Souhegan River Corridor Management Plan

Sunrise Over Souhegan River, Amherst, NH. Howard S. Muscott Photography

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Prepared by the

Nashua Regional Planning Commission

with the

Souhegan River Local Advisory Committee

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Sunrise Over Souhegan River, Amherst, NH. 2024.

1. Executive Summary

The Souhegan River has a 220 square mile watershed that includes portions of seventeen communities in New Hampshire and two towns in Massachusetts. The watershed contains approximately 271 miles of rivers and streams and 103 miles of intermittent streams. The river is approximately 34 miles long, flowing generally northeasterly and easterly through New Ipswich, Greenville, Wilton, Milford, Amherst, and Merrimack, NH. The designated river officially starts in New Ipswich and ends where it discharges into the Merrimack River in Merrimack, NH.

Development pressure is high, especially in the eastern part of the watershed, and historic and current industrial uses along the river and in the watershed continue to be a threat to water quality. Flooding, drought, and erosion is becoming more of an issue as rain events become less frequent and higher volume.

Conserving land, thoughtful development, and removing instream barriers such as perched culverts and dams are opportunities to protect and improve the river's water quality and connectivity.

Recommendations from this plan include:

- Continue gathering water samples on the Souhegan River and its tributaries to monitor water quality.
- Identify and address persistent sources of *E. coli* contamination.
- Follow up-to-date Stormwater Control Measures to reduce stormwater runoff.
- Encourage homeowners to be water wise and Soak Up the Rain, keeping stormwater on their property.
- Remove the two dams in downtown Milford to improve aquatic connectivity.
- Maintain public access to the river so residents of the watershed can love the Souhegan and care for it.
- Establish goals for important water resources in town master plans.
- Establish land acquisition programs to identify and acquire potential important conservation land.
- Increase wetland buffers to at least 50 feet for structures and establish a no-cut buffer.
- In new open space developments, consolidate open space areas to maintain larger natural areas.
- Create maintenance agreements for structural stormwater control measures.
- Designate low- or no-salt routes near wetlands to prevent chloride contamination.

All watershed towns can help protect the river and its tributaries by reducing the amount of stormwater runoff and pollution that enters the surface water of the watershed.

2. Introduction

On May 28, 2000, the Souhegan River Corridor was recognized for its outstanding natural and cultural resources when it was listed as a designated river under the New Hampshire Rivers Management and Protection Act of 1990. Most of the river corridor is categorized as Rural and the rest Rural-Community or Community. The first Souhegan River Watershed Management Plan was completed in March 2006.

Every designated river is required by RSA 483 to have a local river management advisory committee. Souhegan River Local Advisory Committee (SoRLAC) includes members from the towns of:

- Amherst
- Greenville
- Merrimack
- Milford
- New Ipswich
- Temple
- Wilton

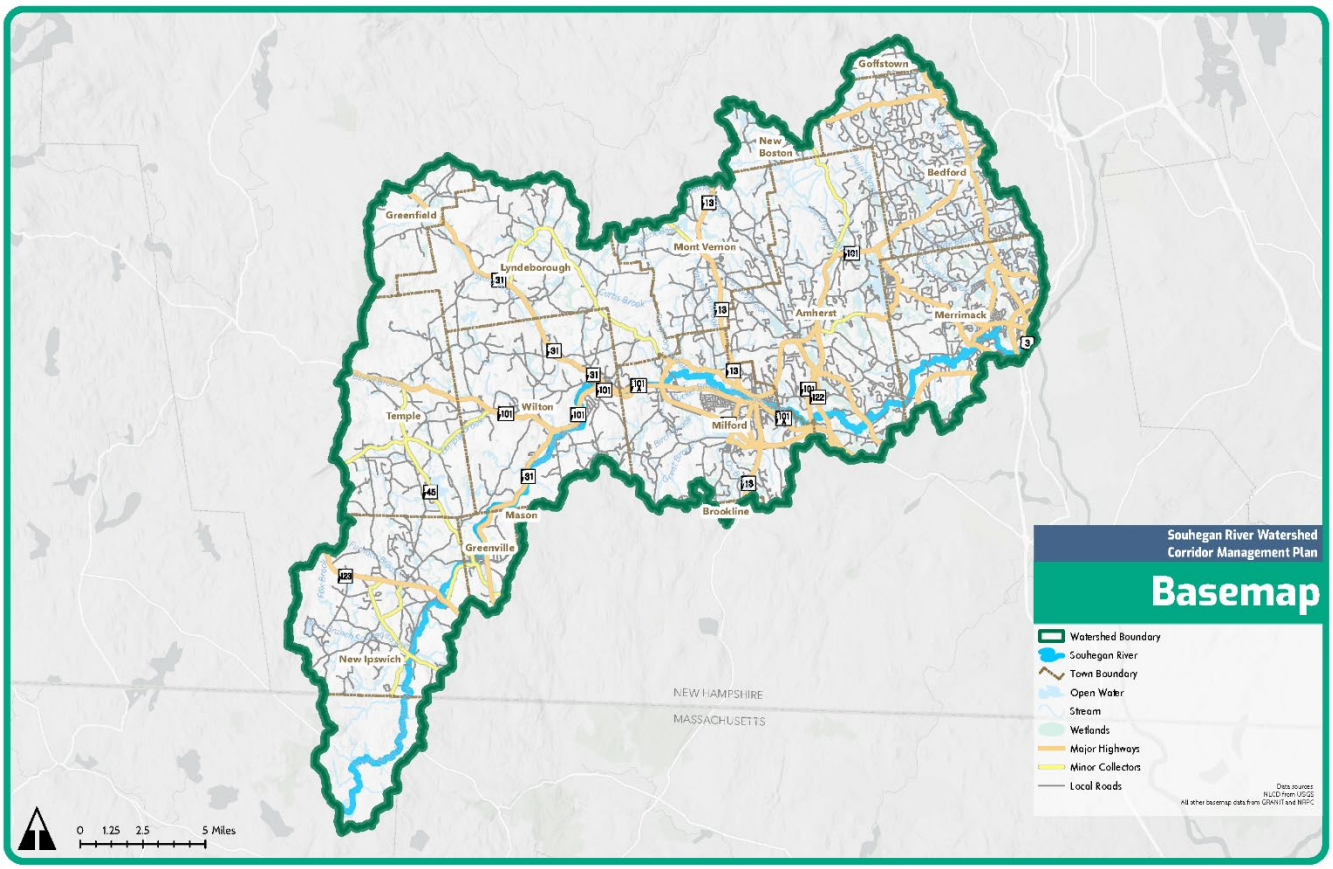
SoRLAC is currently seeking members from Bedford and Lyndeborough. The Souhegan River has a 220 square mile watershed that includes portions of seventeen communities in New Hampshire and two towns in Massachusetts, as listed in Table 1 and seen in Map 1. Souhegan River Watershed Basemap below.

Table 1. Total Acres by Town in Watershed

Town	# of acres in watershed	% of town in watershed	% of watershed
Amherst	20,237	92%	14%
Bedford	12,333	58%	9%
Brookline	253	2%	0%
Goffstown	1,006	4%	1%
Greenfield	4,280	25%	3%
Greenville	2,083	47%	1%
Lyndeborough	14,815	76%	11%
Mason	230	1%	0%
Merrimack	11,649	54%	8%
Milford	13,065	80%	9%
Mont Vernon	9,238	85%	7%
New Boston	2,196	8%	2%
New Ipswich	14,606	69%	10%
Peterborough	56	<1%	0%
Sharon	2	<1%	0%
Temple	13,480	94%	10%
Wilton	15,485	94%	11%
Ashburnham, MA	2,787	10%	2%
Ashby, MA	2,824	18%	2%
Total acres:	**140,625**		

Source: Nashua Regional Planning Commission (NRPC) GIS data.

Map 1. Souhegan River Watershed Basemap



3. Watershed Conditions

The Souhegan River is approximately 34 miles long, flowing generally northeasterly and easterly through New Ipswich, Greenville, Wilton, Milford, Amherst, and Merrimack, NH. Its headwaters are in Ashburnham, MA. The designated river officially starts in New Ipswich and ends where it discharges into the Merrimack River in Merrimack, NH.

Geomorphology

The Souhegan River Protected Instream Flow Report (NHDES, 2008) notes that the upper Souhegan River is very different from the lower Souhegan River. The upper portion has a steeper descent, with large rocks, boulders and bedrock outcrops, as seen below in Figure 1. Souhegan River in Greenville. It is a straightened stream about 16 to 50 feet wide with a shallow and fast-moving current. The transition happens upstream of Milford, where the lower portion of the river has a less steep descent and a sand and fine gravel bottom, as pictured in Figure 2. below.

Figure 1. Souhegan River in Greenville.
Credit: Cory Ritz

Figure 2. Souhegan River Access at Seaverns Bridge, Merrimack.
Credit: Eric Doberstein

The lower portion meanders and is dotted with oxbows. Corridor elevations vary from a high point of 1,050 feet in New Ipswich to a low of 50 feet in Merrimack. Over its 31.8 miles it occasionally drops quickly, forming rapids in Greenville, Wilton, and Merrimack. At Wildcat Falls in Merrimack, it drops 83 feet over a series of three falls.

Water Quantity

The Souhegan River was one of the first rivers in New Hampshire to have a water management plan for instream flows. The Souhegan River Water Management Plan, completed by NHDES in 2013, contains management sub-plans for conservation, water use, and dam management that go into effect as the river flow reaches certain thresholds. The recognized uses that depend on flow include: hydropower; pollution abatement; agriculture, recreation; maintenance and enhancement of aquatic fish and life; fish and wildlife habitat; and rare, threatened, and endangered fish, wildlife, vegetation or natural/ecological communities.

The United States Geological Survey (USGS) collects stream flow information at two sites: one just above Wildcat Falls in Merrimack and one upstream of the Milford Oval. NHDES maintains a gauge in New Ipswich, at Souhegan

Flood Control Dam 19. Data from all three sites is available through an NHDES Real-Time Data & Information for Watersheds dashboard.

Tributaries

The Souhegan River Watershed contains approximately 271 miles of rivers and streams and 103 miles of intermittent streams. One tributary stream in Merrimack is pictured in Figure 3 below. The major tributaries to the Souhegan River are listed in Table 2 and pictured on Map 2. Sub watersheds of the Souhegan River. Map 2 and subsequent maps are located in the map section at the end of the plan document. Many of the intermittent streams are not mapped and not included in these numbers.

Figure 3. Tributary to Souhegan River, Merrimack.

Table 2. Major Tributaries to the Souhegan River

Stream Name	Length (mi)	Free-flowing or dammed	Legislative Classification
S. Branch Souhegan R.	4.0	Dammed	B
W. Branch Souhegan R.	2.0	Dammed	B
Furnace Brook	3.2	Dammed	B
Richardson Brook	4.2	Dammed	B
Blood/Gambol Brook	7.0	Dammed	B
Stony Brook	9.6	Dammed	B
Mill Brook	7.4	Dammed	A
Tucker Brook	4.5	Free-flowing	B
Purgatory Brook	5.7	Free-flowing	B
Caesar's & Beaver Brook	7.7	Free-flowing	B
Great Brook	4.4	Dammed	B
Hartshorn Brook	3.2	Dammed	B
Baboosic Brook	12.7	Unknown	B
McQuade Brook	Unknown	Unknown	B

Source: NRPC GIS Data.

Lakes and Ponds

There are approximately 1,707 acres of small ponds and water bodies in the Souhegan River watershed. Most of the ponds are less than 10 acres in size and are associated with wetlands systems or streams. Significant lakes and ponds greater than 10 acres, which makes them state-owned, are listed in Table 3 below.

Table 3. Significant Lakes and Ponds in Souhegan River Watershed

Lake or Pond Name	Size (acres)	Municipality
Water Loom Pond	43	New Ipswich
Pratt Pond	38	New Ipswich
Wheeler Pond	10	New Ipswich
Tobey Reservoir (Greenville Reservoir)	122	Temple
Heald Pond	69	Temple/Wilton
Badger Pond	12	Lyndeborough
Burton Pond	26	Lyndeborough
Putnam Lake	50	Lyndeborough
Osgood Pond	20	Milford
Horton's Pond	69	Mont Vernon
Joe English Pond	36	Mont Vernon/New Boston/Amherst
Baboosic Lake	222	Amherst
Little Baboosic Pond	15	Amherst
Honey Pot Pond	12	Amherst

Source: New Hampshire Water Quality Report to Congress (305(b)), NHDES list of water bodies.

Wetlands

Wetlands within the Souhegan River watershed are confined to low-lying areas adjacent to the river and its tributaries and depressions located throughout the watershed, as shown in Map 3. Floodplains of the Souhegan River Watershed. Poorly drained and very poorly drained soils are shown in the Map 4. Important Soils of the Souhegan River Watershed. Within the corridor, the most extensive wetlands are in Milford and Amherst and are often connected to wetland systems along tributary streams. Wetlands are not common in the upper river where it is steep with shallow soils.

Even though wetlands are legally protected by federal, state, and local means, they are still vulnerable to development and pollution. Stormwater washes pollutants, such as road salt, into wetlands, and property owners may not know about no-cut or no-build buffers. Local land use boards can also grant special permissions to property owners that allow certain uses in wetland buffer areas. Wetlands in the eastern part of the watershed, where they are more common and development pressure is higher, are likely at the highest risk from development.

Groundwater

Bedrock in the basin consists of hard crystalline Paleozoic rock. Soils are composed of variable, unstratified, silty, gravelly sand and clays with interspersed cobbles and boulders. The stratified drift aquifers that follow the river provide a source of high quality/high quantity drinking water used for public drinking supplies by the towns of Merrimack and Wilton. Map 5. Groundwater in the Souhegan River Watershed shows transmissivity levels associated with the sand and gravel deposits in the watershed.

The most significant stratified drift deposits are located along the river corridor in Amherst and Milford and are referred to as the Souhegan Aquifer. The Souhegan Aquifer has a prolific water yield.

The Amherst aquifer along the Souhegan River extends from Merrimack to Milford. Six high-yield wells are in this area: the Milford Fish Hatchery well, three industrial wells, and the Savage and Keyes Municipal Wells. The Savage and Keyes wells had been used for Milford's municipal water supply, but were contaminated and

removed from service in the 1980s. Both became Superfund sites: Savage Municipal Water Supply Well Superfund Site and Fletcher's Paint Works & Storage Facility Superfund Site. Most of Milford's municipal water supply currently comes from three gravel packed wells, known as the Curtis Well, located in Amherst.

Wilton's two municipal water supply wells and the Monadnock Spring Water Company wells are also located in the river corridor. Stratified drift deposits located in the surrounding watershed tend to be discontinuous and shallow when compared to those within the river corridor.

Floodplains

The boundaries of the Souhegan River floodplain are depicted in Map 3. Floodplains of the Souhegan River Watershed. The 2009 FEMA flood maps for Hillsborough County are still the official maps as of mid-2024, but preliminary updated maps were released in 2023.

Most of the communities in the watershed participate in the Federal Flood Insurance Program and utilize the official Floodway Maps and the Flood Insurance Rate Maps to determine floodplain boundaries. The most extensive floodplains in the Souhegan Watershed are in Milford, Amherst, and Merrimack. West of the Milford Oval, the floodplain has a maximum width of about 4,000 feet. Through downtown Milford, the floodplain narrows to 200 to 400 feet. The floodplain in Amherst is more extensive than anywhere else in the corridor, with floodplain widths ranging from 1,400 feet to over one mile. Continuing into Merrimack, the average width of the floodplain in the western portion is 0.5 miles.

The construction of flood control dams by the Army Corps in the late 1960s has likely reduced severe flooding events along the river. While these dams have provided significant protection for the surrounding communities, they may have altered natural flooding patterns.

Wildlife and Vegetation

The Souhegan River corridor is home to diverse fish, amphibians, reptiles, birds, invertebrates, plants, and plant communities. Map 6. Wildlife Areas in the Souhegan River Watershed, which shows the Wildlife Action Plan Tiers, indicates that many areas of the watershed provide important habitat for wildlife. The largest areas considered to be Tier 1 are located where Greenfield, Temple, and Lyndeborough meet; along Purgatory Brook in Milford, Lyndeborough, and Mont Vernon; where Mont Vernon, New Boston, and Amherst meet; and south of Baboosic lake in Amherst and Merrimack.

The river is habitat for the banded sunfish (*Enneacanthus obesus*) which occurs in slowwater areas and impoundments and prefers heavily vegetated areas. While the banded sunfish is common in the Souhegan River, it depends on intact, vegetated shoreline, which is at high risk from shorefront development. The wood turtle (*Clemmys insculpta*) is a rare species that has been observed basking on a log in the reach between Milford and Merrimack. Wood turtles could be harmed by a decrease in winter water levels that could expose a hibernating turtle to freezing conditions.

Historical records of the rare Fowler's toad (*Bufo fowleri*) include several locations along the Milford to Merrimack reach of the Souhegan River. This species prefers sandy outwash soils. Fowler's toads are water dependent for breeding, eggs, and larval stage.

The state-threatened pied-billed grebe (*Podolymbus podiceps*) has been reported from the Amherst Country Club. Preferred habitat is densely vegetated emergent and deep marsh interspersed with large expanses of open water. The osprey (*Pandion haliaetus*) is an iconic bird of prey observed foraging over the fish hatchery in

Milford, over the river, and reported from the Amherst Country Club. The common loon (*Gavia immer*) was reported from the Amherst Country Club, although it is unlikely to be nesting along the river. This state-threatened bird could be using river seasonally to forage for fish, its primary food. Table 4 lists the rare, threatened, and endangered species and communities.

Table 4. Rare, Threatened, or Endangered Species and Communities in the Souhegan Corridor

Entity	Location
Banded Sunfish (of Greatest Conservation Need)	Throughout
Blanding's Turtle	Milford, Amherst, Merrimack
Fowler's Toad	Milford, Amherst
Wood Turtle	Amherst, Merrimack
Eastern Hognose Snake	Amherst, Merrimack
Grasshopper Sparrow	Amherst, Merrimack
Pied-billed Grebe	Amherst
Common Loon	Amherst
Long's Bitter Cress	Greenville
Wild Garlic	Merrimack
Giant Rhododendron	Greenville, Milford, Wilton
Siberian Chives	Merrimack
Birds Foot Aster	Merrimack
Skydrop Aster	Merrimack
Goat's Rue	Merrimack
Stiff Tick Trefoil	Merrimack
Emergent Wetlands	Greenville, Amherst, Merrimack
S. New England High Energy Riverbank community	Greenville, Wilton
S. New England Floodplain Forest community	Merrimack, Amherst

Source: NH Natural Heritage Inventory, NHDES Instream Protected Uses.

Long's bitter cress (*Cardamine longii* Fern) is an obligate aquatic plant that has only been recorded from one location in NH (Greenville) and this was prior to 1984. It was not observed during an Instream Protected Uses, Outstanding Characteristics, and Resources (IPUOCR) survey conducted by a field team in 2004. Two other endangered or threatened flora that are potentially flow dependent are siberian/wild chives (*Allium schoenoprasum*) and giant/great-laurel rhododendron (*Rhododendron maximum*) (Cairns 2004, NHI 2004). Siberian chives typically require pristine floodplain forest or mid-river island habitat while giant rhododendron typically requires acidic moist soils associated with heavily wooded, low-lying forests.

Sand and cobble bars with plant communities resembling the Southern New England High-Energy Riverbank Community (listed by New Hampshire Natural Heritage Inventory NHNHI) have been observed. Dominant species included twisted sedge (*Carex torta*), dogbanes (*Apocynum sibiricum; A. cannabinum*), Joe-pye weeds (*Eupatorium ssp*.), reed canary grass (*Phalaris arundinacea*), swamp candles (*Lysimachia terristris*), willow (*Salix spp*.), and grapes (*Vitis sp*.). At slightly higher elevations, shrubs such as silky dogwood (*Cornus amomum*) and alder (*Alnus incana*), ferns and other herbaceous plants are often dominant. These habitats depend on periodic high flow scouring to reduce competition from plants less tolerant of flooding and coarse soils.

Southern New England Floodplain Forest communities were observed upstream of Milford. The red maple (*Acer rubrum*) Floodplain Forests, typical of smaller rivers, with sycamore, white ash, ironwood, false nettle, ferns,

grapes, and sedges. Within Amherst and Merrimack, silver maple (*Acer saccharinum*) was observed. Floodplain forest plant communities are dependent on periodic flooding and scouring to provide nutrients and reduce competition from flood-intolerant plant species.

Dragonflies and damselflies are good indicators of water quality and are identifiable by their shed exoskeletons and adult forms. The spine-crowned clubtail (*Hylogomphus abbreviatus*) and the brook snaketail (*Ophiogomphus aspersus*), uncommon species in New Hampshire, have been found along the river near Route 122 in Amherst.

Industrial Use

Dams

Dams on the Souhegan River have played a large role in the region's history, supporting early industries, powering mills, providing areas to recreate, controlling floods, and shaping local communities. While these structures were once essential to economic development, they have also contributed to habitat fragmentation, reduced natural sediment transport, and altered the river's ecological balance.

In 2008, the Merrimack Village Dam in Merrimack was decommissioned, opening up 14 miles of river. In 2014, a feasibility study was completed for the potential decommissioning of the McLane and Goldman dams in downtown Milford. The removal of the McLane and Goldman dams should continue to be considered, as their removal would open up six more miles of the main stem of the Souhegan River.

Existing dams are listed in Table 5 below and shown in Map 7. Dams in the Souhegan River Watershed. Figure 4. below shows the site of the former Merrimack Village Dam. A list of all dams and their owners in the watershed can be found in Appendix D: List of Dams in the Souhegan River Watershed.

Table 5. Listed Dams on the Souhegan River

Impoundment Name	Location	Hydroelectric?
Souhegan River Dam, AKA Site 19	New Ipswich	No
Waterloom Pond Dam	New Ipswich	Yes
Otis Dam	Greenville	Yes
No. 4 Mill Dam	Greenville	No
No. 6 Mill Dam	Greenville, behind No. 6 Mill	Yes
Souhegan River Dam	Wilton	No
Souhegan River III Dam	Wilton	No
Souhegan River Dam	Wilton	No
Pine Valley Mill Dam	Wilton, near Milford town line.	Yes
Goldman Dam	Milford	No
McLane Dam	Milford	No

Source: NHDES.

Figure 4. Site of the former Merrimack Village Dam, Merrimack.
Credit: Eric Doberstein.

Water Withdrawals

Facilities which use 20,000 or more gallons of surface water or groundwater per day (gpd) are required to register with the NHDES Water Management Bureau to report its monthly water use. Currently, there are no surface water withdrawals for public drinking water supplies directly from the Souhegan River. However, Pennichuck Water Works withdrew water from the river from 1965-1984 and maintains the right to withdraw water in the future, and the Amherst Country Club and Souhegan Woods Golf Club both withdraw water directly from the river for irrigation. As seen in Table 6, there are five municipal water supply wells in the watershed, one in Amherst, two in Milford and two in Wilton. A water system is classified as public if it has 15 or more service connections or serves 25 people or more at least 60 days each year. Monadnock Spring Water in Wilton is the only commercial well in the watershed that markets a regional product. A major component of the withdrawals from the Souhegan River is for the Milford Fish Hatchery.

Table 6. Public Water Supplies Near the Souhegan River

Name	Source Type
Amherst Country Club	Groundwater
Milford Water Works and WWTF	Groundwater
Monadnock Mountain Spring	Groundwater
Pennichuck Water Works, Amherst Village District	Groundwater
Pennichuck Water Works, Souhegan Woods	Groundwater
Ponemah Green Golf Course	Groundwater
Wilton Water Works	Groundwater
Greenville Town	Surface Water

Source: NHDES Water Management Bureau.

Wastewater Discharges

All point sources of pollution that discharge directly to surface waters are required to obtain a permit under the National Pollutant Discharge and Elimination System (NPDES). NPDES permits specify effluent limitations, compliance schedules, and monitoring and reporting requirements. Point source discharges include: Greenville

WWTF (wastewater), Souhegan Wood Products (non-contact cooling waters), Hitchiner Manufacturing (non-contact cooling waters), Milford WWTF (wastewater), and Harcross Chemicals (non-contact cooling waters).

Superfund Sites

Four hazardous waste disposal sites are near the river: the Savage Municipal Water Supply Site and Fletcher Paint EPA Superfund Site in Milford, as mentioned above, and the N.H. Plating Company Superfund site in Merrimack. The Savage Municipal Water Supply Site was divided into two units. One is known as the O.K. Tool Source Area and the other as the Extended Plume Area.

In 1983, testing revealed volatile organic compounds (VOCs) levels that exceeded drinking water standards in the Savage Municipal Well. The groundwater is contaminated with VOCs including tetrachloroethylene (PCE), trichloroethylene (TCE), 111-trichloroethane, and vinyl chloride; and heavy metals including lead, chromium, and nickel. The soil and on-site stream were also found to be contaminated with VOCs. A stream that receives discharge from Hitchiner Manufacturing and previously from Hendrix Wire and Cable flows through the site prior to entering the Souhegan River. Thanks to an extensive cleanup effort, there has been a significant reduction in groundwater contamination levels since then. Groundwater monitoring continues.

The Fletcher's Paint Works and Storage Site was first investigated by EPA in 1988. This two-acre site, which borders the river, has sediments and surface waters contaminated with VOCs, including benzene and toluene; heavy metals including nickel and lead; and PCBs. Soil contamination consists primarily of PCBs, PAHs and VOCs. Extensive clean-up efforts have been completed, including excavation and backfilling activities in the Souhegan River in 2016, and capping the site in 2017. There are no public or private wells in use near the site.

