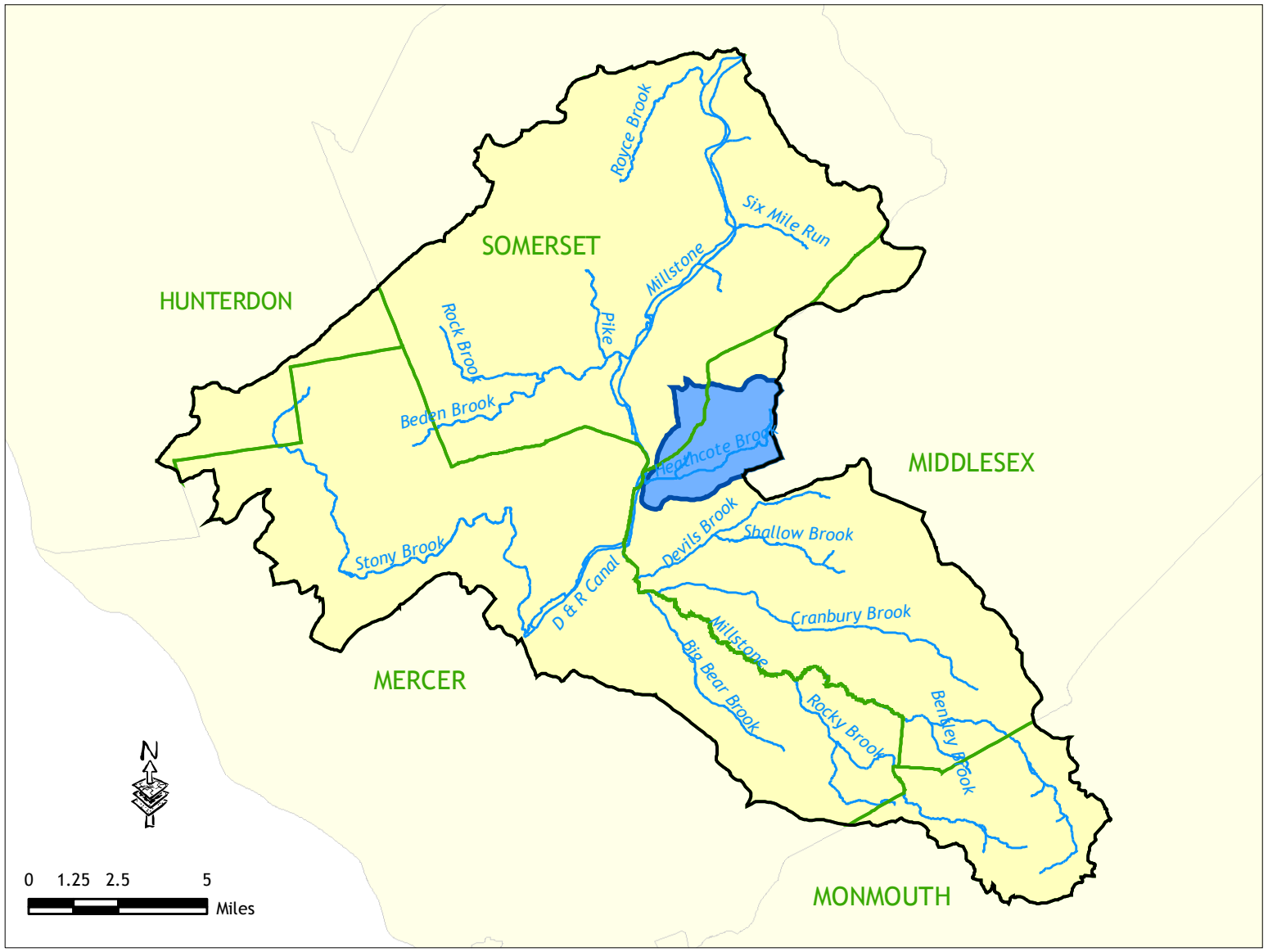
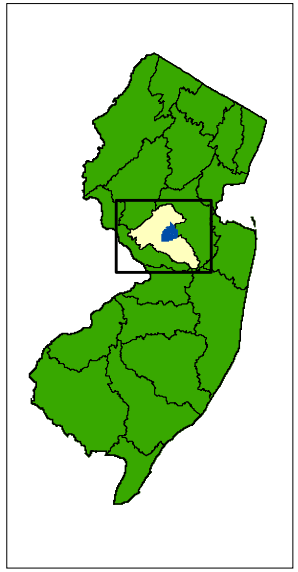
Figure 1: Heathcote Brook Watershed & Millstone Watershed

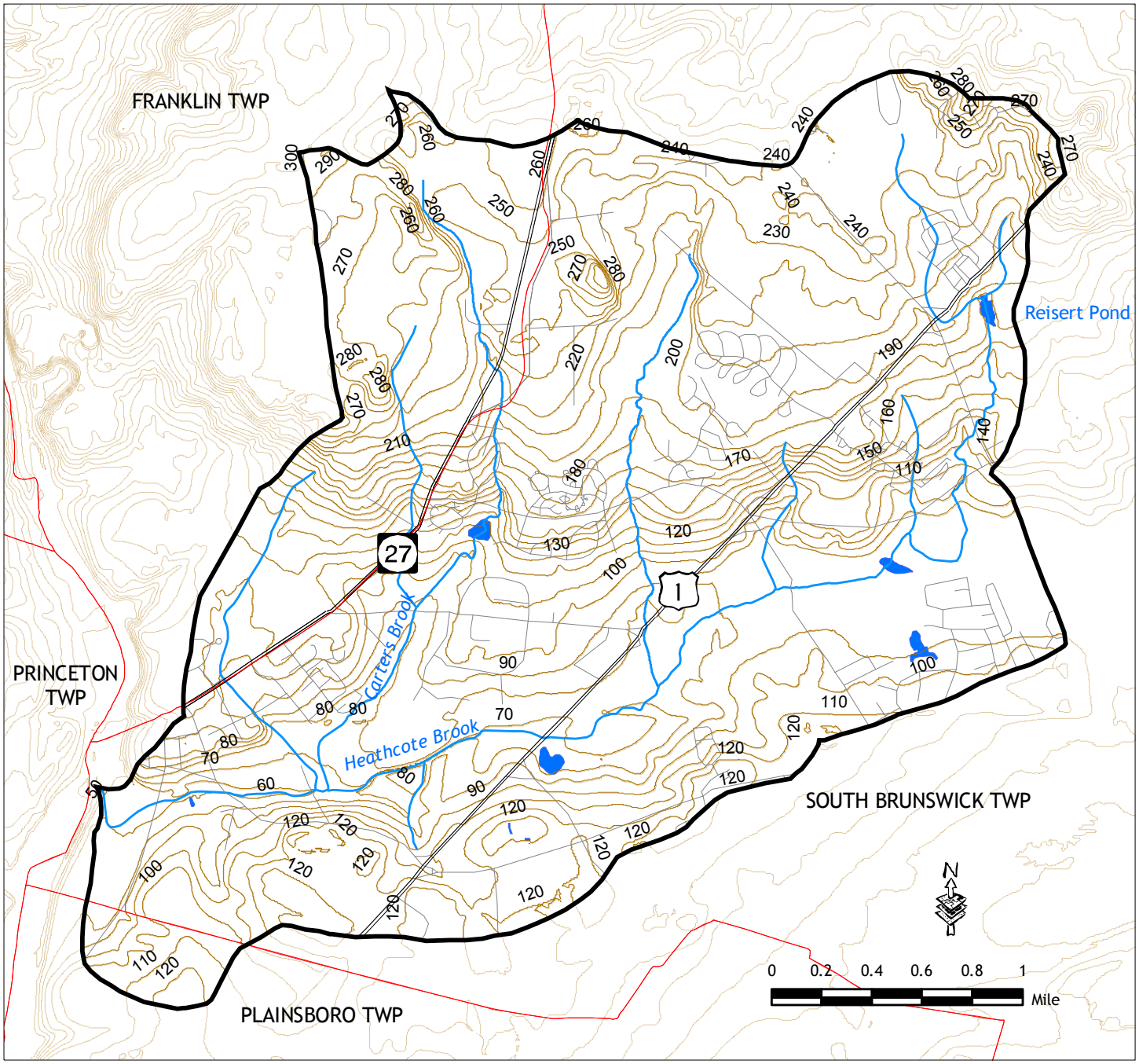




Millstone Watershed
Heathcote Brook Watershed
County Boundaries
Streams
Streams

P. Sankalia, A.Rowan 10/04 - Data Source: New Jersey Department of Environmental Protection. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 2: Heathcote Brook Watershed Topography



Heathcote Brook Watershed

Elevation Contours (10ft. intervals)

Municipalities

Lakes

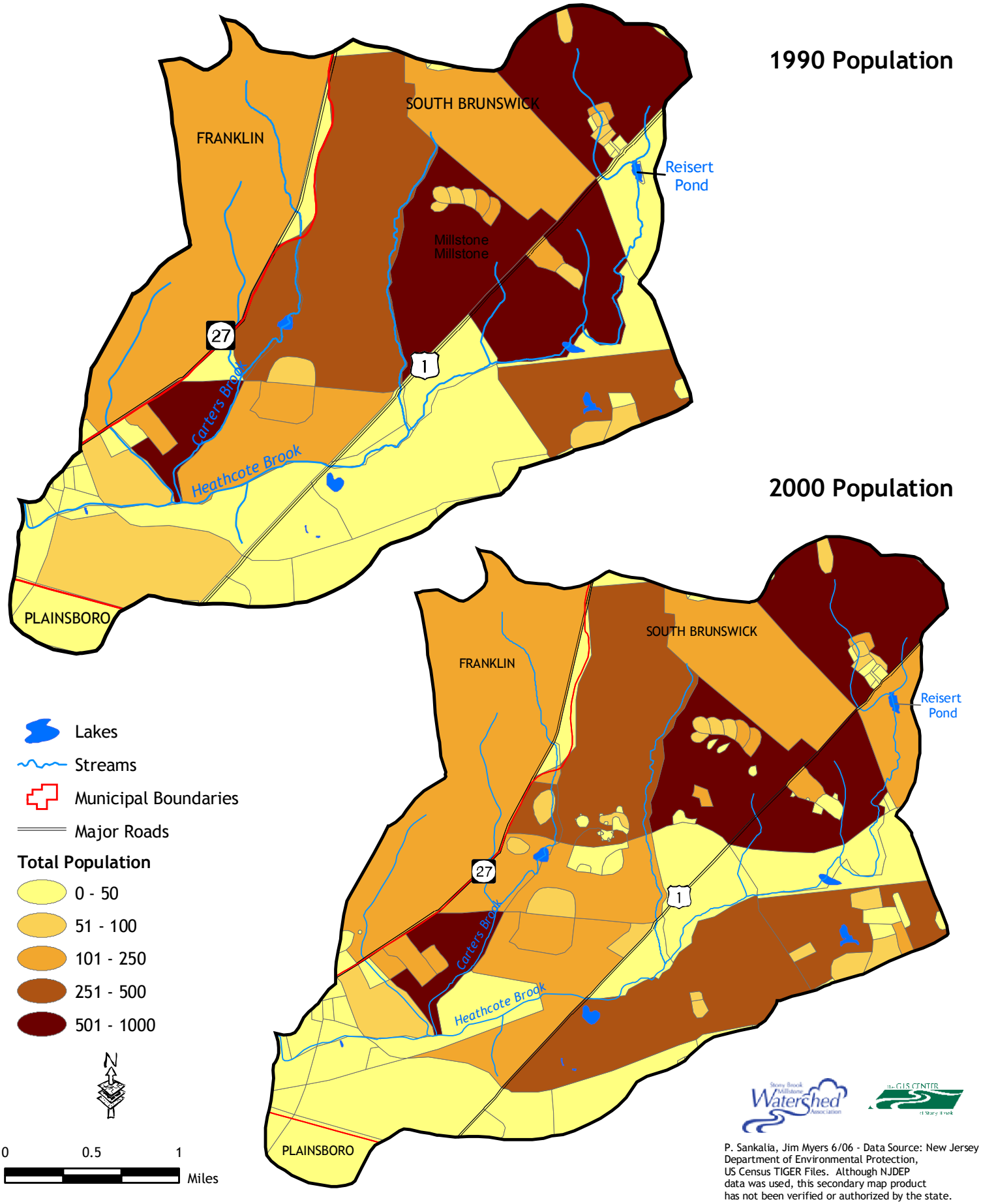
Major Roads

Roads

Streams

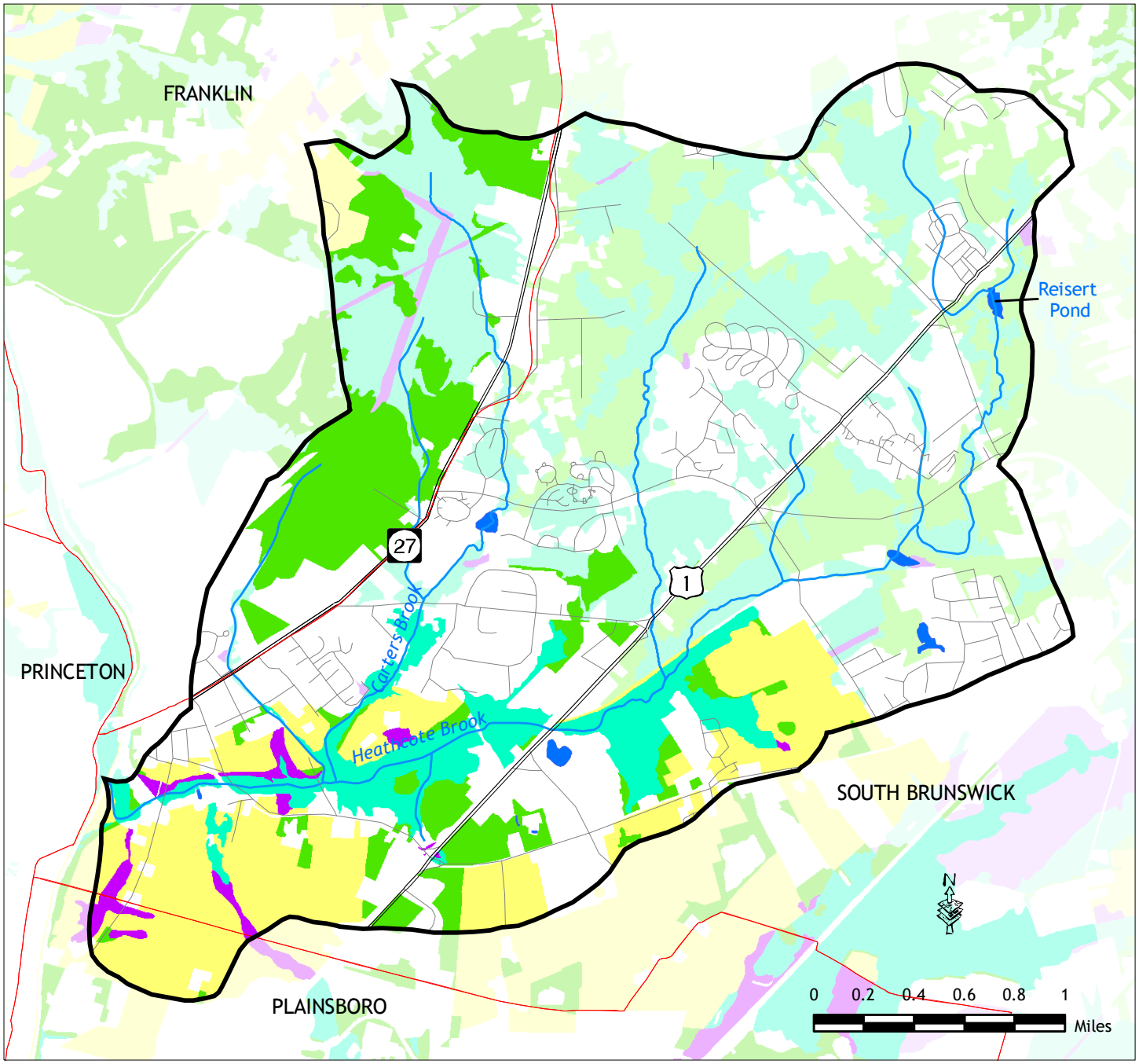
P. Sankalia, A. Rowan 11/03 - Data Source: New Jersey Department of Environmental Protection, US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 3: Population Distribution in Heathcote Brook Watershed By Census Tract



