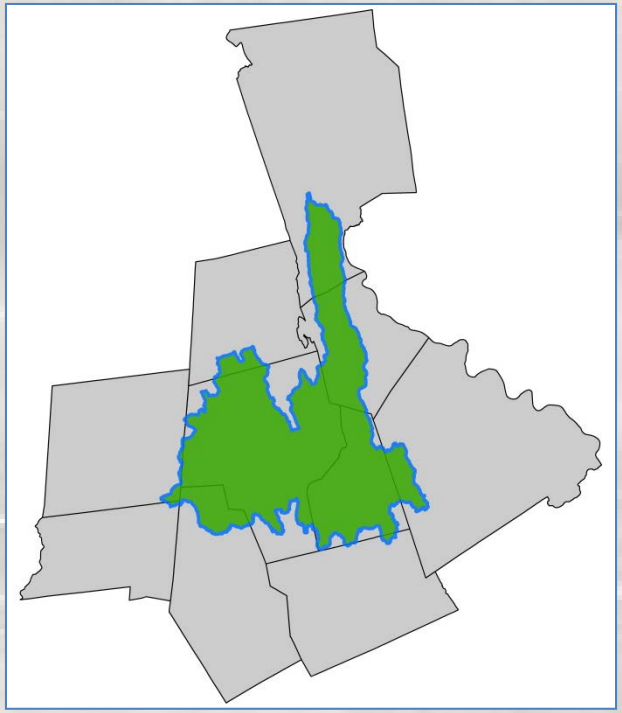
Review of Field Work and GIS Analysis To Date