The third Superfund site is 13 acres formerly home to the New Hampshire Plating Company (NHPC) in Merrimack. Four lagoons hold wastes and wastewaters from the company’s electroplating operations. VOCs and heavy metals, including cadmium, are present in groundwater. Remediation began in 2005 and included excavating all remaining contaminated soils and sludge, treating contaminated soils, and capping with a 2-foot soil cover. As of 2023, EPA was re-designing its groundwater treatment strategy to further reduce contaminant migration.

Because of PCB contamination from these sites, there is a fish consumption advisory for all freshwater fish in the Souhegan River between Riverway East and the Goldman Dam in Milford. No one should eat freshwater fish from this stretch of river.

Saint-Gobain Site

In 2016, Perfluorooctanoic acid (PFOA) was first found in tap water at the Saint-Gobain Performances Plastics facility in Merrimack. They manufactured coated textiles and films from 2002 until 2024. Before that, Chemfab made similar products at the same site beginning around 1986. Both companies used PFOA and per- and polyfluoroalkyl substances (PFAS) in their manufacturing processes. As a result, the PFOA and PFAS were released in air emissions from the facility, ultimately contaminating groundwater in Merrimack, Bedford, and other towns outside the watershed. Bottled water and municipal water hookups have been provided to many residents with contaminated wells. Monitoring wells have been installed and NHDES continues to investigate the extent of the contamination. Saint-Gobain ceased operations at the facility in May 2024 and began demolishing it in late 2024. NHDES has a webpage summarizing the history of the Saint-Gobain site in more detail.

Old Dutch Mustard Company (Pilgrim Foods)

Old Dutch Mustard Company, doing business as Pilgrim Foods, has a long history of violating the Clean Water Act by discharging acidic water into the Souhegan River in Greenville without a permit. They have had multiple violations since the 1980s. In May 2023, NHDES inspectors discovered wastewater from the facility flowing from the facility into the Souhegan River and ultimately determined that acidic wastewater and stormwater had been purposefully discharged into the river since at least 2015. In 2025 the owner pleaded guilty to violating the Clean Water Act.

Recreation

Boating

Boating on the Souhegan River is limited to canoes and kayaks, as seen in Figure 5., because most sections are too shallow for larger watercraft. The western sections of the river from Greenville to Wilton provide intermediate-level whitewater canoeing and kayaking during the spring and other periods of high water, with early ice-out, good training runs, and easy accessibility. The Appalachian Mountain Club's (AMC) River Guide classifies the rapids in this section as Class II, III and IV. The stretch of the river between Wilton and Milford is difficult to canoe or kayak because the water level is generally very low and portages are required around the dams.

Figure 5. Kayakers at Kayley Park, Milford.
Credit: Eric Doberstein.

Below the Route 122 Bridge in Amherst, the river is flat and provides excellent opportunities for family canoe outings. The water is shallow with a sandy bottom and there are spots to picnic and wade. Below the Seaverns Bridge in Merrimack, the river quickens as it flows through a series of ledges known as Indian Ledges. This point is only passable when the water is high. The stretch of the river below Turkey Hill Bridge is impassable to watercraft because of Wildcat Falls, as shown in Figure 6 below.

Public access in Wilton is limited to the western section of town, adjacent to the bridge on Isaac Frye Highway and within the NH Department of Transportation scenic easement on Route 31 South. In Milford, river access is available at Keyes Memorial Park, the Milford Community Athletic Association (MCAA) fields, and Kaley Park, which has a canoe launch. Amherst has two canoe or kayak access points maintained by the Amherst Conservation Commission. The first, at the Route 122 bridge, has off-street parking and a defined launch area, as shown in Figure 7 below.

Figure 6. Wildcat Falls, Merrimack.

The second access point is near the bridge at Boston Post Road and has two parallel staircases leading to the river, wide enough to easily carry a boat up and down to the river. There are also two canoe and kayak access ports in Merrimack: the Turkey Hill Bridge and the Seaverns Bridge. There are no formal ramps at either facility and access is over the riverbank. A minimum amount of off-street parking is available at each site adjacent to the bridges.

Figure 7. Canoe port at the Route 122 Bridge, Amherst.
Credit: Eric Doberstein.

The Souhegan Watershed Association has created an online map of river access points for paddling: The Souhegan River Paddling Access map.

Swimming

Swimming in the river is limited to a few areas where it is deep enough. Two popular swimming areas are the confluence of Purgatory Brook in Milford and the canoe launch on Boston Post Road in Amherst. The Milford site is accessible through state-owned property, so it is protected from future development. The Amherst canoe launch is town-owned conservation land. However, people enjoy wading and rock jumping all along the river. One of the most popular wading and rock jumping locales is in Wilton along the Department of Transportation's scenic easement on Route 31. Limited parking is provided in two locations along the easement.

Golf

There are three golf courses along the Souhegan River in Amherst:

- Amherst Country Club, Route 122.
- Ponemah Green, Route 122.
- Souhegan Woods Golf Club, Thornton's Ferry Rd.

Hiking, Fishing, & Picnicking

Passive recreation spots include:

- Riverside Park in Greenville.
- Taft Land owned by New Hampshire Fish and Game (NHF&G) in Greenville.
- The Souhegan River Scenic Easement owned by New Hampshire Department of Transportation (NHDOT) in Greenville/Wilton.
- Town Forest owned by the Town of Wilton.
- Heald Tract owned by the Society for Protection of New Hampshire Forests (SPNHF) in Wilton.
- The Milford Fish Hatchery, owned by NHF&G.
- The Souhegan River Trail in Milford, two separate sections with permanent easements.
- Milford Community Athletic Association (MCAA) Park.
- Keyes Memorial Park, owned by the Town of Milford.
- Emerson Park, owned by the Town of Milford.
- Bicentennial Park, owned by the Town of Milford.
- McLane Dam Area, owned by the Town of Milford.
- Kaley Park, owned by the Town of Milford.
- Amherst canoe port, owned by the Town of Amherst.
- Route 122 access, owned by the Town of Amherst.
- Scott Land, owned by the Town of Amherst.
- The Sherburne Site, owned by the Town of Amherst.
- The Turkey Hill Bridge Site, Weston Park, owned by the Town of Merrimack.
- Wildcat Falls Conservation Area, owned by the Town of Merrimack, with some trails on NHDOT property.
- The Souhegan River Trail, connecting Wildcat Falls to Watson Park in Merrimack, pictured in Figure 8.
- Watson Park, owned by the Town of Merrimack.

There is also informal, publicly owned access for fishing and canoeing at various bridge crossings along the river including the Captain Clark Bridge in Wilton, Route 122 Bridge in Amherst, and the Turkey Hill and Seaverns Bridges in Merrimack.

Other public and semi-public lands include the Milford Wastewater Treatment Plant, Riverside Cemetery in Milford, the Scott Land in Amherst, Fields Farm Conservation Area and Riverside Park in Merrimack.

Figure 8. The Souhegan River Trail, Merrimack

Conservation and Open Space

Parcels of conservation land and open space located in or near the river corridor include the following:

New Ipswich:

- There are a few small parcels of land owned by the town along the river that are predominately forested.

Greenville:

- NH Fish and Game owns a large parcel that is predominately forested and includes the High Falls.
- Riverside Park is a small undeveloped park.

Wilton:

- The Town Forest.
- SPNHF parcels along Rt. 31.
- NHDOT owns a 3.2-mile scenic easement on Rt. 31 in Wilton and Greenville.

Milford:

- McLane Dam land – floodplain, forest, fields.
- Emerson Park – a small, developed park.
- Keyes Memorial Park – floodplain, open recreational area.
- NH Fish and Game fish hatchery.
- North River Road, open space subdivision. Nine acres set aside for open space. Includes 250-foot buffer to the Souhegan River.
- Conservation easement adjacent to Souhegan River east of the Fish Hatchery; and 50-foot Town easement along the Souhegan River from North River Road to the Fish Hatchery.

Amherst:

- Scott and Sherburne sites – These two adjacent parcels, 39 acres and 10 acres respectively are predominately floodplain. The Scott land is located on both sides of the Souhegan River, bordering

Boston Post Road and Thorntons Ferry II. The Sherburne land, opposite the Souhegan High School has the Souhegan River as its rear boundary and Simeon Wilson Road as the front boundary.

- The Currier Land – predominately floodplain.
- The Curtis Well Site – public drinking water, mixed woods and fields.
- Buckmeadow Conservation Area – a former golf course.

Merrimack:

- Wildcat Falls Conservation Area, owned by the Town of Merrimack, with some trails on NHDOT property.
- Turkey Hill Bridge site-open and forested, provides car top access to the river.
- Davidson Avenue green space – predominately forested.
- Camp Creager Boy Scout Camp.

Scenic Views

Portions of the river that are particularly beautiful or scenic include:

Figure 9. Historic photo of High Falls in Greenville.
Credit: collection of Marshall Buttrick.

- New Ipswich: along River Road along scenic Water Loom Pond and under High Bridge.
- Greenville: High Falls, a scenic gorge pictured in Figure 9, and the old town wells.
- Route 31 proceeds through a 3.2 mile corridor protected by a scenic easement. The easement starts in Greenville at the Green Bridge and continues to Goldsmith Brook in Wilton.
- Downtown Wilton: the river passes under an old railroad bridge. Wilton was accepted into the National Main Street Program with the river as an important element.
- Milford: the river passes under historic Col. John Shepard Bridge (aka the Stone Bridge) and the Swing Bridge.
- The Souhegan River Trail in Milford follows the river along the state-owned fish hatchery property and the MCAA park.
- The Stage at Keyes Memorial Park, where concerts and festivals are hosted, overlooks an oxbow in the river.
- The stretch of the river in Amherst between Route 122 and the Canoe Port on Boston Post Road. High gravel banks and nearby oxbows are home to many birds.
- Merrimack: Indian Ledges, Wildcat Falls, and the Souhegan River Trail are scenic resources.

Archaeological Resources

The first people who came to what is now New Hampshire arrived almost 13,000 years ago. The descendants of these people include the Nashaway, the Souhegan, and the Penacook which all spoke related dialects of the Abenaki language. Today these people are known collectively as the Abenaki, which is often translated as "People of the Dawnland."

Archaeologists from the New Hampshire Division of Historical Resources (NH DHR), professional and avocational archaeologists have identified archaeological sites from various cultural periods including the Early Archaic and Colonial Periods within the Souhegan watershed.

A review of the records included in New Hampshire Division of Historical Resources' EMMIT+, the NH DHR's online inventory of historic and archaeological records, indicates that nine archaeological sites have been recorded along a quarter-mile buffer of the main corridor of the Souhegan River. Seven of these sites date to various pre-contact cultural periods and two are defined as multi-component. Pre-contact sites typically contain deposits attributed to the time prior to European contact and at times can be attributed to the major pre-contact cultural periods shown in Figure 10. Cultural Chronology of New England. The presence of these sites affirms that the Souhegan River has been the site of human habitation for many millennia and the presence of multi-component sites indicate that people over time utilized similar areas/landforms. As not all areas along the Souhegan River or within the larger watershed have been surveyed for the presence of archaeological resources, the archaeological record is considered fragmentary.

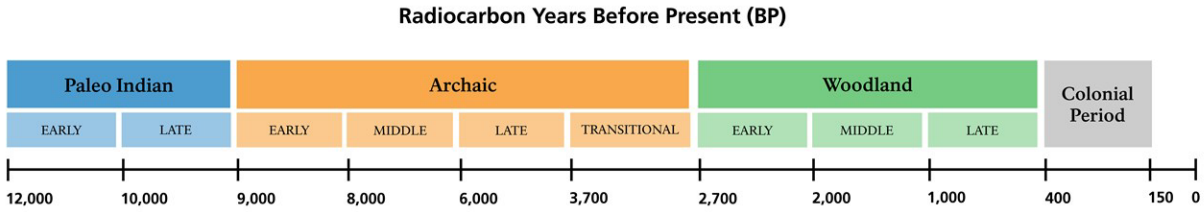


Figure 10. Cultural Chronology of New England.
Source: National Park Service.

Abenaki people named this river Souhegan (also spelled Soughagen, Souhegonack, Sowheage, Souhegen, Souheganash). At different locations it was referred to as "River of the plains," "river of difficult portages," and "waiting and watching place." The Abenaki people set up villages, sometimes seasonally, along rivers and lakes where they had access to water and could hunt, farm and fish. Early fishermen set weirs across the rapids, and then waited and watched for fish, including salmon, alewives, sturgeon, and eels.

Historic Resources

A review of the records included in EMMIT+ indicates that eighty-three historic architectural resources have been recorded along a quarter-mile buffer of the main corridor of the Souhegan River. The majority of the recorded resources consist of general historic buildings, such as houses, town halls, churches, and schools concentrated in the town centers of Milford and Wilton, as shown in Table 7 below.

Figure 11. Mill Street Bridge, Greenville.

Table 7. Documented Historic Architectural Resources within 1/4-mile of the Souhegan River Corridor

Town	Historic Buildings	Historic Districts	Dams	Bridges	Mills	Landscapes/ Parks	Total
Merrimack	1	2	0	2	0	0	5
Amherst	1	0	0	0	0	0	1
Milford	41	2	2	3	2	1	51
Wilton	16	0	0	2	0	0	18
Greenville	1	0	0	3	1	0	5
New Ipswich	0	1	0	2	0	0	3
Total	**60**	**5**	**2**	**12**	**3**	**1**	**83**

Some specific water-related historic structures within the corridor of interest to the Committee include:

Mills

- New Ipswich: High Bridge Mill, Columbian Manufacturing Company, Routes 123 and 124.
- Greenville: Columbian Manufacturing Company Tenement, Main St., Mill No. 4, Main and Mill Streets.
- Milford: Milford Cotton and Woolen Manufacturing Company, 2 Bridge Street, listed on the National Register of Historic Places.
- Merrimack: remains of Grist Mill located on private property at Indian Ledge Falls. Remains of canal to power mills at Merrimack Village Dam site.

Bridges

- New Ipswich: **High Bridge** - This bridge is claimed to be the highest stone bridge in the state, although the arch itself is comparatively small. The bridge presents a stone wall to the viewer and is 156 feet long and has been dated to 1817.
- Greenville: **Railroad Bridge, Green Bridge, Mill Street Bridge** - A stone arch bridge built circa 1858, pictured in Figure 11.

- Wilton: **Railroad Bridge** – Located downtown, old town pictures show that this was previously a covered bridge. **Whiting Bridge** - This bridge crosses Stony Brook at Route 31.
- Milford: historic **Col. John Shepard Bridge** (aka the Stone Bridge), built in 1846 at the site of the first bridge across the river, and the **Milford Suspension Bridge** (aka the Swing Bridge), a 200-foot iron cable suspended footbridge designed by the Berlin Iron Bridge Company, built in 1889, and listed on the National Register of Historic Places in 2017.
- Amherst: Granite structure abutments remain at the following sites: Behind a commercial plaza on route 101A, as pictured in Figure 12 and at the Amherst Country Club on route 122. **Old Boston Post Road Bridge** – A stone bridge visible from the new Boston Post Road Bridge.
- Merrimack: **Chamberlin Bridge** on Route 3.

Dams

- New Ipswich: Waterloom Falls.
- Greenville: No. 1 Mill (Otis Mill), No. 4 Mill.
- Wilton: Pine Valley.
- Milford: McClane Dam, and Goldman Dam.
- Merrimack: Merrimack Village Dam was removed in 2008.

Figure 12. Bridge Abutment of the Milford-Manchester B&M Rail Bridge, Amherst.
Credit: Amherst Heritage Commission.

Land Use

Forested land is the dominant land cover in the watershed outside of each community's Town center and the urbanized areas along the New Hampshire Route 101 and 101A corridors, as seen in Map 8. Land Cover in the Souhegan River Watershed. Significant portions of the forested land within the watershed are actively managed for timber harvesting and wildlife management.

The land use by parcel in the watershed is shown in Map 9. Land Use in the Souhegan River Watershed. This map shows how the land is currently used, which does not reflect how it is zoned or what it could be used for in the future. Commercial and industrial areas are concentrated in the river corridor, while areas further away from the corridor are primarily land only or residential use. The Town of Temple does not maintain a parcel boundary

database, so their land use is not shown. Table 8 lists the number of acres in the watershed categorized as each type of use (excluding land in Temple and Massachusetts). Single-family residential is by far the most common land use in the watershed. The Unclassified/Unknown Other category is primarily land in conservation or owned by a municipality or school district.

Table 8. Parcel-based Land Use based on data from NH Division of Revenue Administration

Land Use	Acres	Percent
Single-Family Residential	129,317	42%
Other Residential	45,701	15%
Land Only	77,374	25%
Commercial	9,322	3%
Mixed Use	147	0%
Industrial	2,639	1%
Unclassified Non-Residential	1,308	0%
Unclassified/Unknown Other	41,985	14%
Total:	**307,794**	**100%**

*Source: NH Division of Revenue Administration. *Does not include portions of watershed in Temple or Massachusetts.*

State-Owned Lands

The most significant parcels of state-owned land in the watershed are in Greenville, Wilton, Lyndeborough, Milford, and Merrimack as shown on Map 10. State-owned Lands in the Souhegan River Watershed. These parcels include: the 210-acre Souhegan River Wildlife Management Area (WMA) in Greenville; the 887-acre Russell Abbott State Forest, partially inside the watershed in Wilton; the Souhegan River Watershed sites #8 and #33, totaling about 600 acres in Lyndeborough and Wilton; the 169-acre Milford Fish Hatchery in Milford, and the 56 acres of NHDOT land adjacent to Wildcat Falls Conservation Area in Merrimack. The New Hampshire Forests & Lands Division of the Department of Natural and Cultural Resources maintains an interactive map of the state-owned lands that they own, manage, and/or monitor.

The New Hampshire Rivers Management Advisory Committee (RMAC) has been inventorying state lands to determine if any are of particular importance to the state's rivers. Only one parcel of state-owned land in the watershed, a 0.1-acre parcel on Route 101 in Bedford, has been identified as low priority.

4. Opportunities and Threats

Flooding & Erosion

Southern New Hampshire has been experiencing heavy rain events more frequently than it has historically and that trend will continue. The Climate Mapping for Resilience and Adaptation tool predicts that by mid-century (2035 to 2064) southern New Hampshire will receive approximately 3 more inches of rain per year, but that rain will occur on fewer days, indicating heavy rains (U.S. Federal Government, 2022). The *Nashua Region Water Resiliency Action Plan* (NRPC, 2016) describes in more detail potential vulnerabilities related to increased flooding and drought.

Certain locations in the Souhegan River watershed are more likely to erode than others. Map 11. Fluvial Erosion Risk in the Souhegan River Watershed shows two tributaries that have hazard ratings of “extreme”: Tucker Brook, just south of NH Route 101 in Milford, and Baboosic Brook, where it meets the Souhegan River in Merrimack. Much of the main stem of the Souhegan River in Milford and Amherst are at “very high” risk of erosion – these are areas where the river tends to meander and has sandy banks. Currently, the river overtops the Boston Post Road in Amherst one to two times a year. While Wilton has sections rated at “high” erosion risk, the rocky banks of the river upstream of Milford are less prone to erosion. While there are ways to stabilize riverbanks, it is best practice to avoid new construction in high erosion risk areas.

Water Quantity

Heavier rain events interspersed with droughts are the biggest threat to the quantity of water in the river. More water than usual leads to flooding and erosion, but too little is also a risk. While Figure 13 shows high water levels, in late 2024, the Souhegan River stream flow volume was lower than flow levels considered “critical to supporting the human and natural resources that depend on it” (NHDES, 2013). In particular, streamflow needs to be high enough to support the habitat needs of fish. While fish are adapted to survive the changing water levels that happen with the seasons, flow levels that are very low can be chronically stressful or fatal.

Water levels can be controlled, to a degree, with dams. Some of the dams on the upper reaches of the river were built for flood control and they are not designed to release water from the impoundments during periods of low flow. However, they still reduce peak flow during flood events.

The inability to manage water releases during dry spells can lead to reduced instream flows, negatively affecting aquatic habitats and water quality. The 2013 NHDES Souhegan River Water Management Plan emphasizes the importance of maintaining natural flow regimes to support both ecological integrity and human uses. The plan highlights that even natural occurrences like floods and droughts play crucial roles in river environments, and managing flow characteristics such as magnitude, frequency, and duration is important for sustaining the river's health. Addressing the limitations of non-operational dams is a recommendation for an effective instream flow management.

Figure 13. Souhegan River at North River Road, Milford, NH.
Credit: Eric Doberstein.

Water Quality

The Souhegan River and all its tributaries have a legislative classification of Class B except for the Mill Brook system in Wilton, which is identified as Class A water, the highest quality. The Souhegan Watershed Association (SWA) has been monitoring the river's water quality since 1997. This data documents the health of the river over 25-plus years, making it possible to notice changes over time and see how recent sample results compare to historic sample results.

Trained volunteers collect water samples from sites in the Souhegan River Watershed. In 2024, SWA took samples at seven sample sites that examined levels of *E. coli*, dissolved oxygen (DO), and pH. *E. coli* is a type of bacteria found in feces and can indicate a leaking septic system or runoff from livestock; DO is a measure of how much oxygen is present in the water, which fish and other aquatic life need to survive; and pH is a measure of acidity, which can help identify pollution or unhealthy conditions for aquatic life. While pH is typically in a healthy range, DO results are sometimes lower than ideal, which is likely due to low flows and hot weather. However, *E. coli* measurements are often at levels high enough to make people sick.

E. coli

An analysis of historical water quality data from 1998 to 2022 (excluding 2020) found that when it rains, *E. coli* counts tend to be higher, suggesting that rain washing pollutants into the river is a significant source of non-point source contamination. Such sources could include septic overflows, agricultural areas, parking lots and roads, and other disturbed landscapes. Any sample results showing more than 406 MPN/100mL of *E. coli* is considered hazardous to human health because contact with it can cause infections. Swimming beaches should not exceed 88 MPN/100mL. Figure 14. shows the positive relationship between the amount of *E. coli* present in a sample and how many inches of precipitation fell in the previous 48 hours. The full analysis can be found in Appendix C: Additional Water Quality Data.

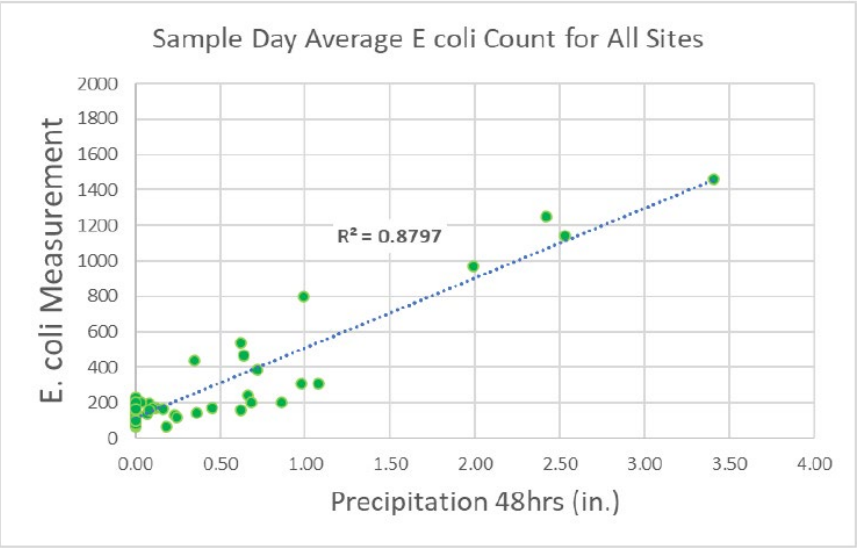


Figure 14. Sample Day Average *E. coli* Count for All Sites.

While *E. coli* levels tend to be higher after a rainstorm, there are certain sample sites on the Souhegan River with high levels of *E. coli* even during dry spells. As seen below in Figure 15, in 2024 every sample site on the Souhegan River exceeded the 88 MPN/100mL threshold on at least one day. On August 6, *E. coli* levels were higher than typical that summer in New Ipswich, Greenville, and Milford. On August 20, *E. coli* levels at the Boston Post Road Canoeport in Amherst exceeded 1,700 MPN/100ML. Levels this high indicate a significant source of contamination.

Routine *E. coli* sampling does not differentiate between human and animal sources. However, there are labs that can analyze the DNA in a sample and determine whether the *E. coli* comes from humans or animals, e.g. septic systems, agricultural uses, or wildlife. DNA sampling should be pursued to help identify the source(s) of this pollution and begin to reduce it.

In recent years, SWA has reduced the number of sites it samples from because it has limited access to analytical laboratories that can analyze the samples. Water samples must be analyzed while they are fresh so quick access to a nearby lab is essential. SWA should be supported in its sampling efforts so it can continue to build upon more than 25 years of data. Regularly sampling multiple sites on the river is essential to monitoring its health and being able to identify and address issues.