P. Sankalia, Jim Myers 6/06 - Data Source: New Jersey Department of Environmental Protection, US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 4:
Critical Habitats in Heathcote Brook Watershed



Lakes
Municipalities
Major Roads
Roads
Streams

Grassland
- Suitable Habitat
- Priority Species

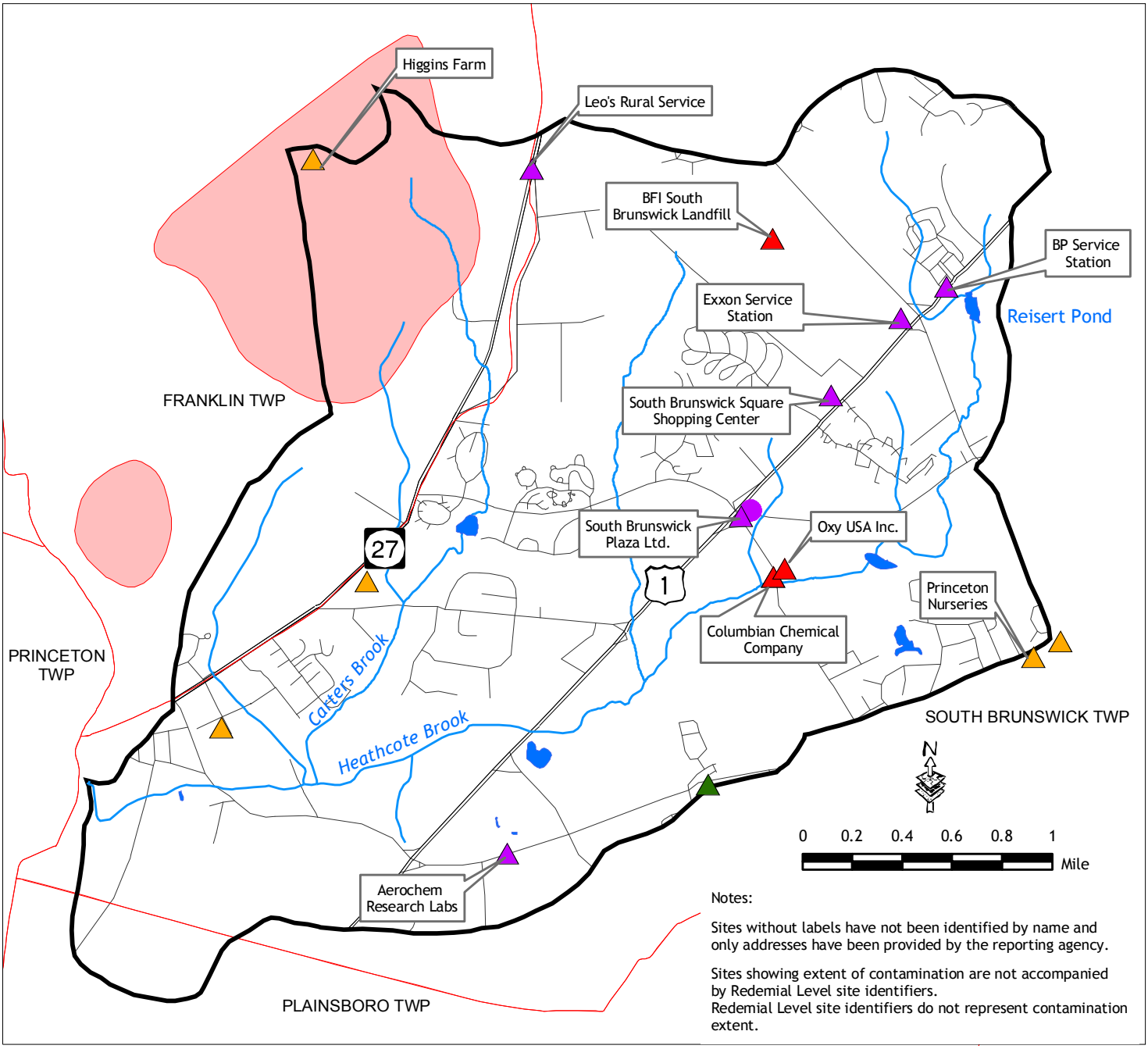
Emergent Wetland
- Suitable Habitat
- Priority Species

Forested Wetland
- Suitable Habitat
- Priority Species

Forest
- Suitable Habitat
- Priority Species

J.Myers 6/06 - Data Source: New Jersey DEP (Landscape Project version 2), US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 5: Known Contaminated Sites and Extent of Contamination in Heathcote Brook Watershed



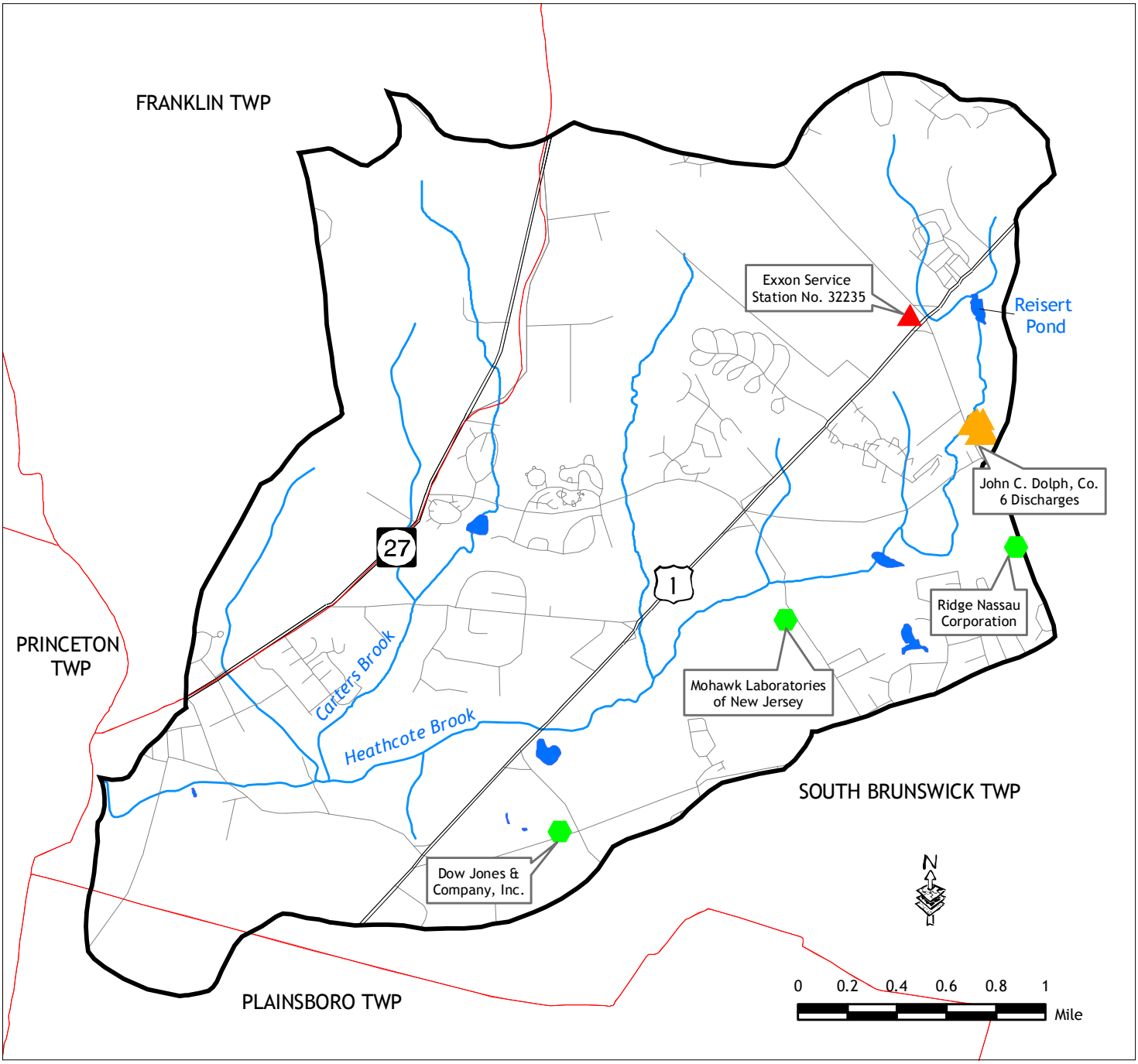
Known Contaminated Site Remedial Levels

- B — A single phase remedial action with a single contaminant affecting only the soil.
- C1 — Remediation does not require a formal design. The source of the contamination is known or has been identified. There is a potential for ground water contamination.
- C2 — Remediation requires a formal design. The source of the contamination is known OR the release has caused ground water contamination.
- D — A multi-phased remediation with multiple sources/releases to mulitiple media inlcluding ground water.
- S — Should have a Remedial Level but this field was either Blank or designated as "N/A" in Pre-NJEMS data.
- C2 Classification Exception Area

- Currently Known Extent of Groundwater Contamination
- Municipal Boundary
- Major Road
- Road
- Stream
- Lake

P. Sankalia, J. Myers, J. Bisacquino - 12/2007.
Data Source: U.S. Census Road TIGER Files; New Jersey Department of Environmental Protection (NJDEP), Bureau of Geographic Information Systems (BGIS); and NJDEP Site Remediation and Waste Management (SRWM) Program's Known Contaminated Sites in New Jersey (KCS-NJ) Report, 7th Edition, Spring 2006 - http://www.state.nj.us/dep/srp/kcs-nj/remlevel.htm
This secondary map product has not been verified or authorized by the source agencies.

Figure 6: NJPDES Point Source Dischargers in Heathcote Brook Watershed



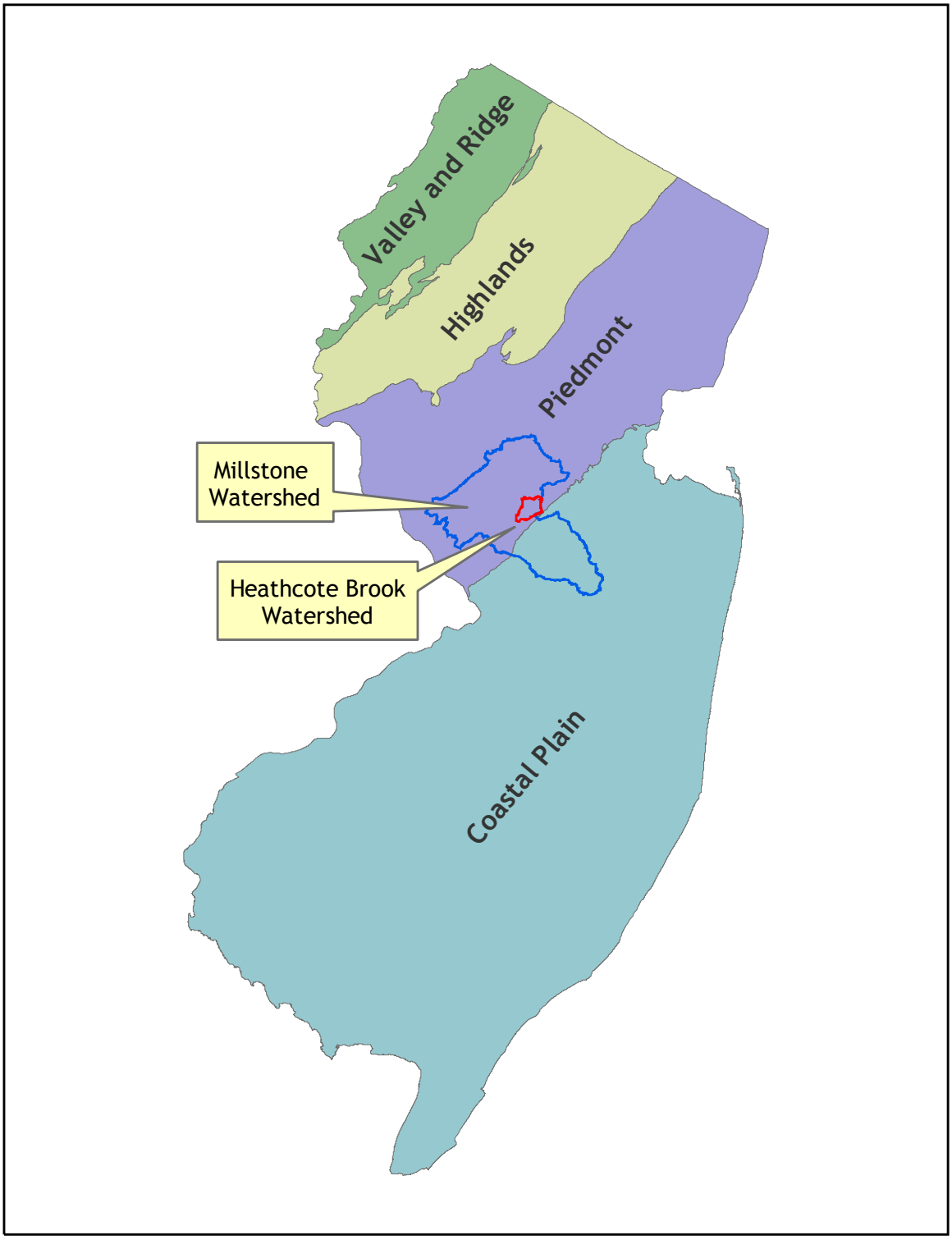
Municipalities
Major Roads
Roads
Streams
Lakes

Surface Water Dischargers

- Petroleum Hydrocarbon Remediation Outfall Pipe Location
- Minor Industrial Storm Water Permit Outfall Pipe Location
- Storm Water Permitted Facility

P. Sankalia, J. Bisacquino 12/2007
Data Source: New Jersey Department of Environmental Protection, U.S. Census Road TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 7:
Physiographic Provinces of New Jersey



N

Miles

0 5 10 20

J. Myers 6/06 - Data Source: New Jersey Department of Environmental Protection, New Jersey Geological Survey & US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

