



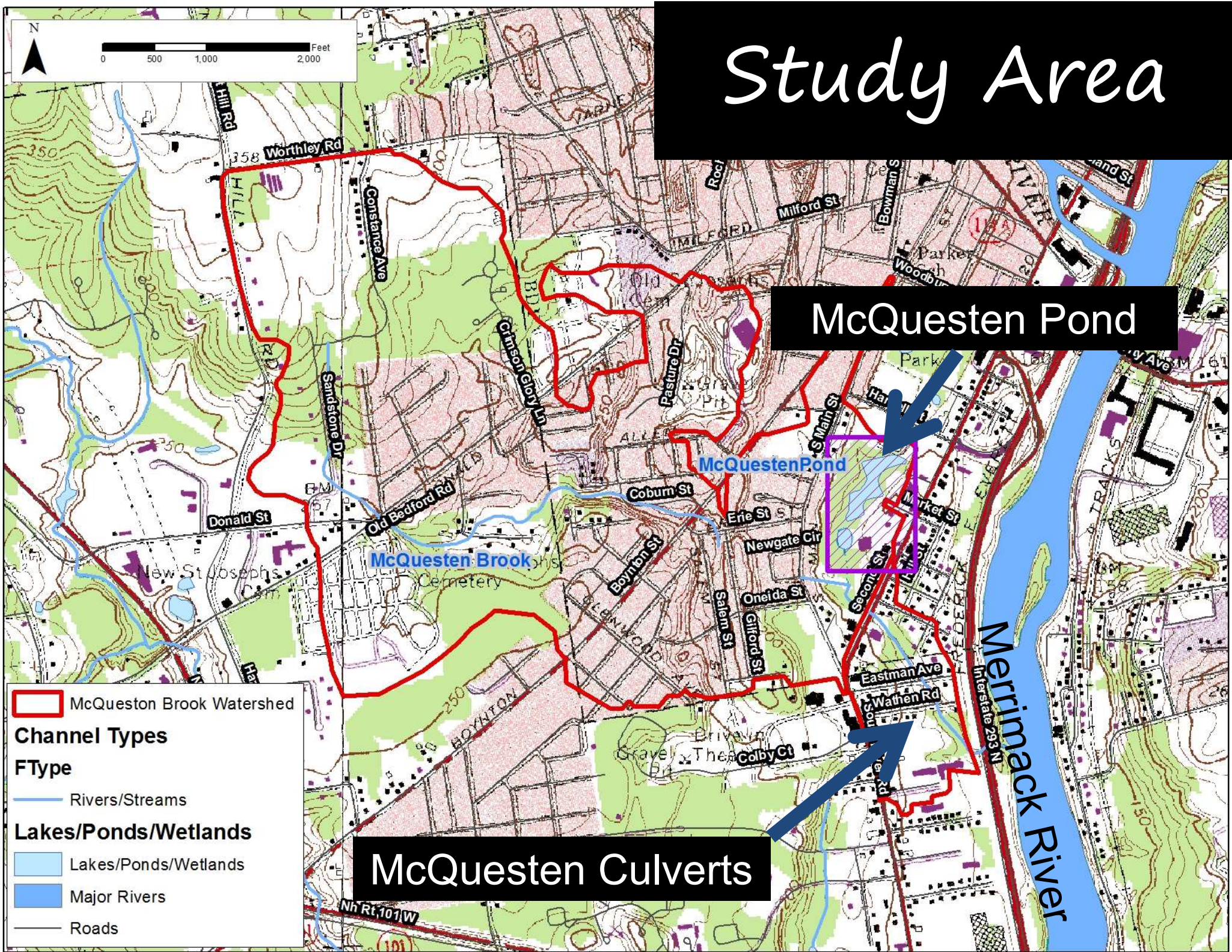
*To restore or
not to restore?
That is the
McQuesten.*

**NH Rivers Management
Advisory Committee Meeting
October 16, 2025**

**Michele L. Tremblay, President
Board of Directors
New Hampshire Rivers Council**

**Stephen C. Landry, Coordinator
New Hampshire
Nonpoint Source Program
NHDES**

Study Area





McQuesten by the Numbers

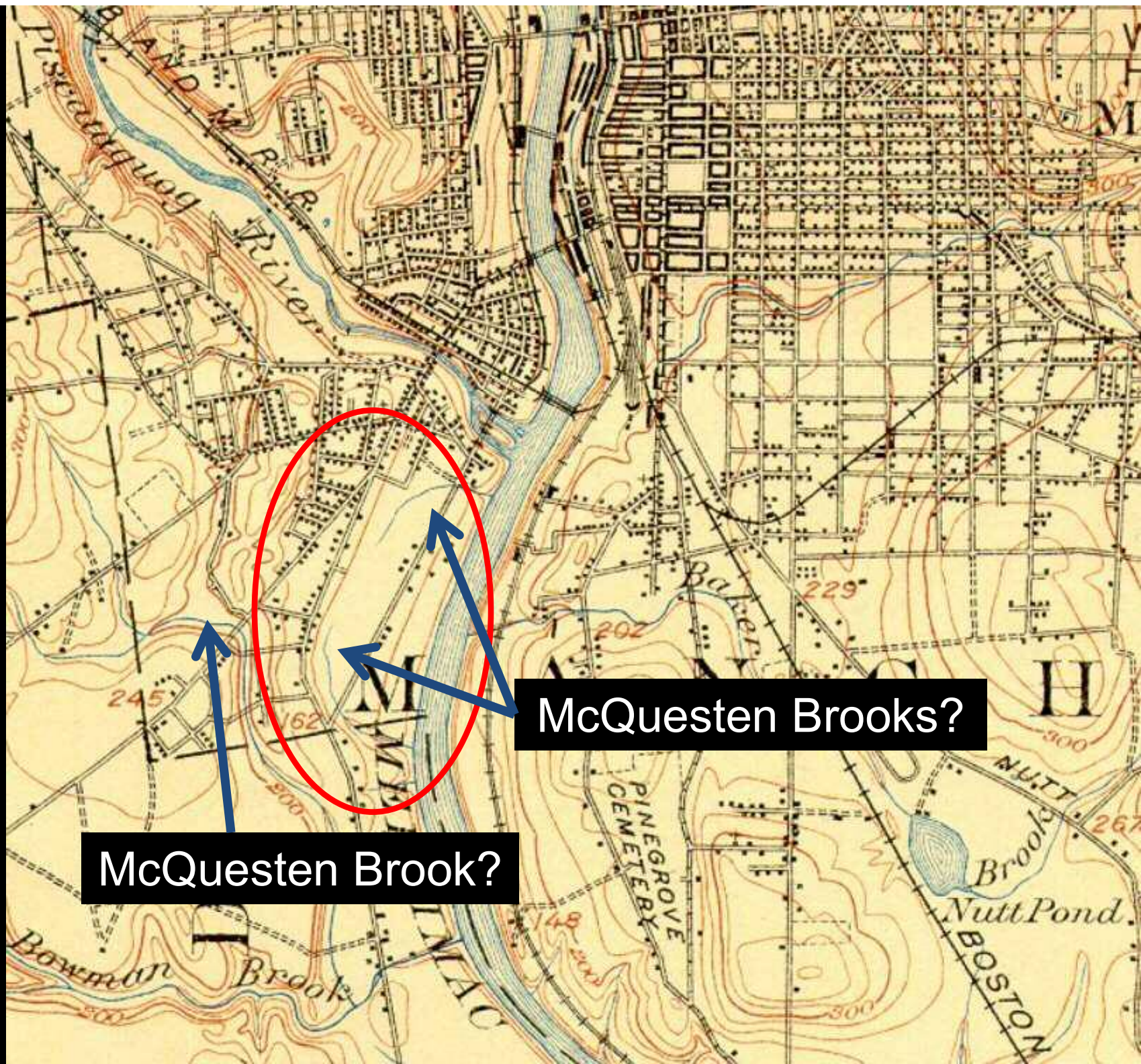
Learn more and get involved at NHRivers.org

563 acres	Over 193 acres or 34 percent of the watershed are covered by impervious surfaces. Negative impacts to water resources and the communities within them occur once a watershed reaches 10 percent impervious cover.
330 catch basins	This means that there are 330 ways for stormwater carrying litter, fertilizer, pet waste, oil, sediment, yard clippings, and other contaminants to flow directly into McQuesten Brook and McQuesten Pond.
50 volunteers	Volunteers include individuals from Anheuser-Busch, City of Manchester, Town of Bedford, Trout Unlimited Merrimack Valley Chapter, Manchester Flyfishing Association, NH Department of Environmental Services, New Hampshire Fish and Game Department, and neighbors working on clean-up events and serving on the McTeam Steering Committee.
fifteen fourteen road crossings	There are fourteen (one was removed in 2015) habitat fragmentation and stream constriction sites in the watershed or, through replacement and restoration, there are fourteen opportunities to improve the flow and fish passage.
thirteen subwatersheds	This means that there are thirteen McQuesten watershed community neighborhoods identified to rise up to meet the restoration challenge.
(over) a dozen partner organizations	Partners and supporters include the NH Department of Environmental Services, NH Fish and Game Department, City of Manchester, Manchester Urban Ponds Restoration Program, Town of Bedford, River Network, Anheuser-Busch, Samuel P. Hunt Foundation, Manchester Flyfishing Association, Trout Unlimited Merrimack Valley Chapter, Ducks Unlimited, Amoskeag Fishways, and University of New Hampshire
four ZERO dams	There are ZERO places where flowing water is impounded, gets warmer, and loses oxygen. Four dams were removed through grants from the NH Department of Environmental Services.
two communities	Coordination across city and town lines can be challenging but not in this case: Bedford and Manchester have come together through the McTeam and have pledged tremendous in-kind support and other resources for the restoration effort.
two NOW ONE waterbody	With the four dams, one barrier, and two culverts removed (one replaced with a bridge), the watershed is now connected as a single waterbody: McQuesten Brook . Vital oxygen and connectivity is restored for water quality and the native brook trout population.
one watershed	Our goal is for the McQuesten watershed to be a healthy and fully functioning system capable of supporting the native brook trout population while providing this busy and highly populated Manchester and Bedford neighborhood with floodwater storage and an oasis for bird watching, fishing, and connecting with nature in a cool, green place.