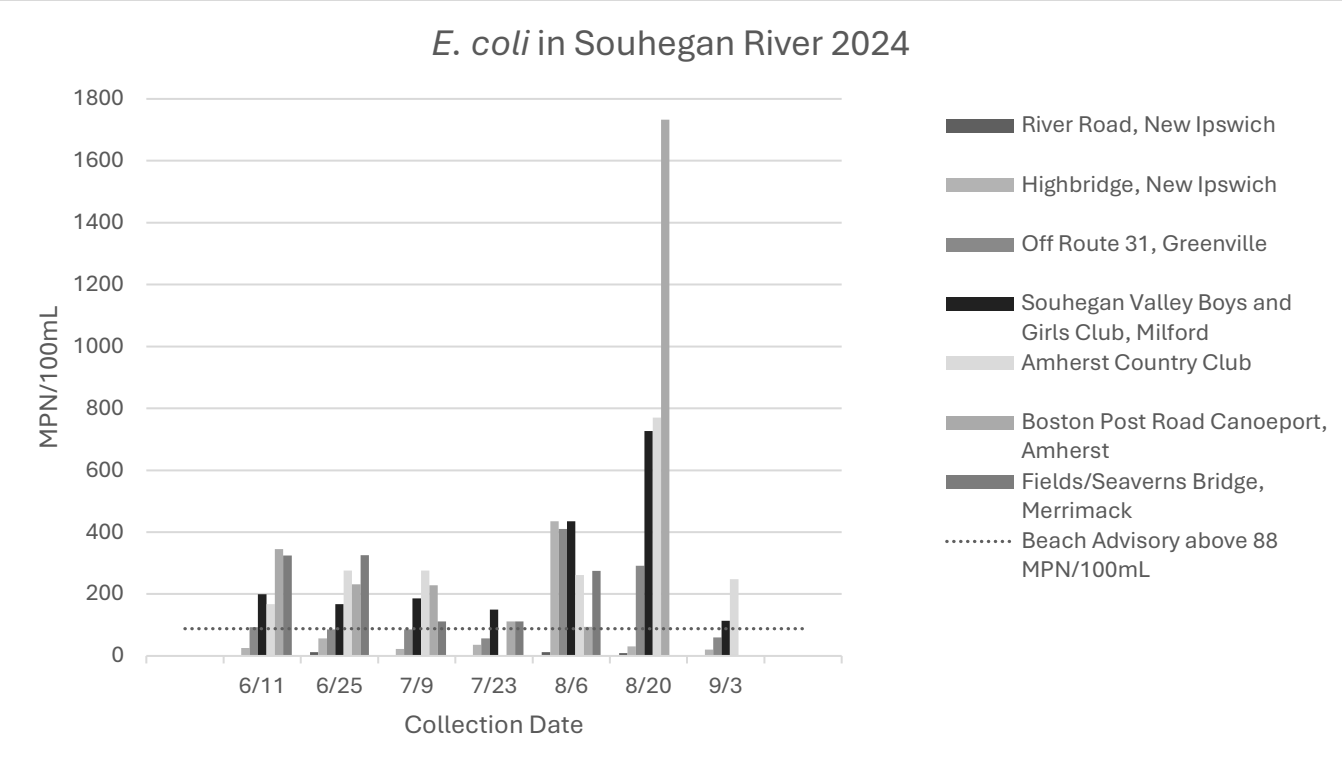


Figure 15. *E. coli* in the Souhegan River 2024.

Nonpoint Sources of Pollution

Point source pollution includes discharges from one identifiable source such as a pipe, which includes permitted industrial uses described above. *Nonpoint* sources of pollution usually have more than one origin and are difficult to assess and regulate. Nonpoint sources include stormwater runoff from agricultural activities, septic systems, and construction sites; erosion; road salting; microplastics; and urban stormwater runoff. Nonpoint sources of pollution are also a serious and recognized threat to the water quality of the Souhegan River. Specific types of nonpoint source pollution in the watershed include:

- Site development and lot conversion.
- Agricultural land use.
- Recreation activities.
- Residential land use.
    - Fuel storage.
    - Wastewater disposal.
    - Lawn care.
    - Driveways.
- Transportation corridors and parking lots.
- Stormwater management.
- Utility rights-of-way.

These sources tend to: increase erosion by disturbing land, increase the amount of nutrients available from fertilizers or wastewater, and/or introduce hazardous substances like petroleum products or microplastics into

the environment. While limiting how much land gets disturbed and how we use and store our hazardous substances helps to reduce nonpoint source pollution, limiting the amount of stormwater that reaches the river can have a big impact.

Using Stormwater Control Measures (SCM) to slow and retain stormwater so it can soak into the ground where it falls will help limit how much stormwater flows directly into the river and its tributaries and how much pollution it carries with it. The 2025 New Hampshire Stormwater Manual provides specific technical guidance for municipalities, designers, and members of boards, commissions and agencies. The NH Soak up the Rain program provides guidance for homeowners.

PFAS

As mentioned above, PFAS contamination in the watershed is an emerging issue. In addition to pollution from Saint-Gobain, PFAS have been used in firefighting foam. Water with PFAS is not safe to drink and must be treated to remove the PFAS – owners of private wells must install a PFAS treatment system or connect to a public water supplier. Our understanding of the risks from PFAS to human health and the environment is continuing to evolve and acceptable upper limits are moving downward. Even with cleanup efforts, these "forever chemicals" will be around for a long time in the watershed. NHDES maintains an online dashboard that displays PFAS sampling results throughout the state: NHDES PFAS Sampling Dashboard. NHDES also maintains a NHDES PFAS Response Website.

NHDES 2024 Surface Water Quality Assessment

NHDES conducts water quality monitoring of the Souhegan River. The Federal Clean Water Act (CWA) requires each state to submit two surface water quality documents to the U.S. Environmental Protection Agency (EPA) every two years. The 305(b) Report and 303(d) List describe surface waters that have been identified as impaired or threatened because one of its parameters is out of balance. NHDES has classified the Souhegan River as threatened and in need of restoration. The 2024 Surface Water Quality Assessments include beaches, lakes, impoundments, estuaries, areas of the ocean, and sections of rivers. Table 9 below lists waterbodies in the Souhegan River Watershed that have been identified as threatened or impaired for specific uses: Aquatic Life, Fish Consumption, and/or Primary Contact Recreation (PCR). It also lists what parameter is too low or too high.

Table 9. NHDES 2024 Surface Water Quality Assessments

Waterbody / Assessment Unit	Town (Primary Town First)	Designated Use	Parameter Name
Pratt Pond Brook	New Ipswich	Aquatic Life	pH
Stark Brook	New Ipswich	Aquatic Life	Benthic-Macroinvertebrate Bioassessments, DO, pH
Souhegan River - West Souhegan River	New Ipswich	Aquatic Life	DO
Souhegan River - Furnace Brook	New Ipswich	Aquatic Life, PCR	pH, E. coli
Tobey Reservoir	Temple	Aquatic Life	pH
Unnamed Trib. to Souhegan River	Greenville, New Ipswich	Aquatic Life	DO, Iron, pH

Waterbody / Assessment Unit	Town (Primary Town First)	Designated Use	Parameter Name
Souhegan River - Tucker Brook	Wilton, Greenville, New Ipswich	Aquatic Life	Aluminum, Benthic-Macroinvertebrate Bioassessments, Iron, Lead, pH
Souhegan River - Stony Brook	Wilton	PCR	E. coli
Purgatory Brook	Mont Vernon, Lyndeborough	Aquatic Life	pH
Hortons Pond	Mont Vernon	Aquatic Life	pH
Souhegan River - Goldman Dam	Milford	Aquatic Life, Fish Consumption	DO, PCBS
Great Brook - Ox Brook	Milford	Aquatic Life	DO, pH
Souhegan River	Milford	Fish Consumption, PCR	PCBS, E. coli
Honey Pot Pond	Amherst	Aquatic Life, PCR	pH, Chlorophyll-a
Unnamed Brook Between Little Baboosic Lake and Washer Cove Baboosic Lake	Amherst	Aquatic Life	pH
Baboosic Lake - Young Judaea Beach	Amherst	PCR	Cyanobacteria
Baboosic Lake - Town Beach	Amherst	PCR	E. coli, Cyanobacteria
Baboosic Lake	Amherst, Merrimack	Aquatic Life	pH
McQuade Brook	Bedford, Goffstown	Aquatic Life, PCR	Chloride, E. coli
Baboosic Brook - McQuade Brook	Bedford, Merrimack	Aquatic Life	Benthic-Macroinvertebrate Bioassessments, DO, pH
Riddle Brook	Bedford, Goffstown	Aquatic	DO, pH
Baboosic Brook - Riddle Brook	Merrimack, Bedford	Aquatic Life	Benthic-Macroinvertebrate and Fishes Bioassessments, DO
Souhegan River	Merrimack, Amherst	Aquatic Life, PCR	Aluminum, DO, pH, E. coli
Muskrell Brook - to Souhegan River	Merrimack, Amherst	Aquatic Life	Dissolved Oxygen, pH

Source: NHDES Watershed Report Cards built from the 2024, 305(b)/303(d).

Aquatic Connectivity

One major barrier that prevents aquatic animals from moving up and downstream in the watershed's tributaries are *perched culverts*, which are pipes that cross under roads and are elevated above the surface of the downstream water. A photo of a perched culvert in Milford is shown in Figure 16 below. Wildlife may be able to travel downstream and freefall with the water, but most fish cannot jump high enough to follow the stream upriver into the culvert. The New Hampshire Stream Crossing Initiative, a collaboration among multiple state agencies, collects information about bridges and culverts throughout the state. It maintains an Aquatic Restoration Mapper which shows information about stream crossings related to aquatic restoration, infrastructure safety, and flood resiliency.

Figure 16. Perched Culvert in Milford.
Credit: Stream Crossing Initiative, 2021.

Locations of perched culverts in the watershed are shown in Map 12. Stream Crossings in the Souhegan River Watershed. Approximately 23 culverts that are at least two feet above the downstream water, a major impediment to aquatic wildlife, have been identified in the watershed. These should be prioritized for replacement to improve aquatic connectivity.

Dams may also prevent aquatic wildlife from freely moving up and down river. Map 7. Dams in the Souhegan River Watershed show locations of dams along the river and its tributaries. The Merrimack Village Dam was removed in 2008 after careful study. As mentioned above, the McLane and Goldman dams in Milford are being studied for potential removal.

Development

Land continues to be developed in the watershed, transitioning from woodland to residential, commercial, or industrial uses. A housing shortage and record housing prices have been putting pressure on building more single family and multifamily housing. Map 13. Land Cover Change in the Souhegan River Watershed shows that between 2001 and 2019 land in the eastern part of the watershed, especially Milford, Amherst, Merrimack, and Bedford, experienced an "urban change." The purple areas on the map show where a previously undeveloped

area has now been developed. This is less common in the western part of the watershed, where the primary land cover change was land transitioning from one type of forest to another.

In order to protect water quality in the watershed, it is important to conserve land that is near surface waters to provide a buffer from development and its accompanying stormwater runoff.

Legal Protections

There are federal, state, and local regulatory controls that are an important part of protecting the long-term health of the river.

EPA Stormwater Regulations

Six of the watershed communities, Amherst, Bedford, Goffstown, Merrimack, Milford, Wilton, are subject to federal Municipal Separate Storm Sewer System (MS4) regulations. These communities must each develop a Stormwater Management Program that includes the following six focus areas:

- Public Education and Outreach.
- Construction Site Erosion Control.
- Public Participation and Involvement.
- Post Construction Stormwater Management.
- Illicit Discharge Detection and Elimination.
- Pollution Prevention and Good Housekeeping.

The MS4 permitting process as required by the federal government has brought a major focus to proper stormwater management; as a result, the affected corridor communities are more closely scrutinizing management practices on new developments and implementing more low impact development practices.

Rivers Management and Protection Act

The Souhegan River is a designated river under the Rivers Management and Protection Act of 1988 (RSA 483). Segments of the Souhegan are classified as rural, rural-community, and community, which means the Act provides restrictions or conditions on the construction of new dams, channel alterations, new hydroelectric facilities, interbasin transfers of water, landfills, new solid waste facilities, sludge and septage, and the use of limestone and fertilizer. Exact restrictions or conditions differ by the river's classification in that section, and can be found in the NHDES Environmental Fact Sheet Protective Measures for Designated Rivers.

It also requires the establishment of a protected instream flow to maintain water for public uses including water quality, fisheries, recreation, and scenic values. This Act allows SoRLAC to comment on all state permit applications for projects within a quarter mile buffer of the designated river corridor. SoRLAC may apply for and accept gifts, grants, and donations of money, and may expend the funds to carry out their duties pursuant to RSA 483:8-a. Any state-owned property adjacent or providing access to the river may be disposed of by the state except after review and recommendation of the advisory committee.

Sections of the Souhegan River are classified as follows (RSA 483:15 XIII):

A. As a rural-community river from the confluence of its south and west branches in New Ipswich to a point 0.5 miles above the Otis Dam in Greenville.
B. As a community river from the point 0.5 miles above the Otis Dam in Greenville to a point 0.5 miles below the Otis Dam.

C. As a rural river from the point 0.5 miles below the Otis Dam to the Label Arts Dam located approximately 0.3 miles above the confluence with Stony Brook in Wilton.
D. As a community river from the Label Arts Dam to the Wilton Road bridge near the Pine Valley Mill in west Milford.
E. As a rural-community river from the Wilton Road bridge to a point 0.5 miles above the route 13 bridge in Milford.
F. As a community river from the point 0.5 miles above the route 13 bridge to a point 0.5 miles below the route 13 bridge.
G. As a rural river from the point 0.5 miles below the route 13 bridge to the Everett Turnpike bridge in Merrimack.
H. As a community river from the Everett Turnpike Bridge to the confluence with the Merrimack River in Merrimack.

These classifications require that the water quality shall be restored to or maintained at least to the Class B level. Any use that would significantly harm the water quality or other instream public uses shall not be permitted. NHDES is required to review and consider adopted local river corridor management plans prior to issuing any permit under RSA 485-A:13, RSA 485-A:17, or RSA 482-A.

More information on the Rivers Management and Protection Act can be found on the NHDES Rivers Management and Protection website.

SoRLAC has created a checklist of best management practices to utilize when they review projects. The checklist can be found in Appendix B: Project Review Checklist for Best Management Practices.

Shoreland Water Quality Protection Act

The New Hampshire Shoreland Water Quality Protection Act (SWQPA) is designed to protect the fragile and valuable resources next to public surface waters. Public waters include lakes, ponds, and impoundments greater than 10 acres; streams that flow year-round; most designated rivers and their segments; and coastal waters. The SWQPA contains minimum standards for the subdivision, use, and development of shorelands within 250 feet of the shoreline. This *Protected Shoreland* area includes a 150-foot woodland buffer and a 50 foot waterfront buffer, as seen in Figure 17 below. Before constructing buildings or cutting down vegetation near these surface waters, property owners need to apply for a Shoreland Permit from NHDES. Some urban areas are exempt from these requirements, including parts of Milford near the Oval.

Figure 17. NH Protected Shoreland Illustration
Source: NHDES.

Within the Protected Shoreland, there are limits to what can be built, how far away from the reference line of the water it needs to be, amount of impervious surface (buildings, parking lots, etc.), and whether trees and bushes may be cut down. Fertilizers may not be applied within 25 feet of the reference line. Septic systems must be at least 75 feet away from the reference line but depending on conditions they may be required to be at least 125 feet away. Primary structures must be at least 50 feet from the reference line, while accessory structures must be at least 20 feet from the reference line. Detailed explanations about the Protected Shoreland can be found on the NHDES Protected Shoreland website. Table 10 below lists the major tributaries and other waterbodies in the watershed covered by the SWQPA.

Table 10. Major Tributaries and Other Waterbodies in the Watershed Covered by the SWQPA

Waterbody	Location
Pratt Pond	New Ipswich
Waterloom Pond	New Ipswich
Wheeler Pond	New Ipswich
Site 13	New Ipswich
Site 14 (Furnace Brook Dam)	New Ipswich
Site 19 (South Branch)	New Ipswich
Site 35	New Ipswich
Otis Dam	Greenville
Site 12-A	Temple
Site 25-B	Temple
Site 26 Dam	Temple
Heald Pond / Site 15	Temple/Wilton
Site 10-A	Wilton
Site 33	Wilton
New Wilton Reservoir	Wilton
Stony Brook	Wilton Reservoir to Souhegan River
Badger Pond	Lyndeborough
Burton Pond	Lyndeborough
Site 8	Lyndeborough
Site 28	Lyndeborough
Hortons Pond	Mont Vernon
Osgood Pond	Milford
Souhegan River Dam	Milford
Baboosic Lake	Amherst
Baboosic Brook	Riddle Brook in Merrimack to Souhegan River
Stump Pond	Amherst/Merrimack
Honey Pot Pond	Amherst
McQuade Brook II	Bedford

Alteration of Terrain Program

Alteration of Terrain (AOT) permits are designed to protect New Hampshire surface waters by minimizing soil erosion and controlling stormwater runoff, as required by RSA 485-A:17. As of the publication date of this document, generally an AOT permit is needed before initiating any ground-disturbing activities to a contiguous area 100,000 square feet (2.3 acres) or more in size or 50,000 square feet in size if the location is within 250 feet of a lake, great pond, fourth-order stream, or designated river as defined in RSA 483-B, the Shoreland Water Quality Protection Act. Some general provisions for AOT permits apply:

- For a single-family subdivision in which the lot development will not be carried out at the same time as roadway construction, (i.e., the roadway and other work within the right-of-way will be completed and stabilized prior to grading the lots), the only item considered in calculation of disturbed area is the roadway. For example, for a 50-foot right-of-way, 2,000 linear feet of roadway would create an area of disturbance of 100,000 square feet, thus requiring a Site Specific permit.
- For other types of developments and earth removal operations, a contiguous earth disturbance of 100,000 square feet including building area, parking, driveways, roadways, utility construction, landscaping and borrow areas would require a Site Specific permit.
- For earth removal operations in existence on the effective date of the regulations, May 4, 1981, the "footprint" of the area of disturbance at that time is considered to be grandfathered, but any contiguous disturbance of 100,000 square feet or more outside that footprint requires a Site Specific permit.
- Projects that result in a discharge of stormwater within one-quarter mile of certain waterbodies (those impaired for phosphorus, impaired for nitrogen, a lake or pond, class A surface water or in the watershed of a surface water that is an outstanding resource water) shall include stormwater runoff treatments that meet specific standards.
- In addition to the above, RSA 483-B, the "Shoreland Water Quality Protection Act," requires that any person intending to conduct an activity within the 250 feet of the protected shoreland resulting in a contiguous disturbed area exceeding 50,000 square feet to first obtain a permit.

More information on Alternation of Terrain Permitting requirements can be found on the NHDES Land Development website.

Watershed Protection Audit Findings

A Watershed Audit can be used to establish the baseline of existing watershed protection strategies. In 2024, watershed audits were administered to knowledgeable municipal staff and/or volunteers in New Ipswich, Greenville, Temple, Lyndeborough, Wilton, Mont Vernon, Milford, Amherst, Bedford, and Merrimack. Each audit measures the extent to which eight watershed protection tools (watershed planning, land conservation, aquatic buffers, better site design, erosion and sediment control, stormwater management, non-stormwater discharges, and watershed stewardship programs) are enacted in the community. The results of these audits, arranged by the watershed protection tools of interest, are detailed in Appendix A: Watershed Audit Summaries at the end of this plan.

- **Tool 1: Watershed planning:** Watershed planning involves the creation of regulatory measures and planning methods that limit impervious cover and redirect development to the most appropriate and least sensitive areas.
- **Tool 2: Land conservation:** Land conservation includes programs to conserve underdeveloped, biologically sensitive, or areas of cultural or historic importance.
- **Tool 3: Buffers:** Vegetative buffers help protect aquatic ecosystems by distancing development from shoreland areas, providing a natural shield from potentially hazardous activities or substances.
- **Tool 4: Better site design:** Better site design includes local ordinances and codes that can reduce impervious cover and redirect runoff through design decisions.
- **Tool 5: Erosion and sediment control:** Erosion and sediment controls include both physical mechanisms and regulatory practices to prevent erosion.
- **Tool 6: Stormwater management:** Stormwater management includes all structural practices that help mitigate the impacts of stormwater runoff into waterbodies.

- **Tool 7: Control of other discharges:** Controlling site-specific pollutant sources such as sanitary waste and deicing chemicals which can enter surface waters through runoff or direct discharges.
- **Tool 8: Watershed stewardship:** Watershed stewardship programs generally foster human behavior that prevents or reduces pollution over a range of land uses and activities.

Here are some general recommendations based on the results of the ten watershed audits:

- Establish goals for important water resources in master plans.
- Establish land acquisition programs to identify potential important conservation land and purchase it when available.
- Increase wetland buffers to at least 50 feet for structures and establish a no-cut buffer.
- Consider reducing the minimum pavement width for new construction low-volume roads to between 18-22 ft in order to reduce the amount of impervious surface.
- In new open space developments, consolidate open space areas to maintain larger natural areas for wildlife and prevent habitat fragmentation.
- In new open space developments, require a minimum percentage of the open space to remain in a natural condition.
- Create maintenance agreements for structural stormwater control measures.
- Store de-icing compounds inside a structure to prevent runoff.
- Designate low- or no-salt routes near wetlands to prevent chloride contamination.
- Limit fertilizer and pesticide use on public lands.

Even watershed towns that are not near the Souhegan River itself can help protect the river by reducing the amount of runoff and pollution that enters the surface water of the watershed.

5. Goals and Objectives

The major goals, objectives, and action items of the Souhegan River Watershed Management Plan:

1. **Develop a User-Friendly Corridor Management Plan**
   Create a straightforward and accessible corridor management plan that can be utilized by local organizations, community representatives, municipalities, and other stakeholders either individually or through collaborative efforts.
   - Objective 1: Promote awareness through outreach towards fostering human behavior that prevents or reduces pollution over a range of land uses and activities.
     1. **Action Item:** Identify municipal department/committee/board, etc. or other organizations within each town that can best promote the Corridor Management Plan.
     2. **Action Item:** Promote adoption of the management plan as part of each watershed community's master plans by visiting each town's relevant committees or boards. Complete by 6-9 months after release of final Corridor Management Plan.
     3. **Action Item:** Include an educational component in the plan to enhance awareness and understanding among stakeholders.
2. **Promote Science-Based Decision-Making**
   Encourage watershed management decisions based on sound scientific information and best practices.
   - Objective 1: Promote additional scientific sampling and evaluation to enhance the understanding of the watershed, considering known and forecasted changes due to climate and land use trends.
     4. **Action Item:** Identify ways to support Souhegan Watershed Association in continuation of water quality testing of the Souhegan River by citizen scientists.
     5. **Action Item:** Request Natural Resources Conservation Service / Hillsborough Soil and Water Conservation District of Milford to evaluate the Souhegan River for erosional areas and riparian restoration.
     6. **Action Item:** Apply for grants to complete bacterial DNA sampling in 2025 or 2026 summer season.
3. **Improve Water Quality**
   Enhance water quality in the river to support recreational uses, human health, aquatic life, and other ecosystems services (e.g. wells)
   - Objective 1: Support and promote bacterial DNA testing in water samples to assess and monitor microbial contamination levels.
     7. **Action Item:** Apply for grants to complete this sampling in 2025 or 2026 summer season.
   - Objective 2: Reduce pollution from site development projects. Restore stream functions that have been damaged by erosion and sedimentation.
     8. **Action Item:** Request Natural Resources Conservation Service / Hillsborough Soil and Water Conservation District of Milford to evaluate the Souhegan River for erosional areas and riparian restoration.
   - Objective 3: Create checklist of Best Management Practices recommendations for better site design
     9. **Action Item:** SoRLAC uses the checklist to evaluate projects submitted for permitting.
     10. **Action Item:** Promote adoption of the management plan as part of each watershed community's master plans by visiting each town's relevant committees or boards. Complete by 6-9 months after release of final Corridor Management Plan.

- Objective 4: Identify point source discharges issues to reduce pollutants entering the waterway.
    11. **Action Item**: Investigate if there is publicly available data on violations which is reviewed periodically by SoRLAC.
    12. **Action Item:** Compile data on frequent violators and communicate to appropriate/responsible agencies SoRLAC's recommendations for a response to continued violations.
- Objective 5: Evaluate the cause of catastrophic instream flow events due to inoperable dams.
    13. **Action Item:** Identify which dams are contributing to the catastrophic instream flow events within the next 12 to 18 months.
    14. **Action Item:** Seek financial support to study how to address the inoperable dams by working with other organizations such as New Hampshire Department of Environmental Services and American Rivers within the next 12 to 18 months.

4. **Enhance Habitat Support**

Improve water quality and instream flow in the river to support and preserve aquatic and wildlife habitats.

- Objective 1: Work with Federal and State agency programs (e.g., United States Environmental Protection Agency, Natural Resources Conservation Service, New Hampshire Department of Environmental Services, New Hampshire Fish and Game) to review applicable programs for the Souhegan River.
    15. **Action item:** Apply for funds or support for projects annually for activities to support water quality and in-stream flow.

Promote and support the conservation of undeveloped and sensitive land within the watershed to limit impervious cover and mitigate the effects of urbanization.

- Objective 1: Support local / regional open space protection and acquisition efforts with an emphasis on Souhegan River floodplain and riparian areas.
    16. **Action Item:** Report monthly at SoRLAC meetings each Town's efforts to acquire and preserve floodplain and riparian areas.
    17. **Action Item:** Identify known regional land conservancy efforts and request annual updates for known efforts.

Support preservation or restoration of critical areas including wetlands, shoreland, floodplains, steep and erosional slopes.

- Objective 1: Identify Town gaps or opportunities for upgrading policy to help protect and restore critical areas.
    18. **Action Item:** Review Town watershed audits in 2025 for actionable activities and opportunities to strengthen local protections.
    19. **Action Item:** Provide examples of best-practice ordinance upgrades directly to relevant board or commission in each Town.
- Objective 2: Identify best practices for SoRLAC reviews of projects.
    20. **Action Item:** Develop materials for training SoRLAC members and for project evaluations in 2025.

5. **Manage the River for Aesthetic and Accessible Qualities**

Manage the river to be aesthetically pleasing and easily accessible for the community.

- Objective 1: Identify, improve and increase public access to the river from trails, canoe launches, or fishing locations.

