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## NATURAL RESOURCES PLAN

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This plan begins with an evaluation of important natural resources in the Lehigh Valley and what should be done to protect them. Before a plan for development is proposed it is first necessary to determine what needs to be preserved. Voters have spoken very clearly on the subject in public opinion surveys conducted over the past 30 years. They want to preserve important natural resources.

Map 2 shows surface terrain features and streams in the 730 square mile Lehigh Valley area. The Lehigh River flows through Lehigh Gap at the northern boundary of Lehigh and Northampton counties southbound to Allentown where it makes an abrupt turn eastward. From Allentown the Lehigh flows eastward to its confluence with the Delaware River at Easton. Major tributary streams flowing into the Lehigh River are Jordan Creek, Little Lehigh Creek, Hokendauqua Creek, Monocacy Creek and Saucon Creek. Bushkill Creek and Martins Creek flow directly into the Delaware.

Blue Mountain, otherwise known as Kittatiny Ridge, extends southwest to the Maryland border. The mountain forms the northern boundary of Lehigh and Northampton counties. Lehigh Mountain and South Mountain are two landmark ridges on the southern border of Allentown. They are parts of a section of mountains called the Reading Prong which extend south of Emmaus, Macungie and Alburdis into Berks County. The eastward extension of these mountains extend through southern Northampton County and then northeast to Massachusetts.

Between Blue Mountain and South Mountain is a seven mile wide limestone valley where most people in the Lehigh Valley live and work. To the north of this valley is a low shale plateau with undulating hills, stream headwaters and a rural environment. The variety of topographic features in the Lehigh Valley creates a landscape with many natural landmarks and scenic beauty.

### RIVERS AND STREAMS

The rivers and streams of the Lehigh Valley have played an important role in its history and development. The area's three cities and some of its major

boroughs grew along the banks of the Lehigh or Delaware rivers. The Lehigh and Delaware Navigation Canals owed their existence to these rivers. Many streams served as the sites for early mills that were dependent on a supply of running water. Most major industries also were located along the banks of rivers or streams.

Visually, rivers and streams provide some of the most scenic settings in the region. The top example of this is the Delaware River Scenic Drive that follows Route 611. The multitude of recreation activities associated with waterways is high on the list of important regional assets. The Lehigh and Delaware are large enough to provide boating opportunities, including some fine canoeing and good fishing. The Forks of the Delaware Shad Fishing Tournament and Festival, held in late April each year in Easton, is a locally important event that depends on the yearly shad migration up the Delaware River. Some of the best trout fishing in eastern Pennsylvania can be found in the Little Lehigh Creek, Monocacy Creek and Bushkill Creek.

Many of the Lehigh Valley's best walking and biking trails are located near rivers and streams. The D & L Trail, a 150-mile path for hikers and bikers, extends from Bristol Borough in lower Bucks County to Wilkes-Barre. Through much of our region the D & L Trail follows the towpaths of the Delaware and Lehigh Navigation Canals. From the Village of Cementon north it will use the right-of-way of the abandoned railroad that parallels the western side of the Lehigh River.

Municipal parkways have been developed along rivers and streams. The most notable is the Little Lehigh Parkway in Allentown. This splendid, four-mile long greenway extends from the western edge of the city nearly to the Lehigh River. It contains a variety of trails, a fish hatchery and roadway. Other noteworthy parks include Trexler-Lehigh County Game Preserve, Jordan Creek Parkway, Cedar Creek Parkway East and West, Monocacy Nature Center, Saucon Park, Jacobsburg Environmental Education Center, Hugh Moore Historical Park, and Delaware Canal State Park. A number of municipalities have developed parks adjacent to the Delaware and Lehigh Navigation Canals.

Rivers and streams either serve, or have the potential to serve, as linkages between recreation areas. The most notable linkage is the one at the Lehigh Water Gap where the Appalachian Trail crosses the D & L Trail. Other linkages have been created by rail-trail projects in places such as Whitehall Township, Bethlehem Township and Palmer Township.

Critical wildlife habitats are found along waterways in the Lehigh Valley. Many species of birds, aquatic animals and mammals depend on river and stream corridors for travel, cover and nesting places. The report *A Natural Areas Inventory of Lehigh and Northampton Counties, Pennsylvania* lists the Delaware River as one of two Exceptional Natural Features in the region. The other is the Blue Mountain. According to the natural areas inventory the Delaware River and its adjacent forested watersheds comprise one of the major corridors for the movement of biota in eastern Pennsylvania.

