ENVIRONMENTAL CONSERVATION PLAN

Salisbury Township includes extremely important natural resources, including the mostly wooded Lehigh and South Mountains. The hydrology and other natural resources of Salisbury have great impacts upon the quality and quantity of groundwater and surface waters in the region. In particular, where groundwater reaches the surface at springs and seeps, it greatly impacts creeks and rivers and feeds into wetlands and other habitats. Salisbury Township is a stopping point for a wide variety of migratory birds, and a home and breeding grounds for many other species of birds and wildlife.

Salisbury Township includes the headwaters of the Saucon and Trout Creeks. The Trout Creek and many other areas drain to the Little Lehigh Creek, which is a major drinking water source for Salisbury and Allentown. Other areas in drain directly to the Lehigh River. The mountains and areas at the base of the mountains are particularly critical for recharge of the groundwater supplies.

The Lehigh County Conservation District in 2011 completed a Natural Resource Inventory (NRI) for Salisbury Township. That effort provided detailed mapping and analysis of many natural resources, including water resources, water quality, birds and habitats. A full copy of that report is available on the Township's website.

Prime Agricultural Soils

The United States Department of Agriculture (USDA) rates soil types for their ability to support crop farming. Soils most conducive to producing food and sustaining high crop yields are given the designation of "prime" and are rich in nutrients, well drained and permeable, as well as resistant to erosion. Prime agricultural soils typically have gently rolling to flat topography. The USDA further assigns a soil rating, from Class I through Class VII, to estimate the average productivity of different soil types for crops.

Most of the prime agricultural soils in Salisbury Township have been developed or approved for development. The main remaining areas are lands along Cedar Crest Boulevard that are owned by the Lehigh Valley Health Network and several areas in eastern Salisbury, including an area of land along Cardinal Drive and areas off of Seidersville Road. There also are scattered areas of agricultural use and undeveloped prime soils in eastern Salisbury. Most of the prime agricultural soils in Salisbury are in the Linden, Duffield, and Washington soil series.

The Pennsylvania Municipalities Planning Code authorizes municipalities to use zoning to "preserve prime agriculture and farmland considering topography, soil type and classification and present use." The Wildlands Conservancy reports that approximately 160 acres of land in Salisbury was farmed, as of 2009. Most of the soils in this category in Salisbury Township are in the Linden, Duffield, and Washington soil series.

State regulations allow for the creation of Agricultural Security Areas (ASA). ASAs serve several purposes, including:

1) to provide legal protection for farmers from nuisance complaints and ordinance enforcement that may arise from normal farming practices,
2) to make property-owners eligible, if they wish, to apply to have the County purchase the development rights to permanently preserve their land, and
3) to make government condemnation of land much more difficult.

To establish an ASA, property-owners would first voluntarily sign a form requesting that there land be included in an ASA. The Township would then need to follow a series of procedural steps to establish the ASA, including forming an Advisory Committee and a vote by the Board of Commissioners.

The State Department of Agriculture publishes an "Agricultural Security Areas Handbook" that lists all of the procedures and requirements for establishing an ASA. One entire section of that Handbook addresses how to establish an ASA that includes two municipalities.

An ASA needs to include a minimum of 250 acres, with each parcel including at least ten acres. The lands do not need to be contiguous. Salisbury Township would probably need to participate in a joint ASA with an adjacent township to meet this requirement.

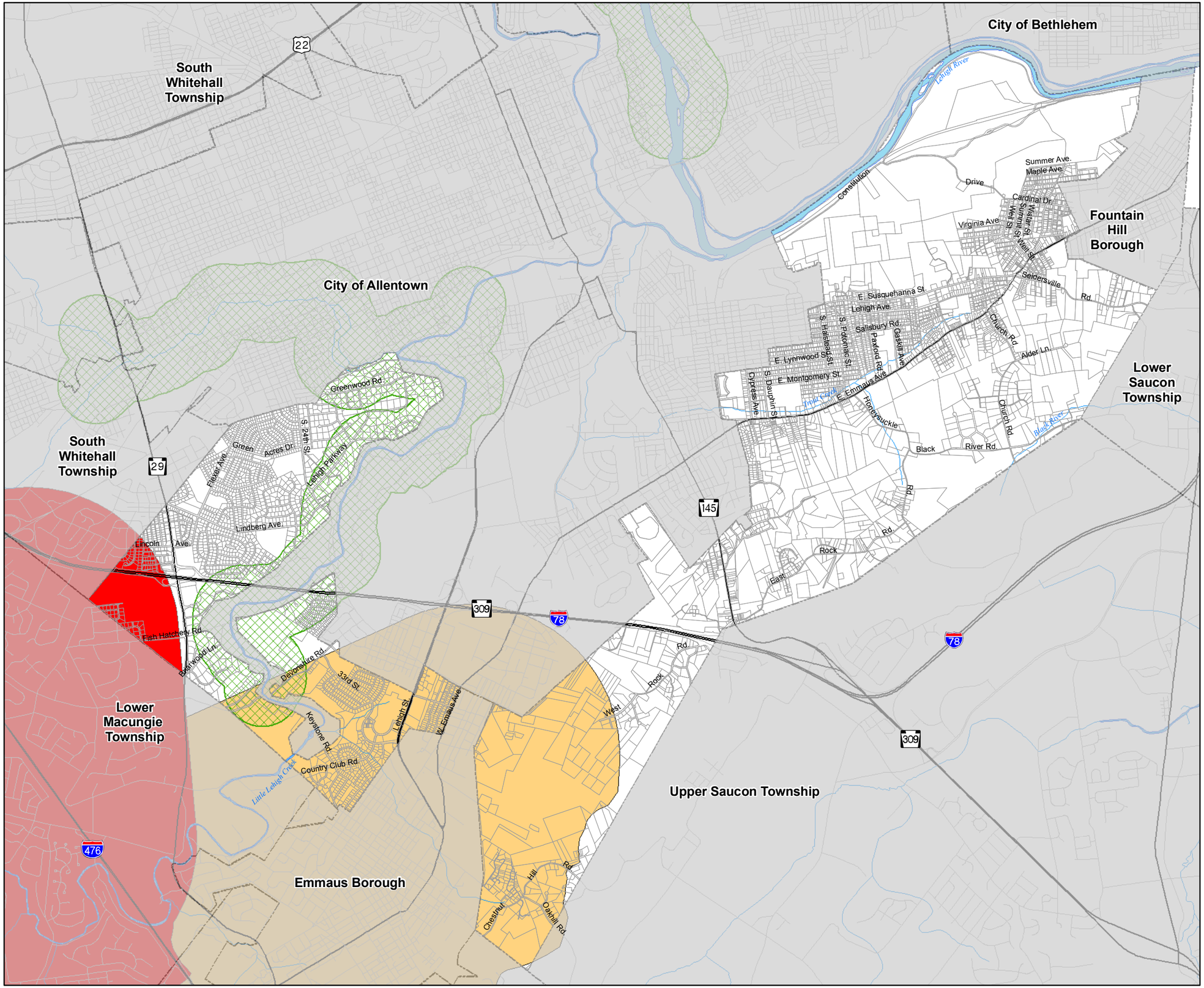
Many landowners have difficulty earning a full-time living from farming. Consideration should be given to offering additional flexibility in zoning regulations for parcels that are farmed and include more ten acres. The goal is to allow opportunities for a landowner to general additional income to make it easier to keep the land mostly undeveloped. The intent is to allow a wider variety of small business uses and a greater intensity than is now allowed as a home occupation, but with proper controls to avoid conflicts with neighboring homes.