21. **Action Item:** Identify public access location and the status of the location.
22. **Action Item**: Promote access improvements with Towns (e.g. river cleanup, walkways, launches, etc.).

- Objective 2: Add criteria for project evaluation that include aesthetic considerations.
    23. **Action Item:** Create a project evaluation form for SoRLAC members in 2025.

6. **Historic, Diverse, and Mixed-Use River**

Evaluate and decide on the inclusion or exclusion of a diversity of uses or a mixed-use approach for the river.

- Objective 1: Acknowledge the complexity of uses on the Souhegan River.
    24. **Action Item:** During regular reviews of projects submitted to SoRLAC include consideration for the balance of uses (e.g. habitat, in-stream flows, recreation, infrastructure safety, historic resources, etc.).
- Objective 2: Expand the consideration of historical/cultural resources in the River Watershed Management Plan.
    25. **Action Item:** Identify gaps in the inventory of known resources identified in EMMIT+ and those known by the Committee and other local stakeholders.
    26. **Action Item:** Develop strategies to help protect and preserve resources from the threats of erosion and development.

7. **Stormwater Management to Reduce Pollution**

Reduce pollution by managing watershed stormwater drainage to mitigate the impact of non-point source pollution.

- Objective 1: Recommend best practices to minimize the impact from industrial, commercial, agricultural, and residential development along the main stem of Souhegan River, wetlands, and tributaries.
    27. **Action Item:** Review Town watershed audits for best practices for stormwater management in 2025.
    28. **Action Item:** Provide examples of best-practice ordinance upgrades directly to relevant board or commission in each Town.

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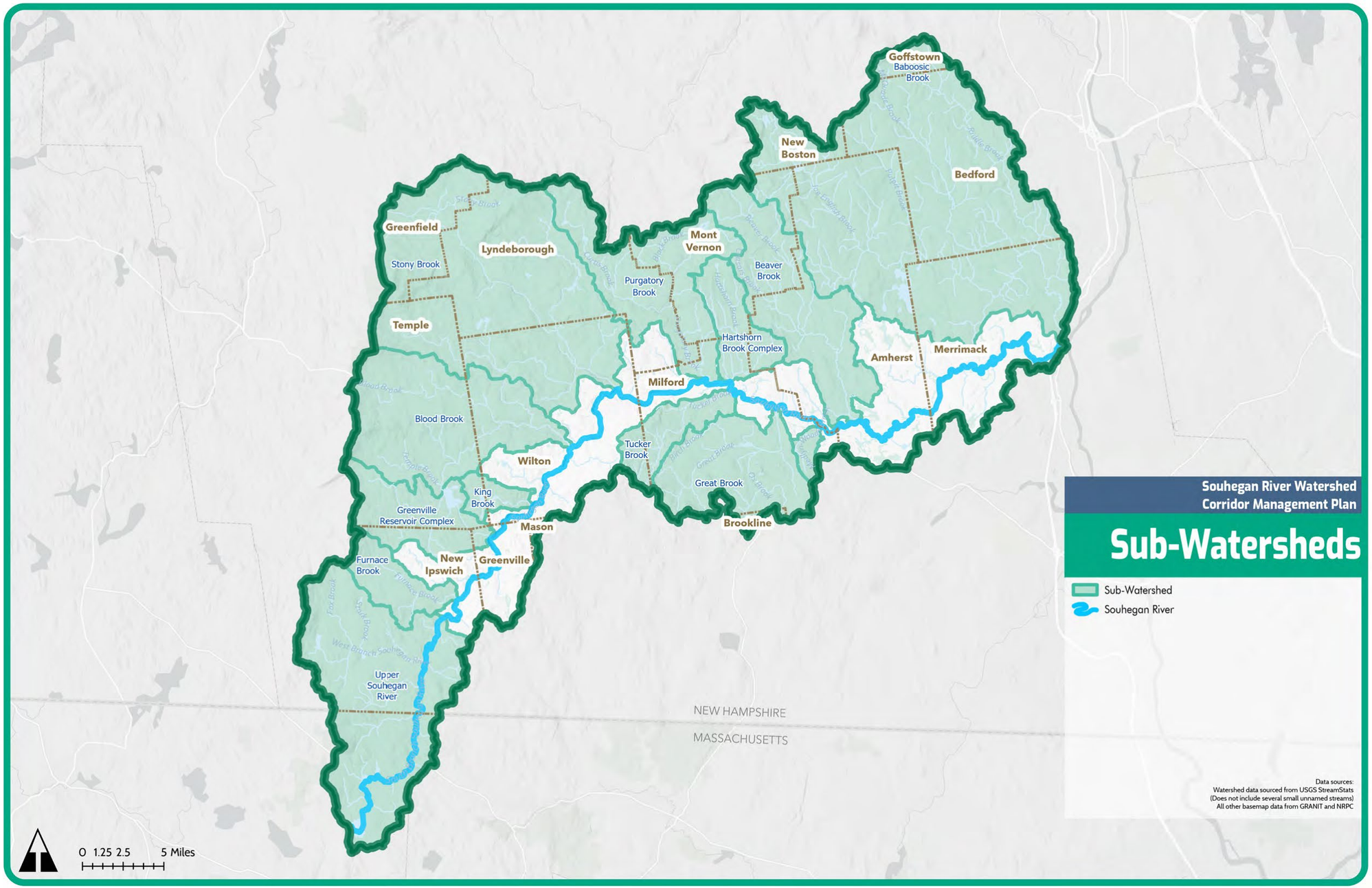
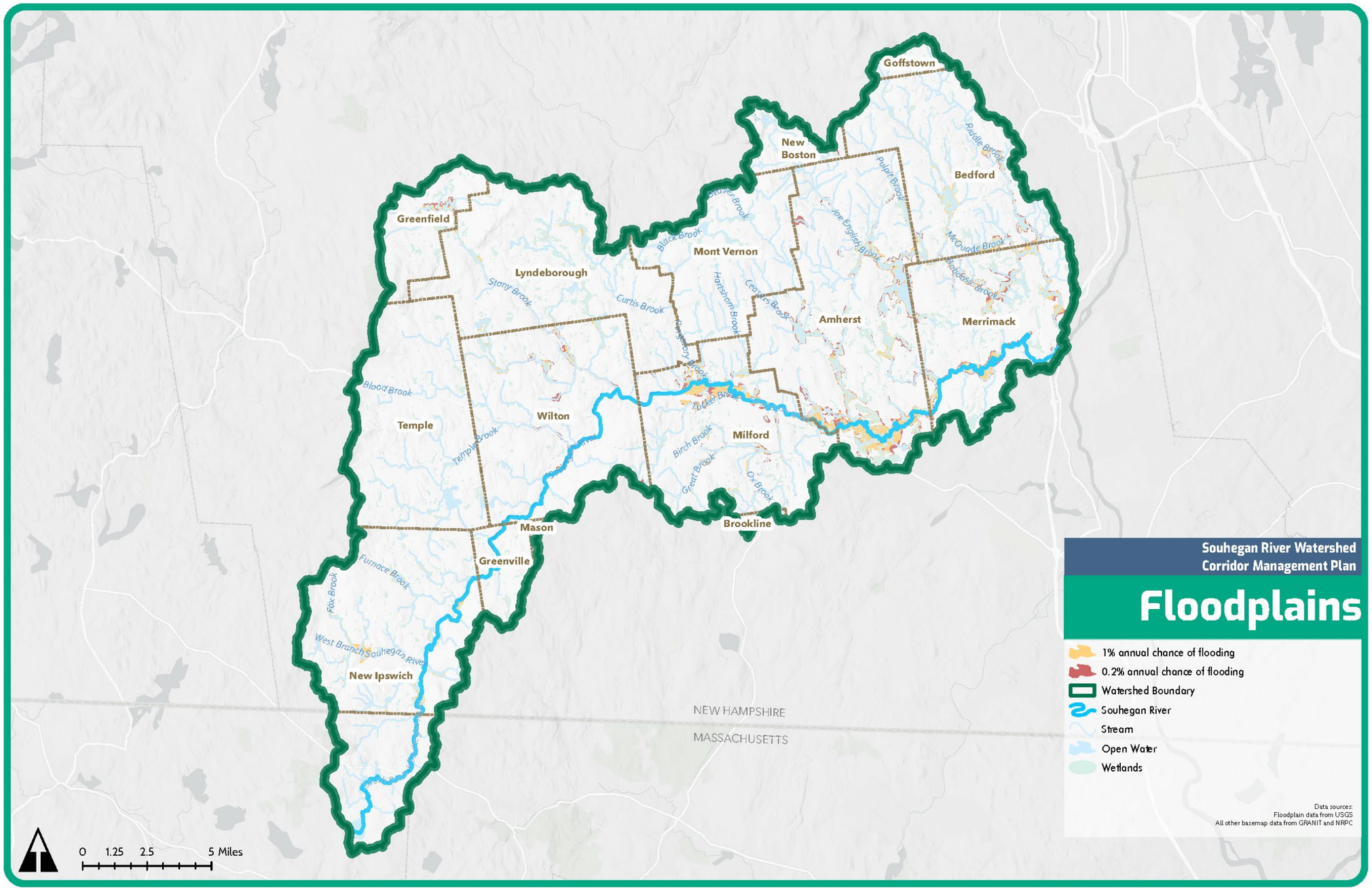
Maps

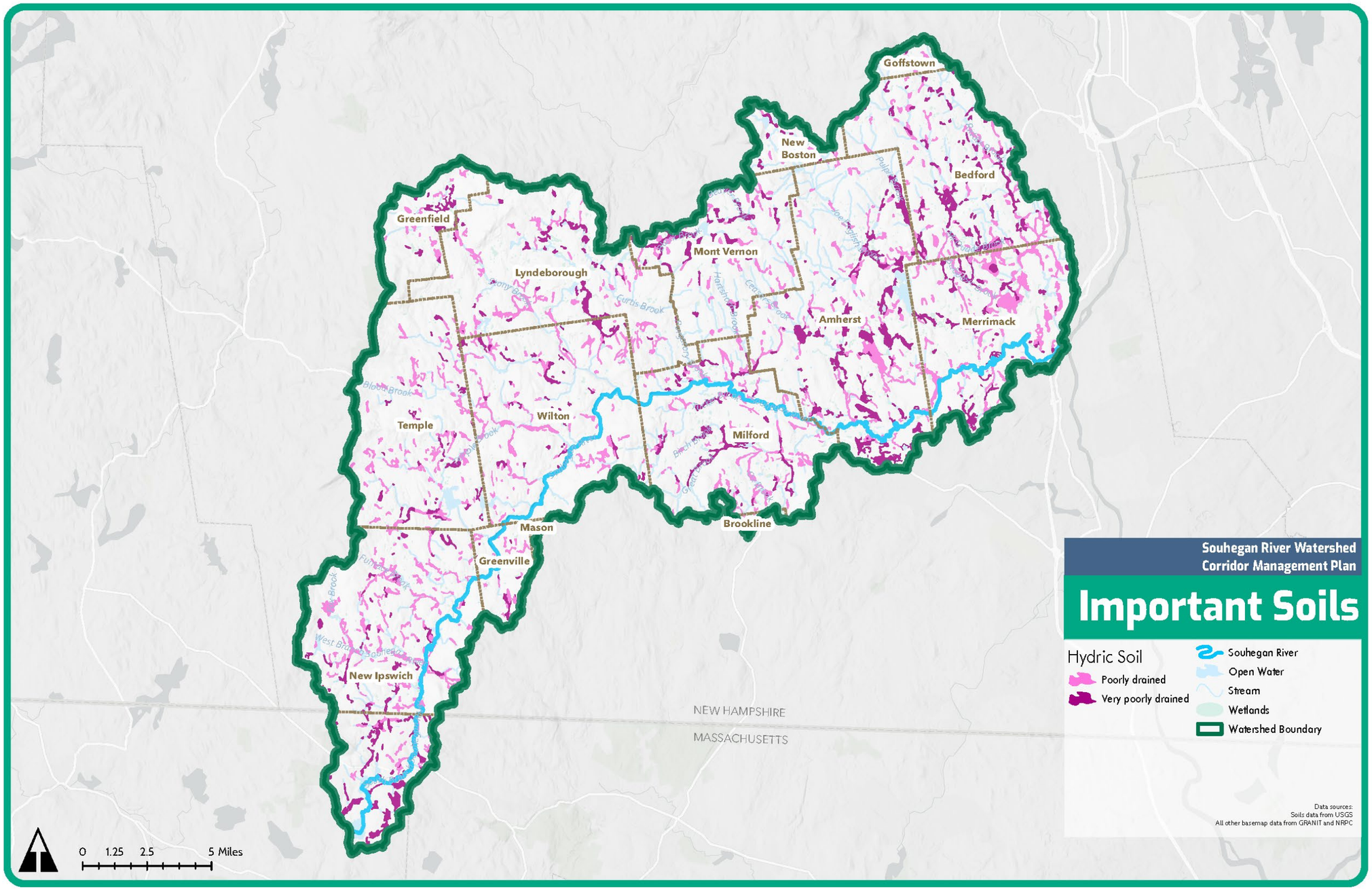
Map 2. Sub watersheds of the Souhegan River.



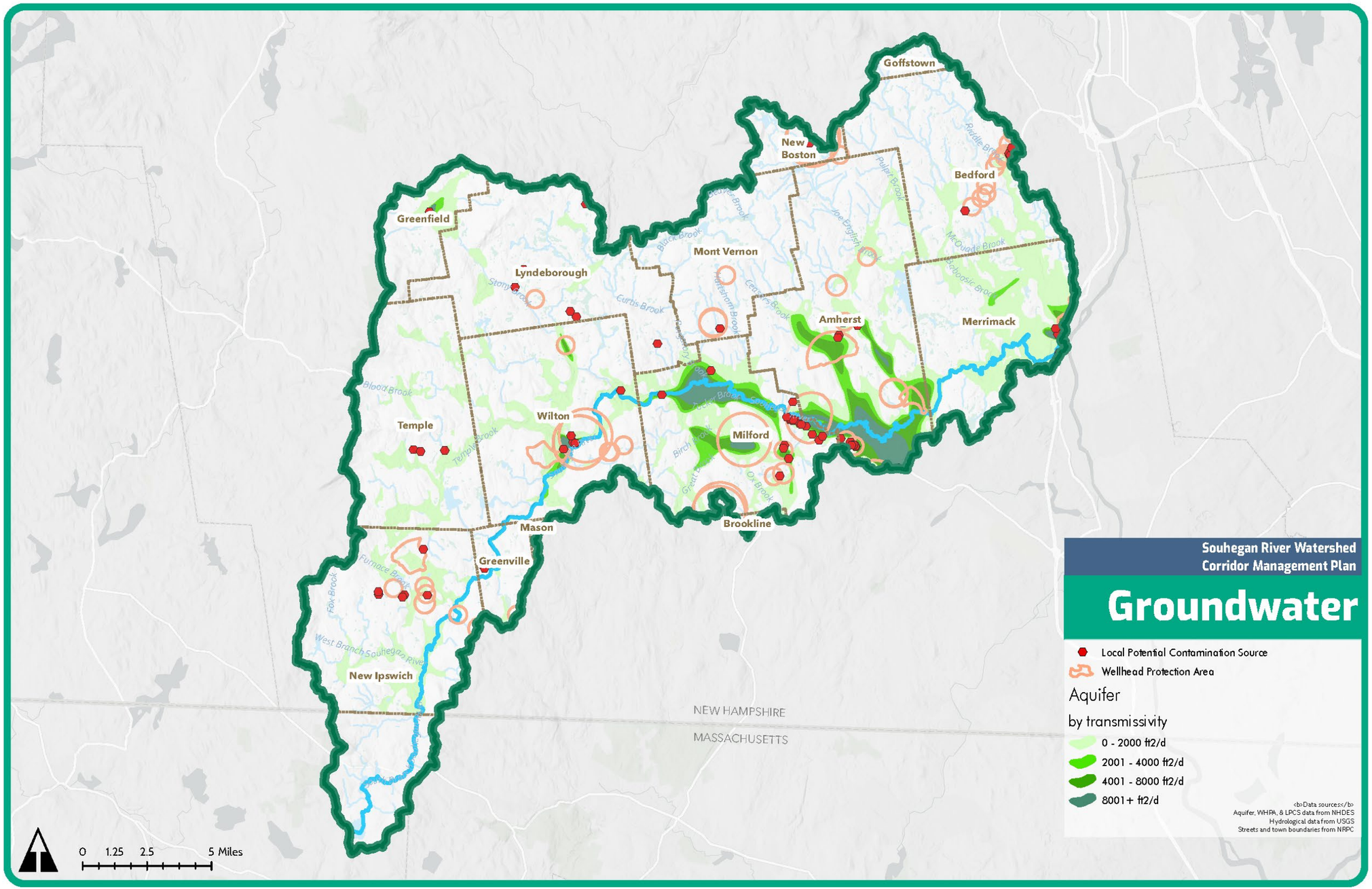
Map 3. Floodplains of the Souhegan River Watershed.



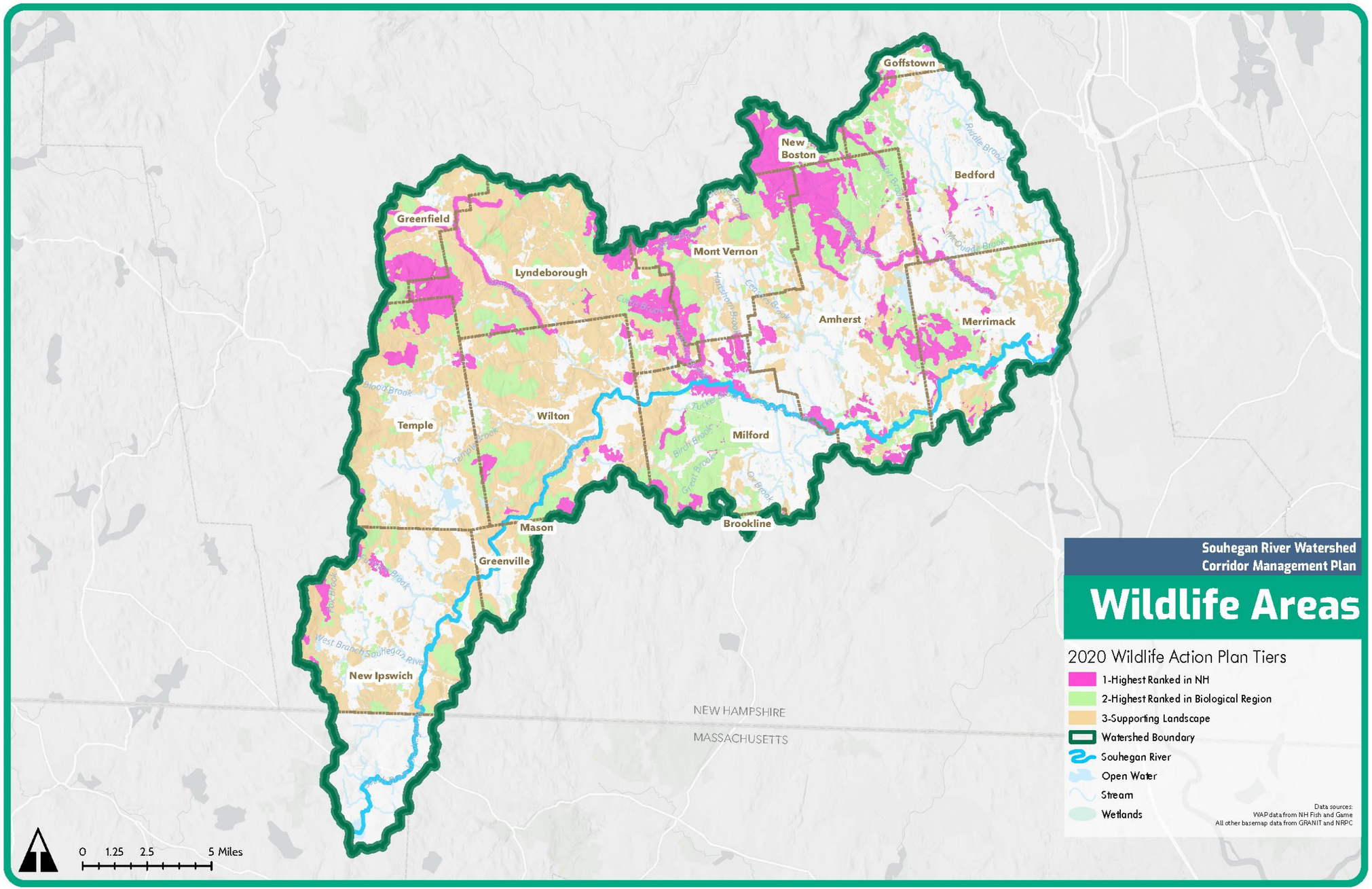
Map 4. Important Soils of the Souhegan River Watershed.



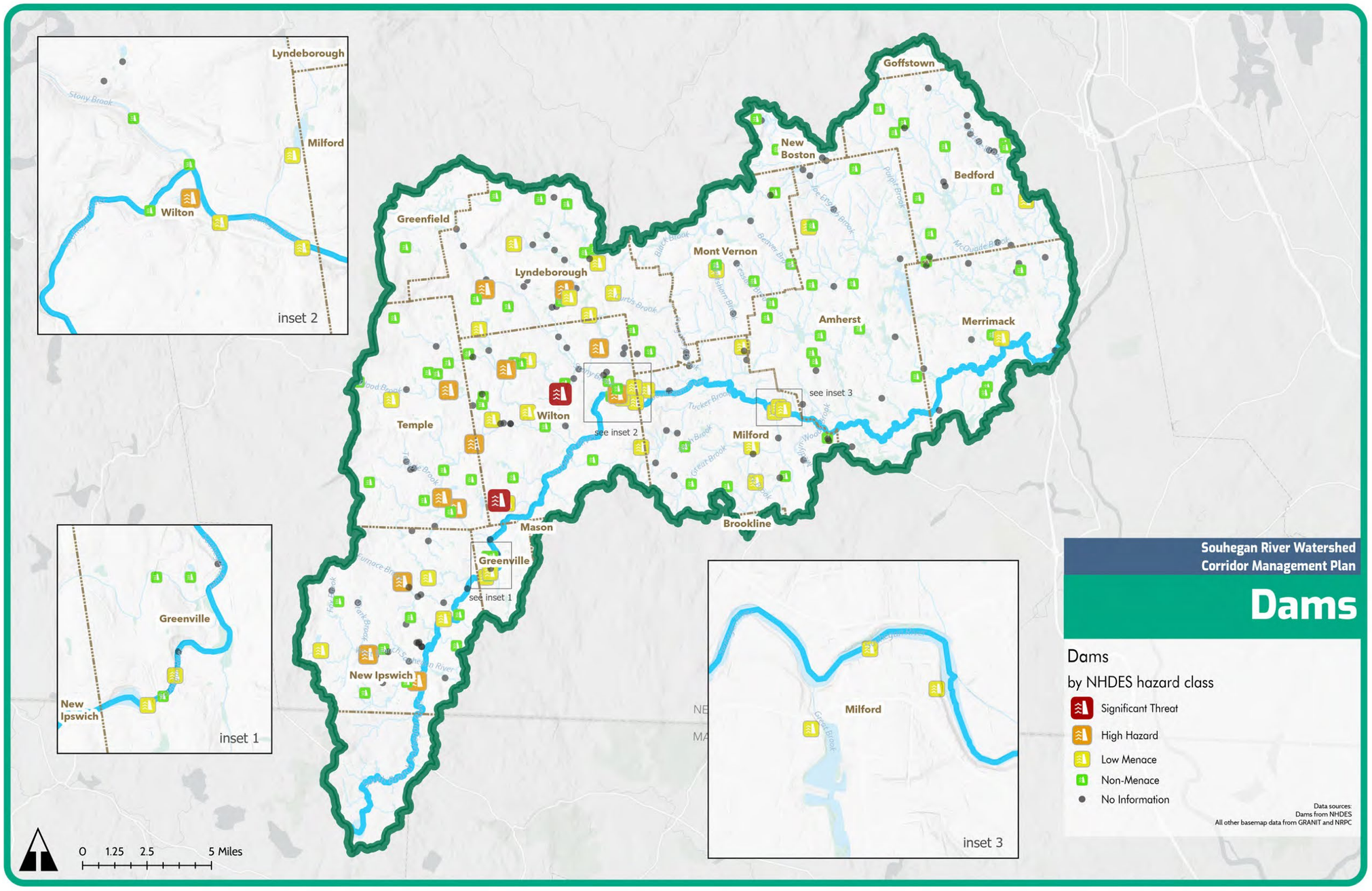
Map 5. Groundwater in the Souhegan River Watershed.