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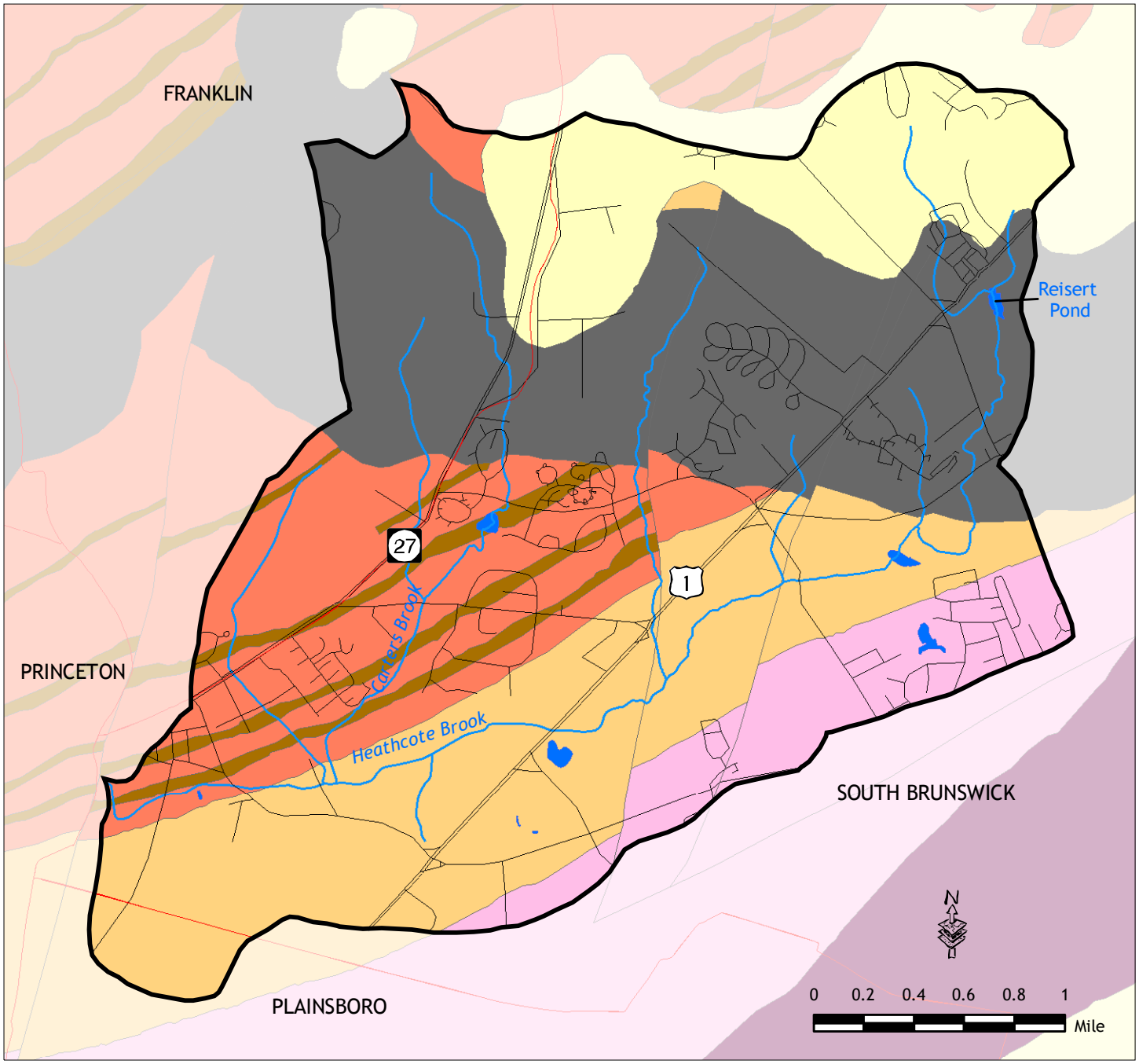
Stony Brook Millstone Watershed Association

Figure 8:
Geology of Heathcote Brook Watershed

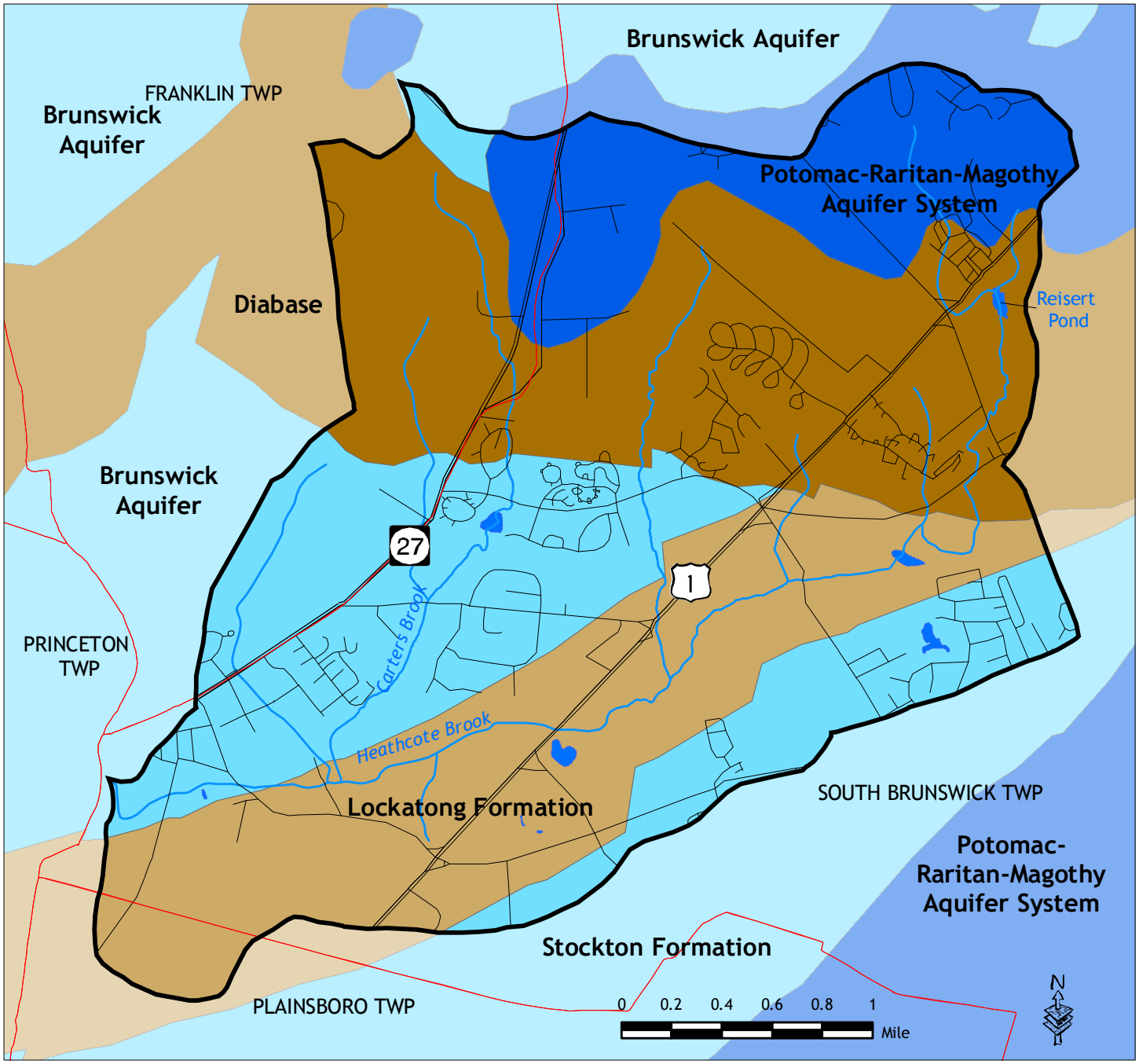


Lakes
Municipalities
Major Roads
Roads
Streams

Bedrock Geology
- Jurassic Diabase
- Lockatong Formation
- Magothy Formation
- Passaic Formation
- Passaic Formation Gray bed
- Raritan Formation
- Stockton Formation

P. Sankalia 5/05 - Data Source: New Jersey Department of Environmental Protection, New Jersey Geological Survey & US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 9:
Aquifers of Heathcote Brook Watershed



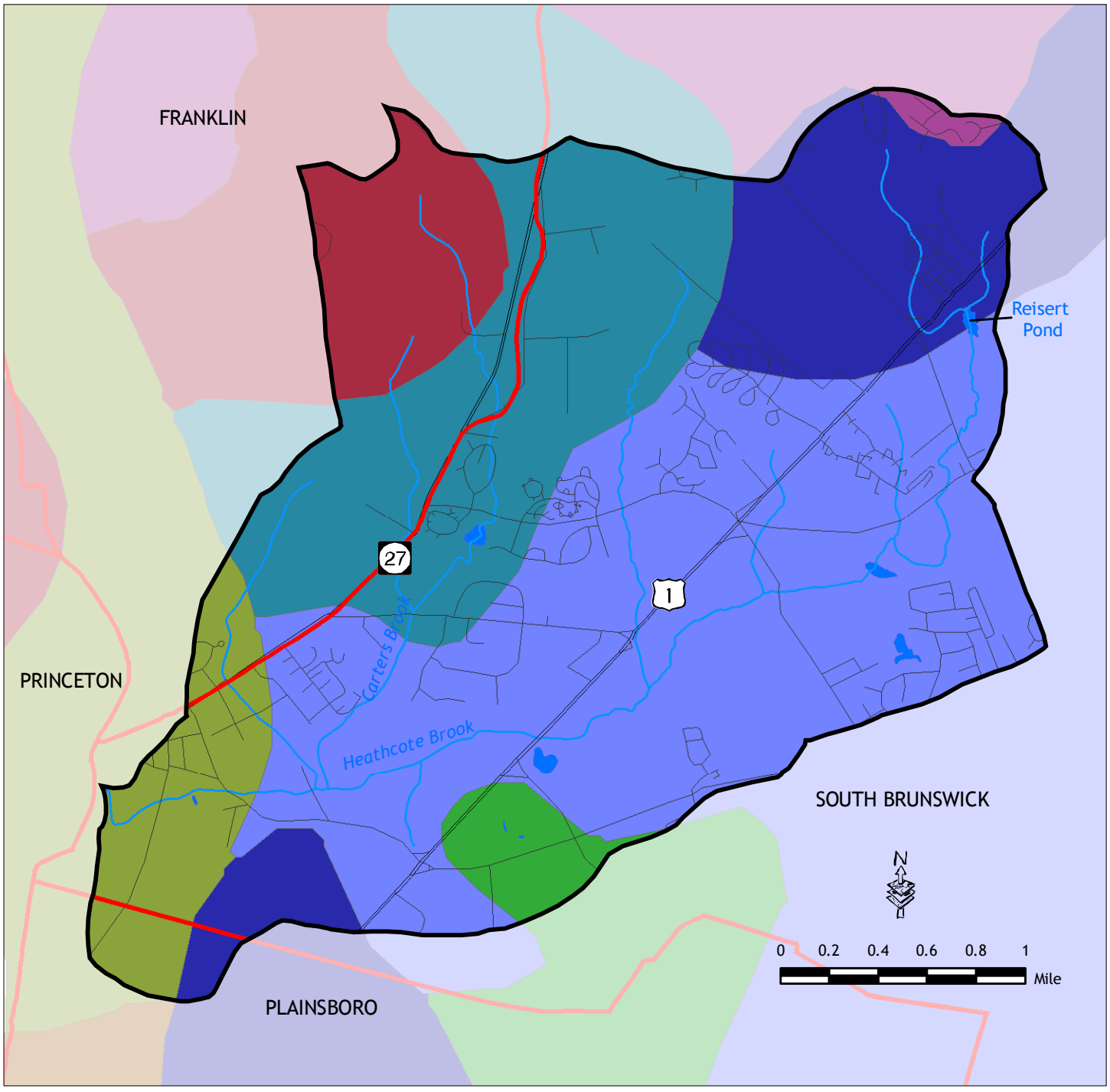
Lakes
Municipalities
Major Roads
Roads
Streams

Aquifer Rank
Average Yield of Hi-Cap Wells

A: >500 gal/min
B: 250-500 gal/min
C: 100-250 gal/min
D: 25-100 gal/min
E: <25 gal/min

P. Sankalia, J. Myers 6/06 - Data Source: New Jersey Department of Environmental Protection, US Census TIGER Files, New Jersey Geological Survey. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 10:
Soils Associations in Heathcote Brook Watershed

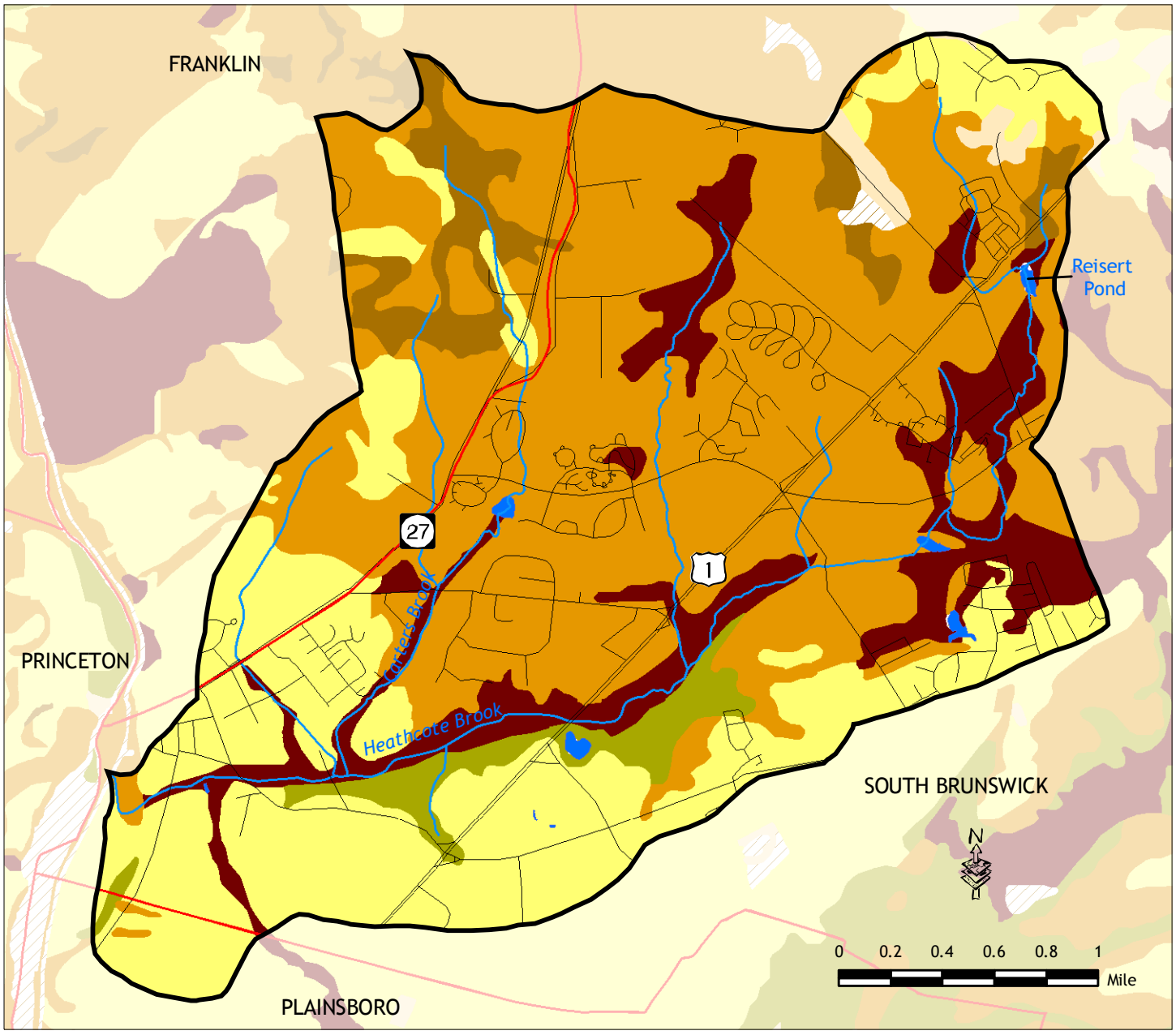


Streams
Municipalities
Lakes
Major Roads
Roads

Soil Association
- Atsion-Manahawkin-Berryland
- Downer-Sassafrass-Hammonton
- Hammonton-Woodstown-Mullica
- Matapex-Matapeake-Chillum
- Neshaminy-Mount Lucas-Lawrenceville
- Penn-Reaville-Klinesville
- Pocomoke-Sulfaquents-Manahawkin
- Rowland-Pope-Birdsboro