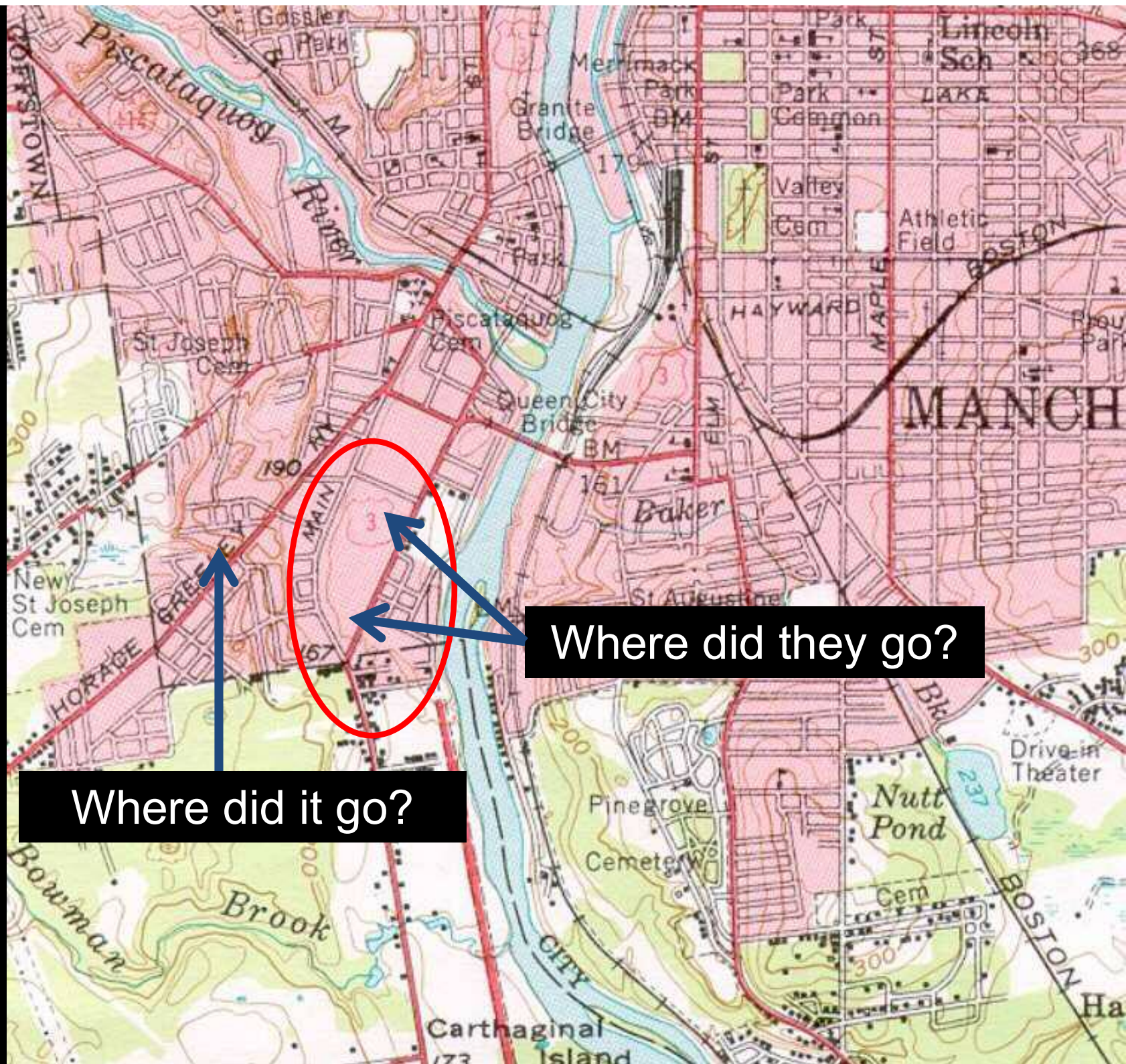
Act 1



1905

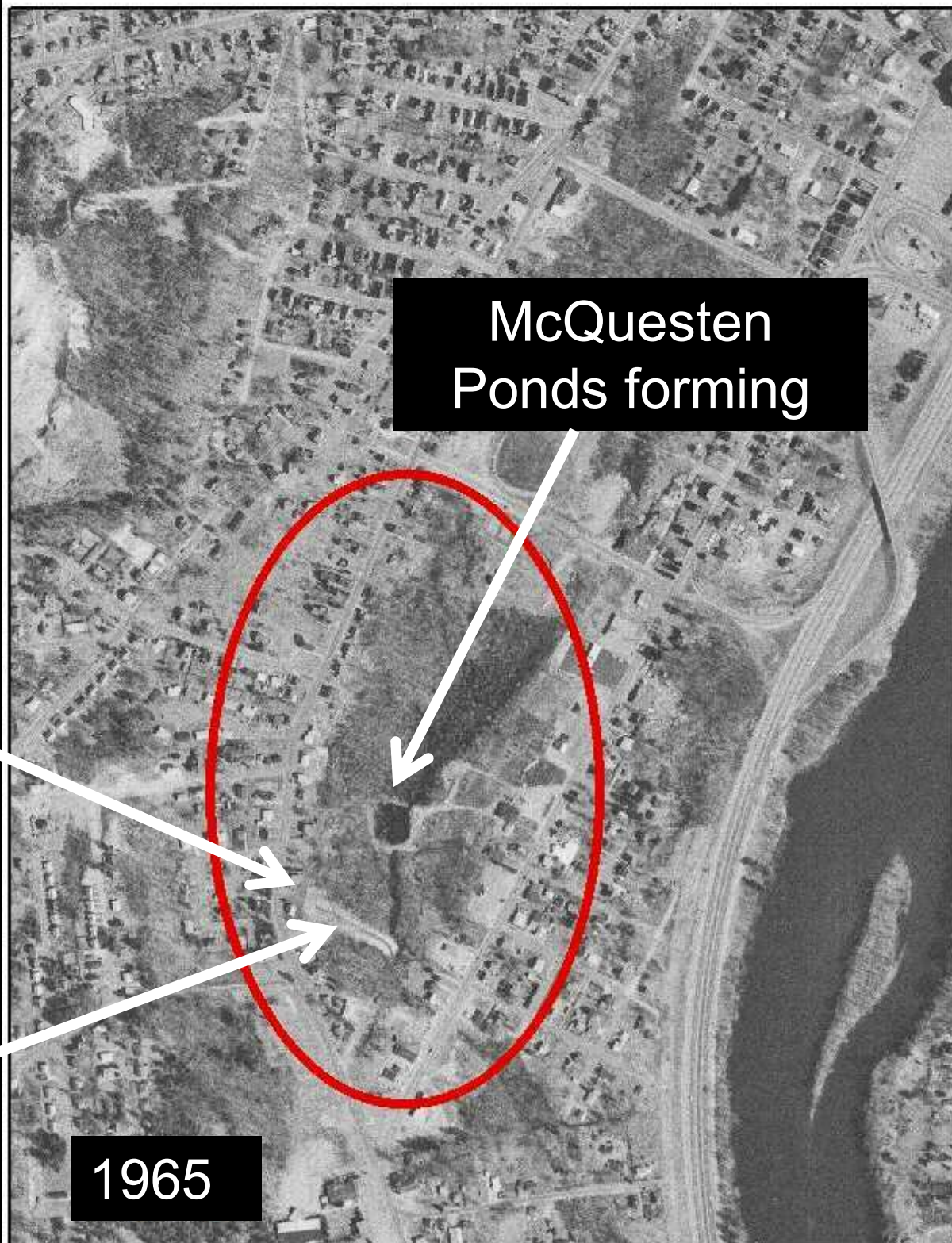


1953



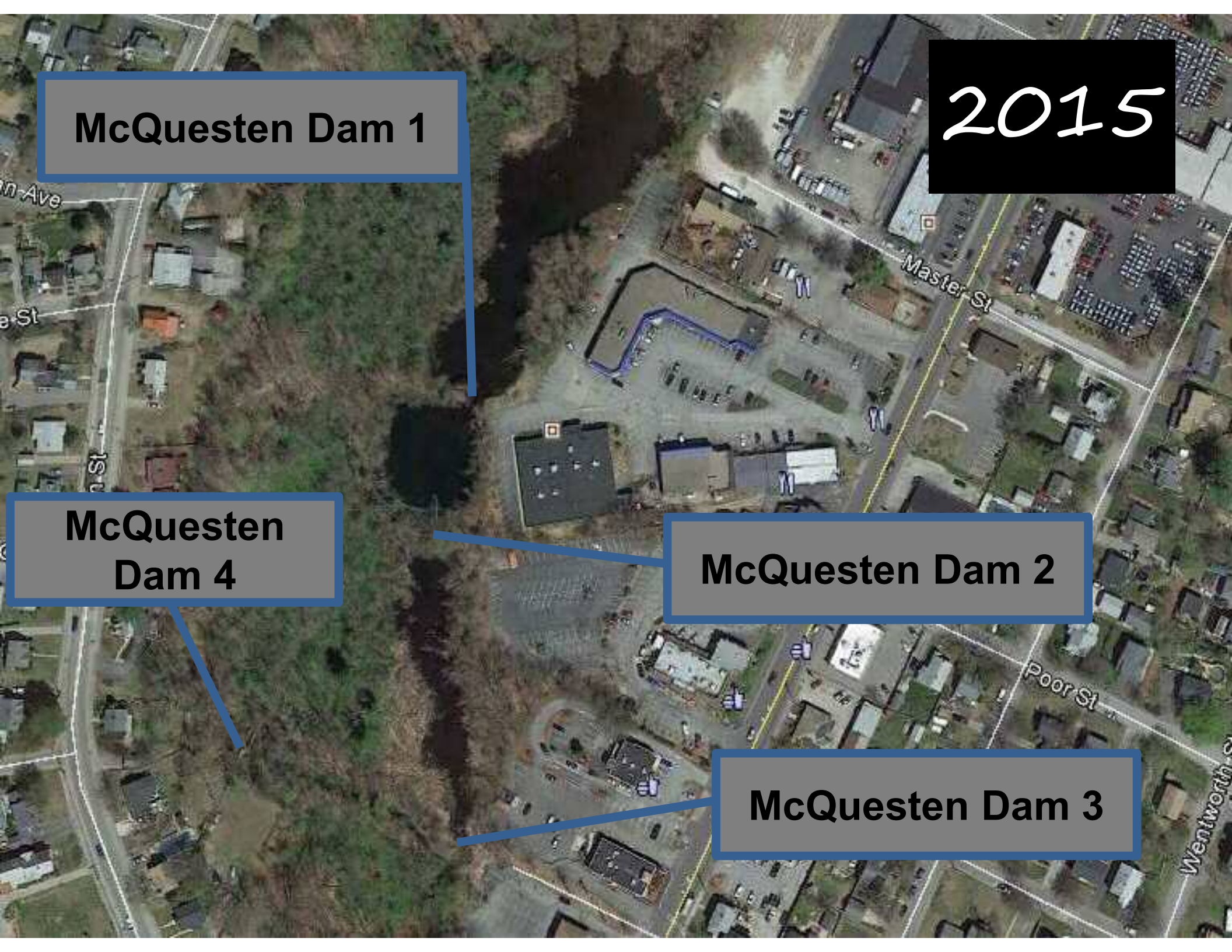


New channel
connecting two
streams?



McQuesten
Ponds forming

1965

An aerial photograph showing a residential and commercial area. A large, dark, irregularly shaped area in the center-left is labeled 'McQuesten Dam 1'. This area is mostly covered in trees and appears to be a wooded or undeveloped site. To the right of this area, there are several buildings, including a large one with a blue roof, and a parking lot. The area is bounded by 'Master St' to the north and 'Poor St' to the south. Other streets visible include 'Wentworth St' on the right and '1st St' on the left. A black box with the year '2015' is in the top right corner. Four callout boxes with blue borders and lines point to specific locations: 'McQuesten Dam 1' (top left), 'McQuesten Dam 2' (center right), 'McQuesten Dam 3' (bottom right), and 'McQuesten Dam 4' (bottom left).

McQuesten Dam 1

2015

**McQuesten
Dam 4**

McQuesten Dam 2

McQuesten Dam 3

WATERSHED 305(b) ASSESSMENT SUMMARY REPORT:

HUC 12 010700060803

HUC 12 NAME SOUTH MANCHESTER TRIBUTARIES

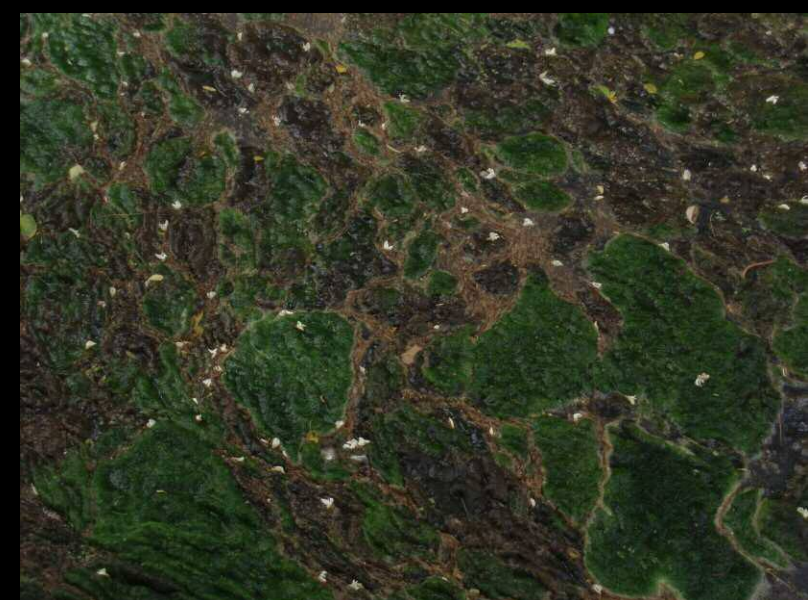
(Locator map on next page only applies to this HUC12)

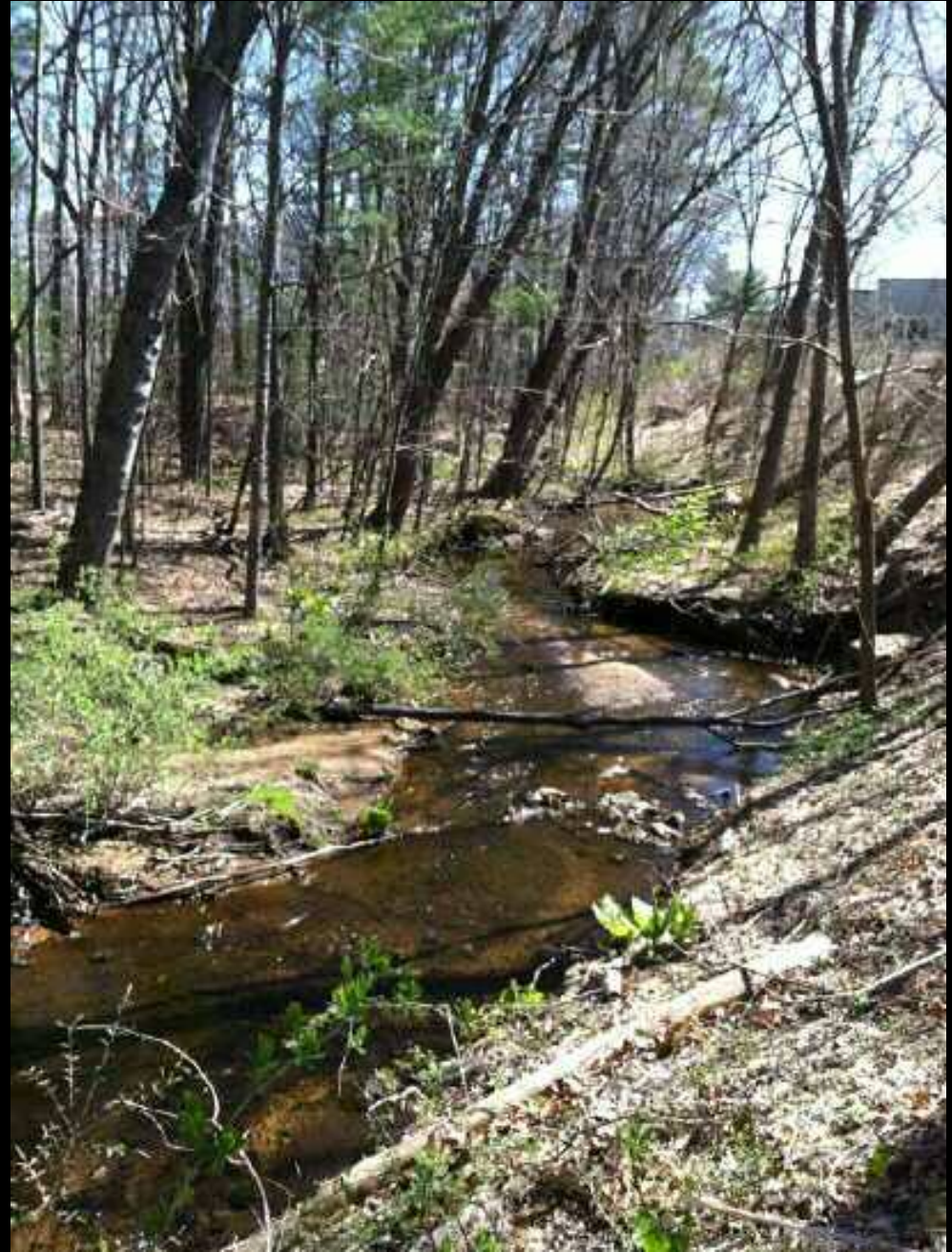
Assessment Cycle 2014 *DRAFT*

Good	Full Support Good
Marginal	Full Support Marginal
Likely Good	Insufficient Information – Potentially Full Support
No Data	No Data
Likely Bad	Insufficient Information – Potentially Not Support
Poor	Not Support Marginal
Severe	Not Support Severe



ASSESSMENT UNIT ID	MAP LABEL	ASSESSMENT UNIT NAME	AQUATIC LIFE	SWIMMING	BOATING	FISH CONSUMP.
NHIMP700060803-01	I*01	BOWMAN BROOK TRIB DAM	3-ND	3-ND	3-ND	4A-M
NHIMP700060803-02	I*02	GALLOWAY POND DAM	3-ND	3-ND	3-ND	4A-M
NHIMP700060803-03	I*03	BOWMAN BROOK - WOODBURY ESTATE POND	3-ND	3-ND	3-ND	4A-M
NHIMP700060803-04	I*04	BOWMAN BROOK	3-ND	3-ND	3-ND	4A-M
NHIMP700060803-05	I*05	BOWMAN BROOK	3-ND	3-ND	3-ND	4A-M
NHIMP700060803-06	I*06	RECREATION POND	3-ND	3-ND	3-ND	4A-M
NHIMP700060803-07	I*07	JENKINS DAM	3-ND	3-ND	3-ND	4A-M
NHIMP700060803-08	I*08	GOLF POND	3-ND	3-ND	3-ND	4A-M
NHIMP700060803-09	I*09	VAN BEUREN EST DET POND	3-ND	3-ND	3-ND	4A-M
NHLAK700060803-01	L*01	NUTT POND	5-M	4A-P	3-ND	4A-M
NHLAK700060803-02	L*02	STEVENS POND	5-M	4A-P	3-ND	4A-M
NHLAK700060803-03	L*03	MCQUESTEN POND	5-P	5-P	3-PAS	4A-M

















Act 11





Act III

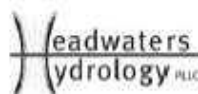


McQuesten Brook Geomorphic Assessment and Watershed Restoration Plan

**Final Report
October 1, 2013**



Prepared for:
New Hampshire Rivers Council
54-207 Portsmouth Street
Concord, NH 03301



Prepared by:
Comprehensive Environmental Inc.
with Headwaters Hydrology,
FB Environmental Associates, Inc. and
Field Geology Services



With Funding by:
New Hampshire Department of
Environmental Services,
New Hampshire Fish and Game Department,
New Hampshire Rivers Council, and
Samuel P. Hunt Foundation

Looking out for the trout

With native species in mind, an urban brook gets a makeover

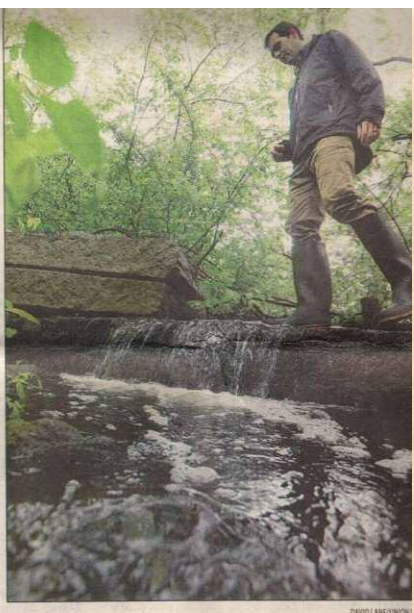
IN 2008, volunteers cleaning up litter from a small West Side brook found about a half dozen dead fish at a small dam. They had been trapped in muck, dead branches and other crud — one was inside a discarded tire — that had accumulated at the dam. The fish essentially suffocated, unable to return to the clear water that must flow over their gills for them to survive.

That's not too much of a news story, not even a fish story. Fish die for all sorts of reasons, especially in a brook that runs through the state's largest city.

But these weren't ordinary fish. They were native brook trout, a species rare even in the pristine streams that cut through wooded parts of New



City Matters
Mark Hayward
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Steve Landry of the state Department of Environmental Services steps across one of the dams on McQuesten Brook which will be removed later this year. More photos, Page 16

» See City Matters, Page A6

McQuesten Brook's urban run

Yet they had been swimming and growing in McQuesten Brook. It is an odd brook, starting in Bedford near the old St. Joseph Cemetery and ending in Bedford east of South River Road. The Manchester portion is hidden away in a clump of woods between South Main and Second streets.

This is a neighborhood where the word forest is best used metaphorically to describe the hot asphalt, harrowing traffic and looming fast food signs that illuminate the night. It's where fish talk centers on the menu at McDonald's, Burger King or KC's Rib Shack.

Today, and \$655,000 later, the little-known brook is being transformed. One downstream culvert has been widened about five-fold, another has been tipped out altogether, freeing up the brook to flow as it



Michelle Tremblay of the New Hampshire Rivers Council and Steve Landry of the state Department of Environmental Services discuss a pond (Point 3 on map) that will soon be eliminated as part of the restoration plan for McQuesten Brook.

And later this year, Manchester public works employees are expected to remove the fish-killing dam on the McQuesten, as well as three small barriers on a tributary that runs behind the second-floor businesses, leaving of native vegetation will follow, and by next year a trout-loving, free-flowing brook about 4 feet deep will replace a pond of stagnant water that is nearly twice the size.

"They're spending some least money," said Gerry McNeil, who will lose 40 four-wheelers in back of his business, McNeil's Banquet Facility, "more or less accepted that they know what they're doing and have cooperated with them."



A new bridge and culvert give a clear path for McQuesten Brook to travel under Eastman Avenue in Bedford (Point 4 on map).

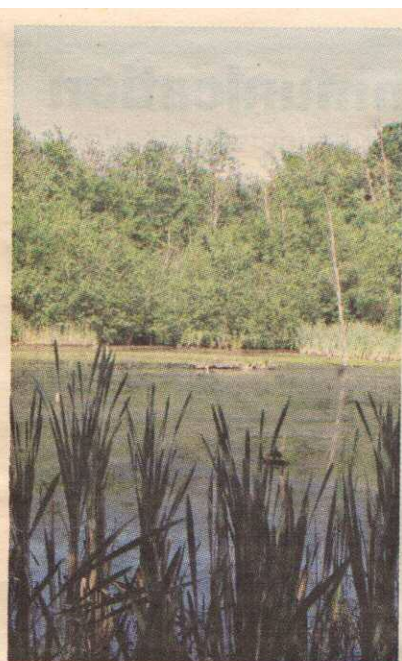
The problem dams are in thickly wooded areas found along Wolfe Trail and local second-storm parking lots. Pasture owners of about 100 acres, including the McQuesten, have been grabbing at your pants, mud chucks your boots like an emergency raincoat. An inventory of maples keep the area shaded, and riders and other insects fly through the air.

The mounds were created when the city laid out paper streets across a brook and there'd been some granite blocks a half century ago, anticipating housing subdivisions that never happened, said Michele Tremblay, the president of New Hampshire Rivers Council. She's not even sure why the dam that traps fish was built.

Yet in spite of it all, the brook is in surprisingly good shape. And human interventions of the brook have actually helped it, Tremblay acknowledges. For example, its head-



Tremblay and Landry of the state Department of Environmental Services stand near a pool created by the fish-killing dam (Point 2 on map) on McQuesten Brook. The dam will be removed later this year.



McQuesten Pond will be restored to a babbling brook. Courtesy photo.

destroying trout habitat.

Landry said some sections of the brook's watershed are nearly 80 percent impervious, with the entire subwatershed averaging 33 percent impervious cover. Once the percentage gets greater than 10 percent, watersheds tend to start exporting runoff issues, Landry said.

All that pavement heats up in summer, and when it rains, the pavement

flows in times of heavy rainfall. Landry had heard that a fitness center located on Second Street had previously experienced flooding from the pond.