Finally, high quality rivers and streams are of critical importance for the preservation of water supplies in the Lehigh Valley. Much of the water we use comes directly or indirectly from local waterways.

### **STREAM QUALITY DESIGNATIONS**

The streams of the state have been given water quality ratings by the Pennsylvania Department of Environmental Protection (DEP). These DEP stream quality designations are listed below.

- EV (Exceptional Value Waters) – waters that constitute an outstanding national, state, regional or local resource, such as waters of national, state or county parks or forests, or waters that are used as a source of unfiltered potable water supply, or waters that have been characterized by the Fish Commission as “Wilderness Trout Streams,” and other waters of substantial recreational or ecological significance.
- HQ (High Quality Waters) – a stream or watershed with exceptional quality waters and environmental features that require special protection.
- CWF (Cold Water Fishes) – maintenance and/or propagation of fish species and flora and fauna that are native to cold water habitats.
- TSF (Trout Stocking) – maintenance of stocked trout from February 15 to July 31 and main-

tenance and propagation of fish species and flora and fauna which are native to warm water habitats.

- MF (Migratory Fishes) – passage, maintenance and propagation of fishes which ascend to flowing waters to complete their life cycle.
- WWF (Warm Water Fishes) – maintenance and propagation of fish species and flora and fauna that are native to warm water habitats.

Map 3 shows the stream quality designations and the number of miles in each category in the Lehigh Valley. Exceptional Value streams include parts of the Maiden Creek headwaters in Lynn Township, a small portion of the Bushkill Creek in Bushkill Township, a section of Slateford Creek in Upper Mt. Bethel Township and a tributary of Cooks Creek in Lower Saucon Township. A number of streams qualify as High Quality Waters-Cold Water Fishes. These include important local streams such as the Little Lehigh, Cedar, Monocacy and Bushkill. Several tributaries to Jordan Creek are rated as High Quality Waters-Cold Water Fishes, Migratory Fishes.







