Bureau

Unlike Northampton County as a whole, some age groups have diverged sharply in percentage from the Census 2000, as reported in the 2007 Comprehensive Plan. The two younger age groups have dropped in numbers significantly while the oldest age group has increased significantly. The middle and largest age group, 18-64 in age, has stayed relatively the same in total number although, as noted, the average age has increased. From a planning perspective, it is notable that the school-age population is a smaller percentage than county-wide, while the senior population is larger.

While not reported in the 2007 Comprehensive Plan, it is worth noting that the Census 2020 reports 10.8 percent of the Lower Mount Bethel population as having disabilities, with the largest subcategory, at 5.6 percent of the total population, having ambulatory difficulty, suggesting a potential impact to transportation planning.

Education Levels

Among Township residents 25 years of age or older, 85.8 percent were reported as high school graduates in the 2020 US Census. 20.7 percent of the Township’s adult population were reported as having bachelor or graduate degrees in 2020, now significantly lower than the 31.8 percent of residents 25 years of age or older reported in Northampton County as a whole, a substantial change from 2000 when the number for Northampton County was only 4 percent higher than that for Lower Mount Bethel Township.

Households and Families

The 2020 US Census reported 1,263 total households in Lower Mount Bethel Township, an increase of 40 households since the 2000 Census, despite overall population decline. Of the 1,263 households within the Township, 96.4 percent are family households, with 63.0 percent married-couple households, 18.0 percent headed by a single female and 15.4 percent by a single male. The average family size in Lower Mount Bethel in 2020 was 2.76 persons, compared to 3.06 persons in Northampton County overall.

Income

According to US Census 2020, the median household income in Lower Mount Bethel Township was \$70,050, slightly lower than the \$73,088 reported for Northampton County as a whole. On the other hand, Census 2020 reported only 2.2 percent of all persons in Lower Mount Bethel

living at poverty level, substantially less than the 8.6 percent reported for Northampton County overall.

Key Findings

- Over the past several decades, the population of Lower Mount Bethel Township has grown only slightly, notably slower than the rate of growth experienced in Northampton County as a whole, and has declined since 2000.
- As charted in Table 3-5, and discussed above, it is not unreasonable for Lower Mount Bethel Township to plan for a target population of 3,934 by 2040.
- Since 2000, the population of Lower Mount Bethel has distinctly aged.
- Very few Township residents live at poverty levels.

References

- *U.S. Census Bureau*
- *Lehigh Valley Planning Commission*
- *2007 Lower Mount Bethel Comprehensive Plan*

HOUSING

Quantity and Change

According to the 2020 US Census, there were 1,360 housing units in Lower Mount Bethel Township, an increase of only 13 housing units since 2000, as reported in the 2007 Comprehensive Plan. 113 housing units (8.3 percent) were reported as vacant in 2020, a slight decrease from the 9.2 percent vacancy rate reported in 2000. This compares to a vacancy rate in Northampton County in 2020 of 5.1 percent. The Township’s relatively high vacancy rate may be attributable to a relatively large number of seasonal and recreational homes.



Of the 1,247 occupied housing units in Lower Mount Bethel Township in 2020, 83.8 percent were occupied by owners and 16.2 percent were occupied by renters. The percentage of owner-occupied housing units in the Township is higher than the percentage for Northampton County as a whole, which was 71.2 percent in 2020. The 2020 US Census reported that only 0.9 percent of owner-occupied housing units had new residents in the year prior to the census and reported no such change in renter-occupied units.

Available 2020 census data does not differentiate between unit types nor housing deficient of complete plumbing or adequate heating as prior censuses did. The 2007 Comprehensive Plan reported that as of the 2000 US Census, there were no housing units lacking complete plumbing

facilities nor adequate heating in Lower Mount Bethel. Given the very small number of additional housing units occupied in Lower Mount Bethel since 2000, and given current building code standards, it is unlikely that these facts have changed.

The 2007 Comprehensive Plan reported that 78 percent of all housing units within the Township were single-family detached units. The remainder was split evenly between multifamily units and mobile homes. Given very little new construction, the majority of single-family detached units has probably increased slightly.

As reported in the 2007 Comprehensive Plan, as of 2000 most Township residents lived in structures built prior to 1970. The median year in which homes were built in the Township was reported at 1963. With slow growth since then, only a very small percentage of the housing stock is relatively new. There are several older neighborhoods in the Township, many of which are located near the Delaware River and were originally intended as seasonal homes. Other older homes are located on farmsteads or at historically significant road intersections.

Housing Value

Median housing values in Lower Mount Bethel Township remain somewhat higher than the median values in the Lehigh Valley overall, and probably have further increased during the Covid housing market. In 2020, Lehigh Valley Planning Commission reported that 25 homes were sold in Lower Mount Bethel, with a median sale price of \$263,500, higher than the median for the Lehigh Valley overall at \$225,000. However, of neighboring municipalities in 2020, only Plainfield Township had a slightly lower median price than Lower Mount Bethel, at \$259,900. The other three neighbors were a bit higher, at \$274,900 in Upper Mount Bethel, \$287,750 in Washington, and \$291,000 in Forks.

For rental units, the median gross rent in Lower Mount Bethel was reported at \$1,060 by the US Census 2020, only slightly less than that reported for Northampton County, at \$1,106.

Key Findings

- Growth in the number of housing units is very limited since 2000.
- Most units are owner-occupied and built prior to 1970.
- There are a significant number of seasonal-use housing units in the Township.
- Housing values are generally keeping pace with the region.

References

- *U.S. Census Bureau.*
- *Lehigh Valley Planning Commission*
- *2007 Lower Mount Bethel Comprehensive Plan*

WORKFORCE

Table 3-9 below compares the percentage employment by industry, of persons in the Township workers (16 years of age or older), in 2020 to that reported in the 2007 Comprehensive Plan, based on the 2000 Census.

Table 3-7: Percentage Employment by Industry, 2020 compared to 2000

Industry	2000 % of All Workers	2020 % of All Workers
Agriculture, forestry, fishing, hunting, mining	1.2	0.7
Construction	8.9	12.6
Manufacturing	23.0	12.2
Wholesale trade	2.1	0.5
Retail trade	11.5	9.6
Transportation, warehousing, utilities	6.6	15.6
Information	2.5	1.3
Finance, insurance, real estate	4.4	3.0
Professional, scientific, management, administrative	11.9	15.4
Educational, health, and social services	15.8	19.2
Arts, entertainment, recreation, accommodation, food services	3.4	1.0
Other services (except public administration)	4.5	4.6
Public administration	4.4	4.3

Employment of Lower Mount Bethel Township residents remains diverse, yet with significant changes over twenty years. Notable increases are indicated in the percentage of persons employed in construction, warehousing, professional, educational and related industries. In the same time period, decreases have been seen in agriculture, wholesale and retail trade, information, finance, and arts and entertainment. These changes are relatively consistent with changes in the Lehigh Valley as a whole.

The average travel time of Lower Mount Bethel Township residents to their places of employment was 32.0 minutes in 2020, only a slight change from the 32.8 minutes reported in the 2007 Comprehensive Plan based on the 2000 Census. 91.6 percent of workers reported commuting to work alone in private vehicles in 2020, a slight increase from the 87.9 percent reported in 2000. 3.8 percent of workers reported carpooling in 2020, compared to 7.4 percent in 2000. No residents of Lower Mount Bethel Township reported taking public transportation to work in either 2020 or 2000.

Key Findings

- Township residents are employed in a wide range of industries but concentrated in manufacturing, construction, professional services, transportation and warehousing, and education, health and social services.
- Most Township residents commute to work via private automobile.

References

- *U.S. Census Bureau*
- *2007 Lower Mount Bethel Comprehensive Plan*

COMMUNITY SUMMARY

Based upon the data and discussion above, Lower Mount Bethel Township remains a largely rural community. Population has declined since 2000 but may be projected to grow at a moderate rate over the next two decades. Historic and scenic resources are numerous and diverse and contribute significantly to the quality of life. The housing stock is largely single-family homes with seasonal residences comprising a moderately large percentage, with most homes built before 1970, and with little change since 2000. With minimal population change, residents overall have aged and are now slightly older than Northampton County as a whole. Employment statistics have also changed in general concert with the Lehigh Valley as a whole, as have incomes and home values and rental prices.

Key Findings

Based upon the above data the following general findings have been made:

- A high percentage of historic buildings remain intact, along with their scenic landscape context.
- Twelve sites in the Township have received Determinations of Eligibility for listing on the National Register of Historic Places, including four archeological sites of Native American significance.
- The Township is the beneficiary of significant scenic resource designations and documentation, most notably the Delaware River Valley Scenic Byway Corridor Management Plan, 2011.
- Population may reasonably be projected to reach 3,934 by 2040, an increase of approximately 1,000 residents from the 2020 census.
- Median rents are higher than in surrounding communities.
- Median household income, housing values and rental prices in Lower Mount Bethel Township are consistent with those in Northampton County.
- Though agriculture is the most visible and consistent industry within the Township, it is no longer a large employer of Township residents.
- Residents are employed in a wide variety of industries, most of which are located outside of the Township.

References noted in the above sections.

CHAPTER 4 EXISTING LAND USE AND ZONING ANALYSIS

OVERVIEW

Lower Mount Bethel Township is rural in nature with much of the land used for agriculture, pasture, forestry, and other open space purposes. Lower Mount Bethel Township remains considerably more rural and undeveloped compared to surrounding townships, as well as Northampton County and the greater Lehigh Valley region. Just over three quarters of the Township remains in agricultural and other open space uses, or vacant land. Less than ten percent of the township has been developed in residential use. Lower Mount Bethel does have a relatively significant proportion of its land in industrial uses, due to the presence of sizable and still active quarries and a regional electric power generation complex.

Table 4-1 presents nine primary categories of land use in Lower Mount Bethel Township by acreage and percent, as inventoried by the Township in 2022, largely on the basis of Northampton County tax records, recent aerial photography and Township knowledge. As indicated below, these nine categories account for 95.97% of the total area of the Township. The remainder encompasses roads and water acreage in the Delaware River within the Township boundary.

Table 4-1: Land Use in 2022, Lower Mount Bethel Township

2022 Land Use	Acreage	Percent of Township
Agricultural or Vacant	11,956.2	75.86
Commercial and Retail	54.7	0.35
Government and Quasi-Government	5.2	0.04
Institutional	22.2	0.14
Manufacturing and Industrial	800.1	5.08
Office	0.9	0.01
Parks and Conserved Open Space	378.8	2.40
Residential	1,360.3	8.63
Utility, Transportation	546.0	3.46
Subtotal	15,124.4	95.97
Delaware River within Township boundary	325.3	2.06
Roads (rights of way)	310.2	1.97
Total	15,759.9	100.00

Agricultural Lands

The Lehigh Valley Planning Commission (LVPC) has long identified Lower Mount Bethel Township as containing some of the best agricultural soils in the region. (See discussion of prime farmland soils in Chapter 2, Natural Resources, of this Plan). Their rich productivity is one of the primary reasons for sustained agricultural use of Township lands for agriculture, including soils

defined by the Commonwealth as prime farmland soils and soils of statewide significance. Figure 2-3 depicts the extent of these soils throughout the Township, comprising 62 percent of the total land area. As depicted in Figure 4-1, agricultural and other open and vacant lands occupy 75.86% of the Township's total acreage, or 11,956.2 acres.

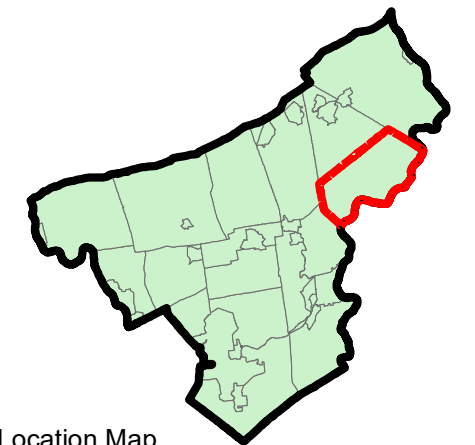
Given the Township's extensive agricultural land use acreage, it is not surprising that so many of these same farms are enrolled in several programs that support continued agricultural use and many are formally preserved via conservation easements. Figure 4-2 shows Northampton County tax parcels which are enrolled in Township Agricultural Security Areas (ASAs), are enrolled in one of two Northampton County preferential tax programs (Act 319 or Act 515), or are permanently protected through Northampton County's farmland preservation program, including those protected with Township funding contributions. Also shown are a few parcels protected by Wetland Reserve easements.

Act 43 of 1981 enables Pennsylvania's farmers and other landowners to join together to form ASAs administered by townships. There must be a minimum of 250 acres in an ASA. The land is used for the agricultural production of crops, livestock, and livestock products under the ownership of one or more persons. Enrollment in an ASA is subject to municipal approval and, once enrolled, lands are registered by the Pennsylvania Department of Agriculture. The major benefit to a farmer or landowner located within an ASA is the protection provided from nuisance suits if any are filed by neighboring property owners who object to normal agricultural practices (odors, flies, unusual hours of equipment operation, etc.) Farms in an ASA may also qualify for the Northampton County Farmland Preservation Program, assuming other eligibility criteria are met. As of 2022, Lower Mount Bethel Township had over 250 parcels totaling 7,645 acres enrolled in an ASA or 49% of the Township land area.

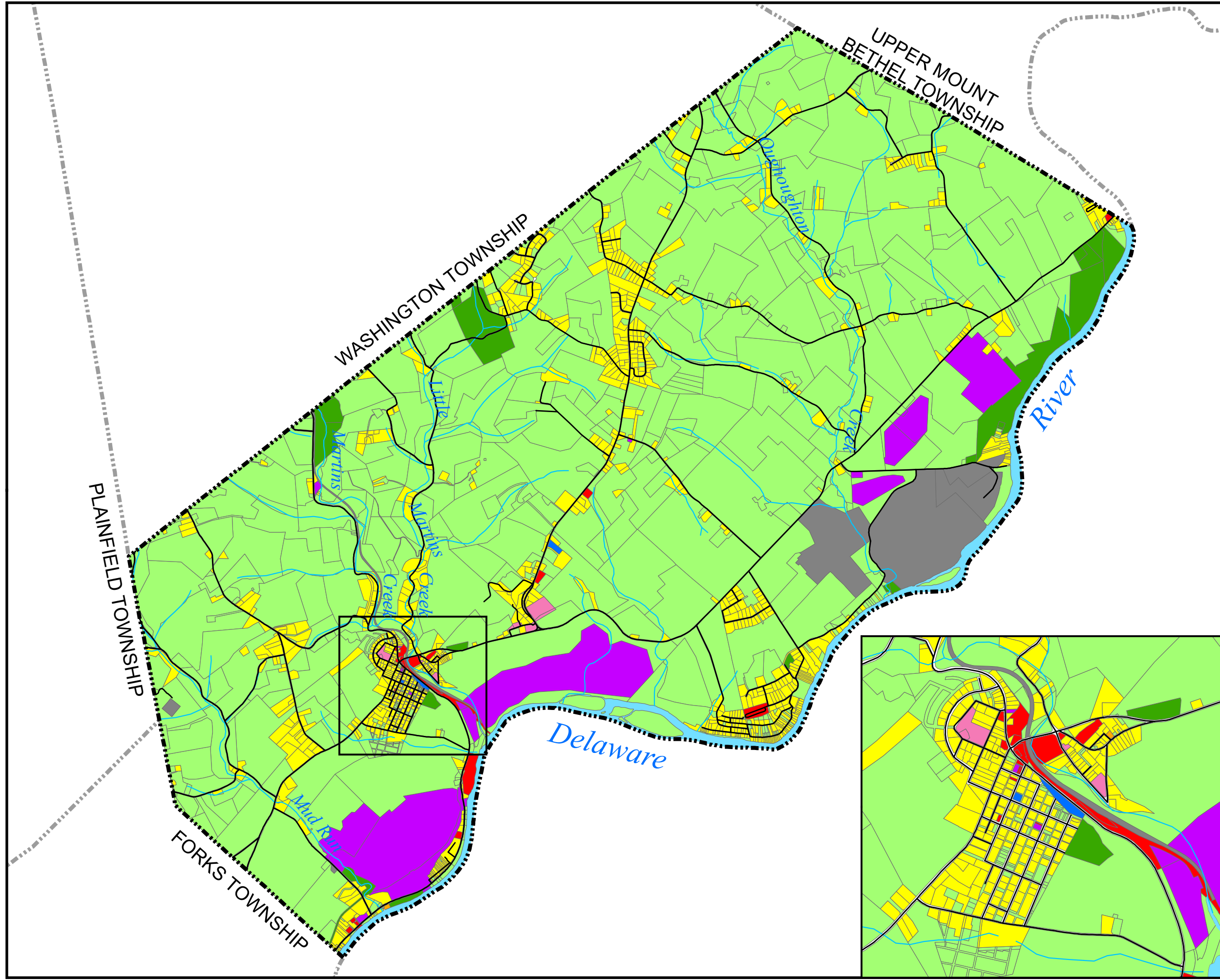
Act 319 and Act 515 are preferential tax programs established by the state legislature to reduce the tax burdens on landowners with large land holdings from standard tax assessment practices. When a landowner enrolls in one of these programs, the enrolled land is taxed at its current use (agricultural, forestry) rather than at its "highest and best use," which is normally based on its zoned development potential. This tax savings can help large landowners maintain their land holdings, and, as a trade-off, landowners agree to keep their land in permitted open space uses (farming, forestry) for a period of years. Landowners who choose to remove their lands from either of these two programs outside of a permitted seven-year "opt-out" window must pay a "roll-back" tax penalty assessed by Northampton County based on the tax differential. Records show in 2022 that 392 parcels, comprising 10,931 acres or 69 percent of the Township, are enrolled in one of these preferential tax programs.

Northampton County administers a county-wide farmland preservation program, with funding provided by the Commonwealth and the County to purchase conservation easements on farmland. These easements result in the permanent preservation of the subject lands. Candidate properties must meet several criteria and be part of an ASA in order to compete for a limited amount of funds each year. Lower Mount Bethel Township also may contribute funds from the Township open space program to favor farms within the Township.

Figure 4-1
Existing Land Use
Lower Mount Bethel Township
Comprehensive Plan

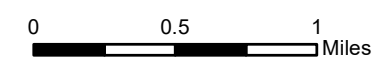


Location Map



Legend

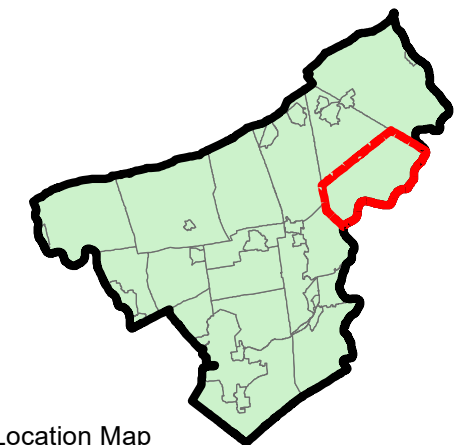
- Lower Mount Bethel Township
- Adjacent Townships
- Roads
- Streams
- Bodies of Water
- Existing Land Use**
- Agricultural or Vacant
- Residential
- Commercial and Retail
- Office
- Institutional
- Manufacturing and Industrial
- Parks and Conserved Open Space
- Government and Quasi-Government
- Utility, Transportation



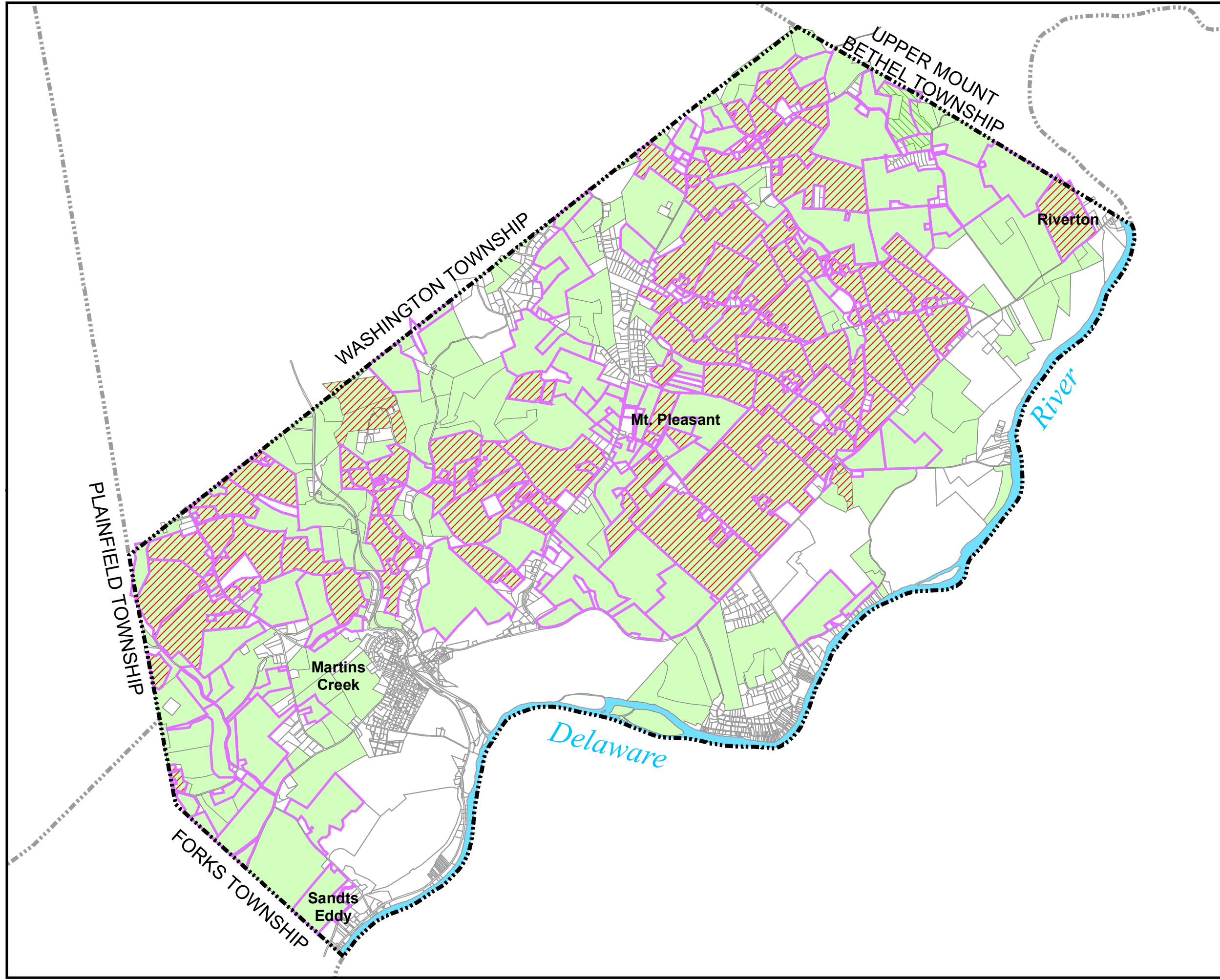
Data source: Base data from Lehigh Valley Planning Commission, 2005
Tax parcel information from Northampton County GIS Dept., 2022.

Map created: June 22, 2022
Last revised: September 28, 2022

Figure 4-2
 Use Value Taxed and
 Preserved Lands
 Lower Mount Bethel Township
 Comprehensive Plan



Location Map



Legend

- Lower Mount Bethel Township
- Adjacent Townships
- Ag Security Areas
- Preserved Farmland
- Wetlands Reserve Easement
- Act 319/515 Parcels
- Tax parcels



0 0.5 1 Miles



Data source: Base data from Lehigh Valley Planning Commission, 2005. Tax parcels from Northampton County GIS, 2022. Protected lands from WeConservePA, 2022.

Map created: August 11, 2022
 Last revised: September 29, 2022

As of 2022, 158 parcels in Lower Mount Bethel Township are permanently protected through agricultural conservation easements, for a total of 4,405 acres. The preserved lands are spread throughout the agricultural areas of the Township, as shown in Figure 4-2, and help to define the township's core agricultural areas. Lower Mount Bethel has the highest amount of land permanently committed to farming through voluntary actions by landowners of any municipality in both Northampton and Lehigh Counties. The Township has benefited from significant public investment, including its own contributions, in the future of its farmers and valuable agricultural resources.

To remain economically viable, agricultural areas must be substantial enough in size, and not fragmented by other uses, particularly those types of land uses that are often incompatible with agricultural practices. The new 2022 Zoning Ordinance includes significant protections for agricultural properties in the AP-Agricultural Preservation District.



A day's work completed north of the Martins Creek area

Commercial & Retail Uses

Commercial and retail land uses are relatively limited, comprising 31 parcels and 54.7 acres or 0.35 percent of the Township's land area. Such businesses are primarily located within Martins Creek and Riverton villages and along PA 611, and include a variety of smaller services and retail stores, restaurants, a funeral home, small professional offices, and a few commercial/industrial uses.

There are no larger community-oriented or regional retail uses such as major grocery stores, clothing or pharmaceutical stores, garden or hardware stores, within Lower Mount Bethel Township. These shopping opportunities are dependent on larger markets and customer support bases, and exist within a relatively short driving distance to the south in adjoining Forks Township, across the Delaware River in Belvidere, New Jersey, or further south along Route 611 in the Easton area, or even farther south and west to the more



Village commercial in the Martins Creek area

metropolitan areas of Bethlehem and Allentown.

Government/Quasi-Government Uses

Government and Quasi-Government Uses are mapped as including the Lower Mount Bethel Township Municipal Office, located on Hutchinson Avenue in the center of Martin's Creek village, the Lower Mount Bethel-Sandt's Eddy Fire Company, located on South Delaware Drive (PA 611) also in Martins Creek village, and the Township Garage, located on North Delaware Drive (PA 611). These three parcels comprise 5.2 acres and 0.02 percent of the Township land area. Municipal and other public open spaces and recreational facilities are inventoried in Chapter 8 and are included on Figure 4-1 as Parks and Conserved Open Space uses.