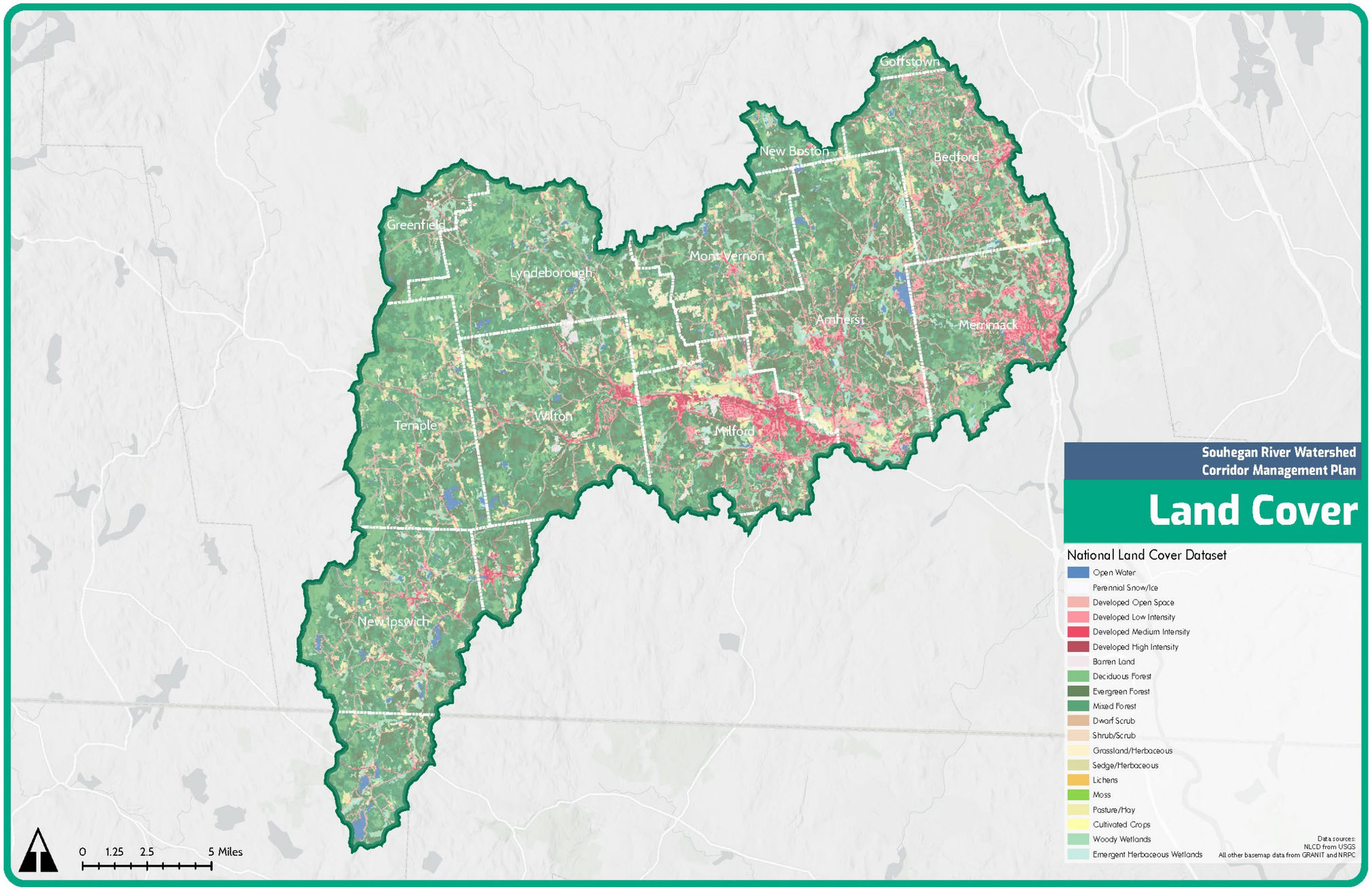
Map 6. Wildlife Areas in the Souhegan River Watershed.



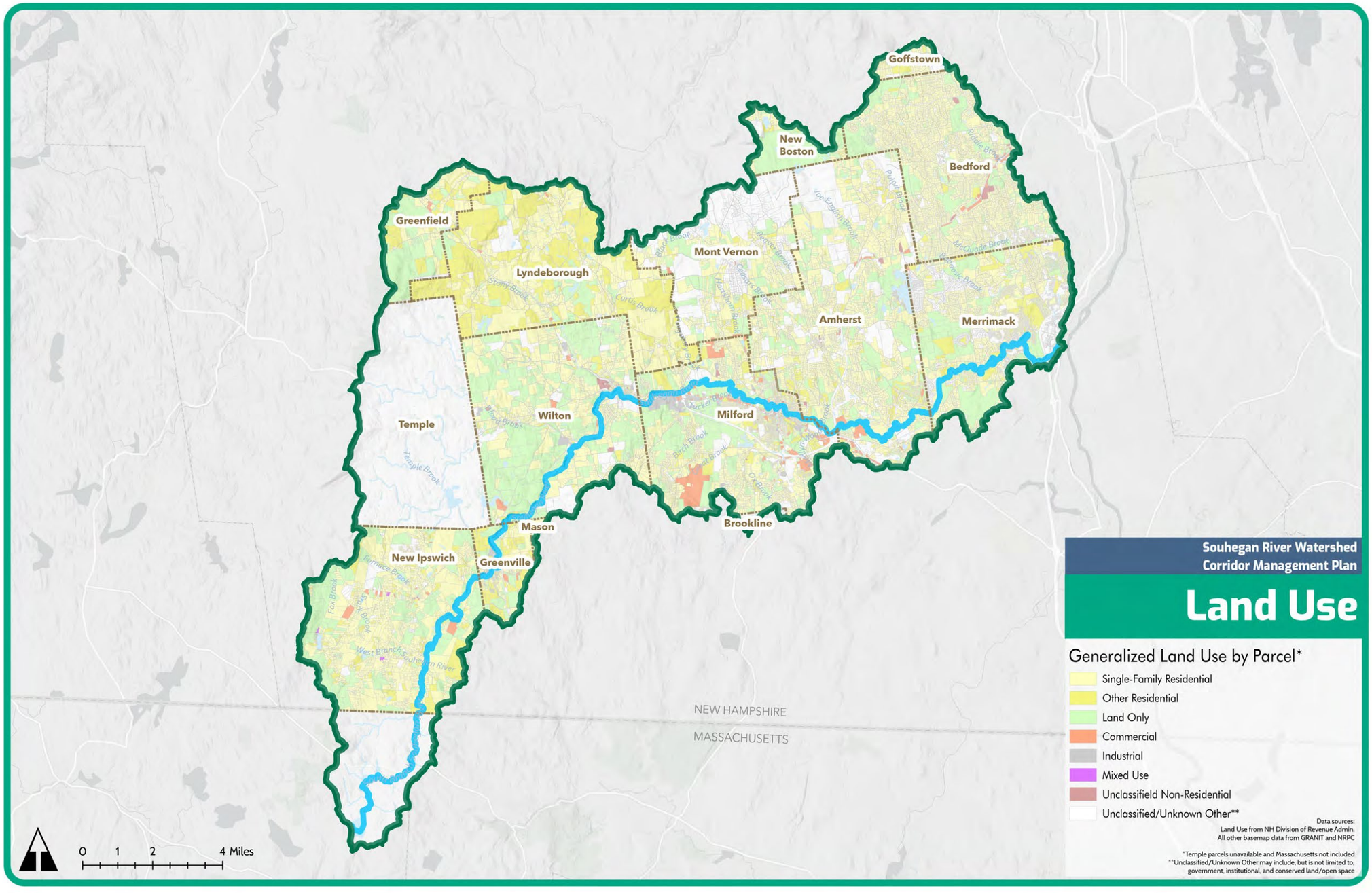
Map 7. Dams in the Souhegan River Watershed.



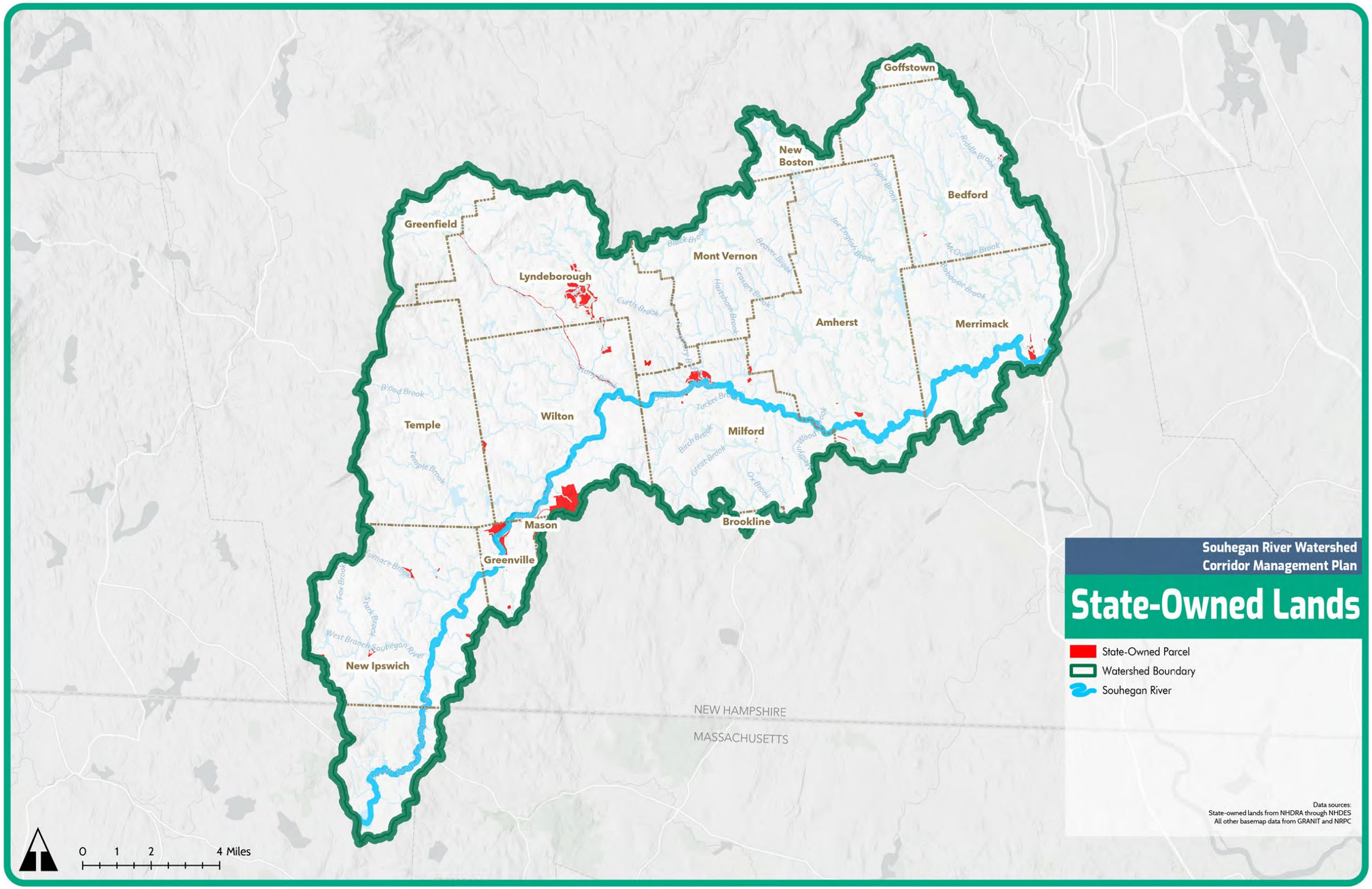
Map 8. Land Cover in the Souhegan River Watershed.



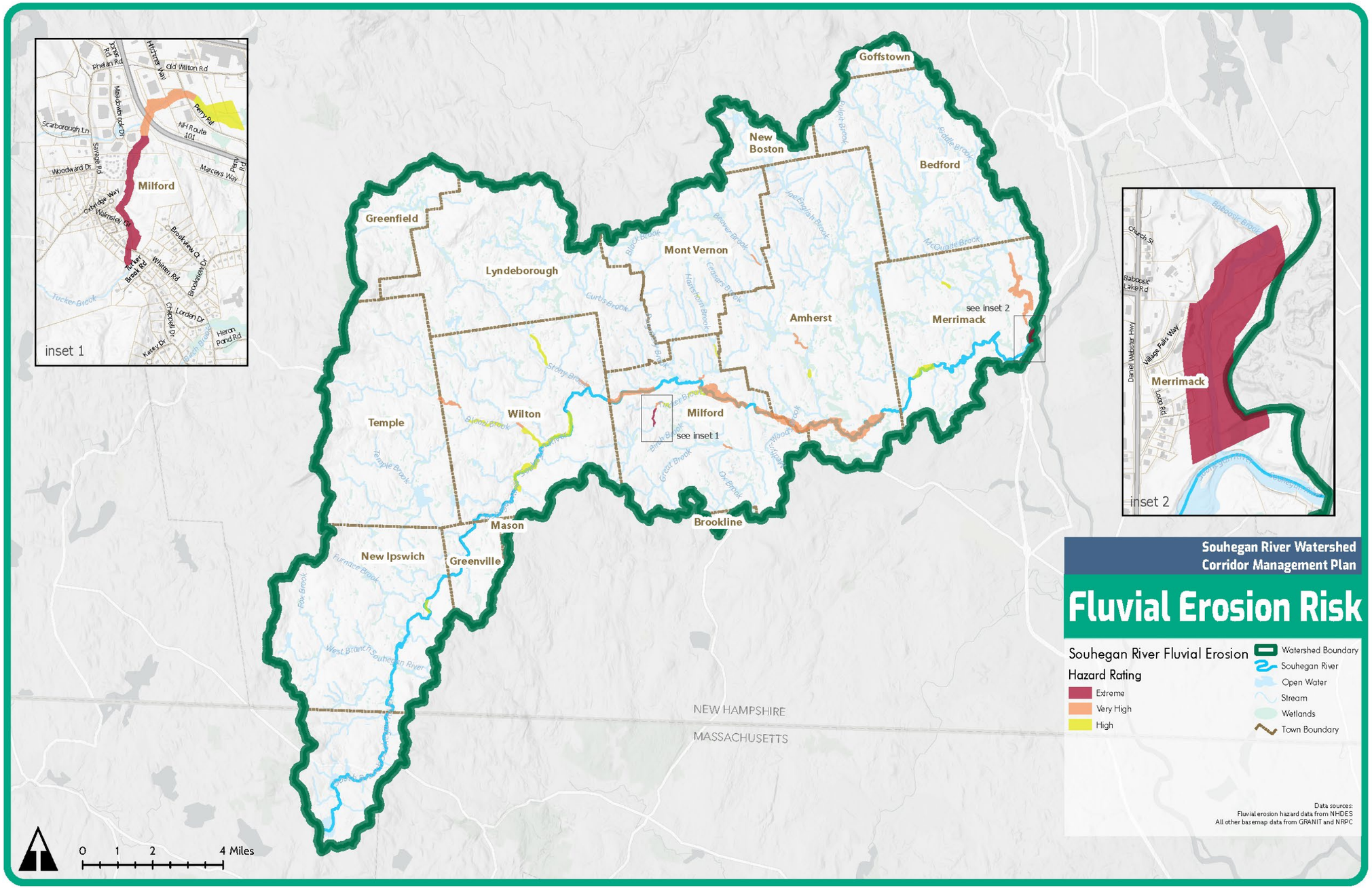
Map 9. Land Use in the Souhegan River Watershed.



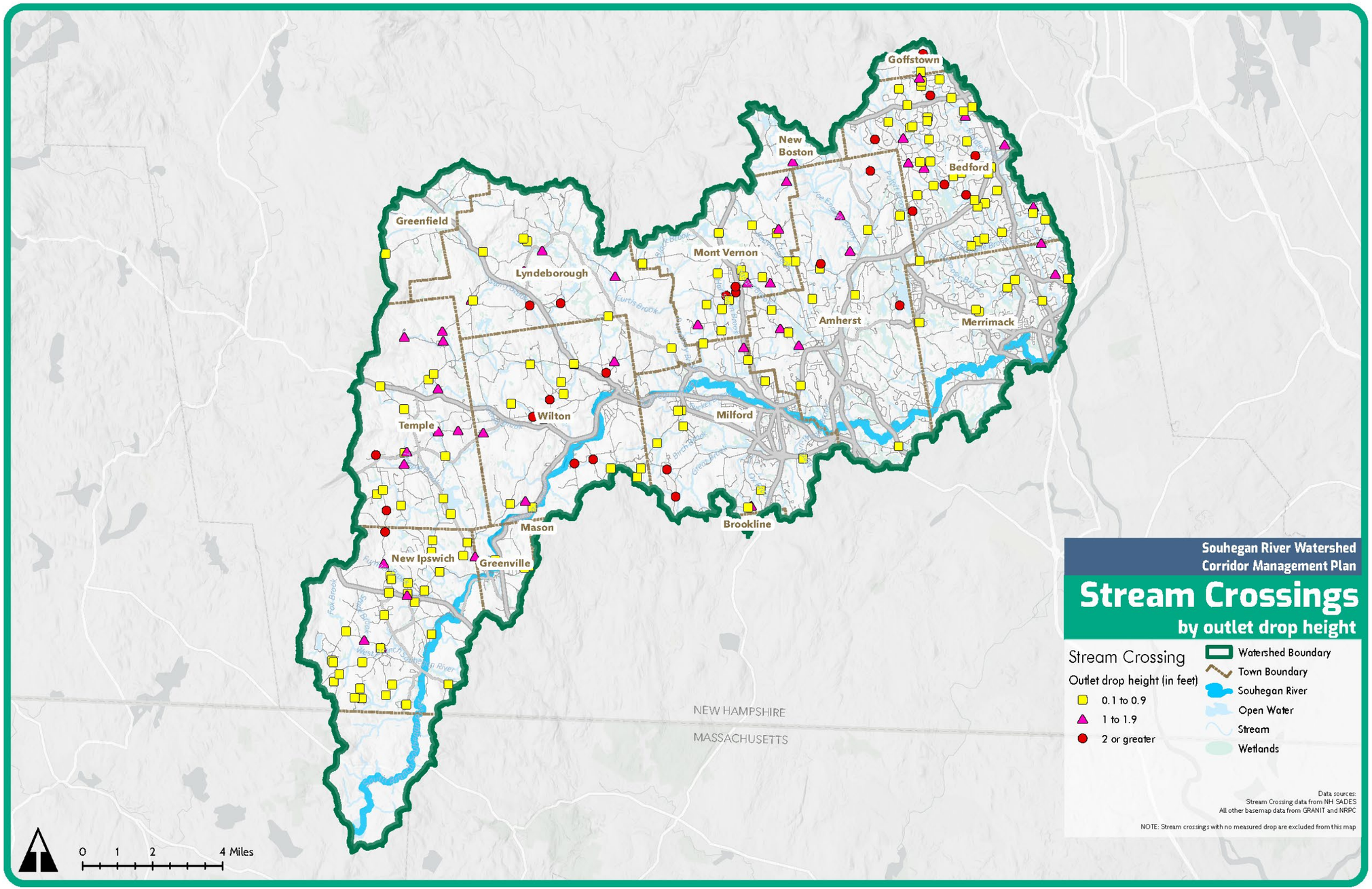
Map 10. State-owned Lands in the Souhegan River Watershed.



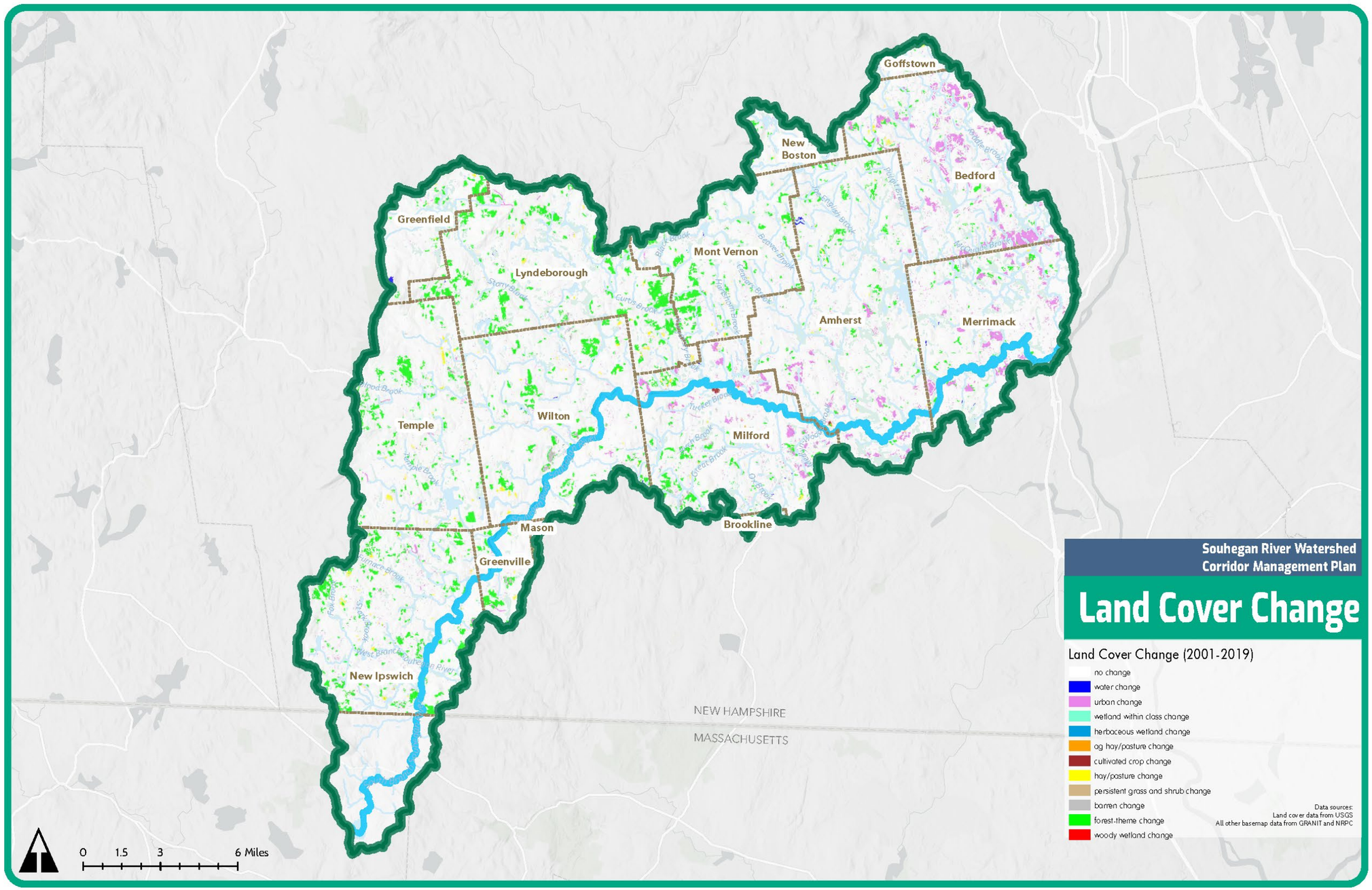
Map 11. Fluvial Erosion Risk in the Souhegan River Watershed.



Map 12. Stream Crossings in the Souhegan River Watershed.



Map 13. Land Cover Change in the Souhegan River Watershed.