### **RIPARIAN BUFFERS**

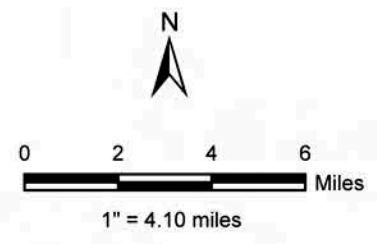
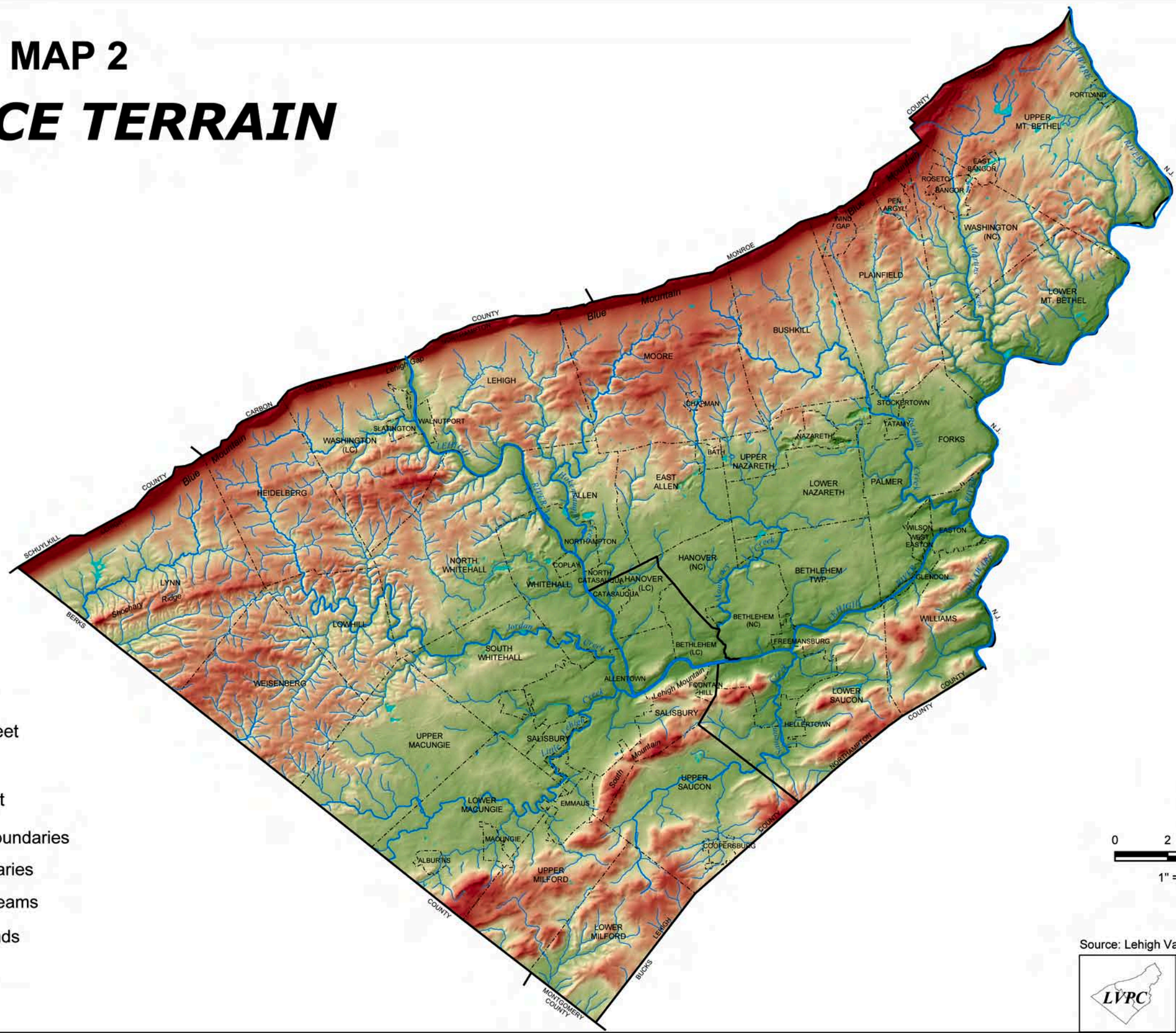
Riparian buffers are recognized as a vital feature for protecting and reclaiming waterways. A riparian buffer is an area of vegetation that is maintained along the shore of a water body to protect stream water quality and stabilize stream channels and banks. The riparian buffer reduces the amount of runoff pollutants entering the stream. It also controls erosion, provides leaf-litter to the stream and habitat for many desirable species of amphibians, reptiles, mammals and birds. If wide enough, riparian buffers function as corridors for migrating large and small mammals.

The riparian vegetation affects the stream channel shape and structure, as well as the stream’s canopy cover, shading, nutrient inputs and amount of large woody debris entering the stream. Riparian canopy cover (branches and tree crowns overhanging a stream) is important not only for its role in moderating stream temperatures through shading, but also as an indicator of conditions that control bank stability, and as an energy source from leaves that will fall into the water. Aquatic macroinvertebrate organisms such as stoneflies eat, shred and break the leaves into coarse and fine particulate organic material that becomes food for other stream organisms.

# MAP 2

## ***SURFACE TERRAIN***

- Elevation Value**
-  High : 1689 Feet
  -  Low : 133 Feet
  -  Municipality Boundaries
  -  County Boundaries
  -  Rivers and Streams
  -  Lakes and Ponds



Source: Lehigh Valley Planning Commission

 LEHIGH VALLEY PLANNING COMMISSION  
 961 Marcon Boulevard, Suite 310  
 Allentown, PA 18109-9397  
 (610) 264-4544