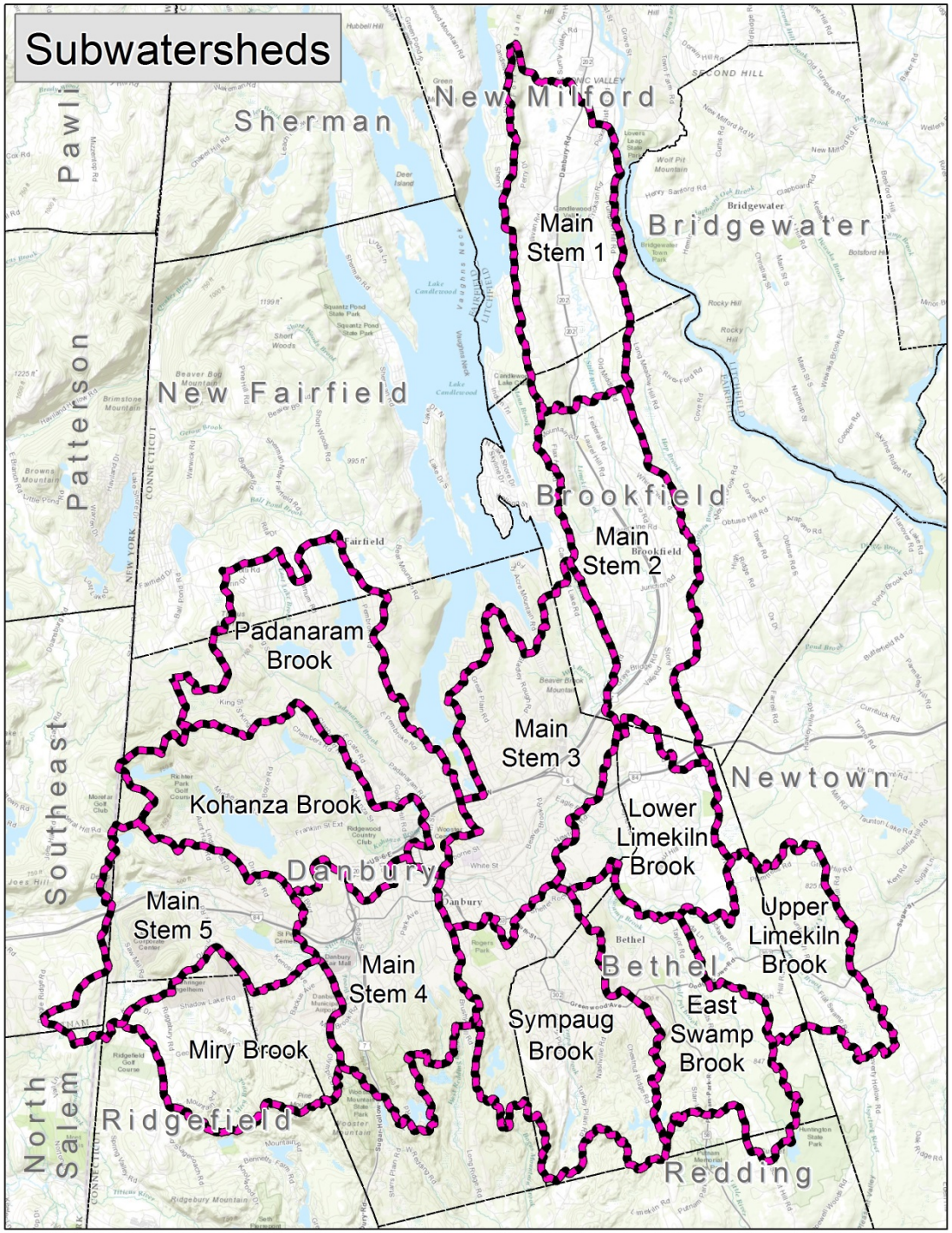


Courteny Morehouse, Housatonic Valley Association

HVA watershed conservation

Subwatersheds

- Still River Watershed divided into 12 subwatersheds

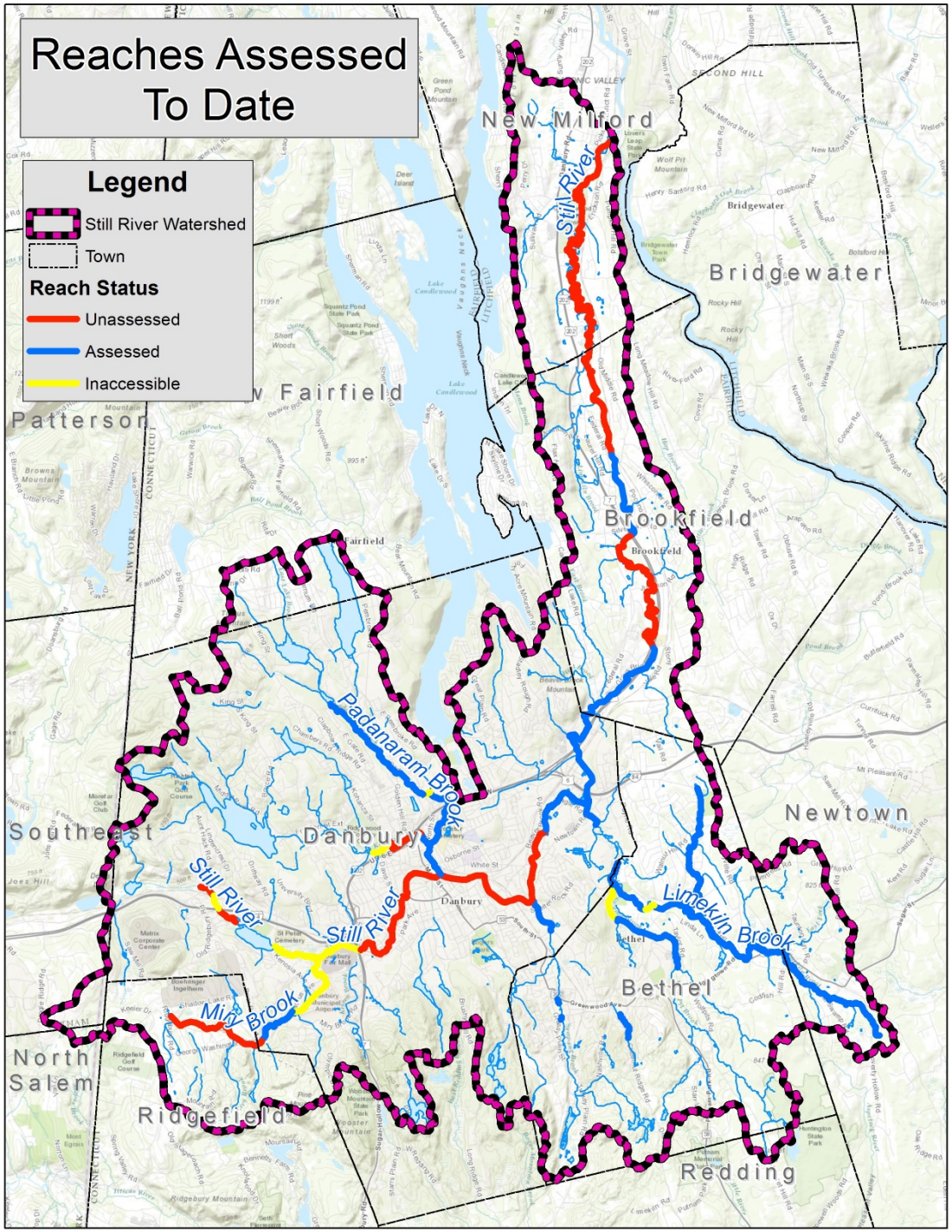


HVA watershed conservation

Status

- Total Miles Assessed: 27
- Total Miles Inaccessible: 4
- Total Miles: 43

- Percent Completed: 64%

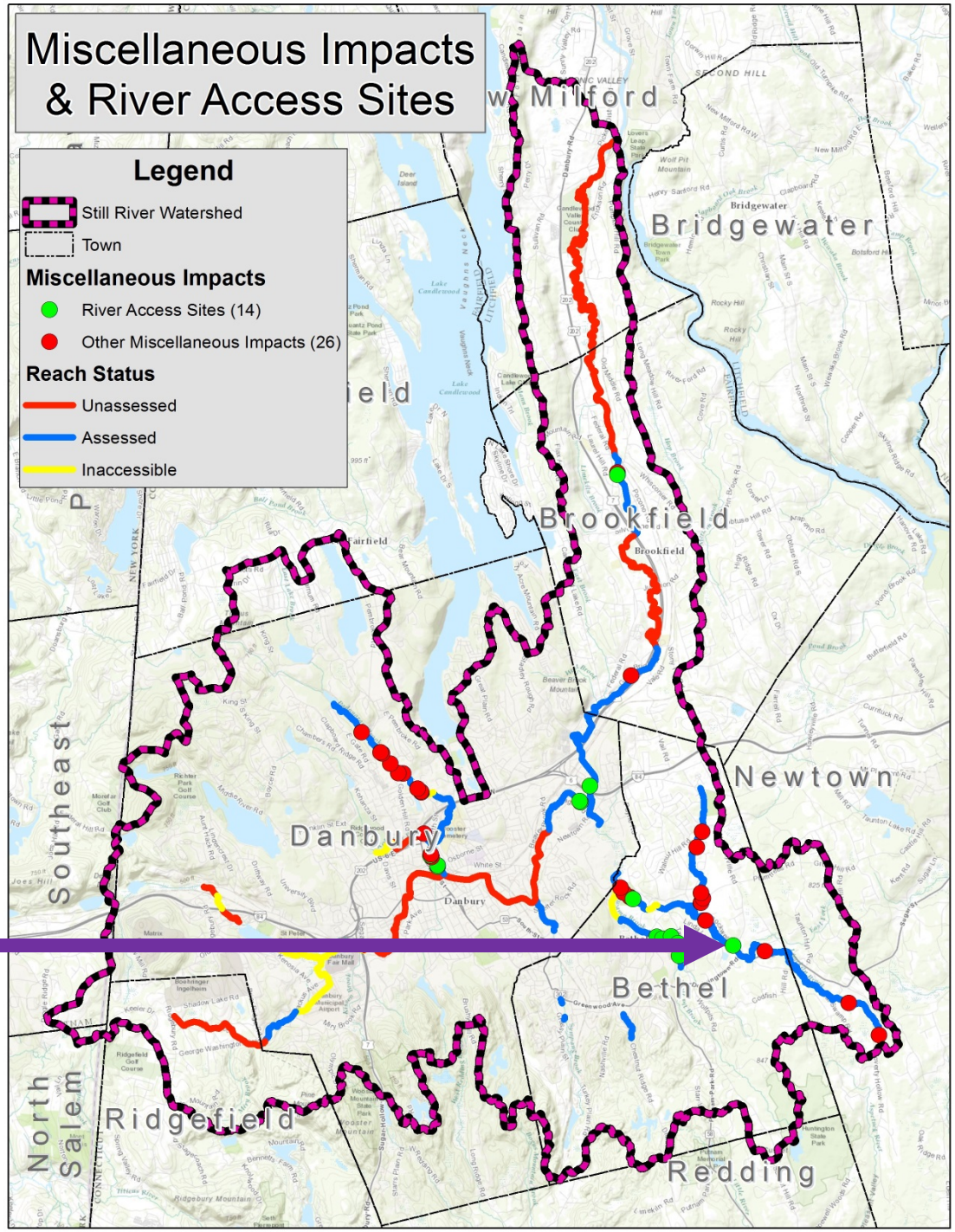


HVA watershed conservation

Miscellaneous and River Access

- Miscellaneous sites: don't fit any other categories
- River access sites:

HVA watershed conservation



Field Work Status

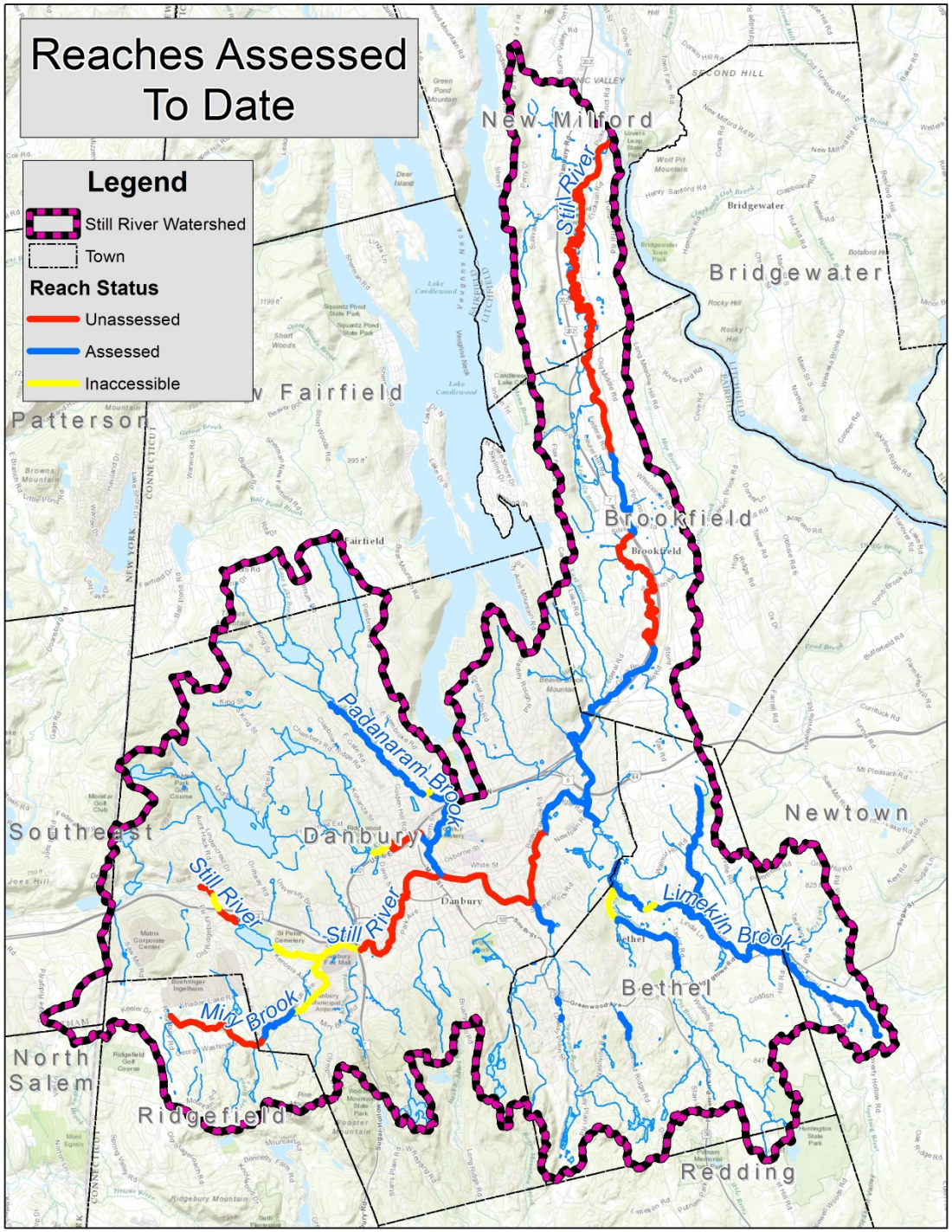
- Stream Assessment Target = 43 miles

•Total Field Assessed: 21miles

- Total Desktop Assessed (Inaccessible in the field): 4 miles

•Total Assessed: 25 miles over 61 stream reaches

- Percent Completed: 58%



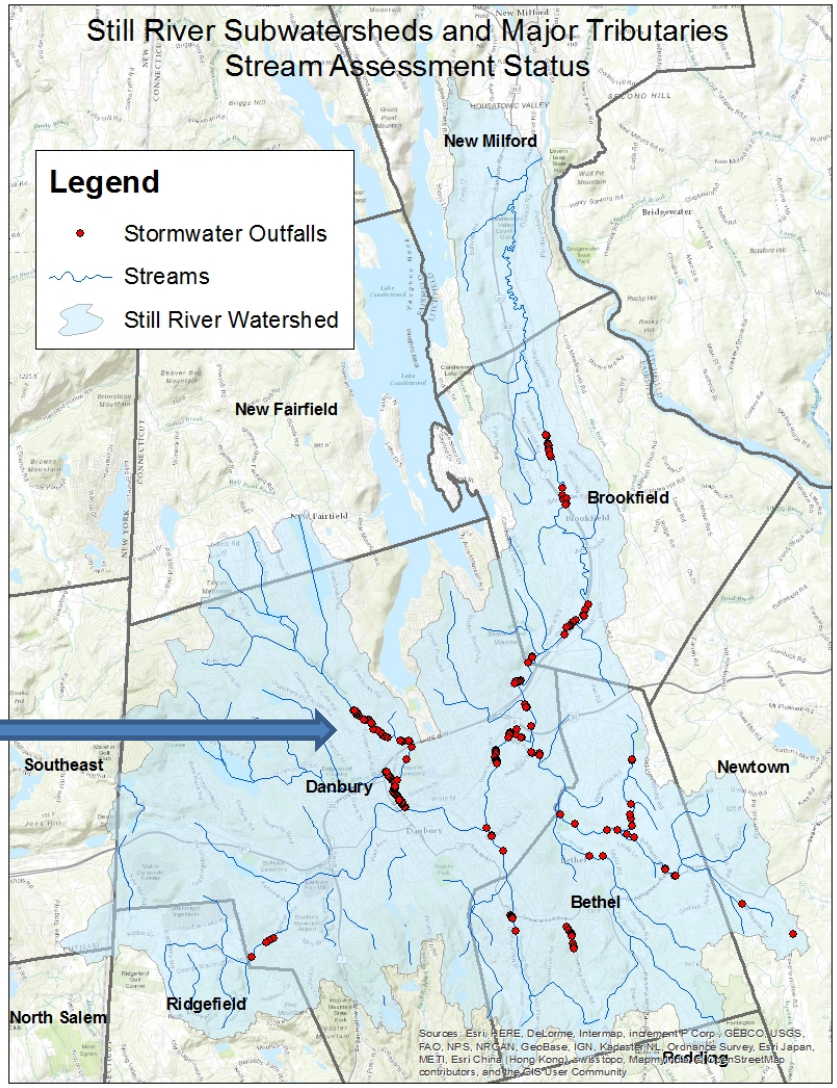
HVA watershed conservation

STORMWATER OUTFALLS (OT)

HVA watershed conservation

STORMWATER OUTFALLS (OT)

- 205 stormwater outfalls documented
- 17 tested for ammonia-nitrogen



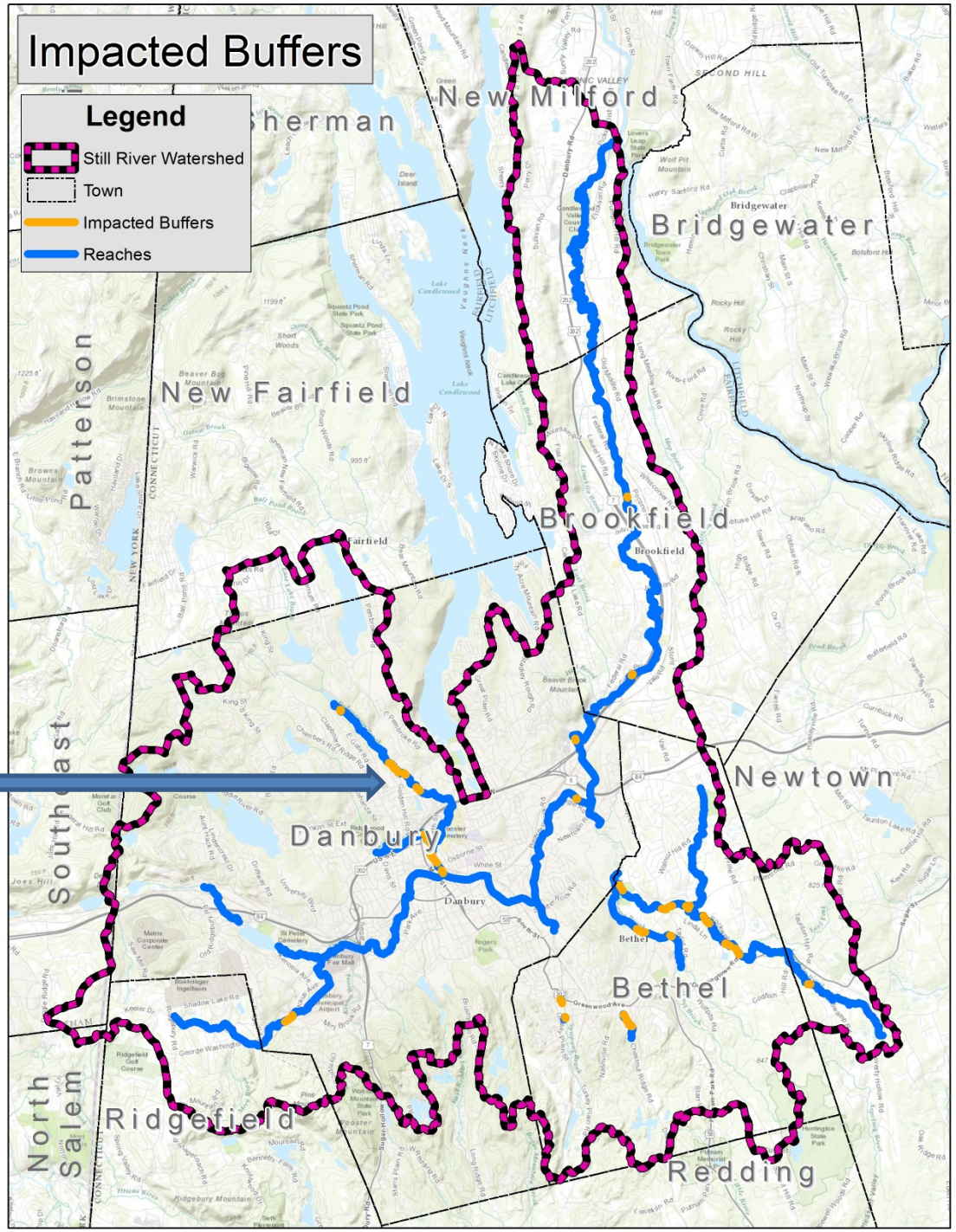
HVA watershed conservation

Impacted Buffers (IB)

HVA watershed conservation

Impacted Buffers

- 2 miles of impacted buffers documented at 46 separate sites



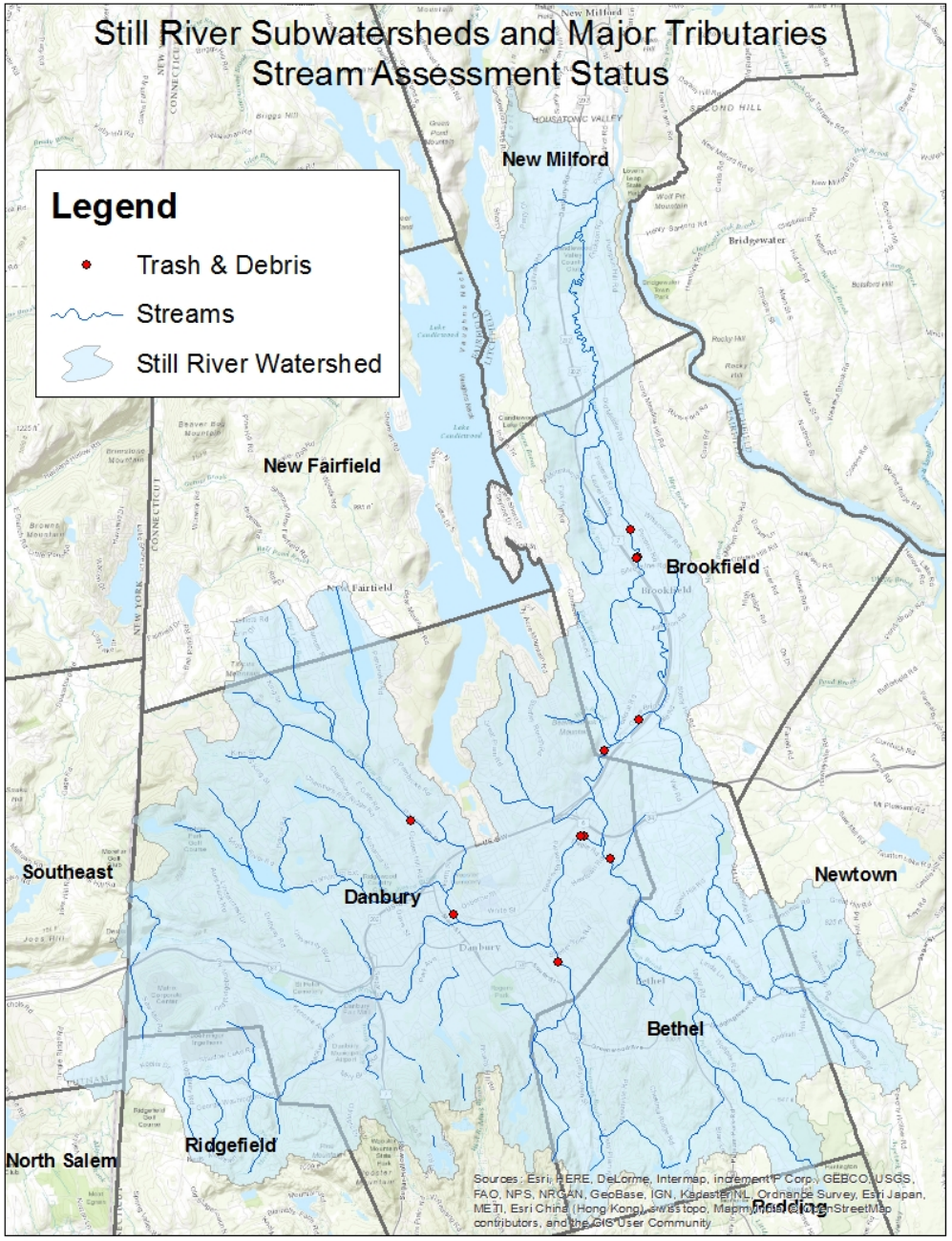
HVA watershed conservation

Trash and Debris (TR)