J. Myers 9/06 - Data Source: New Jersey Department of Environmental Protection, Natural Resource Conservation Service. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 11:
Hydrologic Soil Groups in Heathcote Brook Watershed



Hydrological Soil Groups

- Unclassified
- A — High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.
- B — Moderate infiltration rates. Deep and moderately deep, moderately well and well drained. Soils that have moderately coarse textures.
- B/D — Dual hydrologic groups are given for certain wet soils that can be adequately drained. The first letter applies to the drained condition, the second to the undrained.
- C — Slow infiltration rates. Soils with layers impeding downward movement of water or soils that have moderately fine or fine textures
- C/D — Dual hydrologic group
- D — Very slow infiltration rates. Soils are clayey, have a high water table or are shallow to an impervious layer

- Streams
- Municipalities
- Lakes
- Major Roads
- Roads

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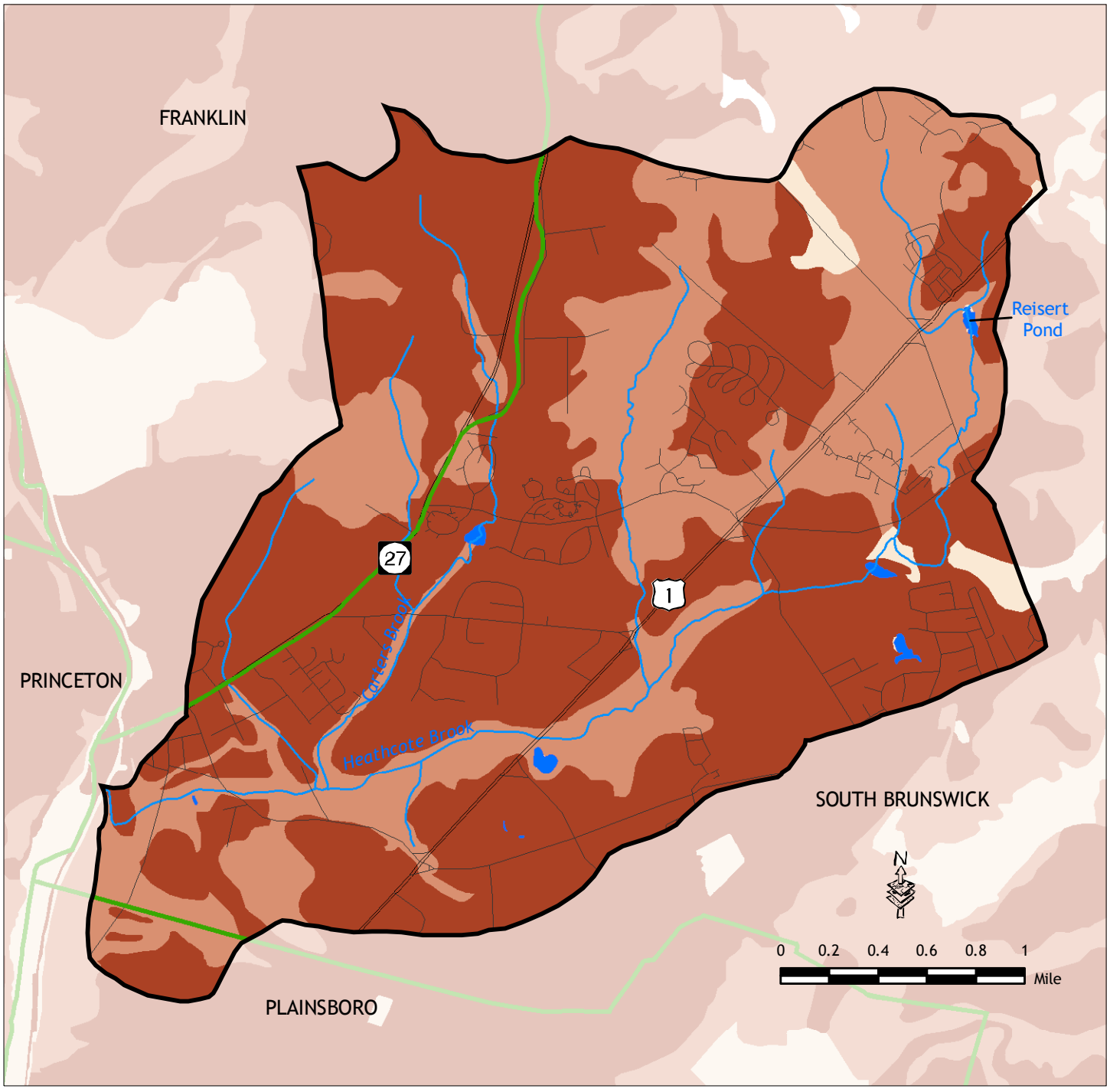
P. Sankalia 5/05 - Data Source: New Jersey Department of Environmental Protection, New Jersey Geological Survey & US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 12:
Soil Erodibility in Heathcote Brook Watershed



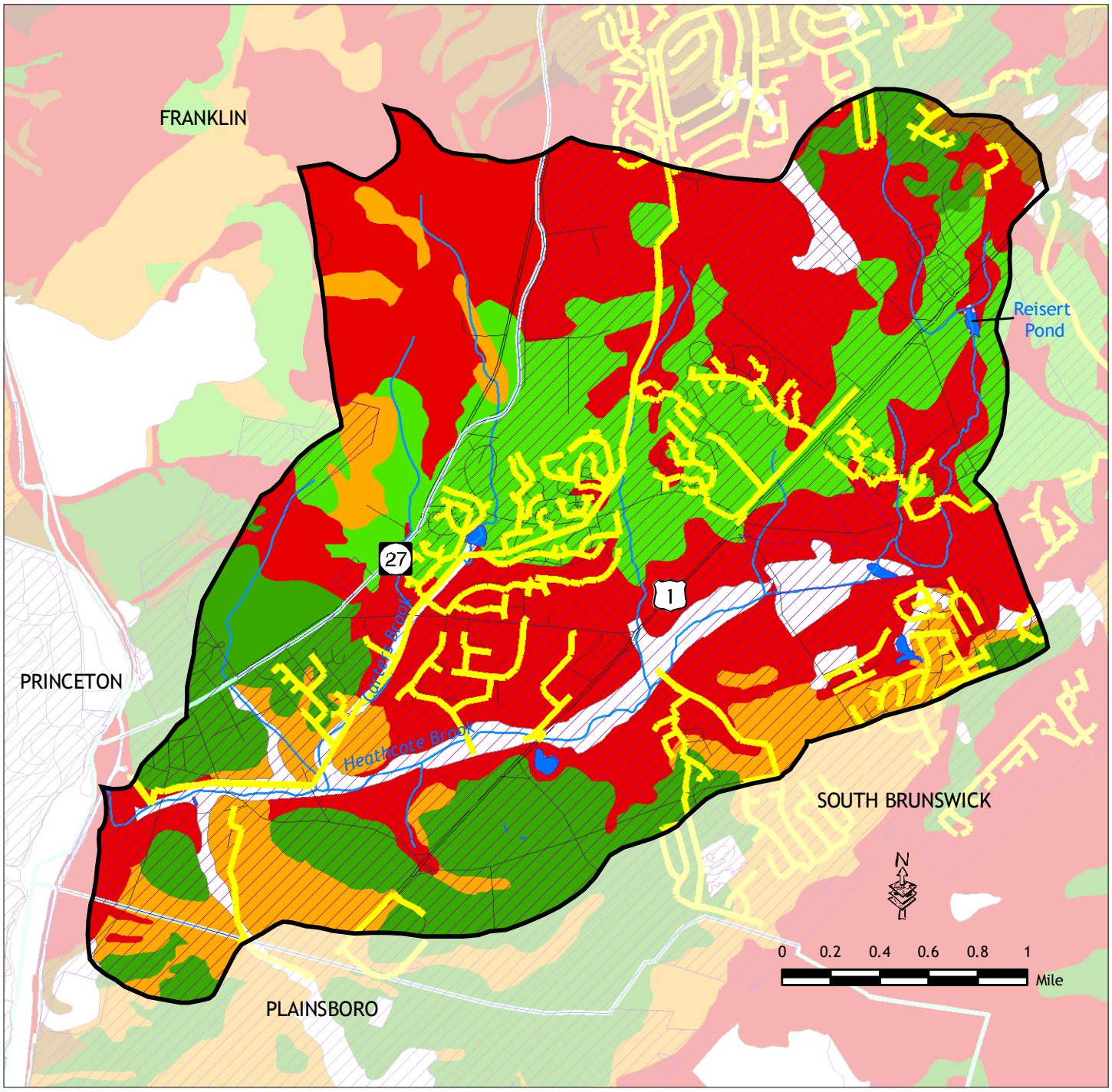
Soil Erodibility (K Factor)

- Low (0.16 and below)
- Med (0.17 - 0.31)
- High (0.32 and above)

- Streams
- Municipalities
- Lakes
- Major Roads
- Roads

P. Sankalia 05/05 - Data Source: New Jersey Department of Environmental Protection, New Jersey Geological Survey & US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 13:
Septic Suitability in Heathcote Brook Watershed



Suitable Septic Installations

- Unclassified
- Conventional
- Conventional w/ drains
- Mound
- Soil Replacement
- Soil Replacement or Mound
- Unsuitable for Septic

- Sewer Service Areas
- Current Sewer Lines
- Major Roads
- Roads
- Municipalities
- Streams
- Lakes

Stony Brook Millstone Watershed Association

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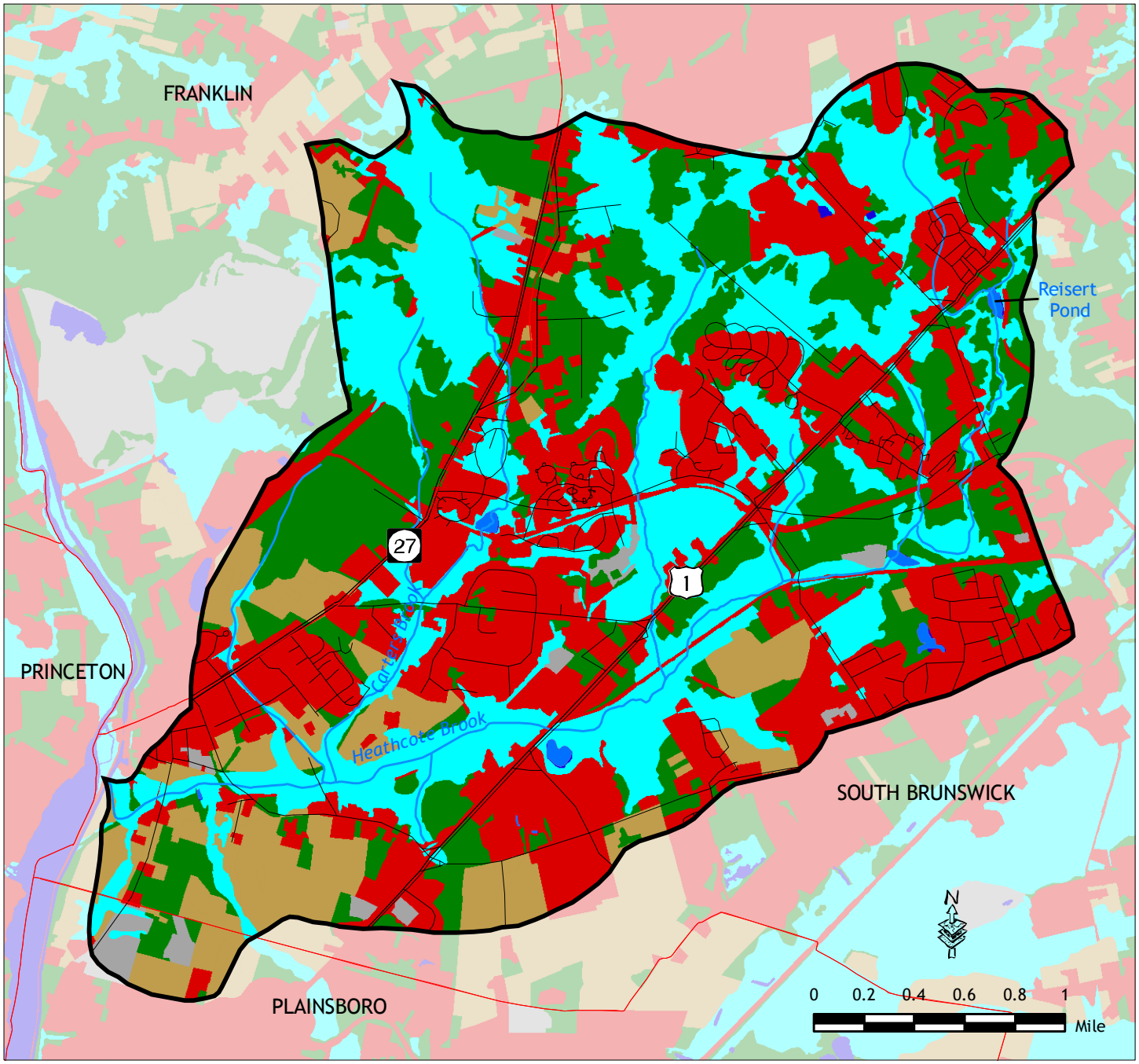
J.Myers 07/06 - Data Source: New Jersey Department of Environmental Protection, New Jersey Geological Survey, US Census TIGER Files and South Brunswick Township. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 14:
2002 Land Use in Heathcote Brook Watershed

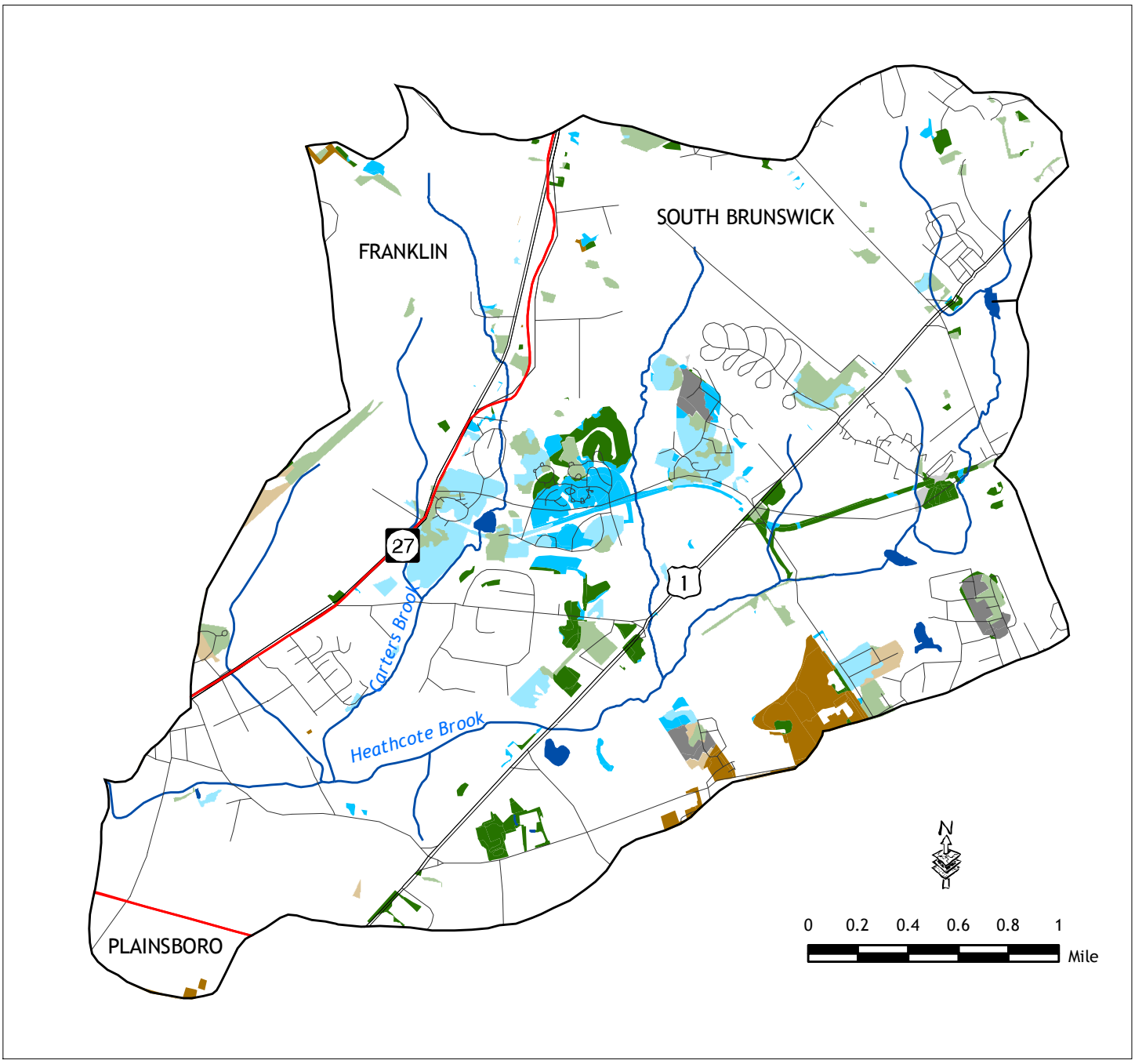


Lakes
Municipalities
Major Roads
Roads
Streams

Land Use
Agriculture
Barren Land
Forest
Urban/Developed
Water
Wetlands

P. Sankalia, J. Myers 6/06 - Data Source: New Jersey Department of Environmental Protection, US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 15: Land Use Changed to Urban/Developed Between 1986 and 1995/97 and Between 1995/97 and 2002 in Heathcote Brook Watershed



