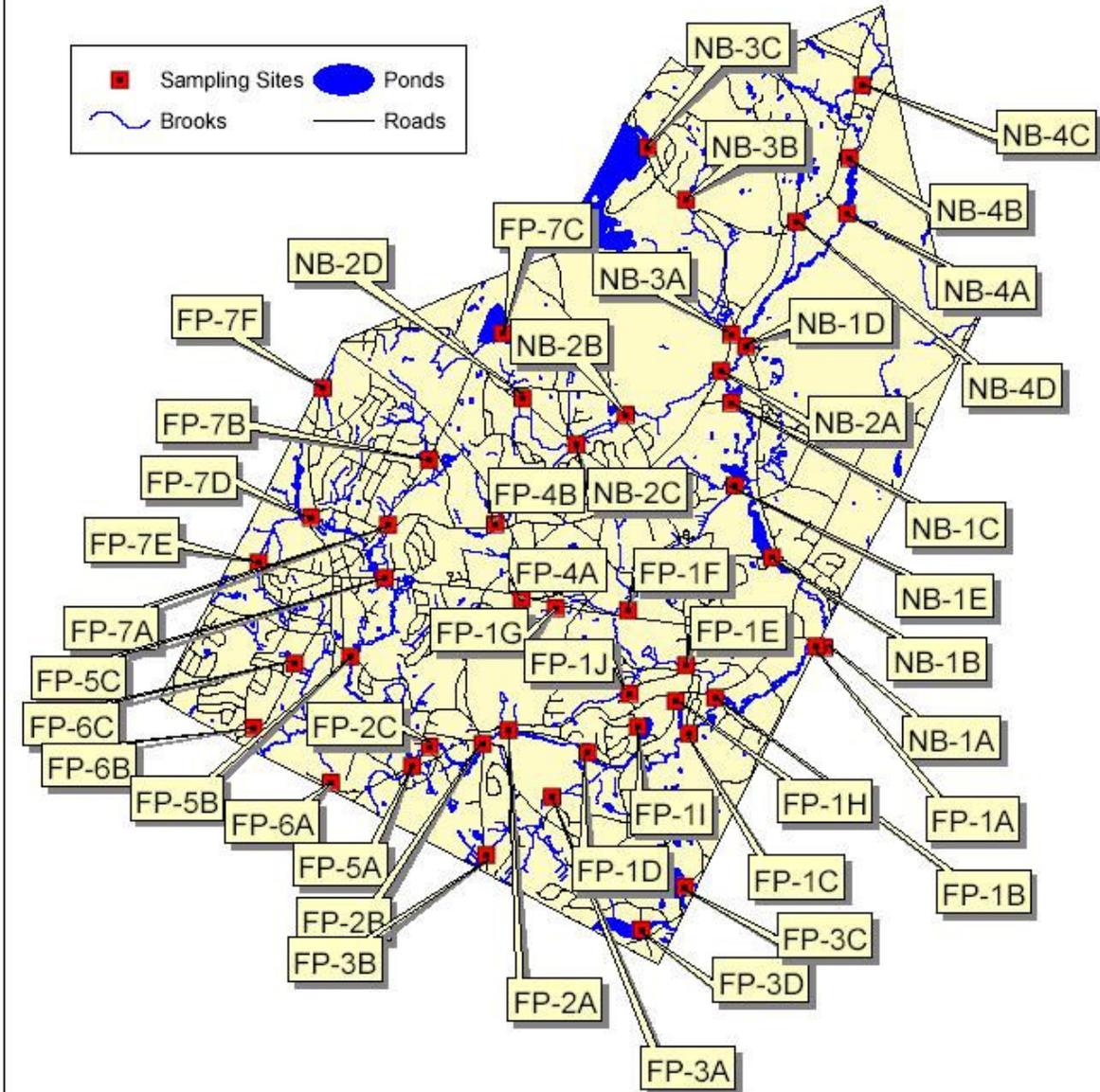


ATTACHMENT "A"

Current Sampling Locations



Legend

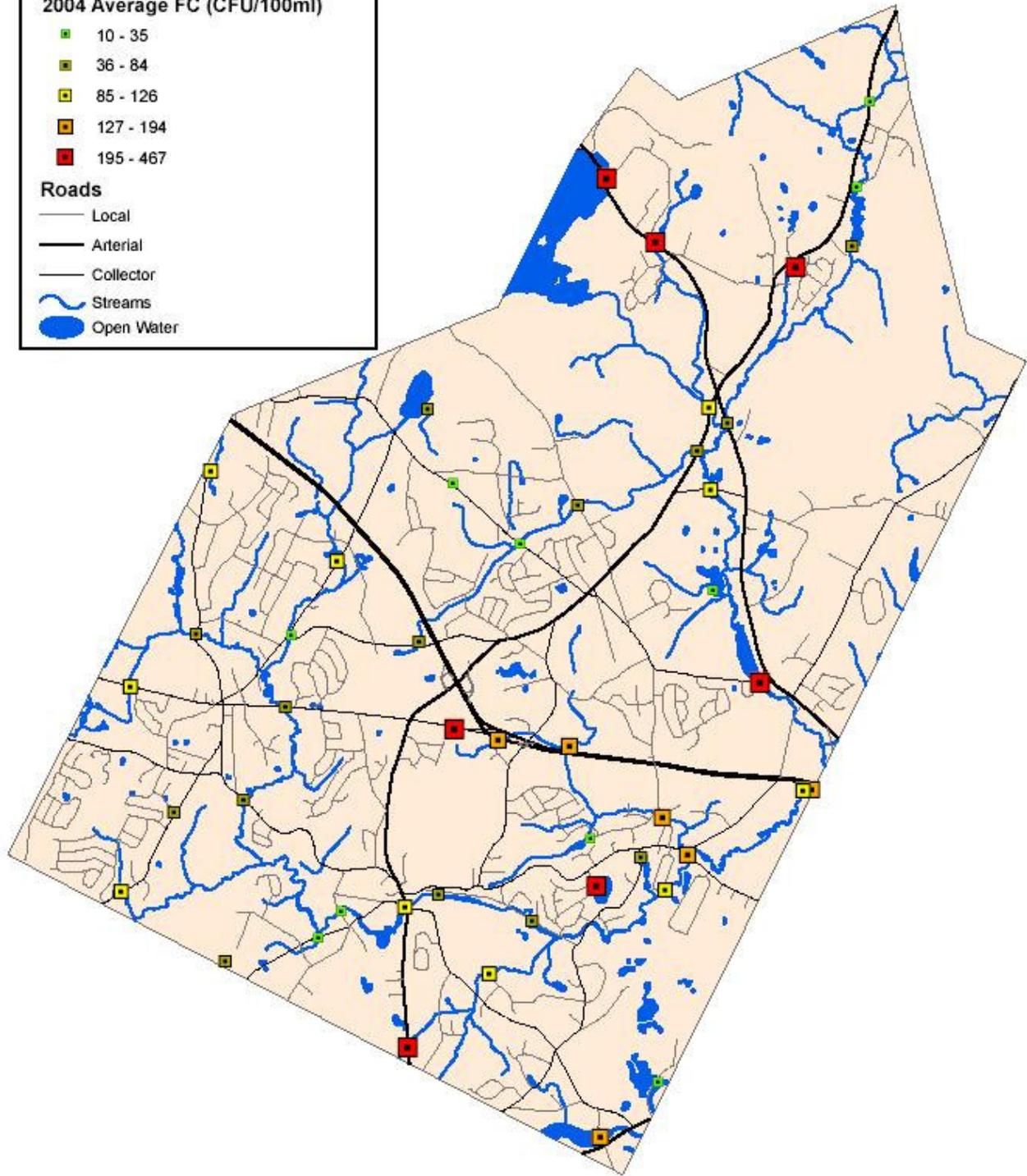
Sampling Sites

2004 Average FC (CFU/100ml)

- 10 - 35
- 36 - 84
- 85 - 126
- 127 - 194
- 195 - 467

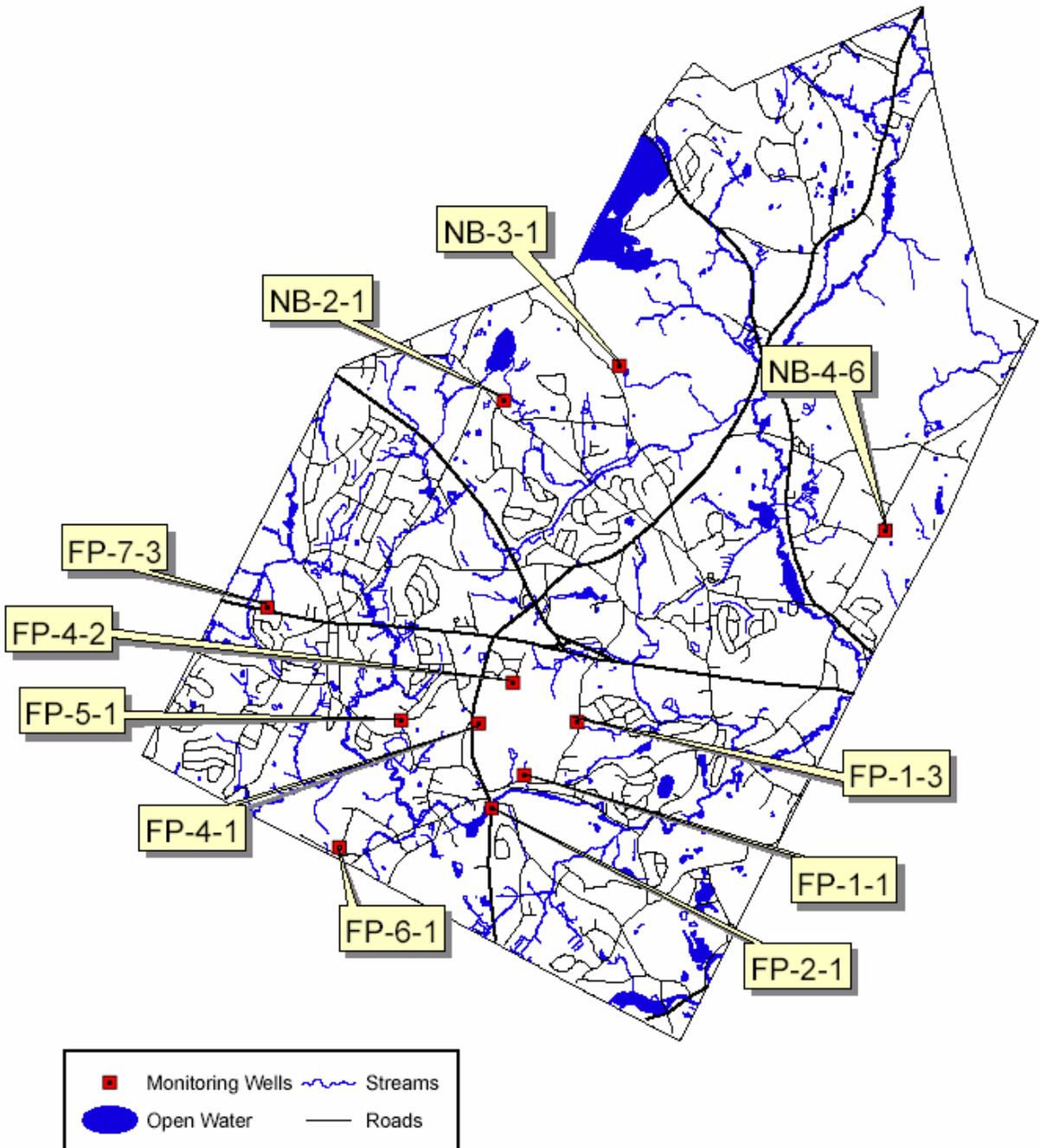
Roads

- Local
- Arterial
- Collector
- Streams
- Open Water



ATTACHMENT "B"