HVA watershed conservation

Trash & Debris

- 11 trash & debris sites documented, including:
  - Large collections of garbage stuck on woody debris
  - Lawn trimmings dumped into the river
  - Small illegal streamside dumps



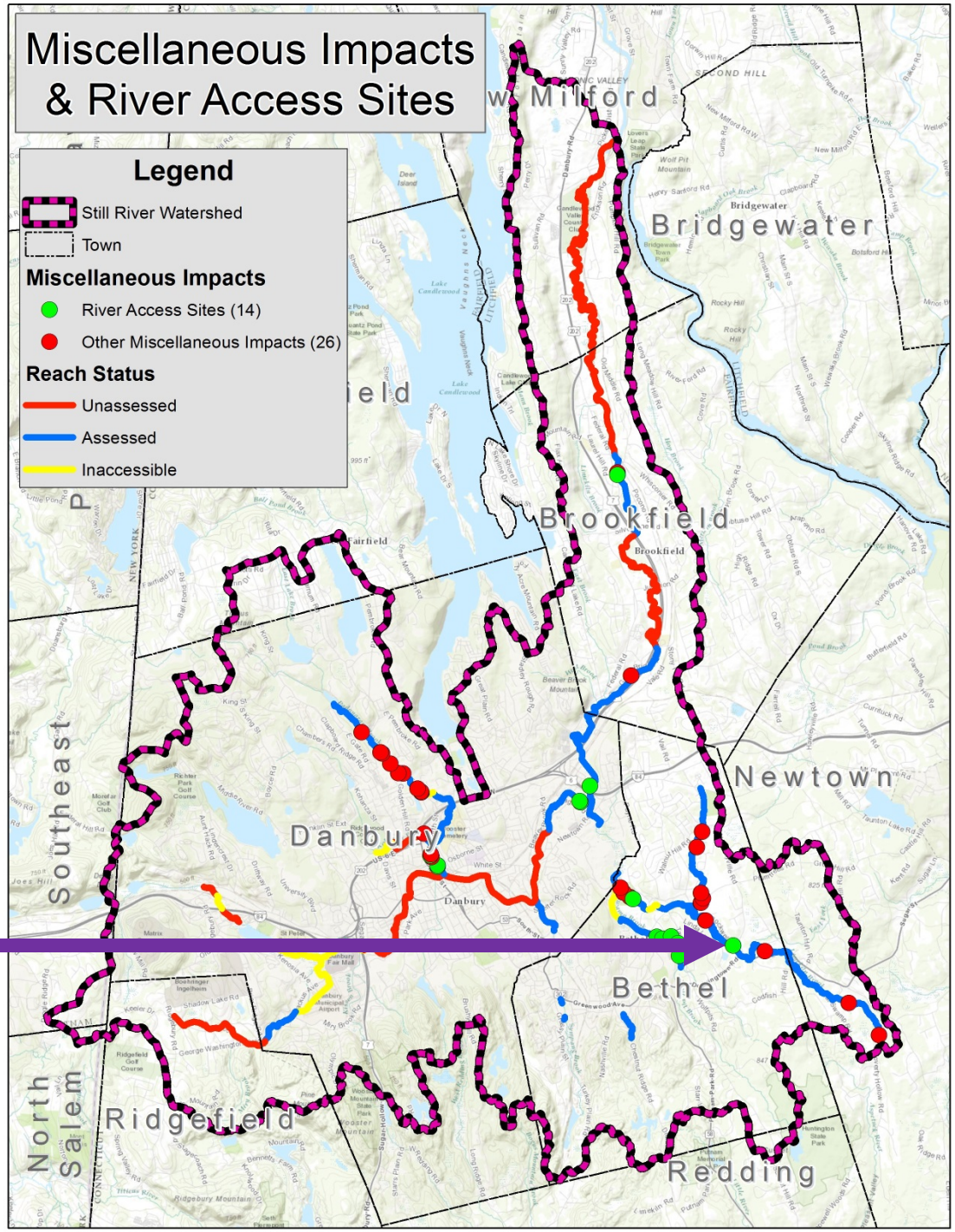
HVA watershed conservation

Miscellaneous Features (MI)

HVA watershed conservation

Miscellaneous and River Access

- Miscellaneous sites: don't fit any other categories
- River access sites are recorded under miscellaneous



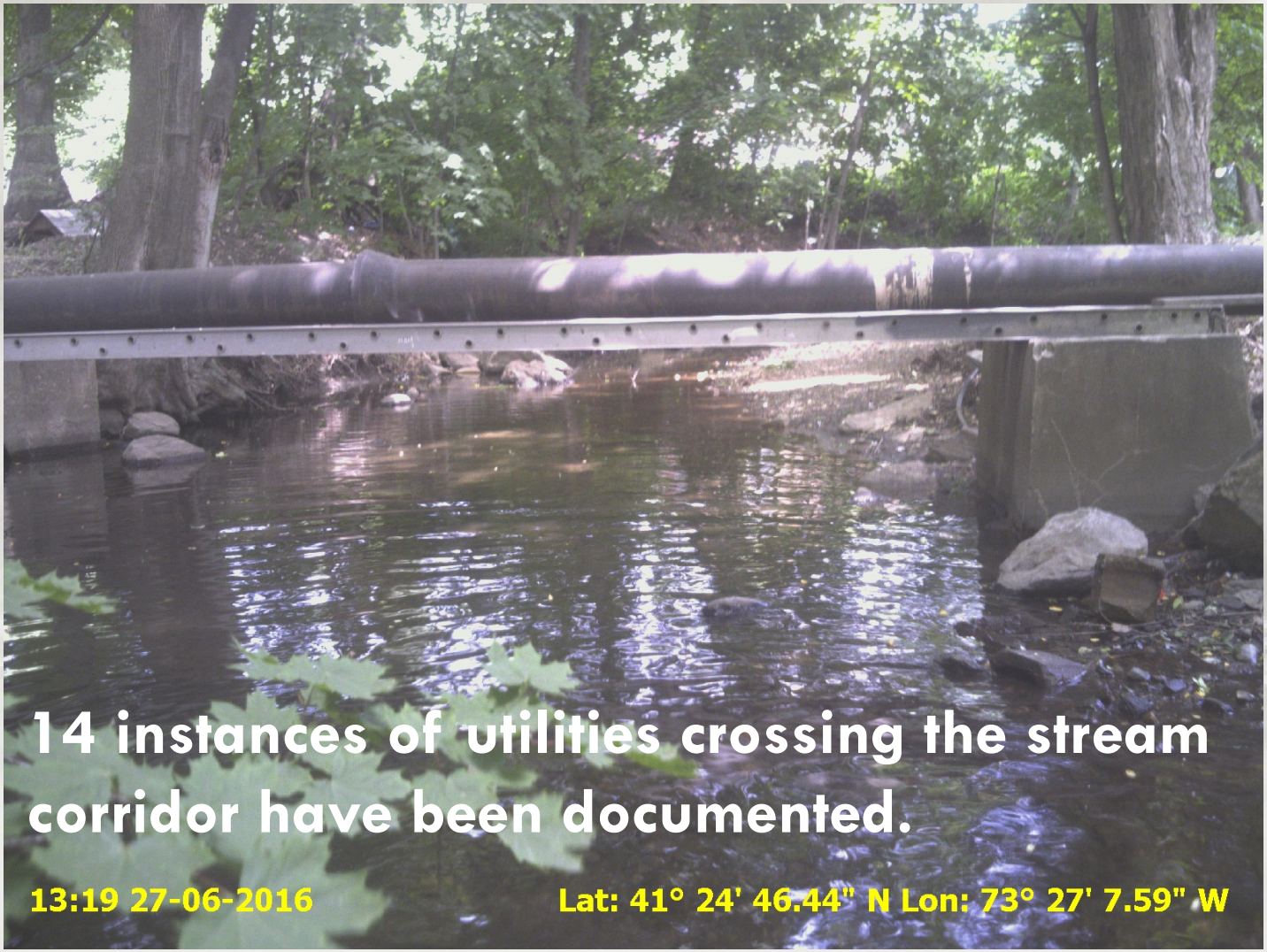
HVA watershed conservation

Stream Crossings (SC)

138 road-stream crossings have been documented and assessed using the North Atlantic Aquatic Conservation Collaborative method.