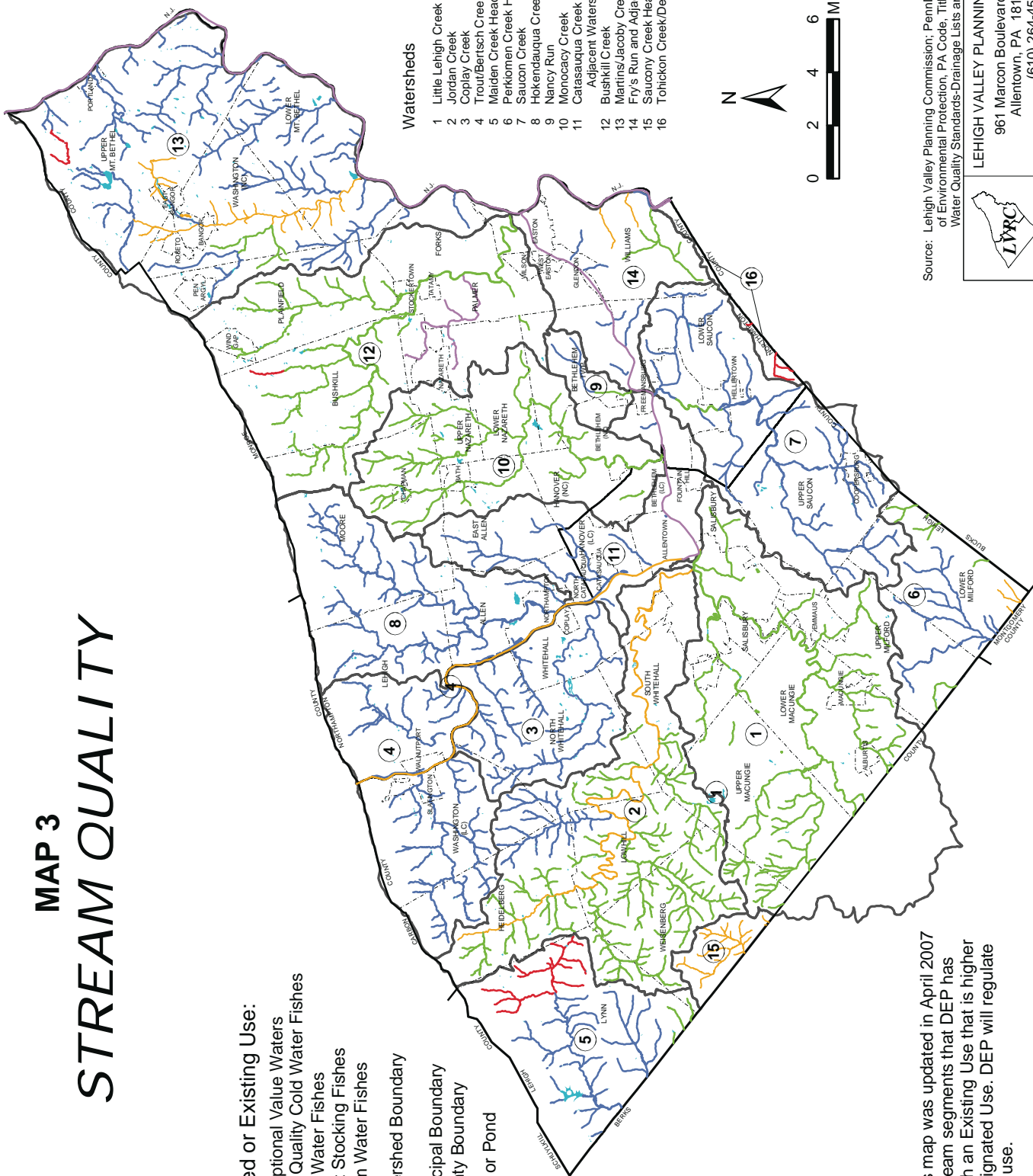
# MAP 3 STREAM QUALITY

**\*Designated or Existing Use:**

- Exceptional Value Waters
- High Quality Cold Water Fishes
- Cold Water Fishes
- Trout Stocking Fishes
- Warm Water Fishes
- Watershed Boundary
- Municipal Boundary
- County Boundary
- Lake or Pond

**Watersheds**

- 1 Little Lehigh Creek
- 2 Jordan Creek
- 3 Coplay Creek
- 4 Trout/Bertsch Creeks
- 5 Maiden Creek Headwaters
- 6 Perkiomen Creek Headwaters
- 7 Saucon Creek
- 8 Hokendauqua Creek
- 9 Nancy Run
- 10 Monocacy Creek
- 11 Catawauqua Creek and Adjacent Watersheds
- 12 Bushkill Creek
- 13 Martins/Jacoby Creeks
- 14 Fry's Run and Adjacent Watersheds
- 15 Saucony Creek Headwaters
- 16 Tohickon Creek/Delaware River (North)



\*NOTE: This map was updated in April 2007 to include stream segments that DEP has classified with an Existing Use that is higher than the Designated Use. DEP will regulate to the higher use.

Source: Lehigh Valley Planning Commission; PennDOT, 1997; PA Dept. of Environmental Protection, PA Code, Title 25, Chapter 93, Water Quality Standards-Drainage Lists and Existing Use Lists



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