As part of the long-term project, officials will also look at replacing some of the undersized culverts along the stream's route. That includes a 36-inch culvert in Bedford and a 48-inch culvert in Manchester. The average width of the stream should be about 12 feet, Landry said.

The stream goes under South Main Street and emerges through a dilapidated 66-inch culvert that is split in four places. The culvert can back up water flow, and the stream has outflanked the culvert on one side, eroding banks and causing mature trees to fall. The culvert has backed up with lawn clippings, trash and saplings, as well as the occasional tire.

"It appears to be serving no purpose other than to mess up the channel," Landry said.

Anheuser-Busch holds a river cleanup each year, where its employees take a morning off to tackle trash and debris along the river. It was during one of the

Make way for brook trout
NH Rivers Council pushing restoration of McQuesten Brook in Manchester

By Jeff Mucciarone
jmucciarone@hippypress.com

For a long time, McQuesten Brook in Manchester has been a place where the city and the state have been at odds. The brook winds its way through woods, under streets and highways, behind shopping centers and through neighborhoods on its way to the Merrimack River. Numbered pointers refer to the locations shown in the photographs.

Paul Gagnon removes a granite dam at McQuesten Brook in Manchester on Monday. A series of dams holding back the brook is being removed.

man Avenue and Wathen Road, closer to the mouth of the brook. They widened one culvert, removed another and installed a natural system for treating storm-water runoff, according to a previous news account.

In all, about \$655,000 is being spent on the project, most of it coming from the New Hampshire Department of Transportation, which will handle the design, and the state's money to go in the heat of the summer," said Michele Tremblay, president of the New Hampshire Rivers Council.

That's the long-term vision for the pond and the brook, which are located off Second Street in Manchester.

"I get discouraged when I see people give up on urban places," Tremblay said.

Urban pond protectors

Volunteers clean up Manchester's watersheds



Urban ponds sometimes fall prey to illegal tire dumping. Courtesy photo.

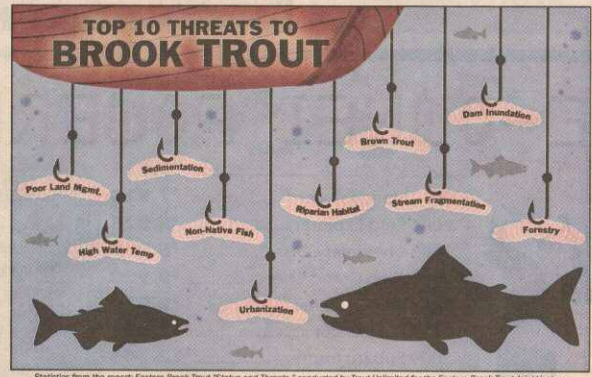
By Rebecca Fishow
rfishow@hippypress.com

What do urban ponds offer cities? There are the obvious recreational benefits — opportunities for city dwellers to exercise, socialize, pursue hobbies and enjoy a nature quick-fix.

But urban watersheds like Dorris Pond, Nutts Pond and McQuesten Brook in Manchester are also constantly working as funnels, collecting water that runs off the city's impervious surfaces and naturally filtering it before it heads to the Merrimack River.

Each year volunteers haul away more and more bags of trash — but it's not because there's more dumping. Instead, there's been an increase in manpower. Last year, 300 people joined the effort. Since its conception 13 years ago, 697 volunteers have spent 2,394 hours collecting 1,899 bags of trash — and that doesn't include items that have been illegally dumped, like shopping carts and tires.

Most of the trash isn't intentional dumping, Drociak said. The ponds tend to be in commercial areas of the city, and trash gets blown away from dumpsters before it settles at the water. Common items include cigarette butts, plastic straws, aluminum cans, plastic



Statistics from the report: Eastern Brook Trout "Status and Threats," conducted by Trout Unlimited for the Eastern Brook Trout Joint Venture

"When you look at how few natural places exist in a place like Manchester, we should be focusing more on restoring and keeping them."

At the heart of the proposed restoration efforts is the eastern brook trout. Wild eastern brook trout typically grow to 6 to 8 inches in length and can be held in the palm of your hand. Once widespread in New England, wild brook trout are extremely rare today, typically only found in clean, well-oxygenated mountain streams and deep, clean northern lakes and ponds. (New Hampshire Fish and Game stocks waterbodies throughout the state with brook trout, brown trout and rainbow trout from state hatcheries for anglers.)

That's why it was so surprising New Hampshire Fish and Game was able to verify the presence of wild eastern brook trout a few years ago in McQuesten Brook. The fish weren't just living and reproducing there; they were thriving. They still are, but conditions in the brook are clouding the trout's future, Fish and Game officials said. The brook is dammed in three places, including the two dams in the pond, which is on the state's list of impaired waters.

McQuesten Brook begins in agricultural land in Bedford and flows through residen-

Workers drain ponds, remove dam to make way for McQuesten Brook

by a cold spring.

Ironically, a long section of the stream is flowing through an underground pipe, which shades the water from the harsh summer sun, allowing it to stay cool. Typ-

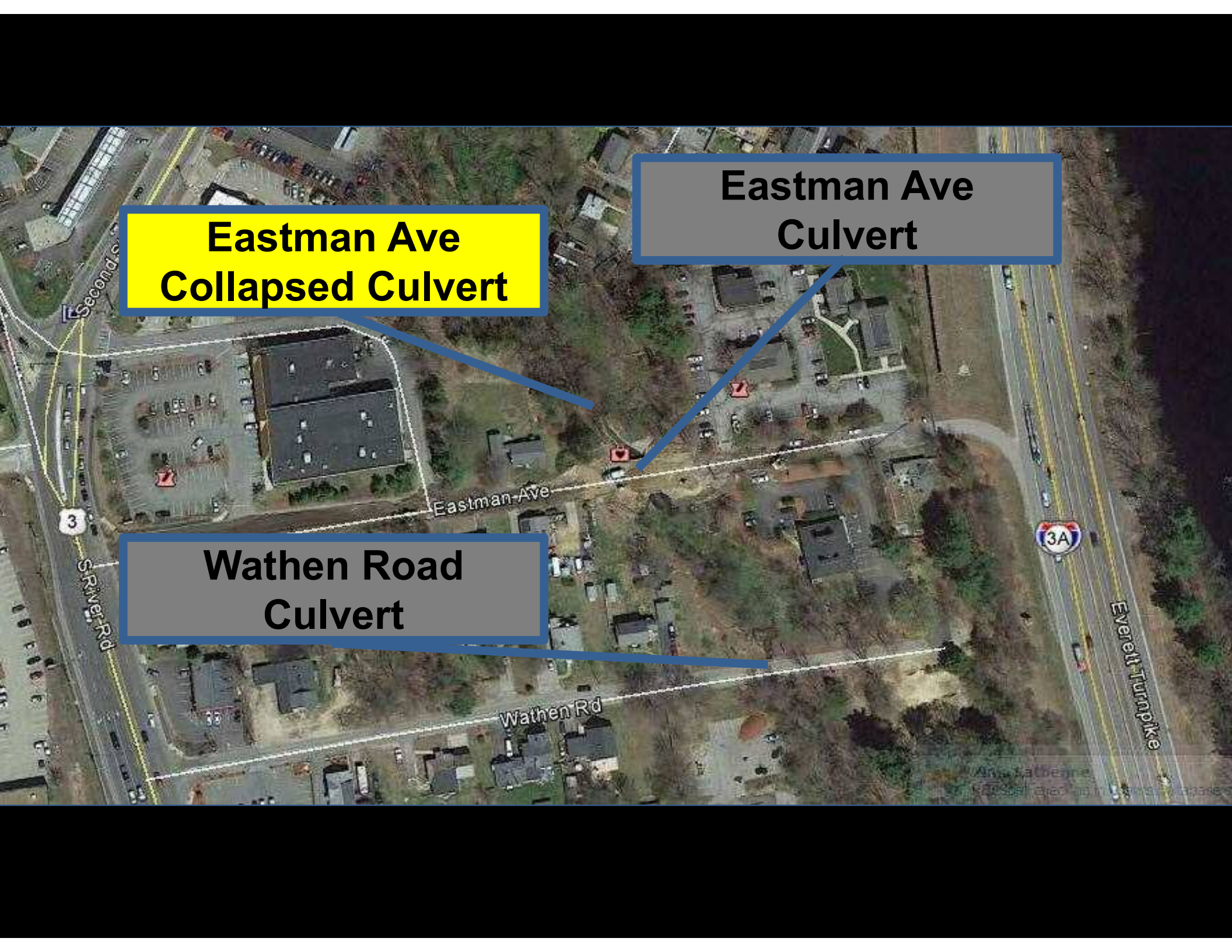




Eastman Avenue
36-inch culvert



Wathen Road
36-inch culvert



**Eastman Ave
Collapsed Culvert**

This is an aerial photograph of a road network. A yellow box with a blue border and a blue arrow points to a specific location on Eastman Ave. A grey box with a blue border and a blue arrow points to another location on Eastman Ave. Another grey box with a blue border and a blue arrow points to a location on Wathen Rd. The map shows various roads, including Second St, SR River Rd, Eastman Ave, Wathen Rd, and Everett Turnpike. There are also highway shields for 3 and 3A. The area is a mix of residential and commercial buildings, parking lots, and trees.

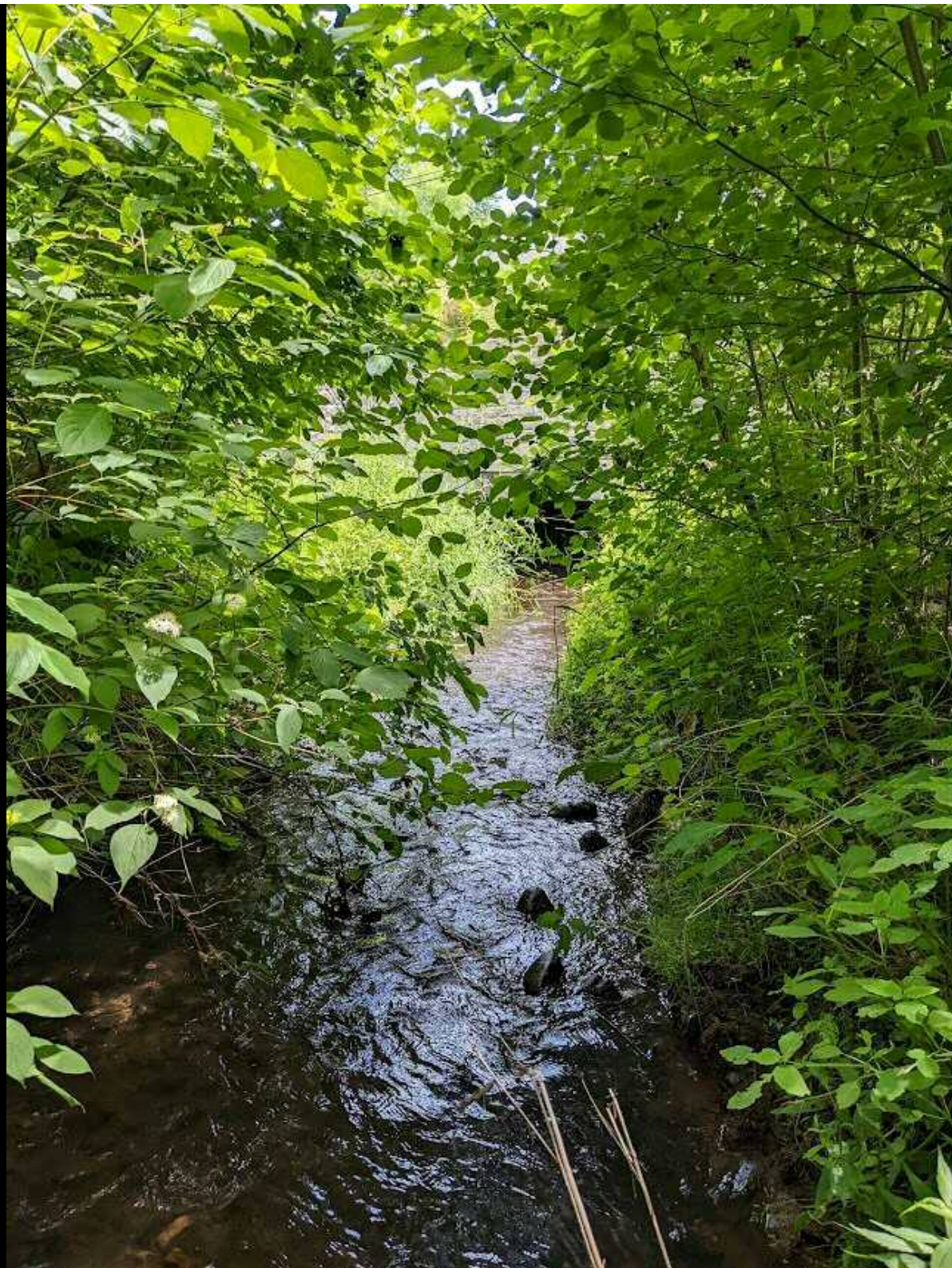
**Eastman Ave
Culvert**

**Wathen Road
Culvert**

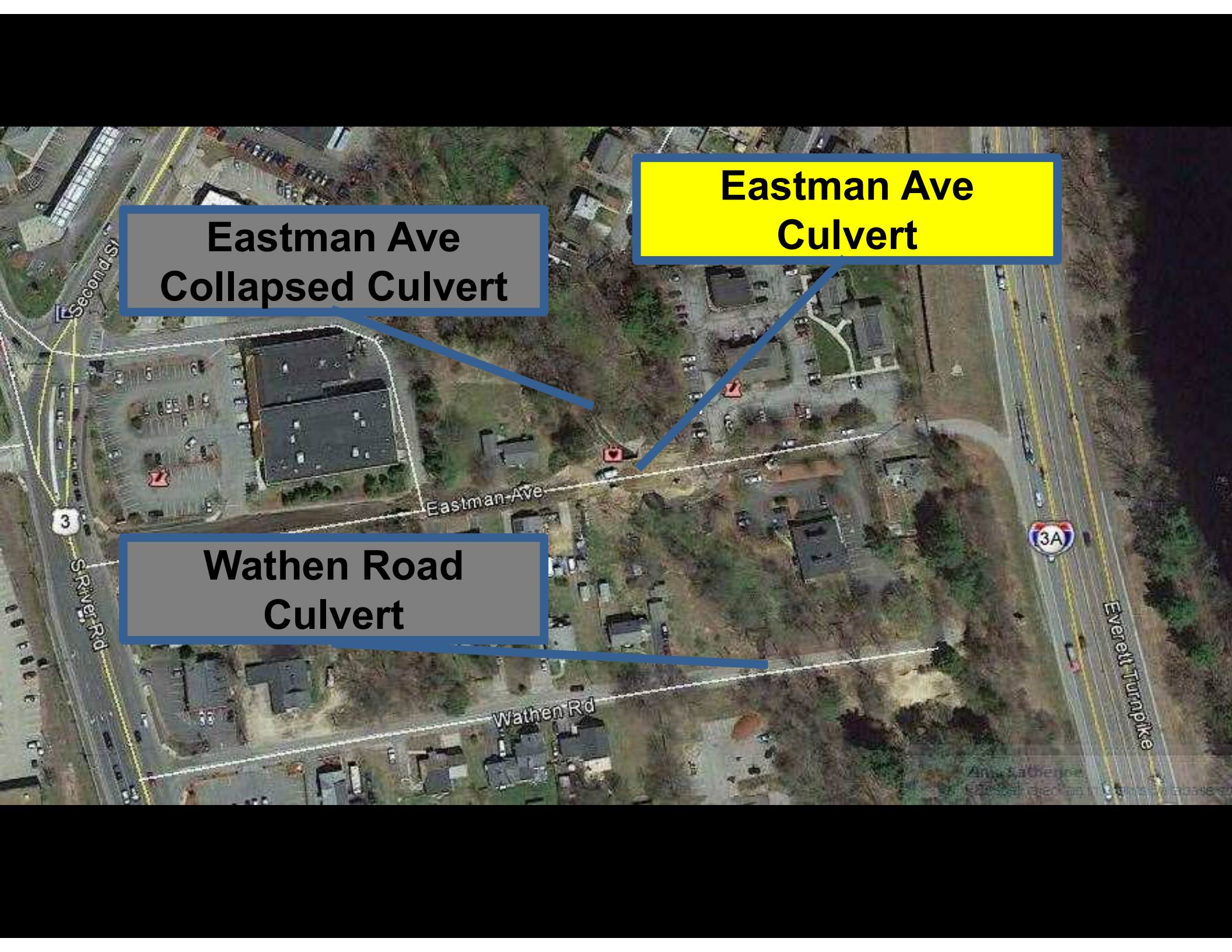
Act IV











**Eastman Ave
Collapsed Culvert**

This is an aerial photograph of a road network. A yellow dashed line traces a path from a grey label box on the left, through a residential area, and then to a yellow label box on the right. Another yellow dashed line runs horizontally across the middle of the image, labeled 'Eastman Ave'. A third yellow dashed line runs vertically on the left side, labeled 'SR River Rd'. A fourth yellow dashed line runs horizontally at the bottom, labeled 'Wathen Rd'. On the right side, a multi-lane highway is labeled 'Everett Turnpike' and has a '3A' shield. A '3' shield is also visible on the left side near the intersection of SR River Rd and Eastman Ave. The area is a mix of residential houses, trees, and parking lots.