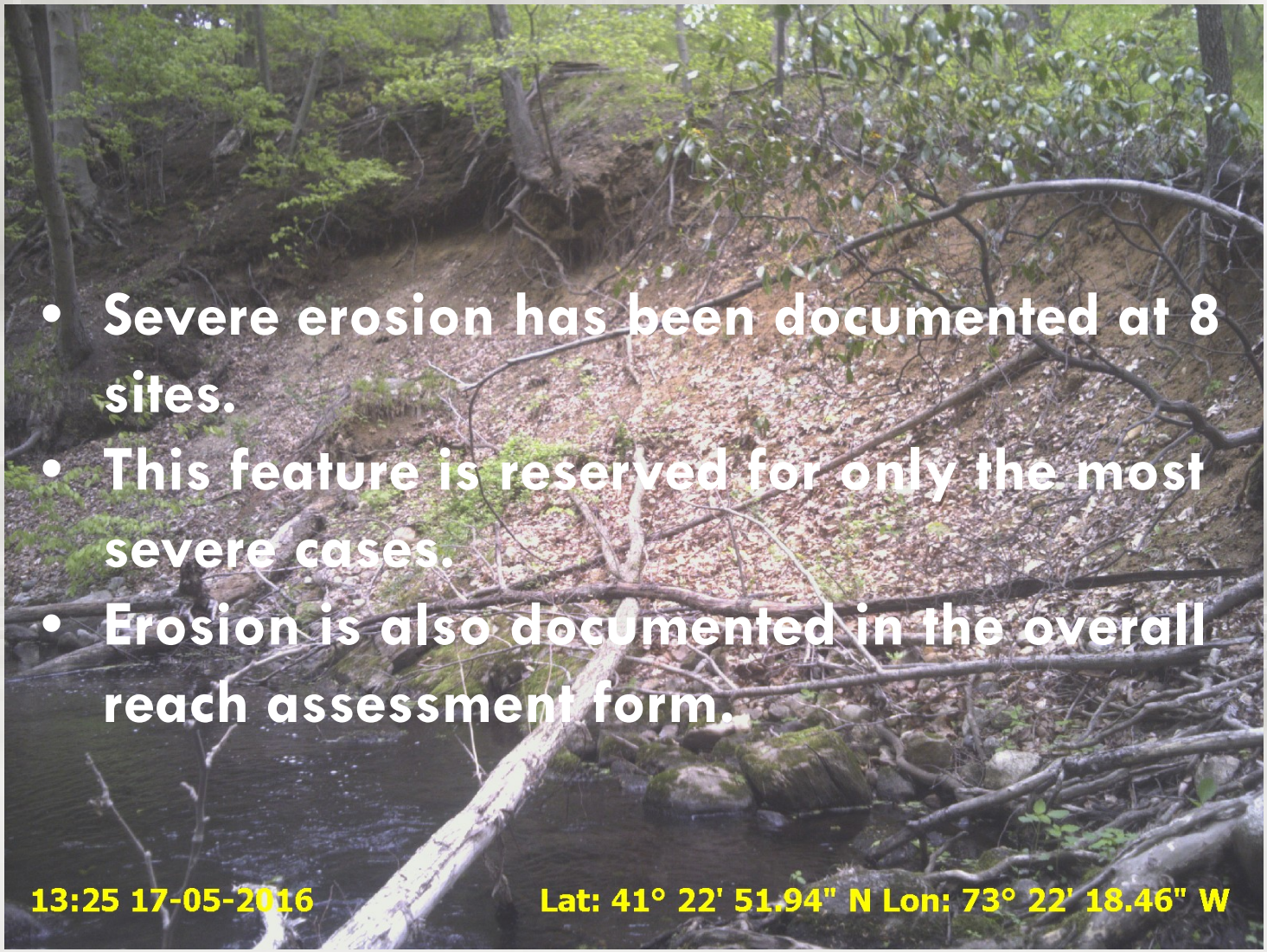
HVA watershed conservation

Utilities in the Stream Corridor (UT)



HVA watershed conservation

Severe Erosion (ER)



- Severe erosion has been documented at 8 sites.
- This feature is reserved for only the most severe cases.
- Erosion is also documented in the overall reach assessment form.

HVA
watershed conservation

Channel Modification (CM)

HVA watershed conservation

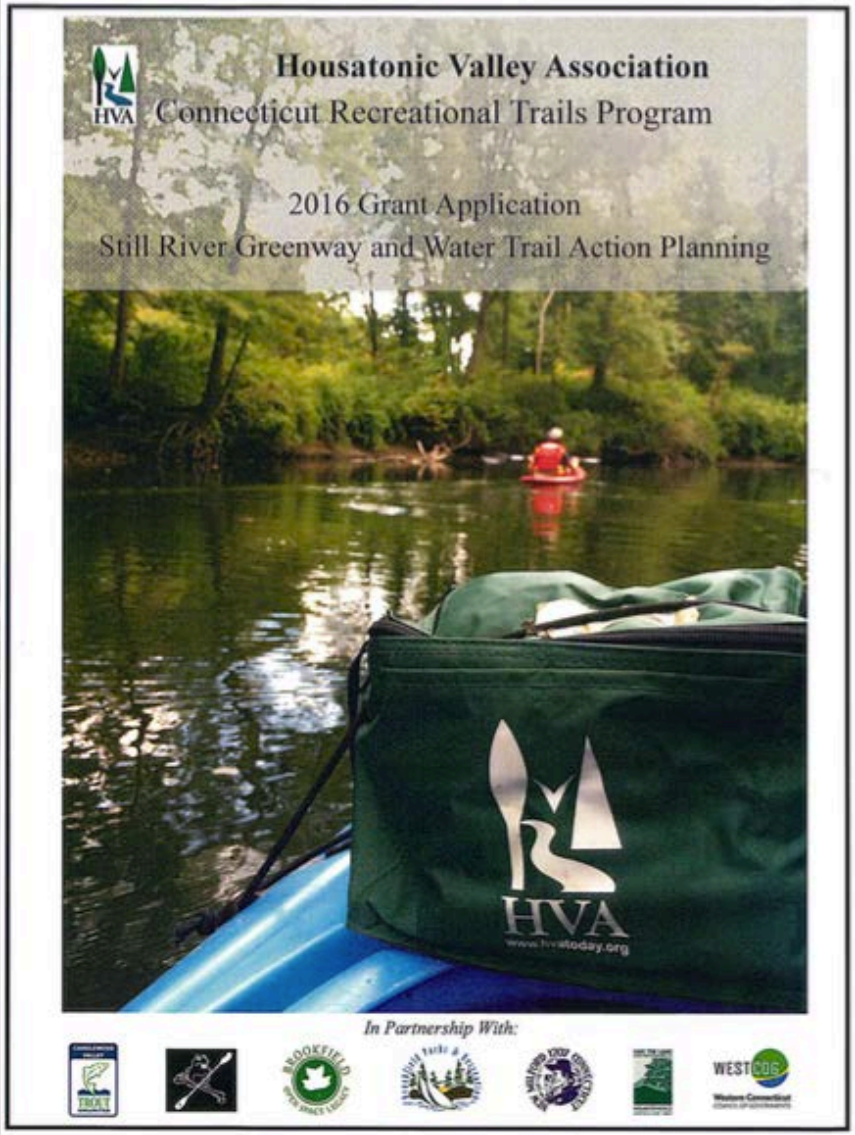
NEXT STEPS

- Complete stream assessments in the Winter/Spring of 2017.
- Incorporate findings into the Existing Conditions Report.
- Utilize data in site selection analysis for future implementation projects.

