Environmental Resource Inventory

Update – 2011

for

Town of Morristown

County of Morris

Compiled by

The Land Conservancy of New Jersey
An accredited land trust

with

Town of Morristown Environmental Commission

Adopted October 27, 2011

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Produced by:

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Adopted October 27, 2011

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Michael Pooler, Chairman Planning Board

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Top: Footes Pond *Center: Ford Avenue Park* *Bottom: Speedwell Lake*

EXECUTIVE SUMMARY

Morristown is the historic center of Morris County and the locus for Revolutionary War activities. During the cold, snowy winters, General George Washington used Ford Mansion as his headquarters and constructed the lookout post Fort Nonsense. Speedwell Lake, the largest lake in Morristown, dates back to the 19th century when Stephen Vail opened the Speedwell Iron Works next to the Lake. Today, a crumbling wall is all that remains of the Iron Works. Across the street, Historic Speedwell, a National Historic Landmark, preserves the estate of Stephen Vail, the creator of the Iron Works. Patriots' Path, the Morris County trail, winds through the Town and recreational amenities are located throughout the Town's neighborhoods and business areas.

The Environmental Commission recognizes the Town's historic and cultural roots and envisions this 2011 Update to the 2003 *Environmental Resource Inventory (ERI)* as an opportunity to identify and document the Town's unique natural resources. Updated environmental data has been incorporated from the New Jersey Department of Environmental Protection, the *Highlands Regional Master Plan*, and the federal floodplain databanks. The Town is home to a myriad of water resources including the Whippany River, Great Brook, Pocahontas Lake, Speedwell Lake, Burnham Pond and Footes Pond. Residents drinking water supplies are supported by the groundwater aquifer and their activities and the activities of those communities which surround Morristown have a direct impact on the quality and quantity of this drinking water.

Morristown is one of the New Jersey communities to be certified as a "Sustainable Community" through the Sustainable Jersey program. Fortunate to have an Office of Sustainability housed in their municipal building, the Environmental Commission seeks to use this updated *Environmental Resource Inventory* to help chart the future direction and balance to the Town's growth and development. Street trees are being inventoried by the Town, and a summary of this inventory is included in this *ERI Update*. This inventory allows for an accurate accounting of the location and type of trees that form the landscape of the community.

A thriving Farmer's Market, Visitor's Center and downtown community frame the center of Morristown. Grow It Green Morristown, a local initiative to support gardening and agricultural commodities for residents, is a hub of activity with two locations. The updated soils analysis incorporated within this Plan will support new and varied locations for additional community gardens in the Town. Morristown is an economically diverse municipality made up of approximately 18,000 residents within a less than 3 mile footprint.

The quality of life for its residents is the driving force behind the *ERI Update*. Documentation of the natural resource base: the geology, hydrology, ecology, and wildlife will help the Town understand the scope and condition of the resources upon which it relies. This document, in combination with the updated *Open Space and Recreation Plan*, and recently completed *Community Forestry Management Plan* is a guide for the Town's future growth and preservation.

A BRIEF HISTORY OF MORRISTOWN

Morristown's first inhabitants were the Lenni Lenape Native Americans, who lived in the area for approximately 2,800 years prior to European exploration. The first Europeans to arrive were Swedish and Dutch settlers during the 17th century who began extensive fur trading operations between themselves and the Lenni Lenape. The first permanent settlement in Morristown occurred in 1715, and in 1739 Morristown became the seat of the newly created Morris County. By the time George Washington and the Continental Army arrived in 1777, Morristown had a population of 250 individuals, most of whom worked the numerous farms and mills in the area. (*2003 Environmental Resource Inventory*)

In 1815, what can be considered Morristown's first act of open space preservation occurred when the trustees of the Presbyterian Church passed a resolution stating that the Green was to remain a "Common" forever. During this time, development was quickly spreading in the area. The Morris Canal was completed in 1832, and the train arrived in Morristown from New York City in 1838. The Whippany River was dammed to provide power for the new forges and tanneries being built on its shore and the community moved away from its reliance on farming and towards a more commercial economy. On April 6, 1864, the Town of Morristown became incorporated.

One hundred years later, in 1968, Interstate 287 was built through the center of Morristown. In 1995, the State Planning Commission designated the town as a regional center and thus a focal point for the economic, social, and cultural activities of the region. According to the latest Census data, Morristown's population has grown from 16,189 in 1990 to an estimated 18,906 in 2009, an increase of almost 17%. The growth and development of Morristown was spurred on in 2000, when it was designated as one of the first five "transit villages" in New Jersey, encouraging transit-oriented development designed to maximize access to public transportation.

The Morristown Environmental Commission was established in 1999 for the protection, development or use of natural resources, including water resources, located within the territorial limits of the Town of Morristown. The Commission has power to conduct research into the use and possible use of the open land areas of the Town and may coordinate the activities of unofficial bodies organized for similar purposes and may advertise, prepare, print and distribute books, maps, charts, plans and pamphlets which in its judgment it deems necessary for its purposes. It keeps an index of all open areas publicly or privately owned, including open marshland, swamps, and other wetlands, in order to obtain information on the proper use of such areas and may from time to time recommend to the Planning Board plans and programs for inclusion in the *Master Plan* and the development and use of such areas. (*Town of Morristown website*) The Environmental Commission compiled the first *Environmental Resource Inventory* in 2003.

LAND USE AND IMPERVIOUS SURFACE

Morristown is a developed community with much of its land, approximately 41%, used for residential purposes, including apartments. Development in Morristown includes commercial land use (11.9%), church and charitable land use (5.5%) and public school property (2.25%). Public property, which is property owned by federal, state, county or local governments, or their agencies, and devoted to public use represents 14.25% of the land in Morristown. Non-taxable land totals 503 acres in Morristown, or 26% of the total land base. **Table 1** presents a summary of land use in Morristown.

Table 1: Land Use in the Town of Morristown, NJ

Summary of Land Use in Morristown		
Land Use	**Acres**	**Percent of Total Municipal Area**
Residential	697.76	36.27%
Public Property	274.16	14.25%
Commercial	229.49	11.93%
Church & Charitable Property	105.58	5.49%
Apartment	93.27	4.85%
Vacant Land	58.23	3.03%
Public School Property	43.24	2.25%
Other Exempt	37.57	1.95%
Cemeteries & Graveyards	27.95	1.45%
Other School Property	14.58	0.76%
Industrial	12.09	0.63%
Railroad Class 1	4.76	0.25%
Source: County of Morris, *2011 Town of Morristown Open Space & Recreation Plan Update*		

Developed areas contribute to the amount of impervious surface in Morristown. According to the Highlands Water Protection and Planning Act Rules (*N.J.A.C. 7:38*), an "*…impervious surface is any structure, surface, or improvement that reduces or prevents absorption of stormwater into land, and includes porous paving, paver blocks, gravel, crushed stone, desk, patios, elevated structures, and other similar structures, surfaces, or*

improvements. Impervious surfaces impede the infiltration of rainfall into the soil and, by doing so; increase the amount of stormwater runoff from the land."

The adverse impact of increased stormwater runoff includes:

- Increased stream bank erosion, channel enlargement, and sediment production
- Lower stream base flows resulting in biological impairment and poor aquatic community integrity
- Elevated stream temperatures due to runoff from heated pavement and rooftops
- The introduction of a variety of pollutants into the receiving waterbody, including petroleum products, metals, nutrients, pesticides, and herbicides.

Figure 1, **Figure 2**, and **Figure 3** present impervious surface coverage in Morristown in 1995/1997, 2002, and 2007, respectively. These were the years that The New Jersey Department of Environmental Protection (NJDEP) produced updates to their land use/land cover (LU/LC) mapping, which included estimating impervious surface for each land use polygon in increments of 5%. Impervious surface coverage was calculated for individual LU/LC polygons through visual estimation. The figures show a concentration of impervious surface within the center of town, where the urban environment consists of high concentrations of pavement and rooftops. **Table 2** presents a summary of the change in impervious surface between the 1995/1997 and 2007 mapping updates. While the impervious surface change between 2002 and 2007 was negligible, significant changes occurred between 1995/1997 and 2002. According to the data, Morristown saw a reduction in impervious surface between these two datasets. Though a reduction in impervious surface is certainly possible, it is rather unlikely that any substantial amount of paved surfaces had been removed in Morristown during this time. Rather, the apparent reduction is more likely due to significant improvements and quality of color-infrared (CIR) imagery.

Table 2: Change in Impervious Surface Coverage from 1995/1997-2007

Impervious Surface Coverage in Morristown

Impervious Surface Coverage (%)	1995/1997 Acres	2002 Acres	1995/1997 - 2002 change (Acres)	2007 Acres	2002 - 2007 change (Acres)
0-15	492	528	36	525	-2
20-35	711	698	-13	695	-3
40-55	99	192	92	191	1
60-75	162	99	-64	106	8
80-100	459	407	-51	406	-2

Source: NJDEP LU/LC data, 1995/1997, 2002, 2007

Figure 1: Percent Impervious Surface Coverage in 1995/1997 for the Town of Morristown, NJ

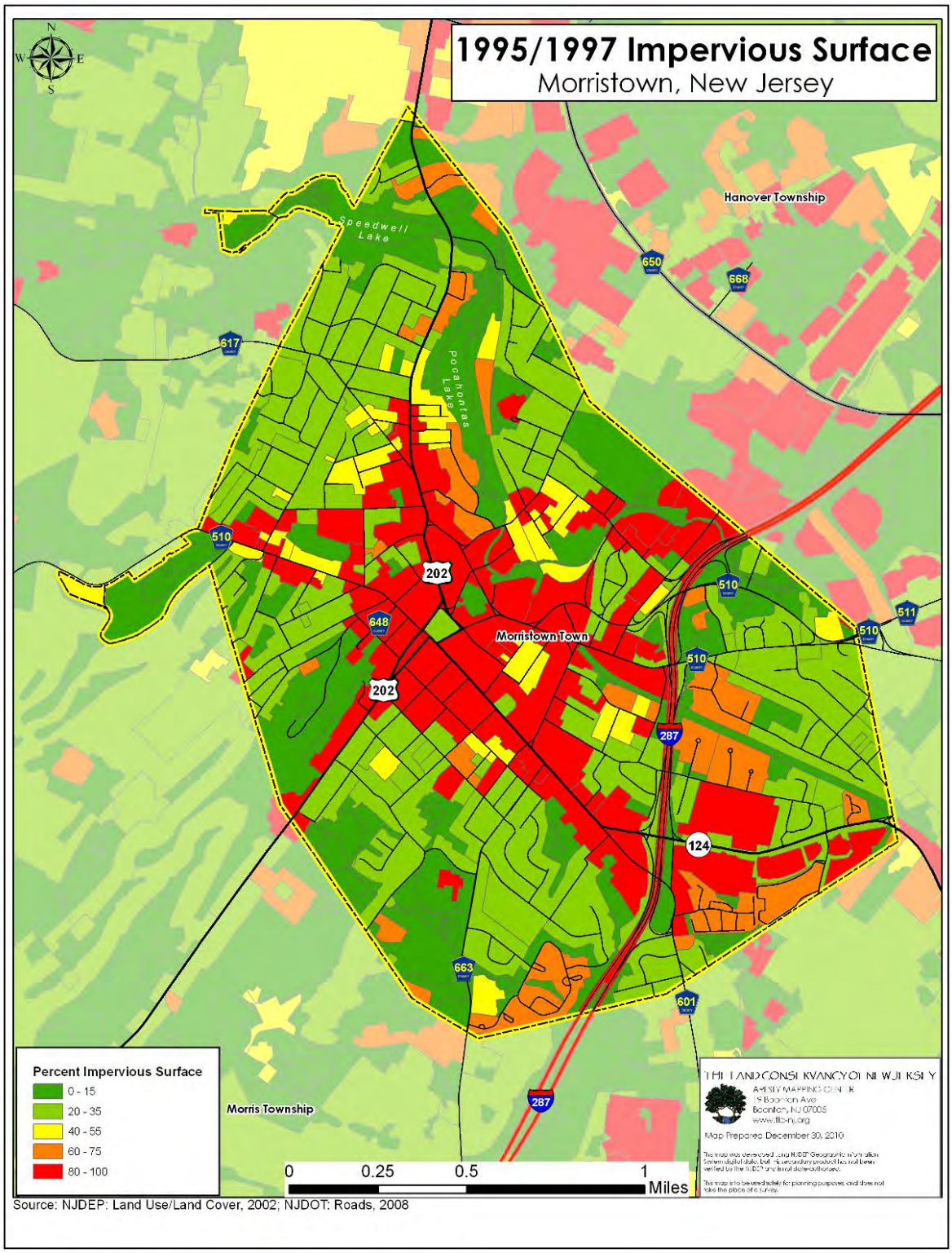


Figure 2: Percent Impervious Surface Coverage in 2002 for the Town of Morristown, NJ

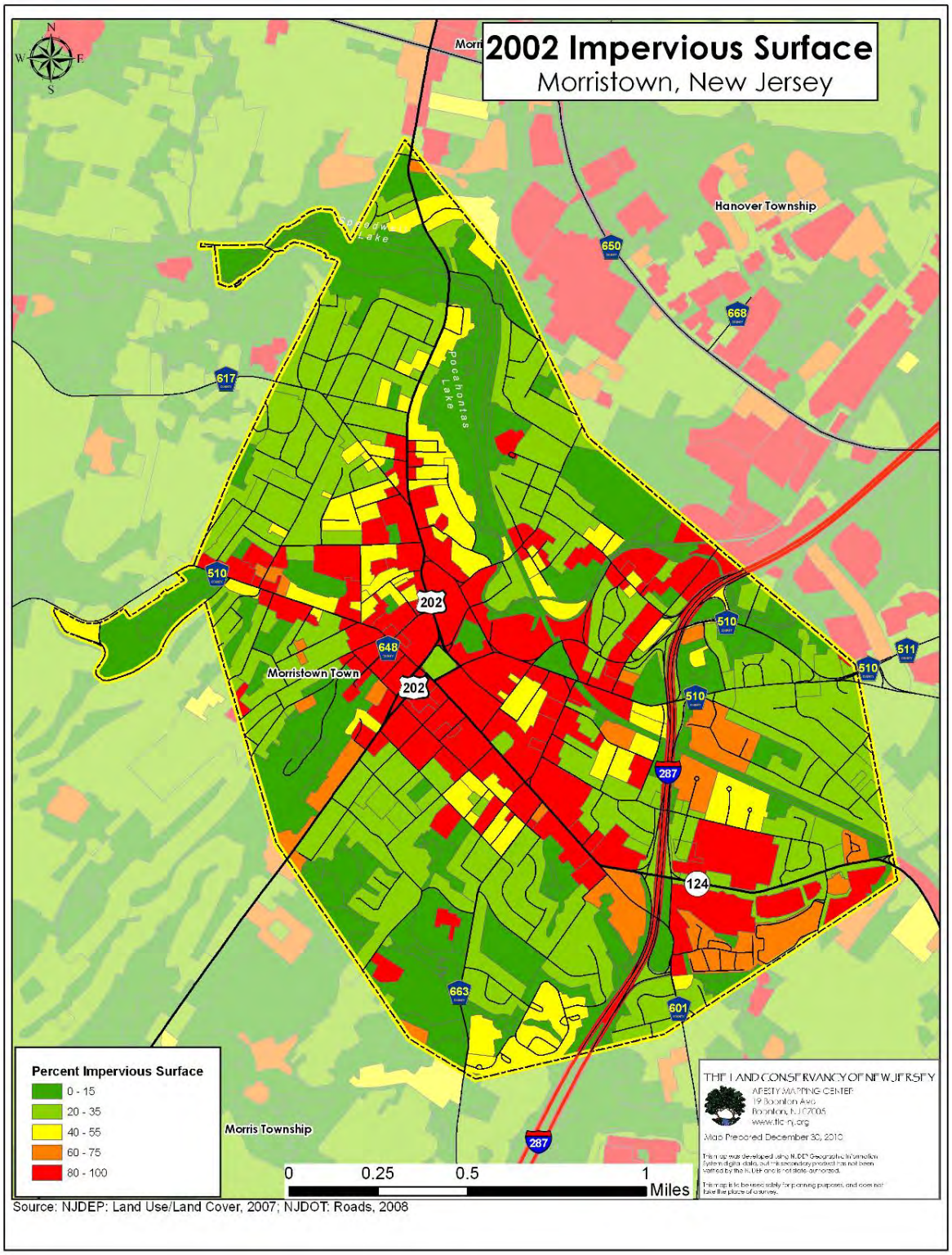
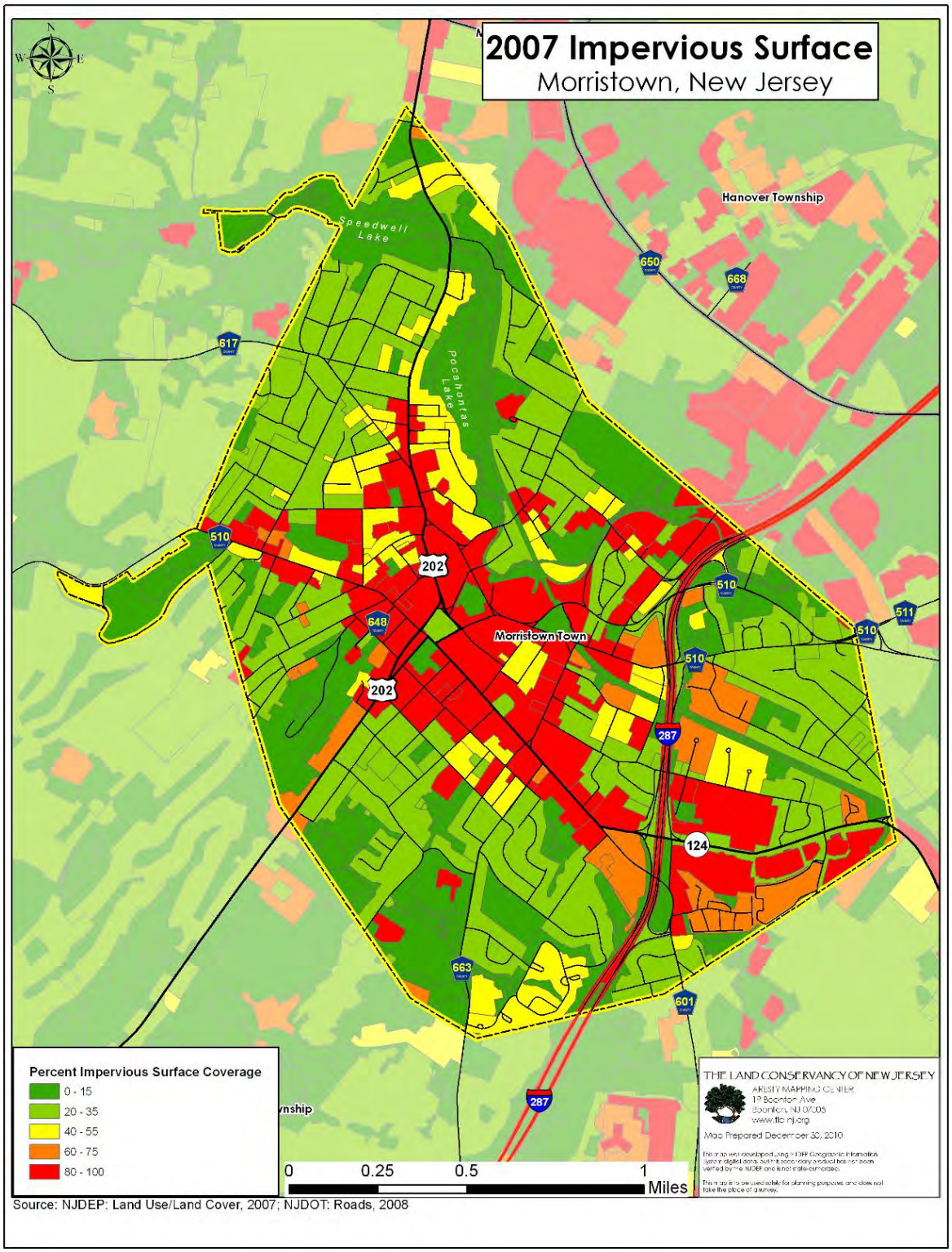