Lower Mount Bethel Township Municipal Office

Institutional Uses

As discussed further in Chapter 8, Community Facilities & Utilities Plan, institutional uses in Lower Mount Bethel Township comprise local churches, cemeteries and a small historical museum. A total of 12 parcels occupy 22.2 acres, comprising 0.14 percent of the Township land area. Government and quasi-government uses are discussed separately above.

Manufacturing and Industrial Uses

Lower Mount Bethel Township contains several resource-dependent and other industrial uses, including 18 parcels occupying 800.1 acres or 5.08 percent of total Township land area. By far the largest industrial uses by land area occupied are quarrying operations.. Except for former coal ash pits, the Talen Energy complex is not counted in this land use category but in the Utility, Transportation category.

H&K Group's Easton Quarry and Asphalt division produces crushed stone at the quarry on Lower Mud Run Road.

In addition to the H&K operation, there are two large quarry operations within the Township operated by Eastern Industries, Inc. a subsidiary of New Enterprise Stone & Lime Co., Inc. One is adjacent to Martins Creek and the second located north of the Talen Energy power plant complex. The quarrying operations include the extraction of sand and gravel.

ConAgra has a grain milling plant located on Route 611 in the southeastern corner of the township at the former Lehigh Cement site. Adjacent to ConAgra is a Bulkmatic facility. This Griffith, Indiana, based company is the largest dry bulk carrier in the US with the Martins Creek operation including a shop, tank wash, and "rail-to-truck" transloading facility.

Office Uses

Office uses, as so categorized by Northampton County tax records, only occupy two parcels in Lower Mount Bethel Township, totaling one acre and comprising 0.01 percent of the Township land area.

Parks and Conserved Open Space

Parks and Conserved Open Space comprise a wide variety of sites, discussed in detail in Chapter 8, Community Facilities and Utilities. This category includes conserved open space that is dedicated to public use, even if simply a preserve with no recreational facilities. However, this category does not include conserved agricultural lands, which are inventoried as agricultural, discussed above.

Among the properties in this land use category are all of Lower Mount Bethel Township's active and passive park and recreational facilities and public trail systems, preserves owned by Northampton County, and the Sandt's Eddy Boat Access owned by the Commonwealth of Pennsylvania. Also included are privately owned recreational facilities open to public use, including the Martins Creek or Pacchiolli ballfield and Talen Energy's Boat Launch on the Delaware River. Overall, there are 23 parcels in this land use category, totaling 378.8 acres or 2.40 percent of the Township land area.

Residential Uses

Residential use in Lower Mount Bethel Township includes a wide range of lot or parcel sizes, housing types, and ownership and rental options. However, while the new 2022 Zoning Ordinance provides for all types of residential uses, to date they are limited by essentially Township-wide reliance on on-lot sewage disposal and use of groundwater aquifers. Rural residences are located on farms and other large lots throughout the Township, while other individual dwellings and a few multifamily structures (duplexes, triplexes, and apartments) are located on smaller lots notably in



Characteristic village residential development

Martins Creek. "Second" or recreational home sites are located along the Delaware River, many converted to principal residential use. A few relatively new suburban-style subdivisions are scattered around the Township, most now in the LD-Low Density Residential zoning district. Mobile homes are located within older, private parks.

According to the 2020 US Census, there were 1,360 housing units in Lower Mount Bethel Township. The 2022 Township Existing Land Use inventory reports 1,083 residential parcels totaling 1,360.3 acres or 8.63 percent of the Township land area. See Figure 4-1.

Lower Mount Bethel's residential communities are further described as follows:

- *Hillendale* - A mix of old, renovated, and relatively new single-family detached residential homes, most on small lots along the Delaware River and accessed by Hillendale Road. Many homes were originally built for seasonal, recreational use and a good number have been converted to year-round principal dwellings.
- *Del Haven* - Similar to Hillendale, a mix of old, renovated, and relatively new single-family detached residential homes also adjoining the Delaware River and accessed from Del Haven Road. Most of these homes occupy small lots either bordering, or with a view of, the river, and many were originally built for seasonal, recreational use. A number of those here have also been converted to year-round principal dwellings.
- *Ostrander Mobile Home Park* - An older, single-family mobile home community located near the Delaware River and just northwest of the Del Haven community. This park is formed by a loop drive bordered by relatively small trailer or mobile home spaces, with units of varying age, quality, and size.
- *McDermott Road Subdivision* - A single-family detached residential community developed near the Delaware River, but outside of the river floodplain. This subdivision's lots are larger than those of the nearby riverside homes to better accommodate individual sewage disposal systems. Homes are located on a steep slope with views of the Delaware River.
- *Kiefer Estates* - A single-family detached residential community constructed on the southeast side of Martins Creek – Belvidere Highway, in the late 1980s and early 1990s.
- *Sandt's Eddy* - A single-family detached, residential community largely lying between Route 611 and the Delaware River near the southeast border of the township. A few homes are located on the west side of Route 611. These homes are typically located on small lots and, given that they were once primarily seasonal in nature, they are largely oriented to the river. Some of the older homes have been renovated given their unique location for recreational interests and a number here have also been converted to year-round principal dwellings.
- *Driftwood Mobile Home Park* - A single-family mobile home community located on the west side of Route 611, near Sandt's Eddy, and smaller in size than the Ostrander Mobile Home Park located up-river.
- *DePue's Ferry Road* - A cluster of older, riverside cottages located on DePue's Ferry Road just north of the Talen Energy complex. The homes are a mix of seasonal and year-round residences, some of which lie within the Delaware River flood plain.
- *Riverton* - A crossroads community consisting of a few tightly clustered buildings with both residential and commercial, tourist-oriented uses, located at the northeast tip of the Township. Of tourist interest, this community is located at the Martins Creek-Belvidere Highway and Riverton Road intersection at the Delaware River Bridge leading into New Jersey and the historic town of Belvidere.
- *River's Edge Mobile Home Park* - A well-kept, single-family mobile home community located at the northwest edge of Riverton.

- *Martins Creek* - An historic village, population center, and center for municipal government services, formed by the intersection of Route 611 and Front Street, and traversed by Martins Creek. While this is the largest concentration of residential, commercial, and institutional land uses within the Township, it has seen little recent development. And, while the predominant residential land use is single-family detached housing on relatively small lots, some higher density, multi-family housing also exists. All lots rely on on-site water and sewage systems.
- *Mount Pleasant and Berry Hollow* - Relatively newer, single-family detached residential subdivisions consisting of large, contiguous lots served by local streets intersecting with Route 611, centrally located but on the higher elevations of the Township.
- *Witchwood Hills* - A single-family, detached, residential development located in the northwestern portion of the Township near the border with Washington Township.

Utility and Transportation Uses

The largest percentage of land area in this land use category encompasses the Talen Energy power plant complex located on a large site on the western side of the Delaware River. Smaller parcels in this category include railroad lines and a pipeline transmission facility. A total nine parcels are found in this land use category, totaling 546.0 acres and accounting for 3.46 percent of the Township land area.

Talen Energy's power generation use requires sizable transmission towers, lines, and other equipment located throughout the Township in routing power to other parts of the mid-Atlantic region. Also, much of the land that houses Talen Energy facilities has undergone significant grading over the years to enable the construction of ancillary facilities. Adjacent to the power plant complex is an industrial tank farm operated by PPL Interstate Energy Company, a public utility.

Talen Energy has also helped to provide open space and recreational opportunities for Township residents and others on riverside lands under their management and has recently conveyed substantial lands and trails to the Township, as described further in Chapter 8.

Existing Land Use Summary - Key Findings:

- In gross, approximately 80 percent of the total area of Lower Mount Bethel Township remains in agricultural and other open space uses, including parks and preserves and the Delaware River (within the Township boundary), or is vacant. The remaining approximately 20 percent is currently being used for residential and non-residential developed purposes, including roads.
- The Township has more protected farmland than any other municipality in the Lehigh Valley Region.
- Residential land uses account for 8.63 percent of the total Township area, most are single-family homes and are owner occupied; a number are seasonal homes although many have been converted to principal dwellings.
- The Township has a greater percentage of land area in industrial or utility/transportation uses, including roads, at over 10 percent of the total Township, than both Northampton County and the Lehigh Valley region, largely due to the presence of extensive quarry operations and Talen Energy.

- Only 0.35 percent of the Township is in commercial and retail uses. There are no major commercial retail operations in the Township; residents must travel to other nearby municipalities to obtain many commercial goods and services.

References:

- *Lower Mount Bethel Township 2022 Existing Land Use inventory*
- *Lehigh Valley Planning Commission*
- *Northampton County GIS Department, May 2022*
- *WeconservePA 2022*

Existing Zoning Analysis

The Lower Mount Bethel Township Zoning Ordinance of 2022 was adopted on July 11, 2022, while this Comprehensive Plan Update was in preparation. It replaces the zoning ordinance enacted in 1972 and incorporates other related ordinances enacted in between those many years. A good number of zoning ordinance changes that were recommended by the 2007 Comprehensive Plan have been incorporated into the new 2022 Zoning Ordinance, both text and map. The 2022 Zoning Map is included as Figure 4-3.

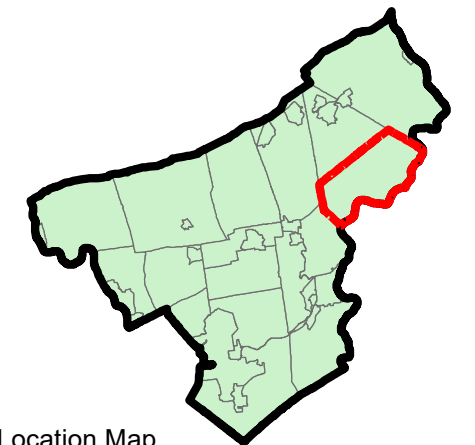
The 2022 Zoning Ordinance divides the Township into six (6) base zoning districts, and two (2) overlay zoning districts. All zoning districts are intended to support and implement the policies and objectives set forth in the Lower Mount Bethel Township Comprehensive Plan of 2007, as amended from time to time, and are intended to promote public health, safety and general welfare within the Township. This new Comprehensive Plan Update is also consistent with the 2022 Zoning Ordinance. The new districts are named as follows:

- AP-Agricultural Preservation District, Article IV;
- LD-Low Density Residential District, Article V;
- MD-Medium Density Residential District, Article VI;
- VMU-Village Mixed Use District, Article VII
- C-Commercial District, Article IX;
- I-Industrial District, Article X;
- MUO-Mixed Use Overlay District, Article VIII; and
- FP Overlay – Floodplain Area Regulations, Article XI.

In terms of mapping, key changes to the 2022 Zoning Map versus the prior zoning map applicable to the 2007 Comprehensive Plan are as follows:

- The new AP-Agricultural Preservation District now incorporates the former A district and the former CV district.

Figure 4-3
 Current Zoning
 Lower Mount Bethel Township
 Comprehensive Plan



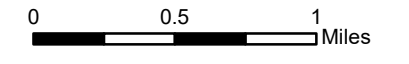
Location Map

Legend

- Lower Mount Bethel Township
- Adjacent Townships
- Tax Parcels
- Roads
- Streams
- Bodies of Water
- Pipeline locations (approx.)
- Mixed Use Overlay District

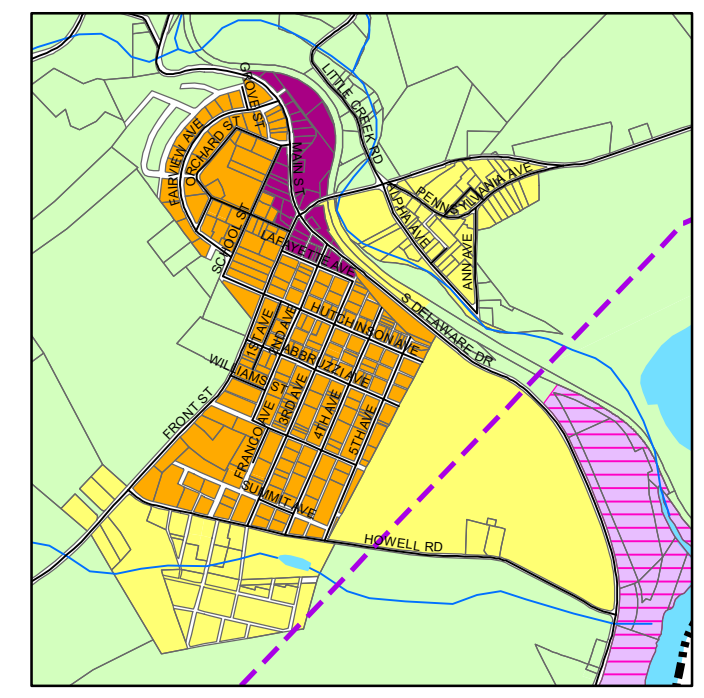
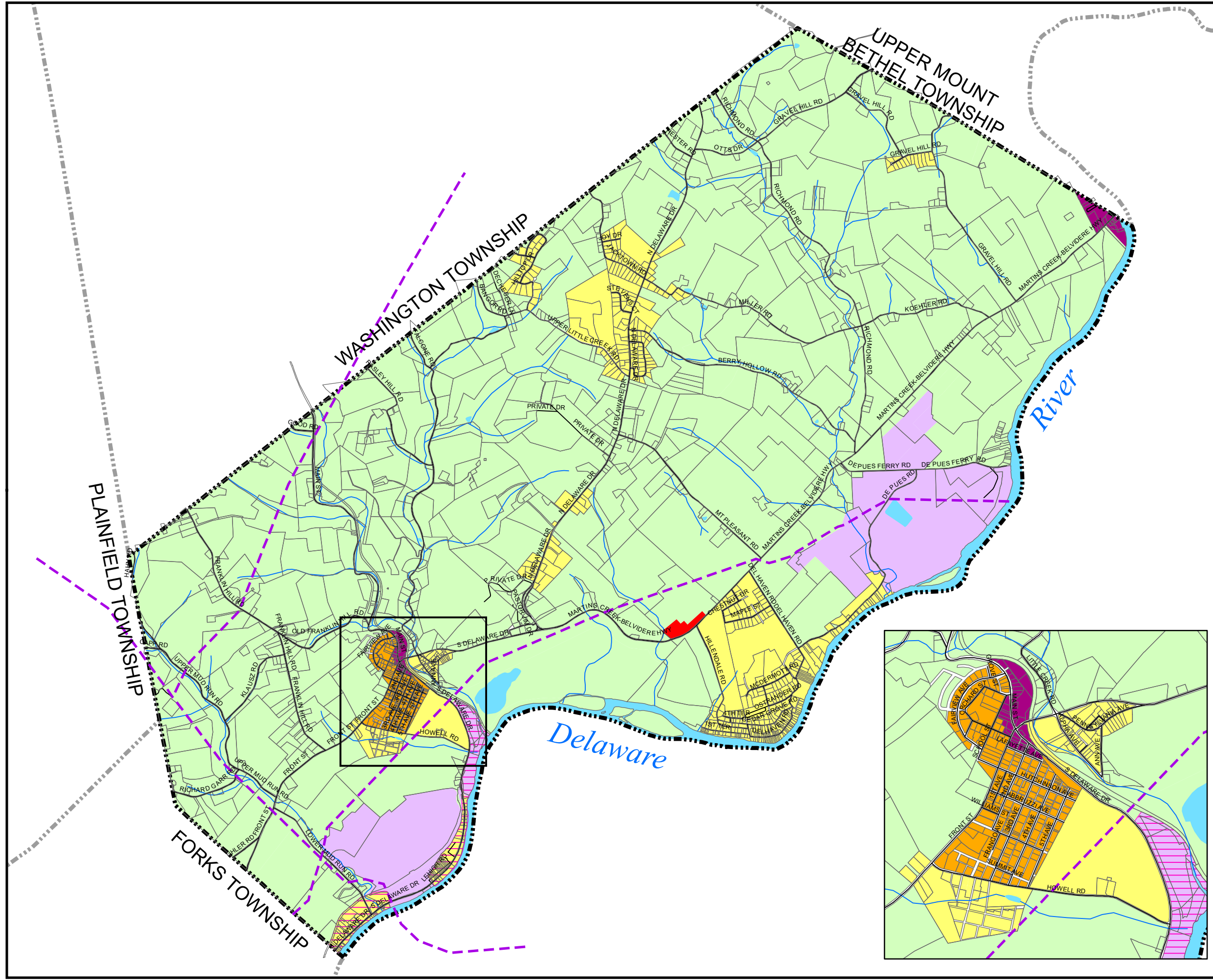
Zoning

- Agricultural Preservation
- Commercial
- Industrial
- Low Density Residential
- Medium Density Residential
- Village Mixed Use



Data source: Base data from Lehigh Valley Planning Commission, 2005
 Tax parcels from Northampton County, 2022.
 Zoning adopted July 2022.

Map created: August 16, 2022
 Last revised: September 29, 2022



- The former LD district has been replaced by a new LD-Low Density Residential District, mostly in similar locations adjusted to reflect existing residential development and enlargement in the Delhaven area as proposed in the 2007 Comprehensive Plan. The former LD area at the foot of Depues Ferry Road has been eliminated and incorporated into the new AP-Agricultural Preservation District.
- The former MD district has been reconstituted as the new MD-Medium Density Residential District with limited map changes.
- The former C commercial district has been eliminated where it had been located in two places in Martins Creek, at Riverton, and near the Delaware River at Delhaven. It was replaced by a new C-Commercial District along Martins Creek-Belvidere Highway near Delhaven and a new VMU-Village Mixed Use District in Martins Creek and at Riverton.
- The former I district has been reconstituted as the new I-Industrial District, adding additional properties that are industrial in character.
- The former F district has been incorporated and updated into the new FP Overlay – Floodplain Area Regulations, and the former separate floodplain ordinance has been incorporated into the new Zoning Ordinance as Article XI.
- A new MUO-Mixed Use Overlay District has been established long PA Route 611 and the Delaware River south of Martins Creek village. It overlays portions of both the new LD-Low Density Residential District and the new I-Industrial District.

Article IV, the AP–Agricultural Preservation District seeks to protect and promote the continuation of agriculture, particularly on lands with prime soils; to strengthen and preserve strong agricultural activities to support farming as a viable component of the Township’s local economy; to maintain farm sizes which permit profitable agricultural operations; and to protect the rural and historic character of Lower Mount Bethel. The AP District substantively incorporates the Comprehensive Agricultural Protection Zoning Ordinance (CAPZO), adopted in 2010, including all subdivision and development options therein. The use regulations by right, special exception, conditional use, and accessory use are spelled out in detail, as are subdivision/development options. Added to the uses permitted by right are temporary structures and events, Now permitted by special exception as a use are commercial stable, riding academy and campground. As with all following zoning districts, specific area, size and dimensional regulations are listed.

Article V, the LD-Low Density Residential District is intended to provide for low density residential uses in areas of the Township where rural-suburban development already exists, yet where extension of public sewer is not anticipated, and where potential intensity of development is not likely to impede preservation of existing agricultural areas. Dwelling uses permitted by right generally include single-family and single-family semi-detached, and two family detached. Other by right uses include forestry, agriculture, and municipal uses.

Temporary events, structures and uses are permitted subject to the specific standards. Also with compliance to specific standards, numerous accessory uses such as private garage, no-impact home business, private swimming pool, etc., are permitted. Uses permitted by conditional use approval include bed & breakfasts and short-term lodging, churches, mobile home parks, and cultural facilities.

Article VI, the MD-Medium Density Residential District is intended to maintain and promote residential growth in that part of the Township, notably the village of Martins Creek, which already exhibits a traditional village development character with a variety of dwelling unit types and is sufficiently compact to potentially be serviced by public sewage and/or water facilities in the future. The MD District also contains few physical limitations that would be unsuitable to accommodate the highest permissible residential densities. Any use permitted by right in the LD District, except for conservation and agricultural uses, is permitted here.

Provided centralized water and sewage systems are installed, multi-family dwellings will be permitted. As in the LD and AP Districts, approval by special exception or conditional use shall permit additional uses (municipal uses, rooming or boarding house, bed & breakfasts, short-term lodging, churches, schools, adult or child day care centers, etc.). Optional accessory uses, where in compliance with specific standards, also are permitted.

Article VII, the VMU-Village Mixed Use District is intended to recognize and provide for the continuation of the historical land use and building patterns in the villages of Martins Creek and Riverton, which exhibit traditional village development character with a variety of dwelling unit types and small-scale commercial and office uses. All uses allowed in the MD District are allowed here. Additionally, where limited to 3,000 square feet collectively on all floors, uses may include retail, professional office, clinics, banks, barber or beauty shops, personal service shops, repair shops, restaurants (no fast food), indoor or outdoor farmers markets or flea markets. As in the MD, LD and AP Districts, approval by special exception or conditional use shall permit additional uses, as well as certain accessory uses where in compliance with specific standards.

Article VIII, the MUO-Mixed-Use Overlay District provides for optional development of modest-scale, mostly non-residential uses, to serve residents and the traveling public. Located along PA 611 south of Martins Creek village and along the Delaware River, this District “overlays” areas zoned LD or I and doesn’t impact their individual by right zoning provisions. Optional permitted uses and accessory uses in the overlay, when approved by the Board of Supervisors as conditional uses include: retail, professional offices, clinics, personal service stores, repair shops, restaurants or taverns (excluding fast food), bed & breakfasts, short term lodging, farmers or flea markets, swimming pools, hotel or motels, day care, nursing homes or assisted living, churches, commercial recreation facilities, special events venues, live-work units, among others. Specific design standards are set forth for use of the Overlay, including provisions to promote consolidation of smaller lots.

Article IX, the C-Commercial District provides for a diversity of commercial, office and service-oriented uses in a location convenient to Lower Mount Bethel residents and the travelling public. The majority of permitted uses in C District are also permitted in other districts described above, either by special exception or conditional use. In this District, specific size and dimensional regulations are set forth that are applicable where sewage disposal is supplied by an individual on-site system. Beside the typical area and bulk regulations, there are expressed design standards for all uses in the C District. These include regulations for access (both vehicular and pedestrian), screening and landscaping, maximum building size limitations, and design standards for structures that will require grouping and building architecture that reflect the traditional rural characteristics of Lower Mount Bethel Township.

Article X, the I-Industrial District is intended to accommodate industrial uses and larger-scale vehicular, office, institutional and other uses which may not be compatible within conventional

residential, commercial or rural agricultural districts, in a manner that respects surrounding residents and landowners while providing employment opportunities and diversification of the local tax-base. This district allows uses by right such as manufacturing, research labs, wholesale businesses, mineral extraction, agricultural and forestry, sale of building materials, fireworks, and sale of ammunition. Uses permitted by special exception include: public library, bus passenger station, membership clubs for gunning, trap shooting or other similar purpose, indoor or outdoor shooting or archery range, and campgrounds. When approved by the Board of Supervisors as a conditional use, facilities such as heliports, hotels/motels, terminals, warehouses, transfer and recycling facilities, service facilities for boats, mobile homes, autos, car washes, adult commercial uses, hospitals, drug and/or alcohol treatment centers, fast food restaurants with or without drive-through, wireless communications facilities, junkyards, landfills, etc. shall be permitted. Specific size and dimensional regulations are applicable where sewage disposal is supplied by an individual on-site system.

Article XI, the FP Overlay–Floodplain Area Regulations is based on the specific authority in the Flood Plain Management Act. It is meant to encourage use of appropriate construction practices in order to prevent or minimize future flood damage, to reduce danger to public health by protecting water supply and natural drainage, and to reduce financial burdens on both community and residents by preventing excessive development in areas subject to flooding. No construction or development in identified floodplain areas within LMBT can occur until a permit is obtained from the floodplain administrator in concert with specific requirements and technical provisions. Special provisions are provided for zoning variances and for existing structures in floodplain areas.

Article XII, Alternative & Renewable Energy, provides regulations intended to promote the safe, effective and efficient use of renewable energy systems, including geothermal energy, solar energy, and wind energy systems as well as manure digesters. This article intends to help reduce the consumption of utility-supplied energy, heat, hot water, or any combination of the above, while protecting the health, safety and welfare of Township residents, and while protecting adjacent land uses through appropriate zoning and land-use controls. Other alternative or renewable energy systems not specified in this Article may be permitted subject to use approval in the I-Industrial District only, and subject to the provisions included in this Article as applicable.

Article XIII, Natural Resources Conservation, is intended to protect the public health, safety and welfare by minimizing adverse environmental impacts. These standards and conservation provisions pertain to steep slopes, wetlands, riparian buffers and conservation of woodlands and heritage trees. Timber harvesting is a permitted as a use by right in all districts, and regulations and practices for timber harvesting are clearly spelled out in this Article.

Article XIV, Common Regulations, includes provisions, regulations and standards that are common to all zoning districts and apply to all uses. This Article covers a multitude of topics, for example, modifications to lot areas and maximum height limits for buildings, provisions for access and utility service, regulations for fences, hedges and walls, and for landscape screening. Performance standards are set forth to avoid dangerous fire hazards, offensive vibrations, dust, odors or other forms of air pollution. Elements that may affect surrounding areas such as glare, electrical disturbances, and solid waste storage are addressed. Provisions to minimize traffic congestion, to control access to streets, to ensure good circulation, and to regulate parking and off-street loading by trucks can be found in this Article. Also included are sign regulations,

regulations on the keeping of animals, outdoor lighting, and the display of for sale motor vehicles.