HVA watershed conservation

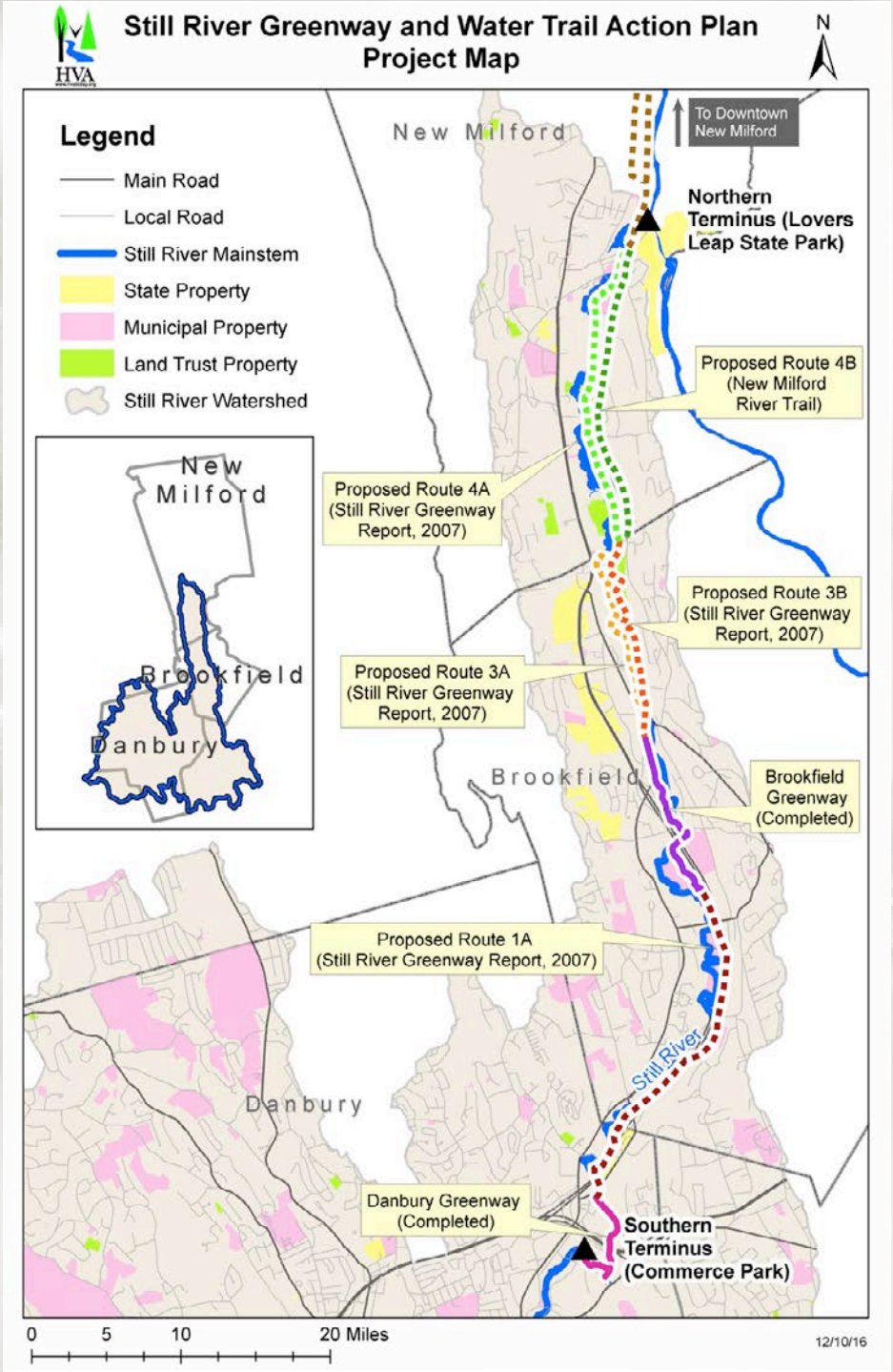
CT DEEP Recreational Trails Program Grant Proposal

- Create an Action Plan for the Still River Greenway and Water Trail
- Routes for hiking, biking, and paddling; fishing access sites; accessibility
- *Partnership with City of Danbury, Town of Brookfield, Town of New Milford, WestCOG, Brookfield Open Space Legacy, Angry Beavers Paddling Club, Candlewood Valley Trout Unlimited, and Weantinoge Heritage Land Trust*



HVA watershed conservation

- Vision for 11 miles of continuous multi-use trail from Danbury to Housatonic River in New Milford
- Building on past work from 2007 Still River Greenway Report, Danbury, Brookfield, and New Milford



HVA watershed conservation

Integration with Management Plan

- Identify projects that achieve both water quality and recreational enhancement goals
- Expand the range of possible funding for both the Still River Greenway/Water Trail and Watershed Management Plan
- Create Still River Recreational Trails Committee

TIMELINE:

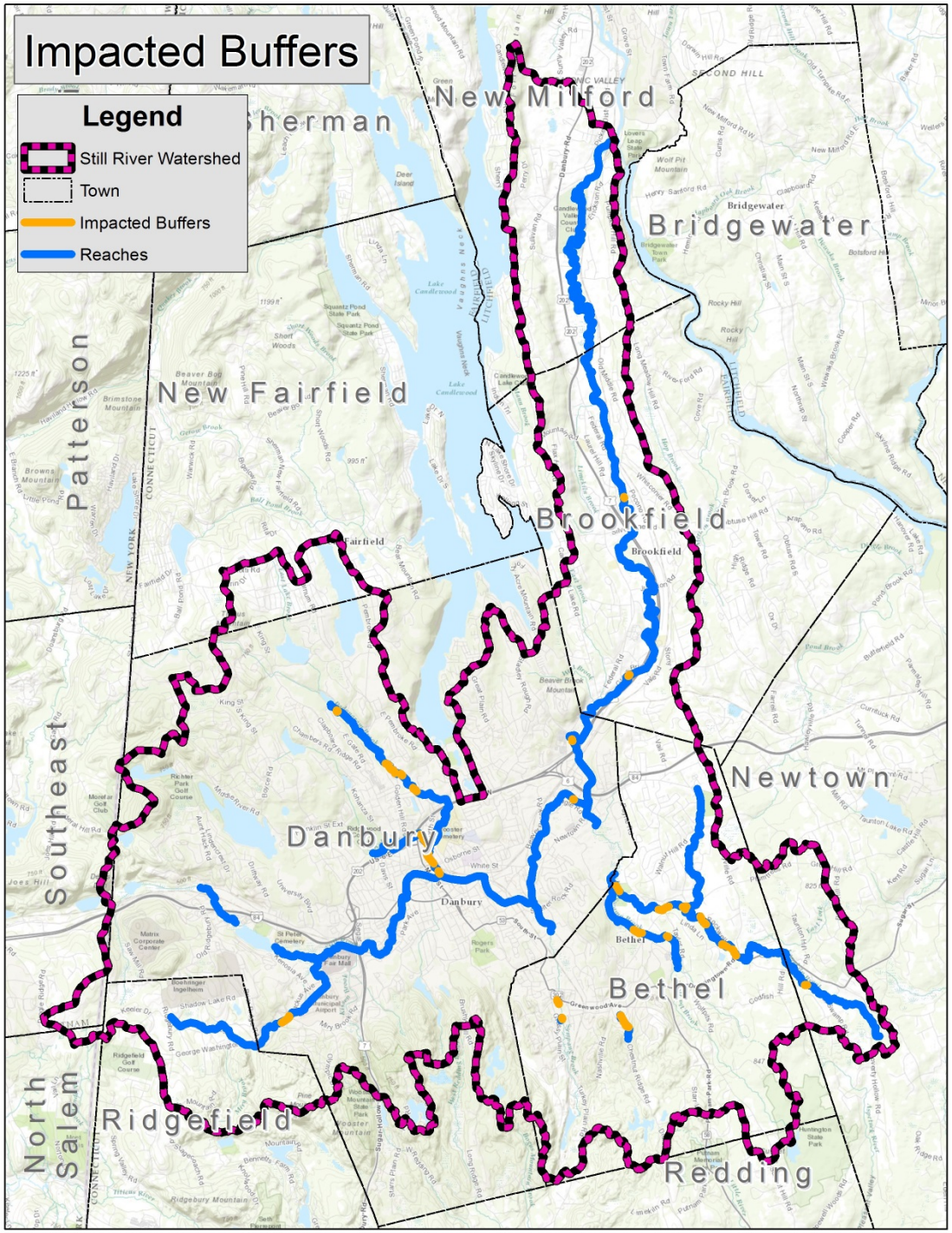
Application submitted Dec 5, 2016

Selection process can take 6 mo or more

HVA watershed conservation

Impacted Buffers

- 11,200 feet (approximately 2 miles)



HVA watershed conservation

HVA watershed conservation

STORM WATER OUTFALLS (OT)

HVA watershed conservation

STORM WATER OUTFALLS (OT)

In addition to the information collected for the Storm Water Outfall field form we will be testing suspicious outfalls for ammonia nitrogen, a common indicator of fecal contamination.

HVA watershed conservation

Severe Erosion (ER)

HVA watershed conservation

Impacted Buffers (IB)

HVA watershed conservation

Utilities in the Stream Corridor (UT)

HVA watershed conservation

Trash and Debris (TR)

HVA watershed conservation

Stream Crossings (SC)

HVA

watershed conservation

Stream Crossings (SC)

Instead of using the Stream Crossing field sheet HVA will complete stream crossing assessments using a protocol developed by the North Atlantic Aquatic Connectivity Collaborative (NAACC)

- A regional effort from West Virginia to Maine
- HVA staff has been trained in this assessment method and has been conducting surveys for over two years