**Eastman Ave
Culvert**

**Wathen Road
Culvert**

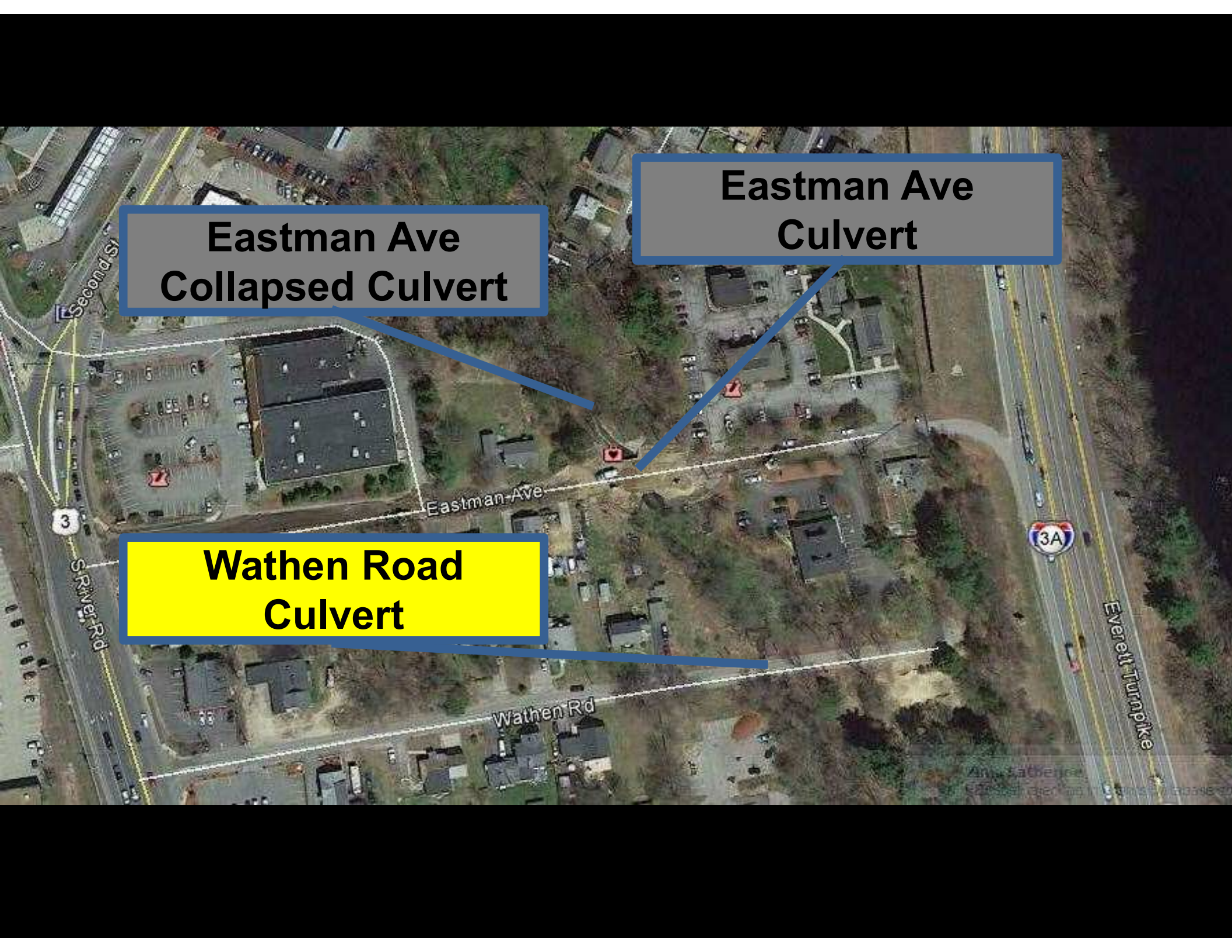


2016



© 2016 Google





**Eastman Ave
Collapsed Culvert**

This aerial map shows a road network. A yellow dashed line traces a path from the 'Eastman Ave Collapsed Culvert' label, through a residential area, to the 'Wathen Road Culvert' label. Another yellow dashed line connects the 'Eastman Ave Culvert' label to a point on Eastman Ave. The map includes labels for 'Second St', 'SRiver Rd', 'Eastman Ave', 'Wathen Rd', and 'Everett Turnpike'. A highway shield for '3A' is visible on the turnpike. A small red icon is located near the intersection of Eastman Ave and Wathen Rd.

**Eastman Ave
Culvert**

**Wathen Road
Culvert**

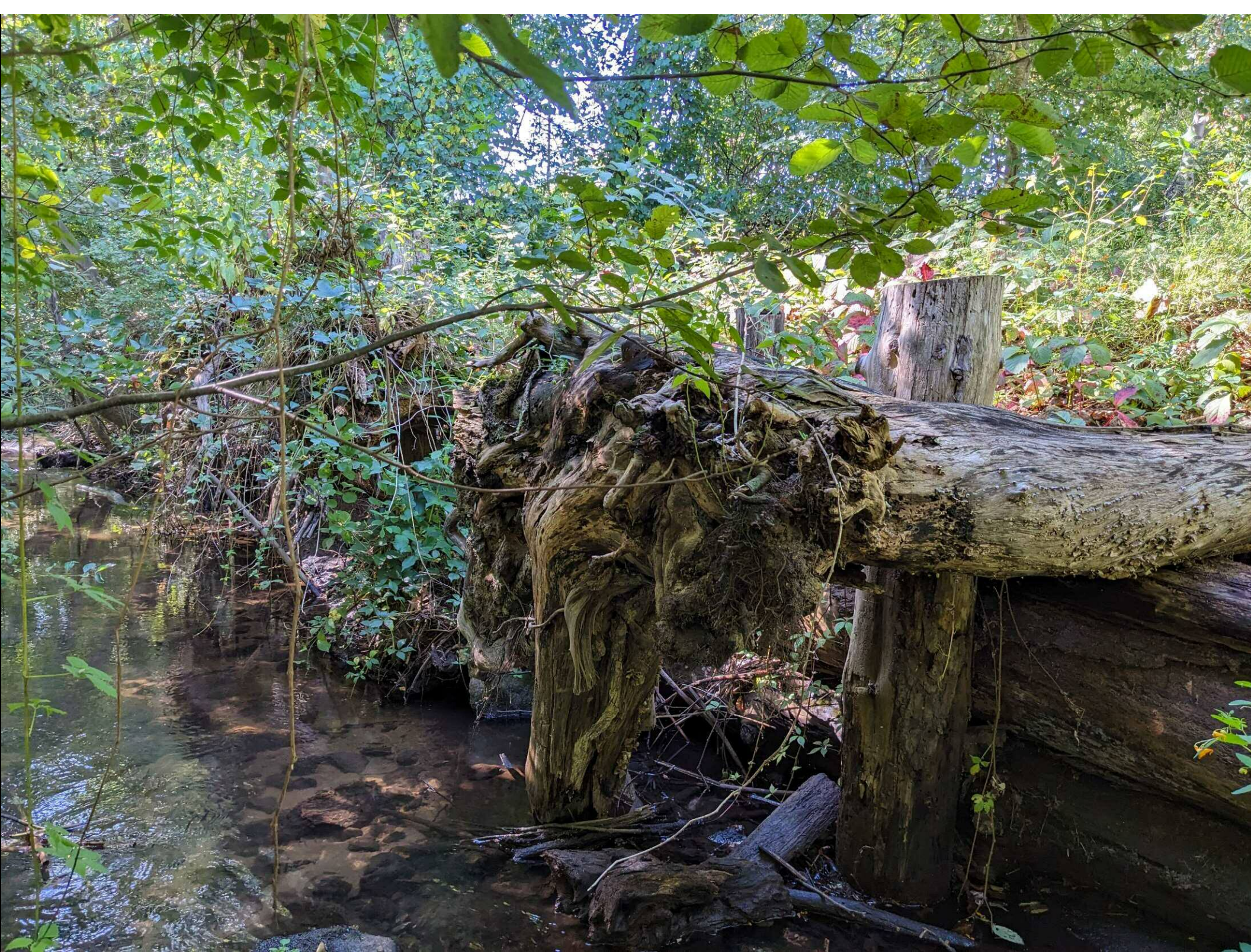
3A

Everett Turnpike

Wathen Rd



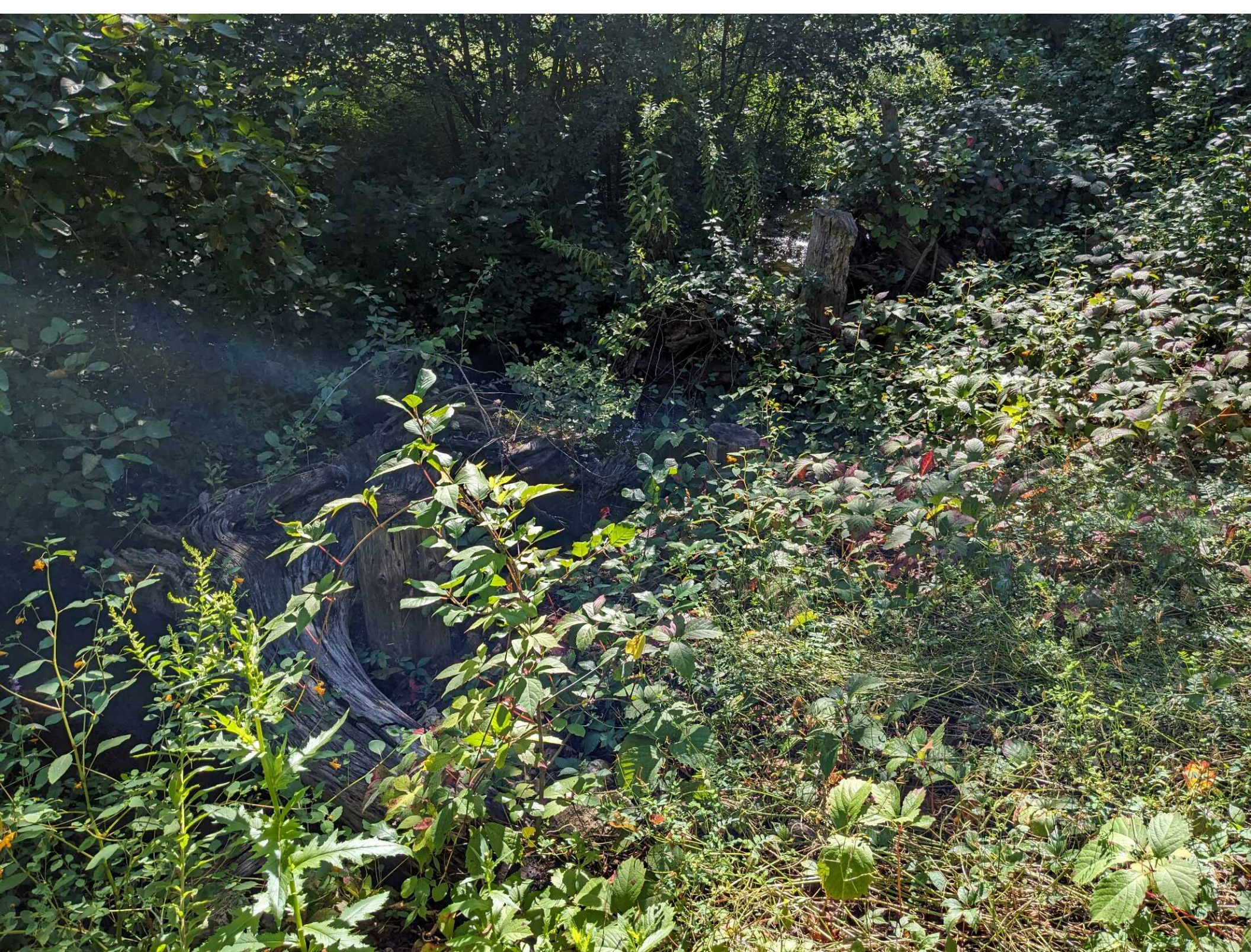




















NONPOINT SOURCE SUCCESS STORY

New Hampshire

McQuesten Brook Restoration Protects Native Brook Trout

Waterbody Improved

McQuesten Brook runs through highly urbanized areas. Despite the stressors associated with that setting, the brook hosts a

robust population of native eastern brook trout to fish passage threatened the survivability of Clean Water Act (CWA) section 303(d) list of in New Hampshire Rivers Council (Council) coordinated the *McQuesten Brook Geomorphic Assessment* bioengineered bank stabilization, floodplain re daylighting that restored natural channel geom Hampshire Department of Environmental Serv Brook from the 2018 CWA section 303(d) list of

Problem

In 2010, NHDES listed a segment of McQuesten Brook (assessment unit NHRIV700060803-16), a tributary to the Merrimack River, located in Bedford and Manchester, New Hampshire, for failure to support aquatic life integrity due to insufficient DO concentration. The brook did not meet the state standard of 5.0 milligrams per liter (mg/L). A sequence of open and closed channels and four fish passage barriers restricted the movement of brook trout and contributed to the DO impairment in this highly urbanized, 564-acre watershed (Figure 1).

Story Highlights

NHDES awarded the Council a CWA Section 319 Watershed Assistance Grant to develop the *McQuesten Brook Geomorphic Assessment and Watershed Restoration Plan* in 2013, which ranked culvert improvements as the second most important structural recommendation in the watershed. These obstructions included: (1) an undersized culvert that carried the brook under a road and served only one household while constricting the brook and restricting aquatic organism passage; (2) another undersized culvert built with enough road fill to meet NHDES' definition of a dam; and (3) a collapsed stone culvert that completely blocked the channel and rerouted McQuesten Brook.



in place by felled trees. They seeded and planted the area to minimize erosion. The brook was diverted, and the culvert was removed in sections. Crews restored the bed with rounded cobble, and they stabilized the

anks with bioengineered gravel bars and e of logs, stone, and root wads. They ed a log and stone crib with integrated he new terminus of Wathen Road. The is a parallel water main and a new detention basin and its overflow outlet.

one block north of Wathen Road, ok was constricted, the Town of Bedford nderized 36-inch culvert at Eastman 15-foot open-bottom bridge. This ed appropriately for aquatic organism conveyance of flood flows up to one and a ill width (Figure 2).

stream of Eastman Avenue, contrac- remnants of a collapsed stream rk restored stream channel dimen- nd fish passage along a reach of eviously supported little or no fish ction was completed in July 2016. veral obsolete dams were removed ort increased aquatic organism out the watershed and connected the sites with upstream reaches, including , which (at that time) was also on the (d) list due to low DO. McQuesten drained, and the area is now a channel.

three fish passage impediments ished a more natural flow regime f McQuesten Brook, resulting in els and lower water temperatures, healthier and more valuable habitat k trout and other aquatic organisms. work, the DO threshold of 5.0 mg/L wide range of temperatures and r to those present while the brook gure 3). In 2018, NHDES removed this unit from the CWA section 303(d) list ment.

brook trout population surv eys com- Hampshire Fish and Game Department ed that trout size and population eased and are similar to those found ern New Hampshire streams.



Figure 2. A new bridge crosses Eastman Avenue.

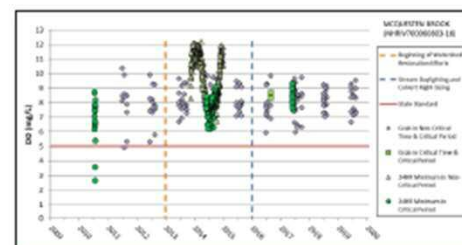


Figure 3. DO levels in McQuesten Brook (2009–2020).

Partners and Funding

The Council's McQuesten Brook restoration plan and its initiative to partner with the Town of Bedford were the driving forces behind the daylighting project at Wathen Road. When the Town agreed to exceed the scope of their capital improvement plan at this site, the Council secured multiple grant resources and engaged a fluvial geomorphologist for specialized project design and construction oversight.

Funding provided in part by Watershed Assistance Grant Funds from NHDES, with \$50,000 in CWA section 319 funds from the U.S. Environmental Protection Agency awarded to the Council, who served as project manager. Other funds included \$345,000 in NHDES Wetland Bureau Aquatic Resource Mitigation Funds; \$482,504 in matching funds from the Town of Bedford's Capital Improvement Program, including engineering and construction costs; and another \$181,785 in matching funds from the Council, supported by dues, endowments, gifts, and more. Specialized contract work was performed by Field Geology Services and Inter-Fluve, Inc.