Article XV, Supplementary Regulations, establishes supplemental controls for uses and structures requiring special design considerations to ensure compatibility with other permitted uses within a zoning district, and shall apply to all zoning districts in which the particular use or structure being regulated is permitted. These are provisions in addition to the standards established for an individual zoning district. It is another very lengthy Article covering some of the numerous uses listed as follows: agritourism, conversion of agricultural structures, farmers markets, accessory dwellings, bed and breakfast establishments, animal shelters, clinics and hospitals, campgrounds, gas stations, auto repair shops, car washes, home occupations, junkyards, schools, landfills, nursing homes, warehouses, pipelines and wireless communication facilities. The use designations are numerous due to the fact that Pennsylvania 2nd Class Townships are required to zone for every use.

Article XVI, Nonconforming Use Regulations, provides for existing nonconformities in all zoning districts, whether uses, lots, or structures or area and bulk requirements that already exist and are not conforming to current zoning provisions. Within the zoning districts established by this Ordinance or subsequent amendments, if there exist certain nonconformities, if lawful prior to ordinance adoption or amendment, they may be continued, subject to certain limitations, under the terms of the new Zoning Ordinance of 2022 or subsequent amendments. To avoid undue hardship, nothing in the zoning ordinance shall be deemed to require a change in the plans, construction, or designated use of any lot, building, or structure for which any applicable permit or plan had been lawfully approved prior to the effective date of the current zoning ordinance or any amendment, and where the use has been diligently carried on. Subjects covered in this Article include regulations for expansion, change of use, restoration, and abandonment of lots, uses, and/or structures

Article XVII, Administration & Enforcement, outlines the procedures and regulations by which the zoning ordinance will be administered and enforced, the procedures for obtaining permits and use and occupancy certificates, the duties of the Township zoning officer, and the conditional use procedures where conditional use approval is required. Established here are also the series of steps the Township can undertake when there is a violation of any part of this Ordinance: notices of violation, stop orders, enforcement remedies and penalties. Finally addressed is how this Ordinance can be amended, changed, or modified by the Board of Supervisors, by citizen's petition, or by landowner curative amendment.

Article XVIII, Zoning Hearing Board, provides regulations to govern the establishment, functions, and procedures of the Zoning Hearing Board, appointed by the Board of Supervisors. Jurisdiction of this Board to hear and render final decisions is delineated along with procedures for meetings, rules, notices of hearings, hearings themselves, time limitations, witnesses, evidence and decisions. Steps for appealing a decision, either of the zoning ordinance or zoning map, are described as well. A special exception is an activity that is allowed by the zoning ordinance if certain conditions are met and the Zoning Hearing Board approves. A variance is a slight modification from the terms of the zoning ordinance that is intended to allow a use or a building to be constructed where the literal terms of the zoning ordinance, if enforced literally, would cause the owner severe hardship. Procedures for approval of both are set forth in this Article.

Article XIX, Mobile Home Park Regulations, establishes provisions to accommodate mobile home communities within the rural context of Lower Mount Bethel Township and to require designs that will foster a pleasant, attractive, safe environment while preserving the benefit of relatively low cost

traditionally associated with mobile home dwellings. In accordance with the objectives of the Lower Mount Bethel Township Comprehensive Plan, and the purpose statements and community development objectives set forth in the preamble of the zoning ordinance, regulations intended to achieve those goals address the mobile home park itself and the individual mobile homes. Park size and building height are specified, and common space areas are required. Directives for water supply, waste disposal, fuel supply, electrical distribution, fire protection, landscaping and screening, and accessory buildings are designated. Concluding this Article are requirements for permits and inspections, and maintenance responsibilities.

Zoning Build-Out Analysis

Lower Mount Bethel Township, like nearly all other municipalities in the state, must comply with the Commonwealth’s Municipalities Planning Code (MPC) with regard to establishing zoning ordinances. Specifically, Section 604(4) of the MPC requires the Township to provide for a diversity of housing types, “encompassing all basic forms of housing, including single-family and two-family dwellings, and a reasonable range of multifamily dwellings in various arrangements, mobile homes and mobile home parks.”

No specific standards have been established by the Commonwealth to guide Pennsylvania communities in determining how much land must be provided for each type. However, a logical key is to have sufficient land appropriately zoned to allow for required diversity to an extent that is ample to meet housing needs anticipated during the twenty-year planning horizon of the current Comprehensive Plan.



The 2007 Comprehensive Plan included a detailed build-out analysis of the Township’s developable lands in accordance with the then current Zoning Ordinance. It concluded that the Township was “over zoned” in providing for far more residential development than needed to fulfill the housing needs in the twenty-year planning horizon for that Plan.

While the new 2022 Zoning Ordinance, and the previously adopted CAPZO have significantly reduced residential development potential in the former A-Agricultural and current AP-Agricultural Preservation Districts, a brief build-out analysis here reaches the same conclusion. Based on population projections in Chapter 3, and 2020 average household size, a maximum of 367 new housing units are needed to fulfill the approximate 20-year planning horizon for this plan, until 2040. It is important to note that while the 2022 Zoning Ordinance permits all housing types, many multi-family dwellings would depend upon development of sewer and water supply facilities. This also may be true for mobile home park development, but in both cases, community rather than public system(s) may be feasible.

Based on the provisions of the new 2022 Zoning Ordinance, vacant and underdeveloped properties in the LD-Low Density and MD-Medium Density Residential Districts could allow for the development of over 1,000 new homes of varying unit types, even without development of public sewerage and water supply. Parcels less than twelve acres in size in the AP-Agricultural Preservation District are not subject to restrictive development provisions aimed at preserving farmland, but allow for lot-out development at one acre per lot. Even accounting for environmental constraints that force larger lots, the gross acreage in this parcel category also could accommodate development of over 1,000 new homes. Modest additional residential development can be accommodated in the remainder of the AP District as well as in primarily non-residential districts. Some 13 parcels in the LD District meet qualifications for development of mobile home parks.

Unlike residential development, the MPC does not specify any required range or amount of non-residential development. Case law has generally established that no lawful use can be entirely precluded. Yet there is little direction as to much land should be available for development of any particular category of non-residential use. The Zoning Ordinance of 2022 provides ample vacant or underdeveloped acreage for any use that may reasonably be anticipated in Lower Mount Bethel Township.

CHAPTER 5 COMMUNITY DEVELOPMENT OBJECTIVES AND STRATEGIES

The following seven community development objectives guide the remaining chapters of this Comprehensive Plan, and are also intended to be useful in future Township actions and programs. Strategies corresponding to each community development objective are intended to further refine the guidance offered for particular areas of the township or specific planning issues.

OBJECTIVE 1.

Retain and protect the Township's historic rural and agricultural character, prioritizing agriculture as a viable way of life.

STRATEGIES:

- Continue to seek preservation of large contiguous areas of viable farmland through strong zoning regulations now in place and use of the Official Map; encourage farmers to participate in agricultural security areas and continue assistance in the purchase of agricultural easements in the AP-Agricultural Preservation District.
- Support the continued use of the Agricultural Security Areas, and Act 319 and Act 515 preferential tax programs administered by Northampton County, programs that benefit Township farmers.
- Continue to support Township landowners' efforts to seek the Northampton County Farmland Preservation Program's purchase of agricultural easements, and use the Township's dedicated open space funds for facilitating preservation of Township farms.
- Continue to support the establishment of appropriate farm related businesses in the AP-Agricultural Preservation District.
- Discourage the extension of new roads, water, or sewer lines into prime farmland areas.
- Coordinate the planning of growth, the preservation of Township resources, the sharing of municipal services, and other issues of mutual concern with adjoining townships, Bangor Area School District and Easton Area School District, the Lehigh Valley Planning Commission, and other agencies and organizations with regional interests.

OBJECTIVE 2.

Protect the Township's other natural, scenic, and historic resources.

STRATEGIES:

- Continue to provide and enforce regulatory protection for the Township's environmentally sensitive areas, including steep slopes, woodlands, headwaters streams, floodplains, wetlands, groundwater, surface water, and aquifer recharge.
- Continue to enhance riparian buffers along the Township's rivers, perennial streams, and areas encompassing wetlands.

- Support the continued watershed conservation and management efforts of the Martins-Jacoby Watershed Association and the Northampton County Conservation District.
- Continue to support and enforce the objectives and regulations of the Lower Mount Bethel Township Act 167 Stormwater Management Ordinance.
- Protect the quality and quantity of existing ground water and surface water resources of the Township, including the use of Best Management Practices (BMPs) for agriculture and land development/stormwater management and ongoing monitoring of potential pollution sources and applicable federal or state regulatory requirements.
- Provide ongoing support of the Lower Delaware Wild and Scenic River Management Plan and the Delaware River Valley Scenic Byway Corridor Management Plan.
- Continue to study and share information regarding underlying geologic conditions in carbonate (Karst) areas in the context of quarry operations and subdivision and land development review; promote employment of special development infrastructure design and construction techniques, to avoid potentially hazardous sinkholes and groundwater pollution.
- Continue to seek to minimize disturbance of moderately steep to steep slopes within the Township.
- Continue to seek minimal removal of woodland areas and retain existing woodland canopy along the stream valleys and along the Delaware River.
- Seek to preserve important historical buildings, structures, bridges, railroad traces, and other historical sites in the Township through both regulatory and non-regulatory tools.

OBJECTIVE 3.

Protect landowner values.

STRATEGIES:

- Work with County and Commonwealth agencies, private foundations, and private enterprise to provide opportunities for economic development and identify new markets and product types for farmers.
- Continue to provide a variety of land use and conservation options to Township landowners that can yield a reasonable financial return, yet do not create conflicts with other objectives and policies of this Plan.
- Continue to preserve and expand contiguous areas of farmland and other open space.

OBJECTIVE 4.

Provide areas for housing, shopping, resident services, recreation and economic development.

STRATEGIES:

- Support the limited establishment of community or public water and sewer systems within the village of Martins Creek and other growth areas designated in this Plan, subject to an updated Township Act 537 Plan.

- Encourage a wide mix of compatible residential and non-residential uses within designated growth areas identified in this Plan.
- Strongly encourage the siting of new, architecturally compatible, commercial establishments in the VMU-Village Mixed Use District, the C-Commercial District, and the MUO-Mixed Use Overlay District as the preferred locations for commercial development in the Township.
- Plan for future active and passive recreational opportunities in order to accommodate projected residential growth and both local and regional recreational interests.
- Provide particular ongoing support of scenic river and Scenic Byway Corridor Management Plan in relation to economic development (tourism) and recreation through consistent local actions.
- Encourage and support the formation of a local organization to discuss and address current and future business goals.

OBJECTIVE 5.

Identify and implement solutions to public health and safety concerns.

STRATEGIES:

- Prohibit new buildings, structures and fill in the 100-year floodplain identified through the federal Flood Insurance Study and administered by FEMA.
- Provide landowners with incentives to relocate residences to locations outside of the 100-year floodplain identified through the Federal flood insurance program and administered by FEMA.
- Require new subdivision lots proposed for on-lot sewage disposal to provide tested primary and replacement absorption areas.
- Consider establishment of appropriate policies and programs for sewage disposal within the Township through adoption of an updated Act 537 Plan.
- Consider appropriate health and safety improvements for areas with documented malfunctioning on-lot sewage disposal systems or malfunctioning central systems when adjoining lands are proposed for development, and consider developer incentives to help finance the cost of inadequate systems improvements.

OBJECTIVE 6.

Manage traffic circulation consistent with the principles of a rural agricultural community, with special emphasis on safety and pedestrian travel.

STRATEGIES:

- Give high priority, and encourage Northampton County and PennDOT where appropriate, to undertake projects that upgrade unsafe roads and intersections, rehabilitate or replace substandard bridges and upgrade existing highways that are deficient.
- Continue ongoing efforts with PennDOT to address traffic patterns and routes within the village of Martins Creek and other critical areas.

- Ensure that design and location of major highway and bridge projects is consistent with the natural resource and agricultural preservation provisions of this plan.
- Give careful consideration to the potential negative impacts on established neighborhoods and local communities during the planning and design of road improvements.
- Promote transportation infrastructure, sidewalks, trails, and crosswalks, to resolve pedestrian safety issues.

OBJECTIVE 7.

Manage residential growth within the Township to help alleviate escalating education costs within the two public school districts serving Township residents.

STRATEGIES:

- Accommodate growth within the Township to the extent required to satisfy the Commonwealth's Municipalities Planning Code.
- Utilize the Township's dedicated open space funds and other means to facilitate further preservation of Township agricultural and other open space lands.

CHAPTER 6

FUTURE LAND USE AND HOUSING PLAN

This Comprehensive Plan balances the land use, economic development, resource protection, and other needs and desires of the Lower Mount Bethel community for the next 20 years. This Future Land Use and Housing Plan reflects the community development objectives and strategies presented in Chapter 5; it is based on factual data and projections contained in this Plan.

Recommendations contained within this chapter will, when implemented, help protect the Township's rural character and way of life, especially in the face of significant land use and economic change within the Lehigh Valley as a whole. The Township desires to remain primarily a rural, agricultural community, while capturing the benefits that some change can bring. Although a reasonable amount of regional growth is anticipated and welcome within the Township, this plan proposes that it be accommodated in ways that enhance the community's unique rural and small-town character, much like its historical past. Economic development, in the form of businesses and industries which enhance the value of the Township's agricultural products, and eco-tourism uses which enhance the natural, cultural, and recreational values of the Delaware River, are encouraged. Achieving a balance of growth with economic prosperity and rural community conservation is an overarching goal of the Comprehensive Plan.

This Plan's strategy continues to rely on existing areas of development and certain additional areas to accommodate most of the Township's future growth and development, generally consistent with the 2007 Comprehensive Plan. The amount of growth accommodated by this Plan is less than that accommodated by the 2007 Plan, largely due to the intervening adoption of the CAPZO, which significantly reduced growth potential in agricultural areas. Lower Mount Bethel Township is also fortunate to enjoy the highest rate of agricultural and open space land conservation in Northampton County, much accomplished since the adoption of the 2007 Plan with considerable public investment.

This Future Land Use and Housing Plan continues to promote the retention of the Township's extensive prime farmlands, as well as its forested stream valleys, visually significant landscapes, scenic roads, and other locally-valued open space areas. Based on population and housing projections contained in this Plan, only limited new growth needs to be accommodated during the 20-year time frame of the Plan. This Future Land Use Plan also:

- Continues to provide for a variety of use, land development, and conservation options to be made available by the Township and others for landowners to utilize;
- Accommodates a variety of housing types and other uses consistent with the 20-year population and housing estimates;
- Is in compliance with the Commonwealth's Municipalities Planning Code, and is generally consistent with the Future LV: The Regional Plan;

- Assumes that public infrastructure and community development objectives will facilitate all forms of housing, will address existing water and wastewater treatment concerns, and will be achieved, in part, through future land use proposals of private developers; and
- Furthers economic development opportunities within the Township that benefit farmers, other residents, and businesses.

The Future Land Use and Housing Plan is graphically portrayed through the Future Land Use Map, Figure 6-1.

The Future Land Use Map, while consistent with the Lower Mount Bethel Zoning Ordinance of 2022, is not a zoning map, but is a general graphic portrayal of future land use opportunities. The Future Land Use Map includes seven land use categories: Agricultural Preservation/Conservation, Low Density Residential, Medium Density Residential, Village Mixed Use, Commercial, Industrial, and Mixed Use.

Land use categories intended to accommodate a significant percentage of planned Township growth, while supporting a potential variety of housing opportunities, residential types and densities, and ownership options, include Low Density Residential, Medium Density Residential, and Village Mixed Use.

Lower Mount Bethel Township's existing housing stock consists primarily of single-family detached homes, and including mobile homes either on individual lots or within private parks where space is leased. The Township also includes a substantial number of vacation homes along the Delaware River, many of which have been converted to year-round use. Limited housing variety is largely a function of a lack of public infrastructure to serve higher density residential uses, but also the

product of low market demand for such housing in this area.



Large farming operation in eastern Lower Mount Bethel

Other land use categories anticipated to accommodate mostly non-residential growth are Commercial, Industrial, and Mixed Use. A brief description of each of the seven land use categories and related planning considerations follows.

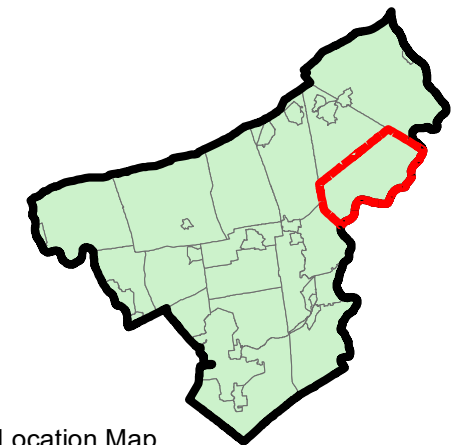
Agricultural Preservation/Conservation

The Agricultural Preservation/ Conservation land use category promotes continued agricultural, forestry, recreational and other forms of open space use on the majority of the Township's land area.

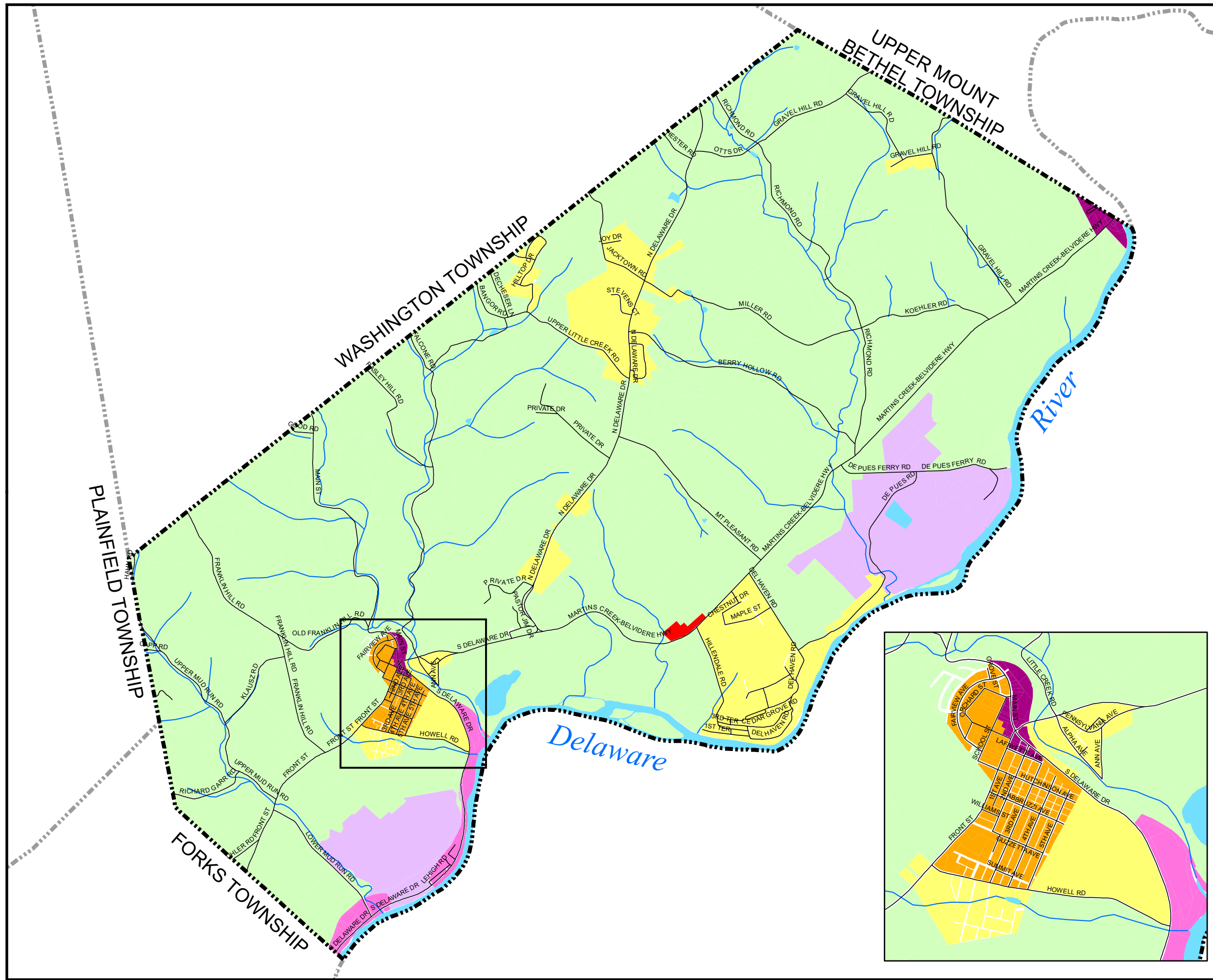
Residential housing for farmers, farm managers, and family members is also appropriate, as are low-intensity, non-farm uses that landowners can pursue to help supplement farm incomes. Very low density rural, or non-farm housing is an appropriate land use within this category when it avoids the more resource-sensitive lands, such as prime farmland soils, and when it also avoids, or is sensitively sited within, woodlands, hedgerows, wetland margins, steep slopes, riparian corridors, and karst topography.

The Agricultural Preservation/Conservation land use category also promotes the continued conservation of the Township's prime farmlands and other natural resource areas through

Figure 6-1
 Future Land Use
 Lower Mount Bethel Township
 Comprehensive Plan



Location Map



Legend

Lower Mount Bethel Township

Adjacent Townships

Roads

Streams

Bodies of Water

Future Land Use

Agricultural Preservation/Conservation

Commercial

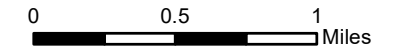
Industrial

Low Density Residential

Medium Density Residential

Mixed Use

Village Mixed Use



Data source: Base data from Lehigh Valley Planning Commission, 2005
 Tax parcels from Northampton County, 2022.
 Zoning adopted July 2022.

Map created: August 16, 2022

combined efforts of the Township, Northampton County, landowners, conservation organizations, and others. In doing this, the Township acknowledges their farmers and other landowners who have voluntarily sold their development rights and permanently protected and enhanced much of the Township's agricultural areas.

Other lands within this category, a mix of prime farmlands, other soils, woodlands or otherwise unfarmed land, may be appropriate for rural residential use, subject to careful siting of building footprints, limiting vegetation clearing, and avoiding disturbance of sensitive resource lands in general. Such land uses should also protect groundwater resources and, at a minimum, infiltrate treated sewage effluent and storm water. The 2022 Zoning Ordinance provides for rural residential development and other non-farm uses on tracts less than 12 acres in size, as well as non-farm open space and recreational uses on larger tracts.

Low Density Residential

The Low-Density Residential land use category applies to relatively well-defined areas of the Township, including existing low-density areas of the village of Martins Creek, existing areas of low-density housing in the interior of the Township, along with adjacent open parcels that are not protected farmland, and the Del Haven and Hillendale areas between Martins Creek-Belvidere Highway and the Delaware River, including land potentially available for future development. These last areas were proposed for “Village Residential” in the 2007 Comprehensive Plan.

The Low-Density Residential land use category is proposed for one-acre minimum lots until such time as central or community sewage facilities are established, and where potential intensity of development is not likely to impede preservation of existing agricultural areas. This Plan proposes that permitted uses generally include single-family and single-family semi-detached, and two family detached dwellings, consistent with the 2022 Zoning Ordinance. Other proposed permitted uses include forestry, agriculture, municipal uses, and additional uses subject to specific standards, as supported in the LD-Low Density Residential zoning district.

Medium Density Residential

This land use category comprises most of the village of Martins Creek, excepting the village fringes that are less developed and the village center. The village of Martins Creek already exhibits a traditional village development character with a variety of dwelling unit types and is sufficiently compact to be serviced by public sewage and/or water facilities in the future. This land use category also contains few physical limitations that would be unsuitable to accommodate relatively high residential densities, although higher densities would require additional sewer service and water facilities in the future. The Medium Density Residential category is intended to provide for all uses found in the Low-Density Residential category, except agricultural and conservation uses, plus multi-family dwellings. As in other land use categories, additional uses are proposed, subject to specific standards. Examples include municipal uses, rooming or boarding houses, bed and breakfasts, short-term lodging, churches, schools, adult or child day care centers, and optional accessory uses.

Village Mixed Use

This land use category recognizes the unique mixed-use character of the historic centers of the village of Martins Creek and Riverton. It promotes the retention and enhancement of village character through infill on existing lots, and through redevelopment of underutilized lots and lots with compatible uses.

The area encompassed in the Village Mixed Use category already exhibits traditional village development character with a variety of dwelling unit types and small-scale commercial and office uses. All uses provided for in the Medium Density Residential land use category are to be allowed here as well. In addition, anticipated uses include relatively small retail businesses, professional offices, clinics, banks, barber or beauty shops, personal service shops, and repair shops, as well as restaurants (but not fast food), and indoor or outdoor farmers markets and flea markets. As in other land use categories, additional uses are suggested, subject to specific standards, including optional accessory uses. Examples include municipal uses, rooming or boarding houses, live-work units, nursing homes, bed and breakfasts, short-term lodging, churches, schools, adult or child day care centers, museums, bus passenger stations, automobile service stations, and single-stage or screen theaters.

Commercial

The Commercial land use category provides for future development of a diversity of commercial, office and service-oriented uses in a location convenient to Lower Mount Bethel residents and the travelling public along Martins Creek-Belvidere Highway, in proximity to the Del Haven and Hillendale areas. While the majority of proposed uses in the Commercial land use category are also proposed in other land use categories, these areas anticipate fewer size or use constraints, while imposing specific design standards consistent with rural village landscapes, especially important in this location along the Delaware River Valley Scenic Byway. These include regulations for access (both vehicular and pedestrian), screening and landscaping, design standards for structures that will require grouping, and building architecture that reflects the traditional rural characteristics of Lower Mount Bethel Township. Uses potentially anticipated in this land use category, and largely not elsewhere, include funeral homes, convenience stores, automobile, boat and mobile home sales, hotel/motels, fast-food restaurants, and hospitals.