Figure 3: Percent Impervious Surface Coverage in 2007 for the Town of Morristown, NJ



GEOLOGY

Physiographic Regions

New Jersey's landscape is divided into four distinctive regions, each characterized by unique geologic processes and landforms, known as physiographic provinces. Physiographic provinces are a useful way of classifying landscapes based on terrain texture, rock type, and geologic structure and history. These attributes play an important role in determining the natural resources of an area. In New Jersey, beginning in the northwest and proceeding to the southeast, these provinces are identified as the Valley and Ridge, Highlands, Piedmont, and Coastal Plain Provinces. Morristown is located on the cusp of the Highlands and Piedmont Provinces. The Ramapo Fault delineates the boundary between these two provinces in Morristown. **Figure 4** depicts the location of Morristown in relation to these Provinces.

Piedmont

The Piedmont Province is a 1,600 square mile area that makes up approximately one-fifth of New Jersey. It is chiefly characterized as a low rolling plain divided by a series of higher ridges. The Piedmont is mainly comprised of slightly folded and faulted sedimentary rocks of Jurassic and Triassic age (240 to 150 million years old) and igneous rocks of Jurassic age.

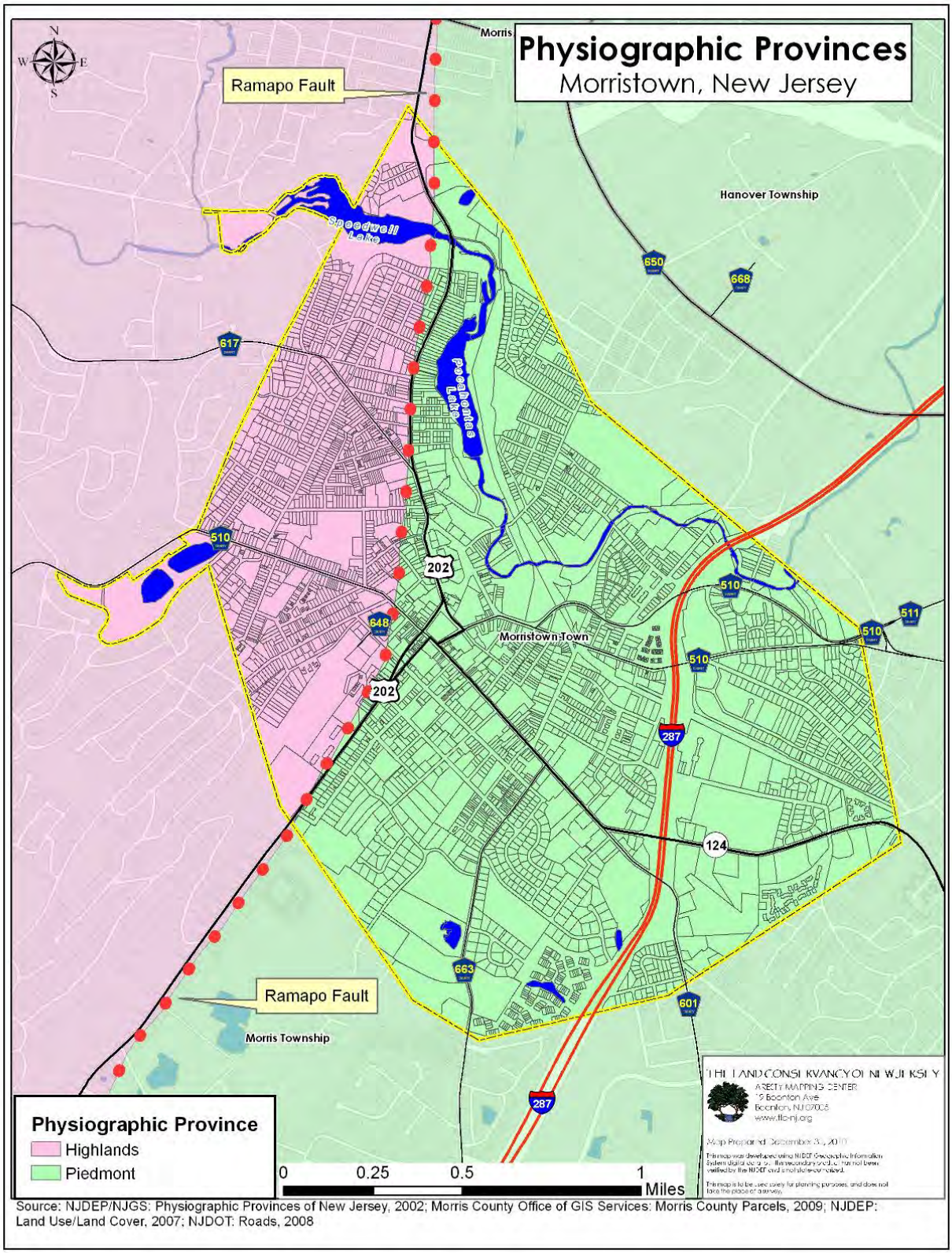
Highlands

The Highlands Province occupies an area of approximately 980 square miles and comprises approximately one-eighth of the state. It is generally characterized as a mountainous belt ranging between 20 to 25 miles wide. The rugged topography of the Highlands consists of a series of discontinuous rounded ridges separated by deep narrow valleys. The Highlands is mainly composed of highly metamorphosed igneous and sedimentary rocks from the Middle Proterozoic age (1.2 billion to about 900 million years old). These rocks are relatively resistant to erosion and result in the steep slopes and mountains common in the Highlands. Also found in the Highlands are small areas of Late Proterozoic age metasedimentary rocks and diabase dikes (*NJGS Information Circular, Physiographic Provinces of New Jersey*). **Table 3** presents a summary of the Physiographic Provinces in Morristown.

Table 3: The Physiographic Provinces in the Town of Morristown, NJ

Physiographic Provinces in Morristown		
Physiographic Province	**Total Acres**	**Percent of Total Municipal Area**
Highlands	494	26%
Piedmont	1,429	74%
Source: NJDEP, NJGS		

Figure 4: Physiographic Provinces in the Town of Morristown, NJ



Bedrock and Surficial Geology

The geology of Morristown can be classified into two layers: bedrock geology, which is the consolidated, underlying rock that extends deep into the earth's crust, and surficial geology, which is the unconsolidated sedimentary materials overlaying bedrock formations. The properties of these layers "*determine the physical extent of aquifers and the chemical quality of the water they yield. They also control how groundwater recharges and moves through the aquifers, how contaminants seep into and move through soil and groundwater, and where natural hazards like radon, sinkholes, and seismic instability may occur. Finally, these properties establish where geologic resources such as sand, gravel, peat, clay, quarry rock, and mineral ores are located. Geologic properties also determine the suitability of an area for the use of septic systems, the management of stormwater and surface runoff, and the stability of foundations for buildings, bridges, tunnels, and other structures.*" *(New Jersey Geological Survey, Information Circular – Geologic mapping in New Jersey)*

Bedrock Geology

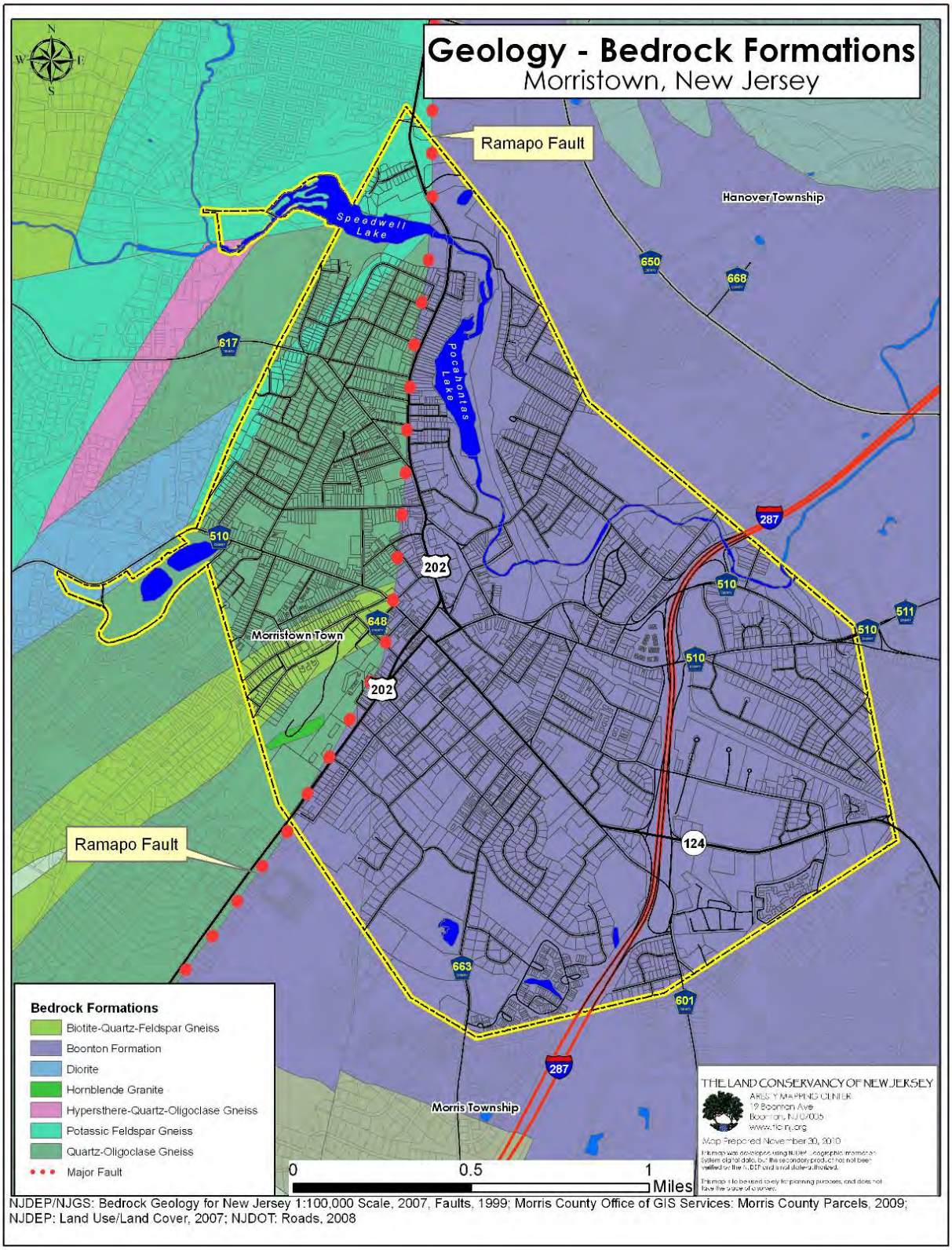
The underlying bedrock geology of Morristown changes significantly between the Piedmont and Highlands Provinces. **Figure 5** depicts the bedrock geology of Morristown. The area of Morristown within the Piedmont consists of relatively young Jurassic age sandstone and siltstone while the area within the Highlands is made up of some of the oldest rocks in the region; Middle Proterozoic gneiss, diorite, and granite.

The bedrock of the Piedmont portion of Morristown is dominated by the Boonton formation, which represents the western edge of the massive geological formation known as the Newark Basin. The Basin was formed when the supercontinent Pangaea began to split approximately 200 million years ago. The Boonton Formation consists of fine-grained sandstone, siltstone, and mudstone (*Olsen, 1990*). Within the Highlands portion of Morristown, the bedrock is much harder, consisting primarily of igneous and metamorphic rocks, namely Quartz-Oligoclase Gneiss, Biotite-Quartz-Feldspar Gneiss, Hypersthere-Quartz-Oligoclase Gneiss, Potassic Feldspar Gneiss, Diorite, and Hornblende Granite. **Table 4** provides a summary of Bedrock coverage in Morristown.