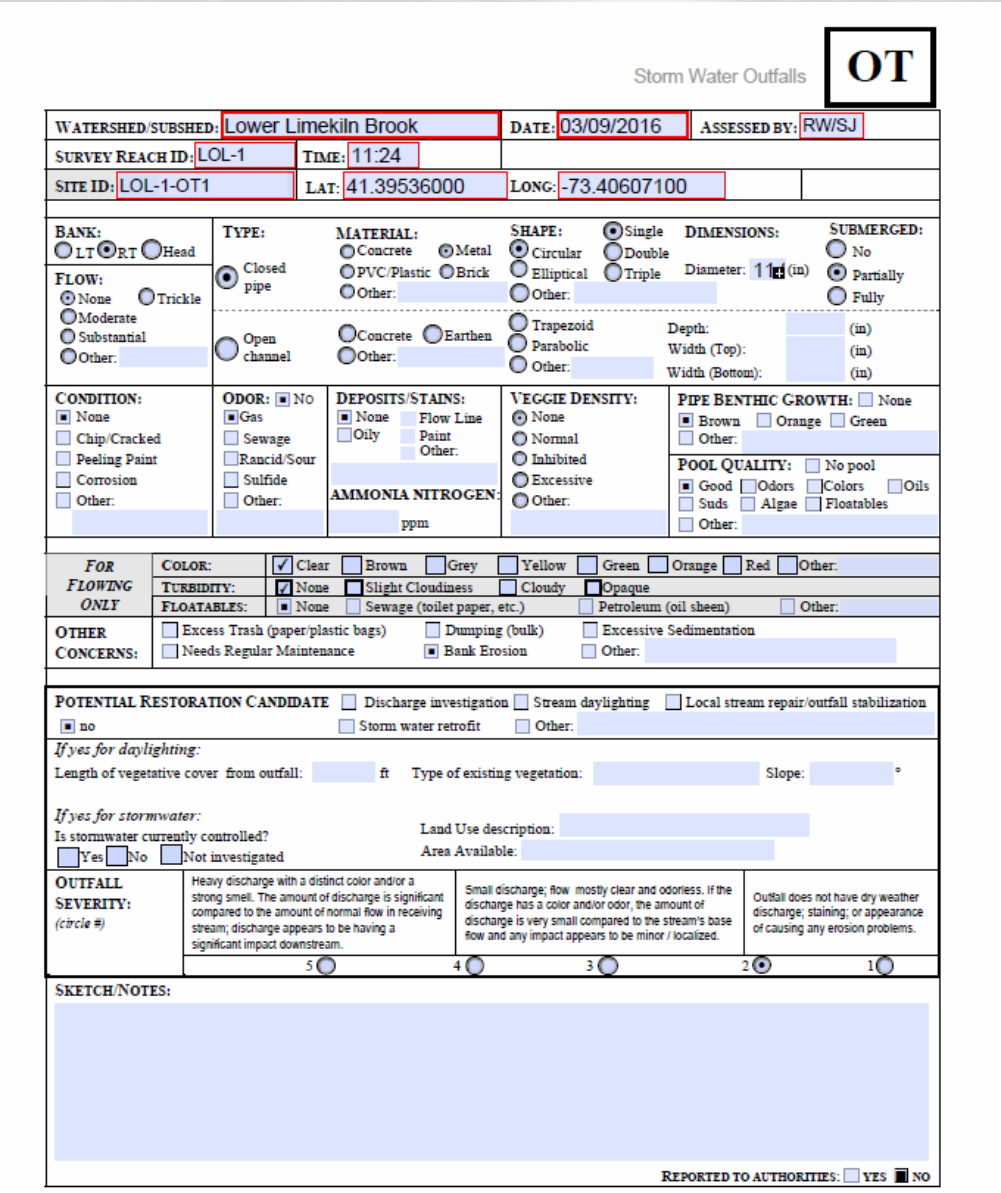
HVA watershed conservation

Channel Modification (CM)

HVA watershed conservation

Miscellaneous Features (MI)

HVA watershed conservation



Storm Water Outfalls **OT**

WATERSHED/SUBSHED: Lower Limekiln Brook | DATE: 03/09/2016 | ASSESSED BY: RW/SJ
SURVEY REACH ID: LOL-1 | TIME: 11:24
SITE ID: LOL-1-OT1 | LAT: 41.39536000 | LONG: -73.40607100

BANK: ○ LT ◉ RT ○ Head

FLOW: ◉ None ○ Trickle ○ Moderate ○ Substantial ○ Other:

TYPE: ◉ Closed pipe | ○ Open channel

MATERIAL: ○ Concrete ◉ Metal ○ PVC/Plastic ○ Brick ○ Other: | ○ Concrete ○ Earthen ○ Other:

SHAPE: ◉ Single ○ Double ○ Triple | ◉ Circular ○ Elliptical ○ Other: | ○ Trapezoid ○ Parabolic ○ Other:

DIMENSIONS: Diameter: 11 (in) | Depth: (in) | Width (Top): (in) | Width (Bottom): (in)

SUBMERGED: ○ No ◉ Partially ○ Fully

CONDITION: ■ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ■ No ■ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ■ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

AMMONIA NITROGEN: ppm

VEGGIE DENSITY: ◉ None ○ Normal ○ Inhibited ○ Excessive ○ Other:

PIPE BENTHIC GROWTH: ☐ None ■ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ■ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY
COLOR: ☑ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:
TURBIDITY: ☑ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque
FLOATABLES: ■ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ■ Bank Erosion ☐ Other:

POTENTIAL RESTORATION CANDIDATE ☐ Discharge investigation ☐ Stream daylighting ☐ Local stream repair/outfall stabilization ■ no ☐ Storm water retrofit ☐ Other:

If yes for daylighting:
Length of vegetative cover from outfall: ft | Type of existing vegetation: | Slope: °

If yes for stormwater:
Is stormwater currently controlled? ☐ Yes ☐ No ☐ Not investigated
Land Use description:
Area Available:

OUTFALL SEVERITY: *(circle #)*

5	4	3	2	1
Heavy discharge with a distinct color and/or a strong smell. The amount of discharge is significant compared to the amount of normal flow in receiving stream; discharge appears to be having a significant impact downstream.		Small discharge; flow mostly clear and odorless. If the discharge has a color and/or odor, the amount of discharge is very small compared to the stream's base flow and any impact appears to be minor / localized.		Outfall does not have dry weather discharge; staining; or appearance of causing any erosion problems.

SKETCH/NOTES:

REPORTED TO AUTHORITIES: ☐ YES ■ NO

HVA has created fillable electronic versions of each field sheet so that we can collect data using tablet computers.

These tablets will be used in conjunction with a GPS that will be used to take photos of each impact and collect geospatial information.

HVA watershed conservation

For organizational purposes each impact will be given a unique **Site ID**

Reach Number
(within a specific subwatershed)

Impact Number
(for that impact within a specific subwatershed)