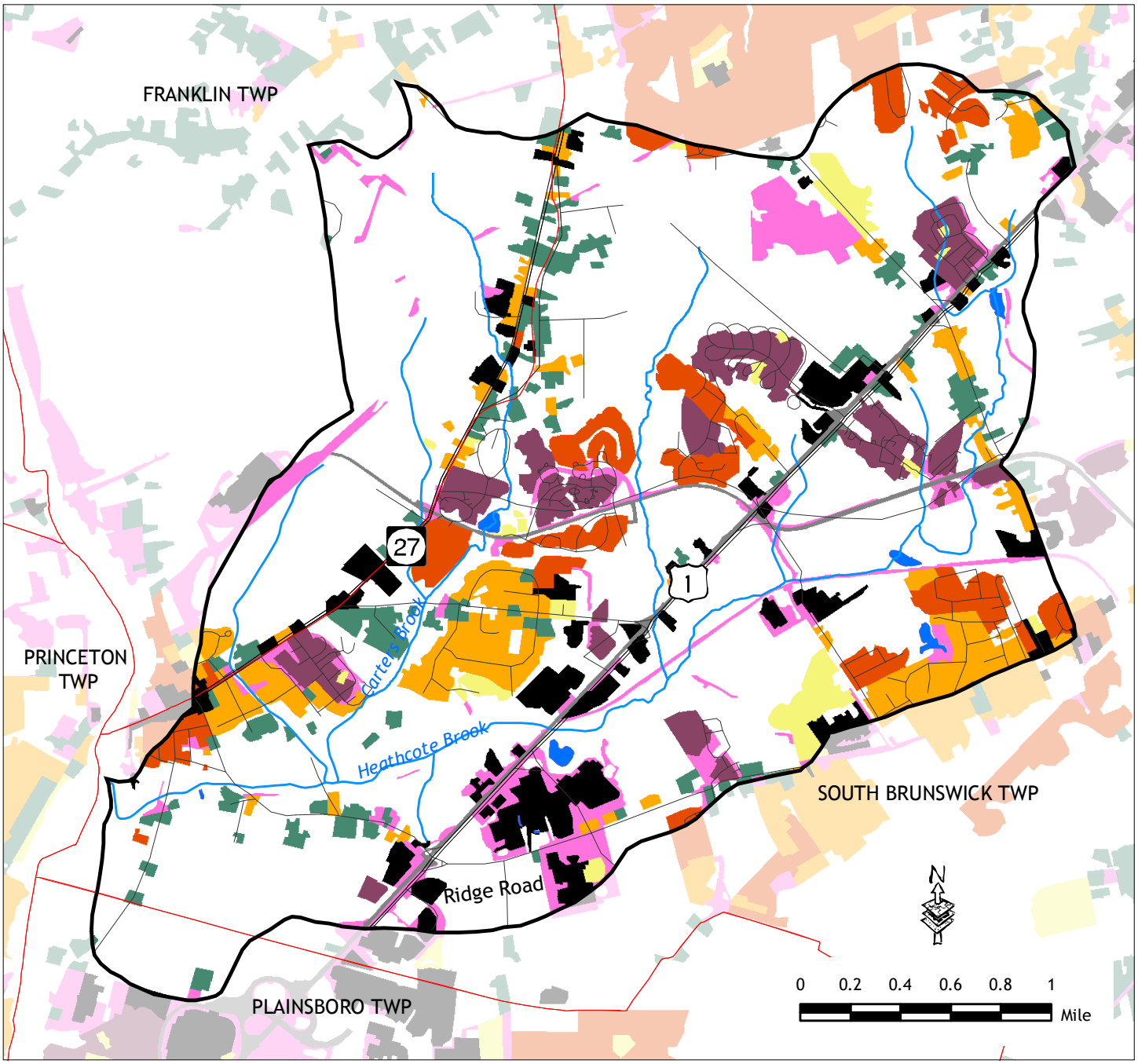
Lakes
Streams
Municipalities
Major Roads
Roads

Previous Land Use
Agriculture
Barren Land
Forest
Wetlands

Lighter shades on map indicate conversion to developed between 1986 and 1995/97. Darker shades indicate conversion to developed between 1995/97 and 2002.

J. Myers 6/06 - Data Source: New Jersey Department of Environmental Protection, US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 16: Urban/Developed Land Use (2002) in Heathcote Brook Watershed



Lakes
Municipalities
Major Roads
Roads
Streams

Land Use Categories

- Transport/Utility
- Industrial/Commercial Complexes
- Residential, Rural, Single Unit
- Residential, Low Density, Single Unit
- Residential, Medium Density, Single Unit
- Residential, High Density, Multiple Units
- Recreational Land
- Other Urban or Built Up

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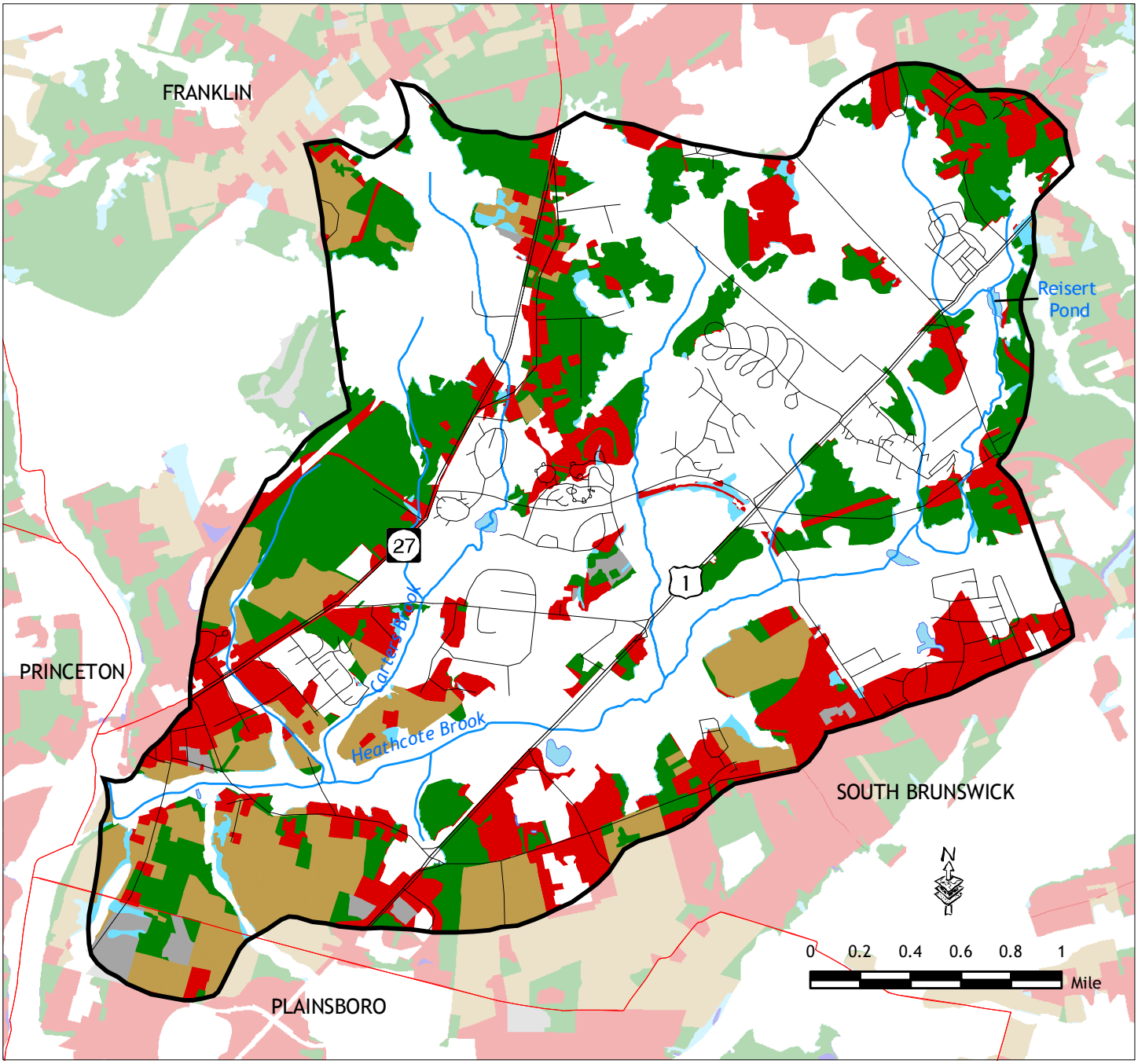
P. Sankalia, J. Myers, J. Bisacquino 6/06 -
Data Sources: New Jersey Department of Environmental Protection, US Census TIGER Files.
Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.
Project: 16landuse.urban.mxd

Figure 17:
Land Use (2002) in Areas of High Ground Water Recharge in Heathcote Brook Watershed



Lakes
Municipalities
Major Roads
Roads
Streams

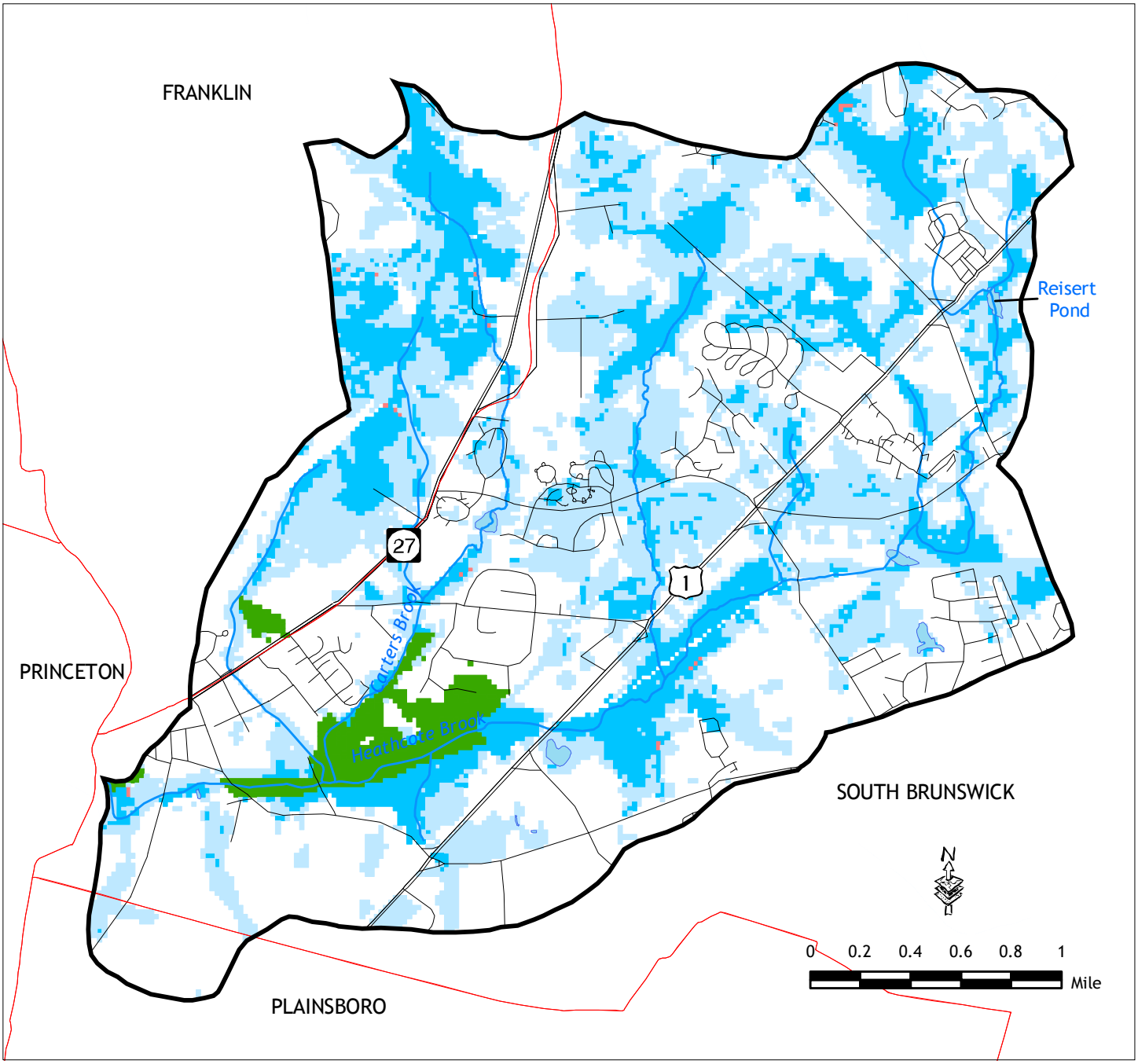
Land Use

Agriculture
Barren Land
Forest
Urban/Developed
Water
Wetlands

"High" recharge defined as 10 in/yr or more

P. Sankalia, J. Myers 6/06 - Data Source: New Jersey Department of Environmental Protection, US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 18:
Critical Areas for Water Resource Protection in Heathcote Brook Watershed