Geology

Much of the history of Salisbury Township is defined by its underlying rock formations. For centuries prior to European settlement, jasper was mined and even exported by Native Americans. This activity helped contribute to the health and vitality of the local Lenni Lenape tribe. Iron ore, limonite and magnetite were later quarried throughout the Township and contributed to the Industrial Revolution. Sandstone taken from the north slopes of South Mountain was used in buildings of Lehigh University, Moravian College, Bethlehem and Allentown.

Salisbury Township Comprehensive Plan

MAP 4.1
Source Water Protection Areas



PublicWater Authorities

- Lehigh County Water Authority Zone III
- Emmaus Borough Public Water Authority Zone III
- City of Allentown - Zone A

December 2011

Base Information Provided By:

Lehigh Valley Planning Commission.

0 3,250 6,500 Feet

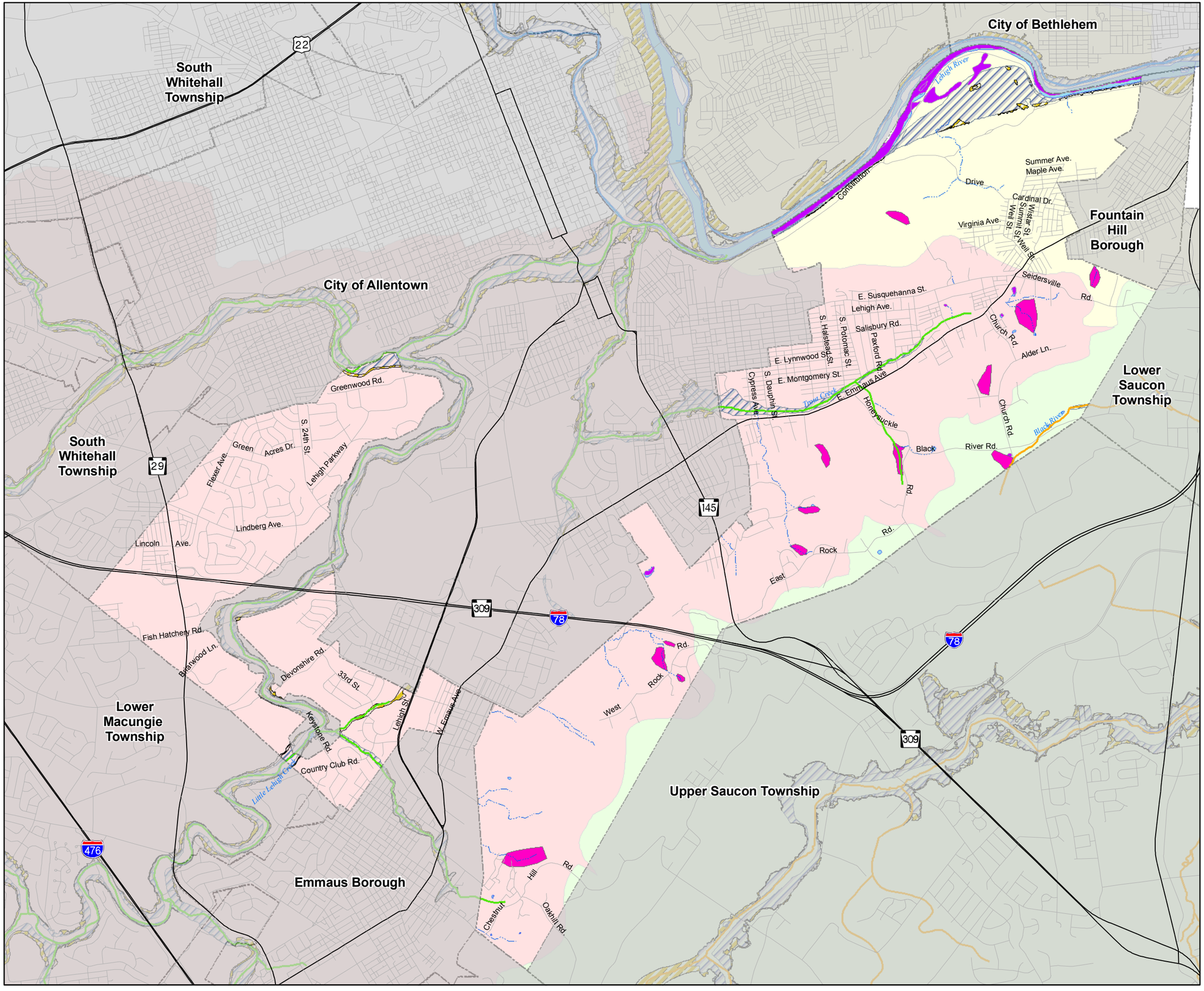
N

URDC **Urban Research & Development Corporation**
28 West Broad Street Bethlehem, Pennsylvania 18018 610-865-0701

Salisbury Township Comprehensive Plan

MAP 4.2

Hydrology



Streams
- Cold Water Fishery
- High-Quality - Cold Water Fishery
- Tributaries*

Watersheds
- Lehigh River
- Little Lehigh Creek
- Saucon Creek

- 100-Year Floodplain
- 500-Year Floodplain
- Wetlands
- Seeps & Springs*

* Note: Mapping was provided by the Lehigh County Conservation District

December 2011

Base Information Provided By:

Lehigh Valley Planning Commission.