Monitoring Well Locations



Town of Acton - Health Department

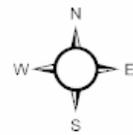
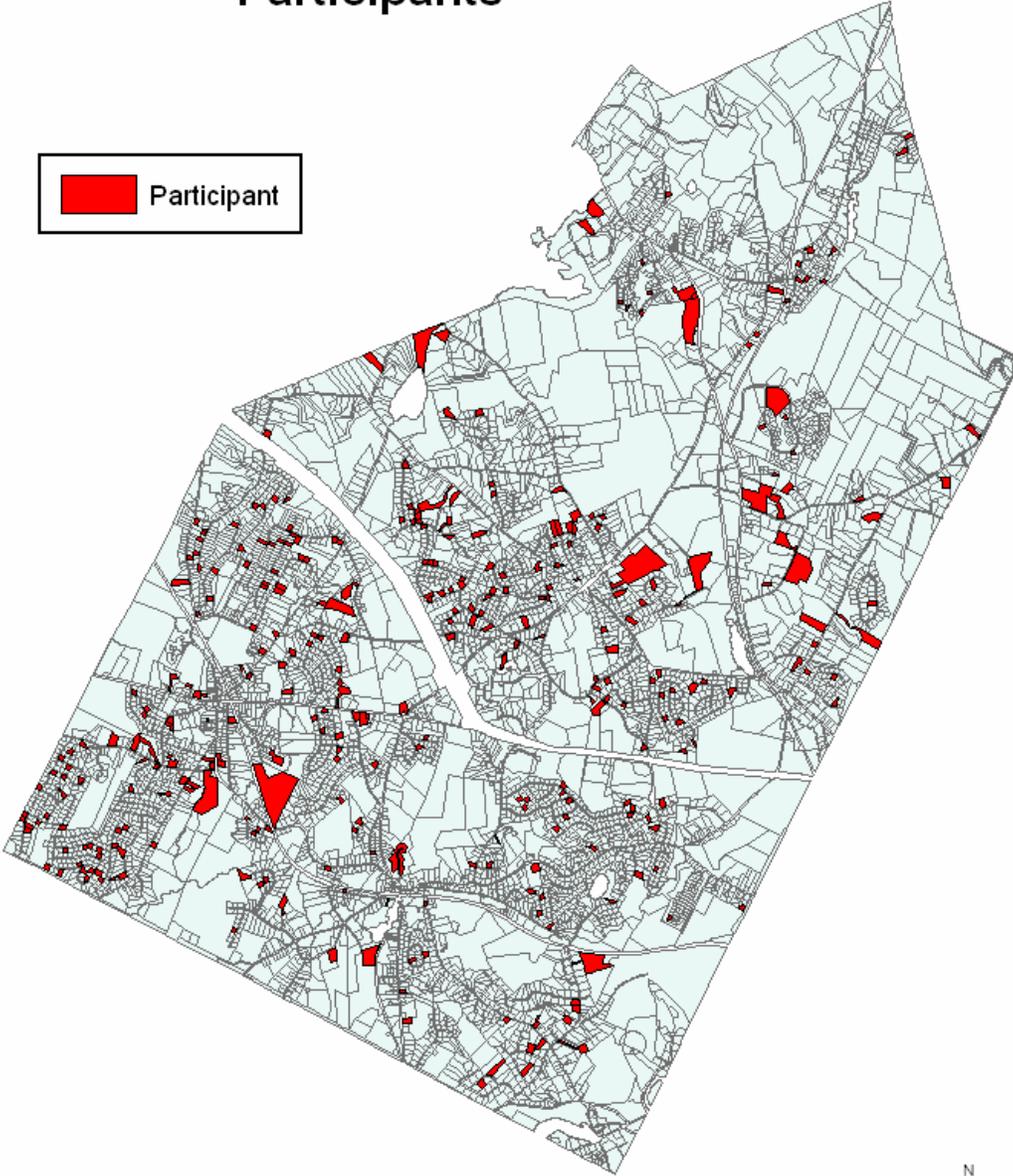
NARA Water Quality Testing - 2004

In House Testing	E-coli count	Geomean
5/10/2004	25	
5/18/2004	20	
5/25/2004	43	
6/1/2004	45	
6/8/2004	5	21.72322
6/15/2004	10	18.085736
6/22/2004	3	12.375263
6/28/2004	5	8.0473846
7/6/2004	68	8.7400524
7/12/2004	6	9.0646342
7/19/2004	21	10.514634
7/26/2004	206	24.498717
8/2/2004	40	37.133111
8/3/2004	160 (10 ml)	44.063962
8/3/2004	150	83.882536
8/10/2004	20	83.067988
8/18/2004	30 (10 ml)	56.50469
8/18/2004	24	51.01698
8/24/2004	370	60.32969
8/31/2004	29	43.430261
Private Lab Testing	E-coli count	Geomean
5/10/2004	4	
5/18/2004	20	
5/25/2004	20	
6/1/2004	4	
6/8/2004	8	8.7468966
6/15/2004	4	8.7468966
6/22/2004	16	8.3651164
6/28/2004	20	8.3651164
7/6/2004	62	14.472326
7/12/2004	4	12.598891
7/19/2004	20	17.383064
7/26/2004	210	29.090166
8/2/2004	290	49.661496
8/3/2004	160	60.0296
8/10/2004	2	52.258802
8/18/2004	12	47.183451
8/24/2004	600	58.207118
8/25/2004	130	49.577562
8/31/2004	44	38.295849

ATTACHMENT "D"

September 2004 Household Hazardous Waste Day Participants

 Participant



Household Hazardous Waste Day Participation May, 2004





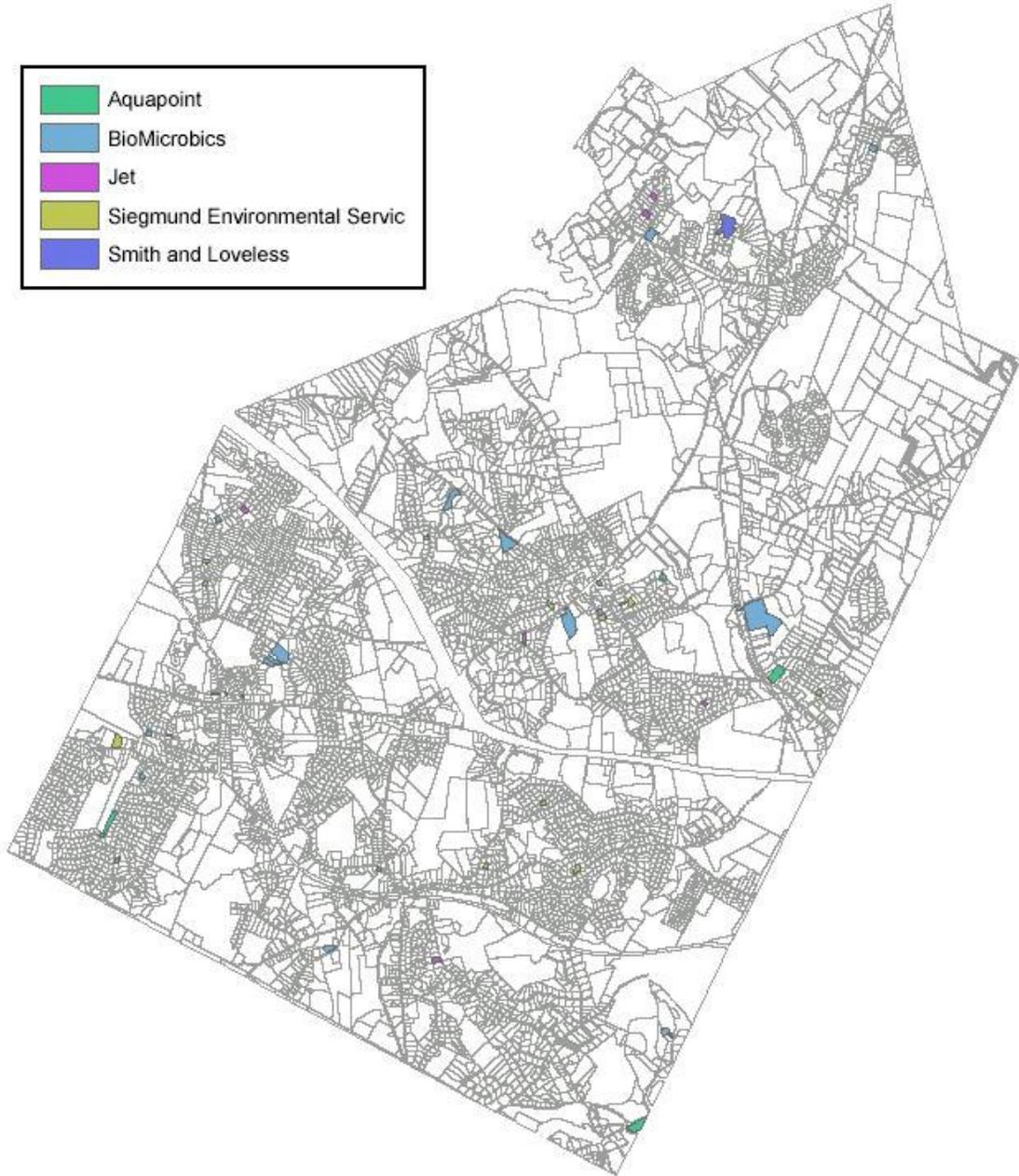
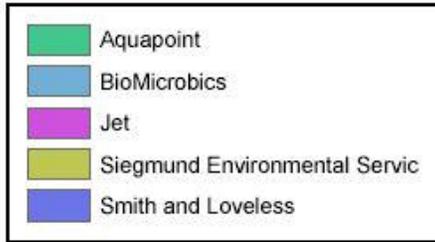
Recycle.
a little
effort
a Big
difference

Acton Recycles!
Household Hazardous Waste Day
MAY 7
9:00 - 11:30

Recycle.
a little
effort
a Big
difference

ATTACHMENT "E"

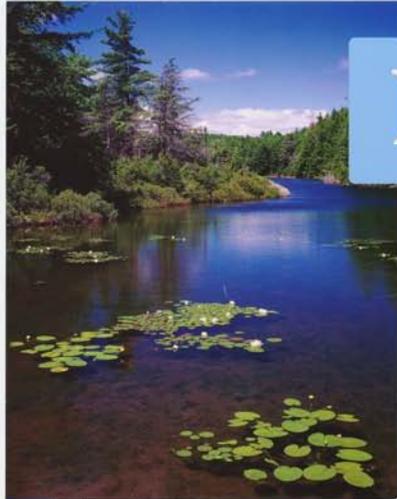
I/A Systems in Acton



ATTACHMENT "F"

LIVING WATERS

Guiding the Protection of Freshwater Biodiversity in Massachusetts



Lakes and Ponds



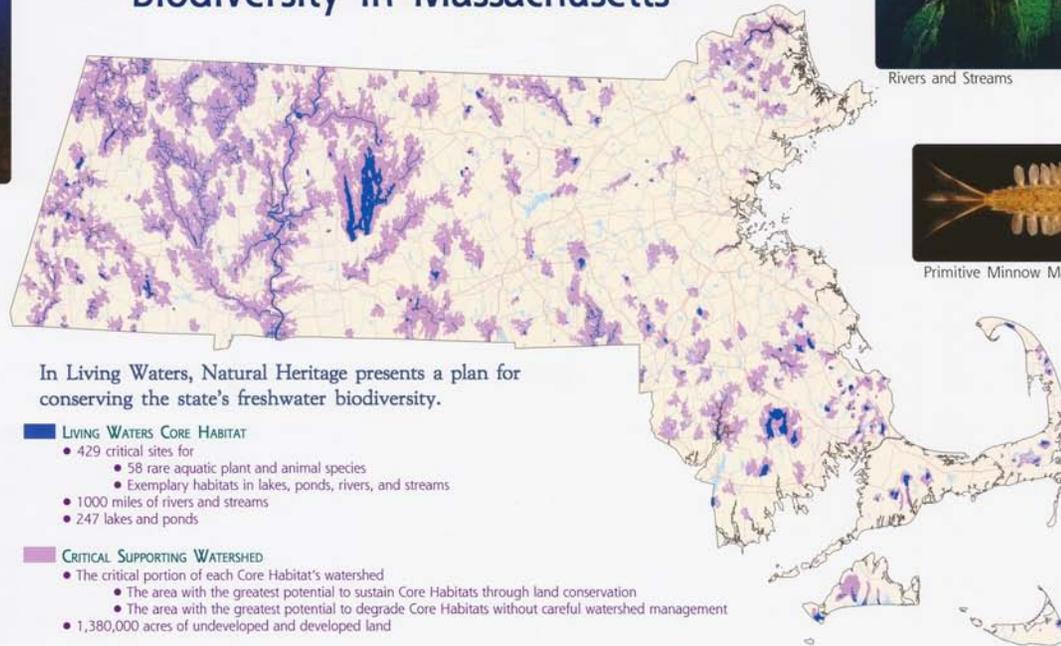
Rivers and Streams



Appalachian Brook Crayfish



Tiny Cow-Lily



In Living Waters, Natural Heritage presents a plan for conserving the state's freshwater biodiversity.