Streams
Municipalities
Lakes
Major Roads
Roads

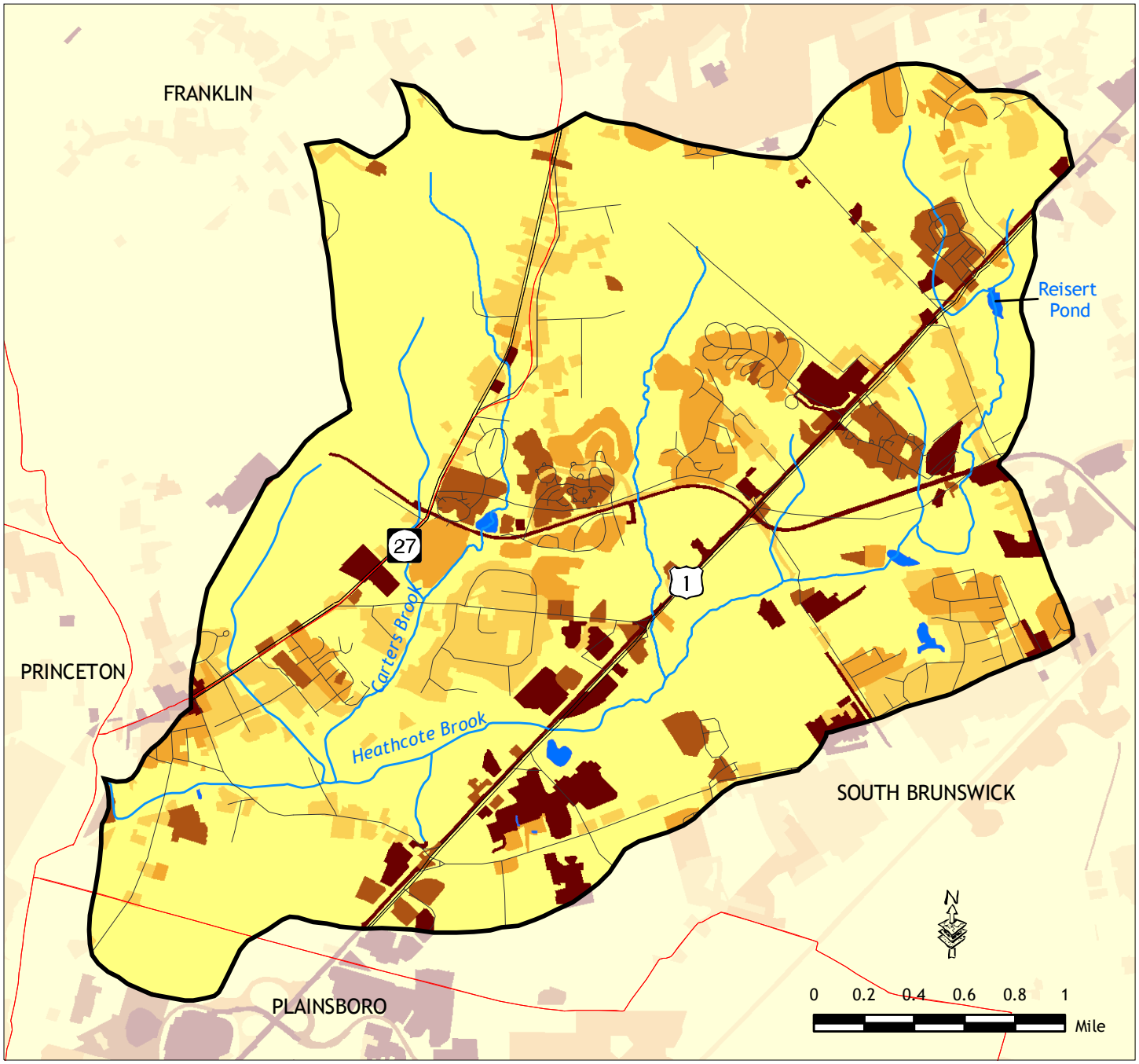
Critical Area Ranking

Four
Three
Two
One
Open Space

Ranking is based on how many of the water resource protection criteria, listed below, are present.
a. Areas with high groundwater recharge
b. Riparian areas
c. Threatened and Endangered Species habitat in wetlands and dense forest areas
d. Wellhead Protection Areas

Cartography by Janel A. Bisacquino, The GIS Center at Stony Brook, 11/09/2006.
Data Source: NJ Water Supply Authority and New Jersey Department of Environmental Protection.
This secondary map product has not been verified or authorized by the source agencies.

Figure 19: Impervious Surfaces (2002) in Heathcote Brook Watershed



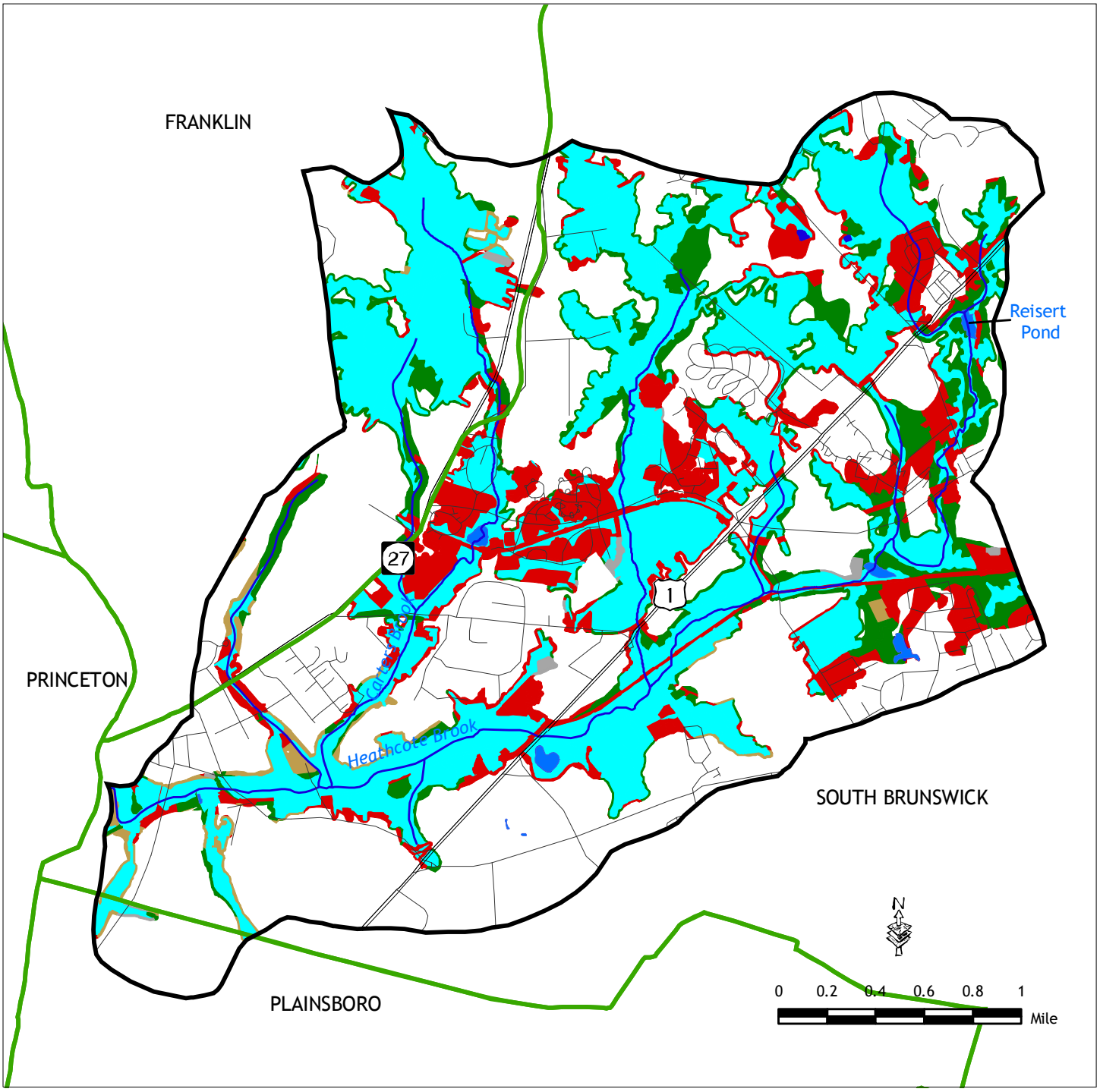
Streams
Municipalities
Lakes
Major Roads
Roads

% Impervious Surface

- 0 - 10
- 11 - 25
- 26 - 50
- 51 - 75
- 76 - 100

P. Sankalia, J. Myers 6/06 - Data Source: New Jersey Department of Environmental Protection, US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 20:
Riparian Land Cover in Heathcote Brook Watershed



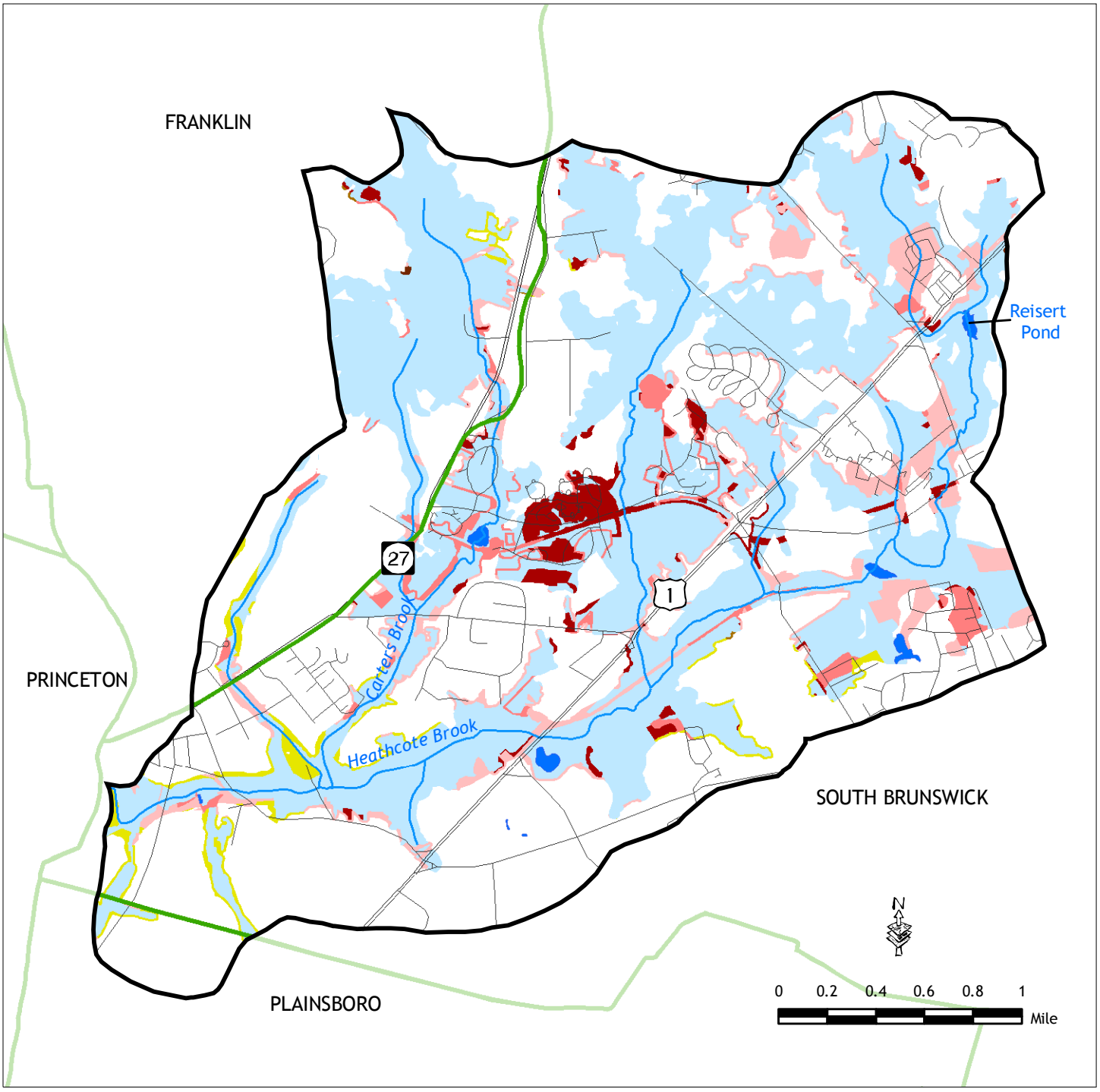
Streams
Municipalities
Lakes
Major Roads
Roads

Riparian Areas

Converted to Agriculture
Barren Land
Forest
Converted to Urban/Developed Land
Water
Wetlands

Cartography by Janel A. Bisacquino,
The GIS Center at Stony Brook, 11/22/2006.
Data Source: New Jersey Department of Environmental Protection, New Jersey Geological Survey and U.S. Census.
This secondary map product has not been verified or authorized by the sourrce agencies.

Figure 21: Riparian Land Cover Conversion in Heathcote Brook Watershed



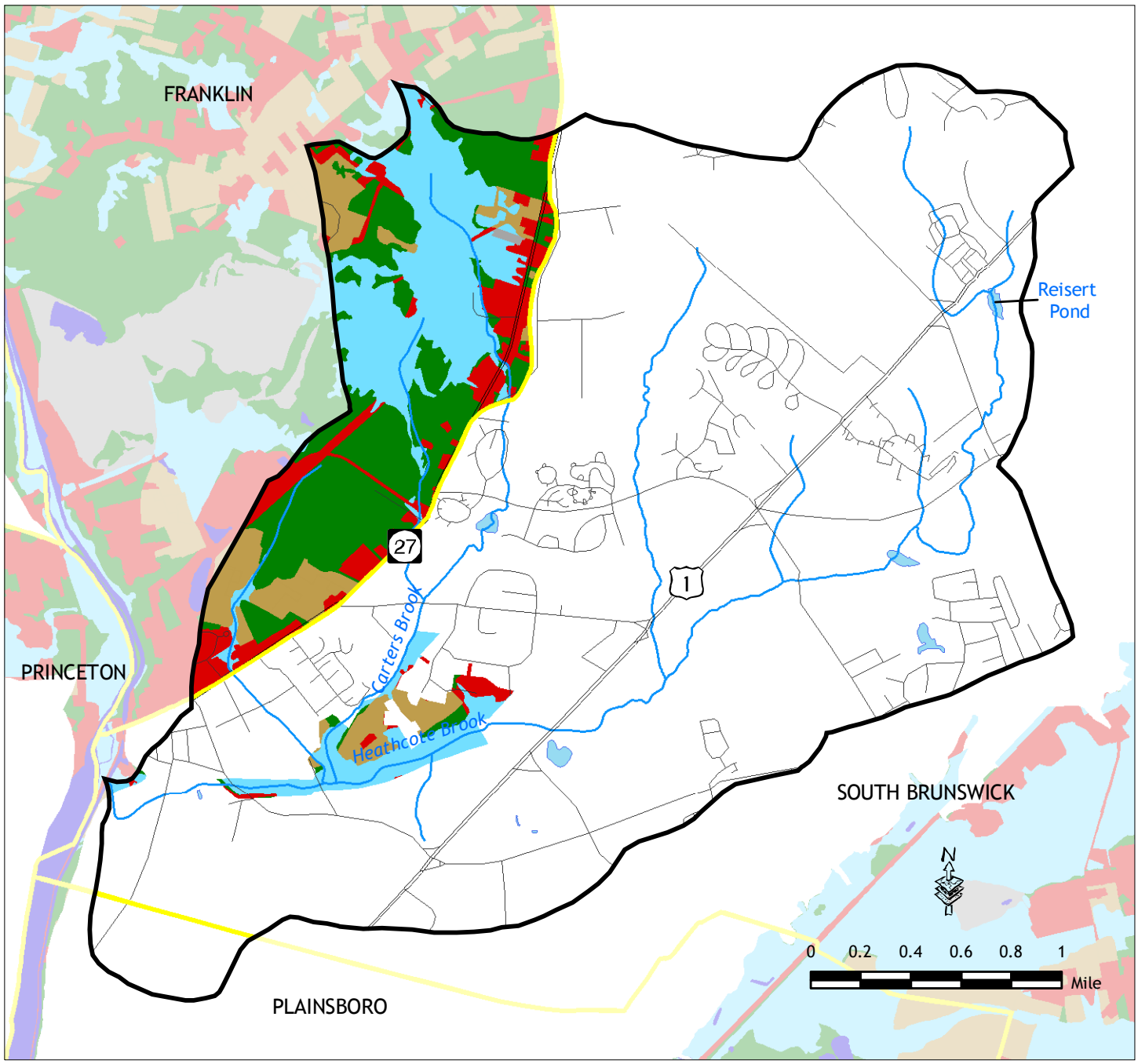
Riparian Land Conversion

- Streams
- Municipalities
- Lakes
- Major Roads
- Roads

- Agricultural Development before 1986
- Agricultural Development 1986 to 1995/97
- Agricultural Development 1995/97 to 2002
- Urban Development before 1986
- Urban Development 1986 to 1995/97
- Urban Development 1995/97 to 2002
- Remaining Riparian Area