0 3,250 6,500 Feet

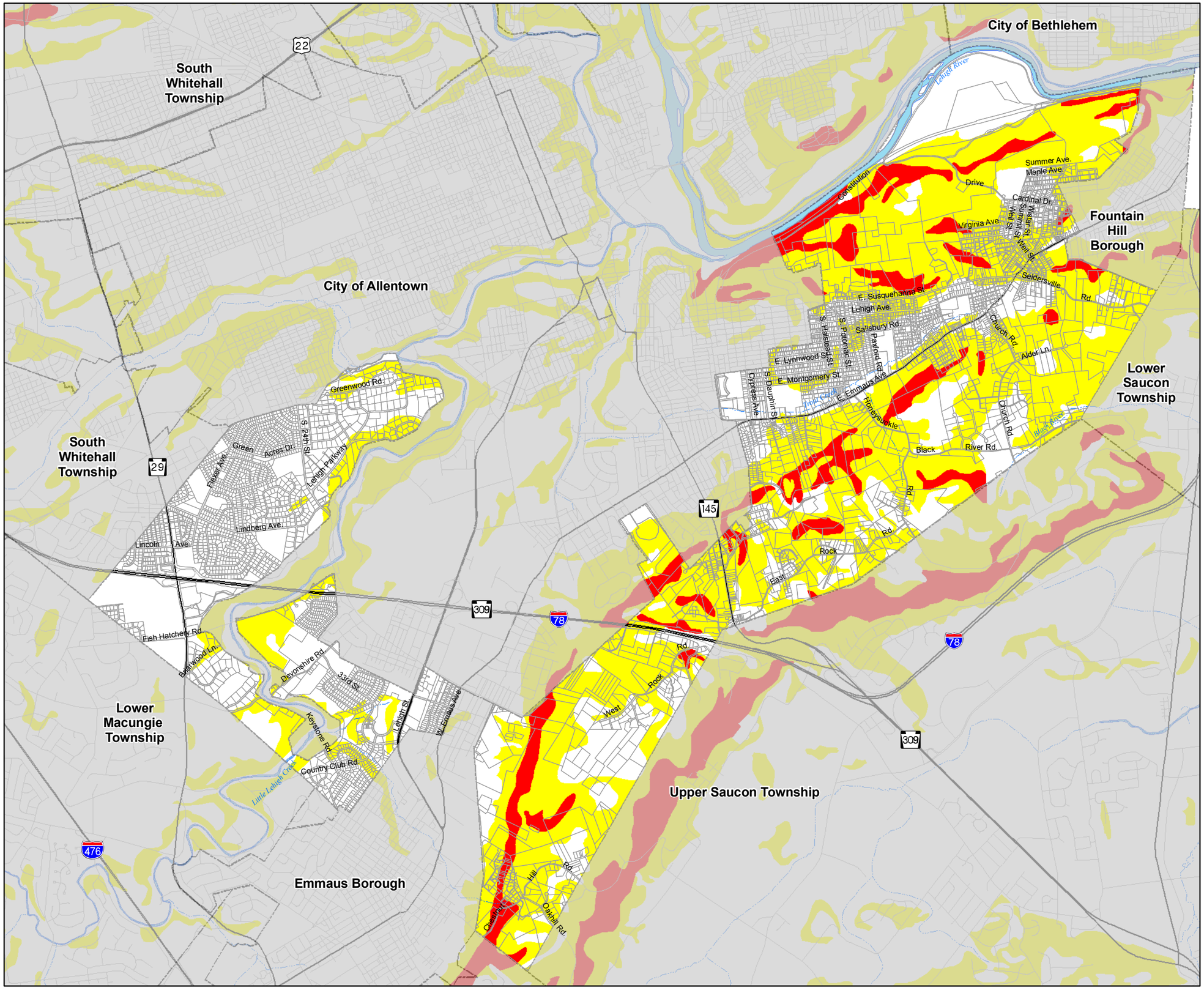
N

Urban Research & Development Corporation
URDC 28 West Broad Street Bethlehem, Pennsylvania 18018 610-865-0701

Salisbury Township Comprehensive Plan

MAP 4.3

Steep Slopes



Slopes 12-25%

Slopes 25% and greater

December 2011

Base Information Provided By:

Lehigh Valley Planning Commission.

0 3,250 6,500 Feet

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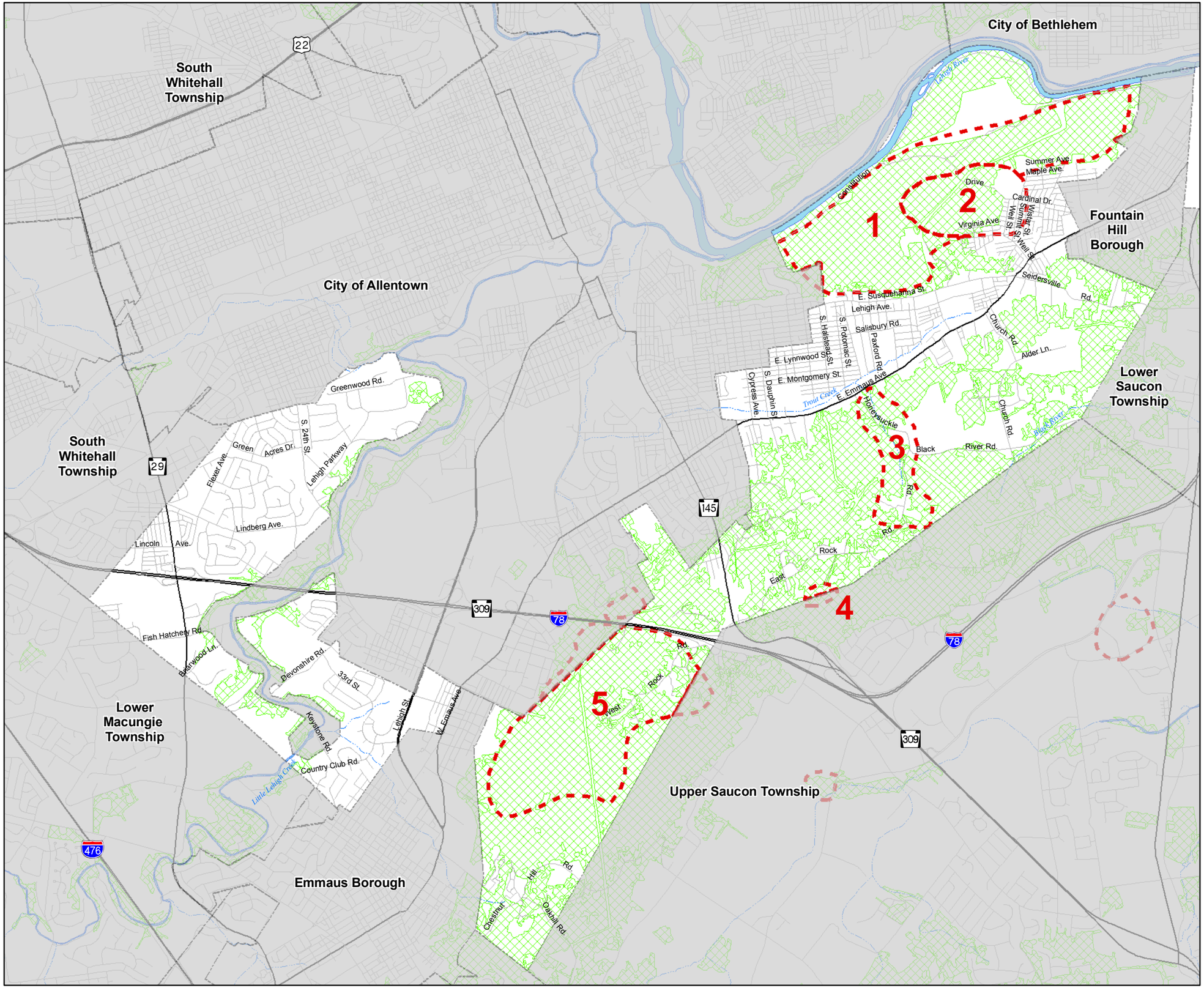
Urban Research & Development Corporation
28 West Broad Street Bethlehem, Pennsylvania 18018 610-865-0701

Salisbury Township Comprehensive Plan

MAP 4.4
Woodlands & Unique Natural Areas



- Woodlands
- Unique Natural Areas
  - 1 Lehigh Mountain
  - 2 Lehigh Mountain Seeps
  - 3 Gauff Hill
  - 4 Bauer Rock
  - 5 Robert Rodale Reserve

December 2011

Base Information Provided By:

Lehigh Valley Planning Commission.