Table 4: Summary of Bedrock Geology Coverage in the Town of Morristown, NJ

Bedrock Geology in Morristown		
Name	**Acres**	**Percent of Total Municipal Area**
Boonton Formation	1,429.3	74%
Quartz-Oligoclase Gneiss	354.1	18%
Potassic Feldspar Gneiss	85.6	4%
Biotite-Quartz-Feldspar Gneiss	45.8	2%
Diorite	4.6	0.2%
Hornblende Granite	3.5	0.1%
Hypersthere-Quartz-Oligoclase Gneiss	1.5	0.075%
Source: NJDEP, NJGS		

Figure 5: Geology – Bedrock Formations for the Town of Morristown, NJ



NJDEP/NJGS: Bedrock Geology for New Jersey 1:100,000 Scale, 2007, Faults, 1999; Morris County Office of GIS Services: Morris County Parcels, 2009; NJDEP: Land Use/Land Cover, 2007; NJDOT: Roads, 2008

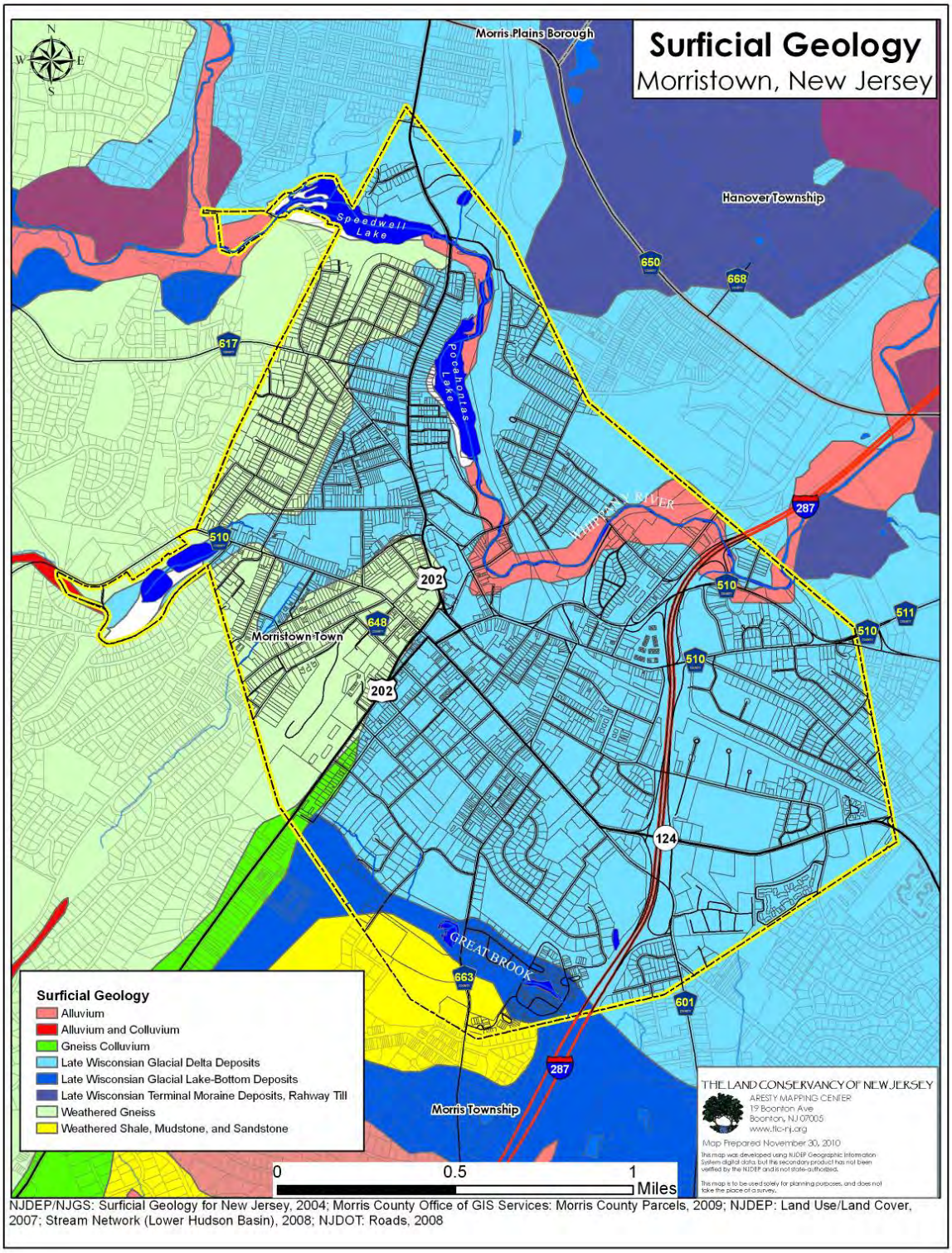
Surficial Geology

Surficial geology is the unconsolidated materials overlaying bedrock formations. They are the parent material for agronomic (capable of supporting agriculture) soils. They also affect the movement of groundwater and are capable of containing aquifers (*NJDEP, DGS10-2 Surficial Geology of New Jersey*). **Figure 6** depicts the surficial geology of Morristown. The majority of the town (74.6%) is covered in Late Wisconsinan glacial sediment, including delta deposits, lake-bottom, and terminal moraine deposits. The second most common material (17.2%) is weathered gneiss rock, which is found in the Highlands physiographic region of the Town. **Table 5** presents a summary of surficial geology in Morristown.

Table 5: Summary of the Surficial Geology in Morristown, NJ

Summary of Surficial Geology in Morristown				
Name	**Acres**	**% of Total**	**Lithology**	**Depth**
Late Wisconsinan Glacial Delta Deposits	1,336.8	71.0%	Sand, pebble to cobble gravel, minor silt	As much as 250 ft. thick
Weathered Gneiss	324.1	17.2%	Silty clayey sand to sandy clayey sand with gneiss	As much as 100 ft. thick
Alluvium	97.9	5.2%	Sand, gravel, silt, minor clay and peat	As much as 20 ft. thick
Late Wisconsinan Glacial Lake-Bottom	66.9	3.6%	Silt, clay, fine sand	As much as 200 ft. thick
Weathered Shale, Mudstone, and Sandstone	44.4	2.4%	Silty sands to silty clay with shale, mudstone, or sandstone fragments	As much as 10 ft. thick on shale and mudstone, 30 ft. thick on sandstone
Gneiss Colluvium	9.9	.5%	Silty sand to sandy clay with shale, mudstone, or sandstone fragments	As much as 70 ft. thick
Alluvium and Colluvium	1.7	0.1%	Imbedded alluvium and colluvium	As much as 20 ft. thick
Late Wisconsinan Terminal Moraine Deposits, Rahway Till	0.3	<0.1%	Rahway Till forming moronic ridges and knolls	As much as 200 ft. thick
Source: NJDEP, NJGS				

Figure 6: The Surficial Geology of the Town of Morristown, NJ



NJDEP/NJGS: Surficial Geology for New Jersey, 2004; Morris County Office of GIS Services: Morris County Parcels, 2009; NJDEP: Land Use/Land Cover, 2007; Stream Network (Lower Hudson Basin), 2008; NJDOT: Roads, 2008

SOILS AND SLOPES

Soils

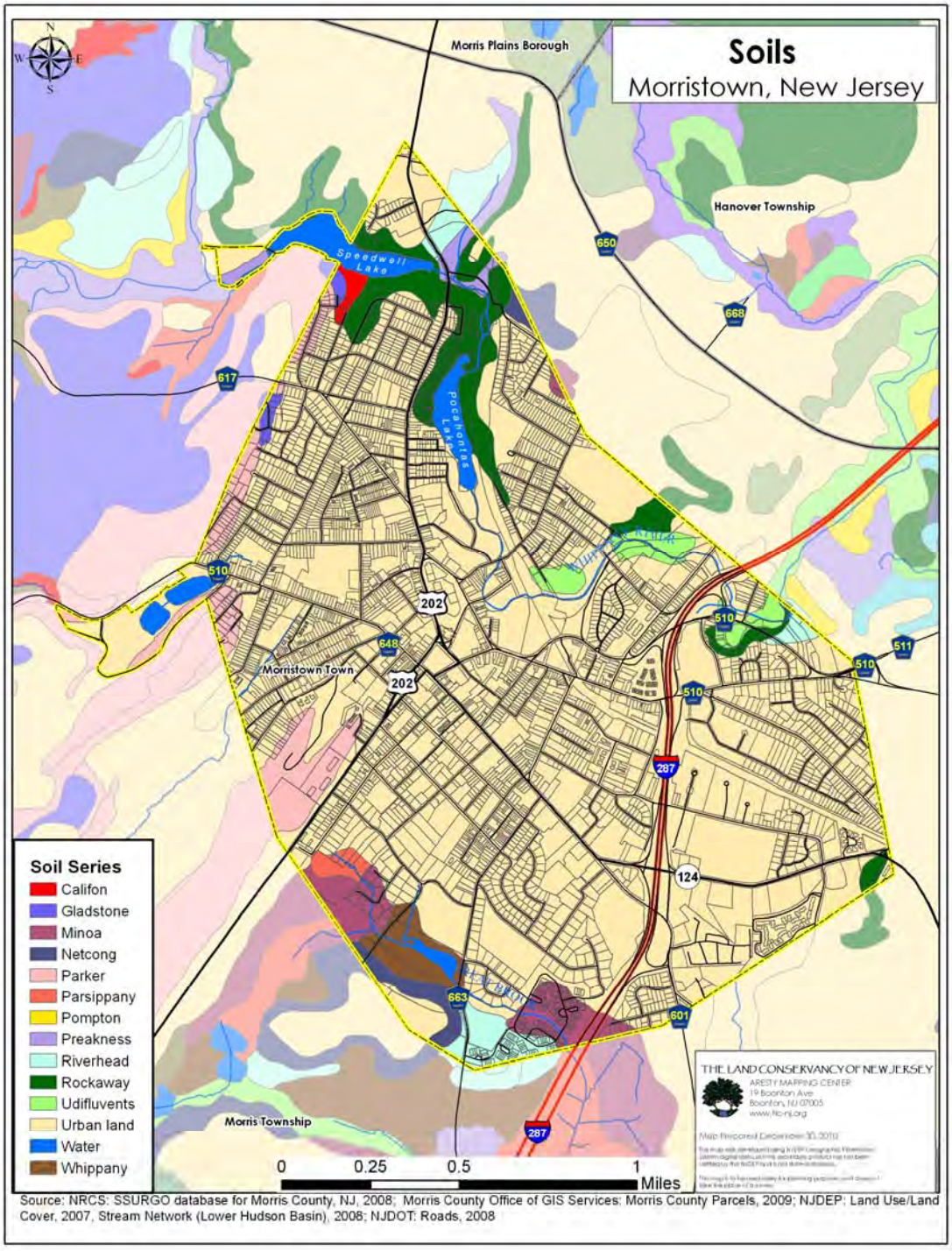
Soils play a critical role in the environment. They support an area's vegetation, absorb rainwater, and provide habitat for many organisms. Soils also serve as a foundation for most construction projects. The physical and chemical properties of soils reflect a large number of variables, including the parent material (bedrock), climate, vegetative cover, animal activities, slopes and drainage patterns, and time. New Jersey's fairly complex bedrock geology, history of glaciations, abundant precipitation, and patterns of human use has led to complex patterns of soil distribution (*NJGS Information Circular, Geologic Mapping in New Jersey*).

Figure 7 depicts the soil series within Morristown. According to the Natural Resources Conservation Service (NRCS) an agency of the United Sates Department of Agriculture (USDA), "*The soil series is the lowest category of the national soil classification system. The name of a soil series is the common reference term, used to name soil map units. Soil series are the most homogenous classes in the system of taxonomy.*" (*USDA NRCS, Official Soils Series Descriptions Fact Sheet*) **Table 6** provides a summary of soil series coverage in Morristown.

Table 6: Soil Series Coverage in the Town of Morristown, NJ

Soil Series in Morristown		
Soils Series	**Acres**	**Percent of Total Municipal Area**
Urban land	1,558	81%
Rockaway	84	4%
Parker	67	3%
Water	46	2%
Minoa	44	2%
Riverhead	32	2%
Udifluvents	27	1%
Whippany	21	1%
Netcong	16	1%
Preakness	11	1%
Parsippany	7	<1%
Gladstone	5	<1%
Califon	5	<1%
Pompton	<1	<1%
Source: NRCS		

Figure 7: Soil Series within the Town of Morristown, NJ



The majority of soil in Morristown has been disturbed to such an extent by human activity that is classified as urban land. Below is a description of the soils series of Morristown.

Urban Land – Urban land is soil that has been re-worked to such an extent that more than 50% of the original soil has been disturbed. Urban soils generally occur in areas that have been already developed and are not suited for other purposes.

Rockaway – The Rockaway series formed in parent material derived from the granite and gneiss bedrock found in the Highlands Physiographic region. The series consists of very deep, well or moderately-well drained soils. A typical soil profile of Rockaway soils shows development of both argillic and fragipan horizons.

Parker – The Parker series consist of very deep, somewhat excessively-drained soils that are derived from granitic gneiss bedrock. They occur on gentle slopes to very steep slopes of ridges and hills.

Minoa – The Minoa series consist of very deep, somewhat poorly drained soils formed in the sediment of river deltas. They are nearly level or gently sloping soils on lowland plains.

Riverhead – The Riverhead series consist of very deep well drained soils formed in glacial outwash deposits derived primarily from granitic materials. They are typically found on outwash plains, beaches, and water-sorted moraines.

Udifluvents – Udifluvents are not considered a soil series as they lack distinguishing horizon characteristics. In the case of the udifluvents in Morristown, these soils have not developed horizons due to sediment deposition from periodic flooding. They are typically found in deltas or river valleys, particularly where there are concentrations of sediment.

Whippany – The Whippany series consist of very deep, somewhat-poorly-drained soils formed in silty and clayey sediments derived principally from shales, basalt, and granite rock. These soils are found on terraces or gently sloping peripheral areas within large basins.

Netcong – The Netcong series consist of deep, well-drained soils on uplands. The soils developed in moderately course of course textured glacial till, composed primarily of granitic gneiss with lesser amounts of quartzite, sandstones, and shales. They are found on nearly level to steeply sloping glacial moraine deposits.

Preakness – The Preakness series consist of very deep, poorly to very poorly drained soils on outwash plains and terraces. They occur in low positions and in swales. The soils formed in stratified course textured materials dominantly from granite rocks with minor amounts of other materials. The soils are often ponded in winter and during periods of high rainfall because of their low topographic position. In many places adjacent to streams, Preakness soils flood frequently for brief periods in late winter and early spring.

Parsippany – The Parsippany series consist of deep, poorly-drained soils in extinct lake basins and near streams. These soils formed in silty and clayey sediments containing a high proportion of fine particles derived from weathered basalt, shale, and granitic materials. Frequent flooding occurs in most areas of Parsippany soils, particularly those adjacent to major streams.

Gladstone – The Gladstone series consists of very deep, well-drained soils formed in residuum and colluvium from granitic gneiss. They occur on upland divides and rolling foothills of the Highlands physiographic region.

Califon – The Califon series consists of moderately-deep to deep, moderately-well-drained, and somewhat-poorly-drained soils that formed in deeply-weathered old till or colluvium derived predominantly from granitic gneiss.

Pompton - Pompton soils are moderately well to somewhat poorly drained. They are characterized by their moderately coarse texture, gravel substratum, and poor drainage. They are derived from glacial outwash made up of shale, sandstone, gneiss, and basalt.

Hydric Soils

According to the NRCS, "*A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.*" (*NRCS, Hydric Soils - Introduction*). Hydric soils are an important element of wetland areas and naturally support wetland vegetation. If a soil is classified as "hydric," Federal/State Wetlands Law may restrict land use due to the relationship of hydric soils to wetlands and wetland preservation.

Within Morristown, hydric soils are represented in the Preakness and Parsippany soils series shown in **Figure 7** above. This amounts to 18 acres, or about 1% of the total area in Morristown.

Agricultural Soils

Some soils are of high enough quality that they are valued for their agricultural productivity. These soils are classified into categories by various state and national agriculture agencies. Within Morristown, agricultural soil categories include "Prime Farmland" and "Farmland of Statewide Importance". **Figure 8** shows the location of these soils in Morristown.

According to the United States Department of Agriculture (USDA), prime farmlands include all those soils in Land Capability Class I and selected soils from Land Capability Class II[1]. "*Prime Farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. It must also be available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water). It has the soil*

[1] Land capability classification is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period of time.

quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management, according to acceptable farming methods" (*USDA, NRCS, Soil Survey Manual, 1993)* Morristown has a total of 57 acres of Prime Farmland, with the majority located in the southern part of the town. It should be noted however that parcel data indicates that an area east of Interstate-287 has been developed into residential housing. As this land is no longer available for farming, future soils data may indicate a reduced amount of Prime Farmland acreage.

According to the USDA, Soils of Statewide Importance for New Jersey include those soils in land capability Class II and III *"that do not meet the criteria as Prime Farmland, these soils are nearly Prime Farmland and economically produce high yields of crops when treated and managed according to acceptable farming methods, Some may produce yields as high as Prime Farmland if conditions are favorable.*" (*USDA, NRCS, Soils of Statewide Importance, 1990*) Morristown has a total of 69.5 acres of Soil of Statewide Importance, much of it located in close proximity to Prime Farmland. Some of these soils also appear to have been recently developed, which will result in a reduction of acreage reflected in future soils data. **Table 7** shows acreages of agricultural soils in Morristown.