P. Sankalia, J. Myers 6/06 - Data Source: New Jersey Department of Environmental Protection, New Jersey Geological Survey & US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 22: Land Use (2002) in State Planning Areas PA 4, 4b, 5 & 8 in Heathcote Brook Watershed



Lakes
Municipalities
Major Roads
Roads
Streams

Agriculture
Barren Land
Forest
Urban
Water
Wetlands

PA 4 - Rural
PA 4b - Rural Environmentally Sensitive
PA 5 - Environmentally Sensitive
PA 8 - State Park

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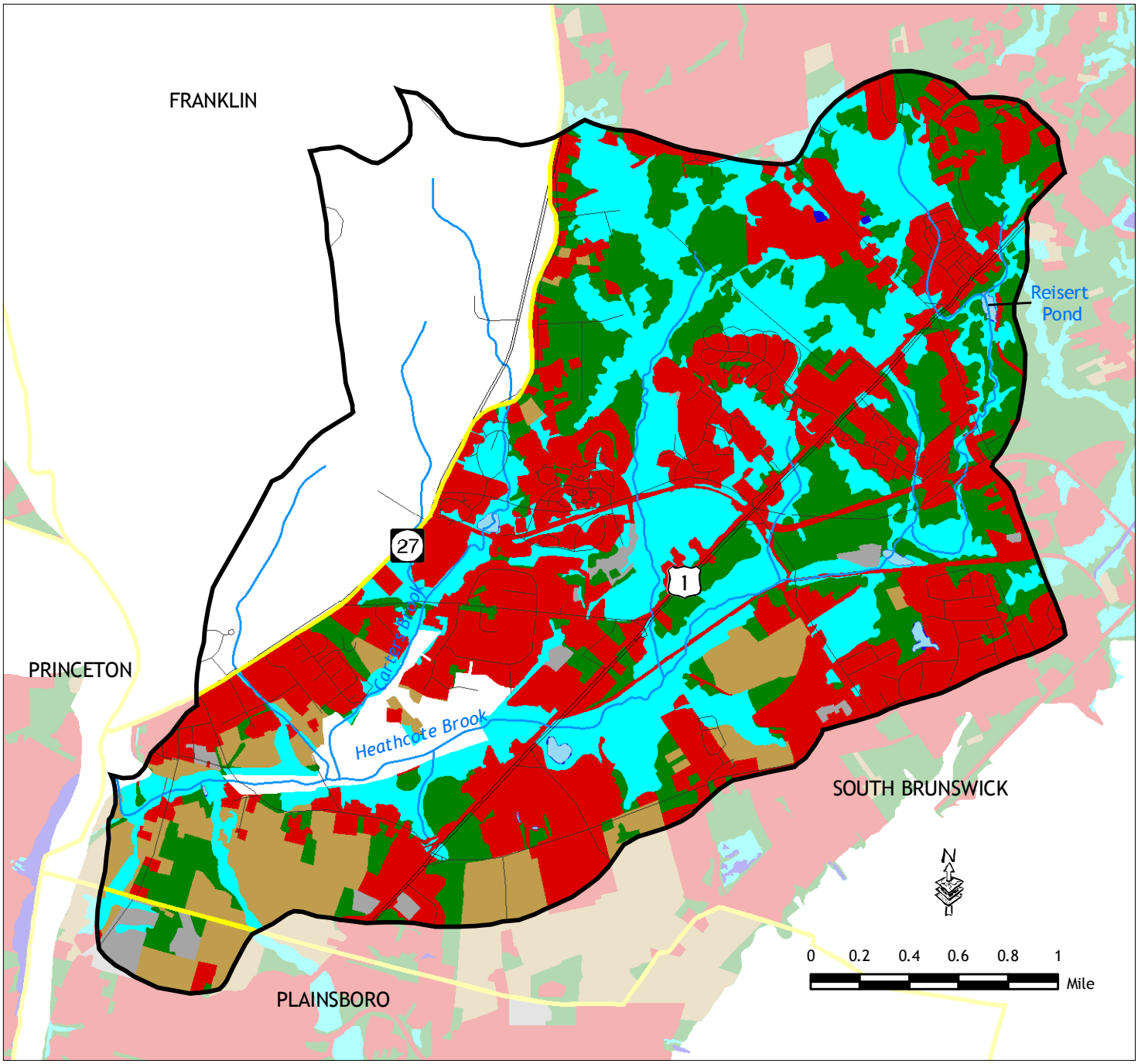
P. Sankalia, J. Myers 6/06 - Data Source: New Jersey Department of Environmental Protection, US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 23: Land Use (2002) in State Planning Areas PA 1, 2 & 3 in Heathcote Brook Watershed



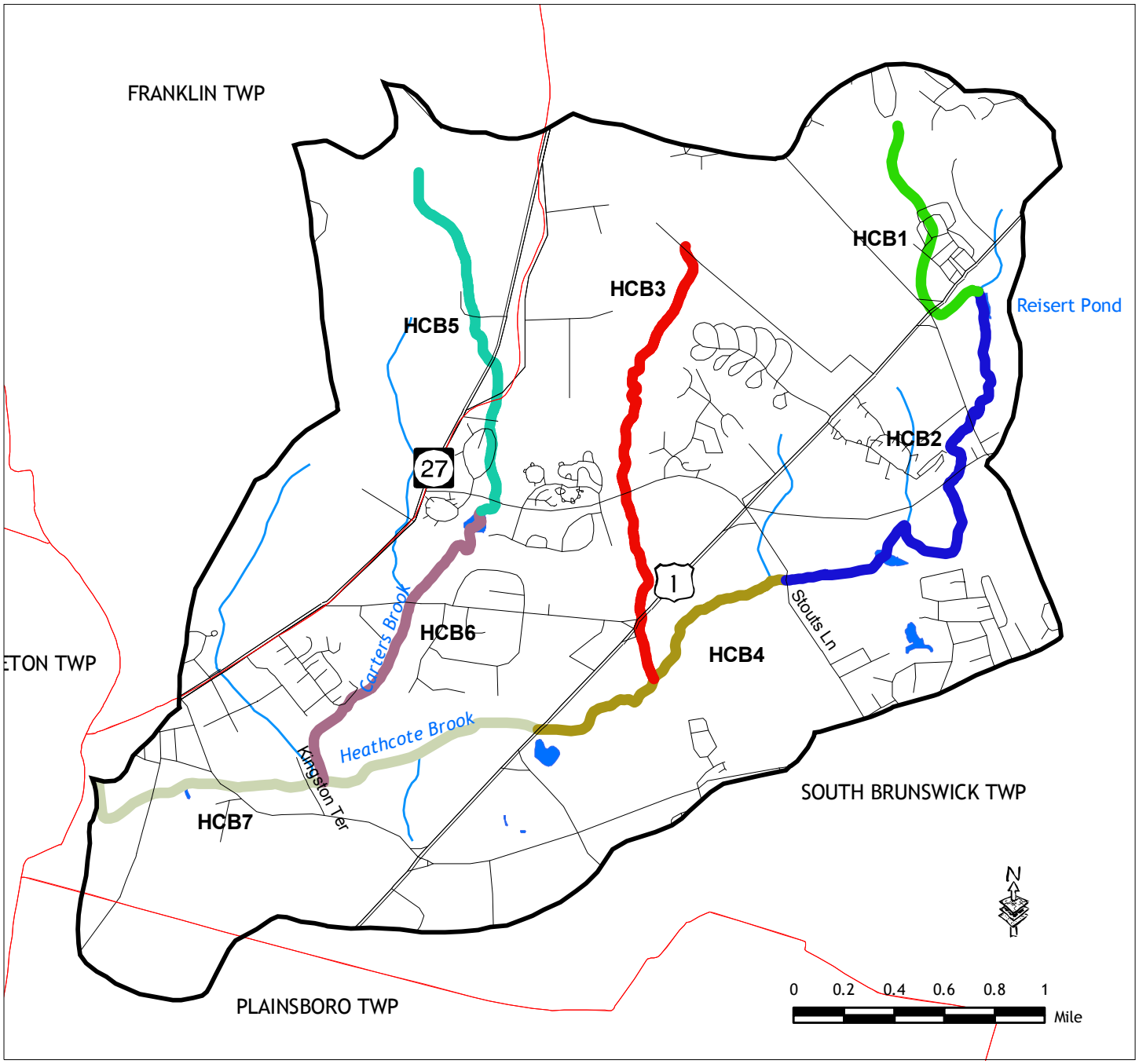
Lakes
Municipalities
Major Roads
Roads
Streams

Agriculture
Barren Land
Forest
Urban
Water
Wetlands

PA 1 - Metropolitan Planning Area
PA 2 - Suburban Planning Area
PA 3 - Fringe Planning Area

P. Sankalia, J. Myers 6/06 - Data Source: New Jersey Department of Environmental Protection, US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 24: Visual Assessment Stream Segments in Heathcote Brook Watershed

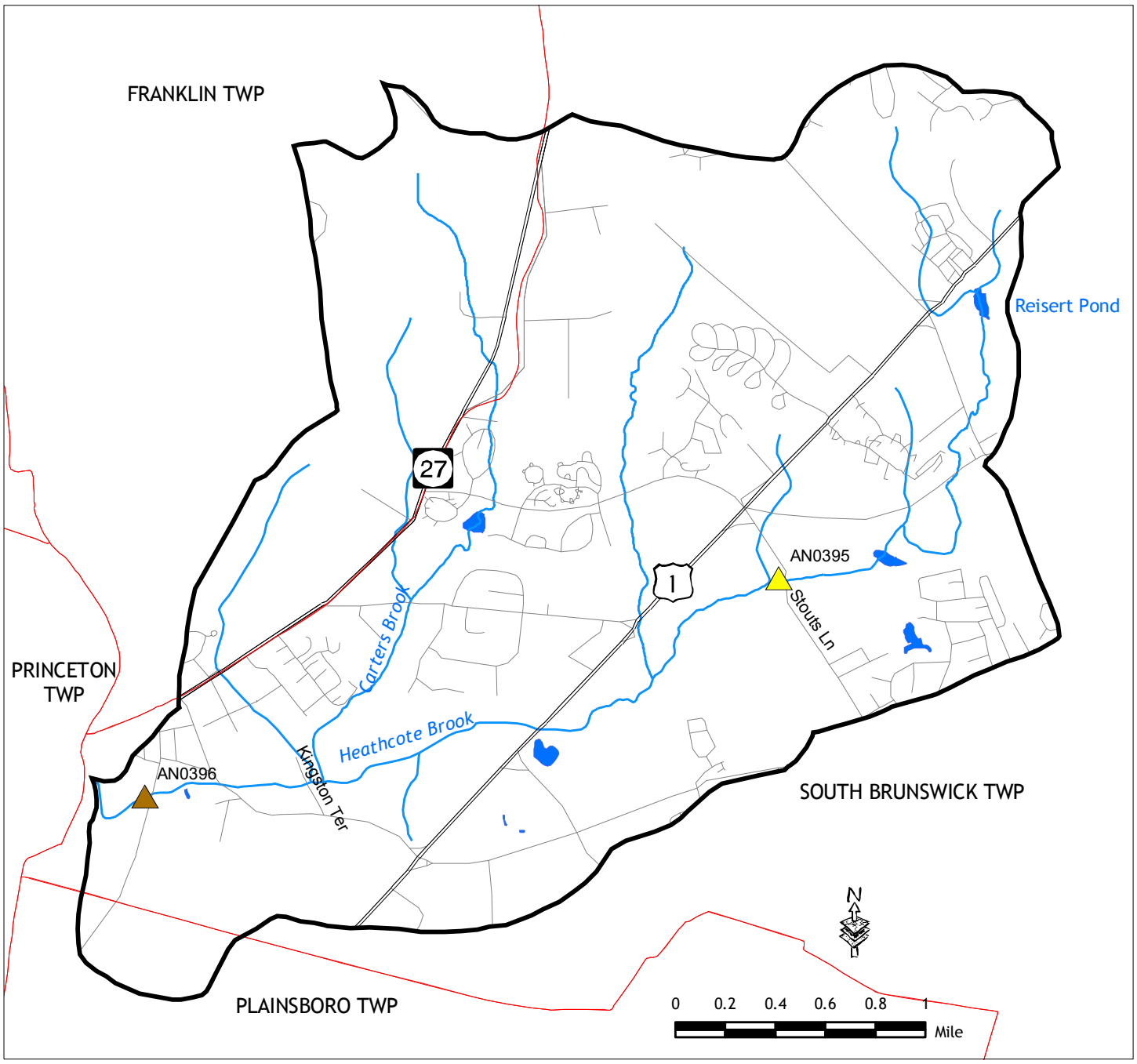


Lakes
Municipalities
Major Roads
Roads
Streams

Visual Assessment Stream Segments
HCB1
HCB2
HCB3
HCB4
HCB5
HCB6
HCB7

P. Sankalia, A. Rowan 11/03 - Data Source: New Jersey Department of Environmental Protection, US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 25:
Biological Monitoring Sites in Heathcote Brook Watershed