LIVING WATERS CORE HABITAT

- 429 critical sites for
 - 58 rare aquatic plant and animal species
 - Exemplary habitats in lakes, ponds, rivers, and streams
- 1000 miles of rivers and streams
- 247 lakes and ponds

CRITICAL SUPPORTING WATERSHED

- The critical portion of each Core Habitat's watershed
 - The area with the greatest potential to sustain Core Habitats through land conservation
 - The area with the greatest potential to degrade Core Habitats without careful watershed management
- 1,380,000 acres of undeveloped and developed land



Primitive Minnow Mayfly



Yellow Lamprussel



Bridle Shiner

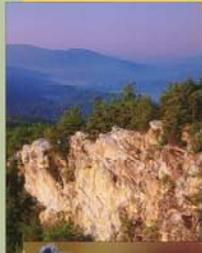
Help Save Endangered Wildlife!
Please contribute on your Massachusetts Income Tax Form to the
Natural Heritage & Endangered Species Fund
To learn more about the Natural Heritage & Endangered Species Program, visit our web site at: www.state.ma.us/dhew/dfw/ehsp.

Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Massachusetts Division of Fisheries & Wildlife
Natural Heritage & Endangered Species Program



BioMap

GUIDING LAND CONSERVATION FOR BIODIVERSITY IN MASSACHUSETTS



Cliff Community



Tule Bluet Damselfly



Great Blue Lobelia



American Bittern



Marbled Salamander



Hesse's Hairstreak



Wood Turtle



Salt Marsh



Piping Plover



Plymouth Gentian



The BioMap identifies those areas of Massachusetts most in need of protection to conserve biodiversity for generations to come.

BioMap Core Habitat

- 1,160,000 acres
- 710,000 (61%) of which are unprotected

BioMap Supporting Natural Landscape

- 970,000 acres
- 760,000 (78%) of which are unprotected

To learn more about the BioMap and to view the map online, please visit the Natural Heritage & Endangered Species Program web site at www.state.ma.us/dfw/e/ehsehp

Core Habitat

- 246 rare plant species
- 133 rare animal species
- 92 natural community types

Supporting Natural Landscape

- Buffer areas around Core Habitats
- Large undeveloped patches of vegetation
- Large "roadless" areas
- Undeveloped watersheds

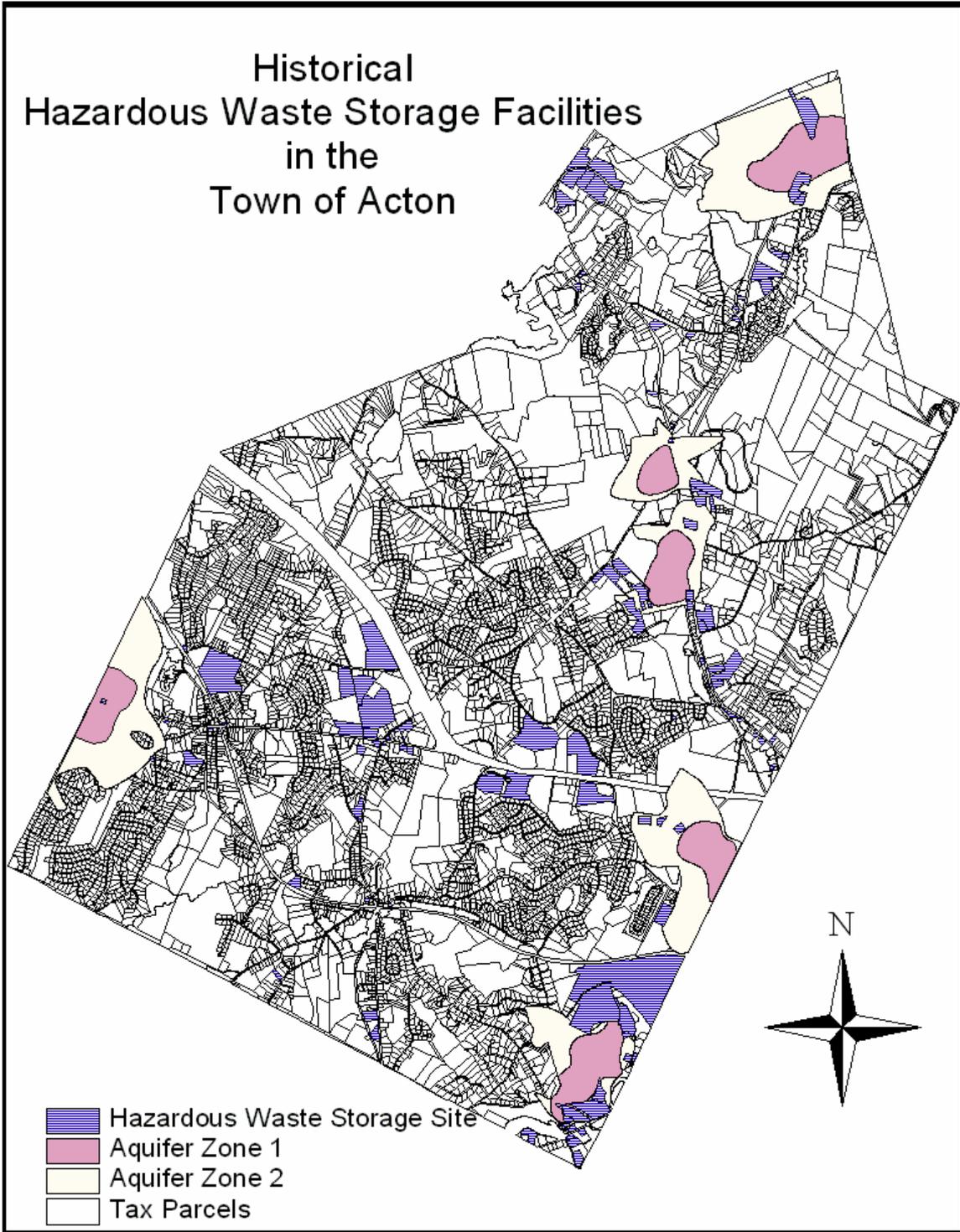
Protected Open Space

Commonwealth of Massachusetts
Jane Swift, Governor

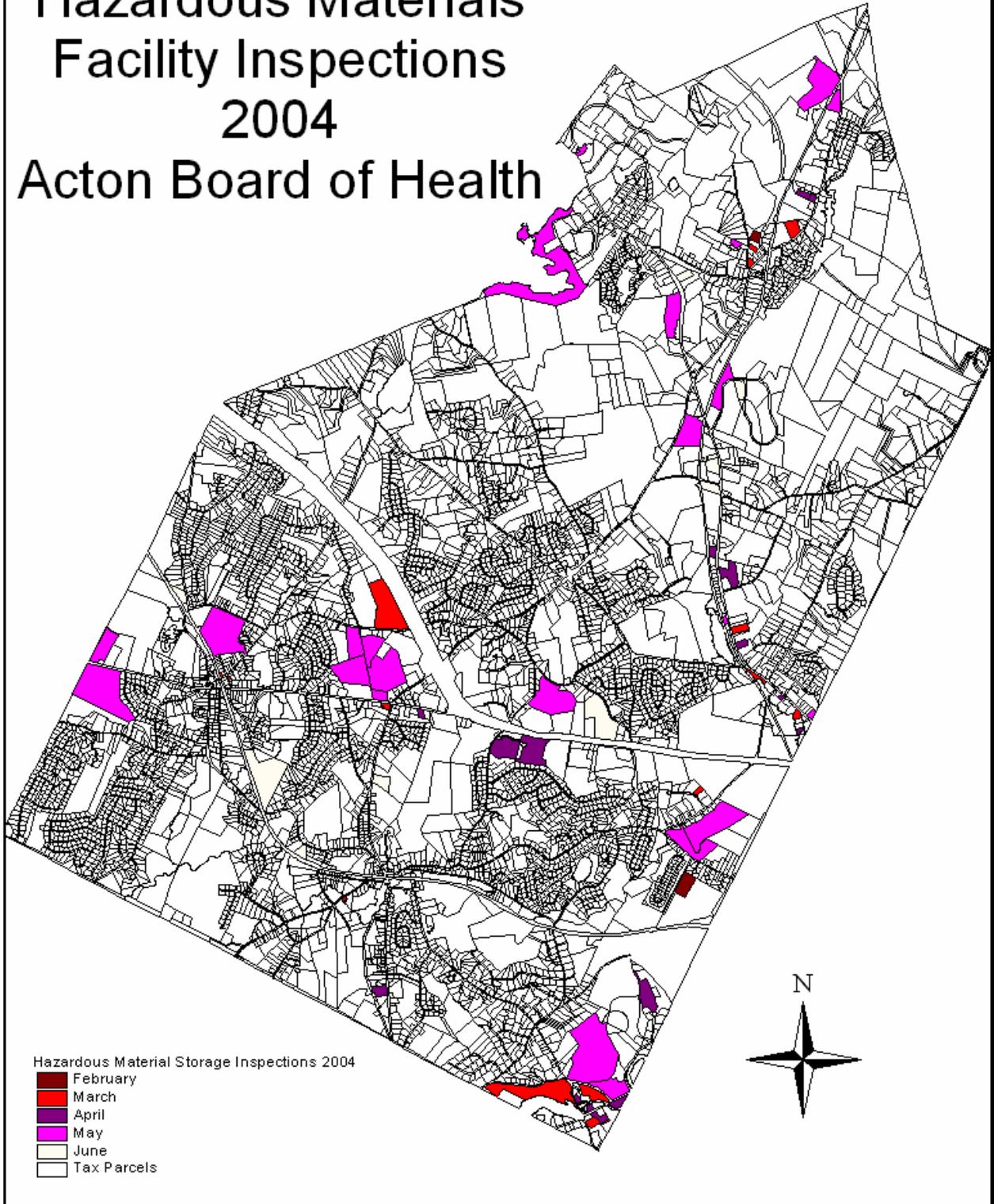
Executive Office of Environmental Affairs
Bob Durand, Secretary

Massachusetts Division of Fisheries & Wildlife
Natural Heritage & Endangered Species Program