0 3,250 6,500 Feet

N

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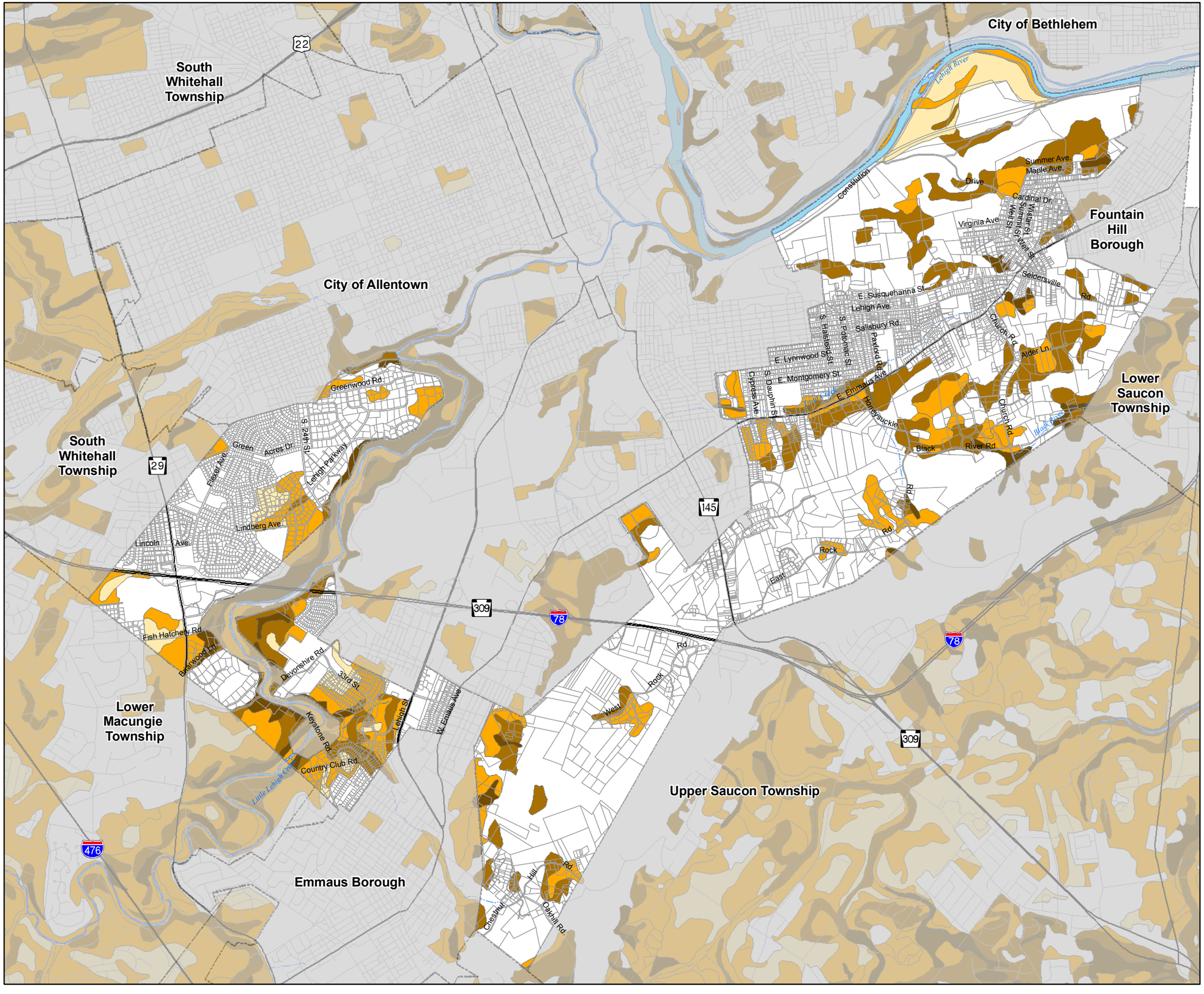
28 West Broad Street Bethlehem, Pennsylvania 18018 610-865-0701

Salisbury Township Comprehensive Plan

MAP 4.5
Prime Agricultural Soils



Soil Classification

- Class I
- Class II
- Class III
- Class IV

December 2011

Base Information Provided By:

Lehigh Valley Planning Commission.

0 3,250 6,500 Feet

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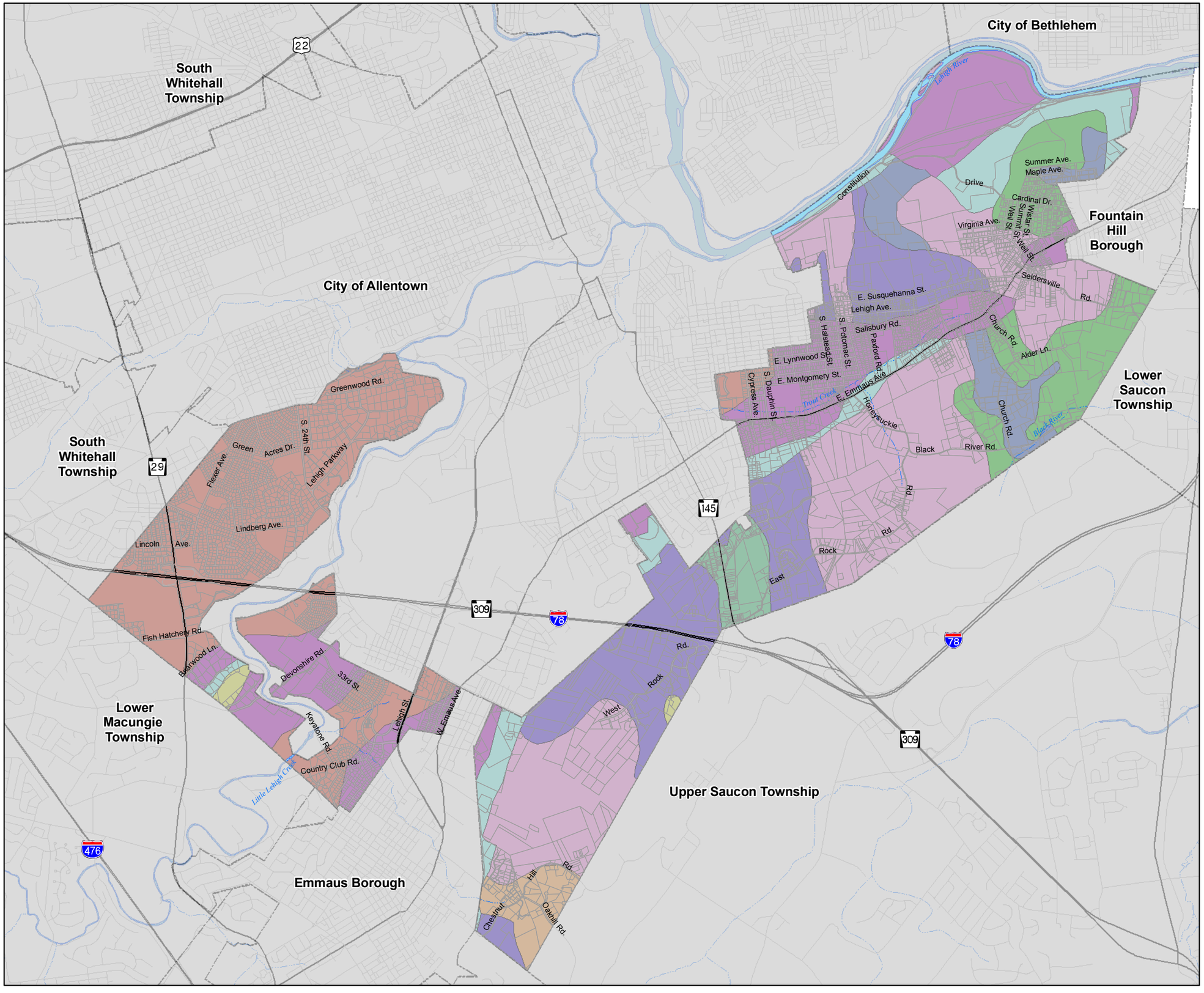
Urban Research & Development Corporation
28 West Broad Street Bethlehem, Pennsylvania 18018 610-865-0701

Salisbury Township Comprehensive Plan

MAP 4.6
Geology



- Ch - Hardystone Quartzite
- Cl - Leithsville Formation
- OCa - Allentown Dolomite
- Oj - Jacksonburg Limestone
- Ya - Amphilbolite
- Yba - Alaskite, mircorperthitic and microantiperthitic
- Ybh - Hornblende granite and associated biotite granite
- Ymb - Biotite-quartz-plagioclase gneiss
- Ymg - Amphibolitic migmatite and related hybrid rocks
- Ymk - Potassic feldspar gneiss

December 2011

Base Information Provided By:

Lehigh Valley Planning Commission.