Environmental Protection Agency
e of Water
ington, DC

141-F-22-001LL
mber 2022

For additional information contact:

Stephen Landry
New Hampshire Department of Environmental Services
603-271-2969 • stephen.c.landry@des.nh.gov

McQuesten Dam 1

2015

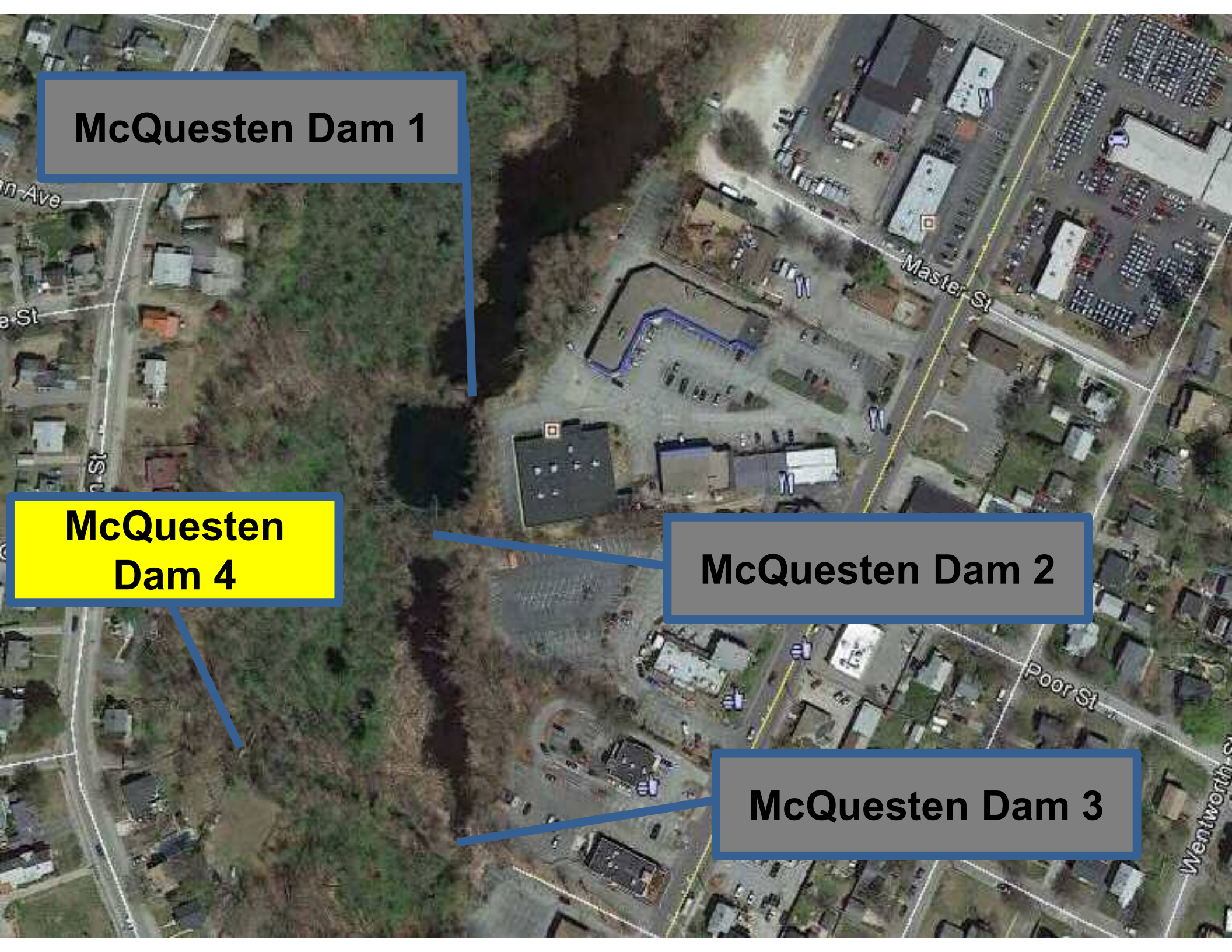
**McQuesten
Dam 4**

McQuesten Dam 2

McQuesten Dam 3





An aerial photograph showing a residential and commercial area. A large, dark, irregularly shaped area of dense vegetation is located in the upper left quadrant. Several streets are visible, including 'Master St' running diagonally from the top right towards the center, and 'Poor St' running horizontally in the lower right. Other streets like 'Wentworth St' and '1st St' are partially visible. Various buildings, parking lots, and trees are scattered throughout the scene. Four callout boxes with blue borders and lines point to specific locations: a grey box labeled 'McQuesten Dam 1' points to the top left; a yellow box labeled 'McQuesten Dam 4' points to the dense vegetation; a grey box labeled 'McQuesten Dam 2' points to a building complex in the center; and a grey box labeled 'McQuesten Dam 3' points to a building in the lower right.

McQuesten Dam 1

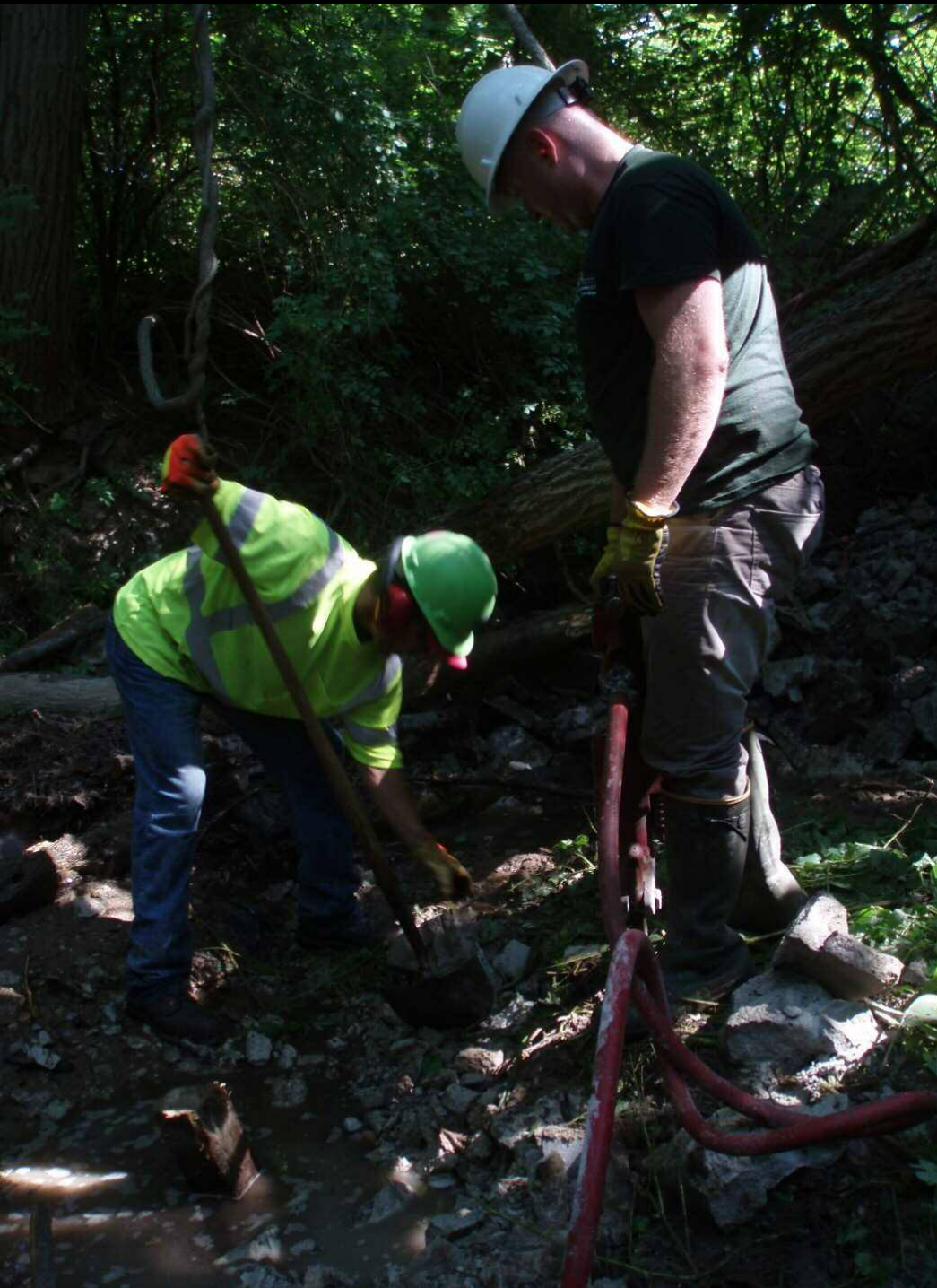
**McQuesten
Dam 4**

McQuesten Dam 2

McQuesten Dam 3















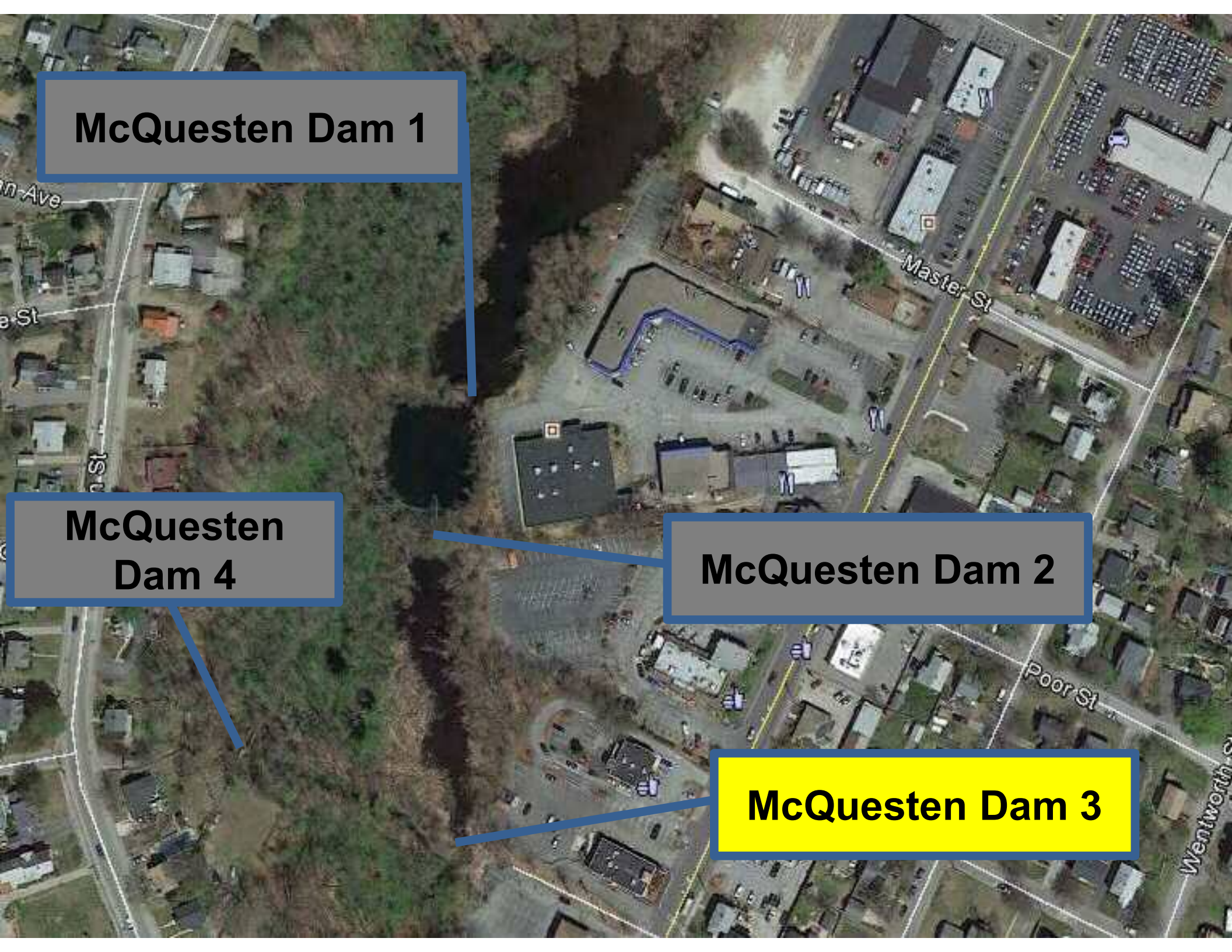












An aerial photograph of a suburban area with several streets and buildings. Four callout boxes are overlaid on the image, pointing to specific locations. The boxes are labeled 'McQuesten Dam 1', 'McQuesten Dam 2', 'McQuesten Dam 3', and 'McQuesten Dam 4'. The background shows a mix of residential houses, commercial buildings, and green spaces. Streets visible include 'Master St', 'Poor St', 'Wentworth St', '1st St', and '2nd Ave'.

McQuesten Dam 1

**McQuesten
Dam 4**

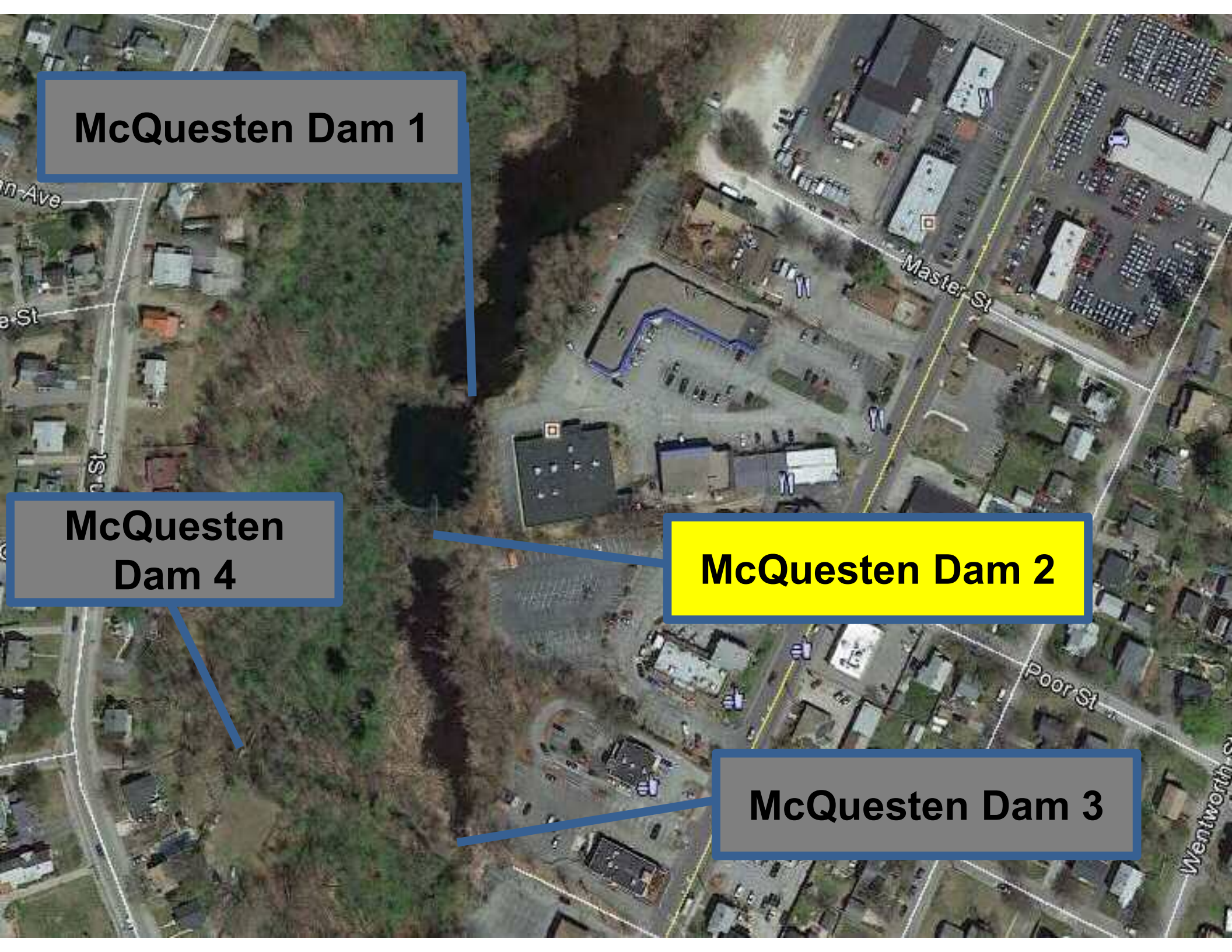
McQuesten Dam 2

McQuesten Dam 3









An aerial photograph of a suburban area with several streets and buildings. Four callout boxes are overlaid on the image, pointing to specific locations. The boxes are labeled 'McQuesten Dam 1', 'McQuesten Dam 2', 'McQuesten Dam 3', and 'McQuesten Dam 4'. The background shows a mix of residential houses, commercial buildings, and green spaces. Streets visible include 'Master St', 'Poor St', and 'Wentworth St'. A large, dark, irregularly shaped area in the center-left is highlighted by a blue line, which is the target of the 'McQuesten Dam 4' callout.