Industrial

The Industrial land use category primarily recognizes the location of existing industrial properties, particularly operating quarries and power generation facilities. The Future Land Use Plan allocates a limited amount of additional lands adjoining these industrial uses to this land use category to allow for limited industrial expansion, and to allow for buffering of these uses, which are potentially noisy, dusty, flammable, and hazardous, from nearby residentially developed or zoned land uses. This land use category intentionally excludes the immediate frontage of Martins Creek-Belvidere Highway, part of the Delaware River Valley Scenic Byway. Existing and former industrial properties along the Route 611 portion of the Byway south of the village of Martins Creek are included.

In addition to existing industrial uses and potential similar uses, the Industrial land use category anticipates a wide variety of lawful uses not otherwise compatible within conventional residential, commercial or agricultural/conservation areas, in a manner that respects surrounding residents and landowners while providing employment opportunities and diversification of the local tax-base. Potential new uses include research labs, wholesale businesses, sale of building materials, and sales of fireworks and ammunition. Additional uses subject to specific design and

approval standards are anticipated to include: public libraries, bus passenger stations, membership clubs for gunning, trap shooting or other similar purposes, indoor or outdoor shooting or archery ranges, campgrounds, heliports, hotels/motels, terminals, warehouses, transfer and recycling facilities, service facilities for boats, mobile homes, autos, car washes, adult commercial uses, hospitals, drug and/or alcohol treatment centers, fast food restaurants, wireless communications facilities, junkyards, and landfills. Specific size and dimensional regulations are intended to be applicable where sewage disposal is supplied by an individual on-site system.

Mixed Use

The Mixed-Use land use category is intended as an optional overlay to existing developed and underdeveloped tracts along Route 611 south of the village of Martins Creek and along the Delaware River. These tracts are presently zoned for industrial and low-density residential uses with many small existing lots generally incapable of providing adequate sewer services. The 2007 Comprehensive Plan suggested such a development option but did not identify it on the Future Land Use Plan at that time. In addition to providing opportunities to increase the Township's eco-tourism industry potential, as recommended in 2007, this land use category, as an option to underlying zoning, is intended to provide for a wide variety of uses along Route 611, in a manner that promotes consolidation of smaller lots, subject to very specific design and approval standards.

This land use category is intended to provide for optional development of modest-scale, mostly non-residential uses, with consolidation of small parcels where applicable, to serve residents and the travelling public. Optional permitted uses and accessory uses in the overlay, when approved, are anticipated to include: retail businesses, professional offices, clinics, personal service stores, repair shops, restaurants or taverns (excluding fast food), bed and breakfasts, short term lodging, farmers markets or flea markets, swimming pools, hotel/motels, day care centers, nursing homes or assisted living facilities, churches, commercial recreation facilities, special events venues, live-work units, and other permitted uses.

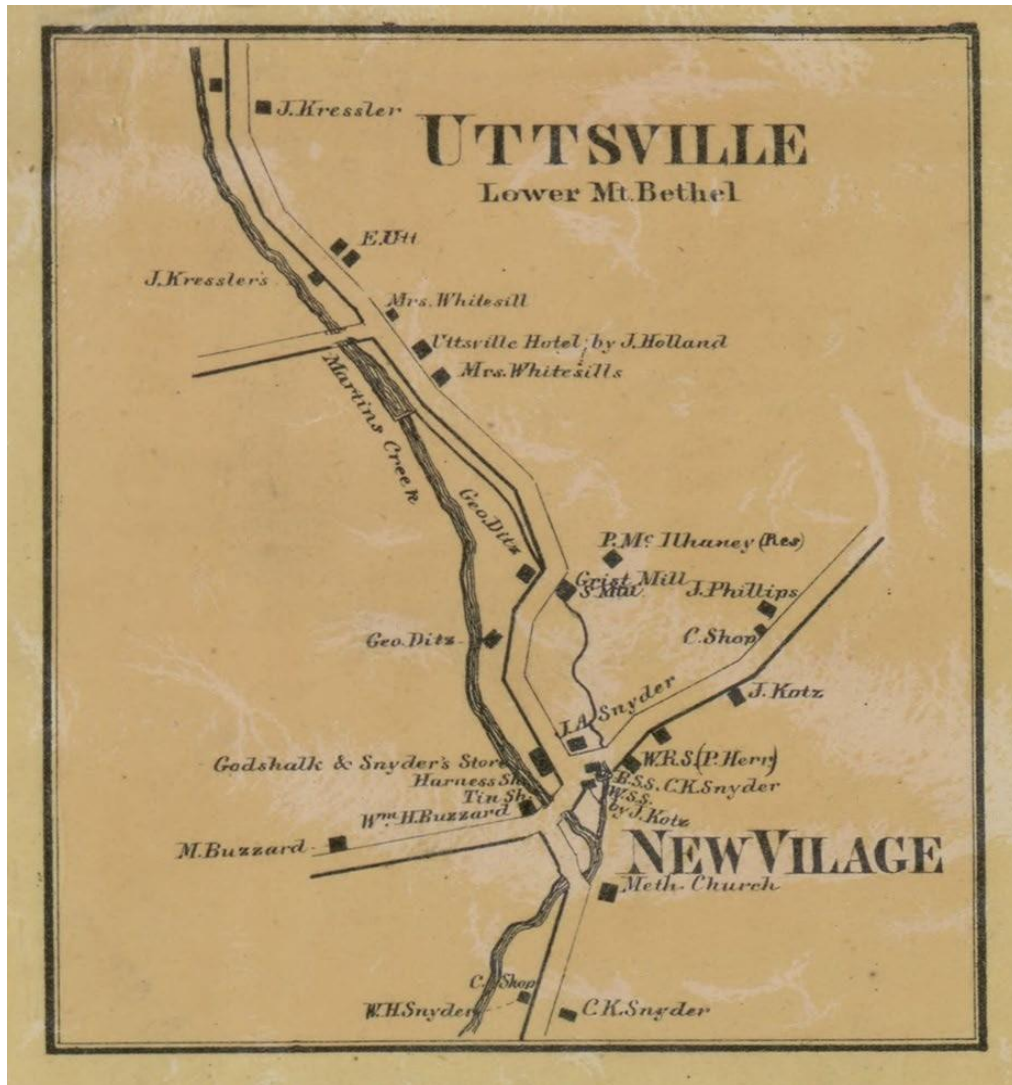
CHAPTER 7

TRANSPORTATION PLAN

This Plan Element, Chapter 7, was prepared by the Township Engineer, Carroll Engineering.

Introduction

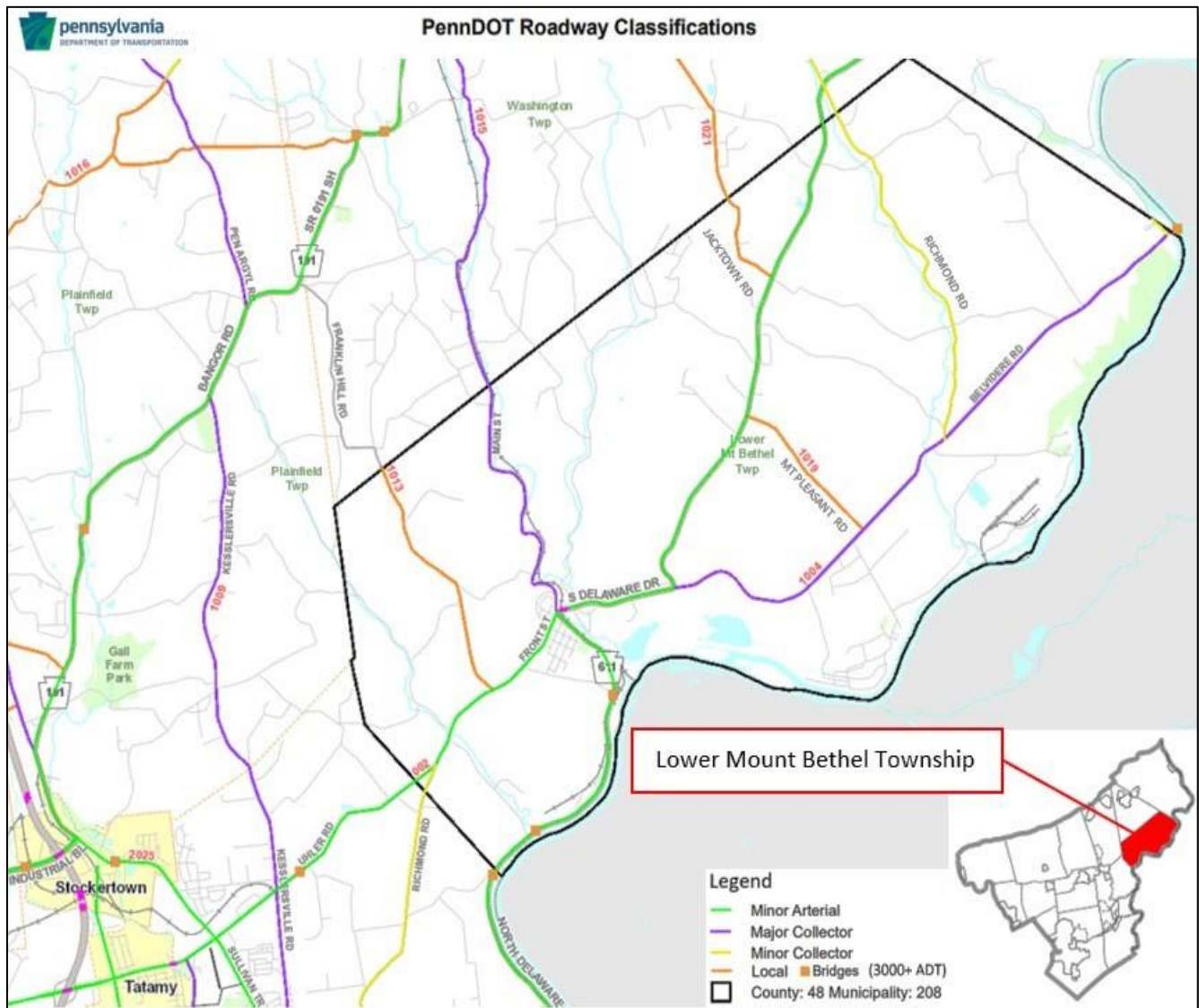
Lower Mount Bethel Township is located within Northampton County in the Lehigh Valley region. Villages within the Township are established near intersections of major State Routes. The transportation network within the Township is heavily reliant on car and truck traffic as means of transporting people, goods, and services. The Township is located within a region that was once a rich source for slate and mining. Presently, this rural Township primarily serves small farming communities. A well-planned transportation system greatly impacts residents and is vital to maintaining a well operated community. This transportation system is key to maintaining the functionality of the municipality.



Map 1: Lower Mount Bethel Township Map - 1860s

PennDOT Roadway Classifications Map

[PennDOT One Map tool](#) was used to generate the map shown below, featuring a vicinity map of the Township. The map illustrates state-owned roadways, high volume bridges, and the Township's location within Northampton County. Roadways are shown as minor arterial, major collector, minor collector, and local state-owned roads. Local state-owned roadways (orange line) have a speed limit of 30 miles per hour (mph) or greater. Bridges (orange rectangle) have a minimum average daily traffic (ADT) total of 4,000 vehicles. The minor arterials (green), major collectors (purple), and minor collectors (yellow) do not have filtered restrictions. Therefore, all arterials and collectors within township limits are shown.



PennDOT Roadway Classifications Map

Roadway Inventory

PennDOT Roadway Classifications

Table 1: Roadway Typologies

Table 1.2, "Roadway Typologies," PennDOT Pub 13M. Lower Mount Bethel Township has 4 major roadway types: Community Arterial (Minor Arterials), Community Collector (Major Collector), Neighborhood Collector (Minor Collector), and Local (Local Road). In the table – the class, type, speed, trip length, volume, spacing, and comment section are categorized per roadway type. The highlighted data pertains to the roadways within Township boundaries.

**TABLE 1.2
ROADWAY TYPOLOGIES**

ROADWAY CLASS	ROADWAY TYPE	DESIRED OPERATING SPEED	AVERAGE TRIP LENGTH	VOLUME	INTERSECTION SPACING	COMMENTS
Arterial	Regional	50-90 km/h (30-55 mph)	24-56 km (15-35 mi)	10,000- 40,000 veh/day	200-400 m (660-1,320 ft)	Roadways in this category would be considered "Principal Arterial" in traditional functional classification.
Arterial	Community	40-90 km/h (25-55 mph)	11-40 km (7-25 mi)	5,000- 25,000 veh/day	90-400 m (300-1,320 ft)	Often classified as "Minor Arterial" in traditional classification but may include road segments classified as "Principal Arterial".
Collector	Community	40-90 km/h (25-55 mph)	8-16 km (5-10 mi)	5,000- 15,000 veh/day	90-200 m (300-660 ft)	Often similar in appearance to a community arterial. Typically classified as "Major Collector".
Collector	Neighborhood	40-60 km/h (25-35 mph)	< 11 km (< 7 mi)	< 6,000 veh/day	90-200 m (300-660 ft)	Similar in appearance to local roadways. Typically classified as "Minor Collector".
Local	Local	30-50 km/h (20-30 mph)	< 8 km (< 5 mi)	< 3,000 veh/day	60-200 m (200-660 ft)	

Table 1: Roadway Typologies

Table 2: Community Arterial (State Routes)

Table 1.4, “Matrix of Design Values – Community Arterial,” PennDOT Publication 13M - This table highlights the traits of a rural Community Arterial which apply to State Route (SR) 611 and Front Street (SR 1002). Rural community arterial properties include: 11’-12’ travel lanes; 8’-10’ design shoulder widths; 25’-50’ curb returns; 2%-8% cross slopes; 0.5% min. vertical grades; 16’-6” clearance; and 35-55 miles per hour (mph) desired speedlimits.

**TABLE 1.4 (ENGLISH)
MATRIX OF DESIGN VALUES – COMMUNITY ARTERIAL**

Community Arterial	Rural	Suburban Neighborhood	Suburban Corridor	Suburban Center	Town/Village Neighborhood	Town/Village Center	Urban Core
Roadway							
Lane Width ¹	11' to 12'	10' to 12'	11' to 12'	10' to 12'	10' to 12'	10' to 12'	10' to 12'
Shoulder Width ^{2, 3}	8' to 10'	4' to 8' (if No Parking or Bike Lane)	8' to 10'	4' to 6' (if No Parking or Bike Lane)	4' to 6' (if No Parking or Bike Lane)	4' to 6' (if No Parking or Bike Lane)	4' to 6' (if No Parking or Bike Lane)
Parking Lane	NA	7' to 8' Parallel	NA	8' Parallel	7' to 8' Parallel	7' to 8' Parallel	7' to 8' Parallel
Bike Lane ⁴	NA	5' to 6' (if No Shoulder)	5' to 6' (if No Shoulder)	5' to 6'	5' to 6'	5' to 6'	5' to 6'
Median (if needed)	4' to 6'	16' to 18' for Left Turn	16' to 18' for Left Turn	16' to 18' for Left Turn	16' to 18' for Left Turn	16' to 18' for Left Turn	16' to 18' for Left Turn
Curb Return ⁵	25' to 50'	12' to 18' for Left Turn; 6' to 8' for Pedestrians	12' to 18' for Left Turn; 6' to 8' for Pedestrians	12' to 18' for Left Turn; 6' to 8' for Pedestrians	12' to 18' for Left Turn; 6' to 8' for Pedestrians	12' to 18' for Left Turn; 6' to 8' for Pedestrians	12' to 18' for Left Turn; 6' to 8' for Pedestrians
Travel Lanes	2 to 4	25' to 35'	25' to 50'	20' to 40'	15' to 30'	15' to 35'	15' to 40'
Cross Slopes (Minimum) ^{6, 7}	2.0%	2 to 4	2 to 4	2 to 4	2 to 4	2 to 4	2 to 4
Cross Slopes (Maximum) ⁸	8.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Bridge Widths	See Section 1.2.C	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Vertical Grades (Minimum) ¹⁰	0.5%	See Section 1.2.C	See Section 1.2.C	See Section 1.2.C	See Section 1.2.C	See Section 1.2.C	See Section 1.2.C
Vertical Clearance (Minimum)	16'-6", See Chapter 2	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
		16'-6", See Chapter 2	16'-6", See Chapter 2	16'-6", See Chapter 2	16'-6", See Chapter 2	16'-6", See Chapter 2	16'-6", See Chapter 2
Roadside ¹¹							
Clear Sidewalk Width ⁹	NA	5'	5' to 6'	6'	6' to 8'	6' to 10'	8' to 14'
Buffer ¹²	NA	6'+	5' to 10'	4' to 6'	4' to 6'	4' to 6'	4' to 6'
Shy Distance	NA	NA	NA	0' to 2'	0' to 2'	2'	2'
Total Sidewalk Width	NA	5'	5' to 6'	10' to 14'	10' to 16'	12' to 18'	14' to 22'
Clear Zone Widths ¹³	See Chapter 12	See Chapter 12	See Chapter 12	See Chapter 12	See Chapter 12	See Chapter 12	See Chapter 12
Right-of-Way Widths ¹⁴	Varies	Varies	Varies	Varies	Varies	Varies	Varies
Speed							
Desired Operating Speed (Design Speed)	35-55 mph	30-35 mph	35-50 mph	30 mph	25-30 mph	25-30 mph	25-30 mph
Stopping Sight Distances (Minimum)	2011 AASHTO Green Book, Table 7-1	2011 AASHTO Green Book, Table 7-1	2011 AASHTO Green Book, Table 7-1	2011 AASHTO Green Book, Table 7-1	2011 AASHTO Green Book, Table 7-1	2011 AASHTO Green Book, Table 7-1	2011 AASHTO Green Book, Table 7-1
Passing Sight Distances (Minimum)	See Table 2.1	See Table 2.1	See Table 2.1	See Table 2.1	See Table 2.1	See Table 2.1	See Table 2.1
Vertical Grades (Maximum)	2011 AASHTO Green Book, Table 7-2	2011 AASHTO Green Book, Table 7-4	2011 AASHTO Green Book, Table 7-4	2011 AASHTO Green Book, Table 7-4	2011 AASHTO Green Book, Table 7-4	2011 AASHTO Green Book, Table 7-4	2011 AASHTO Green Book, Table 7-4

Table 2: Matrix of Design Values - Community Arterial

Table 3: Community Collector (State Routes)

Table 1.5, “Matrix of Design Values – Community Collector,” PennDOT Publication 13M - Rural Community Collectors (Major Collectors), such as Main Street (SR 1015) or Martins Belvidere Highway (SR 1004), properties include: 11’-12’ travel lanes; 4’-8’ design shoulder widths; 20’-40’ curb returns; 2%-8% cross slopes; 0.5% min. vertical grades; 14’-6” clearance, and 35-55 miles per hour (mph) desired speed limits.

TABLE 1.5 (ENGLISH)
MATRIX OF DESIGN VALUES – COMMUNITY COLLECTOR

Community Collector	Rural	Suburban Neighborhood	Suburban Corridor	Suburban Center	Town/Village Neighborhood	Town/Village Center	Urban Core
Lane Width ¹	11' to 12'	10' to 12'	11' to 12'	10' to 11'	10' to 11'	10' to 11'	10' to 11'
Shoulder Width ^{2,3}	4' to 8'	4' to 8' (if No Parking or Bike Lane)	8' to 10'	4' to 6' (if No Parking or Bike Lane)	4' (if No Parking or Bike Lane)	4' (if No Parking or Bike Lane)	4' (if No Parking or Bike Lane)
Parking Lane	NA	7'	NA	7' to 8' Parallel	7' to 8' Parallel	7' to 8' Parallel	7' to 8' Parallel
Bike Lane ⁴	NA	5'	5' to 6'	5' to 6'	5' to 6'	5' to 6'	5' to 6'
Median (if needed)	NA	12' to 16' for Left Turn; 6' for Pedestrians Only	12' to 16' for Left Turn; 6' for Pedestrians Only	12' to 16' for Left Turn; 6' for Pedestrians Only	12' to 16' for Left Turn; 6' for Pedestrians Only	12' to 16' for Left Turn; 6' for Pedestrians Only	12' to 16' for Left Turn; 6' for Pedestrians Only
Curb Return ⁵	20' to 40'	15' to 35'	20' to 40'	20' to 35'	10' to 25'	10' to 25'	10' to 30'
Travel Lanes	2	2 to 4	2 to 4	2 to 4	2 to 4	2 to 4	2 to 4
Cross Slopes (Minimum) ^{6,7}	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Cross Slopes (Maximum) ⁸	8.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Bridge Widths	See Section 1.2.C	See Section 1.2.C	See Section 1.2.C	See Section 1.2.C	See Section 1.2.C	See Section 1.2.C	See Section 1.2.C
Vertical Grades (Minimum) ⁹	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Vertical Clearance (Minimum)	14'-6", See Chapter 2	14'-6", See Chapter 2	14'-6", See Chapter 2	14'-6", See Chapter 2	14'-6", See Chapter 2	14'-6", See Chapter 2	14'-6", See Chapter 2
Clear Sidewalk Width	NA	4' to 5'	5' to 6'	6' to 8'	5' to 6'	6' to 8'	6' to 10'
Buffer ¹¹	NA	5'+	5' to 10'	4' to 5'	4' to 5'	4' to 5'	4' to 6'
Shy Distance	NA	NA	NA	0' to 2'	0' to 2'	2'	2'
Total Sidewalk Width	NA	4' to 5'	5' to 6'	10' to 15'	9' to 13'	12' to 15'	12' to 18'
Clear Zone Widths ¹²	See Chapter 12	See Chapter 12	See Chapter 12	See Chapter 12	See Chapter 12	See Chapter 12	See Chapter 12
Right-of-Way Widths ¹³	Varies	Varies	Varies	Varies	Varies	Varies	Varies
Desired Operating Speed (Design Speed)	35-55 mph	25-30 mph	30-35 mph	25-30 mph	25-30 mph	25-30 mph	25-30 mph
Stopping Sight Distances (Minimum)	2011 AASHTO Green Book, Table 6-3	2011 AASHTO Green Book, Table 6-3	2011 AASHTO Green Book, Table 6-3	2011 AASHTO Green Book, Table 6-3	2011 AASHTO Green Book, Table 6-3	2011 AASHTO Green Book, Table 6-3	2011 AASHTO Green Book, Table 6-3
Passing Sight Distances (Minimum)	See Table 2.1	See Table 2.1	See Table 2.1	See Table 2.1	See Table 2.1	See Table 2.1	See Table 2.1
Vertical Grades (Maximum) ¹⁴	2011 AASHTO Green Book, Table 6-2	2011 AASHTO Green Book, Table 6-8	2011 AASHTO Green Book, Table 6-8	2011 AASHTO Green Book, Table 6-8	2011 AASHTO Green Book, Table 6-8	2011 AASHTO Green Book, Table 6-8	2011 AASHTO Green Book, Table 6-8

Table 3: Matrix of Design Values - CommunityCollector

Table 4: Neighborhood Collector (State Routes)

Table 1.6, “Matrix of Design Values – Neighborhood Collector,” PennDOT Publication 13M - Rural Neighborhood Collectors (Minor Collectors i.e. Richmond Road) are like Rural Community Collectors, but they hold less traffic and therefore are not held to the same standard. Properties include: 10’-11’ travel lanes; 4’-8’ shoulder widths; 15’-35’ curb returns; 2%-8% cross slopes; 0.5% min. vertical grades; 14’-6” clearance, and 20-35 miles per hour (mph) desired speed limits.

TABLE 1.6 (ENGLISH)
MATRIX OF DESIGN VALUES – NEIGHBORHOOD COLLECTOR

Neighborhood Collector	Rural	Suburban Neighborhood	Suburban Corridor	Suburban Center	Town/Village Neighborhood	Town/Village Center	Urban Core
Roadway							
Lane Width ¹	10' to 11'	10' to 11'	NA	NA	9' to 11'	9' to 11'	9' to 11'
Shoulder Width ^{2,3}	4' to 8'	4' to 8' (if No Parking or Bike Lane)	NA	NA	4' to 6' or Curbed	4' to 6' or Curbed	4' to 6' or Curbed
Parking Lane	NA	7' Parallel	NA	NA	7' to 8' Parallel	7' to 8' Parallel	7' to 8' Parallel
Bike Lane ⁴	NA	5'	NA	NA	5'	5'	5'
Median (if needed)	NA	8' to 10' Landscaping; 6' to 8' for Peds	NA	NA	8' to 10' Landscaping; 6' to 8' for Peds	8' to 10' Landscaping; 6' to 8' for Peds	8' to 10' Landscaping; 6' to 8' for Peds
Curb Return ⁵	15' to 35'	15' to 35'	NA	NA	10' to 25'	10' to 25'	10' to 25'
Travel Lanes	2	2	NA	NA	2	2	2
Cross Slopes (Minimum) ^{6,7}	2.0%	2.0%	NA	NA	2.0%	2.0%	2.0%
Cross Slopes (Maximum) ⁸	8.0%	6.0%	NA	NA	6.0%	6.0%	6.0%
Bridge Widths	See Section 1.2.C	See Section 1.2.C	NA	NA	See Section 1.2.C	See Section 1.2.C	See Section 1.2.C
Vertical Grades (Minimum) ⁹	0.5%	0.5%	NA	NA	0.5%	0.5%	0.5%
Vertical Clearance (Minimum)	14'-6", See Chapter 2	14'-6", See Chapter 2	NA	NA	14'-6", See Chapter 2	14'-6", See Chapter 2	14'-6", See Chapter 2
Roadside ¹⁰							
Clear Sidewalk Width	NA	4' to 5'	NA	NA	5' to 6'	6'	6' to 8'
Buffer ¹¹	NA	4'+	NA	NA	3' to 5'	3' to 5'	4' to 6'
Shy Distance	NA	NA	NA	NA	0' to 2'	2'	2'
Total Sidewalk Width	NA	4' to 5'	NA	NA	8' to 13'	11' to 13'	12' to 16'
Clear Zone Widths ¹²	See Chapter 12	See Chapter 12	NA	NA	See Chapter 12	See Chapter 12	See Chapter 12
Right-of-Way Widths ¹³	Varies	Varies	NA	NA	Varies	Varies	Varies
Speed							
Desired Operating Speed (Design Speed)	20-35 mph	25-30 mph	NA	NA	25-30 mph	25-30 mph	25-30 mph
Stopping Sight Distances (Minimum)	2011 AASHTO Green Book, Table 6-3	2011 AASHTO Green Book, Table 6-3	NA	NA	2011 AASHTO Green Book, Table 6-3	2011 AASHTO Green Book, Table 6-3	2011 AASHTO Green Book, Table 6-3
Passing Sight Distances (Minimum)	See Table 2.1	See Table 2.1	NA	NA	See Table 2.1	See Table 2.1	See Table 2.1
Vertical Grades (Maximum) ¹⁴	2011 AASHTO Green Book, Table 6-2	2011 AASHTO Green Book, Table 6-8	NA	NA	2011 AASHTO Green Book, Table 6-8	2011 AASHTO Green Book, Table 6-8	2011 AASHTO Green Book, Table 6-8

Table 4: Matrix of Design Values - Neighborhood Collector

Table 5: Local Road (State Routes)

Table 1.7, “Matrix of Design Values – Local Road,” PennDOT Publication 13M - Local Road. The Township has three local roads, Franklin Hill Road (SR 1013), Mt. Pleasant Road (SR 1019), and Jacktown Road (SR 1021). Their design values fall under rural local roads. Properties include: 9’-11’ travel lanes; 2’-8’ shoulder widths; 10’-25’ curb returns; 2%-8% cross slopes; 0.5% min. vertical grades; 14’-6” clearance, and 20-30 miles per hour (mph) desired speed limits.