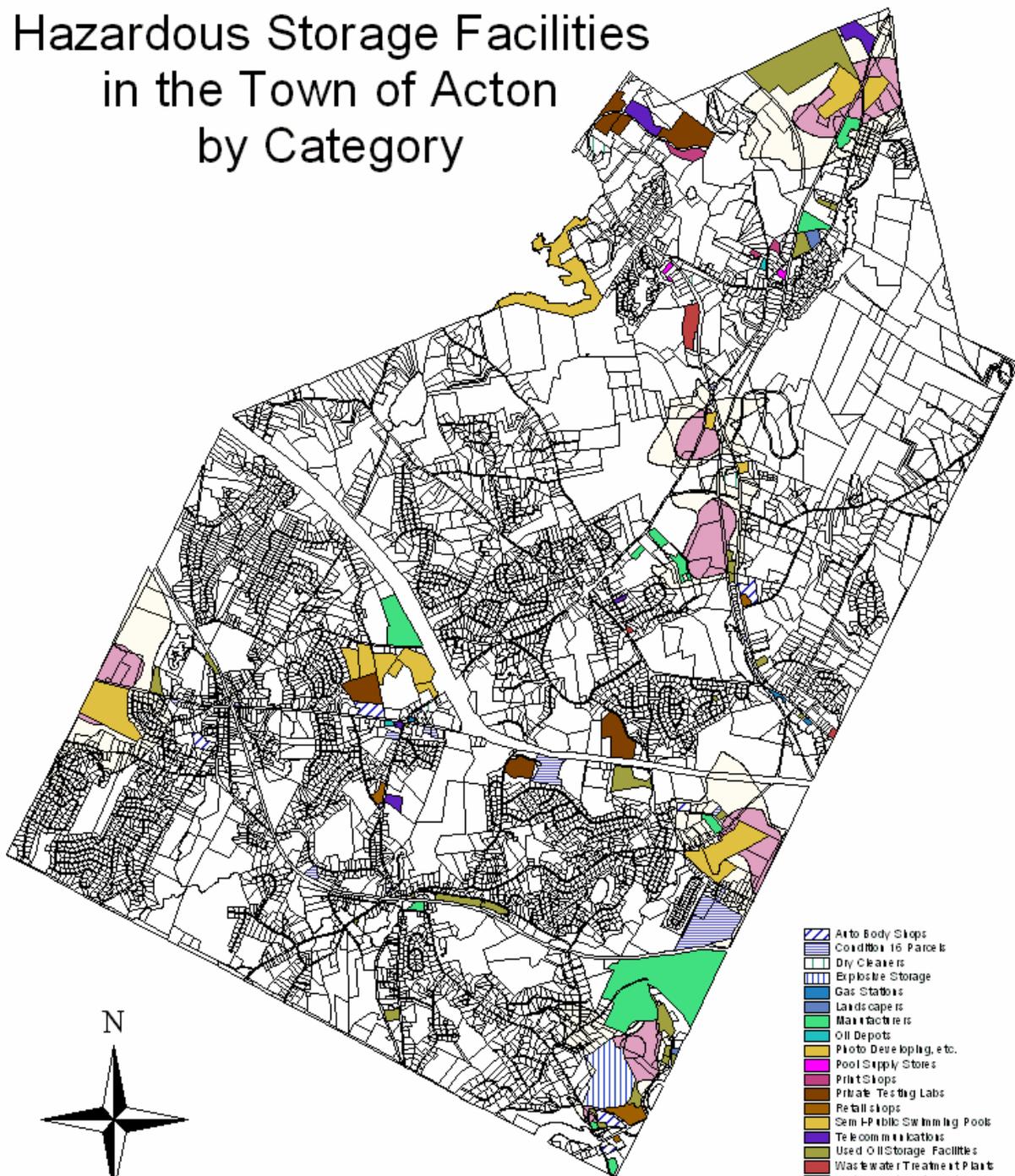
ATTACHMENT "G"



Hazardous Materials Facility Inspections 2004 Acton Board of Health

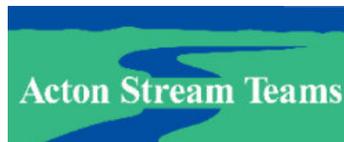


Historical Hazardous Storage Facilities in the Town of Acton by Category

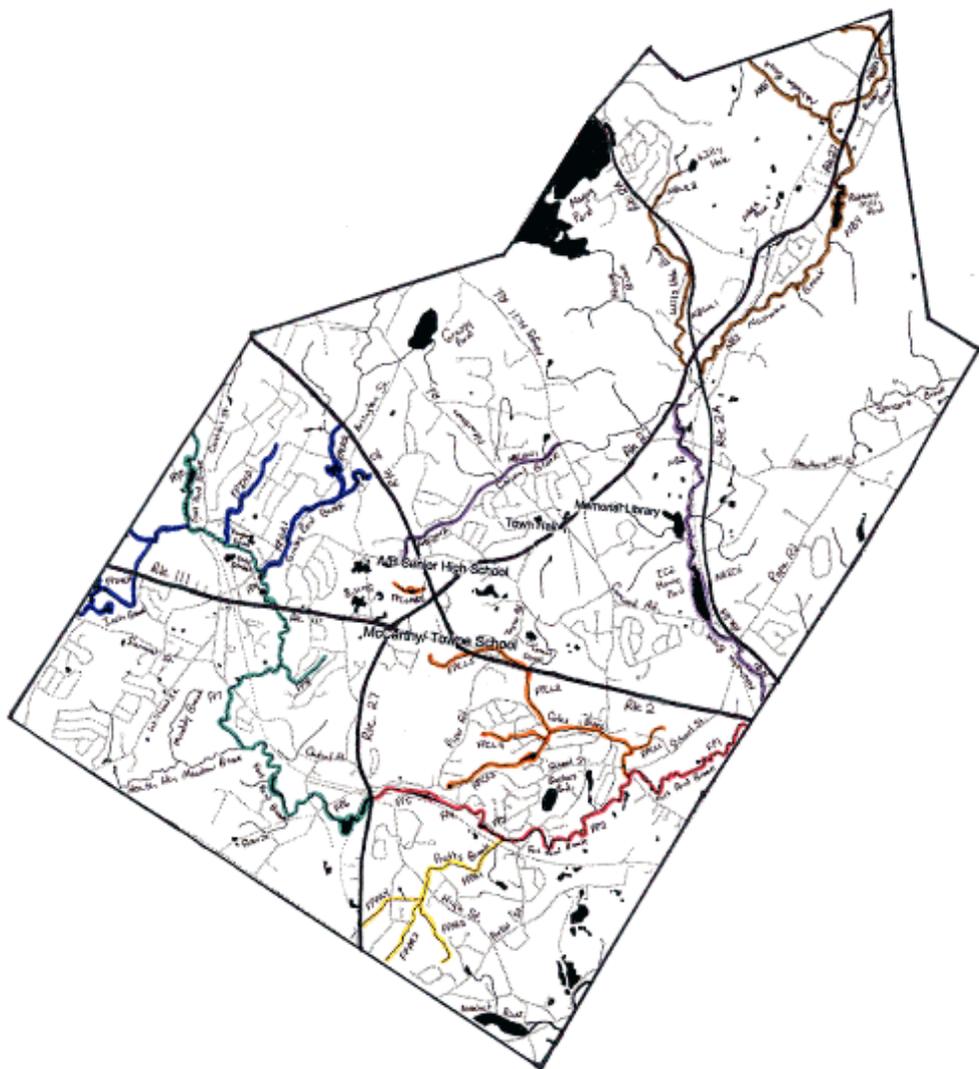


ATTACHMENT "H"

Acton's Streams



Narrative descriptions of 36 different stream areas in Acton can be seen by clicking on the named sections below, or by



Fort Pond Brook - Downstream

- [Fort Pond Brook, section 1 \(FP1\)](#)
- [Fort Pond Brook, section 2 \(FP2\)](#)
- [Fort Pond Brook, section 3 \(FP3\)](#)
- [Fort Pond Brook, section 4 \(FP4\)](#)
- [Fort Pond Brook, section 5 \(FP5\)](#)

Fort Pond Brook - Upstream

- [Fort Pond Brook, section 6 \(FP6\)](#)
- [Fort Pond Brook, section 7 \(FP7\)](#)
- [Fort Pond Brook, section 8 \(FP8\)](#)
- [Fort Pond Brook, section 9 \(FP9\)](#)
- [Fort Pond Brook, section 10 \(FP10\)](#)
- [Inch Brook \(FPINCH\)](#)

Coles Brook

- [Coles Brook, section 1 \(FPCL1\)](#)
- [Coles Brook, section 2 \(FPCL2\)](#)
- [Coles Brook, section 3 \(FPCL3\)](#)
- [Coles Brook, section 4 \(FPCL4\)](#)
- [Coles Brook, section 5 \(FPCL5\)](#)
- [Coles Brook, Merriam extension \(FPMER\)](#)

Fort Pond Brook - Upstream tributaries

- [Grassy Pond Brook, section 1 \(FPGR1\)](#)

[Grassy Pond Brook, section 2 \(FPGR2\)](#)

[Guggins Brook \(FPGUG\)](#)

[Indian Village Tributary \(FPIND\)](#) Pratts Brook

[Pratt's Brook, section 1 \(FPPR1\)](#)

[Pratt's Brook, section 2 \(FPPR2\)](#)

[Pratt's Brook, section 3 \(FPPR3\)](#)

[Pratt's Brook, section 4 \(FPPR4\)](#)

Nashoba Brook - Downstream

[Nashoba Brook, section 1 \(NB1\)](#)

[Ice House Pond \(NBICE\)](#)

[Nashoba Brook, section 2 \(NB2\)](#)

[Conant Brook, section 1 \(NBCON1\)](#)

[Conant Brook, section 2 \(NBCON2\)](#)

Nashoba Brook - Upstream

[Wills Hole Brook, section 1 \(NBWL1\)](#)

[Wills Hole Brook, section 2 \(NBWL2\)](#)

[Nashoba Brook, section 3 \(NB3\)](#)

[Nashoba Brook, section 4 \(NB4\)](#)

[Nashoba Brook, section 5 \(NB5\)](#)

[Butter Brook \(NBBUT\)](#)

Shoreline Survey

FP1, Fort Pond Brook

- Upstream Border: School St. @ Lawsbrook Rd.
- Downstream Border: Concord Border, Rte. 2

FP1 is approximately a half mile and is relatively undisturbed. The vast majority of the abutting bank is owned by the Water District. A lot of aquatic birds were seen during the survey (mallard ducks) and in the past by surveyors (great blue heron). The stream hydraulic grade is quite flat and canoeable. (Our survey was entirely by canoe). Two major wetland sections are present—wet marshes? Historically, some of the abutting land along the upper stretch was used for vegetable farming. Currently it is reverting to wild. The lower stretch is all marshy and an agricultural field used by the State abuts. Rte. 2 abuts the lowest stretch—Lawsbrook the uppermost.

FP2, Fort Pond Brook

- Upstream Border: Parker St. @ Brookside Circle
- Downstream Border: School St. @ Lawsbrook Rd.

The segment contains residential and agricultural land, primarily to the west, and forested areas to the east. Recreational uses include fishing and canoeing, but safe access is a problem.

Trash, tires, and lawn waste are visible, but moderate. Of concern is a possible industrial dump on the bank of Lawsbrook Rd, which appears to be 10-20 feet across.

There are small amounts of foam on the water with the source appearing to be upstream of Parker Street. The stream passes close to the W.R. Grace site (near Parker Street.); however, ACES Technical Director, Bob Eisengrein, feels that the testing wells on the site would detect contamination before leaving the Grace site.



Wildlife: Duck Pair



Foam: Foam observed by canoer on Fort Pond Brook, FP2

Therefore further testing of the stream isn't necessary. The stream's overall condition appears good. A trash cleanup and distribution of information to homeowners about best stream-side practices are in order.

FP3, Fort Pond Brook

- Upstream Border: River St. @ Merriam Lane
- Downstream Border: Parker St. @ Brookside Circle

FP3 spans the area beginning at Clover Hill Road to Marion Road. This section of Fort Pond Brook was observed to be comprised of approximately 75% rapidly moving water, and 25% pools. There were a few locations of surface obstructions that consisted of downed trees; and trash was observed mainly along River Street.

Two main tributaries were observed: (1) a spring that appeared to originate next to the Boston and Main Railroad tracks approximately at the intersection of River Street and Parker Street, and (2) Pratts Brook which enters approximately across the brook from the intersection of Carriage Drive and River Street. Both of these tributaries were flowing during the survey. Storm water catch basins were observed at the intersection of Carriage Drive and River Street. One outfall was located downstream of the stone bridge east of Carriage Drive, and was observed to be flowing during the survey.

The overall character of the Brook was good, however a foam-like substance did appear at the water surface. The foam is an off-white color and was observed to be more than 6 inches in height where it became trapped in vegetation in the current along the surveyed area. The foam did not break up after agitation with a twig.

This foam is the reason we volunteered to be a part of the survey staff because it is disturbing to see it collecting and floating down stream. From our observations it did not appear to originate in the vicinity of our survey area because we observed it upstream beyond Marion Road. Have any Fort Pond Brook water samples been collected from this survey area? Investigation of the origin of this foam-like substance and further information regarding the overall health of Fort Pond Brook is needed. That information should be shared with volunteers and with the general public.