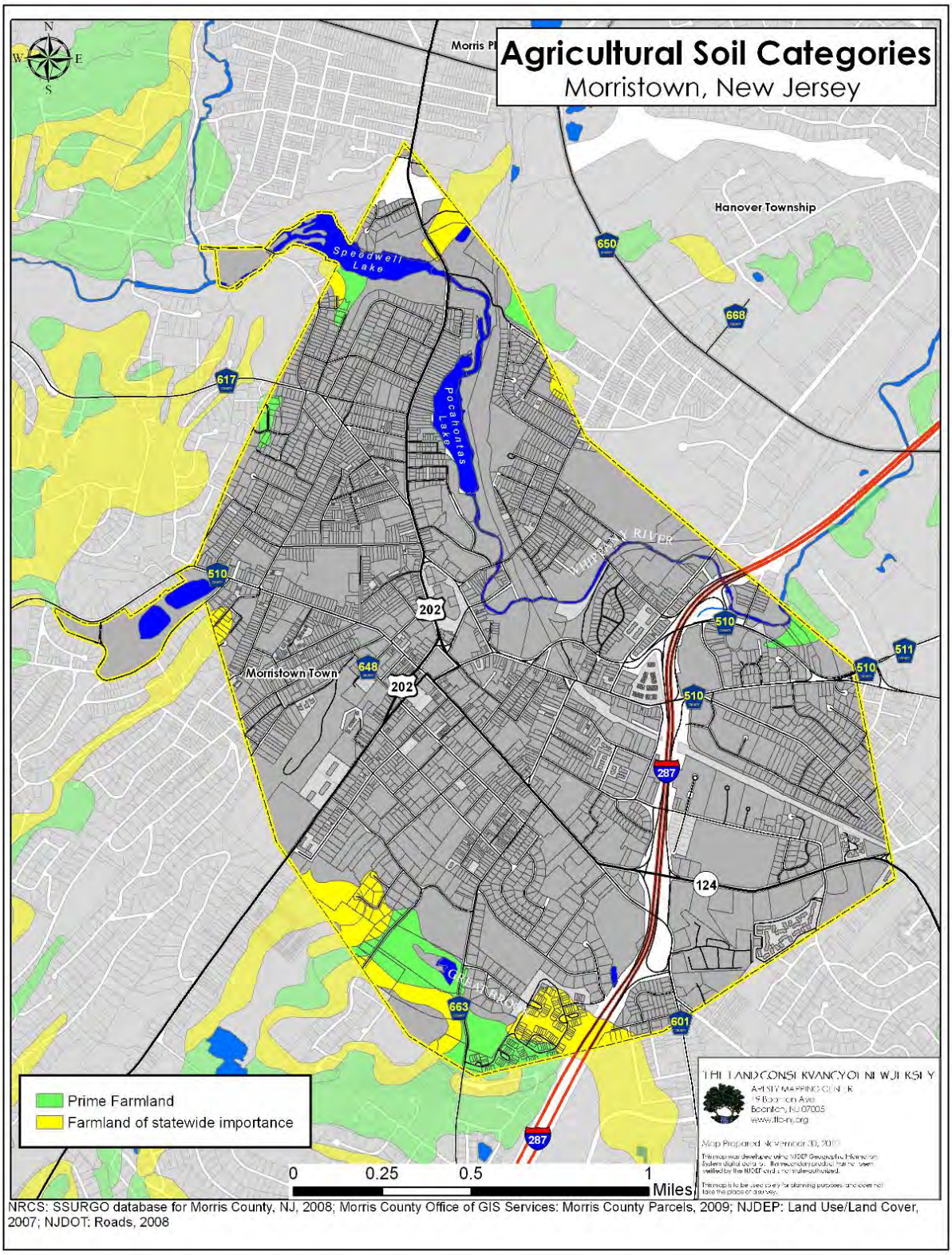
Table 7: Acreages of Agricultural Soils in the Town of Morristown, NJ

Agricultural Soils in Morristown				
Agricultural Classification	**Series**	**Symbol**	**Soil Description**	**Acres**
Prime Farmland	Minoa	MknB	Minoa silt loam, 3 to 8 percent slopes	10
Prime Farmland	Minoa	MknA	Minoa silt loam, 0 to 3 percent slopes	33
Prime Farmland	Netcong	NerB	Netcong gravelly sandy loam, 3 to 8 percent slopes	1
Prime Farmland	Netcong	NerC	Netcong gravelly sandy loam, 8 to 15 percent slopes	13
Prime Farmland	Parker	PaoC	Parker gravelly sandy loam, 3 to 15 percent slopes	3
Prime Farmland	Riverhead	RksB	Riverhead gravelly sandy loam, 3 to 8 percent slopes	20

Agricultural Soils in Morristown				
Agricultural Classification	**Series**	**Symbol**	**Soil Description**	**Acres**
Prime Farmland	Riverhead	RksC	Riverhead gravelly sandy loam, 8 to 15 percent slopes	<1
Prime Farmland	Whippany	WhphA	Whippany silt loam, sandy loam substratum, 0 to 3 percent slopes	21
Farmland of statewide importance	Califon	CanB	Califon gravelly loam, 3 to 8 percent slopes	5
Farmland of statewide importance	Califon	CakB	Califon loam, 3 to 8 percent slopes	0
Farmland of statewide importance	Gladstone	GkaoC	Gladstone gravelly loam, 8 to 15 percent slopes	2
Farmland of statewide importance	Gladstone	GkaoB	Gladstone gravelly loam, 3 to 8 percent slopes	3
Farmland of statewide importance	Minoa	MknB	Minoa silt loam, 3 to 8 percent slopes	1
Farmland of statewide importance	Netcong	NerB	Netcong gravelly sandy loam, 3 to 8 percent slopes	3
Farmland of statewide importance	Pompton	PohB	Pompton sandy loam, 3 to 8 percent slopes	<1
Farmland of statewide importance	Riverhead	RksC	Riverhead gravelly sandy loam, 8 to 15 percent slopes	7
Farmland of statewide importance	Riverhead	RksB	Riverhead gravelly sandy loam, 3 to 8 percent slopes	4

Source: NRCS

Figure 8: Agricultural Soil Categories for the Town of Morristown, NJ



Steep Slopes

Morristown's steep slope ordinance considers steep slopes to be slopes greater than 15 percent, meaning a rise of 1.5 feet or greater over a run of 10 feet. Limiting the disturbance of steep slopes is important in preventing soil loss, erosion, excessive stormwater runoff, and the degradation of surface water, as well as maintaining the natural topography and drainage patterns of the land. Disturbing the natural vegetation, topography and drainage patterns of steep slopes often increases the amount and speed of runoff and can cause erosion, soil creep, slumping (sections of soil shifting down and outward on the slope), and landslides. The combination of unstable slopes and greater runoff means that more water and sediment (silt) enter streams during precipitation events. Increases in water volume entering streams can lead to, or exacerbate, flooding downstream. In addition, an increase in the volume entering streams through runoff means less water is percolating through the soil and back into the groundwater to replenish drinking water supplies or provide base flow for streams during drier periods. The increased water runoff also carries larger loads of sediment compared to predevelopment conditions. Excess sediments in streams can harm aquatic life, accelerate the filling of ponds and wetlands, and decrease a stream's aesthetic appearance (*Town of Morristown, Ordinance 31 – 04*).

Morristown's steep slope ordinance includes the following definitions:

- *Steep Slope* means slopes 15% or greater.
- *Prohibitive Slope* means those slopes greater than 25 percent.
- *Precautionary Slope* means those slopes between 15 percent and 25 percent.
- *Non-critical Slope or Area* means those slopes less than 15 percent.

Morristown regulations of steep slopes include*:*

- No area with prohibitive slopes shall be disturbed, developed, or redeveloped.
- A precautionary slope with a minimum grade of at least 15 percent but not more than 20 percent may have a maximum disturbance area of no greater than 50 percent.
- No area with precautionary slopes may be disturbed or developed without the applicant submitting sufficient evidence to prove the following:

    a. Soil erosion, land disturbance, and other environmental concerns have been adequately addressed;

    b. The Performance Standards in Section E herein have been satisfied;

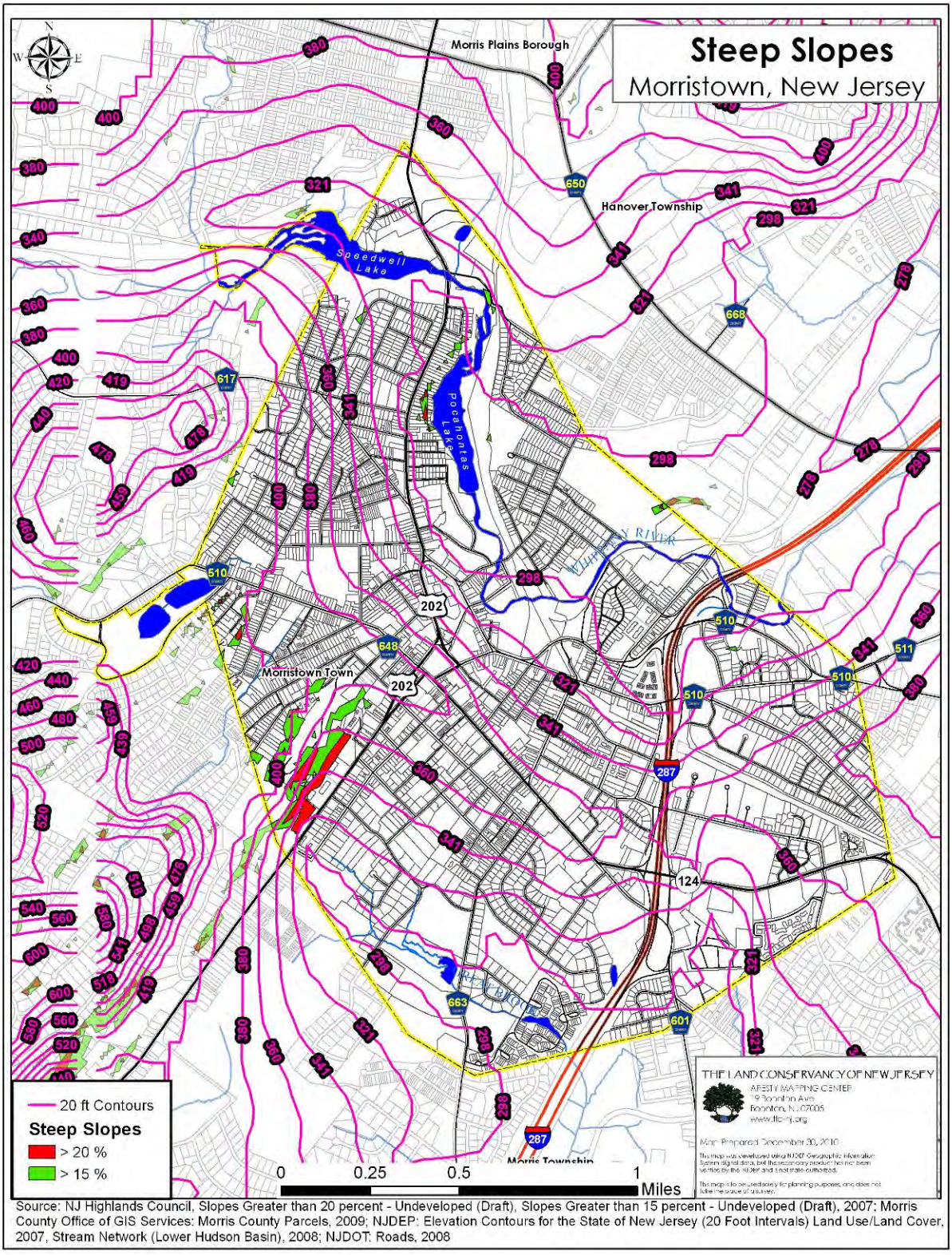
    c. The applicant has submitted grading, drainage, and landscaping plans for the entire lot or tract of land to be developed, each in accordance with the requirements specified in Section F herein, which plans confirm conformance with the aforementioned Performance Standards and which

further confirm that the rate and velocity of the surface water runoff from the entire site which will result following completion of the proposed development shall not exceed that which currently exists in the predevelopment conditions. Certification by a professional engineer will be required stating that the standards contained herein have been met.

- A precautionary slope with a minimum grade of at least 21 percent but not more than 25 percent may have a maximum disturbance area of no greater than 25 percent.

With much of Morristown characterized by the relatively flat land of the Piedmont physiographic, there are few areas of steep slopes in the municipality. These areas mostly occur in the western portion of town where the Highlands region begins. **Figure 9** shows the steep slopes of the area using data from the New Jersey Highlands Council, which delineates between those slopes greater than 15% and those greater than 20%. It should be noted that individual parcels may contain significant slopes that are not represented on the map due to the limitations of the mapping scale.

Figure 9: Steep Slopes in the Town of Morristown, NJ



Source: NJ Highlands Council, Slopes Greater than 20 percent - Undeveloped (Draft), Slopes Greater than 15 percent - Undeveloped (Draft), 2007; Morris County Office of GIS Services: Morris County Parcels, 2009; NJDEP: Elevation Contours for the State of New Jersey (20 Foot Intervals) Land Use/Land Cover, 2007, Stream Network (Lower Hudson Basin), 2008; NJDOT: Roads, 2008

WATER RESOURCES

Watersheds

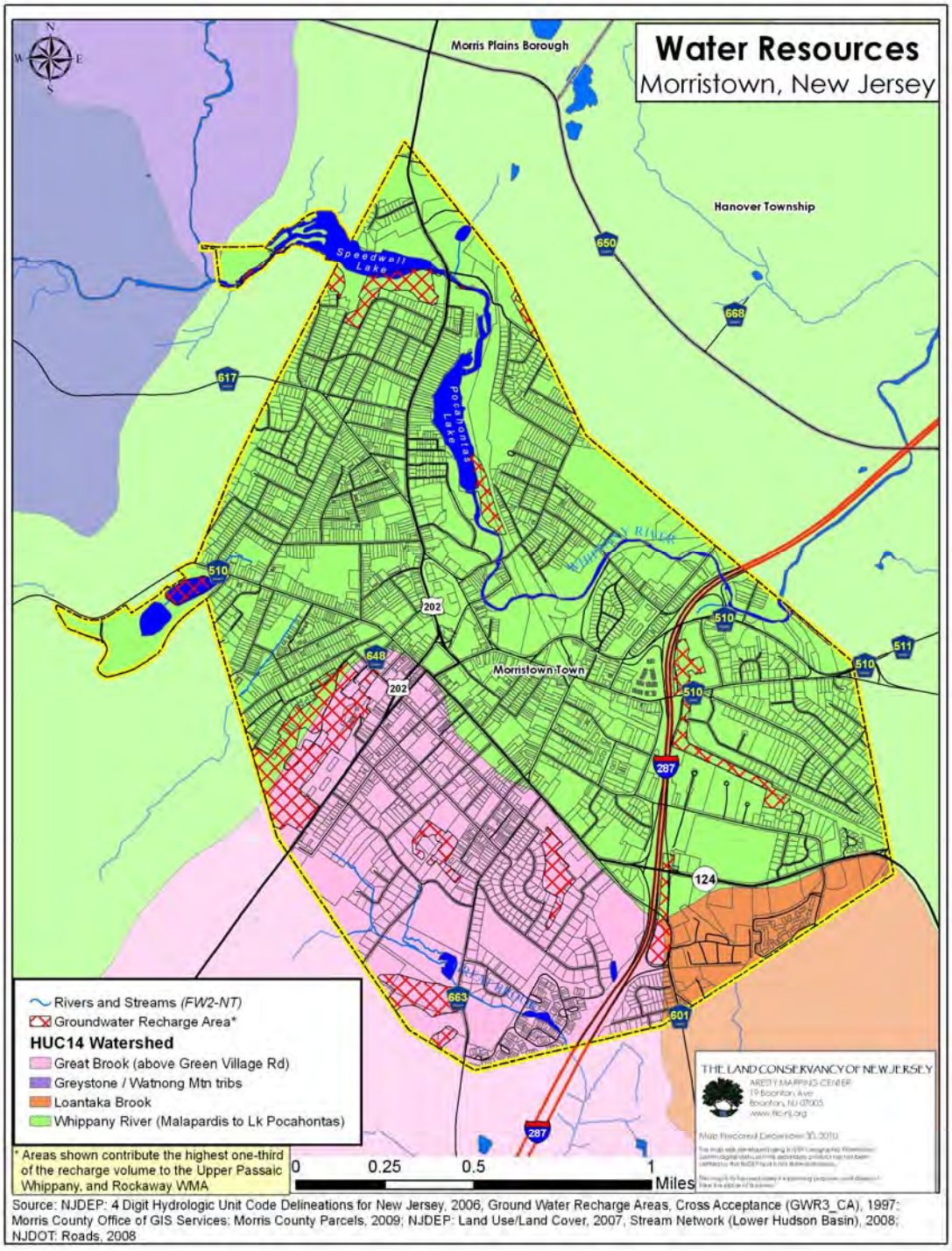
"*A watershed is a topographic area within which apparent surface water runoff drains into a specific point on a stream or to a waterbody such as a lake"* (*EPA, Ecoregions and Watersheds, 1997*). A watershed-based approach to natural resource management is considered by state and national agencies to be the most appropriate unit for managing complex environmental problems. The New Jersey Department of Environmental Protection has divided the state into Watershed Management Areas (WMAs). Morristown lies entirely within WMA 6, also known as the Upper Passaic, Whippany, and Rockaway WMA. This WMA represents the area drained by the waters from the upper reaches of the Passaic River Basin, an area that includes the Passaic River from its headwaters in Morris County to it's confluence with the Pompton River. According to the NJDEP, this WMA is characterized by extensive urban development and reliance upon groundwater sources for water supply.