**TABLE 1.7 (ENGLISH)
MATRIX OF DESIGN VALUES – LOCAL ROAD**

Local Road	Rural	Suburban Neighborhood	Suburban Corridor	Suburban Center	Town/Village Neighborhood	Town/Village Center	Urban Core	
Roadway	Lane Width ¹	9' to 11'	See Roadway Width	NA	NA	See Roadway Width	9' to 11'	9' to 11'
	Roadway Width ²	See Lane and Shoulder Width	Wide: 34' to 36' Medium: 30' Narrow: 26' Very Narrow: 20'	NA	NA	Wide: 34' to 36' Medium: 30' Narrow: 26' Very Narrow: 20'	See Lane and Parking Width	See Lane and Parking Width
	Shoulder Width ³	2' to 8'	See Roadway Width	NA	NA	See Roadway Width	2' to 6' or Curbed	2' to 6' or Curbed
	Parking Lane	NA	7' Parallel	NA	NA	7' to 8' Parallel	7' to 8' Parallel	7' to 8' Parallel
	Bike Lane ⁴	NA	NA	NA	NA	NA	NA	NA
	Median	NA	NA	NA	NA	NA	NA	NA
	Curb Return ⁵	10' to 25'	10' to 25'	NA	NA	5' to 25'	5' to 25'	5' to 25'
	Travel Lanes	2	2	NA	NA	2	2	2
	Cross Slopes (Minimum) ^{6,7}	2.0%	2.0%	NA	NA	2.0%	2.0%	2.0%
	Cross Slopes (Maximum) ⁸	8.0%	6.0%	NA	NA	6.0%	6.0%	6.0%
	Bridge Widths	See Section 1.2.C	See Section 1.2.C	NA	NA	See Section 1.2.C	See Section 1.2.C	See Section 1.2.C
	Vertical Grades (Minimum) ⁹	0.5%	0.5%	NA	NA	0.5%	0.5%	0.5%
	Vertical Clearance (Minimum)	14'-6", See Chapter 2	14'-6", See Chapter 2	NA	NA	14'-6", See Chapter 2	14'-6", See Chapter 2	14'-6", See Chapter 2
	Roadside ¹⁰	Clear Sidewalk Width	NA	4' to 5'	NA	NA	5'	5' to 6'
Buffer ¹¹		NA	4'+	NA	NA	3' to 5'	3' to 5'	3' to 5'
Shy Distance		NA	NA	NA	NA	0' to 2'	2'	2'
Total Sidewalk Width		NA	4' to 5'	NA	NA	8' to 12'	10' to 13'	11' to 15'
Clear Zone Widths ¹²		See Chapter 12	See Chapter 12	NA	NA	See Chapter 12	See Chapter 12	See Chapter 12
Right-of-Way Widths ¹³		Varies	Varies	NA	NA	Varies	Varies	Varies
Speed	Desired Operating Speed (Design Speed)	20-30 mph	20-25 mph	NA	NA	20-25 mph	20-25 mph	20-25 mph
	Stopping Sight Distances (Minimum)	2011 AASHTO Green Book, Table 5-3	2011 AASHTO Green Book, Table 5-3	NA	NA	2011 AASHTO Green Book, Table 5-3	2011 AASHTO Green Book, Table 5-3	2011 AASHTO Green Book, Table 5-3
	Passing Sight Distances (Minimum)	See Table 2.1	See Table 2.1	NA	NA	See Table 2.1	See Table 2.1	See Table 2.1
	Vertical Grades (Maximum)	2011 AASHTO Green Book, Table 5-2	8% to 15% ¹⁴	NA	NA	8% to 15% ¹⁴	8% to 15% ¹⁴	8% to 15% ¹⁴

Table 5: Matrix of Design Values – Local Road

Existing Roadway Infrastructure

Lower Mount Bethel Township contains 60 miles of roadway – 34 miles are Township owned and 26 miles are State owned. The Township is bifurcated by SR 611 which provides nearby access to Forks Township to the south, and the Village of Stone Church and Upper Mount Bethel Township to the north. SR 611 also provides direct access to more major points south (Tatamy Road Interchange Commerce Centre, Easton, Allentown, Bethlehem, and Philadelphia, via SR 33 and Interstate 78) and north (Stroudsburg, New Jersey, and New York City, via Interstate 80). The Township consists of a network of roadways within its borders - arterials, collectors, and rural roads.

Community (Minor) Arterials (State Routes)

An arterial is defined as a high-capacity facility that brings traffic to and from highways and expressways. Rural minor arterials are roadway networks in rural areas but hold the same purpose, albeit with less traffic.

Arterials in the township include:

1. SR 611
2. Front Street (SR 1002)/Uhler Road

Both roads listed are classified as rural minor arterials yet serve as the major truck traffic routes for Lower Mount Bethel Township. SR 611 is a two-lane undivided highway that extends from Philadelphia to I-380 in Coolbaugh Township. Within the Township, SR 611 extends 7.8 miles, connecting the northwest and southeast corners.

Community (Major) Collectors (State Routes)

Community collectors connect traffic from arterials to neighborhood collectors or local roads. They link the community to the Villages.

Community collectors in the Township include:

1. Main Street (SR 1015)
2. Martins Creek Belvidere Highway (SR 1004)

Neighborhood (Minor) Collectors (State Routes)

Neighborhood collectors connect traffic from arterials or community collectors to rural roads. They link the community to the towns.

Collectors in the Township include:

1. Richmond Road (SR 1017)

Local Roads (State Routes)

A rural local road is defined as a roadway that provides access from community to community within a rural area. Within the Township, rural local roads make up 57% of the roadway network. The local roads below are associated with state route number.

Rural Local Roads in the Township include:

1. Franklin Hill Road (SR 1013)
2. Mt. Pleasant Road (SR 1019)
3. Jacktown Road (SR 1021)

Summary of Roadway Network

The following table is a summary of the State-owned roadway network:

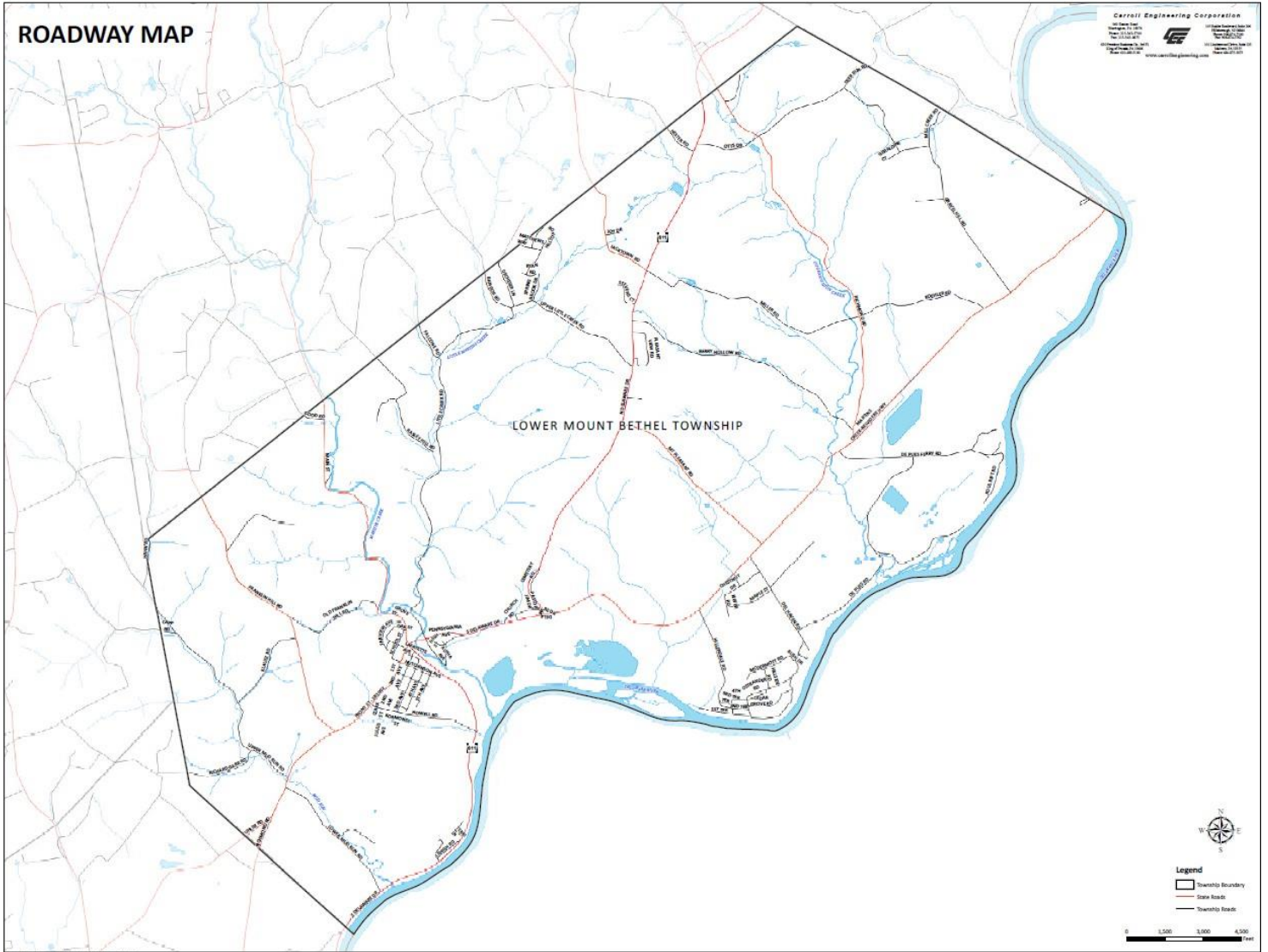
Road Name (Segment)	Roadway Travel Width (ft)	Shoulder Width (ft)	Speed (mph)	AADT (2018)
SR 611 (390-480)	11	3-4	45	4188
SR 611 (380-390)	11	4	45	6646
SR 611 (360-380)	11	4	45	6646
SR 611 (260-360)	10-12	4	45	3856
Front Street (160-160)	12	2-4	35	6460*
Front Street (150-160)	12	2-4	35	6460*
Front Street (140-150)	12	2-4	35	6460*
Front Street (60-90)	12	2-2	35	1807
Martins Creek Belvidere Highway (50-100)	10.5-11	1-3	45	2924
Main Street (10-60)	10	0-3	40	1287
Richmond Road (10-80)	9	0-2	40	471
Franklin Hill Road (10-40)	10	1-5	40	660
Mt. Pleasant Road (10-30)	11	0-1	35	304
Jacktown Road (10-30)	10.5	1-2	35	683

Table 6: Summary of Roadway Network

**Data from LTAP Report, August 2020*

Township Owned Roadway Network

The following map shows the Township-owned roadway network:



Township Roadway Network

Existing Industry

Major industry and truck traffic generators exist within and near the Township – specifically, H&K Group, Inc., Ardent Mills, W.W. Transport, Weyerhaeuser Distribution Center, several quarries, and several small industrial areas in Forks Township. Additionally, further south adjacent to the Tatamy Road Interchange, there are significant warehouses and distribution centers (Amazon, Walgreens, UPS, etc.).

A. H&K Group, Inc.

H&K Group, Inc. Lehigh Valley Division, situated at 5135 Lower Mud Run Road, provides heavy civil construction and contracting services to the region. Within the same property, Easton Block & Supply manufactures concrete block products for use in the building industry. H&K's adjacent Easton Quarry facility and Easton Asphalt facility, situated at 5137 Lower Mud Run Road, offers crushed construction aggregate products and asphalt paving materials to regional construction industry. Within the same property, Rahns Construction Materials Co. operates a ready-mix concrete plant. Traffic entering and exiting these two properties via a common driveway entrance, generally consists of passenger vehicles, on-road trucks, and concrete delivery trucks.



H&K Group, Inc. Site Entrance

B. Ardent Mills

Ardent Mills is a flour milling and grain supplier. Commonly, trucks are coming for loading and returns, and car traffic is minimal. This facility is located at 4888 SR 611 (South Delaware Drive).



Ardent Mills

C. W.W. Transport Inc.

W.W. Transport Inc. is a company that focuses on specialized freight that transports dry and liquid bulk food products.



W. W. Transport Inc. – Google Image

D. Talen Energy Martins Creek Power Plant

The Martins Creek Energy plant uses natural gas and oil to produce 1.7 Megawatts (MW) of power. It is located within the Township at 6605 Foul Rift Road, Bangor, PA. Previously the plant was a coal-fired electric generation facility but converted to natural gas and oil in the mid-2000's.



Energy Plant – LMBT Website

E. New Enterprise Stone & Lime Co. Martins Creek Quarry

Located at 3285 Martins-Belvidere Highway, this facility produces stone and lime materials for roadway and bridge construction projects.



New Enterprise Stone and Lime Co.

F. Delaware Quarry

This quarry is located at 6491 Martins Creek Belvidere Highway in Bangor, PA. It specializes in stone sourcing for construction projects.



Delaware Quarry – Google Image

Additional Township Information

Public Transportation Facilities

Buses/LANTA

Although LANTA does not currently serve the Lower Mount Bethel Township region, there are future considerations for expanding in that area. Currently, the closest bus lines are Route 214, which services the city of Easton to Forks Township, and Route 217 (Slatebelt), which services Bangor, Wind Gap, Uhler Road at Sullivan Trail, and Northampton Crossings. The Slatebelt line may extend into Lower Mount Bethel Township and points north as part of a tourist initiative.

Other Transportation Modes

Bicyclists

In the Township, bicyclists are acceptable everywhere. It is encouraged for bicyclists to enjoy the 179-acre park equipped with 1.3 miles of Riverfront Trail as part of the John M. Mauser Nature Education Trail. There are no dedicated bicycle lanes within the Township.

Pedestrians

There are multiple facilities that generate pedestrian traffic in the Village of Martins Creek, including several churches, commercial properties, the post office, small markets, and Pacchioli Field. There is little to no sidewalk along the residential neighborhoods, but many roadway networks have widened roadways. Pedestrians have safe passageways at the John M. Mauser Nature Education Trail and the Meadows Park located off of North Main Street for walking, exercise, and leisure.

Transportation Infrastructure Focus Areas

SR 611, Front Street, and Main Street – Signalized



SR 611, Front Street, Main Street Intersection

This signalized intersection of SR 611, Front Street, and Main Street is a local point of concern for the Township. This major intersection serves as the connection between the community and the surrounding industry.

From the PennDOT Traffic Information Repository (TIRe), in 2018, SR 611 Annual Average Daily Traffic (AADT) is 6,646 vehicles per day (vpd) on the northern approach and 3,856 vpd on the southern approach. Front Street AADT is 6,460 vpd (LTAP Report, August 2020) and Main Street AADT is 1,684 vpd (PennDOT, 2019).

There are no pedestrian accommodations (including crosswalks, push buttons, and ADA accommodations, etc.) at this intersection, only a large mast arm that serves all four legs of the intersection. Lighting is minimal with one streetlight.

On the north corner is a restaurant (currently closed) with a 2nd floor apartment, followed on the east corner with a private residence and a gas station (currently closed). On the west corner is a professional office building. The southern end contains the signal housing and a large, private fenced lot.

Crash Information:

The PennDOT Crash Information Tool (PCIT) allows users to view crash data in several ways. The map indicates vehicle crashes between the years 2016 and 2020. The blue dot is a crash that resulted in an injury and the green is a crash that only involved property damage. At the signalized intersection of SR 611, Main Street, and Front Street, there was 1 crash in 2020. Nearby, there were a few minor crashes. It should be noted that no fatalities occurred on this corridor during this timeframe.



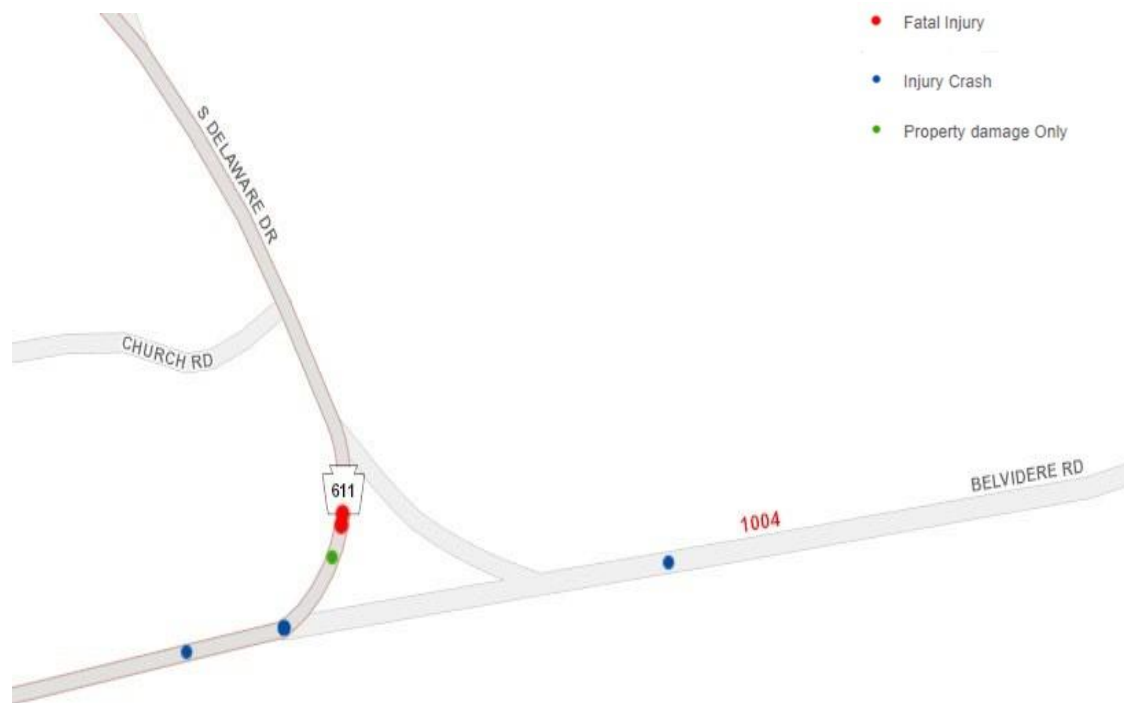
PCIT Map of SR 611, Front Street, Main Street Intersection

SR 611 and Martins-Belvidere Highway – Unsignalized

The intersection of SR 611 and Martins-Belvidere Highway is a three-way stop-controlled intersection. Southbound Martins-Belvidere Highway is stop controlled on the through movement, as well as on the channelized right-turn slip lane on to SR 611. Northbound SR 611 traffic has a continuous thru and left turn movement. The thru traffic enters Martins-Belvidere Highway, whereas the left turn movement continues northbound onto SR 611. Southbound SR 611 making a right turn on SR 611 does not have a stop sign. Traffic moving from SR 611 southbound onto Martins-Belvidere Highway are stop controlled.

Crash Information:

The crash data at the SR 611 and Martins-Belvidere Highway had three fatal accidents in Feb. 2017, May 2019, and May 2020. The accident of February 2017 was a head-on collision in daylight dry conditions. In May of 2019, it was an angled crash in daylight dry conditions. The next year, in May of 2020, it was daylight, but rainy conditions, and the roads were wet.



PCIT Map of SR 611 and Martins-Belvidere Highway Intersection

Safety Concerns:

There are several locations with safety concerns. Many fatalities happened at the intersection of SR 611 and Belvidere Road. The drainage and traffic configuration should be reinvestigated.

Front Street Corridor

Front Street Corridor with Truck Generators

This corridor is a major focal point of the Township. Major truck traffic generators exist near this corridor, specifically, H&K Group, Inc., Ardent Mills, W. W. Transport, Weyerhaeuser Distribution Center, Delaware Quarry, and several industrial areas in Forks and Palmer Townships.

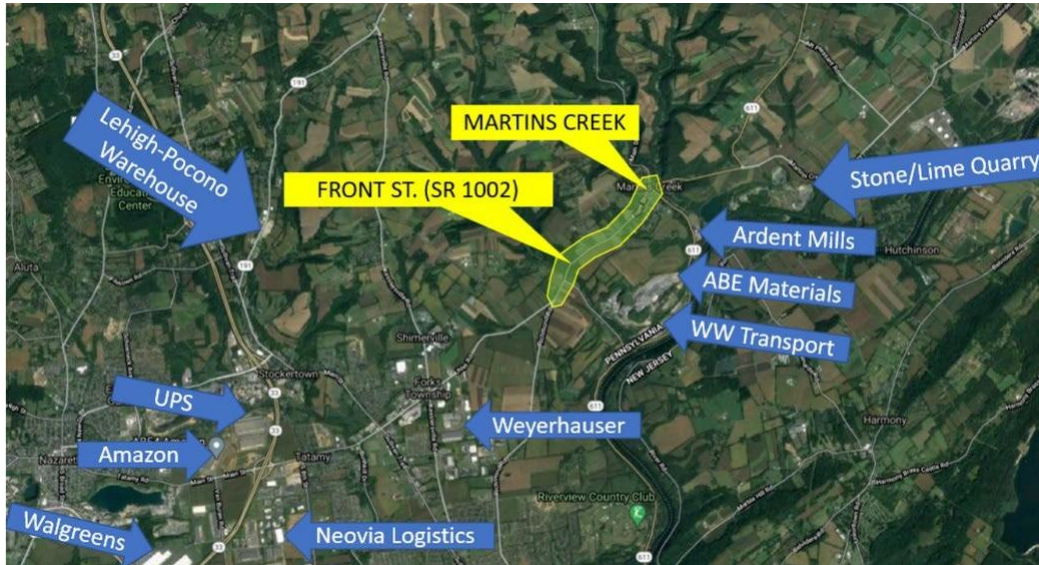
This corridor is approximately 25 feet wide from the southern Uhler Road to Lower Mud Run Road. The roadway width begins narrowing down to 20 feet past Lower Mud Run Road up to SR 611.

Additionally, Front Street (SR 1002) begins to climb in grade approaching the village of Martins Creek, with some slopes rising as high as 12%. There are no existing sidewalks or curbing along this corridor, nor any sidewalks along the intersecting roads or general area. There are no pedestrian facilities present.

There is major truck traffic that utilizes this residential corridor of the Township (see photos below). This corridor experiences approximately 1,357 trucks per day (LTAP Report, August 2020).



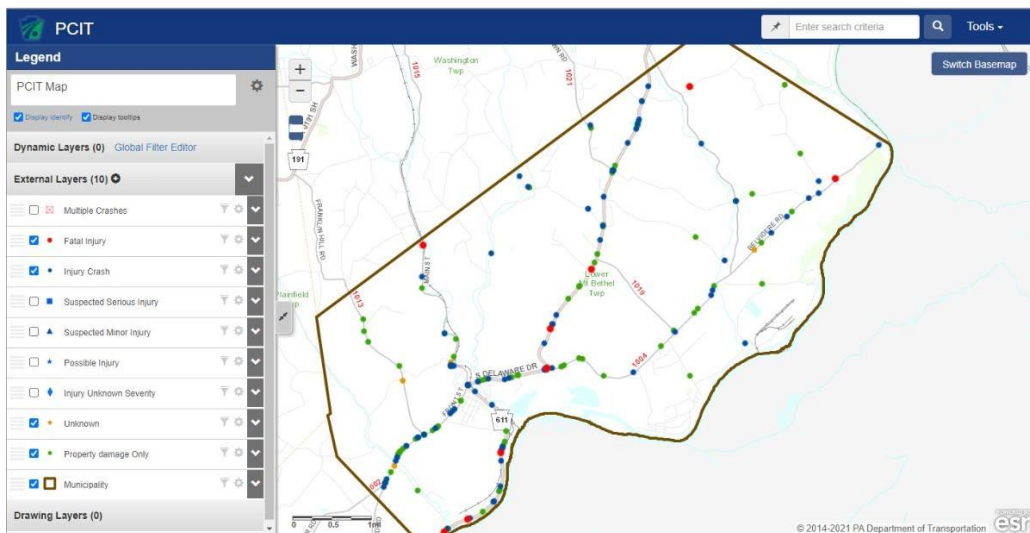
There is noise (from truck's "jake brakes") pollution, air pollution (from dust and exhaust), and there are pedestrian safety concerns along this corridor, as there are pedestrian generators in the neighborhood. There are no walkable shoulders along Front Street, nor any sidewalks or ADA accessible curb ramps. See below for an image showing major truck generators for the region.