FP4, Fort Pond Brook

- Upstream Border: River St. dam, near Piper Road
- Downstream Border: River St. @ Merriam Lane



Wildlife: Muscle Shells

Segment FP4 starts at a dam as two outflow sections, one on the River St. side and one on the railroad side. The River St. side section flows through a parking lot of a paving company, where there appears to be runoff of fresh asphalt, oil, and a possible road salt pile. The two sections rejoin after about 300 feet. Trucks and equipment are stored on an island between the sections.

Most of the remaining segment flows quickly through predominately red maple forested banks. After the stream passes under the road, there are large sandy sediment areas with moderate patches of multi-flora.



Buffer/Yard Waste/Runoff concerns: Brush piled along streambank, FP4

FP5, Fort Pond Brook

- Upstream Border: Rte. 27 @ High Street
- Downstream Border: River St. dam, near Piper Road

The FP5 section of Fort Pond Brook begins at the east side of Route 27 bordered to the north by the Railroad and School Street and to the south by High Street, and ends at the dam on River Street approximately ¼ mile plus downstream. This segment of the brook is composed of three distinct segments due to the rate of flow and water quality.

The upper segment (1) from Rte. 27 to the Railroad Bridge crossing is fast moving beginning with a dramatic falls over ledge and boulders with steep banks, which make it difficult to access to determine depth. The water color is tannic with a slight septic odor (sensed by one surveyor), with some foam due to turbulence. The historic mill buildings exist with evidence of past operations. Access here is from High Street at Rte. 27 with room for parking between the River and the Railroad.



Historic site: Mill dam on Fort Pond Brook, View from Rte. 27

Segment 2, from the Railroad crossing, is also fast moving, slowing down gradually as it approaches the remnants of the built up embankment of an historic bridge creating pools and eddies. The water color is tannic with some foam, and no odor. This section is scenic and peaceful and although there is potential for trails on the south side, access presently requires railroad crossing. Litter is minimal at this segment with some railroad ties, etc. dumped from the tracks. The School Street Garage has dumped various auto parts on their property at the top of the steep embankment.

Segment 3 extends from the historic bridge embankment to the historic mill dam. The water flow is slow and the brook widens during the wet seasons due to the dam. The water is stagnant with an oily film and with a great deal of foam build-up and litter at the dam.

The vegetation is consistently dense along the three segments from the top of the bank to the waters edge with an over-story primarily composed of red oak and maples overhanging the river, providing shade with a dense under-story. The exception is the downstream segment 3 with less over-story on the River Street side. Wildlife along segments 2 and 3 consist of birds, ducks, and heron, not viewed at survey time, but at other times.

FP6, Fort Pond Brook

- Upstream Border: RR tracks near Central Street crossing, north of Robbins St
- Downstream Border: Rte. 27 @ High Street

This segment begins downstream of Central Street, near the Heath Hen Meadow Brook confluence with Fort Pond Brook. A series of established walking trails takes you past open wetland expanses, along stone walls, and through wooded areas with woodland ferns and flowers. The Fort Pond Brook continues on, through a wooded area, to Martin Street, by the Jones Field playing fields. Possible canoe access exists here. Further on, the brook crosses Stow Street and runs by open farmer's fields before emptying into the upper lower Mill Pond.

Mill Pond is cut in half by a railroad bridge, the possible site of a future 'rail to trail' project that would connect South Acton to Marlborough via a bike/pedestrian trail. This section has **HIGH** potential for a Fort Pond Brook Trail!!



Recreation, Canoeing, Fishing, Scenic Views

FP7, Fort Pond Brook

- Upstream Border: Rte. 111, across from Knowlton Drive
- Downstream Border: RR tracks near Central Street crossing, north of Robbins St.



Recreation: Canoeing, Fishing, Scenic Views: Canoeing on Fort Pond Brook, FP7

Segment 1: Starting at the Central Street Bridge and heading south down to the railway tracks. This segment starts with a small pool surrounded by residential property with a minimal buffer zone. It quickly becomes very dense with bushes--posing an almost impenetrable thicket of vegetation. After another 30'-40', the stream opens up into a moderately deep (5'), channel of about 5'-10' width surrounded by wetlands/open marsh. The properties on the eastern side appear distant and well protected. As the stream (@ #5), starts to turn eastward, it becomes more constricted and in close proximity to houses, at first on the northeast side and then on the

south side as well (a new development). The buffer zone appears marginally adequate (~50'), although moderately to sparsely vegetated (there is a coniferous over-story). Two semi-submerged beaver dams occur there. As the stream heads towards the Railway embankment, it grows up again into a large wetland, where geese, ducks and red-tail hawks were observed.

Segment 2: North of the Central St. bridge to the Rte. 111 bridge. The stream forms a very sinewy course through an open wetland, interspersed by occasional thickets of bushes overgrowing the rushes and sedges. There is one pond associated with the stream (#19), on which a lawn abuts, clearly contributing some nutrients to at least the small pond. Generally the stream is navigable by small canoe, except at #13 where an impenetrable thicket of bushes forces a portage around.



Buffer/Yard Waste/Runoff concerns: Grass clippings on bank of Fort Pond Brook, FP7. Grass clippings, brush, and leaves piled along the streams' edge, or near storm drains, "fertilize" the water.



Buffer/Yard Waste/Runoff concerns: Sediment eroding into brook, next to bridge at Rte. 111, FP7

FP8, Fort Pond Brook

- Upstream Border: Fort Pond Brook main stem, near Fraser Drive
- Downstream Border: Spencer St., Lothrop Rd., Durkee Rd.

This unnamed tributary of Fort Pond Brook drains from the area around Mt. Calvary Church, flowing between backyards of fully developed residential-only land that empties into Fort Pond Brook. Near the Spencer Street end the stream is sandy but crowded by shallow backyards. Only 3-4 houses are using the stream bank as a place to pile debris. There are clumps of dark green algae nearby. The main channel of the stream is hard to follow due to the quantity of vegetation and fallen trees. As the stream progresses down, and backyards become larger, the water spreads out creating areas of hummock grasses and stands of skunk cabbage. All pipes leading into the stream appear to carry surface drainage from yards, driveways or streets. There is an access to the stream on a couple of lots on Lothrop Rd. where "car litter" appears. Near the Fort Pond Brook end of the stream the residences become far enough away to allow people to meet to drink, evidenced by piles of bottles and cans. Water is clear; odors are only of rotting vegetation. Only one resident would not grant access to their yard to make visual contact with the stream.

FP9, Fort Pond Brook

- Upstream Border: Idylwilde Farm, junction with Guggins Brook
- Downstream Border: Rte. 111, near Knowlton Drive

Segment 1: The stream flows between Idylwilde Farm fields, which drain into it (some exemption from the Wetlands Protection Act) and the New View residential development. New View does not seem to fertilize, and maintains buffers. Haybales are still in place. There is much grassy vegetation here.

Segment 2: Bridge crossing Central Street. A silt fence, and murky tea-like water were observed.

Segment 3: Douglas School: Trash was present in the wetlands by the stream. How wide is the buffer? Homes on Houghton Lane have backyards virtually in wetlands. Sump pumps were working (where else should water go?). There was backyard litter including leaves and grass clippings.



Pipes and culverts needing follow-up: Small amount of silt in new culvert, FP9

Segment 4: Gates School Bridge: Loosestrife, trash and litter were observed. The Gates school area has much spongy lawn (this was before the recent rains), with lawn running right down to the stream in some places. There were some obvious erosion points from the lawn into the streams.

Segment 5: Bridge at Arlington Street: The stream flows in a channel to this point. It is quick and perhaps deep. After the bridge it turns into swamp. The pond is on one side. Lawns run to the edge of the pond.

Segment 6: The other side is low wetland rising to a large field, which is privately owned. Is this floodplain? Anemones were present in low areas. There was one garden and a septic system belonging to a new house on Mass. Ave. in the field.

FP10, Fort Pond Brook

- Upstream Border: Boxborough border, Littlefield Road
- Downstream Border: Idylwilde Farm, junction with Guggins Brook

Segment FP10 of Fort Pond Brook meanders through residential, agricultural, and conservation land from Littlefield Road at the Boxboro border to the junction with Guggins Brook behind Idylwilde Farm. Included in our survey is the portion of the brook that continues to Central Street. During the survey, we canoed the entire segment; however, there were three portages over culverts. Although the area is subject to flooding, the water level was average for early May, which made the brook navigable. Later in the season, the water level may be too low for canoeing.

The segment is aesthetically beautiful and provides wildlife habitat in many sections. The condition of the banks varies—marshes with thick grass and loosestrife, farm fields and lawns running into the brook, and a few wooded sections. The brook widens at the Littlefield Road bridge and near the culverts/dams; however, it is constricted by grass and loosestrife in many sections. The depth averages 2 feet. The water is tea colored and odor free; and the bottom is grassy and black with organic debris. In general, the flow is slight although occasionally medium after the culverts.

FPINCH, Inch Brook

- Upstream Border: Boxborough border, near Summer Street and Ethan Allen Drive
- Downstream Border: Rte. 111 crossing, near Birch Ridge Road

The FPINCH segment runs from Rte. 111 to the Boxborough line near Summer Street. The upstream section B flows quickly near a residential area with a sandy bottom. The next section is much wider than shown on the survey map, apparently as the result of recent beaver activity. Flooding encompasses many mature trees. There is a private dump at the edge of this water. Further downstream, between the beaver dams and Rte. 111 is a well-established untrammelled wetland with slow flow and a muddy bottom, running through Acton Water District land.

In general FPINCH is in excellent condition, with little obvious degradation by human activity. The private solid waste dump, and the half-buried car engine (both marked on the map) are the two items noted that would benefit from cleanup, although there appears to be no fresh dumping going on.

FPCL1, Coles Brook

- Upstream Border: 2 branches: a. Craig Road, b. Hosmer Street @ Robinwood Road
- Downstream Border: School Street @ Lawsbrook Road

Segment A: From the corner of Robinwood Rd. and Hosmer St. to the corner of School St. and Lawsbrook Rd. This portion of Coles Brook is relatively pristine, suffering little apparent impact from the residential area it flows through. Because its banks are heavily overgrown with trees and shrubs (it flows exclusively through wooded area), it is essentially inaccessible to all but the most determined. The flow is clear and steady. Width varies from a few feet to approximately ten feet (above the junction with Segment B). At that juncture, it quickly narrows at a granite "bridge" structure, where the banks are cut away around the boulders. It remains narrow until it becomes a marsh which has been channeled to form a farm pond. (A resident reported she swam in this pond as a girl, many years ago). The water throughout is clean. Litter is minimal. There is no apparent damage or pollution.

Segment B: From field behind Craig Rd. industrial buildings to junction with main stream segment. This branch of Coles Brook has suffered the indignities associated with running through an industrial park—it has been culverted for ~300 feet, accepts the outflow of numerous parking lot storm drains, and is the terminus for various wind-swept debris. Some boards and brush have also been dumped into this narrow waterway.

This branch originates in a field. Very close to the receiving area of one business building, there is one place that has been bulldozed into the stream/wetland (to improve drainage into the parking lot?). Oil from vehicles may be able to enter the stream at this point.

After the long culvert, the stream changes character drastically--this is where the tree and shrub overhang begins. It is largely inaccessible here, and bordered to the north by soggy soil, wetlands and a dangerous amount of multiflora rose. A lovely trail above the stream on the south side (behind houses on School Street) leads, under tall trees, to the juncture with Segment A, at the granite "bridge".

The water looks clean and clear. Except for litter it is apparently in good shape.

FPCL2, Coles Brook

- Upstream Border: Rte. 2, east bound, across from Conant School
- Downstream Border: Hosmer St. @ Robinwood Road

Summary Narrative description:

This section of Coles Brook (FPCL # 2) flows south from Route 2 (Eastbound) to Robinwood Rd. at Hosmer St. The first three quarters of this section are characterized as a forested wetland with a wide stream valley with multiple braiding of a stream that flows slightly over a sandy bottom. Half of this section is visually undisturbed due to the undeveloped land uses or extent of buffering that exists on both sides of the stream. There is a good, healthy habitat marked with dense vegetation and canopy. The last quarter of the stream segment displays a dramatic change with the narrowing of the valley with swift flowing water over a gravelly bottom creating an excellent riffle habitat with pools and runs. Overall the stream is in good shape producing a superior habitat tempered by sections exhibiting negative impact from residential land uses and road runoff.