Every WMA is composed of multiple watersheds and subwatersheds. The United States Geological Survey (USGS) has mapped and identified watersheds using a hierarchal numbering system. This system identifies watersheds using a hydrological unit code (HUC) consisting of up to 14 digits for the smallest watersheds. Morristown lies within three of these HUC14 watersheds. **Figure 10** depicts these watersheds. **Table 8** presents a summary of the watersheds within Morristown.

Table 8: Summary of HUC 14 Watersheds within the Town of Morristown, NJ

Watersheds in Morristown		
HUC14 Watershed	**Acres**	**% of Total Municipal Area**
Whippany River (Malapardis to Lake Pocahontas)	1,356	71%
Great Brook (above Green Village Road)	486	25%
Loantaka Brook	81	4%
Greystone/Watnong Mountain Tributaries	<1	<1%
Source: NJDEP		

Figure 10: HUC 14 Watersheds within the Town of Morristown, NJ



Surface Waters

Surface water is water that collects on the ground or in a stream, river, lake, wetland, or ocean. Surface waters within Morristown include two lakes: Speedwell Lake (19 acres) and Pocahontas Lake (14.5 acres). Smaller waterbodies include Footes Pond (2.6 acres) and the Burnham Park Ponds (4 acres and 3 acres).

Within Morristown are also segments of the Whippany River and Great Brook. Fresh Water 2 (FW2) is the general classification for all fresh waters in the State, other than the few that meet the highest level of protection (FW1). The presence of trout in a stream means that the waters are relatively free of chemical or biological contaminants. Waters classified as Non-Trout (NT) do not support trout, either because of their physical nature or due to biological or chemical characteristics. Category One (C1) waters are identified for protection from measurable changes in water quality based on exceptional ecological, recreational or water supply significance, or exceptional fisheries resource(s). All the surface waters in Morristown are classified as FW2-NT and are considered not suitable for trout, though they may be suitable for many other fish species.

The Whippany River enters Morristown by feeding into Speedwell Lake, which it then drains on the eastern side of the lake. The river continues into Lake Pocahontas, draining it on its southern side before flowing east into Hanover Township. The Whippany eventually flows into the Rockaway River, which is a tributary of the Passaic River.

Great Brook flows through the southern part of Morristown, feeding Footes Pond, which it then drains on the southern side of the lake. Great Brook is a critical stream for the Great Swamp ecosystem at the Great Swamp National Wildlife Refuge. Since some of the uppermost reaches of Great Brook are located in Morristown, the condition of the environs around Great Brook can impact the water quality further downstream.

The quality of surface waters can be affected by point sources and non-point sources of pollution as well as from erosion and sedimentation. Point source means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged (*Clean Water Act, 1972*). This includes discharges from sewage treatment plants and factories, stormwater runoff, illegal dumping, and malfunctioning underground storage tanks and septic systems. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture.

As opposed to point source pollution, non-point source pollution comes from many different sources. As rainfall or snowmelt moves over and through the ground, it picks up and carries natural and human-made pollutants (such as fertilizers, herbicides and motor oil), and deposits them into surface and groundwater.

Footes Pond is one water feature in Morristown that has been adversely affected by non-point source pollution. A Princeton Hydro, LLC report dated April 2010 found that the sediment in the pond is contaminated with semi-volatile organic compounds exceeding NJDEP Site Remediation Standards. These compounds are byproducts of fuel burning (such as gasoline in motor vehicles) which collect on impervious surfaces and are

transported by stormwater runoff. Since the contamination is due to non-point source pollution, remediation of the pond sediment is not required under New Jersey law. However, if the pond were ever dredged, the excavated sediment would be subject to pollution laws requiring it to be disposed at an authorized and legal facility. Dredging of Footes Pond would also require that the pond be lowered and the sediment allowed to dewater before excavation. Additionally, excavation and disposal activity would likely be subject to the Freshwater Wetlands, Flood Hazard Area, and Solid Waste permitting processes. As the sedimentation and associated filling-in of Footes Pond has been a concern in Morristown, these are issues that would need to be addressed by decision makers.

The effects of pollutants on specific waterways can vary, but are manifested in drinking water supplies, recreation, fisheries, and wildlife. One of these effects is eutrophication. Eutrophication in freshwater systems is the addition of substances, either human-made or natural, to a waterbody, affecting the primary productivity of that waterbody. Substances such as nitrates and phosphates promote excessive algae and phytoplankton growth. These "blooms" can have negative effects on the ecosystem. These negative impacts include a clouding of the water, which limits sunlight, stopping the growth of plants deeper in the water. Additionally, eutrophication can lead to anoxia, a condition where a waterbody has depleted levels of oxygen, which is the result of the decomposition of dead phytoplankton.

Water quality can also be negatively impacted by sedimentation. Sedimentation is the transportation and deposition of eroded materials. Development near streams and on steep slopes reduces vegetation cover in these areas. This ground cover can typically absorb the impact of raindrops, and when it is removed, the soil becomes more susceptible to erosion. The eroded soil is then transported and deposited by runoff into surface waters, where it can contaminate water and increase its turbidity, effectively blocking sunlight to plant species and negatively effecting the ecosystem.

According to a 2003 report by the Whippany River Technical Advisory Committee, the Whippany River has seen significant improvement under dry weather conditions between the 1994/1995 and 2001/2002 sampling periods that the report analyzes. The report attributes this improvement to watershed management efforts such as public education and outreach, storm drain catch basin cleaning and maintenance, stream bank restoration, goose management, pet waste disposal, and adoption of stormwater related ordinances. Other actions contributing to water quality improvement include the upgrade of the Morristown Wastewater Treatment Plant and the phosphorous removal provided by the Morris Township Butterworth Treatment Plant (*Whippany River Technical Advisory Committee, 2003*). The report notes however that a severe drought took place in 2002 during sampling. This drought may have had a role in the improvements observed since very little runoff was generated during this time. The report goes on to recommend that the stations be resampled in the future and trend analysis applied to the data to assess the effectiveness of watershed management.

A separate report assessed the water quality of lakes within the Whippany watershed, including Speedwell Lake in Morristown. Speedwell Lake was found to have some of the most adverse conditions among the five lakes studied. This included excessive

sedimentation, dense algae growth (observed in at least 95% of the lake bottom), and high amounts of nitrogen (2.6 mg/l). Speedwell Lake had comparatively low amounts of phosphorous (0.27 mg/l), but this may be attributed to phosphorous uptake by the extensive amount of plant growth found in the lake (*Whippany River Technical Advisory Committee, 2005*).

Groundwater Recharge Areas

Groundwater recharge is the process in which surface water flows or seeps downwards beneath ground surface, saturating soil or rock. Where water-holding rocks or unconsolidated materials can yield a usable quantity of water, it is called an aquifer.

Figure 10 shows groundwater recharge areas in Morristown. The areas with the highest recharge rates are seen in the red cross-hatched areas on the map. This data was developed for the 2004 *New Jersey State Development and Redevelopment Plan* Cross Acceptance process. This involved taking the original groundwater recharge data, which had been developed by the New Jersey Geological Survey (NJGS), and converting it from an inches-per-year rating to a volume-based rating. Using the volume-based rating, the areas contributing the highest one-third of the recharge volume in each of the state's WMAs were selected for further processing. Finally, any areas that were developed or built-up according to the 1995/97 Land Use/Land Cover Mapping project were removed. The groundwater recharge areas depicted represent the areas within Morristown that contribute the highest one-third of volume to Watershed Management Area #6, which includes the Upper Passaic, Whippany and Upper Rockaway Rivers.

Aquifer Identification

An aquifer is an underground formation of permeable rock or unconsolidated materials that can yield significant quantities of water to wells or springs. The rate of recharge is not the same for all aquifers, and that must be considered when pumping water from a well. Pumping too much water too fast draws down the water in the aquifer and eventually causes a well to yield less and less water and even run dry.

Aquifers in New Jersey are classified as either bedrock or surficial. Bedrock aquifers consist of rock formations while surficial aquifers are formed from unconsolidated materials such as sand or gravel. Bedrock aquifers in the Piedmont and Highlands region contain water in fractures within the rock while surficial aquifers contain water primarily in the spaces between sand and gravel particles. Aquifers are ranked based on their yield rates, which is quantified as the gallons per minute of water a well in that aquifer can be expected to yield. These rankings range from 'A' which are aquifers that can yield over 500 gallons per minute to 'E', which are those that yield less than 25 gallons per minute. Aquifers are typically equated to the type of geologic formation in which they exist.

Figure 11 depicts bedrock and surficial aquifers in Morristown.

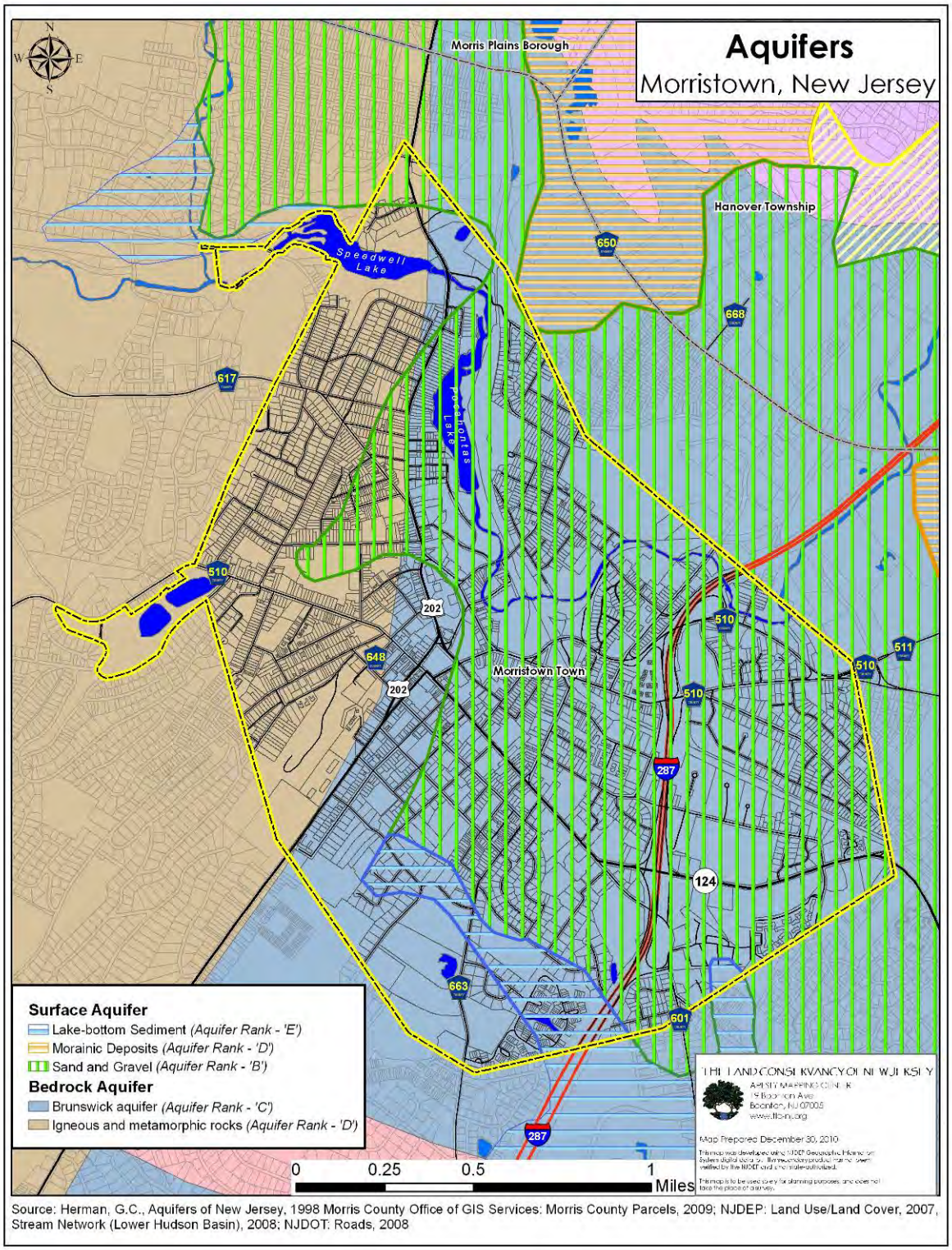
Bedrock Aquifers – Morristown lies over two bedrock aquifers, divided along the Highlands and Piedmont provinces that run through the town. The majority of town is over the Brunswick formation. The name "Brunswick" refers to an outdated nomenclature used to define the bedrock in the area, which within the Morristown area has since been updated to the Boonton formation, though the name remains in use when referring to the aquifer. This aquifer has a rank of "C" and an average yield of 101 – 250 gallons per minute. It is composed mostly of sandstone, siltstone, and mudstone (*Herman 2001*). The second formation is igneous and metamorphic rock, the typical bedrock found in the Highlands region. These rocks are less permeable and generally result in lower yields from wells; the aquifer is ranked "D", meaning wells typically yield 25-100 gallons per minute. **Table 9** provides a summary of bedrock aquifers in Morristown.

Table 9: Summary of Bedrock Aquifers in the Town of Morristown, NJ

Bedrock Aquifers in Morristown				
Name	**Rank**	**Yield (gallons/minute)**	**Acres**	**% of Total Municipal Area**
Brunswick Formation	C	101 - 250	1,429	74%
Igneous and Metamorphic Rock	D	25-100	495	26%
Source: Herman, G.C. 1998				

Surficial Aquifers – Surficial aquifers in northern New Jersey consist of glacial sediment exceeding 50 feet in thickness. In Morristown, surficial aquifers cover about 64% of Morristown, mostly in the piedmont physiographic region. **Table 10** provides a summary of surficial aquifers in Morristown.

Figure 11: Bedrock and Surficial Aquifers in the Town of Morristown, NJ



Source: Herman, G.C., Aquifers of New Jersey, 1998 Morris County Office of GIS Services: Morris County Parcels, 2009; NJDEP: Land Use/Land Cover, 2007, Stream Network (Lower Hudson Basin), 2008; NJDOT: Roads, 2008

Table 10: Summary of Surficial Aquifers in the Town of Morristown, NJ

Surficial Aquifers in Morristown				
Name	**Rank**	**Yield (gallons/minute)**	**Acres**	**% of Total Municipal Area**
Sand and Gravel	B	101 - 250	1,157	60%
Lake-bottom Sediment	E	<25	82	4%
Morainic Deposits	D	25 - 100	<1	0%

Source: Herman, G.C. 1998

Sole Source Aquifers – According to the NJDEP, sole source aquifers are: *"aquifers that contribute more than 50% of the drinking water to a specific area and the water would be impossible to replace if the aquifer were contaminated. Sole-source aquifers are defined with guidelines set forth by the U.S. Environmental Protection Agency (EPA) as authorized in section 1424(e) of the Safe Drinking Water act of 1974. Any federally-funded project in an area that could affect ground-water in a sole-source aquifer must be reviewed by the USEPA. This 'project review area' includes the aquifer's 'recharge zone' and it's 'stream-flow source zone'. The recharge zone is the area through which water recharges the aquifer. The source zone is the upstream area that contributes recharge water to the aquifer. Seven sole-source aquifers are defined in New Jersey and their project review areas cover most of the state" (NJDEP, Sole Source Aquifers in New Jersey, 2001).* Morristown lies completely within the Buried Valley Sole Source Aquifer (SSA). The recharge zone for this aquifer is based solely on political boundaries. The stream-flow source zone is the area contributing flow to these boundaries. As a result, the Buried Valley SSA overlaps other SSA areas, including the Northwest New Jersey SSA and the Rockaway River SSA (*USEPA, Region 2, Water, Buried Valley Aquifer System*).

Public Water Supply and Wellhead Protection

The 1986 Federal Safe Drinking Water Act Amendments (*Section 1428, P.L. 93-523, 42 USC 300 et. Seq*) direct all states to develop a Well Head Protection Program (WHPP) Plan for both public community (CWS) and public non-community (NCWS) water-supply wells. A component of the WHPP is the delineating of Well Head Protection Areas. This delineation is the first step in defining the sources of water to a public water supply in order to prevent and clean up groundwater contamination.