McQuesten Dam 1

**McQuesten
Dam 4**

McQuesten Dam 2

McQuesten Dam 3





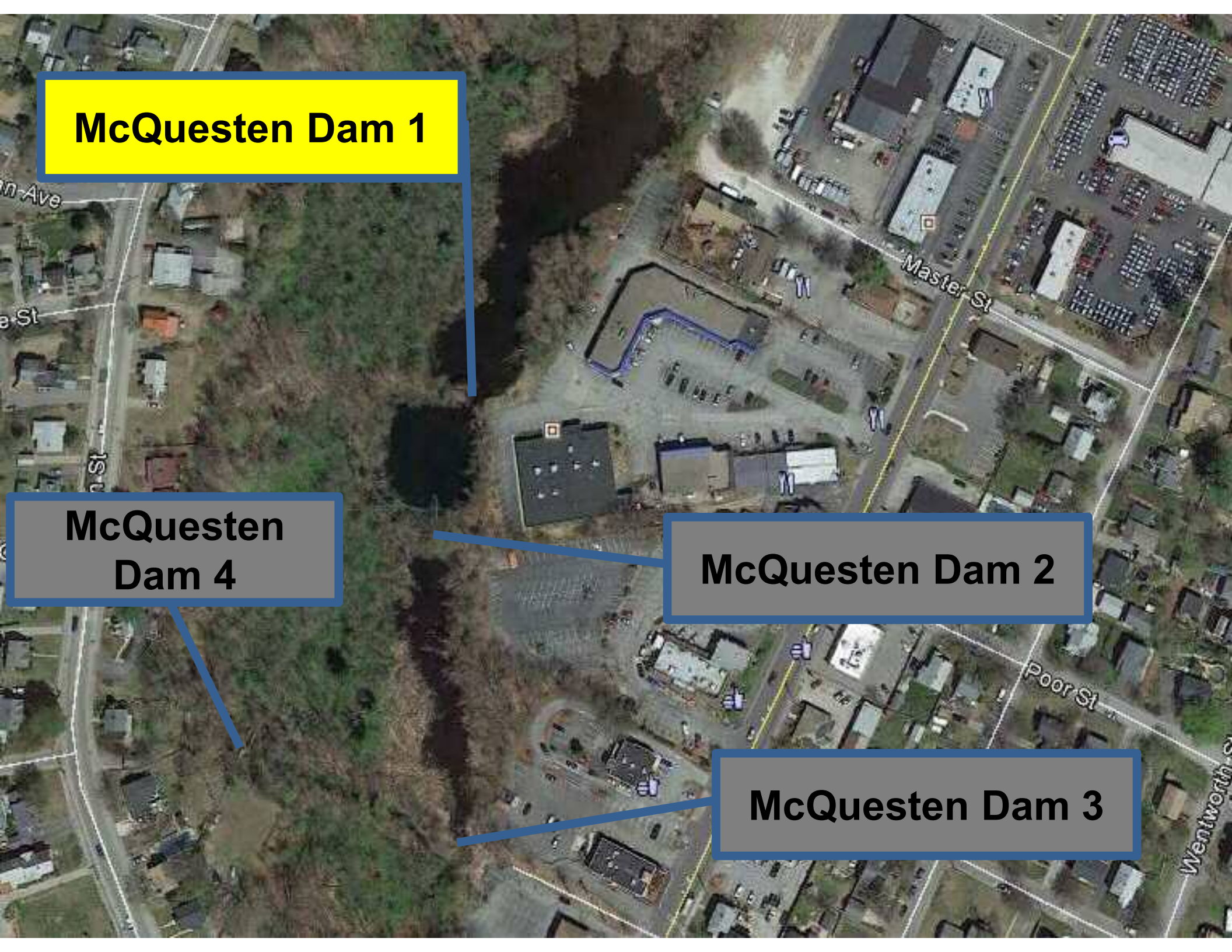










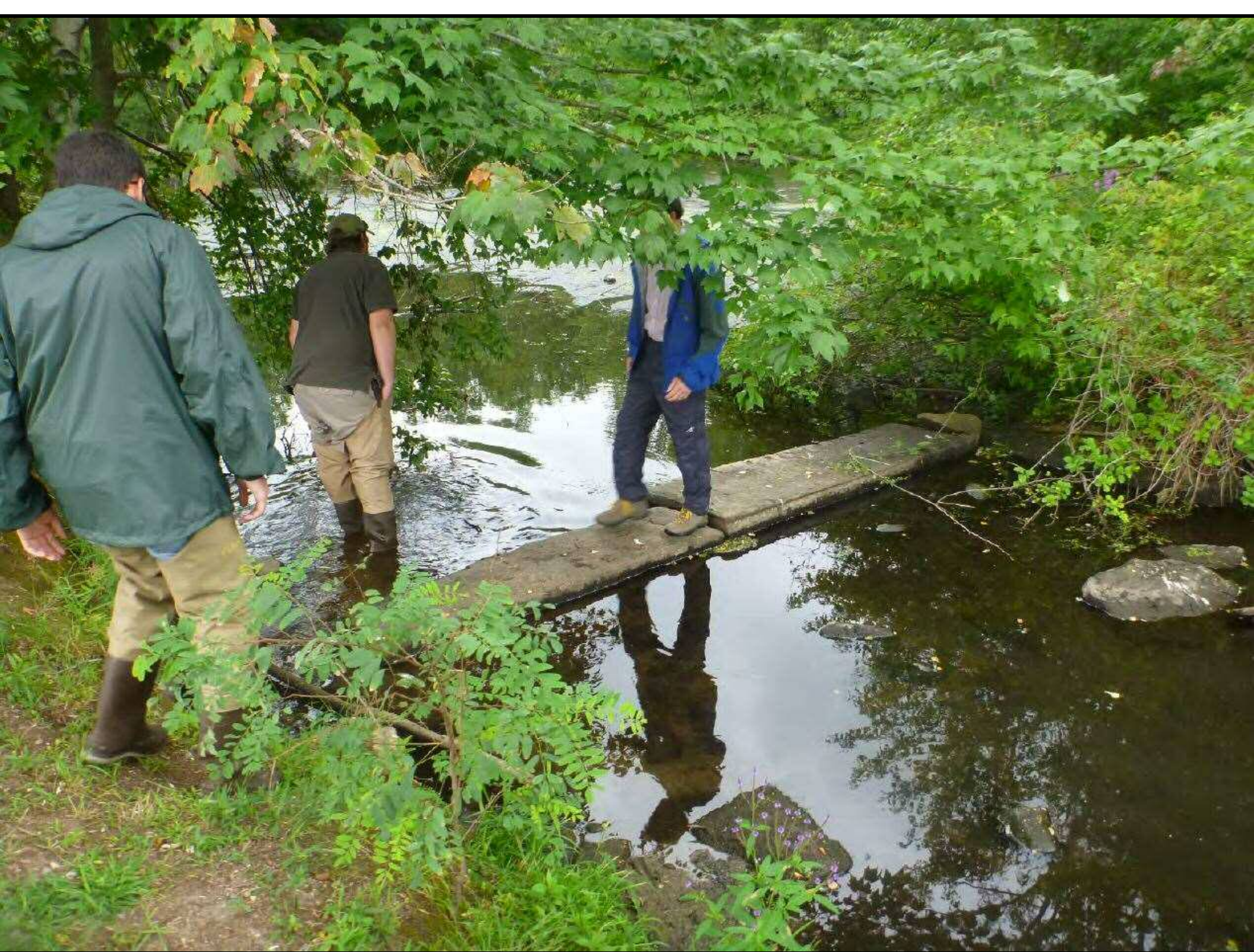
An aerial photograph showing a residential and commercial area. A large, dark, irregularly shaped area of dense vegetation is located in the upper left quadrant. Several streets are visible, including 'Master St' running diagonally from the top right towards the center, and 'Poor St' running horizontally in the lower right. Other streets like 'Wentworth St' and '1st St' are partially visible. There are several buildings, parking lots, and a mix of trees and grass. Four callout boxes with blue borders and lines point to specific locations: 'McQuesten Dam 1' points to the top left, 'McQuesten Dam 2' points to a building in the center, 'McQuesten Dam 3' points to a building in the lower center, and 'McQuesten Dam 4' points to the dense vegetation area.

McQuesten Dam 1

**McQuesten
Dam 4**

McQuesten Dam 2

McQuesten Dam 3

































Meanwhile in McManchester...

Environmental Protection Division

Department of Public Works

[Home](#) » [Departments](#) » [Sewer and Stormwater](#)

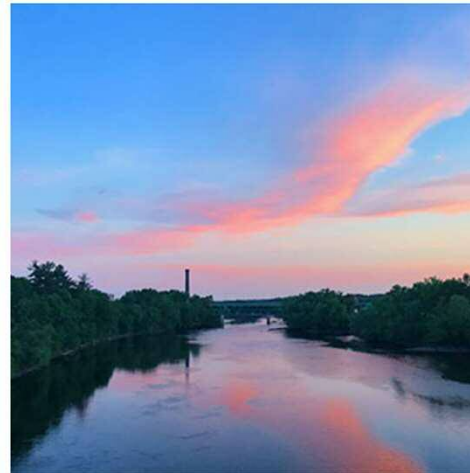
Sewer and Stormwater

The Environmental Protection Division (EPD) of the Department of Public Works, provides services for the collection and treatment of wastewater for Manchester and portions of Bedford, Goffstown and Londonderry.

EPD functions as an enterprise and is fully supported by user fees and grants.

Our mission is to strive to provide the highest quality services at the most competitive costs while maintaining all permit requirements in accordance with Federal and State requirements.

The Division consists of 44 full-time employees.













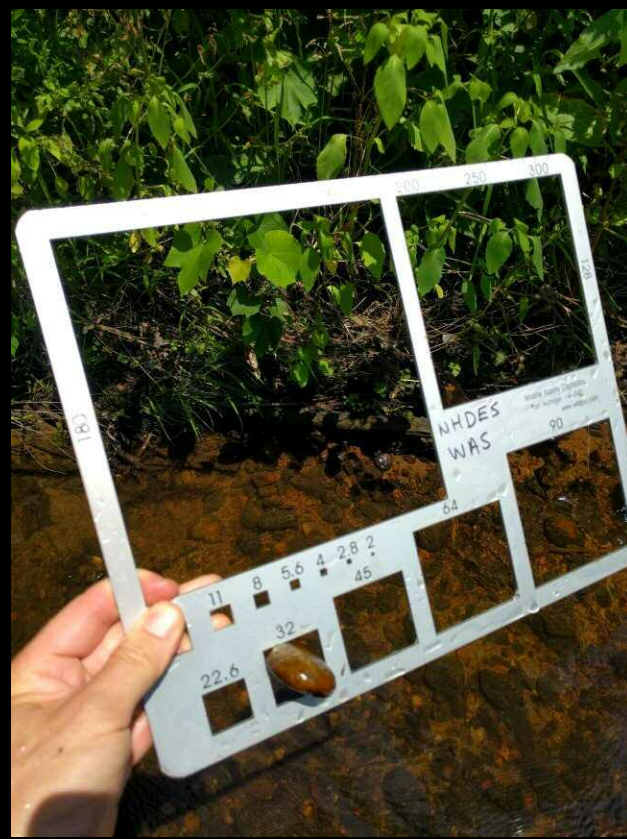


Partnership-powered restoration for \$1.3 million*

* Does not include countless hours of non-federal match provided by the New Hampshire Rivers Council

Item	Cost (\$)
Watershed Restoration Plan	\$82,000
Culverts / Bridge	\$927,000
Dam Removals	\$272,000
TOTAL	\$1.3 million

Source	Grant Amount	Match Amount
US EPA Section 319 NPS (NHDES WAG)	\$236,000	\$492,000
NH Fish and Game Department	\$9,000	\$5,000
Hunt Foundation	\$10,000	\$0
NHDES Aquatic Resource Mitigation	\$410,400	\$124,000
TOTAL	\$665,400	\$621,000



Streamside Aquatic Macroinvertebrate Rapid Bioassessment Surveys

MQB-W2 Wathen Road						
		2011	2015	2018	2020*	2022
Total Order Richness			8	7	8	12
Number of Orders per Tolerance Group	Sensitive		1	2	1	2
	Somewhat-Sensitive		5	3	4	6
	Tolerant		2	2	3	4
Water Quality Score			23.3	22.2	21.4	34.3
Water Quality Range			Fair	Fair	Fair	Good
*2020 - Severe drought						

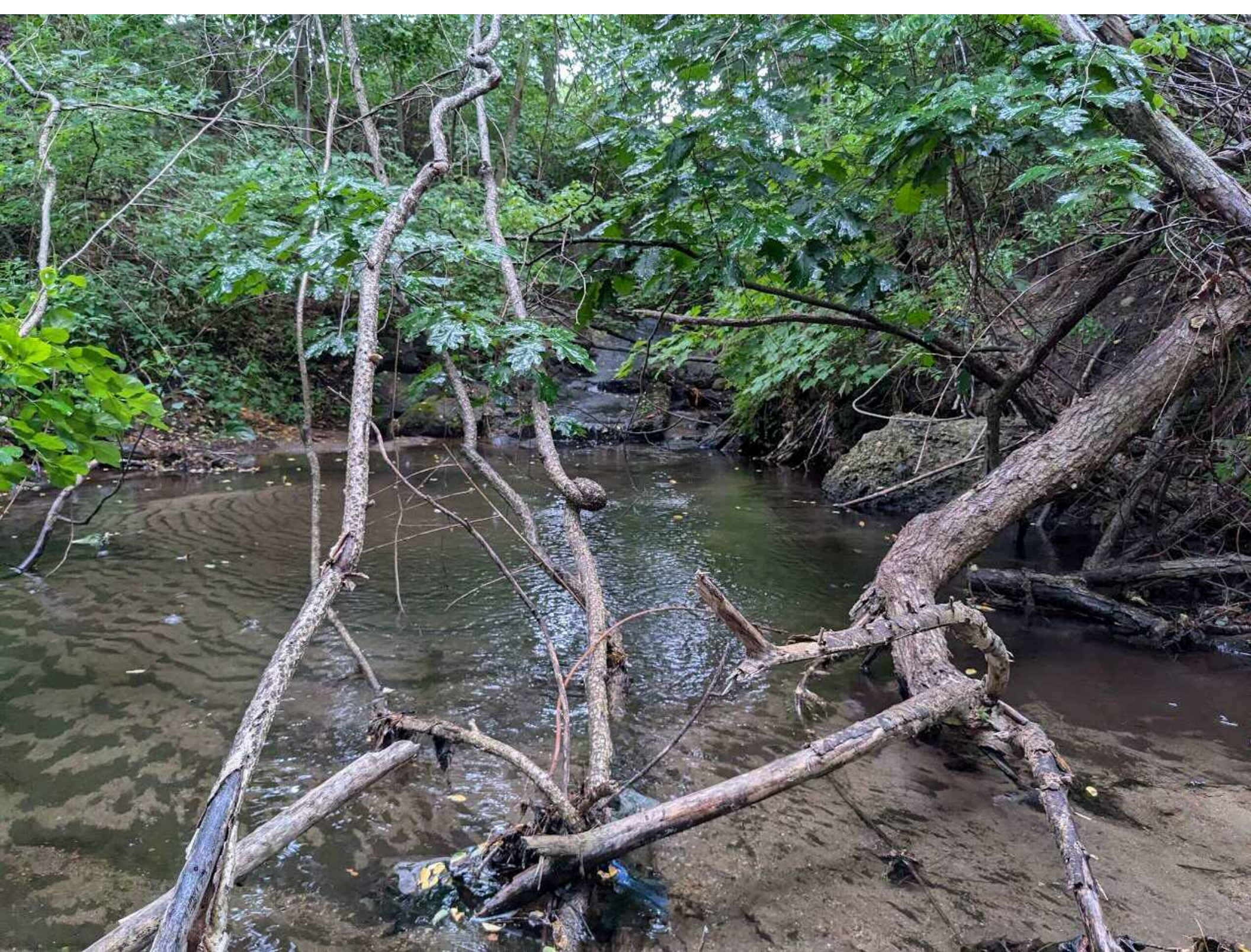


Streamside Aquatic Macroinvertebrate Rapid Bioassessment Surveys

MQB-E3 Eastman Ave		2011	2015	2018	2020*	2022
Total Order Richness			4	4	11	9
Number of Orders per Tolerance Group	Sensitive		0	1	1	1
	Somewhat-Sensitive		3	2	6	5
	Tolerant		1	1	4	3
Water Quality Score			10.9	12.8	29.2	29.8
Water Quality Range			Poor	Poor	Fair	Good

*2020 - Severe drought but a more than doubling of the biosurvey score for this site. An impressive post-restoration score.





DRAFT McQuesten Sediment Study: Post-Field Update



To: Michele Tremblay, New Hampshire Rivers Council

From: Keith Kantack, PG, Inter-Fluve

Date: October 11, 2024

Project: McQuesten Brook Sediment Study



Figure 8. The inlet to the longest piped section of McQuesten Brook. The pipe is set 1-2 feet below the current bed elevation and drives incision in the reach upstream.



Figure 7. Typical channel condition in the reach downstream of Curtis Lane. Sand was actively moving downstream at the time the picture was taken.



Figure 6. Typical channel condition in the Curtis Lane reach. Sand was actively moving downstream at the time the picture was taken. Raw banks and dangling exposed roots indicate active bank erosion.













Fin



Thine
McQuestens?