Aerial Image of Lower Mount Bethel Township Showing Nearby Industry

Crash Information:

Based on PennDOT crash data, multiple traffic accidents have occurred along Front Street (SR 1002). Considering that this approximately 2 mile stretch of road represents nearly 1/3 of the traffic accidents in Lower Mount Bethel Township (during 2020), this road presents a significant safety concern through this area.



PennDOT CIT Map of Lower Mount Bethel Township

The following data is from PennDOT CIT between 2015 and 2020 and displays the gradual increase in crashes along this corridor, relative to the crashes throughout the Township.

- 2015 – 4 crashes (44 LMBT total) – 9%
- 2016 – 5 crashes (31 LMBT total) – 16%
- 2017 – 8 crashes (43 LMBT total) – 19%
- 2018 – 9 crashes (40 LMBT total) – 22%
- 2019 – 10 crashes (43 LMBT total) – 23%
- 2020 – 10 crashes (35 LMBT total) – 29%

Safety Concerns:

The PCIT shows 10 collisions occurring along the studied stretch of Front Street (SR 1002) in 2019, and 43 total collisions in Lower Mount Bethel Township total during 2019. Based on these numbers, the studied stretch of Front Street (SR 1002) represents 29% of all collisions occurring in the Township during 2020. Collisions from January 2015 to December 2020 indicate that Front Street (SR 1002) accounts for approximately 20% of collisions within the Township over the same time period.

Additionally, though Front Street (SR 1002) is posted 10 MPH lower through Martins Creek (45 MPH down to 35 MPH), there are no geometric restrictions that would induce heavy truck traffic to reduce speed except for this signage. Front Street (SR 1002) and Hutchison Avenue shows an LED radar “Your Speed” sign – indicating that there have already been attempts to reduce vehicle speeds through the Village of Martins Creek.

The steepness of the road along this corridor has been observed to induce trucks to accelerate to climb these significant grades in both directions.

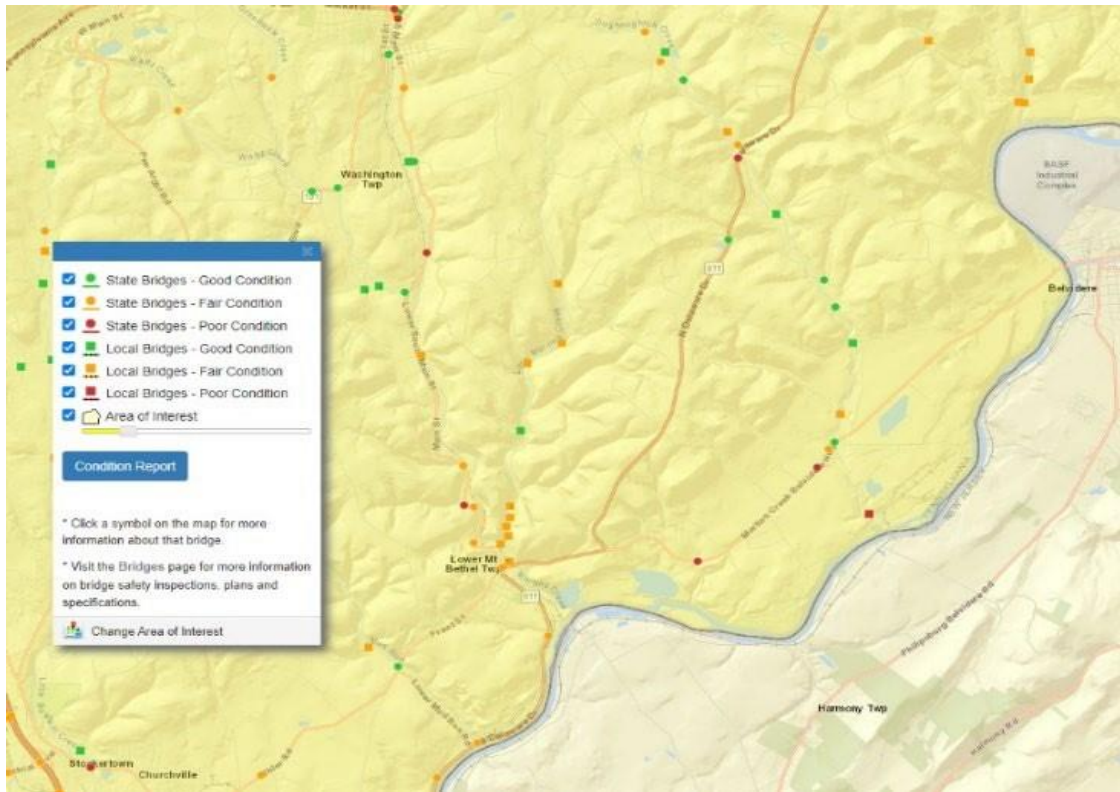
PennDOT’s Local Technical Assistance Program (LTAP) performed a study at Front Street (SR 1002) and Hutchison Avenue in Martins Creek from August 12th, 2020 to August 20th, 2020. - Automatic Traffic Recorder (ATR) data collected shows that the average 85th percentile speed through the intersection was 47 MPH (despite speed awareness devices already in place), and several vehicles were recorded going at 71 – 75 MPH; about 12 MPH and 36 – 40 MPH over the speed limit, respectively.

Alternative Route:

There is a viable alternate route that trucks can utilize in lieu of Front Street (SR 1002), were they restricted. They would be able to access S. Delaware Drive (SR 0611) and Lower Mud Run Road. However, due to the skew of the S. Delaware Drive (SR 0611) and Lower Mud Run Road intersection, it was determined that semi-tractor trailers (AASHTO vehicle WB-62) are currently unable to make the turn from southbound S. Delaware Drive (SR 0611) onto westbound Lower Mud Run Road. Improvements would be needed at this intersection.

Bridges

There are several bridges within the Township, five of which are listed in poor condition (based on PA Bridge Conditions Map). Currently, one of those bridges is being reconstructed on Martins-Belvidere Highway. Many of the bridges are in fair condition, and a few of them are in good condition. In this area, many of the bridges are approaching or are at their life expectancy. A Richmond Road bridge culvert was recently replaced by PennDOT.



Bridges of Lower Mount Bethel Township

There are several County bridges that play a critical role in the Township's traffic system.

SR 611 Bridge over Martins Creek and Norfolk Southern

This bridge is a critical link in the Township as it carries traffic north/south along SR 611. It has an ADT of 7,422 (PennDOT, 2019). It was constructed in 1926 and carries SR 611 over Martins Creek and Norfolk Southern. The bridge is listed in fair condition by PennDOT. The bridge is considered functionally obsolete due to its narrow width, has several areas of spalled/cracked concrete, and has substandard bridge barrier.

Per the [PennDOT One Map tool](#), this bridge is scheduled for repairs and preservation in the year 2024.



Bridge View from Deck



Bridge View from Pier

Northampton County Bridge #31

Northampton County Bridge #31 has been closed for several years by the County due to its condition. This bridge is a vital feature within the Township as it provides a direct link to the river for fire-fighting purposes, is necessary for the operation of the local industry, and provides secondary access for the residents of Depues Road.



Northampton County Bridge #31



Northampton County Bridge #31

Riverton – Belvidere Bridge

The Riverton - Belvidere Bridge (PA – NJ Bridge) spans the Delaware River and becomes Water Street as it enters New Jersey. This bridge has a history of height-restricted collisions; therefore, a low clearance bar was recently installed with signalization. In addition, there are weight restrictions (8 tons) and guiderails. A pedestrian walkway spans this bridge.



Water Street Bridge

Stormwater and Drainage Areas

Richmond Road near Gravel Hill Drive and Ott's Road

Stormwater runoff travels due to the steep slopes from the agricultural fields. There are minimal storm drainage facilities. This location drains to a culvert beneath Richmond Road and is maintained by the State.



Intersection of Richmond Road and Gravel Hill Drive

Martins-Belvidere Highway

The drainage infrastructure conveying runoff along Martins-Belvidere Highway are swales along the side of the roadways. There is a drainage culvert beneath the highway that carries the flow from the roadside swales. This culvert appears to be undersized and is typically clogged with debris.



Culvert Beneath Martins-Belvidere Highway

Existing Development

Tatamy Road Interchange

The Tatamy Road Interchange (PA 33/PA 248) construction began in 2015 and finished in 2019. This infrastructure was installed to accommodate the heavy truck traffic associated with the Chrin Commerce Centre. The Commerce Centre utilizes 800 Acres of industrial space for manufacturing, distribution, and consumer services for national and international consumerism.

This interchange serves major development in the area, including an Amazon Fulfillment Center, a UPS Shipping Hub, New Enterprise Stone, Lulu Warehouse, XPO Logistics, Walgreens Warehouse/Distribution Center, etc.

Traffic from this large logistics center utilizes Uhler Road, Front Street, and SR 611 to reach destinations to the North and the East.

Uhler Road (Forks Township)

This section of Forks Township is zoned Industrial and is experiencing a significant growth in industrial space for manufacturing, fulfillment centers, and consumer services. Traffic from this area of Forks Township also impacts Lower Mount Bethel Township roadways including Front Street (SR 1002) and SR 611.

Future Development

There is a planned industrial park in Upper Mount Bethel Township consisting of over 800 acres of development with over 7,000,000 square feet of building space, as proposed. This development will have impacts to the roadways within Lower Mount Bethel Township and the entire State Belt region, if not well beyond.

River Pointe Logistics (RPL)

River Pointe Logistics in Upper Mount Bethel Township is an approximate 6.3 million square foot Industrial Park and High-Cube Fulfillment Center. This development is planned off of River Road in Upper Mount Bethel Township.

River Pointe Logistics East (RPLE)

Also located on River Road in Upper Mount Bethel Township, east of the RPL site, is the River Pointe Logistics East Project. This project includes 1.1 million square feet of Industrial Park.

303 Demi Road

This development includes 420,000 square feet of warehouse space and will have a shared emergency route for responders with the River Pointe Logistics Industrial Park.

Note: The proposed average daily traffic (ADT) along River Road (in Upper Mount Bethel Township and Portland Borough) is expected to increase from approximately 1,000 vehicles a day to approximately 10,000 vehicles per day, once fully built out in the year 2031. It is anticipated that a portion of traffic generated from these developments will utilize SR 611 heading south to connect with SR 33 and points south and west, including the Lehigh Valley and the Harrisburg area.

Additionally, along SR 611 in Upper Mount Bethel Township, these developments are expected to increase the ADT from 9,900 vehicles per day to approximately 15,000 vehicles per day. (The existing ADT's for River Road and SR 611 were taken from PennDOT's Traffic Information Repository) and the proposed ADT's were taken from the current Traffic Impact Assessment reports for each of the developments).

Summary of Recommendations

1. Discourage heavy cut-through truck traffic along the Front Street (SR 1002).
 - This corridor is a top priority for the Township. Front Street (SR 1002) serves as a vital connection for large vehicles/trucks between points south (the Lehigh Valley, Harrisburg, Easton, etc.) and points north (Interstate 80, Stroudsburg, New Jersey, New York, etc.).
 - There is major truck traffic that utilizes this residential corridor of the Township. This corridor experiences approximately 1,357 trucks per day (LTAP Report, August 2020).
 - There is noise (from truck's "jake brakes") pollution, air pollution (from dust and exhaust), and there are pedestrian safety concerns along this corridor, as there are pedestrian generators in the neighborhood. There are no walkable shoulders along Front Street, nor any sidewalks or ADA accessible curb ramps.
 - There are vehicular speeding issues due to roadway horizontal/vertical geometry.
 - There is a viable alternative route (Lower Mud Run Road and SR 611) that trucks could utilize, were they restricted from using Front Street (SR 1002).
 - It is recommended that the Township continue collaboration with PennDOT for solutions to restricting truck traffic on this corridor.
2. Improve traffic flow and safety in the township.
 - SR 611/Martins-Belvidere Highway is the intersection with the highest crashes in the Township. This intersection is a top priority for being improved. It is recommended that the Township collaborate with PennDOT on potential solutions.
3. Enhance the safety and connectivity of the pedestrian network in the township.
 - SR 611, Front Street, and Main Street signalized intersection lacks pedestrian accommodations and is a vital link for local businesses, schools, and the community. This intersection is a top priority for being improved. It is recommended that the Township collaborate with PennDOT on potential solutions.
4. Ensure high-quality and consistent maintenance of all township infrastructure.
 - It is recommended the Township continue communications with Northampton County regarding Bridge 31. Given its overall significance to the Township's roadway/bridge network and local industry, the Township may wish to consider taking over ownership of the structure once the County performs a major bridge rehabilitation similar to the PennDOT Turnback program. Another option would be to collaborate with Northampton County officials to have the project added to a future Transportation and Improvement Plan (TIP) project and work with the County and the Lehigh Valley Transportation Study.

- It is recommended that the Township continue collaboration with PennDOT for accommodating the runoff and developing solutions along Martins-Belvidere Highway for the drainage swales and the culvert underneath the roadway.
- It is recommended that the Township continue collaboration with PennDOT for accommodating the runoff, installing new drainage facilities, and maintaining the steep slopes along Richmond Road near Gravel Hill Drive and Ott's Road.
- It is recommended the Township consider stormwater infiltration BMP's similar to those utilized along the Fairview Avenue section in the Township (see photo). The stormwater infiltration trenches and piping system can be installed in areas where a direct discharge of the storm sewer is not feasible. Given the soils within the area of the Village of Martins Creek are generally granular, non-cohesive, well-drained soils, these are typically suitable for underground infiltration to collect and divert runoff into the ground. The use of multiple sections of inlets, piping and infiltration sites also improves the performance of the overall system and distributes the runoff to various locations to avoid potential overloading conditions.



Fairview Avenue

CHAPTER 8 COMMUNITY FACILITIES PLAN

There is a wide range of facilities, institutions and services that support the high quality of life in Lower Mount Bethel Township. They all contribute to the foundation of the Township and have a direct bearing on residents' quality of life. Ensuring that the Township is well-positioned to maintain these services and enhance them where needed is an important part of the Comprehensive Plan.

This chapter provides a brief description of existing community facilities in the Township, discussion of key issues, and recommendations where appropriate. It includes reviews of:

- Public and Private Education
- Libraries
- Churches, Cemeteries, and Local Institutions
- Municipal Facilities
- Solid Waste Management
- Storm Drainage and Flood Plain Management
- Emergency Services
- Public Utilities
- Water Supply and Wastewater Disposal
- Parks and Recreation

Public and Private Education

Lower Mount Bethel Township has no schools located within its boundaries and is served by the Bangor Area School District and Easton Area School District. All students use bus transportation to get to school each day.

Much of the Township lies within the Bangor Area School District, shared by seven municipalities. A smaller portion of the Township surrounding and including the village proper of Martins Creek is served by the Easton Area School District. A summary of the two districts is provided below.

Bangor Area School District

The Bangor Area School District, which is shared and covers 92 square miles, has a total of five schools and a current enrollment split fairly evenly between secondary and primary education. The five schools are: one high school, one middle school, one elementary school covering 4th thru 6th grades, and two elementary schools covering K - 3rd grade. Children from Lower Mount Bethel Township are currently enrolled in all five schools, and travel anywhere from five to twelve miles to reach their classroom destinations. Bangor Area School District currently also has a cyber school option.

Bangor Area school recreation facilities are made available by the School District for public use. Three indoor gyms and three sports fields are used. Bangor Area school libraries are not open for general public use, but students can access them during summer recess.

Easton Area School District - Easton Area School District has a total of nine schools, but only 3 service Lower Mount Bethel Township students at this time. They are Easton High School located in Palmer Township, grades 9-12, Easton Area Middle School, grades 6-8, and Forks Elementary School located in Forks Township, K- 5. School students travel approximately 7 miles to reach their Easton Area school district classrooms. The attendance area, approximately one third of the Township, covers Martins Creek village, and the communities of Hillendale and Del Haven.

Easton Area School District currently also has a cyber school option. Easton area schools are also available for public recreation, and for student library use, and are well-utilized by Township residents.

Local community colleges serving the area are Northampton Community College in Bethlehem, and Lehigh Carbon Community College in Schnecksville. A single private day care facility, “Little Wrangler Ranch,” operates in the Township and is located on North Delaware Drive.

Libraries

There is no public library within Lower Mount Bethel Township. In addition to school libraries available for use by students, the Bangor Public Library provides Township residents with access, and receives a contribution of \$500.00 per year from the Township. The Easton Public Library is also available to Township residents.

Churches, Cemeteries, and Local Institutions

Houses of Worship

- St. Rocco's Roman Catholic Church, located on the southwest side of the village of Martins Creek
- Bethel Bible Church, located on the southwest side of Route 611 at its intersection with the Martins Creek – Belvidere Highway on Three Church Hill
- Good Shepherd Evangelical Lutheran Church, located on the northwest side of Route 611 just south of its intersection with the Martins Creek – Belvidere Highway (Three Church Hill intersection).

Cemeteries

- Three Church Hill Cemetery, located on the northeast side of Route 611 at Three Church Hill
- The Old English Presbyterian Cemetery, located on the southwest side of Route 611 on Three Church Hill, adjacent to the Good Shepherd Evangelical Church

Museum

- Hunter-Martin Settlement Museum, also located in the Three Church Hill area

Municipal Facilities

Lower Mount Bethel Township owns four municipal buildings. They are the Municipal Office, Municipal Garage, Jerry Brunetti Environmental & Welcome Center, and the Centerfield School

Municipal Complex. The Township has no immediate plans to acquire additional municipal structures.

Lower Mount Bethel Township's Municipal Office is located on Hutchinson Avenue in the center of the village of Martins Creek. It is a one-story brick building that the Township purchased, renovated and moved into in February 2002. Further renovations and up-grades will be completed in 2022. The Township Municipal Garage and related storage facilities are located at North Delaware Drive. Lower Mount Bethel Township is a member of the Slate Belt Council of Governments with agreements among member municipalities for shared or rented equipment.

The Welcome Center is located at the Riverton Ball Fields on 7701 Martins Creek-Belvidere Highway. The visitor's center was constructed as part of the \$1.3 million Delaware River Joint Toll Bridge Commission (DRJTBC) grant received by Lower Mount Bethel Township.



Centerfield Municipal Building and Public Park

The Centerfield School Municipal Complex is located in the former Centerfield School on Route 611 north of Martins Creek. This building houses the Township public meeting rooms and records retention storage area. The building was used as the Municipal Office until February 2002. Committee meetings are held in a conference room on the upper floor, behind the gym. Public hearings are held in the main meeting room on the lower level. Public restrooms are available on both levels. Handicap access is available to the lower meeting room level. To the rear of the building, the Township Recreation Board has a grade level meeting and storage room.

Solid Waste Management

Waste Management provides garbage collection and individual recycling to Township residents. Businesses contract with a sanitation company of their choice.

Storm Drainage and Flood Plain Management

While there are no community-wide storm water management facilities, the Township is managing private storm water basins within developments. Township staff inspects and cleans the basins and does not collect fees for this service either from the subdivision developers or residents of these developments. Lower Mount Bethel Township is contained within the Martins Creek and Jacoby Creek Watershed. Currently Northampton County has adopted a Water Quality Plan update for this watershed in accordance with Act 167 Stormwater Management Plan requirements set forth by the PA Department of Environmental Protection (DEP). The update contains best management practices (BMPs) which are recommended methods for water quality control. It stresses infiltration of runoff for sites with good drainage. For poorly drained sites, other non-infiltration practices may be recommended. Lower Mount Bethel Township has

adopted the Act 167 Stormwater Management Plan and it is incorporated by reference into the current Subdivision and Land Development Ordinance (SALDO).

Flood Plain management is not provided by the Township. Periodic flooding does adversely effects residents in several developed areas. The Lower Mount Bethel Township Zoning Ordinance of 2022 includes updated Floodplain Area regulations.

Emergency Services

Fire protection is provided by the volunteer Lower Mount Bethel/Sandts Eddy Fire Department. Police protection is provided by Pennsylvania State Police. Lower Mount Bethel Township is served by Suburban Emergency Medical Services based in Palmer Township.

Public Utilities

Electric

Lower Mount Bethel Township is served by two electric companies: PPL Electric Utilities and Metropolitan Edison/FirstEnergy. There are many utility rights-of-way that crisscross the Township as they emanate from the Talen Energy power station. While major transmission lines have a more limited impact on agricultural lands, they do create greater obstacles for residential or non-residential use of land, and they are significant visual intrusions into the Township's open and highly scenic Delaware River corridor.

Telephone

Telephone services are provided by Verizon and Frontier Communications.

Cable Television/Internet Services

Cable television and internet services are provided by Service Electric Cable TV & Communications and Frontier Communications.

Wastewater Disposal and Water Supply

Lower Mount Bethel Township has no existing or planned public water or sewage treatment and disposal facilities as of the adoption of this new Comprehensive Plan Update. All uses have satisfied their potable water needs primarily through the use of individual wells drawing from underground aquifers, and dispose of their wastes through on-lot sewage disposal practices. The only exceptions to this are a few community wells to serve more than one household, and a few shared septic systems.

The Township's Act 537 Wastewater Facilities Plan was adopted in 1975 and is based entirely on on-lot sewage systems. At the time of adoption of the 2007 Comprehensive Plan, consideration also was given to updating the Act 537 Plan. In that time frame, in view of documented instances of well-water contamination in certain locations, most likely from antiquated sewage disposal facilities, a number of surveys, on-site inspections, and water tests were undertaken and analyzed. PA DEP concurred with the Township's assessment that the results of the several tests did not warrant the substantial cost and effort of developing a fixed-pipe sanitary sewer system or wastewater treatment plan. Thus, revision to the Act 537 Plan was considered unnecessary.

Wastewater Disposal

In accordance with the Act 537 Plan, nearly all existing uses, including the higher-density village areas, as well as more recent relatively low-density residential development, continue to use on-lot disposal of wastewater. Although there have been known system replacement needs in various locations, most areas of Lower Mount Bethel Township do not report problems with on-lot system failures. Certain issues were reported in the 2007 Comprehensive Plan, with limited known resolution, other than continued observation, including the following:

- Ostrander Mobile Home Park had reported maintenance issues as a concern, particularly due to the high density of on-lot disposal systems and lack of additional on-lot area available for repair.
- Locations such as Kiefer Estates and in the vicinity of Hillendale Road, and others where karst topography appears, should require special evaluation prior to approval of on-lot disposal systems. Some systems are known to have been replaced.
- In places like Sandts Eddy, Martins Creek, and other village and small-lot areas with small lot sizes and proximity of individual wells to septic systems, when on-lot sewage system repairs are necessary, they are difficult to achieve within required regulatory isolation distances.
- Many seasonal river front properties are now used as full-time homes and are located within the Delaware River Floodway, making permitting of repair or replacement to on-lot disposal systems difficult or impossible.
- Little is known about the on-site sewage disposal methods of the Township's heavy commercial or industrial facilities. The impact of large industrial flows is also a concern with respect to protection of groundwater resources.

The current SALDO includes up-to-date requirements and design standards for sewage disposal systems, including community and public systems should they be developed. Any new subdivision or land development also is now subject to provisions in the SALDO for study of Karst or carbonate topographic features. The 2022 Zoning Ordinance provides for higher density uses in the residential and mixed-use districts which may require community or public sewage disposal. In order to achieve such uses, and potentially resolve other known issues, the Township may need to provide for, or allow, the construction of community or public sewage disposal facilities to accommodate future growth although, in the 20-year time frame of this Comprehensive Plan Update, very little growth is anticipated.

Water Supply

Water that is of sufficient quantity and quality is a key to the Township's environmental health and prosperity. Given the Township's objective of remaining a predominantly rural and agricultural community, and low growth forecast in the 20-year time frame of this Comprehensive Plan Update, the dominant forms of water supply will continue to be those available for on-lot use.

The availability of groundwater from wells largely depends upon the underlying geology, discussed in Chapter 2. Good groundwater bearing zones may be found in unconsolidated materials such as clays, silts, sands and gravels in sediments along the Delaware River or streams, and in materials deposited by glaciers (known as glacial till). Large well yields are possible from bedrock, including limestone, where the rock contains cavernous fractures, but

yields are small in solid bedrock. Water from the limestone is typically harder than from shale. Although some excellent yields have been reported for the Martinsburg shale, wells are often small producers; the water in the Martinsburg shale is reportedly much softer than that pumped from wells dug in limestone. According to data from the Pennsylvania Geological Survey reported in the 2007 Comprehensive Plan, well yields in Lower Mount Bethel Township, while extremely variable, demonstrate that sufficient quantity of groundwater is available within the Township to support typical land uses.

The rural nature of the Township, with widely spaced wells in most areas and large expanses of unpaved land, acts to provide for adequate recharge of the groundwater aquifers by precipitation. Of course, under any scenario, care must be taken to regulate large groundwater withdrawals such as those associated with community supply wells, mine dewatering, irrigation, or water bottling plants, so as to protect surrounding private wells, to protect wetlands, and to maintain stream base-flows during periods of low-flow.

Domestic water supply needs in the Township continue to be primarily met through the use of wells on individual lots and parcels. The Delaware River is not a domestic water source, and no municipal or private water company provides public water to any portion of the Township. Central community water systems serve three of the Township's residential areas: Ostrander Mobile Home Park, Hillendale, and Berry Hollow.