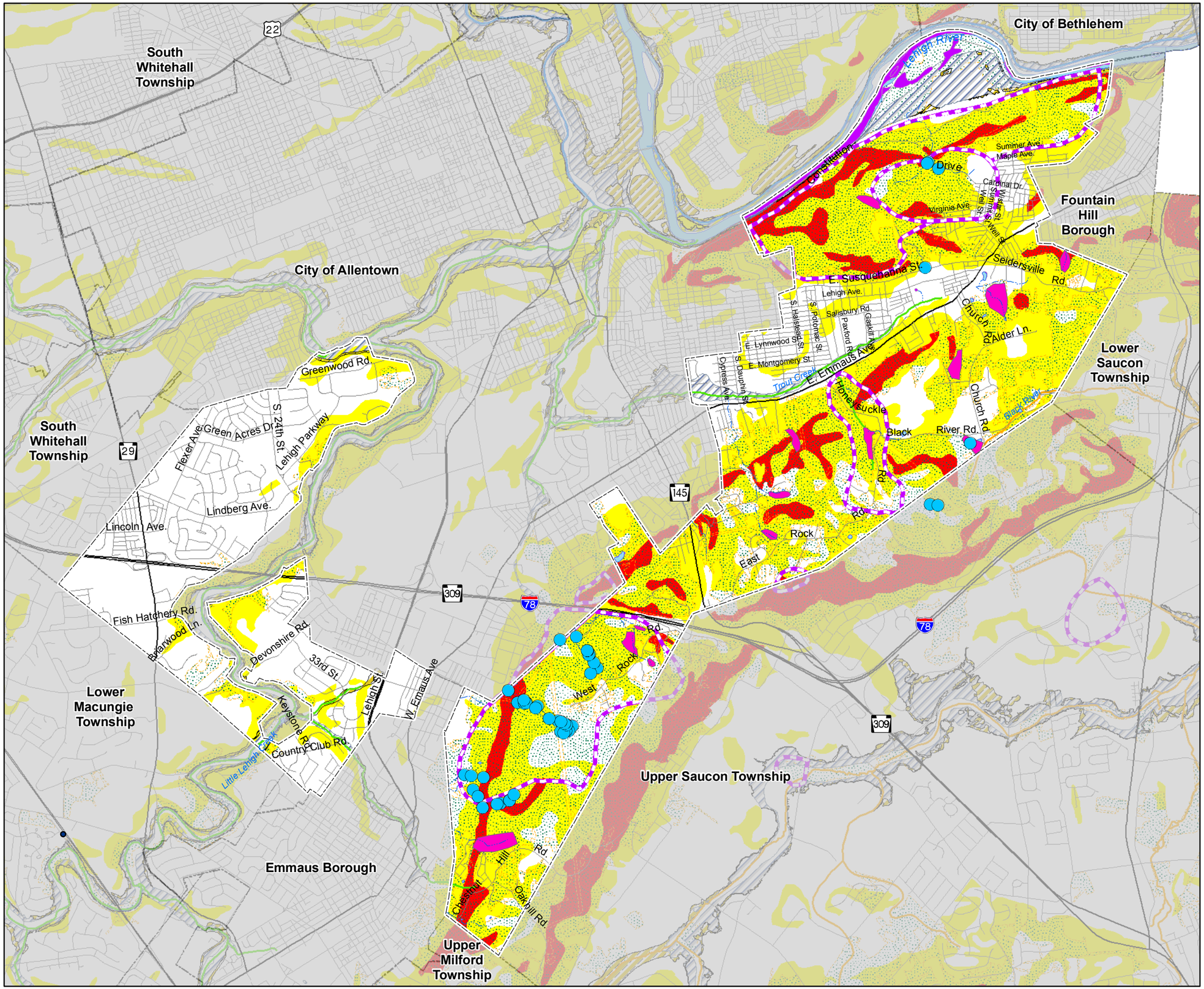
0 3,250 6,500 Feet

N

Urban Research & Development Corporation
28 West Broad Street Bethlehem, Pennsylvania 18018 610-865-0701

Salisbury Township Comprehensive Plan

MAP 4.7
Natural Features Composite



Stream Quality
- Cold Water Fishery
- High-Quality - Cold Water Fishery
- Tributaries*

- 100-Year Floodplain
- 500-Year Floodplain
- Wetlands
- Seeps & Springs
- Predicted Seeps & Springs*

SLOPE
- 12 - 25%
- 25% and greater

- Woodlands
- Natural Areas

* Note: Mapping was provided by the Lehigh County Conservation District

December 2011

Base Information Provided By:

Lehigh Valley Planning Commission.

0 3,250 6,500 Feet

N

URDC **Urban Research & Development Corporation**
28 West Broad Street Bethlehem, Pennsylvania 18018 610-865-0701

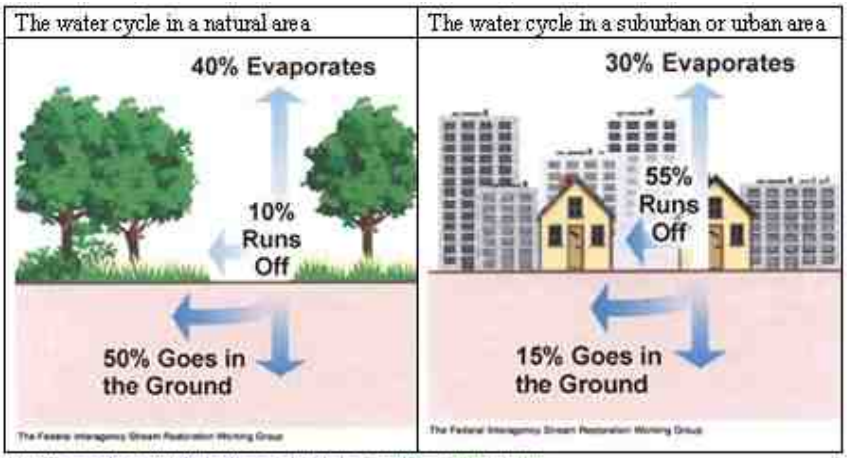
Today, the geology of the township hinders or supports development. The geology is comprised of the upper and lower plate of a Blue Ridge Province thrust fault, with the pre-Cambrian age granite, gneiss, and amphibolites forming the rocks of the South Mountain. The valley bottom is comprised of Cambrian limestone and dolomite formations. along the base of the South Mountain, iron mines and jasper cliffs are found in the Hardystone Quarzite Formation.