Section A. - From Rte 2 Eastbound to end of Auto Auction fence

Section A begins at Rte. 2 with Coles Brook flowing downstream through a culvert (P 1) and a man-made channel, bringing with it sand and trash from the highway. This impact is limited to the first 100 feet. The land used in this section is industrial and commercial, owned by the Auto Auction to the east and Data Instruments to the west. Overall, this section is characterized as a forested wetland, a red maple swamp with its associated species. There is a wide stream valley with a channel that is in good shape, moving often into braided sections.



Trash: Trash behind auto auction, FPCL2. One of the stream areas [cleaned up by the Acton Stream Teams on September 12, 1998.](#)

This is a good habitat section with good food plants, excellent cover and many good snags. There is a red-maple-dominated canopy with dense undergrowth of alder, viburnum, dogwood, and blueberry. The stream bottom is sandy throughout with tea-colored water. The water ranges from one to two feet in depth, flowing slightly.

Two culverts exist in this section; the first by Rte. 2 (see above). The second culvert (P 2) was dry and appears to be connected to the Data Instrument parking lot, but was filled with vegetation debris, and no water was flowing on the day of the survey.

FPCL2 Section B – From edge of Auto Auction fence to tributary flowing south from Brucewood (FPCL3)

The land use in Section B is residential on the southwestern part of Coles Brook and continued industrial on the northeast. The channel is well-defined with a wide stream valley and increased frequency of braided sections. Residential encroachment is pushing at the upland edge. Wetland violations are immediately apparent from the residential uses. They include yard waste dumping and hoses pumping water out of the stream. Some of these hoses appear in active use while others are probably non-active. Lawns come right to the edge in a couple of properties with yard waste fill evident along the bank as well as limited clear-cutting in one property.

Several pools and riffles are found in this section as well as evidence of wildlife, caddisfly, mallard ducks and raccoons. There are many good snags. The depth of the water continues to be 1-2 feet, tea-colored, sandy stream bottom, odorless, and moving more swiftly than section A. One culvert was noted in this section.

This section can be described as a good healthy habitat, marked with dense vegetation including an abundance of marsh marigold and viburnum. Some invasive exotic plant species are also present including purple loosestrife, rosa multiflora, and burning bush.

One culvert on the residential side (P 3) was found in this area with water flowing through swiftly at a depth of one inch. There was evidence of red algae on the culvert.

FPCL2 Section C – From point of Tributary flowing south on Brucewood to Sandalwood.

This section begins in an area of Brucewood that is undeveloped. The map indicates the presence of nine undeveloped, residential zone parcels abutting the stream in this area. The first 75% of this section, two large wetlands join to create a large swamp with multiple streams under extremely dense cover and undergrowth. The area was virtually impossible to navigate on the northeastern side. The southwestern side began with culverts under what appears to be an old cart path, with historic fill. The culverts (P 4 & 5) were draining the wetlands into the stream with swiftly flowing water at 3 inches of depth. There is access to this site from Brucewood and evidence of children creating dams and diversionary ditches, but nothing that significantly disrupted the flow.

Ducks were encountered nesting and Aquatic life (caddis fly nymphs) was in evidence when the composition of the stream bed was checked with a net.

The last 25% of this section displays a dramatic change in the substrates. There is a narrowing of the valley, as the wetlands join, with the water beginning to flow swiftly over the bottom that becomes gravelly and includes small cobbles and very little sand. There is an excellent riffle habitat with pools and runs in this section.

Located at one parcel west of the Sandalwood culvert, there is a small tributary coming downstream from the auto auction land which includes the Clearview Pond, which we did not observe. The small tributary is orange in color, both the

water (clear orange) and the stream bottom. As it enters Coles Brook it becomes cloudy and tannic in color. It has a metallic odor. This tributary needs further assessment. Coles Brook clears up within a matter of yards after the convergence.



Trash: Tire in tributary to Coles Brook, FPCL2

Overall Section C is in excellent shape, producing a superior habitat. What began as a large stream valley, with multiple braiding at the upstream end on Rte. 2, has now converged into a clearly defined, swift-moving stream.

FPCL2 Section D – From Sandalwood Road culvert to Robinwood Road

This section begins at the culvert (P 6) passing underneath Sandalwood Road. Two storm drains empty into the stream at this point, draining Sandalwood Road. The culvert transports the swiftly moving stream at a depth of 1 foot. The land use of this section consists of developed residential properties on both sides of the stream. The residences on the south side push right to the edge of the stream.

The valley has narrowed, still providing good cover for the stream. The bottom is now exclusively gravel and small cobbles in sand, dark brown in color. There are many riffles in this section with swift moving water. The color of the water has become a much darker tea color.

The vegetation in this area contains more invasive exotic plant species, including barberry and rosa multiflora. The stream changed character at Sandalwood and is well defined at this point. An abutter reported a sucker run every spring in this section.

The residential uses on the stream show some evidence of encroachment including yard waste dumping, burning, clear cutting, erosion, and landscaping activities right up to the edge.

FPCL3, Coles Brook

- Upstream Border: Goose Pond @ School Street, near Piper Road
- Downstream Border: Brucewood, @ east end of Arborwood Rd.

This section of Cole's brook was very good overall. Certain areas such as the abandoned cars, and a couple of areas of algae should be investigated and or dealt with, but these seem to be of limited impact to the stream overall. Most of the land right along the brook is not developed, nor could it be without significant drainage of the swampy areas. The depth of the water along the route was no more than 1-2 inches in most places, thus minimizing the recreational usage. Additionally, it seems likely that most of this section is seasonal, perhaps lowering or completely drying up during the later summer months. Perhaps a follow-up near the end of the summer would verify that.

FPCL4, Coles Brook

- Upstream Border: Oakwood near Piper Rd.
- Downstream Border: Brucewood, @ east end of Arborwood Rd.

Segment 1: This section begins at a marsh area near Piper Road and Oakwood Road. The stream continues over rocks (mostly) to where it channels into a small man-made rock pool (10' diameter). Abutters' back yards seem clear of any trash. The land gently slopes toward the stream.

Segment 2: From #13R (rock pool) to Fernwood Road. This is a larger marsh area, approximately 25 yards by 50 yards wide, with many cattails and grass. Water collects on the west side of the marsh and continues to the Fernwood Road culvert. An abutter mentioned that the stream used to flow closer to Oakwood Road but, because of development years ago, is now in its present location.

Segment 3: Fernwood Rd. to junction of other stream from pond. The stream bisects landowners on both sides. The water seems clean and free flowing.

FPCL5, Coles Brook

- Upstream Border: Francine Road
- Downstream Border: Rte. 2 west bound @ Conant School

Eastern segment: This eastern portion of Coles Brook exists in a protected wetland. Vegetation on the banks is dense, with swamp maple, white pine, shrubs and wildflowers. Road runoff at both ends, where the brook flows under Rte. 2, is possibly the cause of sediment and clogging. Otherwise this seems a healthy stream, supporting diverse vegetation and wildlife.

Western segment: Coles Brook starts with a pool (?) behind the parking lot of 380 Mass Avenue. A path leads down to it. The brook flows eastward through woods and old stone walls to Rte. 2. Although there are new residential construction sites nearby, the brook is protected by a buffer of trees and shrubs. The area is wild and dense with vegetation now, but evidence of farmland remains in the form of stone walls and apple trees.

FPCLMER, Coles Brook, Merriam extension

- Upstream Border: Rte. 27 @ Rte.2, Kelly's corner
- Downstream Border: Merriam School

This stream section was divided up into five segments:

Segment #1 We are not quite sure of the direct source of where the stream starts in the storm drain in the High School field. We also saw a storm drain on the side of the road and in the middle of some sand on the other side of the road. We saw some oil around a big patch of cat tails leading to three different pipes. We think the oil should be checked in the areas where the oil came back together. We think the oil is man made because the storm drain across the road consumes car exhaust and oil. The second reason it could be man made is that there's a Building and Grounds Department with lots of barrels. There could be sewage in the stream because the school septic system is right beside the bank.

Segment #2 begins at the school pathway to the ABRHS athletic fields. It runs along the nature path. It is approximately 572 feet long. The presence of Phragmites, run-off mud, rocks and cobblestones from wetlands and blockage of overflow from adjacent fields contribute to our concern about stream flow and other stream conditions. There is also a pipe, where the water flow is faster than most of the stream. There may be another pipe feeding into the pipe that we saw (see map). We also noticed lots of trash, scum, oily sheen, bubbles and brown foam. There were a lot of grassy areas (athletic fields), where fertilizer may be running off into the water. There were a lot of trees, that provided good shade, critter habitat and erosion prevention.

Segment #3 Our section is wetlands along the south side of the stream from the footbridge to the rock, for about 145 feet. It is a very good habitat with many healthy plants, but it has some litter near the footpath, especially by the bridge.

Segment #4, Pond Section: The Pond had a visible oil sheen of unknown origin along the edges and portions of the middle (perhaps 30-40%), but very little trash in the surrounding area. This area is occasionally visited by students from the nearby elementary, junior high and high schools.

The pond abuts high school athletic fields (50%) and a forested area (50%). Surrounding the pond are sporadic areas of vegetation, including shrubs and trees. A stream from the neighboring wetlands flows into the pond. Overflow runoff flows from the pond toward Rte. 27.

A soil sample gathered from the site had a clay-like consistency. The water appeared to be brownish-green, with a slightly fishy odor. Small fish were visible in the pond, as were frogs, aquatic insects and snails. Animal droppings were seen along the trail. The circumference of the pond is approximately 587 feet.

Segment #5 The length of Segment #5 is approximately 277 feet. The bulging sedimentation barrier along Rte. 2 and Rte. 27 needs to be checked.

FPGR1, Grassy Pond Brook

- Upstream Border: Fort Pond Brook @ Arlington Street, near Houghton Lane
- Downstream Border: Arlington Street, near Agawam Road



Sheens on the water, from runoff?: FPGR1. Whatever the rain washes from our roads, yards, and driveways eventually ends up in a stream.

On the west edge of the swamp are large boulders, (across from Elm Street), dumped here in the late '50's before Acton enacted flood plain zoning. There is a small pond at the end of the swamp with a residence close by (corner of Arlington Street and Hayward Road). There are two storm drain pipes from catch basins on Hayward Road emptying into the brook.

Segment 1 extends from the Grassy Pond confluence with Fort Pond Brook to where it flows under Arlington Street near Agawam Road. There is very little development near it. Near Fort Pond Brook the stream is shaded by willow on the west bank and maple trees on the east bank. Shortly upstream there is an old ford of granite blocks on the stream bed. Spanning the brook are two railroad ties. Two others have collapsed into the stream. Beyond the ford the brook now flows through a large open swamp where the brook divides into at least three channels.



Buffer/Yard Waste/Runoff concerns: Road sand in brook,

sand from Hayward Road culvert area, FPGR1



Sheens on the water: Sheen from 12" corrugated pipe at intersection of Hayward Road and Arlington Street, FPGR1; Petroleum products are washed from roadways into storm drains, which lead to culverts, and then streams.

There is evidence of road sand and oil sheen. There is a small pond between Hayward Road and the Arlington Street culvert. The brook now flows through a heavily vegetated wetland. There are lots of willow and alder with downed trees clogging the stream. There is another pond area where the brook flows under Arlington Street at culvert #3, the end of segment #1.



Pipes and culverts needing follow-up: 12" corrugated steel pipe leading from catch basin on Hayward Road into Grassy Brook, end of pipe plugged with sand, FPGR1

FPGR2, Grassy Pond Brook

- Upstream Border: Arlington Street, near Agawam Road
- Downstream Border: 2 branches: a. Rte. 2, near Charter Road; b. Rte. 2 near Olde Barn Way

The segment from Route 2 to Freedom Farme Road is surrounded by forest cover. The stream is about three to six feet wide and several to one foot deep in this part, with slow to medium flow. We found no evidence of erosion, but the stream was occasionally partially blocked by branches and fallen trees (see the photo log). The water was a clear tea color and had no odor. There was occasional trash (which we picked up – including a wheelbarrow) along the banks and in the stream, but not too much. There was some yard debris being disposed near the banks in a few places. There were no lawns that came right down to the stream in this segment. We saw no algae, but did see about a dozen blobs of off-white foam, each with hundreds of tiny bugs in it. It appeared to us to be a natural substance. The streambed was mostly organic material, with some sand, pebbles and rocks upstream.