An average well yield of 24.8 gallons per minute has been documented for individual Township uses, and indicates that there is generally an ample amount of groundwater within the Township for most land uses. For example, a typical household uses 280 – 400 gallons per day. While groundwater contamination has been reported in a number of situations, prior studies have indicated that only a small percentage of total wells are affected, and mostly in older, higher density development areas. It has been reported that a number of residents privately purchase potable water for consumptive use and do not use their wells for drinking or cooking purposes. Groundwater contamination issues have been reported in the following areas and indicate the need for continued observation and potential future solutions:

- Hillendale, which has been reported to have high nitrate levels
- Ostrander Mobile Home Park
- Riverton
- The village of Martins Creek

Groundwater contamination monitoring to-date in Lower Mount Bethel has largely focused on the impacts of on-lot wastewater disposal systems. Recently, US EPA and PA DEP have heightened focus on potential contamination from perfluoroalkyl substances (PFOA) and polyfluoroalkyl compounds (PFOS) in drinking water, collectively referred to as "PFAS." PFAS are widely used, long lasting chemicals, components of which break down very slowly over time. There are thousands of PFAS chemicals, and they are found in many different consumer, commercial, and industrial products. This makes it challenging to study and assess the potential human health and environmental risks. Because of their widespread use and their persistence in the environment, many PFAS are found in the blood of people and animals all over the world and are present at low levels in a variety of food products and in the environment, including water supplies. Scientific studies have shown that exposure to some PFAS in the environment may be linked to harmful health effects in humans and animals.

In 2022, PA DEP is proposing regulations lowering the permissible Maximum Contaminant Levels (MCLs) of 14 parts per trillion (ppt) for PFOA and 18 ppt for PFOS. If adopted, the standards will have significant impact on Pennsylvania companies and waste water treatment facilities. The new levels were set based on a growing body of research from scientists showing the pervasive impacts of these chemicals, and this year the federal Environmental Protection Agency also set a new health advisory for four PFAS chemicals and is expected to set legally enforceable limits next year.

PFAS have been detected in sewage sludge (biosolids) currently being spread on local farm fields, inferring potential impacts on local groundwater supplies. Thus, it is very important to monitor the proposed regulatory changes and the deposition of sludge on farm fields, to develop plans to protect well water, and implement strategies that will be beneficial to the health and safety of the Township.

Little is known about the water supply methods of the Township's heavy commercial and industrial facilities. The impact of large industrial water demands is always a concern with respect to protection of groundwater resources.

Lower Mount Bethel Township's regulatory ordinances are presently consistent with PA DEP and Northampton County regulations and permitting procedures. The current SALDO requires applicants for subdivision and land development approval to submit hydrogeology studies prepared by professional hydrogeologists/geologists on their behalf indicating the likely impact of the development on groundwater resources and surrounding wells. Consistent with PA DEP guidelines, innovative stormwater management/Best Management Practices are also required for all development. The 2022 Zoning Ordinance includes clear provisions and limitations for storage of chemical and petroleum products, whether underground or aboveground.

Consideration of the limited use of public water and sewer systems for areas of the Township with potential health risks, and for areas proposed for higher density land uses, is also likely to continue into the future. There is a continuing need to protect groundwater supplies throughout the Township from sources of contamination such as on-lot waste disposal systems, agricultural fertilizers, livestock operations, heavy commercial or industrial uses, sludge deposition on farm fields, and from improper well construction.

If public water supply facilities are ultimately found necessary, the Township will most likely need to build its own public facilities or negotiate with willing land developers to share in the cost and construction of needed facilities. The higher ends of the density ranges permitted by the Zoning Ordinance of 2022 in the residential and mixed-use districts may require public infrastructure investments to serve new development in the future while, if possible, also addressing existing deficiencies nearby.

Parks and Recreation

Active and passive recreation opportunities are very important aspects of community life and in Lower Mount Bethel Township are important contributors to the quality of life. Key roles of the Township's in regard to parks and recreation are to:

- Ensure that adequate lands, facilities, and programs are available to serve the range of recreational interests and age groups present in the community
- Facilitate recreation by enhancing facilities at parks and public conserved open space, including trails

- Support the efforts of other, third-party organizations, who coordinate scheduled programs for a wide variety of sporting activities.
- Promote local park and recreation events through the Township newsletter, website, and social media.

Considerable planning efforts have been made in regard to parks and recreation since the preparation of the 2007 Comprehensive Plan. Recent efforts include those listed below, which are incorporated into this new Comprehensive Plan Update by reference, to the extent not inconsistent with this Plan. In regard to current parks and recreation facilities, this Plan section is updated considerably. Open space conservation issues are addressed in Chapter 12 of this Plan.

- 2007 Lower Mount Bethel Township Recreation, Park, and Open Space Plan
- 2010, revised 2011, Lower Mount Bethel Township Open Space Plan
- 2013 Community Recreation Update

The following park, recreational and public conserved open space areas serve Lower Mount Bethel Township. They largely, if not more than, meet the recommended Township roles described in the prior plans noted above. Recreational facilities included at each property are listed.

Bryan Kiefer Park and Recreation Field

The Bryan Kiefer Park and Recreation Field is owned by Lower Mount Bethel Township. It is a 2.8-acre little league and softball field in the Del Haven area, with access from Bush Drive. In addition to the ball field, it features a small parking area and tot lot play structure that serves as a neighborhood park to the surrounding residential neighborhood. Facilities include the following:

- Baseball field
- Concession stand/storage shed
- Pavilion
- Dugouts
- Playground
- Parking
- Two sets of bleachers
- Port-a-potties

Lower Mount Bethel Township Centerfield School Municipal Complex

The Lower Mount Bethel Centerfield School Municipal Complex comprises the 4.1-acre grounds and building of the former Centerfield School, located on PA 611 just north of Martins Creek. It is owned by the Township. Indoor facilities are used by the Township for meetings, as discussed above, as well as a gymnasium used for public recreational activities. Outdoor facilities include the following:

- 2 Tennis courts, which are reported in need of repair
- Basketball court

- Bocce court
- Pavilion
- Playground
- Gymnasium
- Parking
- Port-a-potties

Jerry Brunetti Environmental and Welcome Center and Recreation Complex at Riverton

The Jerry Brunetti Environmental and Welcome Center is owned by Lower Mount Bethel Township. It comprises 33.76 acres and is located adjacent to the village of Riverton and the Delaware River off of Martins Creek-Belvidere Highway. It includes an indoor Environmental Education and Welcome Center and the following outdoor facilities:

- 3 soccer fields
- 2 softball fields
- Batting cages
- 3 bleachers
- 2 dugouts
- Ga-ga pit
- Walking and fitness trails and trail connections into the John M. Mauser Nature Education Trail System
- Butterfly garden
- Pavilion
- Playground
- Lighted and paved parking
- Port-a-potties

John M. Mauser Nature Education Trail System

This large conserved open space property comprises 174.19 acres and was acquired by Lower Mount Bethel Township in 2018. It is located along the Delaware River, between the Township's Jerry Brunetti Environmental and Welcome Center and the Talen Energy power plant. It includes an extensive trail system formerly known as Tekening Trails. It has frontage on Martins Creek-Belvidere Highway but is primarily accessed via trails from both the Welcome Center and the Talen Energy Pavilion and Parking.

Talen Energy Pavilion and Parking

This 2.58-acre property, located on Depues Ferry Road, is owned by Talen Energy and leased to Lower Mount Bethel Township. It offers parking, a port-a-potty, and a pavilion for three trailheads for trails extending into the John M. Mauser Nature Education Trail System and all the way to the Jerry Brunetti Environmental and Welcome Center.

The Meadows at Martins Creek

This 74.23-acre passive park/conserved open space is owned by Lower Mount Bethel Township and located along Main Street, extended north from Martins Creek. The property extends into Washington Township, with 27.0 acres in that township. The property includes a variety of trails, some macadam, some grass, and some natural surface woodland trails. Additional facilities consist of parking and a port-a-potty.

Mud Run Conservation Area

This 12.0-acre conserved open space is located on Lower Mud Run Road and is owned by Northampton County. It straddles Mud Run and has no facilities at this time.

Little Martins Preserve

This 87.1-acre conserved open space is located at Upper Little Creek Road and Bangor Road and is owned by Northampton County. It straddles Little Martins Creek and has no facilities at this time.

Martins Creek Ballfield

This 6.0-acre facility, also known as Pacchioli Field, is located at the edge of Martins Creek village, at the foot of Hutchinson Avenue. It is owned by New Enterprise Stone & Lime and is part of a larger tax parcel. Developed with a baseball field and stands, it is home to the Martins Creek “Creekers” baseball club – the only remaining Charter Member of the Blue Mountain Baseball League.

Sandts Eddy Boat Access

The Sandts Eddy Boat Access comprises 5.44 acres owned by the Commonwealth of Pennsylvania and located between the Delaware River and PA 611 south of Martins Creek. It includes a single boat ramp and park and picnic area.

Martins Creek Public Boat Access Area

This 4.2-acre boat launch facility on the Delaware River, located off of Depues Road, is owned by Talen Energy, whose power plant is adjacent. Facilities include the following:

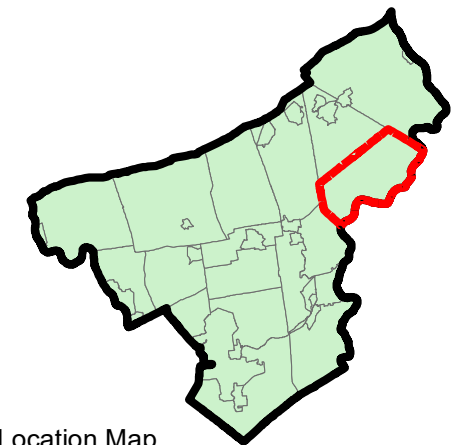
- Boat launch
- Picnic tables
- Parking
- Port-a-potties

There is clearly adequate park and public conserved open space land area available to serve the residents of Lower Mount Bethel Township, based on nationally accepted standards reported in the prior plans incorporated herein, and in regard to current population projections for the 20 - year life of this new Comprehensive Plan Update.

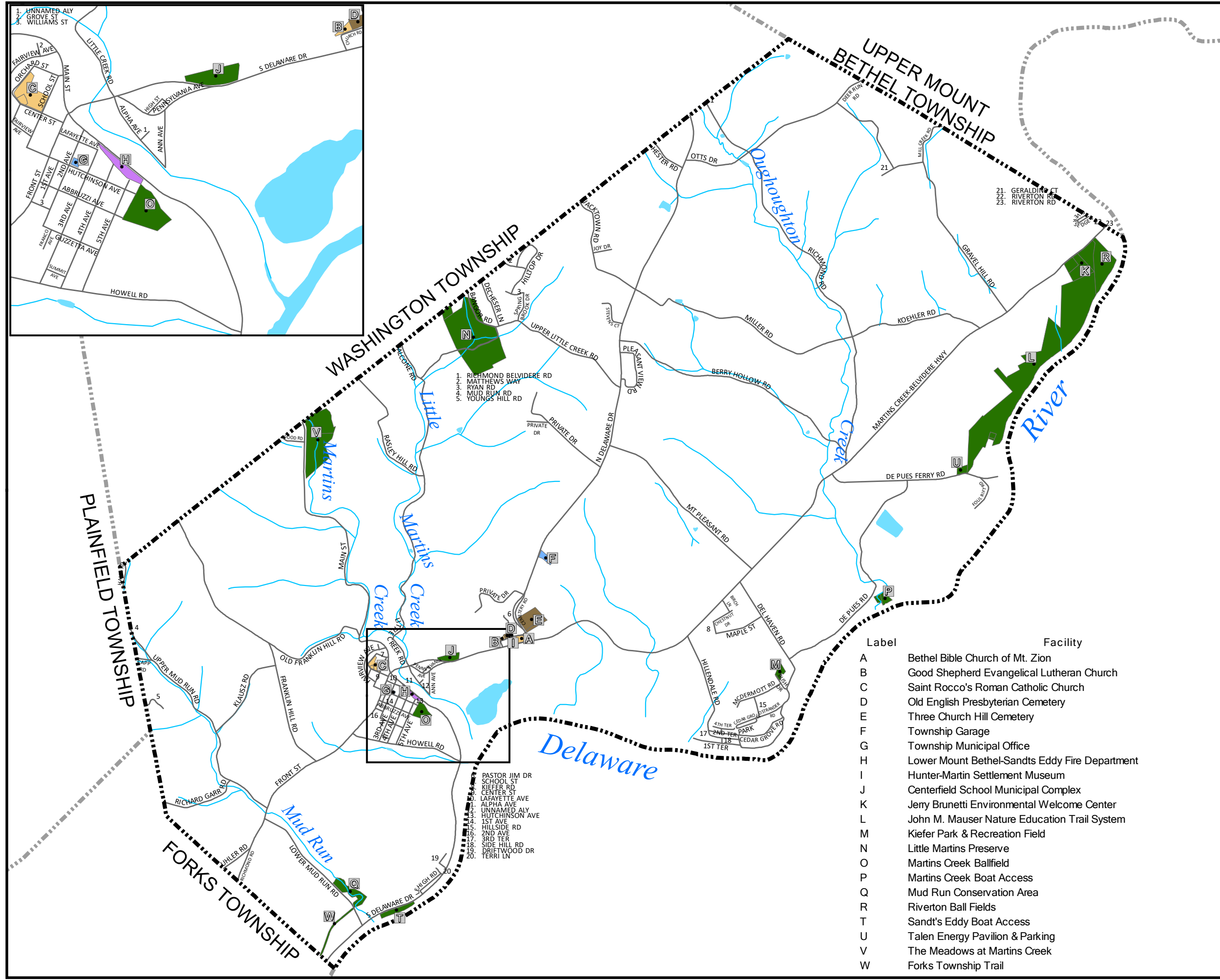
Formal active recreational needs as reported in the prior plans, with limited population growth since their preparation, are met until 2040 based on nationally accepted standards reviewed for this new Comprehensive Plan Update. Based on the 2013 Community Recreation Update, by the end of the 20-year horizon for this Plan, any new community park or recreational development should include multi-purpose field(s), one or two tennis court(s) and pickleball court(s) which can be used for informal play, practice, and overflow usage for recreational league play.

Because Lower Mount Bethel Township has already acquired sufficient lands for community park purposes, paid for by current residents, it is not unreasonable to expect new recreational facilities to be paid for by future residents and new land developments. In this vein, Section 525 of the SALDO provides for dedication of recreational lands and offers that, in the alternative, the Board of Supervisors may agree to accept fees-in-lieu of recreational land or facilities.

Figure 8-1
Community Facilities
Lower Mount Bethel Township
Comprehensive Plan



Location Map

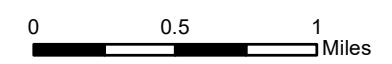


Legend

- Lower Mount Bethel Township
- Adjacent Townships
- Roads
- Streams
- Bodies of Water

Community Facilities

- Churches
- Cemetery
- Emergency Services
- Municipal
- Museum
- Parks and Recreation



Data source: Base data from Lehigh Valley Planning Commission, 2005
Tax parcel information from Northampton County GIS Dept., 2022.

Map created: September 28, 2022
Last revised: October 11, 2022

Label	Facility
A	Bethel Bible Church of Mt. Zion
B	Good Shepherd Evangelical Lutheran Church
C	Saint Rocco's Roman Catholic Church
D	Old English Presbyterian Cemetery
E	Three Church Hill Cemetery
F	Township Garage
G	Township Municipal Office
H	Lower Mount Bethel-Sandts Eddy Fire Department
I	Hunter-Martin Settlement Museum
J	Centerfield School Municipal Complex
K	Jerry Brunetti Environmental Welcome Center
L	John M. Mauser Nature Education Trail System
M	Kiefer Park & Recreation Field
N	Little Martins Preserve
O	Martins Creek Ballfield
P	Martins Creek Boat Access
Q	Mud Run Conservation Area
R	Riverton Ball Fields
T	Sandt's Eddy Boat Access
U	Talen Energy Pavilion & Parking
V	The Meadows at Martins Creek
W	Forks Township Trail

CHAPTER 9 OPEN SPACE, NATURAL AND CULTURAL RESOURCES PROTECTION PLAN

The Township's open space, natural and cultural resources are important for many reasons. Perhaps most importantly, yet often taken for granted, are their contributions to the Township's rural character and the high quality of life that residents and visitors enjoy. Equally important are the local and regional economic development contributions many of these resources make from agricultural, outdoor recreation, and tourism perspectives. This Plan will not repeat, other than in summary, the resource qualities discussed in earlier chapters, but will focus on preservation means, particularly in the context of the Future Land Use and Housing Plan as set forth in Chapter 6.

Open Space

Open Space is generally defined as land that is permanently set aside for public or private use that will not be developed beyond the minimum amount necessary to enhance the conservation values of the land. Key purposes of preserving open space are to protect a critical mass of viable farmland and other resources identified in this Comprehensive Plan Update, including recreational lands, scenic and historical areas, water quality, woodlands, biodiversity and habitat, and to buffer or connect such areas.

In 2011, the Lower Mount Bethel Township Open Space Plan was completed by the Heritage Conservancy, with funding as a Lehigh Valley Greenways project, and subsequently adopted by the Township. The Lehigh Valley Greenways Plan was adopted by both Lehigh and Northampton Counties in 2005. The Lower Mount Bethel Township Open Space Plan is incorporated by reference into this Comprehensive Plan Update.

As a result of voter support in the 2006 primary election, in accordance with Pennsylvania Act 153 of 1996, Lower Mount Bethel Township had instituted an Earned Income Tax ("EIT") of 0.25% to provide funds for the preservation of open space. Act 153 gives local governments the power to derive revenue for the acquisition of open space interests for a variety of conservation purposes. Lower Mount Bethel's EIT generates approximately \$200,000 per year and is critical to on-going land conservation efforts. An Open Space Plan is required in order to utilize the funds in accordance with Act 153 and the 2011 Plan serves that purpose. The goals of the Lower Mount Bethel Township Open Space Plan are consistent with the goals of this Comprehensive Plan Update.

Natural Resources

Chapter 2 of this Plan presents an inventory and analysis of the natural resources found in Lower Mount Bethel Township. These natural resources include: geology, topography, soils, streams, rivers and watersheds, floodplains and wetlands, and woodlands and natural areas.

Geology

The limestone bedrock found in significant portions of the Township, also known as karst topography, requires special land use consideration. Soils formed from weathering of this rock have a high productivity level for supporting croplands, but can also drain too rapidly, leading to

contamination of underlying aquifers by chemicals, sewage effluent, and other potential pollutants. Areas of the Township underlain by limestone geology can also be hazardous to humans and physical land improvements. Building foundations, streets, and utilities can collapse into sinkholes not readily visible without careful geologic investigations.

The Future Land Use Plan (Figure 6-1) recommends that certain areas of the Township be used to accommodate much of the Township's future growth, including an expansion area for Lower Density Residential land use on the fringes of the village of Martins Creek, in an area extended toward Martins Creek-Belvidere Highway from the Hillendale and Del Haven communities; and areas in the north-central portions of the Township, mainly along PA Route 611, that are already characterized with suburban development. Additional future development growth potential is included in the Industrial land use category, in the Medium Density Residential land use category in Martins Creek, in the Village Mixed Use land use category in Martins Creek and Riverton, in the new Commercial District along Martins Creek-Belvidere Highway, and in the Mixed-Use land use category along PA Route 611 south of Martins Creek.

According to the Geology Map (Figure 2-1), most of these areas are underlain by limestone. The recommendation to accommodate new growth in these areas resulted from priority given to other Plan objectives, including the retention of other portions of the Township for more rural, agricultural uses; protecting core agricultural areas and their prime farmland soils; recognizing existing residential development patterns; and the possible future need for community or public utilities in some of these areas to replace substandard or failing on-lot systems, or to provide for future higher intensity development permitted by the Zoning Ordinance.

Since the adoption of the current Subdivision and Land Development Ordinance (SALDO) in 2013, development approvals for parcels located on Karst Topography are subject to carbonate studies to determine the potential for limestone related problems. Special design and construction measures may be required to be incorporated into final plans that avoid risk to life and property, and minimize future contamination of limestone aquifers and naturally-occurring subsurface drainage systems. Also, other resource protection requirements, such as the recharge of stormwater runoff and treated sewage effluent into groundwater aquifers, should continue to be evaluated on a site-specific basis for karst topography.

Topography

Portions of the Township are characterized by steep slopes (those greater than 15 percent) which are highly susceptible to erosion when disturbed. Nevertheless, impacts to slopes of 15 percent to 25 percent can be mitigated through slope stabilization and other measures. Disturbance of slopes greater than 25 percent (very steep slopes) are more difficult to successfully mitigate, and should be avoided wherever possible. The Zoning Ordinance of 2022 and the current 2013 SALDO provide specific requirements for development on steep slopes.

Soils

In regard to future development and conservation, the most important soil considerations for Township planning purposes include their productivity for agricultural and forestry practices, their drainage capabilities for filtering pollutants and recharging groundwater resources, and their constraints, such as shallow depth to bedrock, wetness due to high groundwater table, or location within the floodway or 100-year floodplain. In general, prime farmland soils and soils of statewide significance, hydric soils, and defined floodplain areas all require special resource

protection measures. The current 2013 SALDO and the 2022 Zoning Ordinance include significant protection measures for these soils in the context of future development.

As indicated in Chapter 2, the Township’s prime farmland soils and soils of statewide significance are ideal for the growing of crops and raising of livestock. These soils are critical in maintaining the long-term viability of the Township’s agricultural industry, a key community development objective of this Plan. These soils are best protected through permanent deed restrictions, enforced through agricultural conservation easements obtained through voluntary landowner participation in the Northampton County Farmland Preservation Program. This program results in the purchase of the conservation easement from the landowner. As indicated in Chapter 4, many farmland soils are already permanently protected and, in fact, Northampton County preserved its first farm in 1993 in Lower Mount Bethel Township. Lower Mount Bethel’s adoption of agricultural preservation and limited development provisions in the Zoning Ordinance, beginning with the CAPZO in 2010, has put further protection in place. Continued protection through use of an Official Map, coordination with Northampton County farmland preservation, and opportunities afforded to apply Open Space EIT funds to easement acquisition, is desirable to promote conservation.

Hydric soils, and soils with hydric inclusions, often are used as wetland indicators. When officially delineated, wetlands are subject to federal and state regulations that prevent their loss. Hydric soils which are not a wetland may still be unsuitable for land use development. The Township, through its SALDO, requires that applicants for land development approval map all wetlands and hydric soils existing on their proposed development sites. Township regulations also require the filing of copies of federal or state wetland permit applications and correspondence with the Township. Former wetlands which were altered for agricultural

purposes through the use of drain tiles can also be restored through tile removal.



High quality Martins Creek natural area

Streams, Rivers, and Watersheds

The Township is blessed with many miles of high-quality streams and their watersheds. The Township is also bounded for its entire length by a nationally-recognized, “wild and scenic” river, and generally falls within the Lower Delaware River watershed. Many of the Township’s water resource protection efforts can be combined with those of other groups, organizations, and agencies interested in similar outcomes. For example, the Township’s efforts to protect its streams can benefit from its continued participation in the Martins-Jacoby Watershed Association and the Northampton County Conservation District.

Upgrading stream water quality designations to Exceptional Value (EV) or High Quality (HQ) by petitioning PADEP for such designation may be possible for this watershed. The EV designation would prevent any degradation of stream quality by adjoining land uses, while the HQ designation would also prevent degradation, subject to certain permit exceptions by PADEP. The Lower Delaware River Management Plan prepared as part of the National Wild and Scenic River designation also contains numerous water resource conservation recommendations and strategies that the Township, as a member of the River Management Plan Committee, can implement. The Township should seek regular representation on this Committee.

The Township's stream flows and water quality can be protected and enhanced through voluntary efforts of landowners. Landowners can fence off streams from livestock, and replant trees, shrubs, and other vegetation to re-establish riparian vegetation. Farmers and other landowners should promote the use of the Conservation Reserve and Enhancement Program (CREP) through the Northampton County Conservation District (NCCD). This federally funded program, administered by the County Conservation District, can pay farmers and other landowners to keep streamside lands out of farming production, and limit encroachment and crossings by livestock. Trees also are often available through the NCCD for establishing streamside vegetation.

Protection of the Township's streams also is enhanced by the recent establishment of riparian buffer provisions within the new Zoning Ordinance of 2022, including buffer widths of 100 feet from the nearest edge of any watercourse or sixty (60) feet from the nearest edge of any wetland, whichever is greater. The buffers provide for continued vegetation management activities, trail use, and otherwise permitted activities.

Chapter 23 of the Township Code, Stormwater Management, adopted in 2014 with updated design requirements and provisions to promote use of innovative stormwater management/Best Management Practices (BMPs), is consistent with federal and state water quality initiatives. Sensitive headwater areas, or first-order streams, may be appropriate for consideration of greater protection standards than afforded lower order streams. For example, impervious coverage limitations might be made stricter for uses proposed within the Lower Mount Bethel's sensitive headwater areas.

Floodplains and Wetlands

Lower Mount Bethel Township first enacted a Floodplain ordinance in 1990. Since that time, the 100-year floodplain mapping has been updated by the Federal Emergency Management Agency (FEMA) more than once. Updated floodplain regulations were adopted in 2014, consistent with new mapping and FEMA guidelines. Those regulations were recently readopted as Article XI, the FP Overlay – Floodplain Area Regulations, in the new Zoning Ordinance of 2022.

Some locations along the Delaware River have a history of flooding, and the Township should encourage these locations to improve their floodproofing if located within the floodway, or be relocated outside of the floodplain altogether.

Wetlands within the Township are protected through federal and state regulations and permitting requirements. The Township helps ensure the continued protection of these critically important resources by requiring applicants proposing subdivisions or land developments to depict wetlands on existing features plans and development plans. Applicants for federal wetland

permits administered through the Army Corps of Engineers (ACE) and DEP are also now required to concurrently provide the Township with copies of their applications and related correspondence. Areas within sixty feet of wetlands, that help to buffer them from other uses, are now regulated as riparian buffers, with the same protection standards and limitations afforded the wider stream riparian buffers.