Appendices

Appendix A: Watershed Audit Summaries

Table A-1: Watershed Planning

Mechanism and Activity	New Ipswich	Greenville	Temple	Lyndeborough	Wilton	Mont Vernon	Milford	Amherst	Bedford	Merrimack
Population (2023 OPD Estimates)	5,357	1,996	1,390	1,754	3,921	2,661	16,576	11,957	23,784	28,971
Square Miles	33.1	6.9	22.5	30.5	25.7	16.8	25.5	34.4	33.1	33.4
Most recent master plan	Rolling	2017	2019	2002	Rolling	2022	2016	2023	2021	2013/Amended 2020
How often is master plan updated?	As needed	Rolling - as needed	As needed	As needed	Rolling, 8-10 yr cycle	As needed	Rolling	10 years	10 years	10 years
Plan addresses important water resource goals	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Conservation easements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Land acquisition programs	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	No
Transfer of Development Rights (TDR)	No	No	No	No	No	Yes	No	No	Yes	No
Limiting infrastructure extension	Yes	No	No	No	Sub-conscious decision not to extend	No	Yes	No	Yes	No
Infill/community redevelopment	No	Yes	No	No	Yes	No	No	No	Yes	Yes

Table A-2: Land Conservation

Mechanism and Activity	New Ipswich	Greenville	Temple	Lyndeborough	Wilton	Mont Vernon	Milford	Amherst	Bedford	Merrimack
NFIP	Yes, based on NH model ordinance	Yes, minimum standards	No	Yes, add. wetlands district	Yes, minimum standards	Yes	Yes, flood plain ordinance 6.03.0	Yes, minimum standards	Yes, floodplain ordinance	Yes
Historic district	Yes	No	Yes	No	No	Yes	No	Yes	Yes	No
Heritage commission	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Preservation of cultural or historic resources	Other - properties on national registry	No	Yes, within historic district	No	Other - required to be considered	Yes	Other - stone walls and scenic roads	Other - recommends they be considered	Yes	No
Preservation of agriculture	Other - proposed Agricultural Clusters	Yes	No	No	Yes	Yes	Yes	Yes	No	No
Is there critical habitat for plant or animal species	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No
Preservation of critical habitat	Encouraged	Neither	Neither	Encouraged	Yes, through requiring BMPs	Neither	Yes, wetlands ordinance	Encouraged	Neither	Neither
Wetland preservation during development	Yes	Yes	Yes, building setbacks	Yes	Yes	Yes, wetlands overlay district	Yes	Yes	Yes	Yes
Steep slope restrictions	Yes - overlay district for slopes >15%, no development >25%	No	Yes - PUD not allowed on slopes >25%	Yes - Rural Lands 2 & 3	Yes, slopes >10% deemed critical areas", driveway regs also address slopes	Yes, non-buildable areas include slopes >25% and somewhat poorly drained soils with >15%	Yes	Yes	Yes, no building on slopes >25% and not used for buildable area calcs	No
Conservation of forest areas	Yes, encouraged	Open space Dev Plan	No	Yes, encouraged w/ Planned Residential Developments	Yes, encouraged	No	Yes, required	Yes, encouraged	Other, non disturbance easement along waterways	Yes, encouraged
Local wetland protection overlay zone	Yes, Wetlands and Surface Water Conservation Overlay District	No	Yes, Wetlands Protection	Yes, Wetlands District	Yes, Watershed Protection Overlay District (for watersheds of town's reservoirs)	Yes, Wetlands Overlay District	Yes, Wetland Conservation District	Yes, Wetland and Watershed Conservation District	Yes, Wetland Conservation District	Yes, local Shoreland Protection District

Table A-3: Aquatic Buffers

Mechanism and Activity	New Ipswich	Greenville	Temple	Lyndeborough	Wilton	Mont Vernon	Milford	Amherst	Bedford	Merrimack
Wetland buffers	25 ft no disturbance, 50 ft buildings	N/A	50 ft buffer, 75 ft buildings	50 ft vegetated buffer	50 ft structures (100 ft Watershed POD)	25 ft buffers, 50 ft buildings	25ft / 50ft / 100ft depending on waterbody	25ft / 50ft / 100ft depending on waterbody	50 ft structural setback	25 ft no cut, 40 ft buildings
Reforestation requirements	Yes, zoning overlay	No	No	No	No, only those required by NHDES	Yes, cutting limited to 50% of the basal area in 10-year period	No	No, only for violators	No. Working on riparian no-cut ordinance	No

Table A-4: Better Site Design

Mechanism and Activity	New Ipswich	Greenville	Temple	Lyndeborough	Wilton	Mont Vernon	Milford	Amherst	Bedford	Merrimack
Minimum pavement width <500 ADT	18-22 ft	23-26 ft	18-22 ft	18-22 ft	18-22 ft, refers to state standards	18-22 ft	18-22 ft	22 - 26 ft	greater than 26 ft	23-26 ft
Parking lanes allowed to be traffic lanes	No	No	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not sure	No	No
Minimum ROW for residential street	greater than 45 ft	greater than 45 ft	greater than 45 ft	greater than 45 ft	greater than 45 ft (50 ft)	greater than 45 ft	greater than 45 ft	greater than 45 ft (50 ft)	greater than 45 ft	greater than 45 ft
Utilities to be placed under paved sections	Yes	Not specified	Not specified	Not specified	Not specified	No	Not specified	Not specified	Yes	Yes
Minimum radius of cul-de-sac	36 ft to 45 ft	greater than 45 ft	greater than 45 ft	greater than 45 ft	greater than 45 ft (75 ft or 100 ft)	greater than 45 ft	36 ft to 45 ft	greater than 45 ft (55 ft or 75 ft)	greater than 45 ft	36 ft to 45 ft
Landscaped island allowed within cul-de-sac	Yes	Not specified	Not specified	Not specified	Not specified	Not specified	Yes	Yes	Yes	Yes
Hammerhead turn-arounds allowed	Yes	Yes	Not specified	Not specified	Yes	Yes	Yes	Yes	No	Not specified
Curb and gutters required for residential streets	No	Yes gutters, No curbs	No	No	No	No	No	No	No	No
Minimum parking ratio for office building	approx. 3/1000 SF	5/1000 SF	"adequate"	Not applicable	1/employee plus 5/1000 SF	Not applicable	3/1000 SF	4/1000 SF	3.12/1000 SF	3.3/1000 SF
Minimum parking ratio for shopping center	approx. 5/1000 SF	3.3/1000 SF	"adequate"	Not applicable	1/employee plus 5/1000 SF	Not applicable	3.5/1000 SF to 4/1000 SF	6/1000 SF	4/1000 SF	4/1000 SF
Minimum parking ratio for single-family home	2 spaces	2 spaces	4 spaces	Not applicable	2 spaces	Not applicable	2 spaces	2 spaces	2 spaces	generally 2 spaces
Shared parking arrangement permitted?	Not specified	Not specified	Not specified	Yes	No	Not specified	Yes	Yes	Yes	Not specified
Parking ratios reduced for shared parking?	Not specified	Not specified	Not specified	Not specified	Not applicable	Not applicable	Yes	Not specified	Yes	No
Minimum parking stall width	9 ft	10 ft	Not specified	9 ft	9 ft	Not specified	9 ft, shopping centers 10 ft	Not specified	9 ft	9 ft
Minimum parking stall length	18 ft	20 ft	Not specified	18 ft	18 ft (20 ft parallel)	Not specified	18 ft	Not specified	18 ft	18 ft
Percentage of spaces required for compact cars	No	No	No	No	No	No	No	No	No	No
Unpaved parking spaces allowed	Yes	Yes	Not specified	Yes	Yes	Not specified	Yes	Not specified	No	No
Minimum percentage of parking lot landscaped	No	No, Site plan dependent	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Open space/cluster developments allowed	Yes, conditional use	Yes, by right	Yes, conditional use	Yes, conditional use	Yes, by right but subject to Subdivision approval	Yes, conditional use	Yes, by right	Yes, conditional use	Yes, by right	Yes, by right
Additional review for open space design	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No
Flexible site design for open space options	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes

Mechanism and Activity	New Ipswich	Greenville	Temple	Lyndeborough	Wilton	Mont Vernon	Milford	Amherst	Bedford	Merrimack
Irregular lot shapes allowed	Yes	No	No	No	Yes	Yes	Yes	Yes	No	Yes
Residential district lot size	Village-1: 1 acre	Downtown: 1 acre	Village & Historic: 2 acres	Village: 1 acre	Downtown Res Overlay: 1/3 acre, water, sewer required	District 1: 2 acres	Res A: 15,000 SF	Historic District: 2 acres	General Residential: 0.5 to 1.5 acre	R-4: 40,000 SF
Frontage	200 ft	35 ft	250 ft	150 ft	100 ft	200 ft	100 ft	200 ft	100 to 150 ft	150 ft
Setbacks	30/20/20	10/10/10	35/35/35	35/35/35	35/15/15	50/30/50	30/15/15	50/20/20	35/25/25	30/60/20
Residential district lot size	Village-2: 1 acre	Rural/Ag: 1 acre w/sewer, 2 acres septic	Rural Res & Ag: 3 acres	Light Industrial: 2 acres	Residential: 1/2 acre with water/sewer, 1 acre without	District 2: 5 acres	Res B: 20,000 SF	Residential Rural: 2 acres	Residential & Agriculture: 1.5 acre	R-3: 40,000 SF
Frontage	200 ft	150 with, 200 without	300 ft	250 ft	100 ft	300 ft	150 ft	200 ft	150 ft	150 ft
Setbacks	30/20/20	50/30/30	35/35/35	50/50/50	35/15/15	50/30/50	30/15/15	50/25/25	35/25/25	30/60/20
Residential district lot size	Rural: 2 acres	Res: 1 acre with, 2 acres without	Mountain: 5 acres	Rural Lands One: 2ac	Res/Ag: 2 acres contiguous dry	District 3: Watershed Area: 5 acres	Res R: 2 acres	Northern Transitional: 3.5 acres	n/a	R-2: 80,000 SF
Frontage	200 ft	150 with, 200 without	350 ft	250 ft	200 ft	300 ft	200 ft	300 ft	n/a	200 ft
Setbacks	30/20/20	30/30/30	35/35/35	50/50/50	35/35/35	50/30/50	30/15/15	50/40/40	n/a	50/60/30
Residential district lot size	n/a	n/a	n/a	Rural Lands Two: 5ac	Watershed Overlay: 6 acres dry	District 5: Land Bordering NH RT 13 Overlay	Commercial: 20,000 SF	North Rural: 5 acres	n/a	R-1: 100,000 SF
Frontage	n/a	n/a	n/a	500 ft	300 ft	500 ft	150 ft	300 ft	n/a	250 ft
Setbacks	n/a	n/a	n/a	50/50/50	200' or 150' depending on waterbody type	90/30/50	30/15/15	50/40/40	n/a	50/60/30
Overlay districts for increased density	Yes, cluster subdivision	No	Yes, PUD	No	Yes - Downtown Residential Overlay	No	No	No	No	Yes
Sidewalks required on at least one side	No	No	No	No	No	No	No	No	No	No
Minimum sidewalk width	Not specified	Not specified	Not specified	Not less than 4 ft	Not less than 4 ft	Not specified	Greater than 4 ft	Not applicable	Not applicable	Greater than 4 ft
Trails substitute for sidewalks	Not specified	Not specified	Not specified	Not specified	Not applicable	Not applicable	Not specified	Yes	Not applicable	Not applicable
Minimum driveway width	Greater than 9 ft	Greater than 9 ft	Greater than 9 ft	Greater than 9 ft	Greater than 9 ft	Greater than 9 ft	Greater than 9 ft	Greater than 9 ft (10 ft)	Greater than 9 ft	Not specified
Pervious materials for single-family driveways	Yes	Not specified	Yes	Not specified	Yes	Yes	Not specified	Not specified	Not specified	Yes
Two-track design for single-family driveways	Not specified	Not specified	Not specified	Not specified	Yes	Not specified	Not specified	Yes - state standards	Not specified	Not specified
Shared driveways permitted	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Open space areas required to be consolidated	Yes	Yes	Not specified	No	No	Yes	Yes	No	No	Yes
Minimum % of open space natural condition	Yes	Yes	Yes	Yes	No	Not specified	Yes	Yes	Yes	No
Allowable uses for open space defined	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes

Mechanism and Activity	New Ipswich	Greenville	Temple	Lyndeborough	Wilton	Mont Vernon	Milford	Amherst	Bedford	Merrimack
Rooftop runoff can be discharged to yard areas	Not specified	Not specified	Not specified	Yes	Yes	Not specified	Yes	Yes	Yes	Yes

Table A-5: Erosion and Sediment Control

Mechanism and Activity	New Ipswich	Greenville	Temple	Lyndeborough	Wilton	Mont Vernon	Milford	Amherst	Bedford	Merrimack
Erosion & sediment control req'd during construction	Sites greater than 1 ac	All sites	All sites	All sites	All sites	All sites	All sites	All sites	All sites	All sites
Guidance for types of erosion and sediment control	Yes, state docs	Don't know	Yes, state docs	Yes, state docs	Yes, state docs	Yes, state docs	Yes, state docs	Yes, state docs	Yes, own guidance	Yes, own guidance
Silt fence	**Yes**	**Yes**	No	**Yes**	**Yes**	Don't know	**Yes**	**Yes**	**Yes**	**Yes**
Straw bales	**Yes**	**Yes**	No	**Yes**	**Yes**	Don't know	**Yes**	**Yes**	**Yes**	**Yes**
Construction sequencing	**Yes**	No	No	No	**Yes**	Don't know	**Yes**	**Yes**	**Yes**	**Yes**
Construction phasing	No	No	No	**Yes**	**Yes**	Don't know	**Yes**	**Yes**	No	**Yes**
Preservation of natural vegetation	**Yes**	No	**Yes**	**Yes**	**Yes**	Don't know	**Yes**	**Yes**	**Yes**	**Yes**
Preservation of stream or wetland buffers	**Yes**	No	**Yes**	**Yes**	**Yes**	Don't know	**Yes**	**Yes**	**Yes**	**Yes**
Stair-step grading	No	No	No	No	No	Don't know	No	No	No	**Yes**
Temporary seeding and mulching	**Yes**	**Yes**	No	No	**Yes**	Don't know	**Yes**	**Yes**	No	**Yes**
Permanent seeding and mulching	**Yes**	**Yes**	No	**Yes**	**Yes**	Don't know	**Yes**	**Yes**	**Yes**	**Yes**
Dust control	**Yes**	No	No	**Yes**	No	Don't know	**Yes**	**Yes**	**Yes**	**Yes**
Erosion blankets and geotextiles	**Yes**	No	No	**Yes**	No	Don't know	No	**Yes**	**Yes**	**Yes**
Fiber rolls	No	No	No	No	No	Don't know	No	No	**Yes**	**Yes**
Temporary stream crossings	**Yes**	No	No	No	**Yes**	Don't know	**Yes**	**Yes**	**Yes**	**Yes**
Stabilized construction entrance	**Yes**	No	No	**Yes**	**Yes - logging**	Don't know	**Yes**	**Yes**	**Yes**	**Yes**
Exit tire wash	No	No	No	No	No	Don't know	No	No	**Yes**	**Yes**
Energy dissipation at pipe outlets	**Yes**	No	No	No	**Yes**	Don't know	No	**Yes**	**Yes**	**Yes**
Check dams in natural or man-made channels	**Yes**	**Yes**	No	No	**Yes**	Don't know	No	**Yes**	**Yes**	**Yes**
Sand/gravel bag barrier	No	No	No	**Yes**	**Yes**	Don't know	**Yes**	**Yes**	**Yes**	**Yes**
Brush or rock filter	**Yes**	No	No	No	No	Don't know	**Yes**	**Yes**	**Yes**	**Yes**
Sorm drain inlet protection	**Yes**	No	No	**Yes**	**Yes**	Don't know	No	**Yes**	**Yes**	**Yes**
Catch basin inlet filters	**Yes**	**Yes**	No	No	**Yes**	Don't know	No	**Yes**	**Yes**	No
Sedimentation basins	**Yes**	**Yes**	No	No	**Yes**	Don't know	**Yes**	**Yes**	**Yes**	**Yes**
Sediment traps	**Yes**	No	No	No	**Yes**	Don't know	No	**Yes**	**Yes**	No
Filtration of dewatering operations	No	No	No	No	**Yes**	Don't know	No	No	**Yes**	**Yes**
Secondary filtration	**Yes**	No	No	No	No	Don't know	No	No	**Yes**	No

Mechanism and Activity	New Ipswich	Greenville	Temple	Lyndeborough	Wilton	Mont Vernon	Milford	Amherst	Bedford	Merrimack
Dikes/berms as conveyance to ESC structures	**Yes**	No	No	No	No	Don't know	No	No	No	No
Pipe slope drains to bypass erodible soils	No	No	No	No	No	Don't know	No	No	No	**Yes**
Stockpile stabilization	**Yes**	No	No	No	**Yes**	Don't know	**Yes**	**Yes**	**Yes**	**Yes**
Erosion & sediment control plan req'd in site plan review	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Construction sites inspected for compliance	Yes	Don't know	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Who conducts inspections	Third Party	Municipal Inspector	Other - Selectmen	Municipal Inspector	Municipal Inspector or 3rd party	Municipal inspector	Municipal inspector	Municipal inspector and 3rd party	Municipal and 3rd party	Municipal and 3rd party
How frequently does inspector visit construction site	Monthly, and after rainfall of more than 0.5"	Don't know - depends	Other - as requested by community	Other - as required	Other - triggered by rainfall events	Don't know	Monthly	Not less than once every 7 days. Within 24 hours of a storm of 0.25" or greater	Weekly	Weekly
Sponsor erosion and sediment control training for	None of the above	None of the above	None of the above	Inspectors	None of the above	Inspectors	None of the above	None of the above	None of the above	None of the above

Table A-6: Stormwater Management Practices

Mechanism and Activity	New Ipswich	Greenville	Temple	Lyndeborough	Wilton	Mont Vernon	Milford	Amherst	Bedford	Merrimack
Require stormwater management on new development	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Require stormwater be managed on site	Yes	Yes	No	Yes	Yes	Not specified	Yes	Yes	Yes	Yes
Control peak discharge rate	Refers to state document	Don't know	Not specified	Yes - 25 yr storm	Yes -100 yr storm	Not specified	Yes - 2, 10, 25 yr storms	Yes - 2, 10, 25, 50 yr storms	Yes - 25, 50 yr storms	Not applicable
Treat stormwater runoff	Refers to state document	Don't know	Not specified	Not specified	Yes, same	Not specified	Yes, for TSS, N, P	Yes	Yes	25 year, 50 for detention basins
Control/reduce total volume of runoff	Refers to state document	Don't know	Not specified	Yes - 25 yr storm	Yes	Not specified	No	Control post-development rate to not exceed pre-development rate	Yes	25 year, 50 for detention basins
Protect downstream channels	Refers to state document	Don't know	Not specified	Not specified	Yes	Not specified	No	Yes	Yes	25 year, 50 for detention basins
Exemptions for these requirements	By design waiver reviewed by PB engineer	None	n/a	n/a	None	n/a	Sites smaller than 1 acre	Waivers by PB	Not sure	Very limited
Community provides guidance for types of BMP	Yes, developed own	Yes, developed own	Yes, developed own	Yes, state document	Yes, state document, BMPs and Federal regs	Yes, state document	Yes, state document	Yes, state document	No	Yes, own guidance
Top three stormwater practices in community	Check dams, conveyance to ESC, sedimentation basins	Don't know	Swales, detention ponds, sheet flow to greenspace	Catch basins, ditches, piped underground	Infiltration/ detention basins, swales, vegetation/rain gardens	Don't know	Infiltration basins, oil/water separators, storage chambers	Infiltration basins, detention basins, swales	Silt fence, outfall apron, stormwater retention ponds	Treatment swales, detention basins, infiltration
Stormwater plan required during site plan review	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Inspect stormwater practices during construction	Yes	Don't know	No	Yes	Yes	Don't know	Yes	Yes	Yes	Yes
As-build drawing or stormwater practice required	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Don't know	Yes
Who is responsible for maintenance	Private owner	Depends on ownership	Private owner	Private owner	Private owner, HOA. Town can perform at owner's expense	Don't know	Depends on purpose and ownership	Private owner or HOA	Private owner	Owner
Maintenance agreement	Yes	Don't know	No	No	Yes	Don't know	Yes	Yes	No	Yes
Privately maintained systems inspected	No	Don't know	No	Yes	Yes, periodic certification required	Don't know	No	Yes	No	No
How frequently are privately owned practices inspected	In response to complaints	Don't know	Never	Other - as needed	1 or 2 year interval third party review	Don't know	In response to complaints	Routinely at time agreed with landowner	Annually, if town holds easement	Annually

Mechanism and Activity	New Ipswich	Greenville	Temple	Lyndeborough	Wilton	Mont Vernon	Milford	Amherst	Bedford	Merrimack
Penalties for not complying with maintenance	Yes, if in violation of safety or zoning. HOAs self manage otherwise	Don't know	Yes, general penalties for not complying with site plan, subdivision, driveway or zoning regulations.	Yes, code enforcement will issue violation notices and BOS issues cease and desist orders.	Yes, town can do work and bill, Cert of Occupancy can be revoked (never used, but available)	Don't know	No	Injunctive relief, fines and penalties, cease and desist order, pleas by mail for local land use citations	Not applicable	No

Table A-7: Non-Stormwater Discharges

Mechanism and Activity	New Ipswich	Greenville	Temple	Lyndeborough	Wilton	Mont Vernon	Milford	Amherst	Bedford	Merrimack
Description of stormwater management system	Drainage ditches, swales, detention basins	Combination	Combination	Drainage ditches, swales, detention basins	Combination	Drainage ditches, swales, detention basins	Combination	Combination	Combination: 70% ditches, 30% storm sewers	Combination: 50% ditches, swales, basins; 50% storm sewers
Program for illicit connection detection	No	No	No	No	Yes, in MS4 area	No	Yes	Yes	Yes	Yes
Illicit connection detection include removal	not applicable	not applicable	not applicable	not applicable	Yes	not applicable	Yes	Yes	Yes	Yes
Regulations for septic system maintenance	No	No	No	No	No	No	No	Yes	No	Yes
Inspection of privately owned septic systems	Yes, on installation	No	No	Yes, on installation	No	Yes, on installation	No	No	Yes, on installation	No
Regulations for confined animal feeding lots	Yes	No	No	No	Don't know, livestock near water mentioned in Wetlands Overlay Dist.	No	No	Yes	No	No
Spill response plan	Yes	Yes	Yes	No	Yes	In development	Yes	Yes	Yes	Don't know
Regulate storage of hazardous materials	Yes, >55 gal requires spill response plan	Yes, in ZO	Yes, in ZO	Not specified	Yes, in ZO	In development	Yes	Yes	Yes	Don't know
Hazardous substances protection overlay district	No	No	No	No	No	No	No	No	No	No
Deicing compounds on public roads:	Sand, road salt, calcium chloride	Sand, road salt	Sand, road salt	Sand, road salt	Sand, road salt	Sand, road salt, calcium chloride	Sand, road salt, magnesium chloride	Sand, road salt	Road salt, 3:1 mix of 50/50 a	Sand, road salt, Calcium Chloride, liquid calcium
Storage of deicing compounds	Within structure	Covered, not inside	Open sand, enclosed salt shed	Within structure	Covered, not totally inside	Don't know	Covered, not inside	Covered, not inside	Within structure	Within structure
Designated low- or no-salt routes	Yes	No	Yes	No	Yes, dirt roads	Don't know	No	Yes	Yes	Yes

Table A-8: Watershed Stewardship Programs

Mechanism and Activity	New Ipswich	Greenville	Temple	Lyndeborough	Wilton	Mont Vernon	Milford	Amherst	Bedford	Merrimack
Education or outreach programs for:	Yes: municipal volunteers	No	No	Yes: residents, municipal employees	Yes: residents, municipal employees (MS4 driven)	No	Yes: residents, commercial, industrial, municipal employees	Yes: residents	Yes: some MS4 programming	Yes: residents, commercial, industrial, municipal employees
Stream stewardship programs	Yes, SWA	Yes	No	No	Yes: SWA, SoRLAC	Yes, NHDES VRAP	Yes, SoRLAC	Yes: SWA, Rec Dept	No	Yes
Stream restoration programs	No	No, but should be for Pilgrim Foods	No	No	No	No	Yes, private landowners	No	No	No
Restrictions on pet waste management	No	No	No	No	Yes, town ordinance and MS4	No	No	Yes	Yes	No
Sweep public streets	No	Yes	No	No	Yes, in MS4 area	No	Yes	Yes	Yes	Yes
How often are streets swept	not applicable	Annual	not applicable	not applicable	Annual - spring/summer	not applicable	Annual - spring to fall	Annual - spring	Annual - all year	Annual
Fertilizers used on public lands	No	No	No	Yes	Don't know	No	Yes	Don't know	Yes	Yes
Pesticides used on public lands	No	No	No	Yes	Don't know	Yes, for invasives	No	Yes, for invasives	Yes	No

Appendix B:
Project Review Checklist for Best Management Practices

Project Evaluation Checklist - Local Advisory Committee

Scoring System: 1 = Poor, 3 = Acceptable, 5 = Excellent, N/A not applicable

Project Overview: _____

NHDES #: _____

Project Name/Owner: _____

Project Engineer: _____

Location/Town: _____

Date of Application Review: _____

Consistency with River Corridor Management Plan

1. Does the project align with objectives in the local River Corridor Management Plan? **Score:** _____
2. Are there conflicts with recommended land use practices? **Score:** _____

Environmental Impact Assessment

3. Are raingardens or retention systems included for areas that lead directly to or near water bodies without treatment? **Score:** _
4. Potential effects on water quality (e.g., sedimentation, pollution)? **Score:** _____
5. Impact on riparian buffers and wetlands? **Score:** _____
6. Effects on aquatic and terrestrial habitats? **Score:** _____
7. Consideration of floodplain functions and storage capacity? **Score:** _____

Compliance with Local and State Regulations

8. Adherence to Shoreland Water Quality Protection Act requirements? **Score:** ____
9. Conformity with local zoning ordinances and conservation overlays? **Score:** _____

Stormwater Management

10. Is there sufficient erosion control and sediment filtering in place, especially where runoff will be directed to existing outflows? **Yes**_____**No**_____**and Score:** _____
11. Adequacy of proposed stormwater management systems? **Score:** _____
12. Use of Low Impact Development (LID) techniques? **Score:** _____
13. Stormwater retention areas perched above the river? Yes _____No_____and Score: _____

Snow Management

14. Does the project include a designated snow storage area? **Yes_____No_____and Score: _____**
15. Green SnowPro or equivalent environmentally friendly de-icing methods? **Yes_____No_____and Score: _____**

Public Access and Recreational Considerations

16. Any impact on existing public access points to the river **Yes_____No_____and Score: _____**
17. Opportunities to enhance or provide new public access **Yes_____No_____and Score: _____**

Cultural and Historical Resources

18. Assessment of potential impacts on cultural or historical sites **Score: _____**

Cumulative Impacts

19. Evaluation of the project as compared to other existing/proposed developments **Score: _____**
20. Consideration of long-term impacts on the river corridor **Score: _____**
21. Proposed actions to avoid, minimize, or compensate for adverse impacts **Score: _____**
22. Plans for ongoing maintenance and monitoring of mitigation efforts **Score: _____**
23. Summary of public/municipal comments or concerns **Score: _____**

Additional Considerations

24. Climate resilience and adaptation measures **Score: _____**
25. Consistency with regional conservation initiatives **Score: _____**

Reviewer's Summary and Recommendations

Overall Score: _____

Specific conditions or modifications recommended for project approval:

Suggestions for monitoring or follow-up actions post-approval:

Appendix C: Additional Water Quality Data

Water Quality Analysis for the Souhegan Watershed: A decade of *E. coli* Trends Measured by Citizen Scientists

An analysis of *E. coli* contamination levels across the Souhegan River watershed that focused on data collected by citizen scientists from the Souhegan Watershed Association (SWA) shows an effect of precipitation on *E. coli* presence. SWA data stretches back to 1998 and is a significant investment by local stakeholders in the health of the Souhegan River and shows a local focus on water quality. Even though data is available from 1998 this analysis was performed from 2012 to 2022 (months of June, July, August and September) limited to the years precipitation data was available, excluding 2020 due to COVID-19. Precipitation was measured in Greenville as a proxy for the watershed. Study includes 62 sampling days and 1,118 *E. coli* samples collected across multiple sites. Only data collected on days with available precipitation records or *E. coli* measurements were used. This study identifies patterns in contamination levels and correlations with precipitation events.