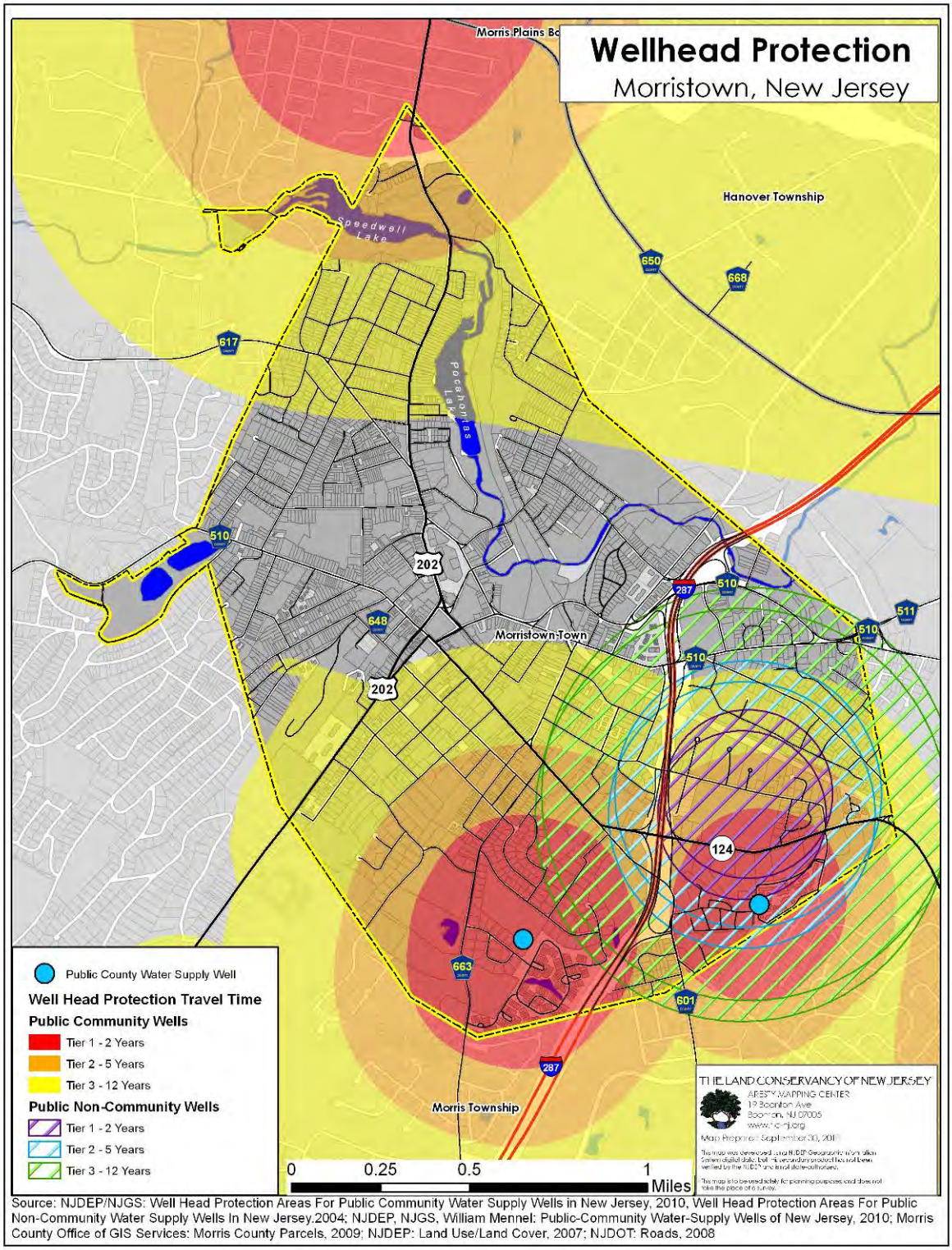
Well Head Protection Areas are delineated for both public community and non-community wells. The delineations for these wells are the two, five, and twelve-year tiers. Each tier represents the horizontal extent of groundwater captured by a well pumping at a specific rate over those periods of time.

There are two public community wells in Morristown[2]. The Southeast Morris County Municipal Utilities Authority (SEMMUA) owns these wells. There are also two public non-community wells in Morristown[3]. A public non-community well is a well used by individuals other than year-round residents for at least sixty days of the year. **Figure 12** shows the location of public community wells and the Well Head Protection Areas for both community and non-community wells. All four wells are located in the southern part of the town. There are also delineated tiers of public wells outside of Morristown that reach into the northern part of the town.

[2] As of February 19, 2010

[3] As of April 5, 2004, more recent data on non-community wells was not readily available

Figure 12: Public Community Wells, and Wellhead Protection Areas for the Town of Morristown, NJ



Source: NJDEP/NJGS: Well Head Protection Areas For Public Community Water Supply Wells in New Jersey, 2010, Well Head Protection Areas For Public Non-Community Water Supply Wells In New Jersey.2004; NJDEP, NJGS, William Mennel: Public-Community Water-Supply Wells of New Jersey, 2010; Morris County Office of GIS Services: Morris County Parcels, 2009; NJDEP: Land Use/Land Cover, 2007; NJDOT: Roads, 2008

Special Flood Hazard Areas

A floodplain is land adjacent to a stream or river which experiences flooding during periods of high discharge. The floodplain includes both the floodway, which is the stream channel, and adjacent areas that are mathematically determined to be required to carry and discharge floodwaters resulting from the 100-year flood under certain conditions, and the flood fringe, which experiences flooding, but not the strong current found in the floodway. The floodplain is an important part of a river ecosystem, including providing habitat for aquatic species, improving water quality, and allowing for recharge of groundwater. The Special Flood Hazard Area is the floodplain as regulated by the Federal Emergency Management Agency (FEMA).

FEMA undertakes the mapping of Special Flood Hazard Areas throughout the United States. Development within these mapped areas is subject to increased regulation in an attempt to avoid loss of life and property as well as to reduce the amount of structures that can displace water and exacerbate flooding. The Special Flood Hazard Area is represented on maps as the 100-year floodplain. This represents the level of floodwater that has a 1% chance of being equaled or exceeded in a single year. This is considered a high-risk area and in communities that participate in the National Flood Insurance Program (NFIP), such as Morristown, it is mandatory with some types of mortgages to purchase flood insurance in these zones. FEMA also maps the 500-year floodplain; these areas have 0.2% annual chance of flooding and are considered to be at moderate risk.

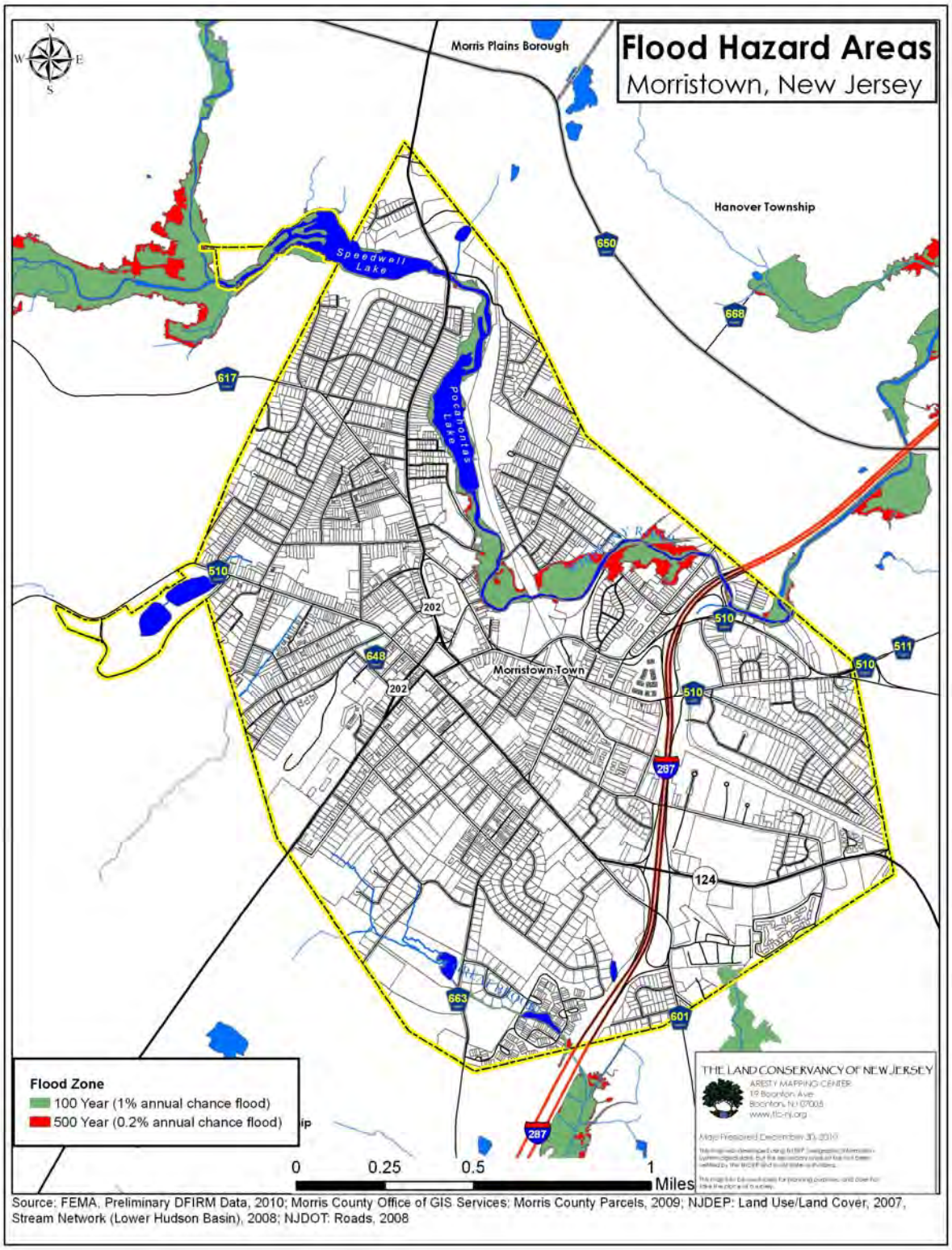
Preliminary Digital Flood Insurance Rate Maps (DFIRMs) were released to Morris County and its municipalities by FEMA in October 2010. This data is displayed in **Figure 13**. It is the most current flood data available, but is subject to revision during the appeals and protest period. The status of these maps and the release of the final effective maps can be checked at *http://www.rampp-team.com/nj.htm*.

Northern Morristown, along the Whippany River, is susceptible to the greatest amount of flooding, with a small floodplain area also found along Great Brook to the south. In total, 6% of Morristown lies within the 100 or 500-year floodplain, **Table 11** presents a summary of flood hazards in Morristown.

Table 11: Flood Hazard Area Summary for the Town of Morristown, NJ

Flood Hazard Areas in Morristown		
Flood Hazard	**Acres**	**% of Total Municipal Area**
100-year Floodplain	91	5%
500-year Floodplain	15	1%
***Source*: Preliminary FEMA DFIRM**		

Figure 13: Flood Hazard Areas for the Town of Morristown, NJ



Riparian Zones

In order to better protect the public from the hazards of flooding, preserve the quality of surface waters, and protect wildlife and vegetation, the NJDEP has adopted Flood Hazard Area Control Act rules (N.J.A.C. 7:13) in order to incorporate more stringent standards for development in flood hazard areas and riparian zones. A riparian zone is land and vegetation within and adjacent to surface waters. In most of New Jersey, surface waters such as those in Morristown, which are classified as FW2-NT, are subject to a regulated 50-foot riparian zone, measured from the top of the bank, along both sides of all waters.

Activity within the regulated area of the flood hazard area and the riparian zone may be restricted if it includes or results in one or more of the following:

1. The alteration of topography through excavation, grading and/or placement of fill;
2. The clearing, cutting and/or removal of vegetation in a riparian zone;
3. The creation of impervious surface;
4. The storage of unsecured material;
5. The construction, reconstruction and/or enlargement of a structure; and
6. The conversion of a building into a private residence or a public building.

However, since Morristown's location makes it subject to the Highlands Water Protection and Planning Act (N.J.S.A. 13:20-1 et seq), surface waters in the town have a buffer of 300 feet in which disturbance is regulated.

WETLANDS

Wetlands are important natural resources that contribute significantly to an area's social, economic, and environmental health. Among the services they provide are filtration of chemicals, pollutants, and sediments from water, flood control, critical habitat for wildlife, recreation and tourism. The NJDEP defines a freshwater wetland as "*an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation; provided, however, that the Department, in designating a wetland, shall use the three-parameter approach (that is, hydrology, soils and vegetation) enumerated in the 1989 Federal Manual*" (*N.J.A.C. 7:7A).* NJDEP has adopted this manual as the technical basis for identifying and delineating wetlands. The NJDEP regulates virtually all activities in a wetland, including removing vegetation, filling, and placing obstructions. Depending on the environmental value of a particular wetland, there may also be a transition area, or buffer, around the wetland that will require a waiver issued by the NJDEP for any activity within that zone. For example, a wetland containing endangered species habitat would require a 150-foot wide transition area, whereas a small wetland in a ditch might not require any transition area at all. Most freshwater wetlands require a 50-foot transition area.

Wetlands in New Jersey are classified into three different values; exceptional resource value, ordinary resource value, or intermediate resource value. The criteria for these classifications are described below.

<u>Exceptional Resource Value Wetland</u>

- Discharges into FW-1 water and FW-2 trout producing waters and their tributaries;
- Is a present habitat for threatened or endangered species; or
- Is a documented habitat for threatened or endangered species, and which remains suitable for breeding, resting, or feeding by these species during the normal period these species would use the habitat.

<u>Ordinary Resource Value Wetland</u>

- A freshwater wetland which does not exhibit any of the characteristics of a Exceptional Resource Value Wetland which is:
    - An isolated wetland, as defined at *N.J.A.C. 7:7A-1.4*, which:
        - Is smaller than 5,000 square feet; and
        - Has the uses listed below covering more than 50 percent of the area within 50 feet of the wetland boundary. In calculating the area covered by a use, the Department will only consider a use that was legally existing in that location prior to July 1, 1988, or was permitted under this chapter since that date:

- Lawns
- Maintained landscaping
- Impervious surfaces
- Active railroad rights-of-way
- Graveled or stoned parking/storage areas and roads

- A drainage ditch
- A swale or
- A detention facility created by humans in an area that was upland at the time the facility was created regardless of the wetland resource classification of the wetland under these rules, or the classification of the body of water, as FW-1 or FW-2 trout production, to which it discharges.

Intermediate Resource Value Wetland

A freshwater wetland of intermediate resource value is any wetland not defined as exceptional or ordinary.

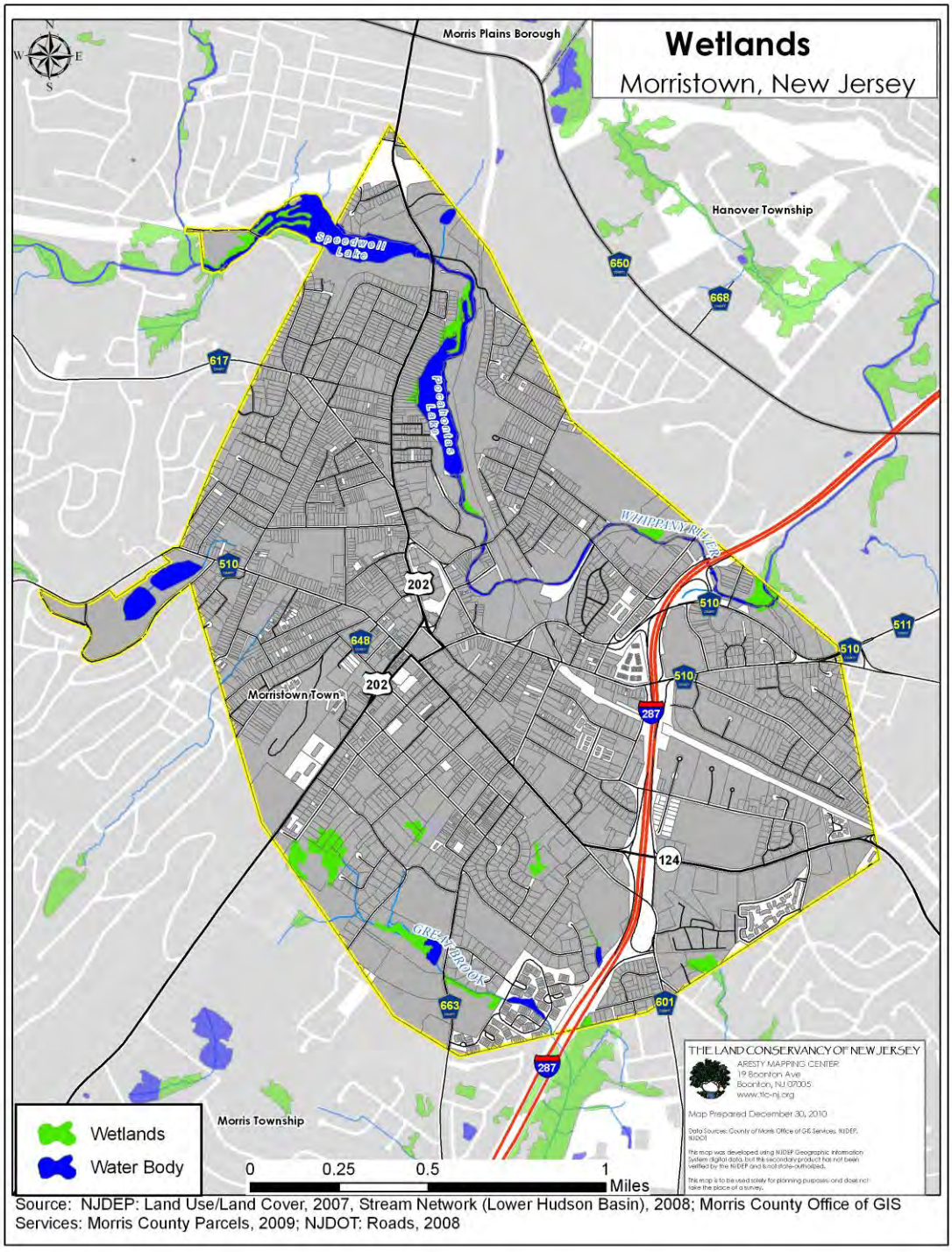
According to the NJDEP 2007 Land Use/Land Cover data, there are approximately 29 acres of wetlands within Morristown. **Figure 14** presents the locations of wetlands in Morristown. **Table 12** presents a summary of wetlands in Morristown. Though this information is based on NJDEP mapped wetlands, unmapped wetlands, which are still subject to NJDEP regulation, may exist in Morristown. These wetlands would require a professional delineation before a regulated activity could occur in or around these them.