Woodlands and Natural Areas

Lower Mount Bethel's woodlands are relatively scarce given the predominance of the agricultural landscape. Nevertheless, as discussed further in Chapter 2, woodlands are the best type of land cover for watershed management, natural erosion and flood control, moderation of noise and climate impacts, and protection for wildlife habitat, riparian buffers, steep slopes, and headwater areas. Woodlands also have aesthetic, recreational, and commercial value, including timber harvesting.

The Township's woodlands can be protected through both non-regulatory and regulatory measures. Woodlands can be protected through a landowner voluntarily restricting or limiting their lands through the donation of a conservation easement to a public body or conservation organization. The donation of a conservation easement may be tax deductible for federal and state income tax reporting purposes, and eased land would likely be subject to lower inheritance taxes than if it were unrestricted, due to a lower appraised value. State and federal grant programs may be available to assist the Township in funding the acquisition of conservation easements. Placement of specific woodlands on an Official Map will help initiate Township conservation efforts.

The Township has included woodland resource protection provisions within its new Zoning Ordinance of 2022, while providing for planned timber harvesting. The SALDO also requires that woodlands be delineated on land development plans, and proposed limits of clearing and grading clearly demarcated.

The Township may also wish to "classify" or prioritize its remaining woodlands to help identify those woodlands of greatest importance for long-term conservation efforts. Woodlands vary in size, age, quality, and in the biological/ecological functions they perform. While a comprehensive assessment of woodland quality would be a huge undertaking, relative importance of individual woodlands can be assigned on the basis of available Geographic Information System (GIS) mapped data, including size, relative amount of forest interior (usually measured as 300 or more feet from the woodland edge), and location relative to specific environmental benefits. Examples would include watershed values such as stabilizing steep slopes and protecting wooded headwater areas, streams and riparian buffers, with greater priority where environmental issues overlap. Such prioritization could be included on an Official Map.

Cultural Resources

Chapter 3 of this Plan includes a discussion of the history of Lower Mount Bethel Township and presents an assessment of the cultural resources found in the Township, including both historic resources and scenic resources.

Historic Resources

Lower Mount Bethel Township's historic villages and farmsteads as well as individual historic features and sites represent special resources contributing to the character of the Township and its quality of life. A limited number of historic resources found in Lower Mount Bethel

Township and deemed eligible for the National Register of Historic Places are listed based on recent data from the Pennsylvania Historical Museum Commission (PHMC). No historical resources in Lower Mount Bethel Township have been placed on the National Register at this time. Additional historical resource information, gathered for the 2007 Comprehensive Plan, is included as an appendix to this Plan. That information does not appear to have been updated and does not reflect more recent information from PHMC included in Chapter 3.

Without a comprehensive and up-to-date inventory of historic resources, there are limitations to what the Township can do to help protect them. The current Subdivision and Land Development Ordinance (SALDO), Section 22-407, provides for a required Historic Resource Impact Study. The Study includes required study of proposed development impacts within 250 feet of any historic resource, identification of impacts, and proposals for their mitigation. Yet without a formal inventory of historic resources adopted by the Township, these provisions are difficult to enforce. The 2022 Zoning Ordinance does provide for adaptive reuse and conversion of agricultural structures existing prior to August 7, 2010 to non-agricultural uses in order to promote rehabilitation and preservation of outdated structures.

The Township should consider means to improve how it helps to preserve its historic resources in several ways. Foremost, the Township should consider undertaking a comprehensive and updated inventory of historic properties, including buildings constructed more than fifty years ago, cemeteries and Native American sites, building on the inventory in the Appendix to this Plan and newer information available from PHMC, and in cooperation with Northampton County. Additional provisions that should be considered include the potential establishment of historic preservation guidelines, limitations on the demolition of historic properties, requirements for landscape buffers, and adaptive reuse opportunities for historic structures. The Township should consider establishing an Historical Commission to assist with such efforts.

Further effort should also be promoted, perhaps by volunteers, to formally nominate sites, buildings, structures, districts or objects identified as having historical, architectural or archeological significance to the National Register, including those already receiving a Determination of Eligibility (DOE) from PHMC. If approved, inclusion on the National Register provides a degree of protection from any publicly funded, assisted, or licensed project which might adversely affect a listed site. Listing on the National Register also makes property owners eligible for matching grants for historic preservation and may enable owners of income-producing properties to qualify for tax benefits. Listing on the Registers does not restrict the right of a private owner to alter or sell a designated property.

Scenic Resources

Lower Mount Bethel Township abounds with scenic landscapes and scenic views which are critical contributors to the sense of place and perceived quality of life. Chapter 3 includes a discussion of scenic resources focused specifically on the Lower Delaware Scenic and Recreational River, a unit of the National Park System, and the Delaware River Valley Scenic Byway. These corridors course through much of the Township and are emblematic of public visual access to scenic resources.

The scenic quality of the landscape, of course, is much more than long scenic views. It comprises many individual landscape features, such as historic structures, stone walls, fences, agricultural out-buildings and open fields, which singularly or in combination create the context of the rural historic fabric of the Township. The removal of any of these landscape attributes can

be as damaging to scenic landscape quality as the introduction of new intrusions that are not within the existing scenic context of the landscape.

The SALDO requires some inventory of and assessment of impacts to scenic landscape features in Sections 22-400 and 22-406. The Township may wish to consider adding more specific reference to inventory and assessment of impacts to individual landscape features and broadly to the Scenic River and Scenic Byway along their entire lengths. The Township should seek coordination with the National Park Service in regard to implementation of any efforts along the Lower Delaware Scenic Byway and to implement recommendations of the Corridor Management Plan for the Delaware River Valley Scenic Byway, noting that potential state and federal funding may be available.

Open Space Connections/Greenways

All of the open space, agricultural, natural, historic and scenic resources often overlap to create corridor connections, often referred to as greenways. Greenways vary greatly in scale, from narrow ribbons of green that run through village and rural areas to wider corridors that incorporate diverse natural, cultural and scenic features. They can incorporate both public and private property and can be land- or water-based. They may follow old railways or ridge tops, or they may follow stream corridors, shorelines, or wetlands, and include water trails for non-motorized craft, such as along the Delaware River. Some greenways are scenic byways that may accommodate motorized and non-motorized vehicles, as discussed above. Others function almost exclusively for environmental protection and are not designed for human passage.

Greenways differ in their location and function, but overall, a greenway is intended to protect natural, cultural, and scenic resources, provide recreational benefits, wildlife habitat, enhance quality of life and stimulate economic development opportunities. In Lower Mount Bethel Township, the natural resource patterns are present to make a strong case for proposing an interconnected network of greenway corridors based primarily on stream corridors and woodlands, including the Delaware River frontage. These areas already represent a resource-rich overlap area that includes most of the Township's wetlands, floodplains, hydric soils, rare and endangered species, steep slopes, woodlands, and headwater areas.

The Township may wish to map such greenways and corridors in the future, and pursue both voluntary actions by landowners, and regulatory provisions, that apply to new major development that insure the retention, and enhancement, of these natural corridors. Some corridors could also coincide with the Township's scenic byway efforts.

The 2011 Open Space Plan identified two proposed greenways, which were termed the Martins Creek Greenway and the Mud Run Greenway. In addition, it could be argued that a Delaware River Greenway was been initiated with the Township parkland and Township trails along the Delaware River from Riverton to Depues Ferry Road.

The Martins Creek Greenway starts at the Delaware River, southeast of the Village of Martins Creek and extends north through Washington Township to the Village of Flicksville. Much of the landscape adjacent to the creek is woodland flanked by farmland. Scattered rural residential development is beginning to occur throughout the greenway. The Martins Creek Greenway connects with an extended Delaware River Greenway.

The Mud Run Greenway begins where Mud Run meets the Delaware River at the Village of Sandts Eddy. It extends northwest into Plainfield and Washington townships and ends just south

of Route 191. Much of the stream valley is wooded, and the adjacent landscape is almost entirely in agricultural production. Several farms adjacent to Mud Run are in the State's Agricultural Conservation Easement Program, with a number of other farms in the Townships' Agricultural Security Area program. There has been limited rural residential development near the stream. The Mud Run Greenway connects with an extended Delaware River Greenway at the Village of Sandt's Eddy and contains a 12-acre unimproved natural area owned by Northampton County, just upstream from Route 611.

Recreational activities that currently take place within the Martins Creek, Mud Run and Delaware River Greenways include: fishing, nature study, bird watching, hiking and hunting when permitted by landowners.

Official Map

A principal recommendation for this Plan, cited in several places, is to use the tool of the Official Map to promote protection of agricultural and natural resources, linked to use of funds derived from Lower Mount Bethel Township's 0.25% EIT dedicated to acquisition of interests in open space.

Article IV of the Pennsylvania Municipalities Planning Code (MPC) enables municipalities to prepare an Official Map and take proactive measures in shaping important components of their future development, in contrast to simply reacting to developers' proposals. Adopted by ordinance, it serves as a visionary document that specifies properties where the Township would like to consider acquisition of interests in open space or for other public improvements including, for example, trail rights-of-way or even road or sewer rights-of-way. By doing so, the Township reserves mapped lands or portions thereof for future public purposes.

The Official Map also is an excellent supporting document for grant applications involving land or easements intended for open space or park facilities, demonstrating that the Township has proactively planned for such potential action. A wide variety of elements can be shown on the Official Map as long as they are consistent with the MPC.

The Official Map is not a taking of private land. If by virtue of the Official Map a landowner is denied reasonable use of his property, he or she can apply for a special encroachment permit that would allow them to build on their site. If a landowner notifies the Township of their intention to develop a site identified on the Official Map, the Township has one year to negotiate acquisition of the site or portions of it. Otherwise, the fact that the property has been placed in reserve on the Official Map will become invalid. Any landowner is free to use any unmapped portions of their property in accordance with applicable zoning and subdivision regulations. The Official Map need not be surveyed. A metes and bounds survey is not required until an actual purchase of land or easement is proposed by the Township. The Official Map does not obligate the Township to open, maintain or improve any interests shown on the Map.

CHAPTER 10

REGIONAL PLANNING CONTEXT

Lower Mount Bethel is surrounded by four municipalities in Northampton County. Washington Township lies along the entire northwestern boundary of the Township which is the longest boundary with any other municipality. Upper Mount Bethel Township lies to the northeast, Forks Township lies to the southwest, and Plainfield Township lies to the west. Lower Mount Bethel Township also is part of the Slate Belt region in Northampton County along with all of its neighboring municipalities except Forks Township. The Township, with all of Northampton County, is joined with Lehigh County to form the Lehigh Valley region. In addition to the surrounding boundaries in Northampton County, the Delaware River forms the southeastern border of the entire Township, with Warren County, New Jersey on the other side.

As required by the PA Municipalities Planning Code (MPC), this chapter looks at the land use planning contexts in the surrounding municipalities for consistency, particularly along boundary lines. It also looks at overall consistency with regional planning efforts, notably those of the Lehigh Valley Planning Commission which also serves as the county planning agency for Northampton County. Since the Delaware River and its floodplains act as a wide buffer to land use issues on the New Jersey side, land use planning issues in Warren County are not discussed. The Delaware River, as a significant resource itself, is discussed elsewhere in this 2022 Comprehensive Plan Update.

Upper Mount Bethel Township

Land Use

The landscape characteristics and topography along most of the township line between Upper and Lower Mount Bethel Townships include woodlands, steep slopes, rolling hills, and some agricultural areas. At Riverton village, at the northeast corner of Lower Mount Bethel, the village extends slightly into Upper Mount Bethel Township and there is a mobile home park adjacent to the Delaware River at the township line.

Zoning

Upper Mount Bethel lands lying along the township line adjacent to Lower Mount Bethel are currently zoned OSC-Open Space Conservation and A-1-Agricultural Rural Residential. There also is an adjacent portion of Upper Mount Bethel Township which is zoned as an overlay zoning area, as a Scenic Riverside Agricultural Area, noted for special protection needs.

Except for the very small area adjacent to the village of Riverton, which is zoned Village Mixed Use in Lower Mount Bethel, these adjacent zoning districts are consistent and compatible with adjacent areas in Lower Mount Bethel. They provide for low overall density of development but are non-conforming with Lower Mount Bethel's agricultural preservation options.

Current Planning

One of the prime goals of Upper Mount Bethel's Comprehensive Plan, adopted in 2001, is the preservation of community and visual character by developing land use regulations to protect the rural aspects of the community, including protection of existing farmland. Upper Mount Bethel Township also is participating in the current draft Plan Slate Belt efforts.

Washington Township

Land Use

The topography and general characteristics of the portion of Washington Township abutting Lower Mount Bethel Township are rolling hills interrupted by areas of steep slopes. Prime intents of the Comprehensive Plan are to keep this area rural in character and to protect good agricultural land and well-run farming establishments from the encroachment of development. Existing uses for lands lying adjacent to Lower Mount Bethel's boundary are almost entirely in agricultural use. There are a few single-family residential uses. A portion of Lower Mount Bethel Township's "The Meadows at Martins Creek" park straddles the township boundary into Washington Township.

Zoning

All of the areas in Washington Township immediately adjacent to Lower Mount Bethel are currently zoned A-Agriculture. The purpose of this district is to protect and preserve the scenic, recreational, and environmental resources, and provide for agricultural and animal husbandry uses. A very small Rural Center District and Low-Density Residential District lie near the township line with Lower Mount Bethel Township, along PA Route 611. Except for the very small nearby areas zoned for Rural Center and Low-Density Residential, the adjacent zoning districts, mainly the A-Agriculture District, are consistent and compatible with adjacent areas in Lower Mount Bethel. The A-Agriculture District provides for low overall density of development, with a minimum lot size of 1.5 acres, but is non-conforming with Lower Mount Bethel's agricultural preservation options.

Current Planning

Washington Township adopted the Central Slate Belt Multi Municipal Plan with the Boroughs of Roseto, Bangor, and East Bangor in October, 2005. It is currently participating in the Plan Slate Belt multi-municipal comprehensive planning effort, which also includes Lower Mount Bethel Township.

Plainfield Township

Land Use

Plainfield Township shares a township boundary with Lower Mount Bethel Township for only about 1 ¼ miles. The adjoining land in Plainfield Township is almost entirely in agricultural uses, with a few areas that are woodland.

Zoning

All lands lying along the boundary with Plainfield Township are zoned FF- Farm and Forest District. The purposes of the FF-Farm and Forest District are to encourage the continuation of farming, a rural-farm setting, forested areas, limited development, and an attractive rural residential living environment for single-family homes on relatively large lots. The zoning district also intends to encourage the retention of tracts in sizes sufficiently large for efficient agriculture, and to control the numbers and locations of homes within agricultural areas to minimize conflicts with agriculture. These purposes are consistent with Lower Mount Bethel's across the boundary line.

Current Planning

Plainfield Township's continued planning efforts reflect its interest in the preservation of agricultural lands. Plainfield Township adopted a joint regional comprehensive planning initiative with Pen Argyl and Wind Gap Boroughs in 2010 with the purpose of creating a sustainable open space and farmland preservation program. The Township is currently participating in the Plan Slate Belt multi-municipal comprehensive planning effort, which also includes Lower Mount Bethel Township. Plainfield Township also adopted an 0.25% earned income tax in 2007 for open space preservation.

Forks Township

Land Use

Forks Township abuts the southwest portion of Lower Mount Bethel Township, with the two communities sharing a boundary generally parallel to Upper and Lower Mud Run Roads and extending to the Delaware River. The entire portion of adjoining land in Forks Township is in agriculture or agricultural associated uses, consistent with uses across the shared boundary in Lower Mount Bethel. Much of the rest of Forks Township, not adjacent to Lower Mount Bethel, has experienced relatively intense suburban development.

Zoning

Zoning in the portions of Forks Township which lie along the entire border with Lower Mount Bethel is classified as FP-Farmland Protection, adopted in 2014. The Farmland Protection district is also intended to encourage and enhance the preservation of the cultural landscape within the Township and to act primarily as open space. The district is not intended to be a sewerage area, and where limited residential development is permitted lots are required to be at least 2 acres in area, large enough to support on-lot sewer and water. However, this district is non-conforming with Lower Mount Bethel's agricultural preservation options.

Current Planning

Forks Township adopted a new Comprehensive Plan in 2010 recommending 3-acre minimum lots and cluster provisions to provide for more farmland protection in the areas abutting Lower Mount Bethel Township. Forks Township now has a new 2022 draft Comprehensive Plan

Update which identifies lands adjacent to Lower Mount Bethel as Rural Residential/Agriculture, consisting primarily of agricultural lands, larger lot single-family detached dwellings, and areas of environmental resources that potentially limit development. Forks Township is not part of the Plan Slate Belt multi-municipal planning efforts.

Plan Slate Belt

Plan Slate Belt, the Slate Belt Multi-Municipal Comprehensive Plan, was completed in draft by the Lehigh Valley Planning Commission (LVPC) in July of 2022. Plan Slate Belt covers Lower Mount Bethel Township and all of its immediate neighbors except Forks Township. Also included are six boroughs well to the north and northwest of Lower Mount Bethel.

Most of Lower Mount Bethel and the immediately adjacent areas are indicated on the Plan Slate Belt Future Land Use Plan as intended for farmland preservation. Almost all of the farmland preservation areas in and adjacent to Lower Mount Bethel Township are also indicated as of high preservation priority. The corridors along the Delaware River and Martins Creek are shown as “Character-Defining Areas.” The rest of Lower Mount Bethel Township, largely comprising existing development of various types, is indicated as “Exurban.” No areas within or adjacent to Lower Mount Bethel are shown as areas for future development. Areas indicated as Exurban also include areas indicted in this Comprehensive Plan Update for future development consistent with the character of existing development in those areas. Plan Slate Belt’s emphasis on low density development in Exurban areas is consistent with Lower Mount Bethel Township’s current sewer and water service limitations.

FUTURELV: The Regional Plan

“FUTURELV: The Regional Plan” is the Comprehensive Plan for Lehigh and Northampton Counties, prepared by the joint-county Lehigh Valley Planning Commission and adopted in November of 2019. FUTURELV promotes a forward-thinking strategy to lead the region into the future, while addressing the needs of today. It establishes goals, policies and actions designed to carry the region through 2045 and beyond and is expected to be updated regularly. FUTURELV refreshes a 2005 plan that had substantial updates in 2010, and is among the first comprehensive plans in the nation that merges the land use, economic, environmental, housing, preservation and farming policies with the region’s transportation planning and investment policies.

FUTURELV’s future land use maps are more generalized than either those included in Plan Slate Belt or in the several municipal Plans. The vast majority of Lower Mount Bethel Township and immediately adjacent areas, including in Forks Township, are indicated for Farmland Preservation. The corridors along the Delaware River and Martins Creek are also shown in FUTURELV’s maps and documentation extending into Forks, Upper Mount Bethel and Washington Townships. As in Plan Slate Belt, the remaining fringe, generally along the Delaware River, is here also shown as “Exurban,” and includes most areas shown in this 2022 Comprehensive Plan Update for future development.

References:

- *Lower Mount Bethel Township Comprehensive Plan, 2007*
- *Lehigh Valley Planning Commission*
- *Forks Township*
- *Lower Mount Bethel Township*
- *Plainfield Township*
- *Upper Mount Bethel Township*
- *Washington Township*

CHAPTER 11 IMPLEMENTATION PLAN

This 2022 Comprehensive Plan Update is intended to be implemented by Lower Mount Bethel Township. Plan implementation is expected to occur over a twenty-year time frame upon adoption of this Plan. The Township Board of Supervisors will be the official body involved in all implementation actions. The Board will consider recommendations herein and will also rely on recommendations from other Township commissions and committees, Township staff and appropriate consultants. The Township will also seek support from, and expect to coordinate with, Easton and Bangor Area school districts, the Lehigh Valley Planning Commission, Northampton County, the Slate Belt Region, state and federal agencies, watershed organizations, and others.

The Township has established the following implementation priorities, based upon the recommendations in the several chapters. Additional recommendations of less priority remain within the text of the several chapters. All implementation priorities and other recommendations should be reviewed periodically during the 20-year life of this plan. The PA Municipalities Planning Code (MPC) requires that the Township update its comprehensive plan, at a minimum, once every ten years. Implementation recommendations or actions contained in this Plan will be reassessed for any subsequent updates.

IMMEDIATE ITEMS (WITHIN 1 YEAR)

1. Draft and enact an Official Map for Lower Mount Bethel Township.
2. Continue efforts working with Plan Slate Belt and the Lehigh Valley Planning Commission on the multi-municipal, comprehensive plan for the Slate Belt area (10 municipalities) in order to reinforce the Township's efforts to maintain a rural and agricultural community.
3. Coordinate with PennDOT to resolve traffic problems on Route 611 and Front Street in the village of Martins Creek. Collaborate with regional efforts in neighboring municipalities to address current and future traffic issues.
4. Codify the new Zoning Ordinance of 2022.

SHORT-TERM ITEMS (1 TO 5 YEARS)

1. Require stormwater management facilities proposed in Carbonate (karst) topography to be subject to additional testing for soil infiltration capacity. Requirement of specific buffers from carbonate geological features also may be necessary to prevent groundwater contamination and sinkhole formation.
2. Consider greater protection standards for sensitive headwater areas, or first-order streams, that are more appropriate than those afforded lower order streams, including for example, stricter impervious coverage limitations.

3. Address the closing of Bridge 31 that has been detrimental to the Township adding mileage and time to local trips and creating a roadblock for effective emergency services. Work with the County where possible, and explore township acquisition of the bridge and its cost effective repair or replacement. Seek out available grants, and state or local programs to assist with funding.
4. Investigate alternate sewage disposal methods for the high density residential areas that are prone to septic system failure.
5. Find ways to attract suitable businesses to the newly formed Mixed Use Overlay District (MUO) to bolster the township's tax base.
6. Revise where needed and update the Township's Open Space Plan including the criteria checklist. Develop a comprehensive list of all farms that did not meet the County's preservation standards and rank according to the Township's criteria checklist, and create a priority list and ranking of all possible non-farm properties to be considered for possible acquisition with EIT funds. Develop cost estimates for monitoring each class of acquisition. Continue dialog with Northampton County Farmland Preservation to remain knowledgeable and up to date on availability of state and county funding.
7. Seek out natural resource areas within the Township for future conservation with a focus on greenways and those areas that may be appropriate for recreation uses as may be included on the Official Map.
8. Form a committee to formally promote the preservation of historic resources and properties within the Township. Use our local museums for research materials, guidance and committee membership. Task the committee with the following upon consideration and approval of the Board of Supervisors:
 - Consider undertaking a comprehensive and updated inventory of historic properties, including buildings constructed more than fifty years ago, cemeteries and Native American sites in cooperation with Northampton County.
 - Consider the potential establishment of historic preservation guidelines, limitations on the demolition of historic properties, requirements for landscape buffers, and adaptive reuse opportunities for historic structures beyond agricultural structures which are currently afforded adaptive reuse.
 - Promote voluntary efforts to formally nominate sites, buildings, structures, districts or objects identified as having historical, architectural or archeological significance to the National Register of Historic Places.
9. Continue efforts to preserve farmland through the Northampton County Farmland Preservation Program. This should include helping to promote the program to Township landowners, approving appropriate requests for Agricultural Security Area (ASA) designation of eligible properties, and discouraging non-farm development in the Township's core agricultural areas.

10. Put into place possible solutions to address traffic issues in the Township, including the following:
 - Continue efforts to improve Township roads, bridges, and traffic circulation patterns.
 - Work with Northampton County and PENNDOT to preserve and maintain historic bridges, especially along the Scenic Byway with a focus on context sensitive design.
 - Enhance the safety and connectivity of the pedestrian network in the Township, notably including Front Street and Main Street in the village of Martins Creek.
 - Pursue available funding opportunities for transportation improvements, including liquid fuel funds, partnerships with developers, traffic impact fees, and State and Federal funding through the PENNDOT/Lehigh Valley Planning Commission 12-Year Plan process.
11. Explore use of alternate energy systems for the Township Office and the Centerfield School Municipal Complex.
12. Monitor use and enforcement of the 2022 Zoning Ordinance, and consider amendments that may become necessary, being particularly alert to new uses that may arise from time to time which are not covered in the new Zoning Ordinance.
13. Monitor use and effectiveness of the Official Map in a similar way.
14. Continue to work with Talen Energy to pursue the Township acquisition of the Talen pavilion.

LONG-TERM ITEMS (5-20 YEARS)

1. Continue to implement all tools at our disposal to maintain the rural and agricultural character of the Township, and to conserve and protect its natural, historic and recreational resources.
2. Promote voluntary efforts to protect and enhance stream flows and water quality through use of the Conservation Reserve and Enhancement Program (CREP) through the County Conservation District.
3. Explore opportunities for stream quality assessments that may lead to further streams achieving designation of High Quality (HQ).
4. Seek further protection of the Township's four Natural Heritage Areas containing PA-rare, threatened, and/or endangered species (see Figure 2-6).
5. Continue to explore ways to expand the Lower Mount Bethel Township trail system to Forks Township in the south and to the borough of Portland to the north, connecting the Township to the Liberty Trail.

6. Consider participating in the Lower Delaware River management plan partnership with the National Park Service.
7. If National Scenic Byway status would appear on the agenda for area communities, Lower Mount Bethel Township should consider joining the effort due to its participation in the PA State Scenic Byway program.
8. Continue to monitor and protect groundwater supplies from sources of contamination such as on-lot waste disposal, agricultural fertilizers, livestock operations, heavy commercial or industrial uses, sludge deposition, and from improper well construction.
9. Continue to monitor US EPA's and PA DEP's heightened focus on and regulation of contamination from PFAS. This is particularly important in the context of permitted deposition of sludge on farm fields, development of plans to protect well water, and otherwise implement strategies for the health and safety of the Township.