Sinkholes are typically prevalent in karst/limestone areas, most of which were comprised of farmland before they were developed. The limestone geology results in creeks and springs of unique quality, which provide the region's drinking water supply through the Little Lehigh Creek, Schantz Spring on Schantz Road in Upper Macungie, and Crystal Spring in Allentown.

The Geology Map shows the locations of various geological formations in Salisbury Township.

Water Resources

Understanding the hydrology of a landscape and the science of underground, surface and atmospheric quantity and quality of water is critical. Proper protection of underground and surface waters needs to be addressed in development regulations to protect water quantity and water quality. Various intensities and methods of land development greatly affect the ability of rainwater to be recharged into the groundwater, or to result in increased stormwater runoff.



www.mmsd.com/wql/pics/impervious1.jpg water quality initiative

Many types of water resources are shown on the Hydrology Map, including many previously unmapped watercourses based upon work by the Lehigh County Conservation District. However, the Conservation District notes that not every watercourse or water feature has been mapped because they were not able to access many privately-owned lands.

From the enjoyment of its scenic or historic resources to the dependence on it for economic survival, a major body of water should be considered an asset carefully regulated. Protection of water quality is an utmost concern. Pennsylvania's *Chapter 93: Water Quality Standards* establishes ratings for rivers and streams with outstanding water quality that allow the Pennsylvania Department of Environmental Protection to protect, maintain and restore the quality of water. Streams and rivers with High Quality (HQ) or Exceptional Value (EV) rankings have sufficient data to suggest that the water chemistry, and biology, support and sustain native trout habitat and nationally valued outdoor

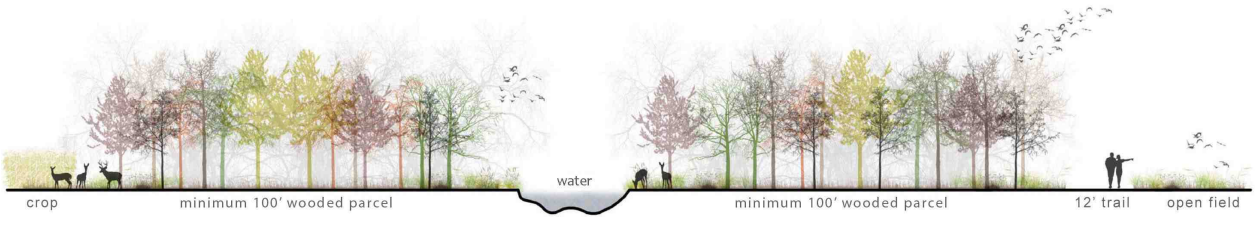
recreation opportunities. These waterways are afforded greater standards of protection from the impacts of development, discharge, and degradation than other waterways.

Salisbury stretches across three major watersheds: the Little Lehigh Creek, the Saucon Creek, and the Lehigh River. The Trout Creek, the major stream flowing through the township, is a tributary to the Little Lehigh Creek. The Little Lehigh Creek (including its tributary Trout Creek), and all the headwaters streams draining into the Little Lehigh, are designated High Quality Cold Water Fishery. The Black River (a tributary to Saucon Creek) and several other small headwaters tributaries to the Saucon Creek are designated Cold Water Fishery, as are the direct tributaries to the Lehigh River. The Lehigh River itself is designated Warm Water Fishery. Analysis by the Lehigh County Conservation District, as part of the Natural Resources Inventory of Salisbury Township, revealed nearly 22 tributaries which had been previously unnamed and unmapped, which are shown on the Hydrology Map.

Watershed	Acres
Little Lehigh	136
Saucon Creek	596
Trout Creek	2574
Lehigh River	5,208

While flooding can enrich the soil along undeveloped flood-prone areas, it can be disastrous along developed segments. Township regulations control the construction of buildings and other activities within the "100 Year Floodplain." The 100 Year Floodplain is mapped by the Federal Emergency Management Agency and is intended to show the extent of lands that would be flooded during the worst flood expected in an average 100 year period. However, recent experience has shown that severe storms have become more common that was previously predicted by FEMA.

"Riparian buffers" are important along creeks and rivers to filter out pollutants before they reach the waterways and to maintain high quality aquatic habitats and water quality. Vegetated buffers of trees and thick understory vegetation should be preserved and/or planted along creeks and the Lehigh River. This vegetation also reduces erosion and stabilizes streambanks. Buildings and paving should continue to be required to be setback sufficient distances from waterways. The first 25 feet from the bank of a waterway should not be disturbed at all except for activities to restore and replant the area. Within the next 50 to 100 feet, disturbance should be minimized.



The joint Federal/State NPDES program has been expanded to require that new land developments include extensive reviews, designs and features to protect water quality. These include Best Management Practices (BMPs) to promote groundwater recharge and to avoid erosion and sedimentation. In addition, the State Source Water Protection Program works to identify potential hazards to drinking water supplies, such as spills that could occur from facilities handling hazardous substances.


Rain Garden

The State Stormwater Protection Program is a voluntary, community-based effort to protect the raw water quality of sources (wells, springs, streams, reservoirs) used by public water systems. That program has identified areas that have the most impact upon larger public water supply wells and springs. Portions of western Salisbury were determined to have potential impacts upon the Emmaus water supply wells, a Lehigh County Authority well and the City of Allentown Little Lehigh water intake (Map 4.1).

The most notable local water supply that is directly impacted by Salisbury is the Little Lehigh Creek water intake for the Allentown regional water system, which is along Martin Luther King Blvd. Large portions of Western Salisbury drain into the Little Lehigh Creek upstream of this water intake. The Allentown water system in turn provides the water supply for large portions of Salisbury.

Lands in Salisbury also impact water supplies because of the springs (where groundwater emerges to the surface at a particular point) and seeps (which is where spring water breaks the surface of the ground in a larger widespread area) found all across the South Mountain range and lending water to the Trout and Little Lehigh creeks. The Natural Resource Inventory found that many local waterways suffered from excess silt, which results from uncontrolled runoff and soil erosion. The Natural Resource Inventory noted that without flows from springs, seeps, wetlands and headwaters streams, larger streams downslope would dry up and water quality would deteriorate.

The Conservation District's Natural Resource Inventory found that a minimum of 34 seep/spring areas exist throughout the Township, and identified a 79-acre area that should be studied in more detail. The known seeps and springs are shown on the Hydrology Map.

Example of field surveys and GIS analysis of unmapped hydrological areas. Information provided by Lehigh County Conservation District for the 2011 Natural Resources Inventory.

Wetland areas are prevalent throughout undeveloped portions of Salisbury Township, and are extremely important to filter out water pollutants. Federal and state regulations control alteration of wetlands, but the Township has an important role to work with landowners to make sure that wetlands are identified before any alteration occurs. These wetland delineations require a detailed on-site study by a qualified professional. The National Wetlands Inventory has identified 73 acres of known wetland areas, but much larger wetland areas actually exist. The Natural Resource Inventory provides guidance on this issue. The U.S. Natural Resources Conservation Service's list of hydric soils provides one indication of where wetlands may exist.

Vernal ponds are depressions in the ground that are covered by shallow water for variable periods of time, but which may be dry during other periods. They are often (but not always) classified as wetlands and are important for many species of wildlife.