Lakes
Municipalities
Major Roads
Roads
Streams

Impairment at AMNET Sites

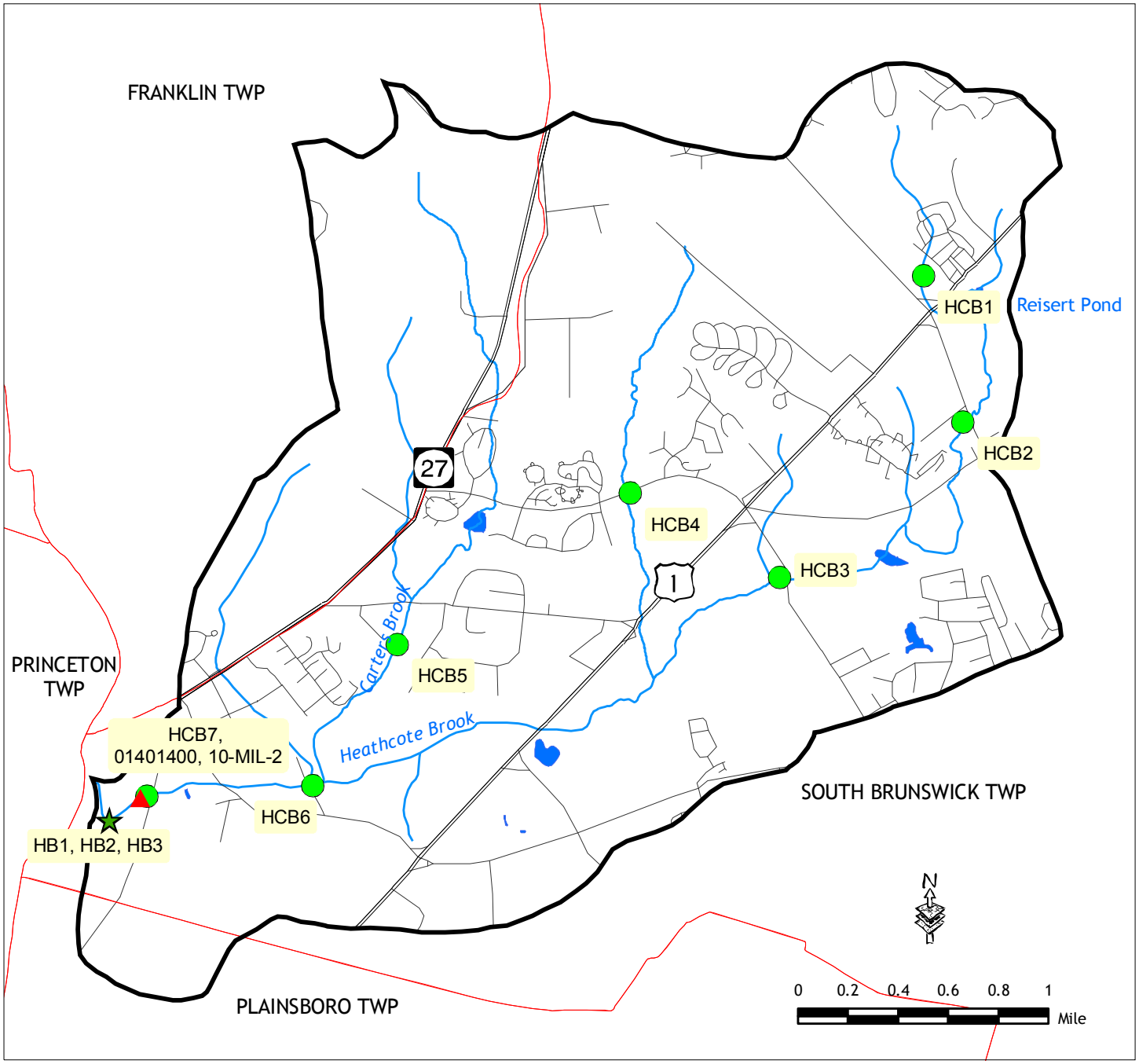
Sampling - 1st, 2nd, 3rd Rounds

Moderate, Moderate, Moderate

Severe, None, Moderate

J. Myers 7/06- Data Source: New Jersey Department of Environmental Protection, US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 26:
Chemical Monitoring Sites in Heathcote Brook Watershed



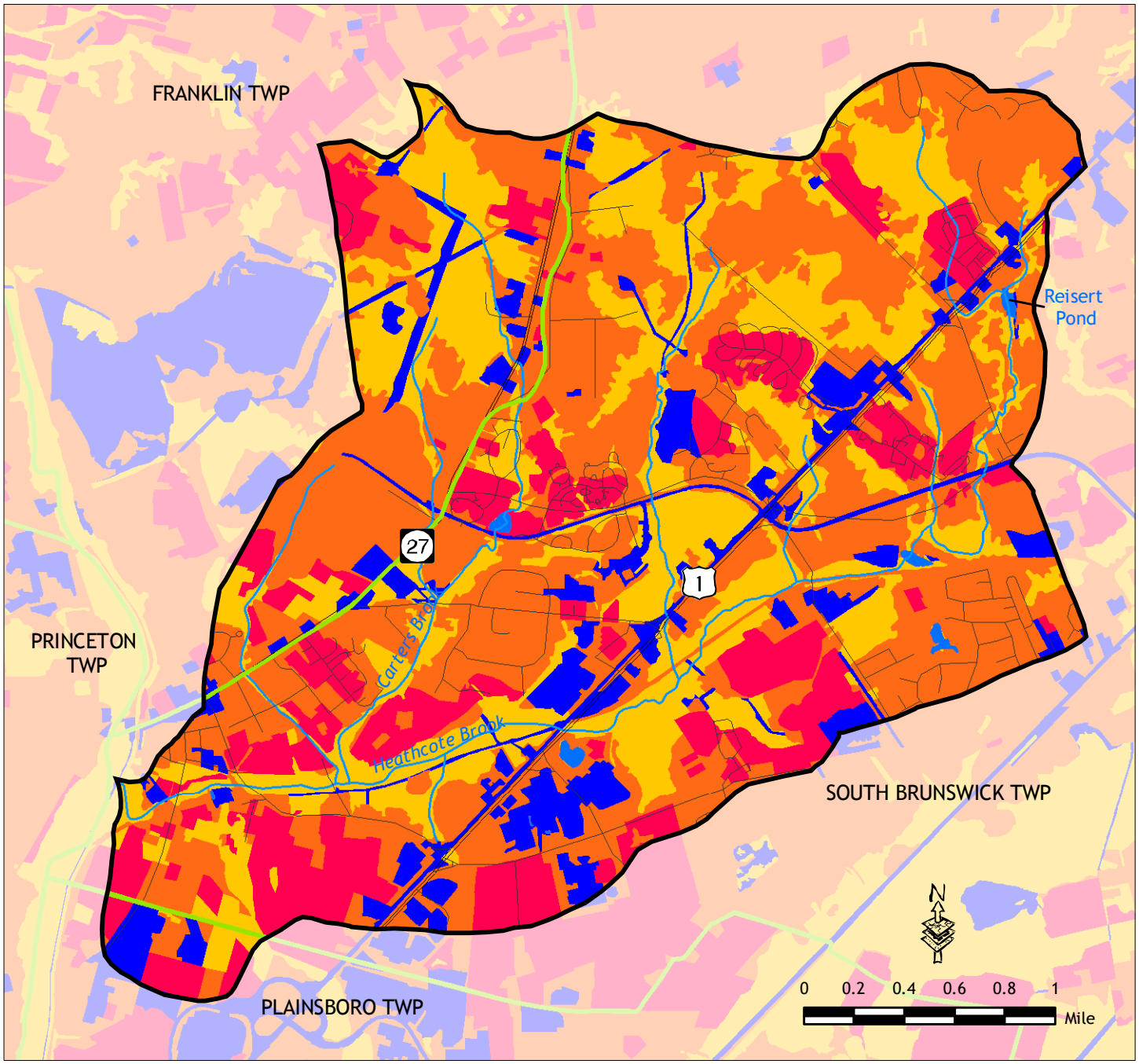
Lakes
Municipalities
Major Roads
Roads
Streams

Bacteria Sampling Site
Chemical Action Team Site
USGS Sampling Site

HCB7 is also USGS sampling site 01401400, 10-MIL-2

J. Myers 7/06- Data Source: New Jersey Department of Environmental Protection, US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 27:
Nonpoint-Source Nitrogen Loadings in Heathcote Brook Watershed



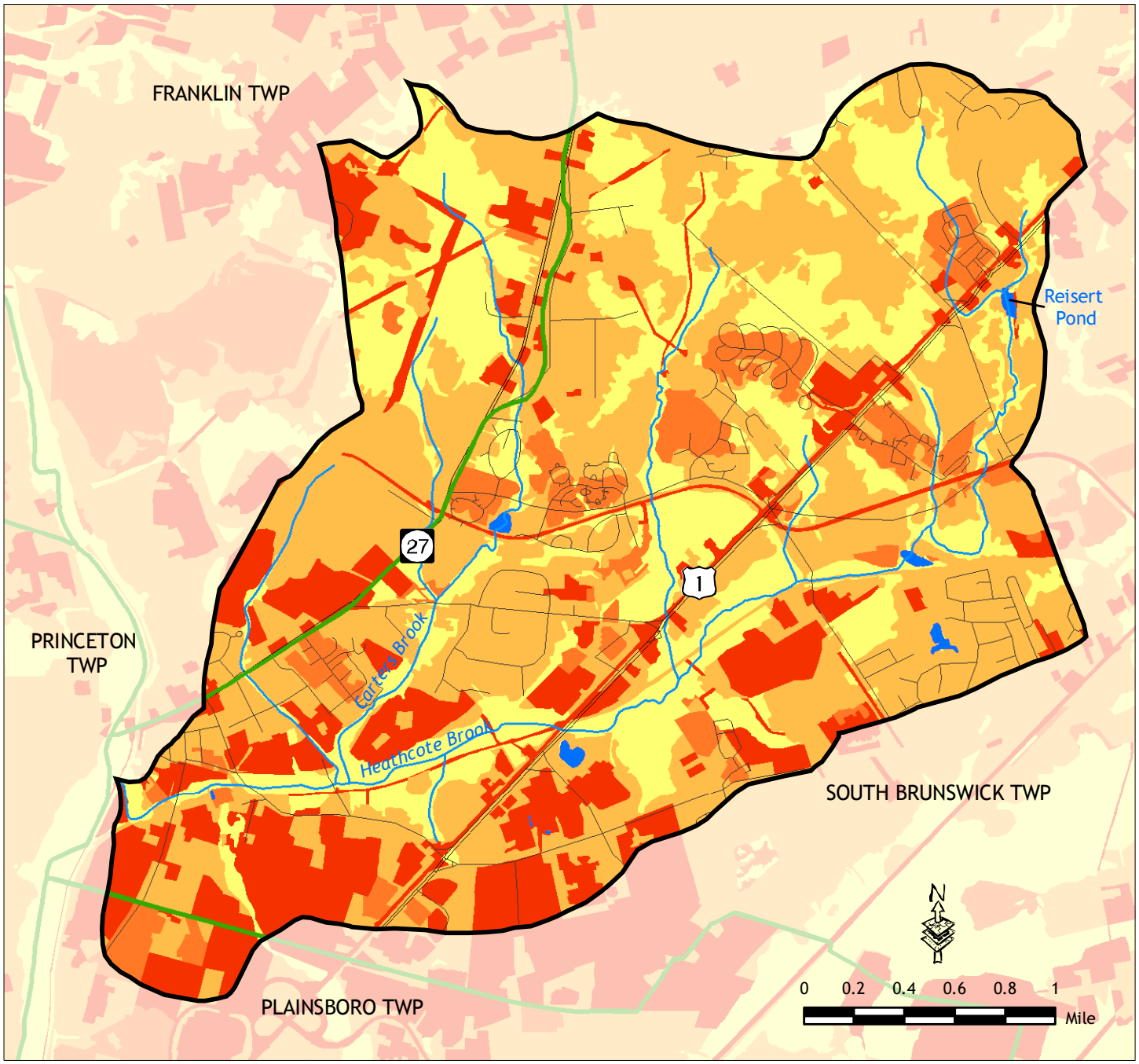
Lakes
Municipalities
Major Roads
Roads
Streams

Nitrogen Loadings
(lbs/acre/year)

- 0.000
- 0.001 - 1.619
- 1.620 - 3.035
- 3.036 - 4.047
- 4.048 - 5.585

J. Myers 7/06 - Data Source: Loading calculations based on coefficients from Steve Souza, Princeton Hydro, LLC; New Jersey Department of Environmental Protection, US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 28:
Nonpoint-Source Phosphorous Loadings in Heathcote Brook Watershed



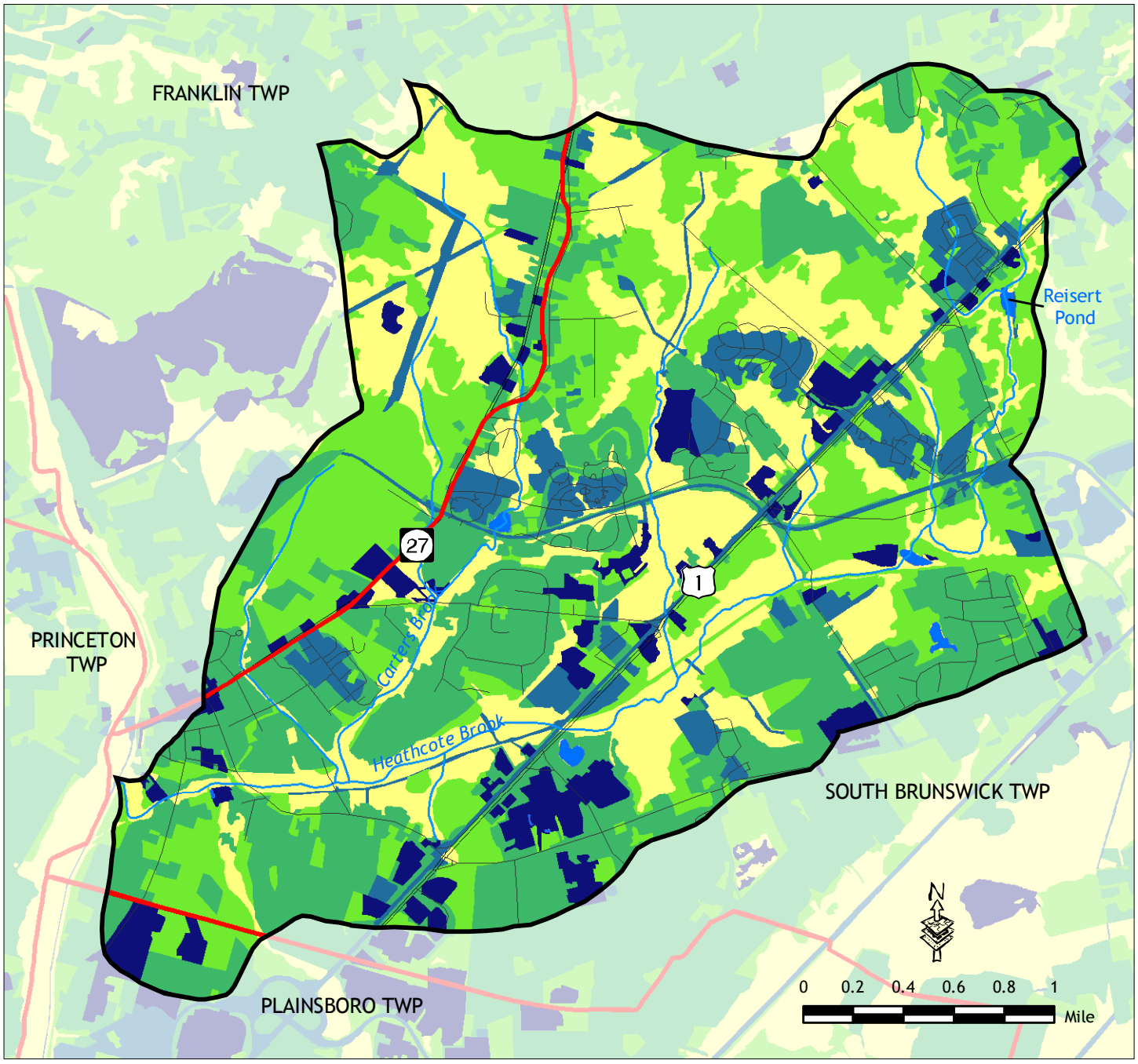
Municipalities
Lakes
Streams
Major Roads
Roads

Phosphorous Loadings
(lbs/acre/year)

-0.101 - 0.000
0.001 - 0.174
0.175 - 0.324
0.325 - 1.926
1.927 - 10.927

J. Myers 7/06 - Data Source: Loading calculations based on coefficients from Steve Souza, Princeton Hydro, LLC; New Jersey Department of Environmental Protection, US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.

Figure 29:
Nonpoint-Source Total Suspended Sediment Loadings in Heathcote Brook Watershed



Lakes
Municipalities
Major Roads
Roads
Streams

Total Suspended Sediment
(lbs/acre/year)

-80.9 - 0.0
0.1 - 202.3
202.4 - 404.7
404.8 - 809.4
809.5 - 1618.8

J. Myers 7/06 - Data Source: Loading calculations based on coefficients from Steve Souza, Princeton Hydro, LLC; New Jersey Department of Environmental Protection, US Census TIGER Files. Although NJDEP data was used, this secondary map product has not been verified or authorized by the state.