**NEW HAMPSHIRE
RIVERS COUNCIL**
Rivers Make New Hampshire!

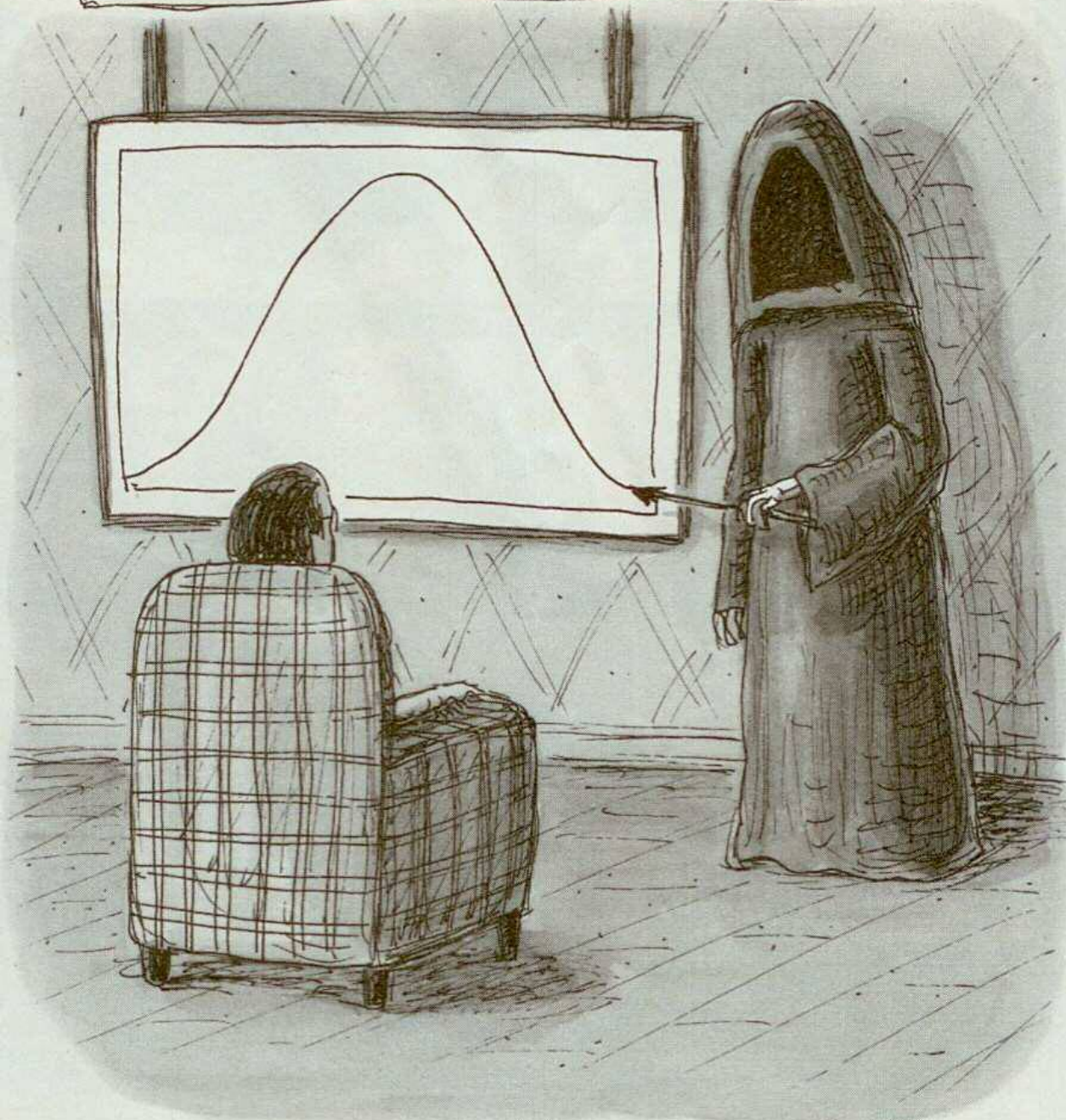
Michele L. Tremblay
NHRivers.org



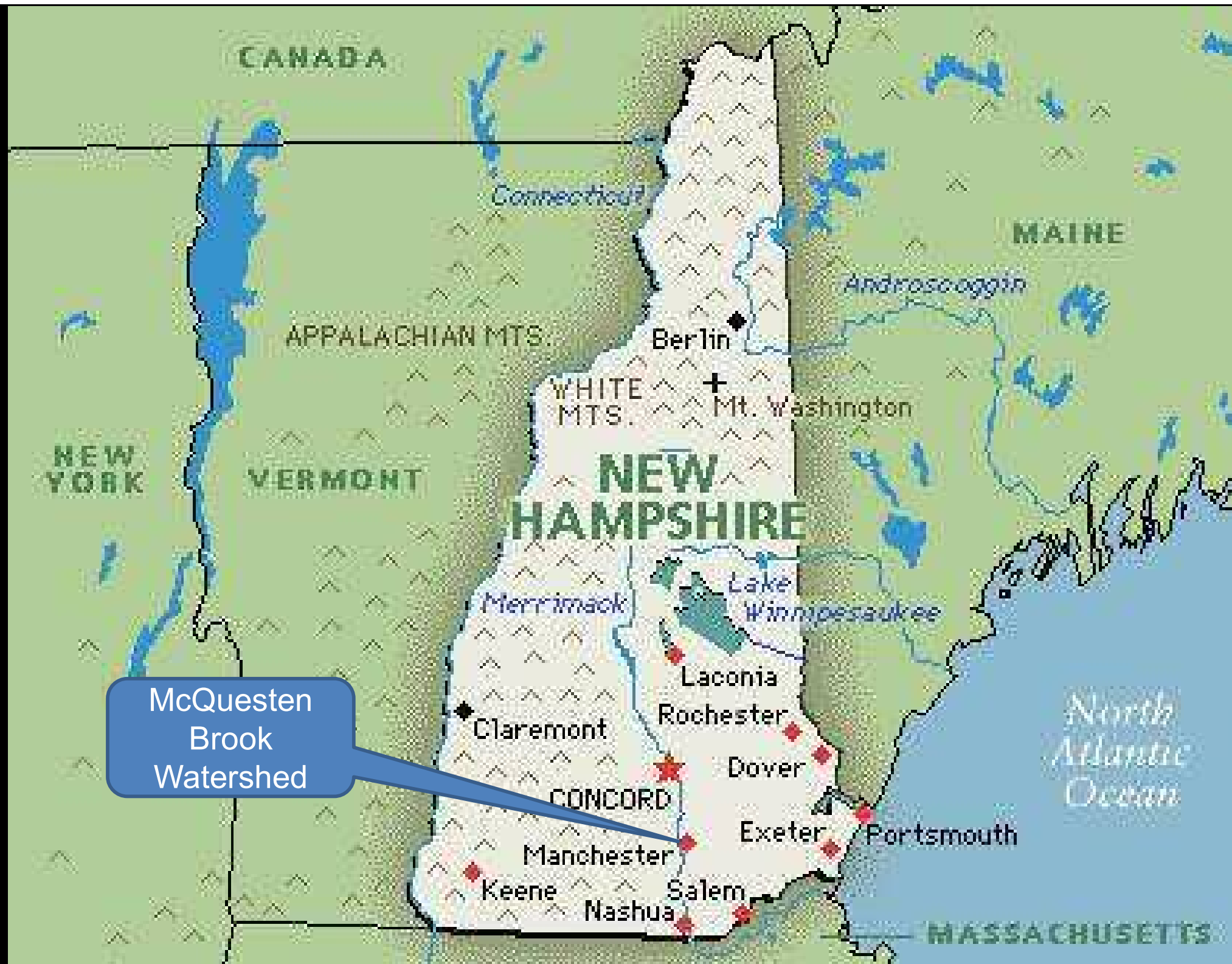
Stephen C. Landry
DES.NH.gov



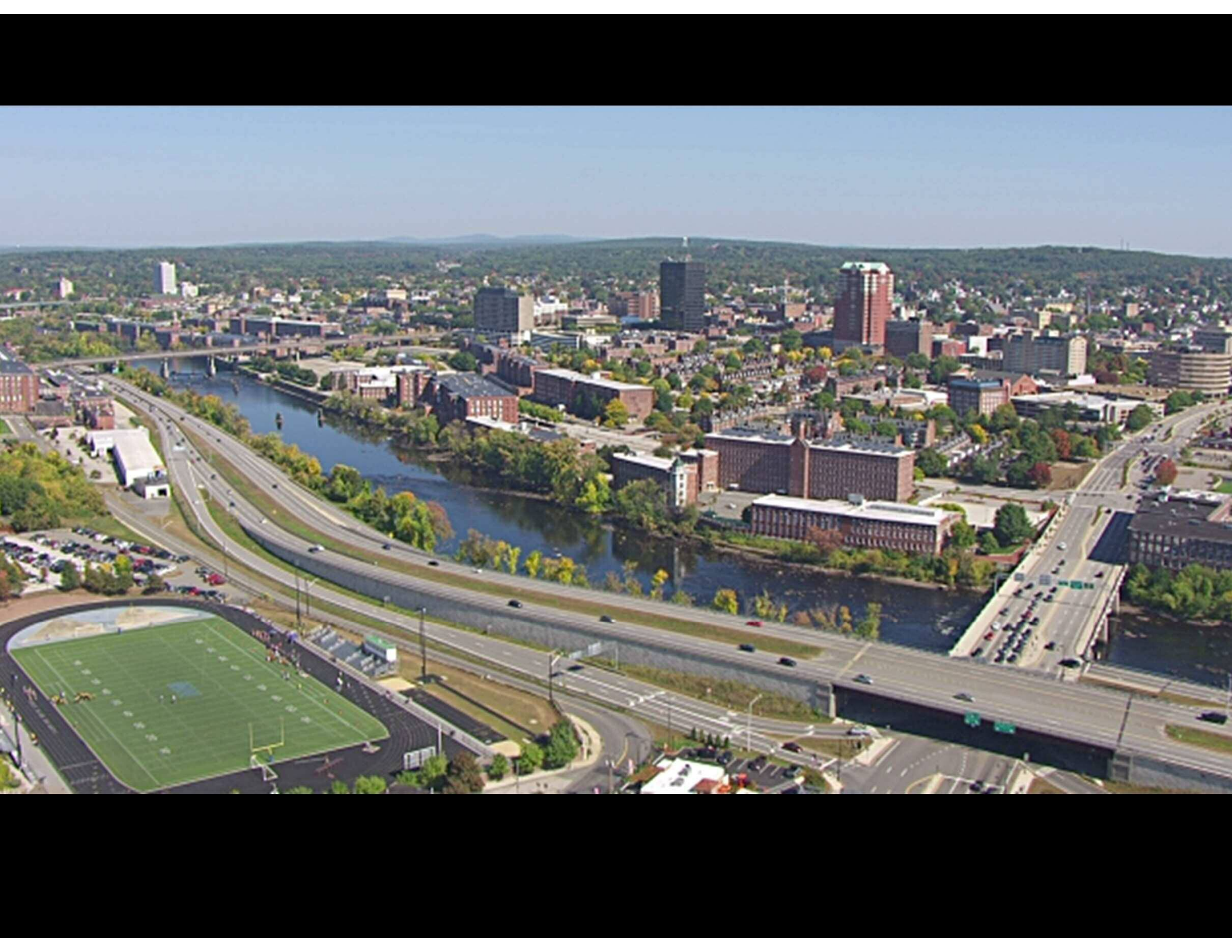
THE LAST POWERPOINT

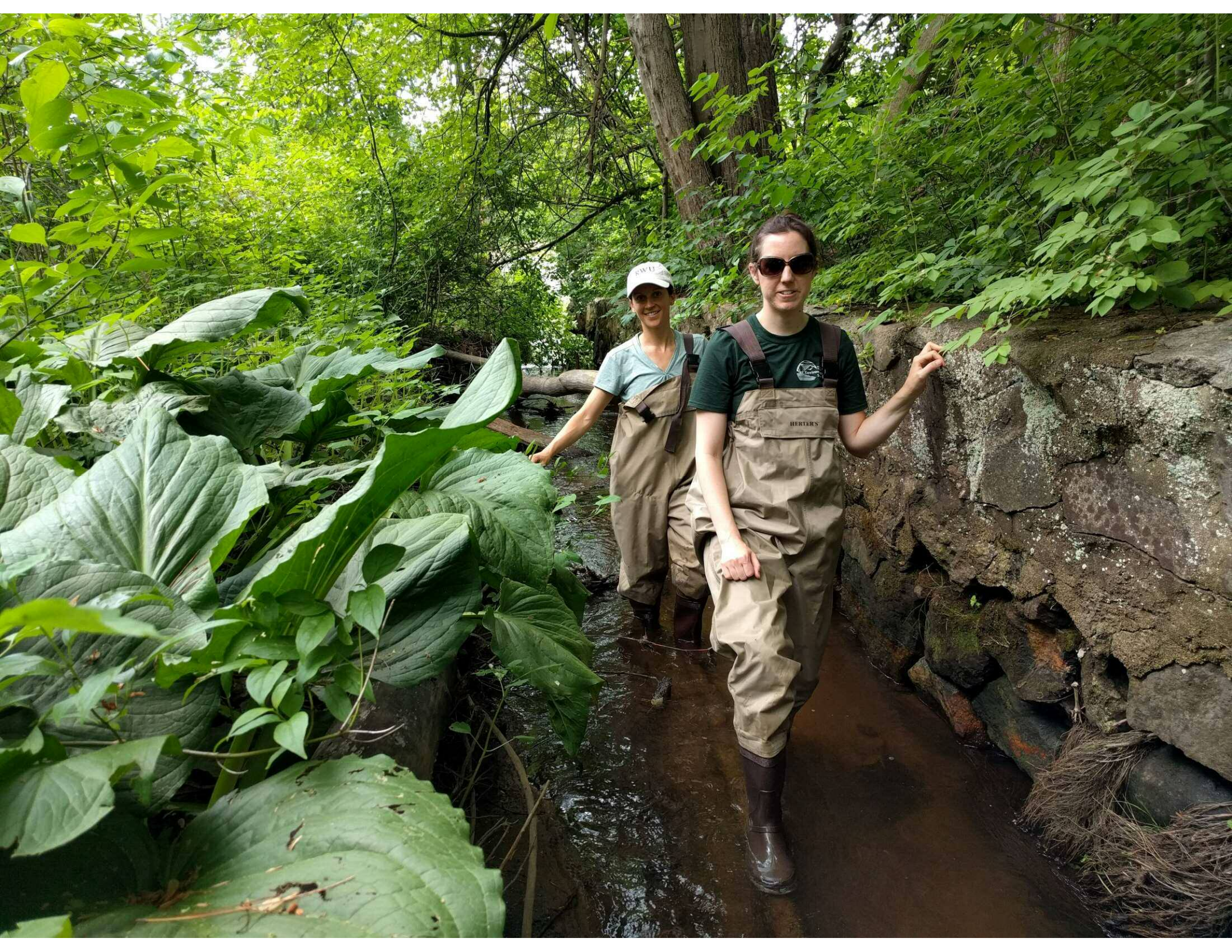


R. C. W.



McQuesten
Brook
Watershed



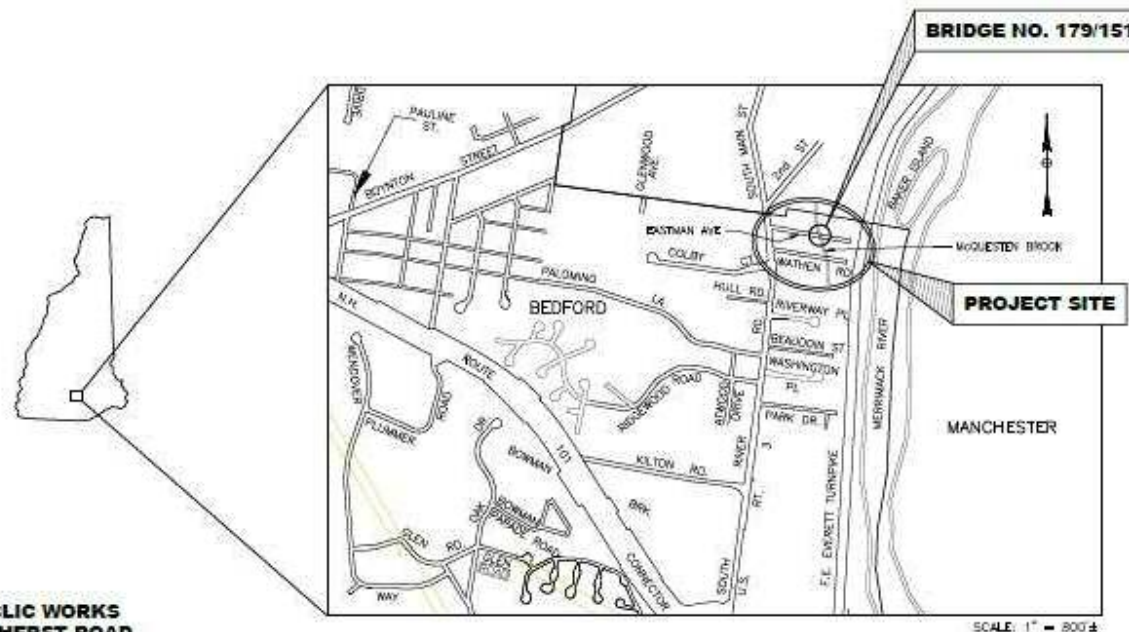


CONSTRUCTION PLANS MCQUESTEN BROOK RESTORATION

BRIDGE NO. 179/151 BEDFORD, NEW HAMPSHIRE

DRAWING INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PROJECT NOTES
3	OVERVIEW PLAN
EASTMAN AVENUE	
4	ROADWAY TYPICAL SECTIONS AND DETAILS
5	ROADWAY PLAN AND PROFILE
6	GENERAL PLAN AND ELEVATION
7	SITE PLAN AND SURVEY LAYOUT
8	BORING LOGS (SHEET 1 OF 2)
9	BORING LOGS (SHEET 2 OF 2)
10	ABUTMENT 1 MASONRY (WEST)
11	ABUTMENT 2 MASONRY (EAST)
12	BRIDGE TYPICAL SECTIONS
13	PRECAST DETAILS (SHEET 1 OF 2)
14	PRECAST DETAILS (SHEET 2 OF 2)
WATHEN ROAD	
15	ROADWAY TYPICAL SECTIONS AND DETAILS
16	ROADWAY PLAN AND PROFILE
17	DRAINAGE DETAILS
18	MISCELLANEOUS DETAILS
19	MCQUESTEN BROOK PLAN AND PROFILE
20	EROSION CONTROL DETAILS
21	EROSION CONTROL NOTES
22	ROADWAY CROSS SECTIONS (SHEET 1 OF 2)
23	ROADWAY CROSS SECTIONS (SHEET 2 OF 2)



BEDFORD PUBLIC WORKS
24 NORTH AMHERST ROAD
BEDFORD, NH 03110



BEDFORD PROJECT # 07-2014

Prepared By:



PLAN SET NO. _____



How many dams* are in New Hampshire?