The Little Lehigh Creek was nominated as a Critical Water Planning Area in 2009, from a study conducted by the Pennsylvania Department of Environmental Protection. A Critical Water Planning Area is defined as a "significant hydrologic unit where existing or future demands exceed or threaten to exceed the safe yield of available water resources." Currently the watershed has been identified as needing continued review and further evaluation.

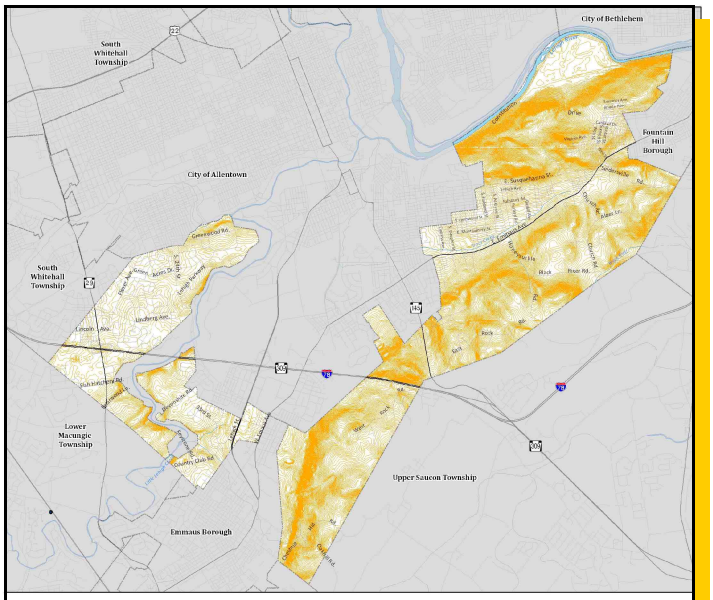
Steep Slopes

The topography of Salisbury helps to create a sense of place, with the highly visible scenic features of the South Mountain and Lehigh Mountain. The Lehigh Mountain and South Mountain provide scenic vistas, extraordinary outdoor recreation opportunities in the form of hiking, biking and wildlife viewing, and most importantly, protection of key sources of water from development.

The steep slopes also greatly limit the suitability of various lands for development. Steeper terrain is more prone to erosion and landslides from site work associated with development. It is also likely to cost more to develop for human use and as a result is often left untouched. Steep terrain left

undisturbed can be supportive of vegetated and woodland habitat. If thick vegetation is preserved on steep areas, it avoids increased speeds and amounts of stormwater runoff and promotes a higher quality of water for streams and drinking.

Lehigh County provides detailed computerized mapping of local topography and contours. The measure of a slope, the result of a ratio of its vertical rise to its horizontal run, is most usually represented as a percentage. For example, a property which rises 15 feet in elevation over the course of 100 feet of distance has a 15 percent slope. A slope of 15 to 25 percent is generally considered to be a moderately steep slope at is only suitable for very low intensity development, while a slope of 25 percent or greater is considered very steep and should remain undisturbed to the maximum extent feasible.



Five-foot contours help identify steep slopes located along South Mountain and Lehigh Mountain. Base information provided by Lehigh Valley Planning Commission.

A high percentage of Salisbury Township's undeveloped lands include extensive areas of steeply sloped lands. Most development on South Mountain has occurred on flatter plateau areas that are accessible from roads. The following are categories of sloped lands in Salisbury, as provided by the U.S. Natural Resource Conservation Service.

Slopes	Acres
25-60%	568
12-25%	257
8-15%	959
8-25%	3,635

The Pennsylvania Highlands

From Connecticut to Maryland, a stretch of forested mountains acts as the green backdrop to an ever growing megalopolis that stretches from Boston to New York to Philadelphia to Baltimore. Each city benefits from the scenic beauty and ecological uniqueness of this stretch of mountains, known broadly as the Highlands. In fact, so unique and so important is the stretch of mountains, the federal government passed the Highlands Conservation Act to support land conservation in this area. The Act will provide matching conservation funding to forever guarantee the mountain range as a source of clean drinking water for New York, a tourism site and place of wonder for the entire population, and a haven for the species of plants and animals found only along the Highlands.

The Pennsylvania Highlands runs from the Delaware River, through the Lehigh Valley, and then southwest to the border of Maryland. Through the Lehigh Valley, mountain tops and rolling hills form the southern border of Lehigh and Northampton counties. The Highlands program seeks to not only preserve sensitive lands, but also to promote tourism and outdoor recreation. The Highlands program seeks to prevent inappropriate development for the long term benefit of water quality.

(http://www.highlandscoalition.org/thehighlands.htm)

The Federal Highlands Program offers some funding to help preserve key natural areas.

Woodlands

Woodlands provide habitat for wildlife, shade and cool streams, provide oxygen and cleanse and cool the air, stabilize soil and prevent erosion, offer opportunities for enjoying a diverse and scenic landscape, and balance economic and societal needs with firewood or timber harvesting. Some areas have more open space between trees, while others have denser tree counts and less opportunity for sunlight to reach ground level vegetation. Such a distinction can have profound implications for diversity of habitat and protection of water quality.

The US Forest Service and the Pennsylvania Bureau of Forestry provide advice and reference material to property owners and municipalities to help manage timbering to promote long-term sustainable woodlands. State law requires that every municipality allow forestry in every zoning district by right. Reasonable regulations are allowed on forestry, which have been clarified by court decisions. For example, it is reasonable to require a professional forestry management plan, to limit the size of clearcutting, and to limit forestry near waterways and on very steep slopes.

Salisbury is approximately 48 percent forested. In areas of older woodlands, the majority of trees range from 80 to 120 years of age. These trees are considered second and third-growth forest, since the time much of eastern Pennsylvania was de-forested a hundred years ago. What exists today of Salisbury's forestland should be carefully managed. Forest areas with healthy interior habitat, including understory shrubs and herbaceous plants, should be kept free of invasive species and unmanaged forestry practices. Invasive species of plants are not native to the area and can spread rapidly and choke out native trees, grasses and shrubs. Invasive species are most commonly found near disturbed edges of forests.

Areas affected by diseases (such as the Chestnut blight and Dutch elm disease) or rampant deer browse should be considered for restoration. Deer in many areas browse the understory so heavily that the natural tree regeneration is difficult if not impossible.

Unique Natural Areas

In 1999, the Lehigh Valley Planning Commission, in partnership with the Nature Conservancy, prepared the Natural Areas Inventory of Lehigh and Northampton Counties. In partnership with the Western Pennsylvania Conservancy, an update was completed in 2005 to provide greater detail of the existing flora and fauna throughout the Valley. Within Salisbury Township, the Inventory found four sites in need of special protection, with a fifth site in Allentown near the Salisbury border. A sixth site is near the Upper Saucon/Salisbury border. These areas are shown on the Woodlands and Unique Natural Areas Map (Map 4.4).

Robert Rodale Reserve— Nearly 300 acres of woodlands on South Mountain. The Robert Rodale Reserve is home to unique plant and amphibian species found around seeps, springs and vernal pools protected by the forest canopy. Species of rare or special concern status were identified. These lands generally stretch south of I-78 and east of Emmaus.

Lehigh Mountain— Nearly 500 acres of upland and lowland forest and wetland habitat were identified that are home to similar species of rare and special concern. These lands support a large number of nesting and migratory bird species, as well as provide good habitats for many reptile and amphibian species.

Lehigh Mountain Seeps— A natural community of seeps that includes documented PA. rare plant species that is on a central part of the Lehigh Mountain.