Table 12: Wetland Summary for the Town of Morristown, NJ

Wetlands in Morristown		
Type of Wetlands	**Acres**	**% of Total Municipal Area**
Deciduous Wooded Wetland	26	1%
Herbaceous Wetland	2	<1%
Disturbed Wetland (modified)	1	<1%

Source: NJDEP

Figure 14: Wetland Map for the Town of Morristown, NJ



LANDCOVER AND CRITICAL HABITAT

Since 1986, the NJDEP has mapped land use within the state through their land use/land Cover (LU/LC) data sets. Areas are delineated using color infrared images. The latest update of this data occurred in 2007. The NJDEP also maps critical habitat for imperiled and priority species through the Landscape Project, which is a pro-active, ecosystem-level approach to the long-term protection of these habitats.

Morristown consists of five LU/LC categories: barren land, forest, urban, water, and wetlands. Of these categories, urban is the most prominent, accounting for over 80% of the total area of Morristown. **Figure 15** presents generalized land use/land cover as well as critical habitat within Morristown. **Table 13** presents a summary of LU/LC in Morristown.

The Landscape Project (*Version 3.0 Highlands*) ranks patches of habitat 0 through 5, with Ranks 3 through 5 being considered environmentally significant by the NJDEP. The following is a description of each rank.

- **Rank 5** is assigned to species-specific patches containing one or more occurrences of wildlife listed as endangered and threatened pursuant to the Federal Endangered Species Act of 1973.
- **Rank 4** is assigned to species-specific patches with one or more occurrences of State endangered species.
- **Rank 3** is assigned to species-specific patches containing one or more occurrences of State threatened species.
- **Rank 2** is assigned to species-specific patches containing one or more occurrences of species considered to be species of special concern (this rank represents "rare species" of wildlife as defined in the *Highlands Water Protection and Planning Act* rules).
- **Rank 1** is assigned to species-specific patches that meet habitat-specific suitability requirements such as minimum size criteria for endangered, threatened or priority wildlife species, but that do not intersect with any confirmed occurrences of such species.
- **Rank 0** is assigned to species-specific patches that do not contain any species occurrences and do not meet any habitat-specific suitability requirements.

Figure 13 also depicts habitat patches in Morristown. Morristown contains habitat patches with ranks 1, 2, and 3, with rank 0 omitted from the map. The majority of the habitat patches (85 acres) in Morristown are ranked 2. According to the NJDEP data, these sites have had one or more occurrences of Great Blue Heron foraging activity. There are 29 acres of environmentally significant habitat in Morristown, all of which is located in and around Footes Pond Park. These patches have contained one or more occurrences of Coopers Hawk, a State threatened species. **Table 14** presents a summary of habitat patches within Morristown.

Figure 15: Land Cover & Critical Habitat Within the Town of Morristown, NJ

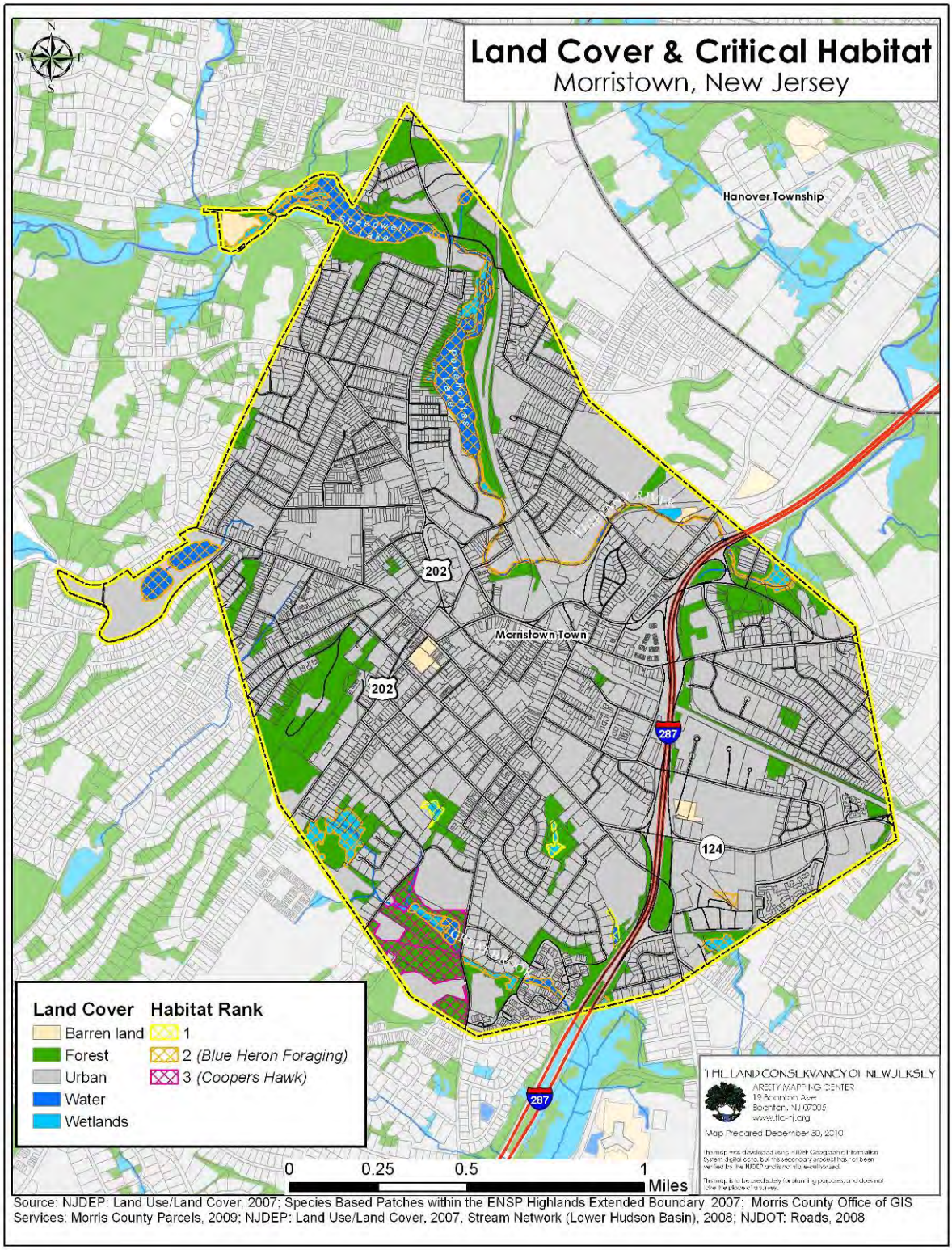


Table 13: Land Use/Land Cover Categories for the Town of Morristown, NJ

LU/LC Generalized Categories for Morristown		
LU/LC Category	**Acres**	**% of Total Municipal Area**
Barren Land	11	1%
Forest	245	13%
Urban	1,577	82%
Water	61	3%
Wetlands	29	2%
Source: NJDEP		

Table 14: Critical Habitat Summary for the Town of Morristown, NJ

Critical Habitat in Morristown		
Rank	**Acres**	**% of Total Municipal Area**
Rank 1	3	< 1%
Rank 2	85	4%
Rank 3	29	2%
Source: NJDEP		

Vegetation

Morristown has a mosaic of different habitats, some of which are fragmented, primarily due to the residential and business development within the town. The following sections are excerpted from the 2003 *Environmental Resource Inventory* and offer information on the current street trees in the municipality and invasive exotic plants.

Invasive Exotic Plants

Table 15 is a short list of invasive exotic plants that should be avoided when planting landscapes and should be removed when found in public parks.

Table 15: Invasive, Exotic Plants to be Avoided When Planting

Trees

Acer platninoides – Norway Maple
Acer pseudoplatanoides – Sycamore-leaved Maple
Ailanthus altissima – Tree of Heaven

Shrubs

Berberis thunbergii – Japanese Barberry
Euonymus alata – Burning Bush
Ligastrum vulgare – Privet
Lonicera maackii – Amur Honeysuckle
Lonicera tartarica – Tartarian Honeysuckle

Vines

Lonicera japonica – Japanese Honeysuckle
Celastrus orbiculatus – Oriental Bittersweet
Rosa multiflora - Multiflora Rose
Rubus phoneicalasius – Wineberry
Wisteria floribunda – Japanese Wisteria

Herbaceous Plants

Alliaria perolata – Garlic Mustard
Allium vineale – Onion Grass
Fallopia japonica – Japanese Knotweed
Microstegium vimineum – Japanese Stilt Grass
Lythrum salicaria - Purple Loosestrife

Street Trees

Table 16 is a short list of recommended street trees.

Table 16: Recommended Street Trees

Acer rubrum – Red Maple
Acer saccharum – Sugar Maple
Ginkgo biloba – Ginkgo
Gleditsa triacanthos inermis – Honey Locust
Quecus phellos – Willow Oak
Tilia cordata - Littleleaf Linden
Zelkova serrata – Japanese Zelkova

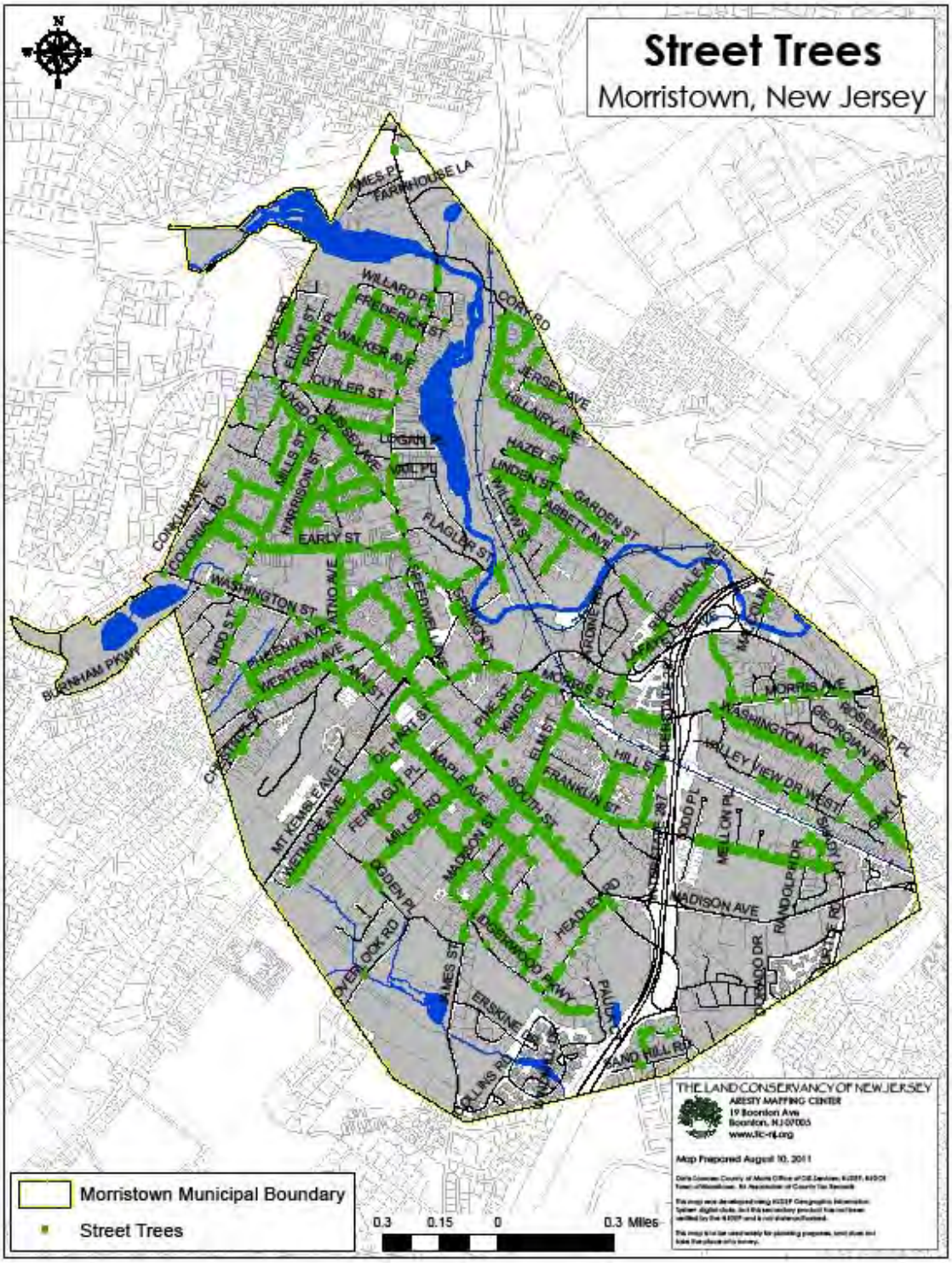
The Town is currently completing an Urban Forestry Study documenting and inventorying the community's street trees. Over 3,000 trees (3.067) were located using a GPS (Global Positioning System) unit and mapped on the GIS base map for the municipality (**Figure 16** below). The following street trees (**Table 17**) were identified in the Town of Morristown:

Table 17: Street Trees Present in the Town of Morristown, NJ

American Basswood
American Basswood
American Beech
American Chestnut
American Elm
American Holly
American Hornbeam
Amur Maple
Aristocrat Callery Pear
Bigleaf Linden
Black Birch
Black Oak
Black Poplar

Butternut
Cherry Plum
Chestnut Oak
Crimson King Maple
Dogwood
Eastern Hemlock
Eastern Redbud
Eastern White Pine
European Beech
Flowering Dogwood
Gingko
Goldenrain Tree
Green Ash
Hedge Maple
Honey Locust
Kwanzan Cherry
Littleleaf Linden
London Planetree
Norfolk Island Pine
Northern Catalpa
Northern Pin Oak
Northern Red Oak
Norway Maple
Ornamental Pear
Pin Cherry
Pin Oak
Pine
Purpleleaf Sand Cherry
Red Maple
Red Mulberry
Royal Paulownia
Scarlet Oak
Silver Maple
Sugar Maple
Sweet Cherry
Sweetgum
Tree of Heaven
Trident Maple
Washington Hawthorn
Weeping Birch
White Ash
White Oak
Yew
Zelkova

Figure 16: Street Tree Locations Within the Town of Morristown, NJ



Wildlife

Table 18 contains wildlife known to be present in Morristown at various times of the year. This section is excerpted from the *2003 Environmental Resource Inventory*.