The segment from Freedom Farme Road to Arlington Street consists of a few hundred feet of stream which opens up into a pond near Arlington Street and St. Elizabeth's Church. The stream is in much the same condition as the previous segment, except that it contains a small island about fifteen feet in diameter which is used by neighborhood children as a fort and play area. Boards have been placed in the stream to reach the island. Around the island lies a substantial blockage composed of branches and other debris. Just past the island there is a cement dam spanning the stream. The dam has an opening about twenty-four feet wide. The pond area appeared fairly clean with no erosion, but some landscaping trash was near the bank on the church side. There are two sections of black sheet-plastic "construction protection fencing" along the Arlington side of the pond that no longer serves a purpose. Also on the northeast side of the pond there is a lawn which comes all the way down to the pond. Ducks, herons and turtles have been seen in the pond. People also catch fish in the pond. The stream then goes under Arlington Street to the other side.

The segment extending from the opposite side of Arlington Street back to Arlington Street near Agawam Road runs through a large wetland consisting of clumps of low grass growing out of muck. Here the stream was in similar condition (no odor, tea color, similar depth and width and flow). It also had a dozen or so aluminum cans in the water way. We, however did find a few small areas (each about one foot square) covered with a bluish oily sheen which re-coagulated when stirred with a stick. This substance did not appear natural or to have any obvious source.

FPGUG, Guggins Brook, and a portion of Inch Brook

- Upstream Border: 2 branches,; a. Boxborough border; b. Inch Brook @ Rte. 111
- Downstream Border: Idylwilde Farm, junction with Fort Pond Brook

Segment One is the short section where Guggins Brook leaves the woods of the conservation land and travels through wetlands/marsh to join Fort Pond Brook just south of Idylwilde Farm. It is a beautiful, clean section. Marsh grasses grow along the stream bank and the dark water is reflects the open sky. Only a few trees overhang the stream here. The stream bed appears to be dar, rich mud.



Plants: Phragmites, FPGUG

Segment Two is the conservation land through which Inch Brook and Guggins Brook travel, and then join together before Guggins Brook leaves the woods to join Fort Pond Brook. This area is what all streams should look like! Clean-looking streams flowing through woods with no sign of disruption, erosion or contamination. Culverts cross in several places for hiking trails. We saw one problem area: At the Boxborough border there was a pile of fill, a marsh fully filled with phragmites, and a wooded section with an oily sheen. This oily sheen did not break up with a stick. This section abuts housing development in Boxborough.

FPIND, Indian Village Tributary

- Upstream Border: area between Seminole Rd., Oneida Rd., near Algonquin Road
- Downstream Border: Elm Street Playground, Douglas School

This tributary of Fort Pond brook is a densely vegetated, undisturbed stream. It is dry in the summer with small peak flows (less than one cubic foot/second). The stream runs through a residential area and may be minimally impacted by nutrient loading from septic systems, contributing to the heavy vegetation.

The banks are predominantly wetlands and woods, and the stream is accessible only with difficulty. The southern end, adjacent to apartment buildings and the Douglas School playground is fairly littered.

FPPR1, Pratt's Brook

- Upstream Border: High Street @ Valley Road
- Downstream Border: River Street @ Carriage Drive

Pratt's Brook enters a larger stream, Fort Pond Brook, at Carriage Drive. It is carried through a pipe under the railroad tracks into a shaded pool. (A moving company has a large storage building here.) On the other side of the tracks, the brook rushes quickly through a boulder and rock strewn area (100' approx.) From a rock pedestrian bridge there are extensive wetlands on both sides of Pratt's Brook to Broadview Road. (There is at least one tributary east of Pratt's Brook.) This is conservation land, but at Broadview Rd. several houses' back yards border the wetlands.



Buffer/Yard Waste/Runoff concerns: Sand being washed from road towards Pratt's Brook, FPPR1



Buffer/Yard Waste/Runoff concerns: Rain water washes sand (and oil etc. from the road?) into Pratt's Brook, FPPR1

Further on, the boulders are replaced by smaller rocks, and a lot of fallen trees are in the water. From Broadview Rd. to High Street, the stream narrows to a sandy bottom. About 100' north of High Street, an old footbridge and natural vegetation block the stream. Bordering High Street, there is a small wetlands area.

FPPR2, Pratt's Brook

- Upstream Border: Putter Drive near Robert Rd.
- Downstream Border: High Street @ Valley Road

This section Pratt's Brook is a small, moderately flowing brook that flows through wooded wetlands, and abuts residential areas. Lots of woodland wildflowers, skunk cabbage, canada mayflowers and wood anemone were observed.

One problem encountered was the outflow pipe from storm drains on Hatch Road. The concrete pipe had a large amount of rusty sediment which spilled onto the wetland areas and had patches of sheen on it. Also, behind one of the houses on Hatch Rd. there were 6-7 foot lengths of rusty pipes about 3 feet from the shore (3" diameter).

Behind Robert Road several lengths of black, 2" diameter (?) irrigation hoses were found. They were not connected to anything. One tributary, with no flow, dead ends near this. Large amounts of algae were noted here.

FPPR3, Pratt's Brook

- Upstream Border: Maynard Golf Course, east of Conant Street
- Downstream Border: High Street @ Valley Road

This segment of the stream appeared healthy and was quite pretty, although we occasionally saw trash. For much of this segment the stream was surrounded by wetlands filled with skunk cabbage and bushes and also contained mature hardwood trees. (Perhaps this area was not always so wet.)

Other portions of the stream were surrounded by (dry) woods. Beyond the immediate area of the stream there were woods and still further away there were houses. It should be noted that five additional homes are to be built on the steep hill near the east side of the stream.

While thick growth seen along some sections of the stream did not hinder the flow of the stream, it did cause some trouble for the stream surveyors. Therefore, we recommend that any additional surveys or other activity in this section be done in early spring or late fall to avoid the thickest growth of the year.

FPPR4, Pratt's Brook

- Upstream Border: Rte. 27, near former Beacon building
- Downstream Border: High Street @ Valley Road



Wildlife: Bird's Nest, FPPR4

Segment FPPR4 flows well near the start at High Street. The underbrush is thick, and access is difficult. Further on the brook splits, and the area becomes swampy. Vegetation is lush and includes skunk cabbage, yellow and white flowers, and many trees, especially oaks. The brook flows through a residential area and under Conant Street. Most of the land between Conant St. and Rte. 27 is dense woods and wetlands. The area where Pratt's Brook crosses Rte. 27 and flows past the former Beacon Building has cleanup issues that need to be addressed.

NB1, Nashoba Brook

- Upstream Border: Concord Road, Ice House Pond
- Downstream Border: Concord Border, Rte. 2A

The section of the Nashoba Brook watershed designated NB1 runs from the downstream end of Ice House Pond, at Concord Rd., to the Concord town line. This section has great potential, and, unfortunately, equally great problems.

NB1 has probably the heaviest commercial development along the brook's banks of any section, yet is still is very useable and clean. There are, however, some particular areas of concern.

1) The construction dump along Wetherbee St. is the biggest problem. A landowner has used the wetlands along the streambed as a site to store his construction equipment, and it now includes a great deal of large, useless machinery, cinderblocks, and other construction debris.

2) The general level of trash along the streamside is high in this area, and needs a good clean-up effort.



Wildlife: Animal den?, NB1

3) Because of the heavy commercialization, many sites along the brook experience run-off problems from gravel or tarred driveways.

Because it is at the downstream end of the whole watershed, the brook is widest in NB1, making for the possibility of canoeing much of it. Unfortunately, the streambed has filled in with brush, which, while a natural occurrence, makes much of the length impassable. Clearing out this brush would increase the usability of the brook in this area. The abandoned railroad bed runs along much of this section, and converting it into a hiking and biking trail would improve access to the brook, increase the usability, and reduce the amount of trash and litter discarded along its banks.

In the long run, the Acton Stream Team could probably have its greatest impact along this length of the Nashoba Brook.

NBICE, Ice House Pond

- Upstream Border: Brook Street, up to Conant Brook
- Downstream Border: Ice House Pond, northern border

Ice House Pond is an approximately 11 acre pond (300 x 1800 ft.) at the intersection of Route 2A and Concord Road. It is formed by a darn on the other side of Concord Road. It has a parking lot for about 15 cars at the south end. North of the lot is a grove of trees with a picnic table and a few paths. Above this are farm fields leading to a 10 ft. strip of trees/brush along the western shore. The eastern shore has about a 20-60 ft. strip of trees/brush, an unused railroad track and then mixed residences and offices. The northern end is shallower as water comes into the pond and dumps silt and has wetland sections. Depth is about 1 foot to 6 feet. The pond seems to be clean and in fairly good shape.



Plants: Duckweed, dead turtle, NBICE. Excess nutrients in the water can lead to excess plant growth. When the plants die, they sink to the bottom and decay--using up oxygen needed by fish and other aquatic life, and leading to unpleasant odors.



Dams, beavers: Beaver work, NBICE

It is used for non-power boating, picnics, fishing (it is stocked), ice skating and wild life habitat. There are beaver, frogs, turtles, bugs and birds to eat the bugs.

Items:

- The pond was dredged a couple of years ago. It will fill up again (as all ponds do) and plans should probably be made to do it again (or at least re-evaluate it).

- There are signs of old brush dumping behind some of the residences/businesses. I don't think it is worth a cleanup, but it would be nice not to see new stuff added.
- There is some purple loosestrife and phragmites in the northern wetlands.
- There are two upright concrete cylinders, about 2 ft. across and 2 ft. high, with metal caps next to the railroad tracks. One cap is removable. Both contain large old lead acid batteries, probably rail road equipment. This might be a child hazard.
- Water is pumped from the pond for agricultural use. The farmer keeps an old, old truck engine which runs a pump next to the pond. The water is piped under Rte. 2A. Is a gas/oil leak from the engine an issue? (It has been there a long time). Is the water used for food crops? If so, is it safe enough? Are there limits on the amount of water that can be taken?
- There is not a lot of cover around the pond for wildlife and care needs to be taken to preserve/expand this with future uses.



Dams, beavers: Beaver work, NBICE

NB2, Nashoba Brook

- Upstream Border: Brook Street, up to Conant Brook
- Downstream Border: Ice House Pond, northern border

The Upstream area of this section seemed clean, with quick running water. The soil along the bank was solid.

The midstream area contained faster running water. The banks seemed in good shape. There was some trash from parking lots, but this was not a major issue.

The midstream area contained the most trash, but there was not a lot of build-up.

The left hand bank going upstream is entirely undeveloped and is in good shape, consisting of mostly low shrubs and some wetlands down to the water's edge. The right back area is extensive wetlands bordered by railroad track and the backs of businesses along Rte. 2A. Some trash sites and runoff from parking lots behind businesses affects the wetland, but these sources are some distance from the streambed.

NBCON1, Conant Brook

- Upstream Border: Cowdrey Lane
- Downstream Border: Nagog Hill Road, between Greenwood Lane and Hammond Street

Going upstream from Nagog Hill Road, Conant Brook is a small and swiftly moving stream for about 150' where the lower beaver dam is located. The pond above this dam appears to be shallow and not canoeable. The upper beaver dam is about half way between Nagog Hill and Newtown Roads. It is accessible from Newtown Road, where you can canoe downstream to the dam and upstream to the point of closest approach at Cowdrey Lane, picking your way with difficulty through a dying forest. There is lots of vegetation, including a rotting bottom. The banks are either forested conservation land or residential backyards. No problems were noted.



Dams, beavers: Beaver activity on Conant Brook, NBCON1

- Lots of litter near Newtown Road.
- Beaver ponds had rotting bottoms, lots of duckweed, dying and fallen trees, and a stagnant, sometimes scummy surface.