Methods

The Souhegan Watershed Association has its samples evaluated by Municipal Wastewater Treatment Plant (WWTP) Labs in the watershed. These labs monitor the wastewater effluent dumped into the river for some of the same parameters that SWA tracks for the river itself. The following labs have at one time or another performed SWA lab work: Milford, Nashua, Merrimack and Manchester.

The *E. coli* bacteria levels are quantified with the same toolset at all labs. They all use IDEXX Quanti-Tray systems. The human sample process effort takes a few minutes. After 24 hours incubation the system provides bacterial counts within 95% accuracy. The labs then digitally forward the data to SWA. This program is dependent on the labs providing quick-no-cost service.

Key Findings

1. Correlation Between Precipitation and *E. coli* Levels

    - Analysis shows a significant relationship between precipitation events and *E. coli* levels across many sites. This is reflected in mean *E. coli* value measured for each collection day at all the sites (Figure C-1). Many sites showed a positive correlation between precipitation and *E. coli* counts (Figure C-2, Figure C-3, Figure C-4), indicating a moderate to strong link between rainfall and elevated *E. coli* levels.

    - This pattern of higher *E. coli* counts due to rainfall events suggests stormwater runoff is a significant driver of non-point source contamination in the Souhegan River. Following rainfall, runoff likely transports contaminants from various sources such as septic overflows, agricultural areas, impervious surfaces, and disturbed landscapes into the river.

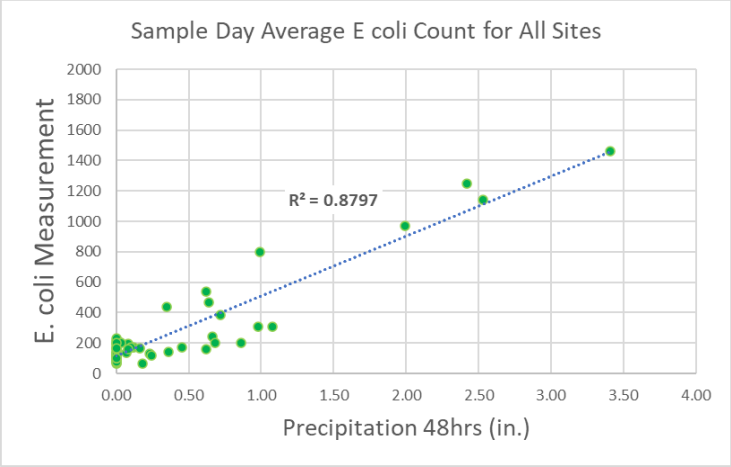


Figure C-1 Average *E. coli* value on day of collection for 20 Souhegan River sites.

2. Site Variability

- Some sites along the river demonstrate unique contamination profiles that are less influenced by precipitation, indicated by their lower R-squared values. This suggests that other local factors, such as direct human activity, proximity to WWTPs, or wildlife, may play a more prominent role in these areas.

Implications for Corridor Management

1. Targeted Stormwater Management

- Based on the strong correlation between rainfall and *E. coli* levels, particularly at sites with high R-squared values, improving stormwater infrastructure near these areas could reduce contamination. Strategies could include septic remediation, controls for agricultural runoff, expanding riparian buffers, and promoting pervious surfaces to reduce runoff velocity and pollutant load.
- High-Risk Sites for Focused Intervention: Sites such as the Boston Post Road Canoeport and Beaver Brook in Amherst, and Watson Park in Merrimack could benefit from targeted investigations including DNA investigation to trace the sources of *E. coli* contamination. These areas have consistently high contamination levels that are exacerbated by rainfall, indicating that localized runoff controls could be effective.

2. Community Involvement and Education

- The engagement of SWA's citizen scientists has been important in gathering this extensive dataset, highlighting the need for public involvement in watershed health monitoring. It is recommended continuing and expanding community outreach to foster greater awareness and encourage best practices to prevent pollution.
- Outreach and engagement could also provide opportunities for public education, with material particularly focused on reducing runoff from residential and recreational areas during storm events.

Recommendations

1. Enhance Stormwater Management Measures

- Expand the use of green infrastructure at high-risk sites to mitigate contamination from runoff. For example, rain gardens and extended vegetated buffers could help intercept and filter pollutants before they reach the river.
- Investigate the feasibility of low-impact development practices for new or ongoing developments within the watershed to minimize impervious surfaces and reduce runoff-related contamination.

2. Continue Long-Term Monitoring and Expand Predictive Modeling

    - Long-term monitoring should continue with support from citizen scientists. Additional variables, such as flow rate or land use changes, could improve predictive accuracy.
    - The Negative Binomial model has shown to be a useful predictive tool for understanding contamination drivers. Estimates of rainfall could yield expected *E. coli* increases. Further model refinement, possibly incorporating other seasonal effects such as temperature and localized factors such as land use or contamination zones, could better inform management strategies and public health.

Conclusion

This citizen-scientist data-driven assessment underscores the importance of targeted watershed management interventions to address *E. coli* contamination, particularly during rainfall events. By implementing stormwater controls, continuing community-driven monitoring, and prioritizing high-risk sites, water quality in the Souhegan River can be better protected, supporting both environmental health and safe public enjoyment. Additionally, the data collected by SWA citizen scientists serves as a powerful foundation for these efforts and reflects the value of community involvement in preserving the Souhegan River's water quality.

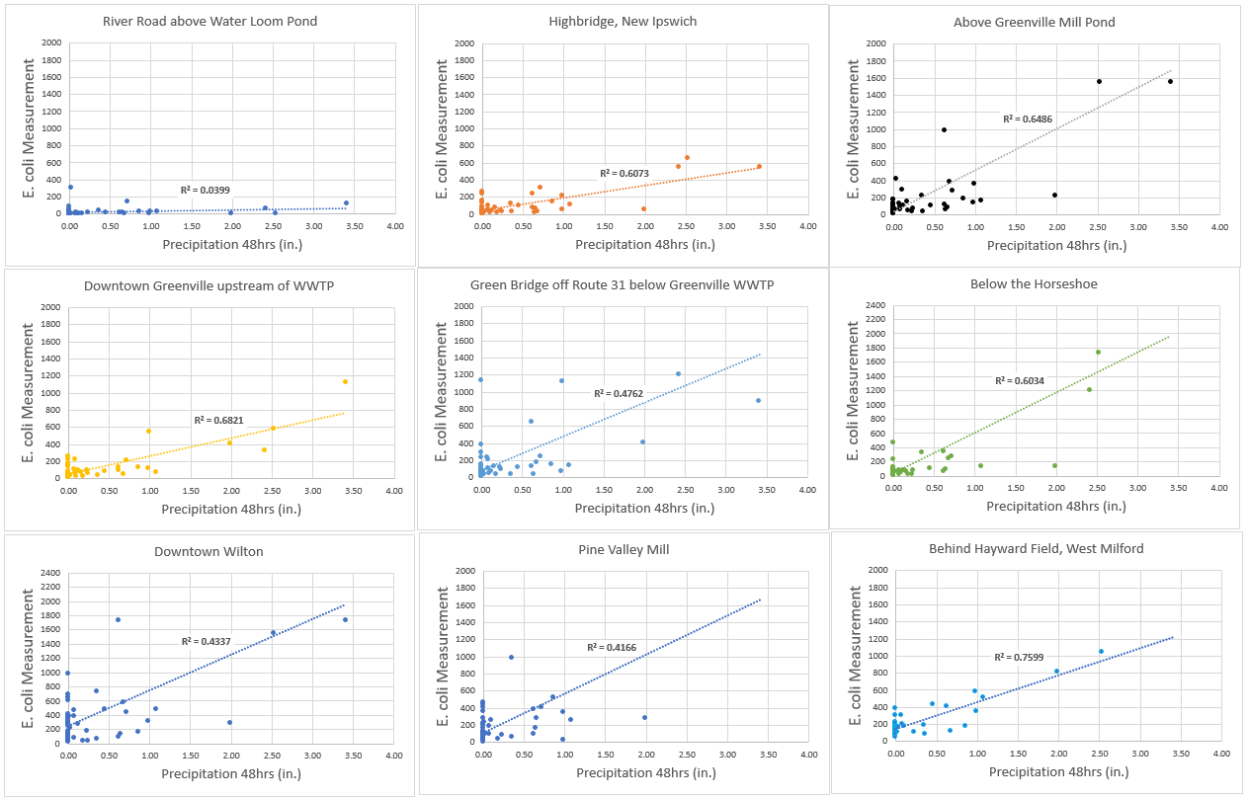


Figure C-2. *E. coli* and precipitation measurements for 9 sites in the Souhegan River watershed.

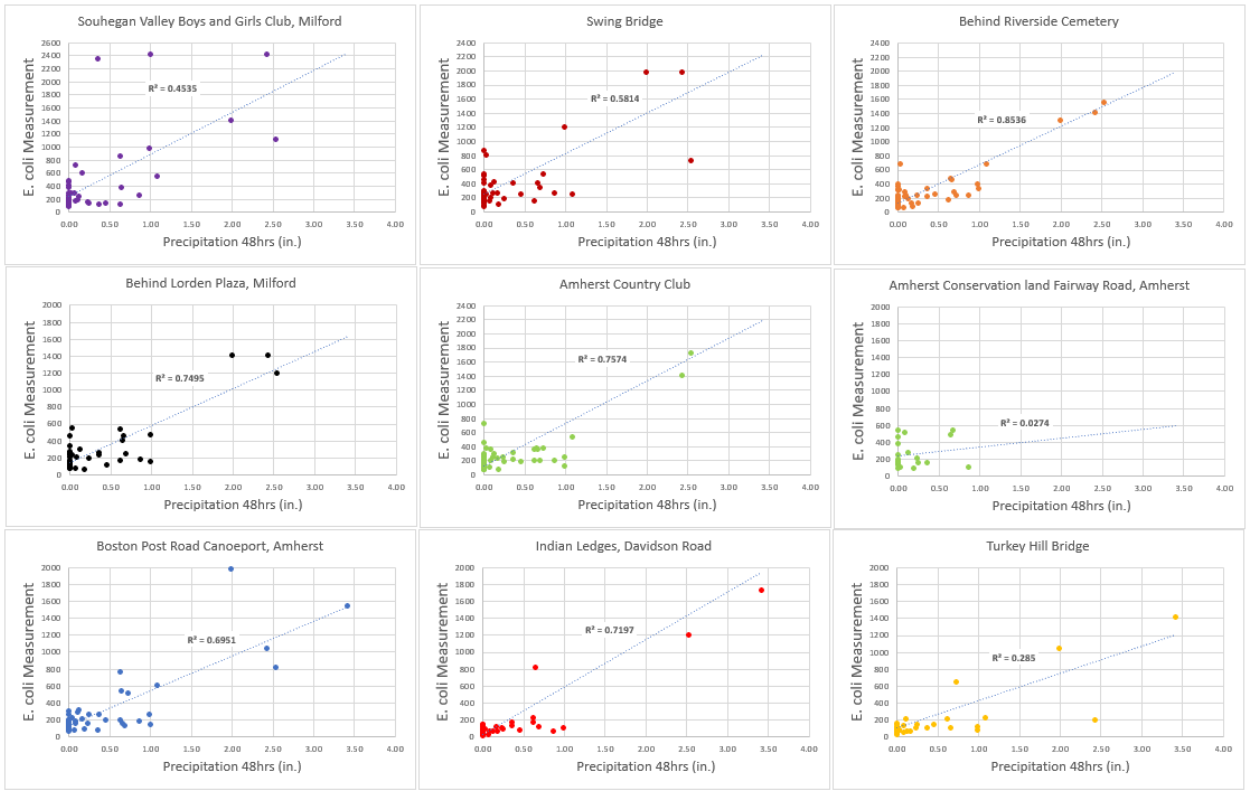


Figure C-3. *E. coli* and precipitation measurements for 9 sites in the Souhegan River watershed.

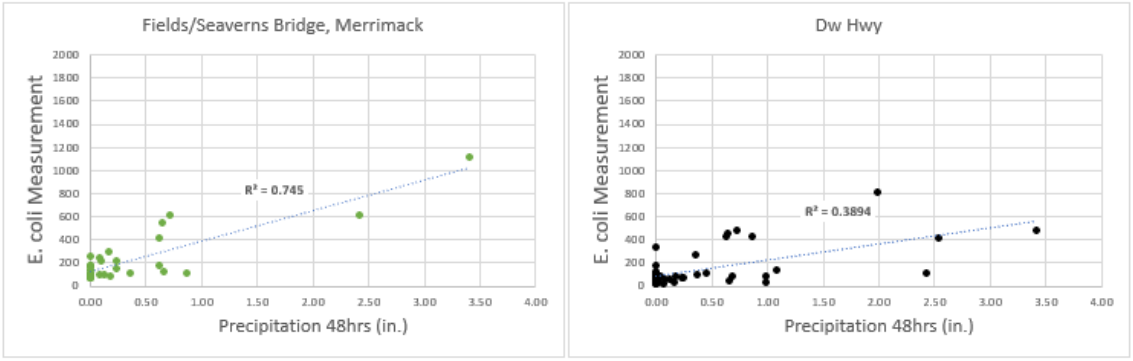


Figure C-4. *E. coli* and precipitation measurements for two sites in the Souhegan River watershed.

Appendix D: List of Dams in the Souhegan River Watershed

Table D-1: List of Dams in the Souhegan River Watershed

TOWN	RIVER	NAME	OWNER	DAM ID	HAZCL	STATUS
AMHERST	BABOOSIC BROOK	BABOOSIC LAKE DAM	MR MALCOLM CLARK	D007008	N/A	RUINS
AMHERST	BEAVER BROOK	WOOLFORD DAM	MR CHRISTOPHER KAISER	D007005	NON-MENACE	ACTIVE
AMHERST	INTERMITTENT STREAM	GLEN ECHO POND DAM	MR BARRY B HAMMOND	D007012	NON-MENACE	ACTIVE
AMHERST	JOE ENGLISH BROOK	JOE ENGLISH POND DAM	US AIR FORCE STATION NEW BOSTON	D007001	N/A	REMOVED
AMHERST	JOE ENGLISH BROOK	JOE ENGLISH POND DAM	US AIR FORCE STATION NEW BOSTON	D007002	N/A	RUINS
AMHERST	JOE ENGLISH BROOK	PEABODY DAM	MR CHARLES BACON	D007003	N/A	RUINS
AMHERST	RUNOFF	BRADGATE POND DAM	HIGHLAND VILLAGE CORP	D007021	N/A	EXEMPT
AMHERST	TR JOE ENGLISH BROOK	LINCOLN POND DAM	LINCOLN POND ASSOCIATION	D007004	NON-MENACE	ACTIVE
AMHERST	TR JOE ENGLISH BROOK	FREESTYLE FARM POND DAM	FREESTYLE FARM LLC	D007009	LOW	ACTIVE
AMHERST	TR SOUHEGAN RIVER	YORK POND DAM	SHERBURNE BROTHERS	D007006	NON-MENACE	ACTIVE
AMHERST	TR YORK POND	TRUALL DAM	MR DANIEL FLICKNEAR	D007007	N/A	RUINS
AMHERST	UNNAMED STREAM	FARM POND DAM	COUNTRY MANSION	D007010	NON-MENACE	ACTIVE
AMHERST	UNNAMED STREAM	RECREATION POND DAM	MR HAROLD W POPE	D007011	NON-MENACE	ACTIVE
AMHERST	UNNAMED STREAM	DREAM LAKE DAM	MR MIKE RICCITELLI	D007015	NON-MENACE	ACTIVE
AMHERST	UNNAMED STREAM	THE HILLSIDE FIRE POND	ATHERTON UNIT OWNERS ASSOCIATION	D007019	NON-MENACE	ACTIVE
AMHERST	UNNAMED STREAM	STEARNS FIRE POND DAM	MR BILL STEARNS	D007023	NON-MENACE	ACTIVE
AMHERST	UNNAMED STREAM	FIRE POND DAM	MR STEPHEN ALBANO	D007024	NON-MENACE	ACTIVE
AMHERST	UNNAMED STREAM	POWERS POND DAM	JIM POWERS	D007025	NON-MENACE	ACTIVE
AMHERST	UNNAMED STREAM	FARM POND DAM	MR STEVEN RAYMOND	D007013	N/A	EXEMPT
AMHERST	UNNAMED STREAM	JAKES POND DAM	MR ART DESAULNIER	D007014	N/A	EXEMPT
AMHERST	UNNAMED STREAM	RICHARD ARNOLD DAM	MR RICHARD ARNOLD	D007016	N/A	EXEMPT
AMHERST	UNNAMED STREAM	DAUTEUIL POND DAM	MR DONALD DAUTEUIL	D007020	N/A	EXEMPT
BEDFORD	BABOOSIC BROOK	STOWELL POND	MR BRIAN SEALANDER	D020009	NON-MENACE	ACTIVE
BEDFORD	MCQUADE BROOK	LENZ MILL	MR RUSSELL C BROWN	D020006	NON-MENACE	ACTIVE
BEDFORD	MCQUADE BROOK	FARM POND	MR JEROME K WALKER	D020033	NON-MENACE	ACTIVE
BEDFORD	MCQUADE BROOK	JENKINS ROAD MCQUADE BROOK DAM	TOWN OF BEDFORD	D020013	N/A	REMOVED
BEDFORD	MCQUADE BROOK	WHEELER DAM	MS CHARLENE DALRYMPLE	D020008	N/A	RUINS
BEDFORD	MCQUADE BROOK	SHEPARD DAM	MR DONALD W WHEELER	D020012	N/A	RUINS
BEDFORD	MCQUADE BROOK	PARKER DAM	GREENFIELD FARMS DEVEL GROUP	D020018	N/A	RUINS

TOWN	RIVER	NAME	OWNER	DAM ID	HAZCL	STATUS
BEDFORD	MCQUADE BROOK	LENZ SAWMILL DAM	SKV INVESTMENT ASSOC	D020019	N/A	RUINS
BEDFORD	RIDDLE BROOK	R COMERFORD DAM	MR RAE COMMERFORD	D020020	N/A	NOT BUILT
BEDFORD	RIDDLE BROOK	RIDDLE BROOK DAM	MR MARCIA ANN MARSTON	D020030	N/A	NOT BUILT
BEDFORD	RIDDLE BROOK	MAGAZINE STREET DAM	TOWN OF BEDFORD	D020047	N/A	REMOVED
BEDFORD	RIDDLE BROOK	REMIG DAM	FEDERAL BAKE SHOP LTD PARTNERSHIP	D020007	N/A	RUINS
BEDFORD	RIDDLE BROOK	DAMONS MILL DAM	MR JACK B MIDDLETON	D020010	N/A	RUINS
BEDFORD	RIDDLE BROOK	HOLBROOK DAM	MR ANDREW NOYES	D020011	N/A	RUINS
BEDFORD	RIDDLE BROOK	MCALLISTER DAM	MR RAE V COMMERFORD	D020014	N/A	RUINS
BEDFORD	RIDDLE BROOK	COMERFORD RECREATION DAM	MR RAE COMMERFORD	D020017	N/A	RUINS
BEDFORD	RUNOFF	FOREST RIDGE ESTATES	POMEROY ASSOCIATES	D020038	NON-MENACE	ACTIVE
BEDFORD	TR MCQUADE BROOK	LYSCARS POND DAM	ATHERSTONE HOMEOWNERS ASSOCIATION	D020046	NON-MENACE	ACTIVE
BEDFORD	TR RIDDLE BROOK	BURLIEGH DAM	TOWN OF BEDFORD	D020026	NON-MENACE	ACTIVE
BEDFORD	UNNAMED STREAM	FIRE POND	MCAFEE HEIRS TRUST	D020028	NON-MENACE	ACTIVE
BEDFORD	UNNAMED STREAM	STONE DAM	MS ELIZABETH STONE	D020037	NON-MENACE	ACTIVE
BEDFORD	UNNAMED STREAM	RECREATION POND	MR WAYNE WILLIAMS	D020039	NON-MENACE	ACTIVE
BEDFORD	UNNAMED STREAM	APPLE ORCHARD ESTATES DAM	BENJAMIN ENTERPRISES	D020044	NON-MENACE	ACTIVE
BEDFORD	UNNAMED STREAM	KAMEN GEO THERMAL POND DAM	MR DEAN KAMEN	D020045	LOW	ACTIVE
BEDFORD	UNNAMED STREAM	GINGRAS DAM	MR LEO GINGRAS	D020027	N/A	RUINS
GREENFIELD	STONEY BROOK	WILDLIFE POND	MR ROGER SWAIN	D098003	NON-MENACE	ACTIVE
GREENVILLE	NA	PILGRIM FOODS LAGOONS 1&2	OLD DUTCH MUSTARD CO DBA PILGRIM FOOD	D101009	NON-MENACE	ACTIVE
GREENVILLE	SOUHEGAN RIVER	OTIS FALLS DAM	ALPINE PACIFIC UTILITIES HYDRO LLC	D101001	LOW	ACTIVE
GREENVILLE	SOUHEGAN RIVER	SOUHEGAN RIVER	GREENVILLE ELDERLY HOUSING	D101002	NON-MENACE	ACTIVE
GREENVILLE	SOUHEGAN RIVER	CHAMBERLIN FALLS DAM	ALPINE PACIFIC UTILITIES HYDRO LLC	D101003	LOW	ACTIVE
GREENVILLE	SOUHEGAN RIVER	SOUHEGAN RIVER VI DAM	EVERSOURCE ENERGY	D101006	N/A	REMOVED
GREENVILLE	SOUHEGAN RIVER	SOUHEGAN RIVER IV DAM	OIL RECOVERY SYSTEMS	D101004	N/A	RUINS
GREENVILLE	SOUHEGAN RIVER	SOUHEGAN RIVER V DAM	GREENVILLE ELECTRIC LIGHTING CO	D101005	N/A	RUINS
GREENVILLE	UNNAMED STREAM	CIDER MILL DAM	OLD DUTCH MUSTARD CO DBA PILGRIMS FOODS	D101008	NON-MENACE	ACTIVE
LYNDEBOROUGH	BRANDY BROOK	BRANDY BROOK DAM	MR H W HOLT	D147012	N/A	RUINS
LYNDEBOROUGH	CURTIS BROOK	CURTIS BROOK DAM	JACQUELINE AND DANIEL WEAVER	D147013	LOW	ACTIVE
LYNDEBOROUGH	CURTIS BROOK	CURTIS BROOK DAM	ASMITA NEPAL	D147038	LOW	ACTIVE
LYNDEBOROUGH	FURNACE BROOK	SOUHEGAN SITE 8 DAM	NH DES WATER DIVISION	D147028	HIGH	ACTIVE/MULTIPLE
LYNDEBOROUGH	MILL BROOK	MILL BROOK DAM	MR J A PUTNAM	D147003	NON-MENACE	ACTIVE
LYNDEBOROUGH	MILL BROOK	MILL BROOK DAM	MR PERRY E JOSLIN ESTATE	D147001	N/A	RUINS
LYNDEBOROUGH	MILL BROOK	MILL BROOK DAM	MRS A M WATERHOUSE	D147002	N/A	RUINS
LYNDEBOROUGH	MILL BROOK	MILL BROOK DAM	MR J A PUTNAM	D147004	N/A	RUINS