Table 18: Known Wildlife Present in the Town of Morristown, NJ

Amphibians

Northern Dusty Salamander – *Desognathus fuscus*
Red-backed Salamander – *Plethodon cinereus*
Wood Frog – *Rana sylvatica*
Green Frog – *Rana Clamitans Melanota*
Leopard Frog – *Rana pipiens*
Bullfrog - *Rana castesbeiana*
Northern Cricket Frog – *Acris crepitans*
Spring Pepper – *Hyla crucifer*
American Toad – *Bufo americanus*

Reptiles

Common Snapping Turtle - *Chelydra serpentina*
Eastern Box Turtle – *Terrapene carolina*
Eastern Painted Turtle – *Chrysemys picta*
Easter Painted Turtle – *Natrix sipedone*
Northern Water Snake – *Storeria dekayi*
Eastern Garter Snake – *Thamnophis sirtalis*
Eastern Ribbon Snake – *Thamnophis sauritus*
Ring Neck Snake – *Diadophis punctatus*
Black Rat Snake – *Elaphe obsolete*
Milk Snake - *Lampropeltis doliata*

Mammals

Virginia Opossum - *Didelphis viginiana*
Short-tailed Shrew – *Blarina brevicauda*
Eastern cotton-tailed Rabbit – *Sylvilagus floridanus*
Little Brown Bat – *Myotosis lucifugus*
Silver-haired Bat - *Lasionycterus noctivagans*
Eastern pipistrel Bat – *Pipistrelllus subflavus*
Red Bat – *Lasiurus borealis*
Red Fox – *Vulpes vulpes*
Grey Fox – *Urocyon cinereoargenteus*
Hoary Bat – *Lasiurus cinereus*
Woodchuck – *Mormota monax*
Eastern Chipmunk – *Tamias striatus*
Eastern Gray Squirrel –*Sciurus caroliniensis*
Deer Mouse – *Peromyscus maniculatus*

Birds

Great Blue Heron – *Ardea herodias*
Green Heron – *Butorides striatus*
Canada Goose – *Branta canadensis*
Mallard – *Anas platyrhynchos*
Wood Duck – *Aix sponsa*
Turkey Vulture – *Cathartes aura*
Osprey – *Pandion halieatus*
Bald Eagle – *Haliacetus leucocephalus*
Sharp-shinned Hawk – *Accipiter striatus*
Cooper's Hawk – *Accipiter cooperii*
Red-shouldered Hawk – *Buteo lineatus*
Red-winger Hawk – *Buteo platypterus*
Red-tailed Hawk – *Buteo jamaicensis*
American Kestrel – *Falco sparverius*
Wild Turkey – *Meleagris gallapoavo*
Killdeer - *Charadrius vociferous*
Spotted Sandpiper – *Actitis macularia*
Ring-billed Gull – *Larus delawarensis*
Herring Gull – *Larus argentatus*
Great Black-backed Gull – *Lams marinus*
Rock Pigeon – *Columbia Livia*
Mourning Dove – *Zenaida macroura*
Eastern Screech Owl – *Otus asio*
Great Horned Owl – *Bubo Virgianus*
Common Nighthawk – *Chordeiles minor*
Chimney Swift – *Chaetura pelagica*
Ruby-throated Hummingbird – *Archilochus colubris*
Belted Kingfisher – *Meageryle alcyon*
Red-bellied Woodpecker – *Melanerpes carolinus*
Downy Woodpecker – *Picoides pubescens*
Hairy Woodpecker – *Picoides villosus*
Northern Flicker – *Colaptes auratus*
Pileated Woodpecker – *Dryocopus Pileatus*
Eastern Wood-pewee – *Contopus virens*
Eastern Phoebe – *Sayomis phoebe*
Great Crested Flycatcher – *Myiarchus crinitus*
Eastern Kingbird – *Tyrannus tyrannus*
Tree Swallow – *Iridoprocne bicolor*
Rough-winged Swallow – *Stelgidoptervx ruficollis*
Barn Swallow – *Hirondo rustica*
Blue Jay – *Cyanocitta cristata*
American Crow – *Corvus brachyrhynchos*
Fish Crow – *Corvus ossifravus*
Black-capped Chickadee – *Parus atricapillus*
Tufted Titmouse – *Parus bicolor*

White-breasted Nuthatch – *Sitta carolinesis*
Brown Creeper – *Certhia familiaris*
Carolina Wren – *Thaothorus ludovicianus*
House Wren – *Troglodytes aedon*
Winter Wren – *Troalodytes troglodytes*
Golden-crowned Kinglet – *Regulus satrapa*
Ruby-crowned Kinglet – *Regulus calendula*
Blue-gray Gnatcatcher – *Polioptila caerulea*
Veery – *Catharus fuscescens*
Gray-cheeked Thrush – *Catharus minimus*
Swainson's Thrush – *Catharus ustulatus*
Hermit Thrush – *Catharus izuttutatus*
Wood Thrush – *Hylocichia mustelina*
American Robin – *Turdus migratorius*
Gray Catbird – *Durnetella carolinensis*
Northern Mockingbird - *Mimus polygottos*
Brown Thrasher – *Toxostoma rufum*
American Pipit – *Anthis spinoletta*
Cedar Waxwing – *Bombycilia cedrorum*
European Starling - *Sturnis vulgaris*
White-eyed Vireo – *Vireio griseus*
Solitary Vireo – *Vireo solitarius*
Warbling Vireo – *Vireo gilvus*
Philadelphia Vireo – *Vireo phiadelphius*
Red-eyed Vireo – *Vireo olivaceus*
Blue-winged Warbler – *Vermivora dinus*
Lawrence's Warbler – *Virinivora chusoptera pinus*
Tennessee Warbler – *Vermivora peregrina*
Nashville Warbler - *Vermivora ruficaill*
Northern Parula – *Parula Americana*
Yellow Warbler – *Dendroica perechia*
Chestnut-sided Warbler – *Dendroica petechia*
Magnolia Warbler – *Dendroica pensylvanic*
Cape May Warbler – *Dendroica tigrina*
Black-throated Blue Warbler – *Dendroica caeralescens*
Blackburnian Warbler – *Dendroica fusca*
Pine Warbler – *Dendroica pinus*
Prairie Warbler - *Dendroica discolor*
Palm Warbler – *Dendroica xalm*
Blackpoll Warbler – *Dendroica striata*
Bay-breasted Warbler – *Dendroica castanea*
Black-and-White Warbler – *Mniotilta varia*
American Redstart – *Setophaga ruticilla*
Worm Eating Warbler – *Helmithero vermivorous*
Ovenbird – *Seiurus aurocapillus*
Northern Waterthrush – *Seiurus noveboracensis*

Connecticut Warbler – *Oporornis agilis*
Mourning Warbler – *Oporornis philadelphia*
Common Yellowthroat – *Geothyypis trichas*
Hooded Warbler – *Wilsonia citrina*
Wilsons's Warbler – *Wilsonis pusilla*
Canada Warbler – *Wilsonia Canadensis*
Scarlet Tanager – *Piranga olivacea*
Northern Cardinal – *Cardinalis cardinalis*
Rose-breasted Grosbeak – *Pheucticus ludovicianus*
Indigo Bunting – *Passerica cyanea*
Rufous-sided Towhee – *Pipila erythrophthalmus*
Chipping Sparrow – *Spizella passerina*
Field Sparrow – *Spizella pusilla*
Song Sparrow – *Melospiza melodia*
White-throated Sparrow – *Zonotrichia albicollis*
Swamp Sparrow – *Melospiza Georgiana*
Dark-eye Junco – *Junco heymalis*
Bobolink – *Dolichonyx oryzivorus*
Red-winged Blackbird – *Ageliaus phoeniceus*
Rusty Blackbird – *Euphagus carolinus*
Common Grackle – *Quiscalus quiscula*
Brown-headed Cowbird – *Molothrus ater*
Orchard Oriole – *Icterus spurious*
Baltimore Oriole – *Icterus galbula*
Purple Finch – *Carpodacus purpureus*
House Finch – *Carpodacus mexicanus*
American Goldfinch – *Carduelis tristis*
House Sparrow – *Passer domesticus*

Fish

Mottled Sculpin – *Cottus bairdi*
Chain Pickerel – *Esox niger*
Brook Trout – *Salvelinus fontinalis*
Rainbow Trout – *Salmo gairdneri*
Brown Trout - *Salmo trutta*
Bluegill – *Lepomis macrochirus*
Largemouth Bass – *Micropterus salomides*
Creek Chub – *Semotilus astromaculetus*
Blacknose Dace – *Rhinichthys astratulus*
Pumpkinseed – *Lepomis gibbosus*
American Eel – *Anguilla rostrata*

CLIMATE CHANGE

According to the National Oceanic and Atmospheric Administration (NOAA), global temperatures have been increasing over the past 50 years, with temperatures in the northeast increasing 2 degrees Fahrenheit since 1970. As human activities continue to elevate the levels of atmospheric carbon dioxide, a greenhouse gas, the phenomenon known as the greenhouse effect continues to increase in intensity. This effect results in a warming of the earth's surface as thermal radiation is absorbed in the atmosphere and released back toward the Earth. As the warming trend continues, it can be expected to impact the Earth's climate.

For Morristown, and the rest of the northeastern US, climate change is resulting in "*more frequent very hot days, a longer growing season, an increase in heavy downpours, less winter precipitation falling as snow and more as rain, reduced snowpack, earlier break-up of winter ice on lakes and rivers, earlier spring snowmelt resulting in earlier peak river flows, rising sea surface temperatures, and rising sea level*" (Global Climate Change Impacts in the US, 2009). Additionally, Morristown may see changes in its flora and fauna composition as species shift their range northward to adjust to increasing temperatures. Invasive species may also become more prevalent as native species face increased competition from non-native species that are better suited to the conditions. Though Morristown itself does not have large agricultural or natural resource industries, climate change may impact farms and fisheries that supply residents with much of their food.

It is possible that future warming may be reduced through a reduction in emissions. However, though curbing emissions may reduce the future severity of climate change, some changes may be unavoidable. Adapting to these changes will be an issue that will need to be addressed at the local, state and federal levels of government.

The Office of Sustainability completed an inventory of solar panels during the summer of 2011. **Table 19** lists the following the locations which have solar panels:

Table 19: Inventory of Solar Panels in the Town of Morristown, NJ

1. 68 Miller Road (Block 7301, Lot 4)
2. 76-80 Miller Road, (Block 7301, Lot 6)
3. 320 South Street (Parsons Village), (Block 6702, Lot 2)
4. 55 Abbett Avenue, (Block 1904,Lot 1)
5. 38-42 Abbett Avenue (Block 2101, Lots 1, 1.01, 1.02)
6. 19 Lincoln Street (Block 2201, Lot 19)
7. Sewer Treatment Plant – Hanover Twp Project (Block 9999, Lot 99)
8. Maple Avenue Office Building,(Block 6004, Lot 12)
9. Morris County Administration and Records Building, 30 Schuyler Place (Block 5906, Lot 9.01)
10. 37 Harrison Street (Block 5601, Lot 7)
11. 80 James Street (78 James Street) (Block 7104.Lot 26)

KNOWN CONTAMINATED SITES

The Known Contaminated Sites List (KCSL) for New Jersey are those sites and properties within the state where contamination of soil or groundwater has been confirmed at levels equal to or greater than applicable standards.

Known Contaminated Sites may include:

- Active sites with known contamination, these sites can have one or more active case with any number of pending and closed cases
- Pending sites with confirmed contamination which are those sites having one or more pending cases, no active cases, and any number of closed cases, and
- Closed sites with remediated contamination, which are those sites having only closed cases. Sites in this category have no active or pending cases.

These lists are produced by the NJDEP in response to *N.J.S.A. 58:10-23.16-17*, which requires the preparation of a list of sites affected by hazardous substances. It also satisfies Program's obligations under the New Jersey New Residential Construction Off-Site Conditions Disclosure Act (*N.J.S.A. 46:3C1 et seq.*). Sites included in the KCSL report can undergo a wide variety of remedial activities, ranging from relatively simple "cut and scrape" cleanups to highly complex cleanups. The sites with complex contamination issues can have several sources of contamination, which can affect both soil and groundwater at the same time.

Table 20 and **Table 21** present Active Sites with Confirmed Contamination and Pending Sites with Confirmed Contamination, respectively, in Morristown as of February 15, 2011. These tables present the sites' ID, the Project Interest (PI) Number and Name, the address, and whether or not the site is a home. There are currently 38 active sites with known contamination and 6 pending sites with confirmed contamination in Morristown

Table 20: Active Sites With Confirmed Contamination in Town of Morristown, NJ

Active Sites With Confirmed Contamination in Morristown				
Site ID	**PI Number**	**PI Name**	**Address**	**Homeowner**
353438	436238	16 HILLAIRY AVENUE	16 HILLAIRY AVE	Yes
390815	488570	23 HAZLETT STREET	23 HAZLETT ST	Yes
194167	254966	24 COLONIAL ROAD	24 COLONIAL RD	Yes
425407	532464	30 PHOENIX AVENUE	30 PHOENIX AVE	Yes

Active Sites With Confirmed Contamination in Morristown				
Site ID	**PI Number**	**PI Name**	**Address**	**Homeowner**
427036	534954	50 OGDEN PLACE	50 OGDEN PL	Yes
385062	480774	52 1/2 MADISON STREET	52 MADISON ST	Yes
330780	510062	67 73 SPRING STREET	67 73 SPRING ST	No
3610	006379	CUMBERLAND #121215	149 WASHINGTON ST	No
32148	001340	EGGERT OIL COMPANY INC	173 175 MORRIS ST	No
13578	007374	EXXON R/S 30162	215 MADISON AVE	No
3684	007819	EXXON R/S 30168	109 MORRIS ST	No
3626	008601	EXXON R/S 30250	2 MT KIMBLE AVE	No
15198	008610	EXXON R/S 32066	89 WHIPPANY RD	No
52654	019893	FRANCES MURRAY	73 MENDHAM RD	No
66555	G000007268	GOLDERES JUNK YARD	14 COAL AVE	No
66118	G000002192	JCP&L MORRISTOWN SUBSTATION	RIDGEDALE AVE	No
223667	292045	KINGS SHOPPING CENTER	191 SOUTH ST	No
183603	240178	LANTERMAN RESIDENCE	188 FRANKLIN ST	No
3607	008548	LUKOIL 57239	151 WASHINGTON ST	No
125001	G000043801	LYNTON AVIATION @ MORRISTOWN AIRPORT	1 AIRPORT RD	No
3633	025495	MESLER'S SERVICE STATION	163 165 MORRIS ST	No
52793	020272	MORRIS ELM LLC	41 ELM ST	No

Active Sites With Confirmed Contamination in Morristown				
Site ID	**PI Number**	**PI Name**	**Address**	**Homeowner**
49210	023359	MORRISTOWN DPW GARAGE	EARLY ST & CLINTON PL	No
119332	157114	MORRISTOWN GAS WORKS	SPRING ST & WATER ST	No
54809	024455	MORRISTOWN GAS WORKS (FORMER)	1 5 COAL AVE	No
28582	006069	MORRISTOWN SERVICE STATION	78 MARKET ST	No
60074	92104	MORRISTOWN TIRE CO INC	105 MORRIS ST	No
56646	031506	MT KEMBLE REALTY	8 12 MT KEMBLE AVE	No
117769	435137	NEW JERSEY TRANSIT PARKING LOT	20 MORRIS ST	No
74240	G000038122	PLAZA CLEANERS	30 LAFAYETTE AVE	No
375950	465934	RABBINICAL COLLEGE OF AMERICA	226 SUSSEX AVE	No
19518	031043	REGGIES AUTO SERVICE	128 WASHINGTON ST	No
14789	006901	REHABILITATION MORRISTOWN MEMORIAL HOSP	95 MT KEMBLE AVE	No
13581	004730	SHELL SERVICE STATION	72 ELM ST	No
3685	012658	SHELL SVC STA 100115	152 MORRIS ST	No
37719	011820	ST MARY ABBEY/DELBARTON SCHOOL	270 MENDHAM RD	No
52641	019855	THE SHOPPES AT ESSEX ASSOCIATION	74 76 ABBETT AVE	No

Active Sites With Confirmed Contamination in Morristown				
Site ID	**PI Number**	**PI Name**	**Address**	**Homeowner**
28743	018035	WASHINGTON SERVICE INC	74 WASHINGTON ST	No
Source: NJDEP				

Table 21: Pending Sites with Confirmed Contamination in the Town of Morristown, NJ

Pending Sites With Confirmed Contamination in Morristown				
Site ID	**PI Number**	**PI Name**	**Address**	**Home Owner**
74526	G000039690	144 LAKE ROAD	144 LAKE RD	No
69951	G000031624	16 COLONIAL ROAD	16 COLONIAL RD	No
68264	G000024239	181 MILLS STREET	181 MILLS ST	No
67803	G000022140	23 FRANKLIN PLACE	23 FRANKLIN PL	No
223075	291317	MILLER RD. RADIOLOGICAL	MILLER RD	No
73354	G000033692	MORRISTOWN TOWN SCHOOL TRANSPORTATION	157 MORRIS AVE	No
Source: NJDEP				

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