NBCON2, Conant Brook

- Upstream Border: Rte. 2, ABRHS
- Downstream Border: Cowdrey Lane

From Cowdrey Lane to Rte. 2, Conant Brook is bordered on both sides by residential yards. There are a lot of 20'-30' wide marshy areas next to the brook in this section. In many sections the water level is obviously much higher than normal, due to a beaver dam downstream which has recently been constructed. Just upstream of Rte. 2, the brook splits into two branches, passes under Rte. 2 through two culverts, and rejoins again downstream of Rte.2.

Between Rte. 2 and the high school the brook is bounded by narrow marshes (5'-15' wide) all the way along. The marshes are bordered by trees, beyond which is Hayward Rd. on one side and soccer fields on the other side. The upstream end of this section is a pond which is about 50' wide and 300' long.

NBWL1, Wills Hole Brook

- Upstream Border: Rte. 27, Rte. 2A
- Downstream Border: Rte. 2A, west of Wyndcliffe Dr., bridge @ Great Rd. Apt.

This segment extends from the bridge at the Great Road Apartments and ends on Rte. 2A by Wyndcliffe Drive, and is approximately 2400' long. It is basically a lovely stream---clear, odorless, shaded and quite natural. It is occasionally marred by litter and trash---2 tires, bicycle, bubble wrap, hubcap, fencing material. The stream was fairly easy to follow until we got to the segment behind Acton Wood's Plaza---then it's very overgrown and blocked with trees and pricklers. Immediately behind the plaza is the plastic siltation barrier and sand and silt.

Along the stream is much skunk cabbage. The terminus section at Rte. 2A and Wyndcliffe Drive is characterized by the stream's meandering through marsh grass and is very different from the rest of our segment.



Trash: Bicycle in Wills Hole Brook, NBWL1



Sheens on the water: Stagnant rust colored water with oily sheen,

Wills Hole Brook, along Rte. 2A, NBWL1

NBWL2, Wills Hole Brook

- Upstream Border: Gaging Station, near Wheeler Lane.
- Downstream Border: Rte. 2A crossing, between Rte. 27 and Davis Rd.

The entire report for NBWL2, including photographs and maps of twelve different sites within the stream section, can be found at www.ultranet.com/~balkus_p/stream.htm. The information at this web site was used to produce the following narrative description of stream section NBWL2.

Will's Hole Brook originates from Will's Hole, a quaking bog, that is adjacent to Acton Town Forest. Will's Hole is on the northeastern side of Rte. 2A in North Acton, and the stream flowing from it crosses under Rte. 2A and then parallels this main road until the



Wildlife habitat, NBWL2



Buffer/Yard Waste/Runoff concerns: No buffer, grass up to edge of stream, erosion, NBWL2. When fertilizers, pesticides, and herbicides are applied to a lawn that runs to the streams' edge, these materials also end up in the stream.

stream flows into Nashoba Brook, near the junction of Rte. 27 and Rte. 2A (see section [NBWL1](#)). Street, lawn, and other runoff are a concern to this stream section. Along much of its length, drainage from the street feeds directly into the stream. Along Rte 2A the stream is bordered by businesses and condominiums.

The uppermost part of stream section NBWL2 is not accessible due to swampy conditions resulting from the presence of a beaver lodge, and beaver activity. Moving downstream the stream bottom consists of sand, rocks, and mud. Skunk cabbage, grasses, and overhanging trees are present along the banks. The water is clear and three to four inches deep.

Further downstream is a pond, approximately ¼ parking area) NBWL2 acre in size, with a mud bottom. The water is clear. Downstream of the pond the stream flows through a pipe under Rte. 2A. The area south of the pipe is very marshy, with grasses and skunk cabbage. The stream is three to four inches deep, and the wetland area is approximately 30 feet by 30 feet. The stream then flows through a heavily wooded area. Large rocks in the water cause some pooling.



Dams, beavers: Beaver material in pile on right was previously removed from culvert pipe. It has been an ongoing challenge to keep the water flowing freely. NBWL2

Another pond area is present further downstream. This is followed by an area where the stream flows past lawns that run to the waters' edge, with no buffer area to filter out fertilizers, pesticides etc. A little further on is an area where a man-made dam causes the stream to form a pool, that is approximately twelve feet wide and one foot deep. The bottom consists of mud and leaves, and the water is clear. The furthest downstream portion of NBWL2 is about six inches deep, with a sandy pebbly bottom and clear water.



Dams, beavers: Beaver dam previously opened to prevent flooding, NBWL2

NB3, Nashoba Brook

- Upstream Border: Gaging Station, near Wheeler Lane.
- Downstream Border: Rte. 2A crossing, between Rte. 27 and Davis Rd.

Beginning where the stream crosses under Rte. 2A, there are paved troughs on both sides of the highway that guide road runoff directly into the stream and are a potential source for pollutants from autos and road salts. The Rte. 2A bridge is crumbling and is in great need of repair. Culverts assist the flow of water under the bridge and under the nearby railroad bed.



Historic Site: Crumbled spillway of 'pencil factory'

Just beyond a sewage treatment plant off Davis Road there is a large dump site abutting and possibly overflowing into the Conservation Land along the brook. This dump is an eye sore as well as dangerous to anyone exploring around or on it and should be removed. There must be a treated effluent outflow from the treatment plant but we were unable to locate it because we stayed on the other side of the meandering brook.



Trash: Railroad battery, stand knocked over, NB3

Scattered areas of trash were found here and there along the brook and a rusting bike was found at the northern end. Along the railroad tracks batteries, once stored in concrete containers, are exposed to the elements. Vandals have tried to disconnect them but have only damaged them. Battery acids are a very real hazard here. New construction planned for along Rt. 27 could be a future hazard and should be monitored.

A railroad bridge crosses the brook south of the Pencil Factory. The ties on the bed are beginning to crumble and should be checked. Otherwise it appears to be stable. Vegetation is growing around and through the railroad bed all along this section.

Stone walls line the brook, **Historic site: "Potato cave", NB3**
meander through the forest
and around historic manufacturing sites situated along the stream. A dam was constructed for water power to run a pencil factory forming a broad mill pond upstream. The dam has long since been breached and the pond is now filling as the forest attempts to reclaim it. Towards the northern border a second water powered facility was sited with raceways diverting the water flow. A delightful wooden bridge and two expansive boardwalks allow hikers to cross the brook at the northern end and gain access to paths on the eastern side of the stream.

This is a lovely stretch of the brook with tannin stained clear water flowing over sand, gravel and boulders. The vegetation is thick with hardwoods and conifers through out. Vegetation hangs over the stream with fallen trees in the brook and brush along the banks providing a wealth of habitat for animals. Some small animals were seen as well as a few ducks, frogs and bugs. Fish were not apparent due to the tannin colored water but anglers do come here regularly. If all sections of the brook are as lovely as this one, then we are in great shape.

NB4, Nashoba Brook

- Upstream Border: Rte 27 crossing, near South St.
- Downstream Border: Gaging Station, near Wheeler Lane



Recreation, hiking: Footbridge access to over 300 acres of conservation land, NB4

Our survey is divided up into four sections: Section 1 is the footbridge at the gauging station to the dam; Section 2 is from the dam to Carlisle Road and Section 3 is Carlisle Road to Route 27.

Section One: is a huge catch basin for steeply sloped land on either side of the corridor. There is an inlet brook that was just boiling with water. The right of way path after the bridge also has lots of run off and is wet most of the year. The biggest threat to this area is on the right hand side of the brook where survey flags come right down to the brook at the right of way! Any development of this hillside would seriously impact runoff and must be very carefully considered.

Section Two: The Robbins Mill Pond Section of Nashoba Brook is looking quite healthy.

Above the pond there is a lot of swamp brush and loosestrife which is choking the flow of the brook. There is a beautiful forest on the right which used to be part of the Marshall property which is now loaded with survey flags right to the stream. This much development if allowed to the stream edge would seriously impact the wetland waterway! Number one priority should be to get a buffer zone donated to the town to keep land owners from cutting down the trees which are now acting as a huge filter for the whole area. Some cleaning out of the stream brush would make it healthier also.

This stream is almost dry in the summer time and gets completely choked off with water chestnuts. It becomes foul smelling. Water will only flow under the dam, not through it and the sluiceway (man made stream) was totally dried up last September. The dam is also in need of repair and further study.



Recreation, Canoeing, Fishing, Scenic Views: Nashoba Brook, NB4



Historic Site: Sluiceway from Grist Mill, NB4

Section Three: The underpass under Carlisle Road is showing some corrosion of the iron pipe. If and when repair is done there, a wider opening should be considered for the high spring and fall waters.

The upper stream is quite narrow and five trees down across the stream meant that we had to portage the canoe several times. We could not make it to Route 27 as the last tree totally blocked passage and there was no dry land to get around.

A serious problem in this section is the presence of: parked vehicles in or on the edge of wetlands, and several sheds, one of which has fallen down into wetlands. There is an appearance of possible filling in of some of the wetland, but none of us are experts on this subject.

NB5, Nashoba Brook

- Upstream Border: Westford Border, west. of sand & gravel pits
- Downstream Border: Butter Brook junction, Rte 27, South St, Nashoba Sportsmen's Club

We surveyed the Nashoba Brook from the Westford/Acton town line to a point approximately 3000 feet downstream. Gunfire at the Nashoba Sportsmen's Club limited our observations to southeast of this point. The stream is 6 to 24 inches deep, 10 to 15 feet wide and flowing moderately. Banks are heavily vegetated. Water quality appears to be good, with the exception of a section next to the piggery, where the odor of garbage is pervasive. A long abandoned railroad grade parallels the brook and appears to be getting regular use by hikers, horses, and some ATV's. The only area of concern on this section is turbidity/nutrient loading near the piggery.

NBBUT, Butter Brook

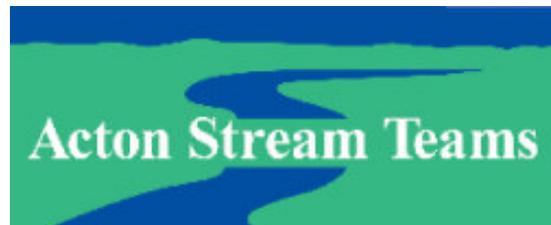
- Upstream Border: Westford Border, east. of sand & gravel pits
- Downstream Border: Nashoba Brook junction, Rte 27, South St, Nashoba Club

For the most part the stream passed through typical New England woods. It was generally shaded with a few open areas. The stream was shallow and indistinct in many areas with evidence of having overflowed its banks in several places. Skunk cabbage abounds, indicating wet areas. Mud and brush made it difficult to follow precisely in places, particularly west of Rte. 27 upstream. No drainage from pipes into the stream was observed, however, there appears to be a drainage ditch west of Rte. 27 near the Westford line. This area should be revisited. The most significant trash, with the exception of discarded railroad batteries, was found immediately adjacent to Rte. 27, consisting of typical "road debris".



Trash: Butter Brook, near Rte. 27, NBBUT. One of the stream areas [cleaned up by the Acton Stream Teams on September 12, 1998.](#)

Acton Shoreline Survey Spring 1998



Stream Survey Goal

The goal of the Spring 1998 Shoreline Survey was to make a visual survey of the two primary stream systems in Acton: the Nashoba Brook system (including the incoming streams, Butter Brook, Will's Hole Brook and Conant Brook) and the Fort Pond Brook system (including the incoming streams, Guggins Brook, Inch Brook, Grassy Pond Brook, Pratt's Brook and Coles Brook). Both stream systems feed into the Assabet River. The Acton Stream Teams sought to identify and reduce sources of pollution and excessive nutrients to Acton waterways, and to raise awareness of the wildlife habitat and recreational opportunities provided by Acton's local streams.

Topics...

- [The Map](#)
- [Survey Background](#)
- [Survey & Results](#)
- [Post Survey Actions](#)
- [1998 Achievements](#)

In conclusion...

The Acton Stream Teams look forward to continuing to raise public awareness of the wildlife habitat and recreational opportunities provided by Acton's local streams, and also of ways we can all be better stewards of our rivers and streams.

Please look at some of the Stream Teams' recent [Projects and Events](#) and the [Stewardship Handouts](#).