Gauff Hill— The stream systems on this site support PA. rare plant species. This area is located on South Mountain due south of the Truman School.

Jasper Cliff— Located adjacent to the City's South Mountain Reservoir and southwest of Waldheim Park, this site in Allentown is one of the largest and only formations of coarse jasper existing in Pennsylvania.

Bauer Rock — This site is located near the Salisbury/Upper Saucon border. It is a pinnacle of rock rising 40 feet above the ridgeline. It is part of Lehigh County's Big Rock Park.

These sites are all within the Pennsylvania Highlands region and are part of the South Mountain range.

The Lehigh Mountain Master Plan provides recommendations for the Lehigh Mountain, most of which is in public ownership. The South Mountain Conservation, Trails and Greenways Plan addresses areas that are in need of protection and recommends careful natural resource management.

Environmental Conservation Goals

1. To preserve and protect sensitive natural features within the Township.

2. To protect and improve the water quality of groundwater, springs, seeps, wetlands, the Little Lehigh Creek, Trout Creek, the Lehigh River and other waterways.

3. To manage development in a way that respects the natural features of the land.

4. Encourage the continuation of agricultural activities.

Environmental Conservation Recommendations

1. **Work with the Wildlands Conservancy, the School District, property-owners and other groups to seek to permanently preserve additional environmentally sensitive lands.**

   Federal Highlands, State DCNR and County Open Space grants should be sought to preserve key tracts of land. This may include private ownership or homeowner association ownership with conservation easements, in which the landowner commits to not develop the land.

An emphasis should be placed upon preserving lands with important water resources, including seeps, springs, vernal pools, watercourse and wetlands. Also, lands should be preserved that are needed to provide continuous habitat and wildlife migration corridors between existing preserved lands.

2. **Bolster Zoning and Subdivision and Land Development Ordinance language to strengthen environmental protections.**

Proper buffer widths should be required from wetlands. New buffer and setback distances should be established from seeps, springs and ephemeral streams in accordance with the findings of the Salisbury Township Natural Resources Inventory. More detailed analysis of seeps, springs and other water features should be required on individual sites when they are proposed for development. The Township's current setbacks from creeks and the Lehigh River should be strengthened, and a greater emphasis placed upon preservation of trees and thick understory vegetation and/or new plantings along waterways.

Salisbury Township for many years has had strict zoning regulations in place regarding development on steeply sloped lands. These provisions are critical and should be continued. Disturbance of steeply sloped lands can result in soil erosion, excessive speeds and amounts of stormwater runoff, and driveways and roads that are so steep that they are hazardous during winter driving conditions.

3. **Update the Township's zoning regulations concerning forestry and tree clearing as part of development.**

Salisbury Township has extensive regulations in place on forestry and other tree cutting. These provisions should be re-examined to make sure they are as workable and effective as is practical and that they are consistent with the latest court decisions. It is desirable to maintain large contiguous areas of forests that serve as important habitats and travel corridors for animals.

Owners of woodlands who intend to do timbering should be encouraged to voluntarily work with the State Bureau of Forestry to develop a Forest Stewardship Plan to promote sustainable forest practices over the long-term. Too often, the high value trees are all removed, and less valuable and less diverse species are allowed to take over.

Great care is also needed during construction to make sure that trees that are intended to be preserved are actually protected from damage. This includes installing temporary fencing under the dripline of trees to avoid damage to trunks and compaction of the soil around the root systems. Parking and storage of materials should not be allowed within this area. Pavement around trees should be minimized to allow for water and air exchange in the soil. Moreover, changes in the grade level around trees should be held to an absolute minimum. Even a minor rise in the ground level over the root system of a tree can kill it.

4. **Establish incentives in the Zoning Ordinance that promote use of "Green" methods of development.**

   The intent is to encourage certified green buildings that minimize energy consumption, promote recycling, promote bicycling and walking, ensure healthy conditions for occupants, and minimize environmental impacts. One less parking space should be required if a development provides bike racks. New development should also be designed so that it is convenient and safe for public transit riders to walk from transit stops to building entrances.

5. **Update the Zoning Ordinance to promote use of solar and wind energy within appropriate areas**.

Photo provided by treehugger.com

The types of wind turbines and solar panels are constantly evolving, with increased efficiencies and reduced costs. The Township should make sure that its Zoning Ordinance does not include any unintended obstacles to appropriate forms of wind and solar energy. Electric vehicle recharging stations should also be addressed.

6. **Consider providing flexibility in the Zoning Ordinance to allow a wider range of accessory uses on agricultural parcels.**

   This flexibility should be possible on parcels of more than 10 acres that include agricultural uses. This approach is intended to help landowners generate supplemental income that will help keep their land in agriculture.

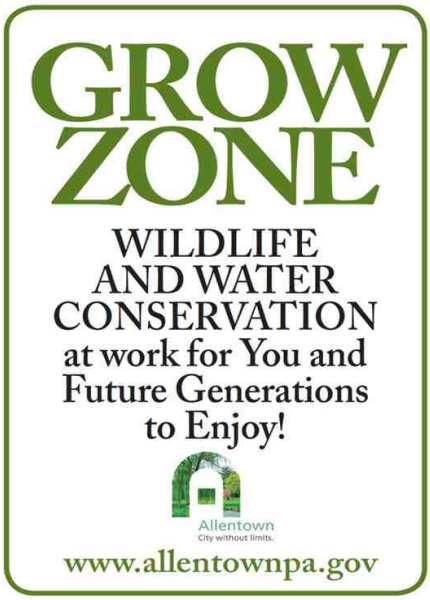
7. **Encourage property-owners to plant trees and other thick vegetation along creeks, and to cooperatively manage important natural features.**

   Funding is periodically available to plant "riparian buffers" along creeks and to stabilize streambanks. Property-owners should be asked to participate in these programs and/or to voluntarily plant new trees and shrubs. Mowing along creeks banks should be minimized. These vegetated buffers are important to improve water quality, reduce erosion, and improve wildlife and aquatic habitats.

PPL and other private landowners should be encouraged to remove invasive species. Meadows of native species are desirable under power lines to provide better bird and wildlife habitats.

The Natural Resource Inventory found that the quality of many vernal pools are deteriorating because they are filling with silt. The importance of vernal pools should be explained to property-owners and they should be encouraged to remove silt with shovels to improve their ecological functions.

The Natural Resource Inventory also highlights locations where naturalized areas can be incorporated into various Township parks and public school sites. The goal is to provide better wildlife habitats, reduce mowing near creeks and provide areas for environmental education.



Successful programs, such as Allentown's Grow Zone, educate landowners and recreational users about the importance in establishing buffers along streams.

Private landowners should be encouraged to allow access to their lands for additional Natural Resource Inventory work, even if the land is not proposed for development. The intent is to identify additional areas of seeps, springs, watercourses, vernal pools and similar natural features.

When development is proposed near a wetland or a groundwater seep, the Township should seek that the developer screen the area for bog turtles, and seek to minimize alterations where and when bog turtles are found.

8. **Explore asking voters in a referenda to approve a dedicated tax or an open space bond for the permanent protection of open space within the Township.**

State law allows voters of a Township to enact an increase in real estate mileage or the earned income tax, which can then only be used to buy and preserve open lands. A municipality can also approve a bond that is used to preserve open lands at the present time while the land is still available, and then it is paid off over time from proceeds of this special tax or regular funding sources.