TOWN	RIVER	NAME	OWNER	DAM ID	HAZCL	STATUS
LYNDEBOROUGH	MILL BROOK	PUTNAM DAM	MR J A PUTNAM	D147005	N/A	RUINS
LYNDEBOROUGH	MILL BROOK	HILDRETH DAM	MR W J STEPHENSON	D147006	N/A	RUINS
LYNDEBOROUGH	MILL BROOK	MILL BROOK DAM	MR W J STEPHENSON	D147007	N/A	RUINS
LYNDEBOROUGH	MILL BROOK	HOLT DAM	MR F P RICHARDSON	D147008	N/A	RUINS
LYNDEBOROUGH	NA	SCOTT BROWN DAM	SCOTT BROWN	D147039	NON-MENACE	ACTIVE
LYNDEBOROUGH	PHILIP BROOK	FARM POND DAM	MR S PHILIP BROOKS	D147032	NON-MENACE	ACTIVE
LYNDEBOROUGH	PURGATORY BROOK	PURGATORY BROOK	MR STANLEY GREENE	D147014	NON-MENACE	ACTIVE
LYNDEBOROUGH	PURGATORY BROOK	PURGATORY BROOK DAM	P C MCKEENE AND B L TOWER	D147018	N/A	RUINS
LYNDEBOROUGH	PURGATORY BROOK	FALKNER DAM	MR WILLIAM FAULKNER	D147035	N/A	RUINS
LYNDEBOROUGH	STONY BROOK	MIDDLE BR PISCATAQUOG RIVER	MS MARION R KANTER	D147010	N/A	BREACHED
LYNDEBOROUGH	STONY BROOK	STONY BROOK DAM	MR E J BLANCHARD	D147009	N/A	RUINS
LYNDEBOROUGH	STONY BROOK	STONY BROOK DAM	MR WILLIAM BUDDS	D147011	N/A	RUINS
LYNDEBOROUGH	TR SOUHEGAN RIVER	MORISON POND	HITCHINER MANUFACTURING CO INC	D147029	NON-MENACE	ACTIVE
LYNDEBOROUGH	TR SOUHEGAN RIVER	SOUHEGAN SITE 8 CEMETERY DIKE	NH DES WATER DIVISION	D147036	LOW	ACTIVE/MULTIPLE
LYNDEBOROUGH	TR SOUHEGAN RIVER	SOUHEGAN SITE 8 SOUTH DIKE	NH DES WATER DIVISION	D147037	LOW	ACTIVE/MULTIPLE
LYNDEBOROUGH	TR STONY BROOK	BURTON POND DAM	SNVK LLC	D147017	LOW	ACTIVE
LYNDEBOROUGH	TR STONY BROOK	SOUHEGAN RIVER SITE 28 DAM	NH DES WATER DIVISION	D147026	HIGH	ACTIVE
LYNDEBOROUGH	TR STONY BROOK	SWARTZ POND DAM	MR HARRY FLEMING	D147031	LOW	ACTIVE
LYNDEBOROUGH	UNNAMED BROOK	FIRE POND	MR JAMES PREFTAKES	D147021	NON-MENACE	ACTIVE
LYNDEBOROUGH	UNNAMED BROOK	SIMONI RECREATION DAM	MR CARLO SIMONI	D147040	NON-MENACE	ACTIVE
LYNDEBOROUGH	UNNAMED BROOK	RECREATION POND	MR PETER VAN HAM	D147022	N/A	EXEMPT
LYNDEBOROUGH	UNNAMED BROOK	FIRE POND	MR EDMOND J FORBES	D147023	N/A	EXEMPT
LYNDEBOROUGH	UNNAMED BROOK	BLANCHARD MEADOW DAM	MR ULMER BLANCHARD	D147019	N/A	RUINS
LYNDEBOROUGH	UNNAMED BROOK	PURGATORY BROOK DAM	MR ALEXANDER SWENSON	D147034	N/A	RUINS
LYNDEBOROUGH	UNNAMED STREAM	BERSEN WILDLIFE POND	MARK AND LAURA BERSEN	D147024	NON-MENACE	ACTIVE
LYNDEBOROUGH	UNNAMED STREAM	FIRE POND	MR JEAN P LEMIRE	D147030	NON-MENACE	ACTIVE
LYNDEBOROUGH	UNNAMED STREAM	FARM POND	MR DAVID MITCHELL	D147033	NON-MENACE	ACTIVE
LYNDEBOROUGH	UNNAMED STREAM	FARM POND	MR JOHN MORRISON	D147025	N/A	NOT BUILT
LYNDEBOROUGH	UNNAMED STREAM	LUCUS FLAT DAM	PINNACLE MOUNTAIN FISH AND GAME CLUB	D147027	N/A	RUINS
MERRIMACK	BABOOSIC BROOK	BABOOSIC BROOK III DAM	MR DICK PLANTIER	D156009	N/A	EXEMPT
MERRIMACK	BABOOSIC BROOK	BABOOSIC BROOK I DAM	MR HARLEY GILMORE	D156004	N/A	RUINS
MERRIMACK	BABOOSIC BROOK	BABOOSIC BROOK II DAM	MR HARLEY GILMORE	D156005	N/A	RUINS
MERRIMACK	BABOOSIC BROOK	BABOOSIC BROOK III DAM	MR HARLEY GILMORE	D156006	N/A	RUINS
MERRIMACK	MUSKRELL POND	MUSKRELL POND DAM	MR ROBERT M WOOLSEY	D156012	N/A	EXEMPT
MERRIMACK	RUNOFF	RECREATION POND DAM	MR KENNETH BEACH	D156015	NON-MENACE	ACTIVE
MERRIMACK	RUNOFF	SUREWOOD DETENTION POND DAM	MR JAMES MACHAD	D156027	N/A	EXEMPT

TOWN	RIVER	NAME	OWNER	DAM ID	HAZCL	STATUS
MERRIMACK	RUNOFF	BRADGATE ASSOCIATES	BRADGATE ASSOCIATES INC	D156033	N/A	EXEMPT
MERRIMACK	SOUHEGAN RIVER	MERRIMACK VILLAGE DAM	PENNICHUCK WATER WORKS INC	D156001	N/A	REMOVED
MERRIMACK	TR SOUHEGAN RIVER	MEADOW WOOD POND DAM	TOWN OF MERRIMACK	D156045	LOW	ACTIVE
MERRIMACK	UNNAMED STREAM	FARM POND DAM	MR ARTHUR GAGNON	D156013	NON-MENACE	ACTIVE
MERRIMACK	UNNAMED STREAM	UNNAMED STREAM DAM	JON AND SUE MACKIE	D156018	N/A	RUINS
MERRIMACK	UNNAMED STREAM	UNNAMED STREAM DAM	UNKNOWN	D156019	N/A	RUINS
MERRIMACK	WATSON BROOK	WATSON DAM	MR HAROLD WATSON	D156010	NON-MENACE	ACTIVE
MERRIMACK	WATSON BROOK	WATSON BROOK POND DAM	MR HAROLD WATSON	D156014	NON-MENACE	ACTIVE
MILFORD	GREAT BROOK	RAILROAD POND DAM	TOWN OF MILFORD	D159001	LOW	ACTIVE
MILFORD	GREAT BROOK	OSGOOD POND DAM	TOWN OF MILFORD	D159004	LOW	ACTIVE
MILFORD	GREAT BROOK	GREAT BROOK	MR THOMAS LORDEN	D159017	NON-MENACE	ACTIVE
MILFORD	GREAT BROOK	GREAT BROOK	MR HORACE D STEARNS	D159013	N/A	EXEMPT
MILFORD	GREAT BROOK	GREAT BROOK DAM	TOWN OF MILFORD	D159011	N/A	RUINS
MILFORD	HARTSHORN BROOK	HARTSHORN POND DAM	TOWN OF MILFORD	D159005	LOW	ACTIVE
MILFORD	HARTSHORN BROOK	HARTSHORN BROOK DAM	FRANK HARTSHORN CO	D159006	N/A	BREACHED
MILFORD	HARTSHORN BROOK	HARTSHORN BROOK DAM	MR CHARLIE WHEELER	D159007	N/A	RUINS
MILFORD	OX BROOK	COMPRESSOR POND DAM	TOWN OF MILFORD	D159016	LOW	ACTIVE
MILFORD	PURGATORY BROOK	PURGATORY BROOK DAM	UNKNOWN	D159009	N/A	RUINS
MILFORD	RUNOFF	MILFORD ELM ST TRUST FIRE PD	TOWN OF MILFORD	D159025	LOW	ACTIVE
MILFORD	RUNOFF	DETENTION BASIN A	THE RICHMOND COMPANY INC ret mail	D159026	NON-MENACE	active
MILFORD	RUNOFF	DETENTION BASIN C	THE RICHMOND COMPANY INC ret mail	D159028	N/A	EXEMPT
MILFORD	RUNOFF	DETENTION BASIN C	THE RICHMOND COMPANY INC ret mail	D159027	N/A	NOT BUILT
MILFORD	RUNOFF	GFI STORMWATER DET POND	GFI MILFORD LLC	D159029	N/A	NOT BUILT
MILFORD	SEASONAL STREAM	DANA FIRE POND	MR RICHARD HOWSON	D159021	NON-MENACE	ACTIVE
MILFORD	SOUHEGAN RIVER	GOLDMAN DAM	HELEN GOODWIN TRUST	D159002	LOW	ACTIVE
MILFORD	SOUHEGAN RIVER	MCLANE DAM	TOWN OF MILFORD	D159003	LOW	ACTIVE
MILFORD	TR GREAT BROOK	KITLEDGE GRANITE CORP DAM	KITLEDGE GRANITE CORP	D159020	N/A	EXEMPT
MILFORD	TUCKER BROOK	GOODRIDGE DAM	MR HERBERT F GOODRIDGE	D159008	N/A	RUINS
MILFORD	TUCKER BROOK	TUCKER BROOK DAM	UNKNOWN	D159010	N/A	RUINS
MILFORD	TUCKER BROOK	TUCKER BROOK DAM	UNKNOWN	D159015	N/A	RUINS
MILFORD	UNNAMED BROOK	HITACHI FIRE POND	GFI MILFORD LLC	D159018	NON-MENACE	ACTIVE
MILFORD	UNNAMED BROOK	HAMPSHIRE HILLS DAM	HAMPSHIRE HILLS SPORTS AND FITNESS	D159019	N/A	BREACHED
MILFORD	UNNAMED BROOK	UNNAMED DAM	ALLAN AND CAROL GIBBONS	D159012	N/A	EXEMPT
MILFORD	UNNAMED STREAM	FARM POND	MS CELIA MELENDY	D159014	NON-MENACE	ACTIVE
MONT VERNON	BEAVER BROOK	BEAVER BROOK DAM	TOWN OF MONT VERNON	D163001	N/A	RUINS
MONT VERNON	CURTIS BROOK	CURTIS BROOK DAM	MR PAUL AND JENNIFER BERNARD	D163002	N/A	EXEMPT
MONT VERNON	HARTSHORN BROOK	HARTSHORN BROOK II DAM	MR DAVID CRUDEN	D163007	LOW	ACTIVE

TOWN	RIVER	NAME	OWNER	DAM ID	HAZCL	STATUS
MONT VERNON	HARTSHORN BROOK	UPPER STEARNS POND DAM	DAVID CRUDEN	D163013	NON-MENACE	ACTIVE
MONT VERNON	HARTSHORN BROOK	TROW DAM	WILKINS LUMBER	D163006	N/A	RUINS
MONT VERNON	TR BEAVER BROOK	CARLETON PARK POND	TOWN OF MONT VERNON	D163008	N/A	EXEMPT
MONT VERNON	UNNAMED BROOK	ICE POND	US AIR FORCE STATION NEW BOSTON	D163004	NON-MENACE	ACTIVE
MONT VERNON	UNNAMED BROOK	ROBY POND DAM	US AIR FORCE STATION NEW BOSTON	D163012	N/A	EXEMPT
MONT VERNON	UNNAMED STREAM	FARM POND DAM	MR JOSEPH G CARLETON II	D163009	NON-MENACE	ACTIVE
MONT VERNON	UNNAMED STREAM	ROWE RECREATION POND	MR ROBERT ROWE	D163010	NON-MENACE	ACTIVE
MONT VERNON	UNNAMED STREAM	HERRICK RECREATION POND DAM	MR DAVID HERRICK	D163011	N/A	EXEMPT
NEW BOSTON	UNNAMED BROOK	GARDNER RESERVOIR DAM	US AIR FORCE STATION NEW BOSTON	D167029	NON-MENACE	ACTIVE
NEW BOSTON	UNNAMED BROOK	GREENTREE RES DAM	US AIR FORCE STATION NEW BOSTON	D167017	N/A	EXEMPT
NEW BOSTON	UNNAMED BROOK	GREENTREE RES DIKE	US AIR FORCE STATION NEW BOSTON	D167030	N/A	EXEMPT
NEW BOSTON	UNNAMED BROOK	BEAVER DAM POND DAM	KAREN AND PETER BEERS	D167018	N/A	REMOVED
NEW BOSTON	UNNAMED STREAM	JOE ENGLISH ACRES POND DAM	MS CAROL HAYSE	D167026	NON-MENACE	ACTIVE
NEW IPSWICH	BALCH POND	BALCHS POND DAM	TIM AND TERRI GORDON	D175008	N/A	RUINS
NEW IPSWICH	BRANCH FURNACE BROOK	FIRE HOLE DAM	MS ALICE TRIPP	D175002	N/A	RUINS
NEW IPSWICH	FOX BROOK	FOX BROOK DAM	NEW IPSWICH SPORTSMENS CLUB	D175018	N/A	RUINS
NEW IPSWICH	FURNACE BROOK	SOUHEGAN SITE 14 DAM	NH DES WATER DIVISION	D175001	HIGH	ACTIVE
NEW IPSWICH	FURNACE BROOK	KANGAS DAM	GEORGE AND DIXIE RHOADS	D175012	N/A	RUINS
NEW IPSWICH	FURNACE BROOK	BOX FACTORY DAM	MR CHASE HAUTANCH	D175013	N/A	RUINS
NEW IPSWICH	FURNACE BROOK	FURNACE BROOK IV DAM	MR F W FITZSIMMONS	D175014	N/A	RUINS
NEW IPSWICH	PRATT BROOK	PRATT POND DAM	PRATT POND ASSOCIATION	D175003	LOW	ACTIVE
NEW IPSWICH	PRATT POND	WALKER POND DAM	MR EDGAR LEIGHTON JR	D175007	N/A	RUINS
NEW IPSWICH	PRATT POND BROOK	SMITHVILLE FIRE POND DAM	TOWN OF NEW IPSWICH	D175006	NON-MENACE	ACTIVE
NEW IPSWICH	PRATT POND BROOK	SMITHVILLE SWIMMING POOL	MR NICHOLS	D175005	N/A	BREACHED
NEW IPSWICH	PRATT POND BROOK	LENNOX DAM	MR AND MRS EDWARD NELLIE	D175004	N/A	EXEMPT
NEW IPSWICH	RUNOFF	MAJESTIC VIEW ESTATE DET POND	MR PETER HOWATT	D175032	NON-MENACE	ACTIVE
NEW IPSWICH	RUNOFF	HIGH RANGE ROAD DET POND 1	MR ALVAN TRAFFIE	D175033	N/A	EXEMPT
NEW IPSWICH	RUNOFF	HIGH RANGE ROAD DET POND 3	MR ALVAN TRAFFIE	D175034	N/A	EXEMPT
NEW IPSWICH	RUNOFF	CASCADE ROAD DET POND 4	MR ALVAN TRAFFIE	D175035	N/A	EXEMPT
NEW IPSWICH	RUNOFF	CASCADE ROAD DET POND 5	MR ALVAN TRAFFIE	D175036	N/A	EXEMPT
NEW IPSWICH	RUNOFF	HIGH RANGE ROAD DET POND 6	MR ALVAN TRAFFIE	D175037	N/A	EXEMPT
NEW IPSWICH	RUNOFF	DETENTION POND DAM	LAND REALTY TRUST	D175029	N/A	NOT BUILT
NEW IPSWICH	SOUHEGAN RIVER	WATERLOOM POND DAM	TRIDAM ENERGY LLC	D175009	LOW	ACTIVE
NEW IPSWICH	SOUHEGAN RIVER	HIGH BRIDGE DAM	WARWICK MILLS INC	D175010	NON-MENACE	ACTIVE
NEW IPSWICH	SOUHEGAN RIVER	SOUHEGAN RIVER III DAM	OTIS COMPANY	D175011	N/A	RUINS
NEW IPSWICH	SOUTH BRANCH SOUHEGAN RIVER	SOUHEGAN RIVER SITE 19 DAM	NH DES WATER DIVISION	D175019	HIGH	ACTIVE

TOWN	RIVER	NAME	OWNER	DAM ID	HAZCL	STATUS
NEW IPSWICH	STARK BROOK	WHEELER POND DAM	MR DAVID SOMERO	D175023	N/A	RUINS
NEW IPSWICH	TR FURNACE BROOK	CEMETERY POND DAM	TOWN OF NEW IPSWICH	D175038	NON-MENACE	ACTIVE
NEW IPSWICH	TR SOUHEGAN RIVER	SOUHEGAN RIVER SITE 13 DAM	NH DES WATER DIVISION	D175020	LOW	ACTIVE
NEW IPSWICH	TR SOUHEGAN RIVER	PROFESSIONAL BUILDING DAM	MR WILLIAM C BARNSLEY	D175027	N/A	NOT BUILT
NEW IPSWICH	UNNAMED BROOK	BLUEBERRY HILL C C POND	CHESHIRE DREXELL CONST AND DEVEL INC	D175031	NON-MENACE	ACTIVE
NEW IPSWICH	UNNAMED BROOK	FIRE POND DAM	MS WINTHROP WADE	D175017	N/A	RUINS
NEW IPSWICH	UNNAMED STREAM	SOMERO FIRE POND	UNKNOWN	D175022	NON-MENACE	ACTIVE
NEW IPSWICH	UNNAMED STREAM	HURWITZ RECREATION POND DAM	MR PAUL SOMERO	D175025	NON-MENACE	ACTIVE
NEW IPSWICH	UNNAMED STREAM	INTERIOR POND DAM	MR WILLIAM C BARNSLEY	D175026	N/A	NOT BUILT
NEW IPSWICH	UNNAMED STREAM	TRAFFIE DAM	MR ALVAN TRAFFIE	D175030	N/A	NOT BUILT
NEW IPSWICH	WEST BRANCH SOUHEGAN	SOUHEGAN RIVER SITE 35 DAM	NH DES WATER DIVISION	D175021	HIGH	ACTIVE
TEMPLE	BLOOD BROOK	SOUHEGAN RIVER SITE 26 DAM	NH DES WATER DIVISION	D234008	HIGH	ACTIVE
TEMPLE	MILLER GAMBLE RIVER	SOUHEGAN RIVER SITE 12A NORTH DIKE	NH DES WATER DIVISION	D234016	HIGH	ACTIVE/MULTIPLE
TEMPLE	NA	GREENVILLE ALUM LAGOON	TOWN OF GREENVILLE	D234021	NON-MENACE	ACTIVE
TEMPLE	NORTH BROOK	RECREATION POND DAM	MR W B JONES	D234009	N/A	EXEMPT
TEMPLE	RICHARDSON BROOK	SOUHEGAN RIVER SITE 12A SOUTH	NH DES WATER DIVISION	D234011	HIGH	ACTIVE/MULTIPLE
TEMPLE	TEMPLE BROOK	TEMPLE BROOK	MR LINCOLN GEIGER	D234001	NON-MENACE	ACTIVE
TEMPLE	TEMPLE BROOK	SOUHEGAN RIVER SITE 25B DAM	NH DES WATER DIVISION	D234012	HIGH	ACTIVE
TEMPLE	TEMPLE BROOK	CONSERVATION POND DAM	MR JOSEPH HILL	D234002	N/A	RUINS
TEMPLE	TEMPLE BROOK	DAVIDSON GRIST MILL DAM	MR JOSEPH HILL	D234003	N/A	RUINS
TEMPLE	TR BLOOD BROOK	LEIGHTON POND DAM	MR DOUGLAS GUY	D234004	LOW	ACTIVE
TEMPLE	TR BLOOD BROOK	FIRE POND	MRS LYMAN W GALE	D234005	NON-MENACE	ACTIVE
TEMPLE	TR TEMPLE BROOK	WILDLIFE POND DAM	MR ALBERT H GOVE	D234010	N/A	EXEMPT
TEMPLE	UNNAMED BROOK	WILDLIFE POND DAM	MR RICHARD MCADOO	D234014	NON-MENACE	ACTIVE
TEMPLE	UNNAMED BROOK	WILDLIFE POND DAM	MR MARTIN T CONNOLLY	D234015	NON-MENACE	ACTIVE
TEMPLE	UNNAMED BROOK	FOX WATER SUPPLY POND DAM	FOX CONSTRUCTION CORP	D234013	N/A	NOT BUILT
TEMPLE	UNNAMED STREAM	FIRE POND	MR RANDALL MARTIN	D234006	NON-MENACE	ACTIVE
TEMPLE	UNNAMED STREAM	FARM POND DAM	MR ROSS BOWEN	D234007	NON-MENACE	ACTIVE
TEMPLE	UNNAMED STREAM	TEMPLE MOUNTAIN SKI CORP DAM	NH DNCR	D234018	NON-MENACE	ACTIVE
TEMPLE	UNNAMED STREAM	CROMWELL DAM	MR GAIL P CROMWELL	D234019	NON-MENACE	ACTIVE
TEMPLE	UNNAMED STREAM	CAUSEWAY DAM	MR WILLIAM C BARNSLEY	D234020	N/A	NOT BUILT
TEMPLE	WHITING BROOK	ROBBINS RECREATION POND	MS MARGARET ROBBINS	D234017	NON-MENACE	ACTIVE

TOWN	RIVER	NAME	OWNER	DAM ID	HAZCL	STATUS
WILTON	BLOOD BROOK	BLOOD BROOK DAM	MR EDMOND BARRETT	D254015	NON-MENACE	ACTIVE
WILTON	BLOOD BROOK	BLOOD BROOK DAM	MR JOHN ZAVGREN	D254018	LOW	ACTIVE
WILTON	BLOOD BROOK	BLOOD BROOK DAM	OWNER UNKNOWN	D254017	N/A	EXEMPT
WILTON	BLOOD BROOK	BLOOD BROOK DAM	MRS F E HADLEY	D254016	N/A	RUINS
WILTON	BLOOD BROOK	CREED DAM	MR FRANCIS H CREED	D254024	N/A	RUINS
WILTON	BLOOD BROOK	BLOOD BROOK DAM	MRS EMILY HADLEY	D254025	N/A	RUINS
WILTON	BLOOD BROOK	BLOOD BROOK DAM	MR OLE ALFSON	D254027	N/A	RUINS
WILTON	BURTON BROOK	BURTON BROOK BEAVER DAM	E B FRYE AND SONS	D254013	N/A	RUINS
WILTON	COUNTY FARM BROOK	COUNTY FARM BROOK DAM	DR EDWARD SHERIS	D254026	N/A	BREACHED
WILTON	KING BROOK	BATCHELDER POND DAM	DR CHARLES CRAWFORD	D254020	LOW	ACTIVE
WILTON	KING BROOK	SOUHEGAN RIVER SITE 15 DAM	NH DES WATER DIVISION	D254030	SIGNIFICANT	ACTIVE
WILTON	KING BROOK	SOUHEGAN RIVER SITE 33 DAM	NH DES WATER DIVISION	D254034	HIGH	ACTIVE
WILTON	MILL BROOK	OLD WILTON RESERVOIR	TOWN OF WILTON	D254008	NON-MENACE	ACTIVE
WILTON	MILL BROOK	FRYES MEASURE MILL DAM	EB FRYE AND SON INC	D254010	LOW	ACTIVE
WILTON	MILL BROOK	MILL BROOK	MR HARLEY SAVAGE	D254011	NON-MENACE	ACTIVE
WILTON	MILL BROOK	MILL BROOK DAM	MR DOUGLAS BRATTEN	D254012	NON-MENACE	ACTIVE
WILTON	MILL BROOK	MILL BROOK DAM	MRS K L ROEDEL	D254014	NON-MENACE	ACTIVE
WILTON	MILL BROOK	SOUHEGAN RIVER SITE 10A DAM	NH DES WATER DIVISION	D254033	HIGH	ACTIVE
WILTON	PROCTOR BROOK	PROCTORS BROOK DAM	MR JOSEPH DROHAN	D254029	N/A	EXEMPT
WILTON	RUNOFF	QUINN BROTHERS DAM	QUINN BROTHERS CORP	D254041	N/A	EXEMPT
WILTON	RUNOFF	ROBERT BRAGDON DET POND DAM	ROBERT BRAGDON	D254042	N/A	EXEMPT
WILTON	SOUHEGAN RIVER	PINE VALLEY MILL DAM	PINE VALLEY HYDROELECTRIC POWER CO LLC	D254001	LOW	ACTIVE
WILTON	SOUHEGAN RIVER	WILTON HYDRO DAM	GOULD LEECH TRUST	D254002	LOW	ACTIVE
WILTON	SOUHEGAN RIVER	SOUHEGAN RIVER III DAM	WS PACKAGING GROUP INC	D254003	NON-MENACE	ACTIVE
WILTON	SOUHEGAN RIVER	WS PACKAGING CANAL DAM	WS PACKAGING GROUP	D254004	HIGH	ACTIVE
WILTON	STOCKWELL BROOK	NEW WILTON RESERVOIR DAM	TOWN OF WILTON	D254009	SIGNIFICANT	ACTIVE
WILTON	STONEY BROOK	STONEY BROOK DAM	WILTON YOUTH CENTER	D254028	N/A	EXEMPT
WILTON	STONY BROOK	STONEY BROOK DAM	TOWN OF WILTON	D254005	NON-MENACE	ACTIVE
WILTON	STONY BROOK	STONEY BROOK	NTV LLC	D254006	NON-MENACE	ACTIVE
WILTON	STONY BROOK	CONRAD DAM	MR E N CONRAD	D254007	N/A	RUINS
WILTON	TANNERY BROOK	FROG POND DAM	WILTON CONSERVATION COMMISSION	D254021	LOW	ACTIVE
WILTON	TR BLOOD BROOK	PETERS FARM POND DAM	MR R WINFIELD TRAFTON	D254019	LOW	ACTIVE
WILTON	TR SOUHEGAN RIVER	CAMP POND DAM	SOCIETY FOR PROTECTION OF NH FORESTS	D254043	NON-MENACE	ACTIVE
WILTON	UNNAMED STREAM	HILLER WILDLIFE POND DAM	ROBERT L HOWARD LIVING TRUST	D254031	NON-MENACE	ACTIVE
WILTON	UNNAMED STREAM	ERB WILDLIFE POND DAM	MARK AND KRISTI LEGERE	D254032	LOW	ACTIVE

TOWN	RIVER	NAME	OWNER	DAM ID	HAZCL	STATUS
WILTON	UNNAMED STREAM	WILDLIFE POND DAM	MR DAVID BLACKMER	D254035	NON-MENACE	ACTIVE
WILTON	UNNAMED STREAM	FIRE POND DAM	MR DAVID BLACKMER	D254036	NON-MENACE	ACTIVE
WILTON	UNNAMED STREAM	FIRE POND DAM	MR DAVID BLACKMER	D254037	N/A	EXEMPT
WILTON	UNNAMED STREAM	PRIES DAM	MR WALTER PRIES	D254039	N/A	EXEMPT
WILTON	UNNAMED STREAM	PRIES DAM	MR WALTER PRIES	D254040	N/A	EXEMPT
WILTON	UNNAMED STREAM	ANN JACKSON GIRL SCOUT POND	GIRL SCOUTS OF THE GREEN AND WHITE MTNS	D254038	N/A	REMOVED
WILTON	UNNAMED STREAM	RECREATION POND DAM	F RUSSELL BEEBE	D254022	N/A	RUINS
WILTON	UNNAMED STREAM	UNNAMED STREAM DAM	UNKNOWN	D254023	N/A	RUINS