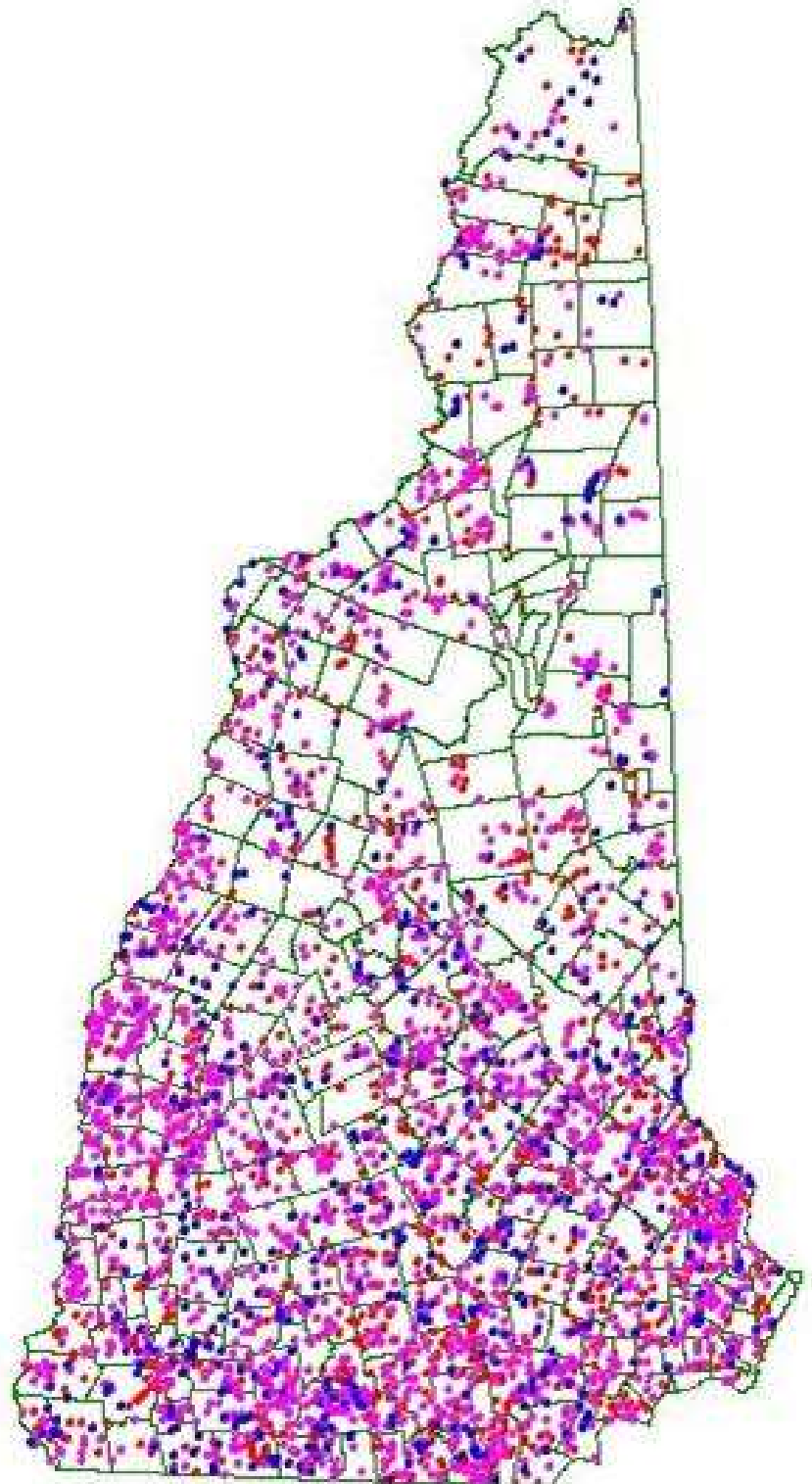
National Inventory of Dams (NID)
= 641

NID + remaining active dams
= 2,621

NID + active + inactive dams =
5,212

Source: NH Dam Bureau Database

* 75% privately owned



NHDES Watershed Assistance Grants: Section 319 and 604(b)

NEW HAMPSHIRE NONPOINT SOURCE MANAGEMENT PROGRAM PLAN

SEPTEMBER 26, 2014



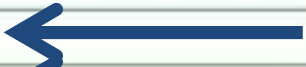
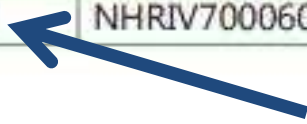
- Created as result of the provisions to Section 319 of the U.S. EPA Clean Water Act
- Nonpoint Source Pollution (NPS) contributes to over 90% of water pollution problems in NH.
- Major Sources of NPS pollutants:
 - Developed lands
 - Septic systems
 - Landscape and turf management
 - Road maintenance activities
 - **Habitat and hydrologic modification**
 - agriculture



Priority dams and barriers for removal must meet the following criteria:

1. The structure impounds or diverts water; 
2. The waterbody for which it is located must be on New Hampshire's 303(d) list, as impaired for at least one of the following parameters:
 - Chlorophyll-a 
 - Dissolved oxygen saturation
 - Dissolved oxygen 
 - Cyanobacteria hepatotoxic microcystins; and

Table 4. Priority Dam and Barriers sites.

WATERBODY NAME	WATERBODY AUID	TOWN
EXETER RIVER – GREAT DAM	NHIMP600030805-04	EXETER
OYSTER RIVER – MILL POND DAM	NHIMP600030902-04	DURHAM
BELLAMY RIVER – SAWYERS MILL DAM POND	NHIMP600030903-02	DOVER
SOUHEGAN RIVER – GOLDMAN DAM	NHIMP700060906-07	MILFORD
ASHUELOT RIVER DAM POND	NHIMP802010301-02	KEENE
TAYLOR RIVER REFUGE POND	NHLAK600031003-02	HAMPTON FALLS
HORSESHOE POND	NHLAK802020202-03	FITZWILLIAM
MCQUESTEN POND - DAM #1 	NHLAK700060803-03	MANCHESTER
MCQUESTEN POND - DAM #2 	NHLAK700060803-03	MANCHESTER
MCQUESTEN BROOK - SOUTH MAIN STREET DAM 	NHRIV700060803-16	MANCHESTER

3. The dam or barrier owner has contacted the DES River Restoration Program and expressed their interest in removal. 





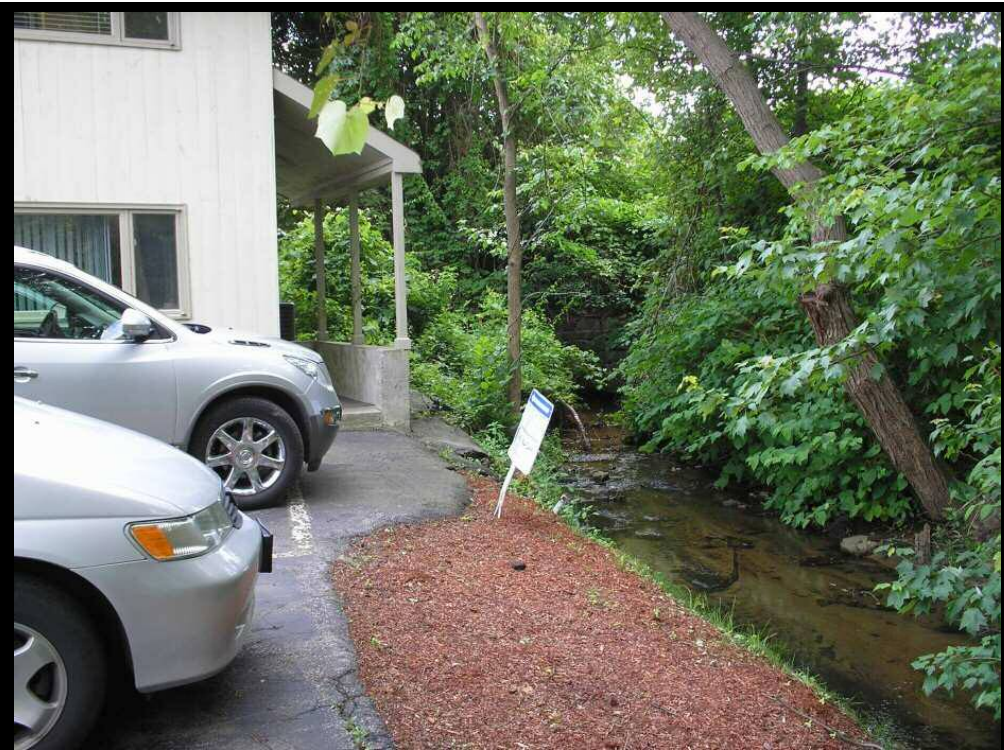












Request for Qualifications

Design, Engineering, and Permitting for the Removal of the McQuesten Pond and McQuesten Brook Dams - Manchester, NH







McDam Removals!







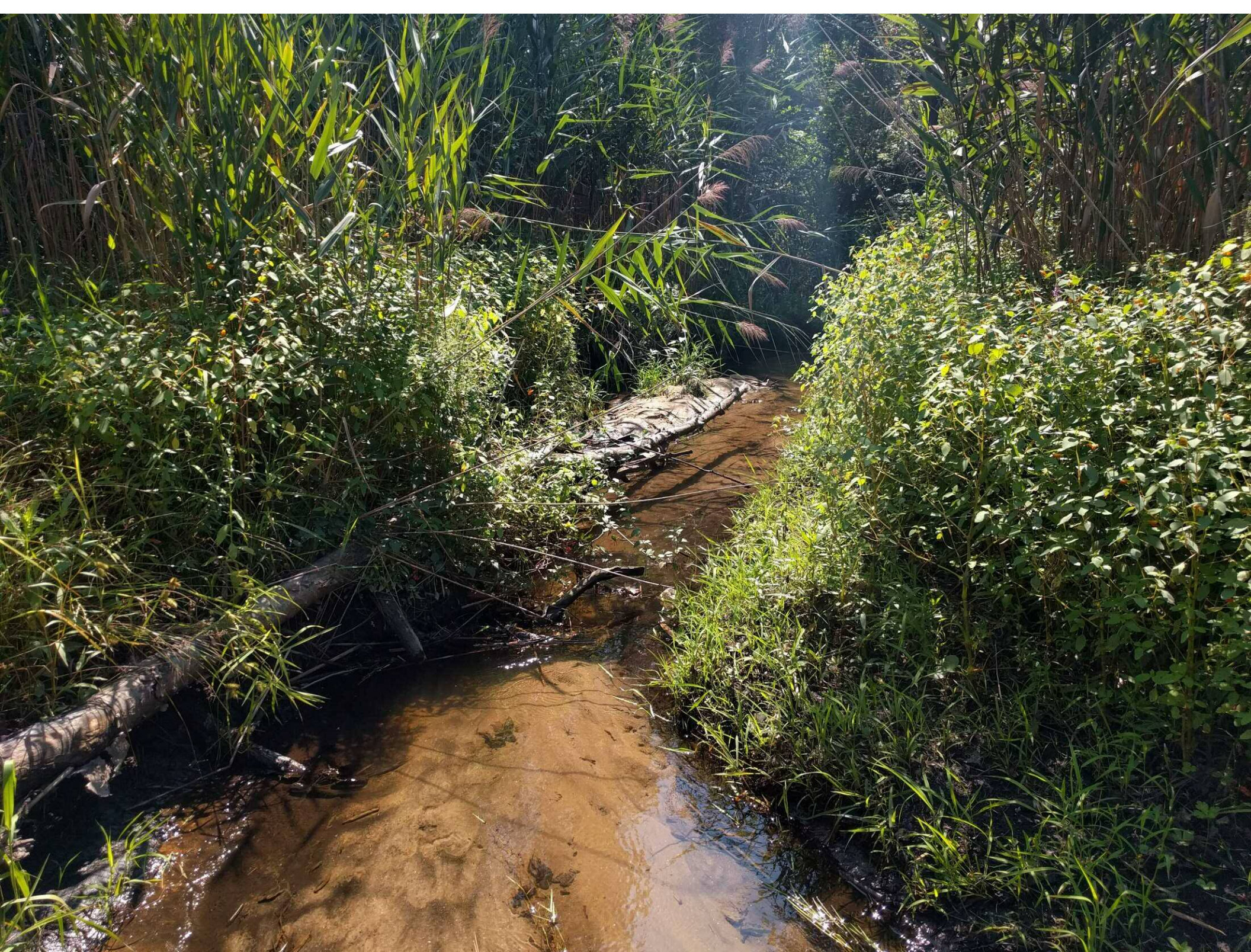


Table 3-5. Culvert Geomorphic Compatibility and AOP Rankings

Road	Segment	Geomorphic Compatibility	AOP	Culvert Type & Dimensions	Percent Bankfull Width	Observations & Measurements
I-293 (Everett Turnpike)	M01A	Mostly Incompatible	No AOP including adult salmonids	48" RCP 220' long	30%	Outlet drop: 18", undermining at outlet (headwall collapsed), stream flow makes sharp bend at inlet, no substrate on culvert bottom, debris jam at inlet
Wathen Road	M02B	Partially Compatible	Reduced AOP	36" RCP 30' long	27%	Culvert slope and low flow velocity greater than channel, low flow depth shallower than channel, no substrate on culvert bottom
Eastman Avenue	M02B	Mostly Incompatible	Reduced AOP	36" RCP 50' long	30%	Stream flow makes sharp bend at inlet, entire length of culvert backwatered at low flow, substrate on culvert bottom throughout
Second Street	M02C	Mostly Compatible	Reduced AOP	66" RCP 210' long	73%	Entire length of culvert back-watered at low flow, substrate >3' thick on culvert bottom throughout







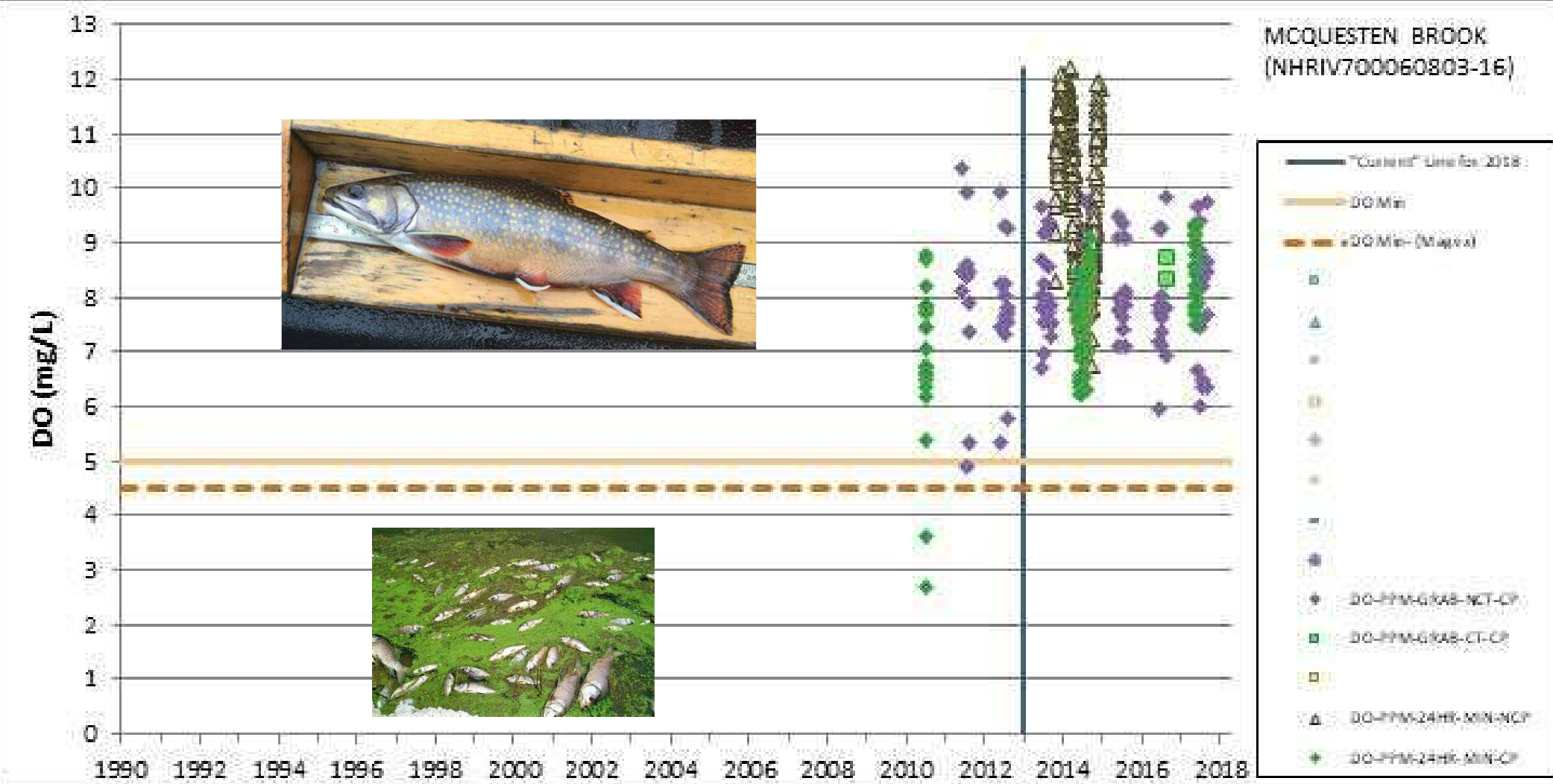




MCQUESTEN BROOK (NHRIV700060803-16)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Town(s) - Primary Town Listed First	2016	2018
MCQUESTEN BROOK	NHRIV700060803-16	Oxygen, Dissolved	BEDFORD, MANCHESTER	5-P	2-G

All of the grab samples and daily minimum logger values (n=526) collected during the current assessment period (2013-2018) were above the dissolved oxygen threshold of 5.0 mg/L. Grab samples and datalogger data was collected at stations 01-MQB, 02-MQB, 03-MQB, 03D-MQB, 04A-MQB, and 05-MQB at a wide range of temperatures 4.1-27.6 degrees C, flows ranging from 0.08 to 18.46 cfs, and 3-day rainfall totals from 0.00 to 4.01 inches. The high dissolved oxygen samples were collected during a wide range of times: during critical period, critical time, and noncritical period and noncritical time. The McQuesten Brook (NHRIV700060803-16) has been moved to 2-G for dissolved oxygen for the aquatic life use support designated use based on data collected in the current assessment period.



JULY 30, 2015



- 1- Cover, Sheet Index, and Vicinity Map
- 2- Existing Conditions, Access and Staging
- 3- Dam Removal Plan and Profile
- 4- Dam Removal Cross Sections
- 5- Dam Removal Cross Sections
- 6- Typical Details
- 7- Planting Plan

AFTER STAKING AND
72 BUSINESS HOURS
BEFORE EXCAVATION

COORDINATES:
LAT: 42°58'09.5"
LONG: 71°28'52.5"
WATERBODY: MCQUESTEN BROOK
TRIBUTARY OF: MERRIMACK RIVER



McQuesten Brook Dam Removal
New Hampshire Rivers Council



COVER, SHEET INDEX, AND VICINITY MAP

SHEET

1 OF 7