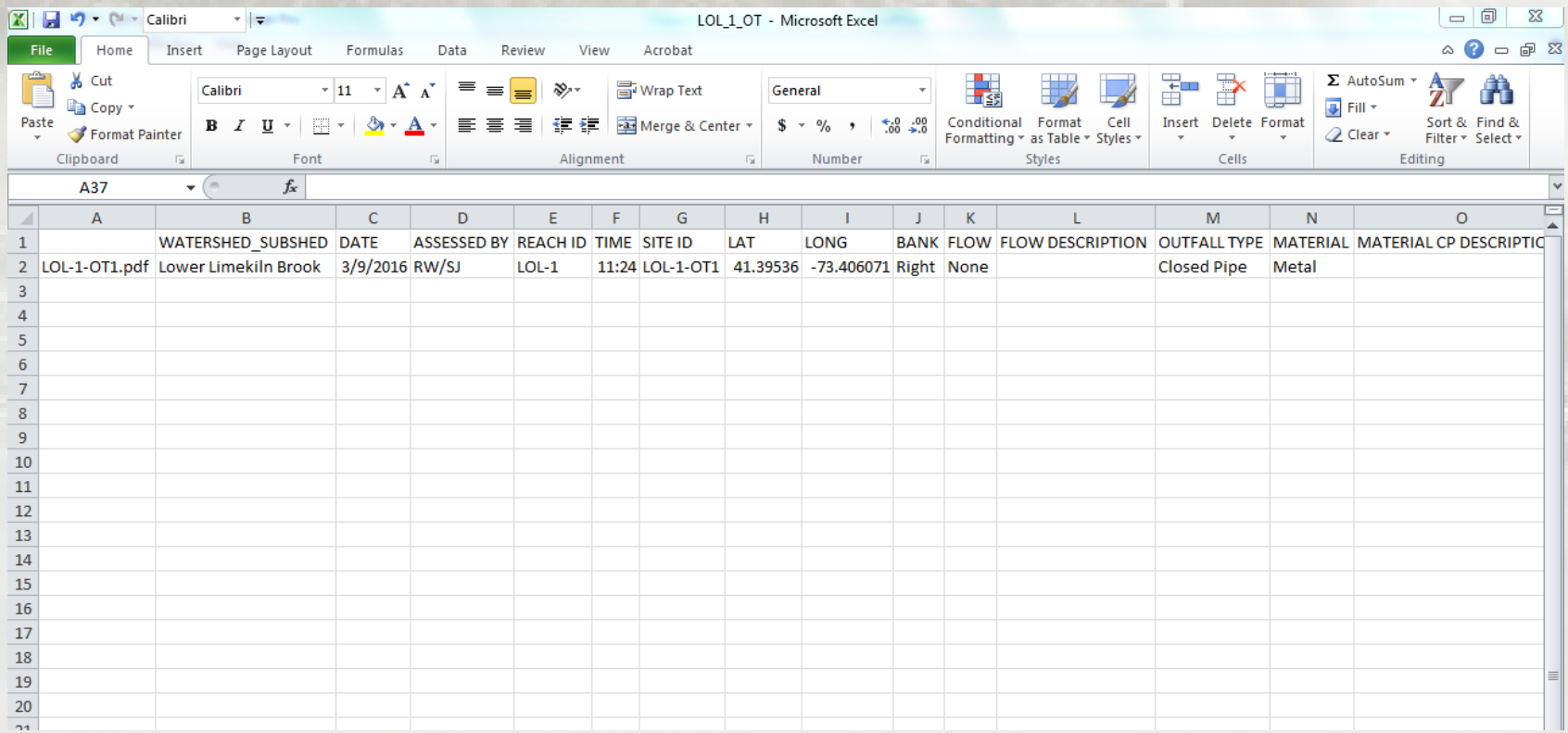
LOL-1-OT1

Subwatershed Code
LOL = Lower Limekiln Brook

Impact Code
OT = Storm Water Outfall

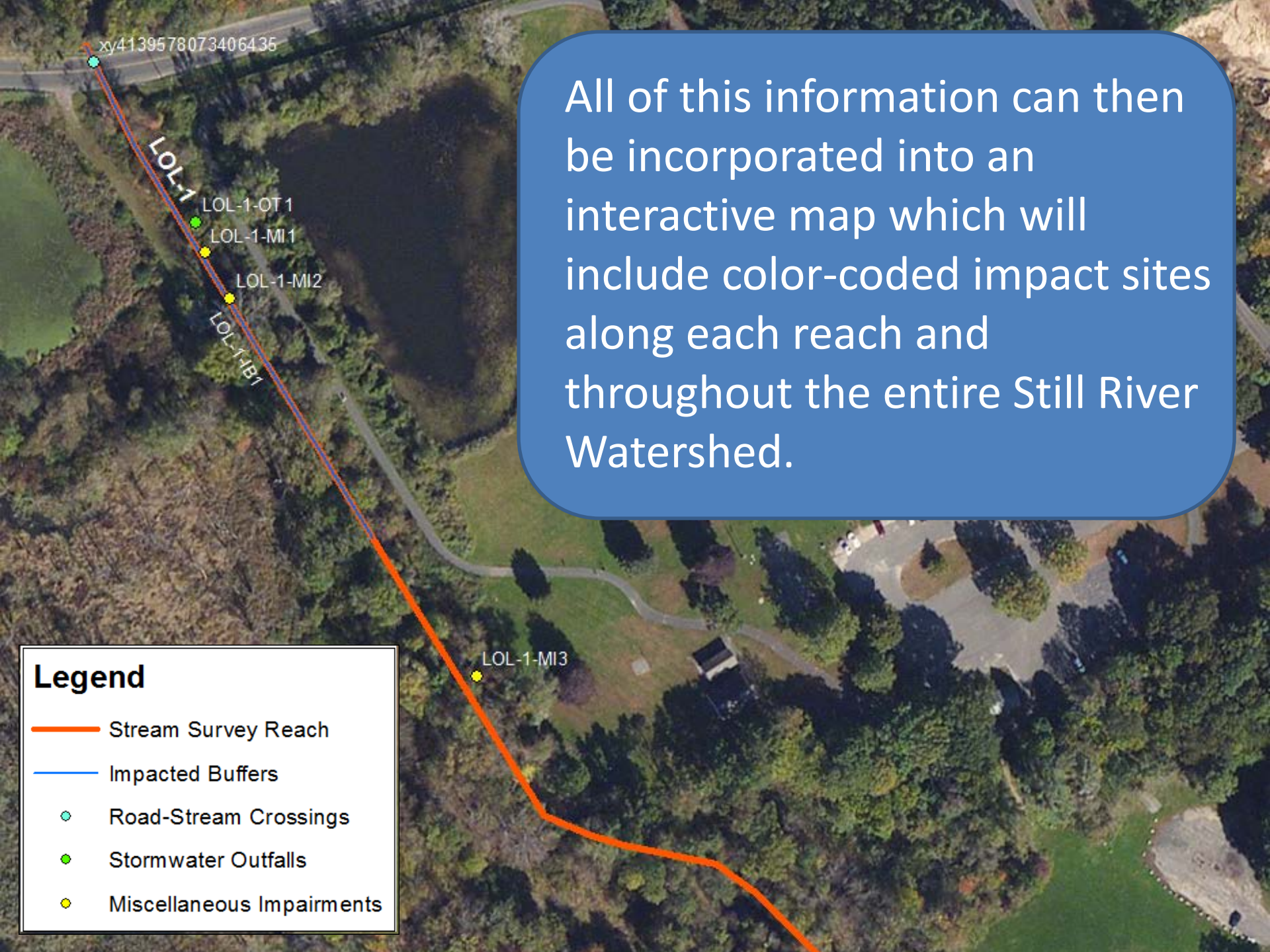
HVA watershed conservation

Data collected with these electronic field forms can then be easily exported into spreadsheets which can be linked with information collected with the GPS.



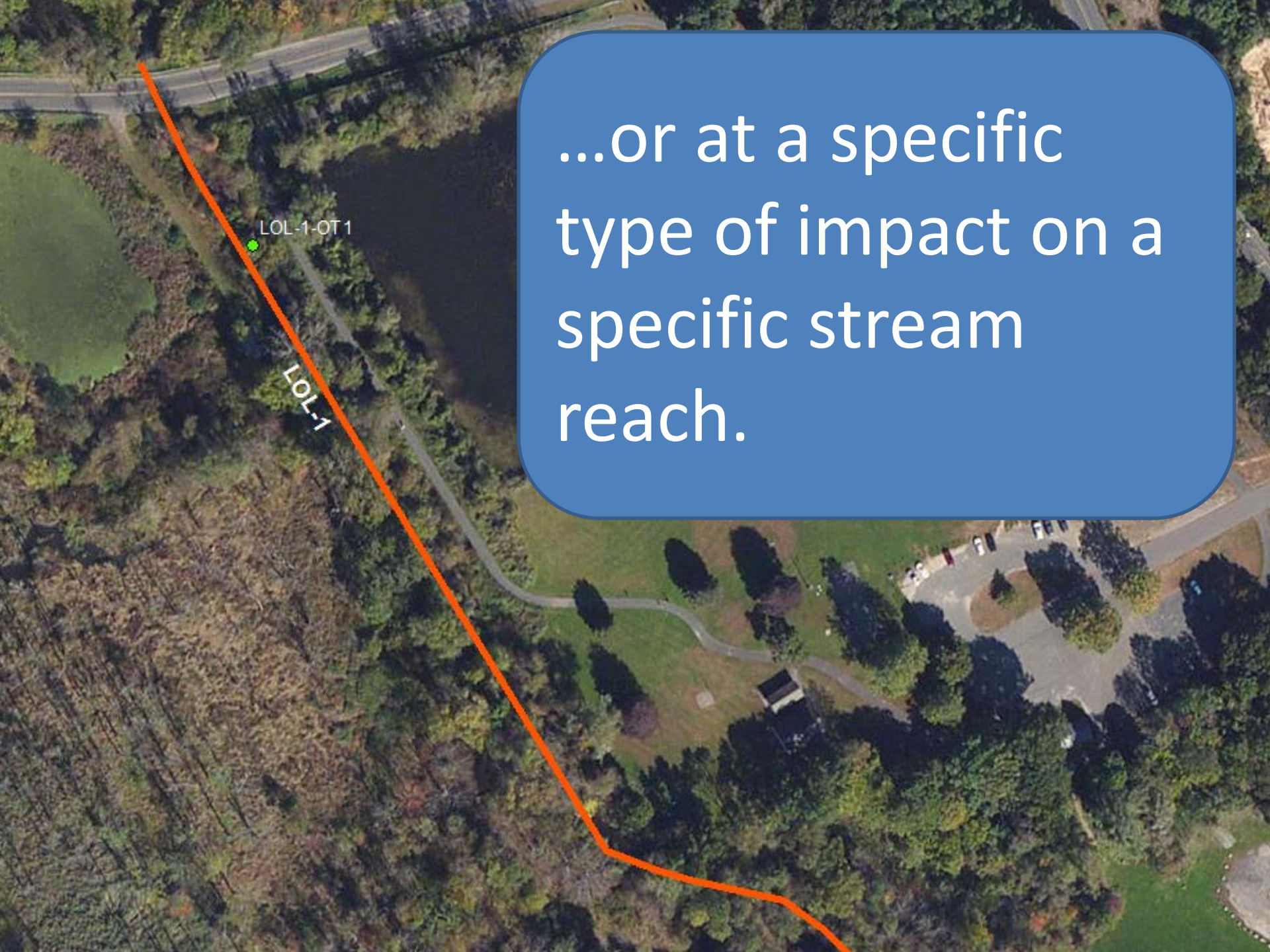
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		WATERSHED_SUBSHED	DATE	ASSESSED BY	REACH ID	TIME	SITE ID	LAT	LONG	BANK	FLOW	FLOW DESCRIPTION	OUTFALL TYPE	MATERIAL	MATERIAL CP DESCRIPTIO
2	LOL-1-OT1.pdf	Lower Limekiln Brook	3/9/2016	RW/SJ	LOL-1	11:24	LOL-1-OT1	41.39536	-73.406071	Right	None		Closed Pipe	Metal	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															

HVA watershed conservation

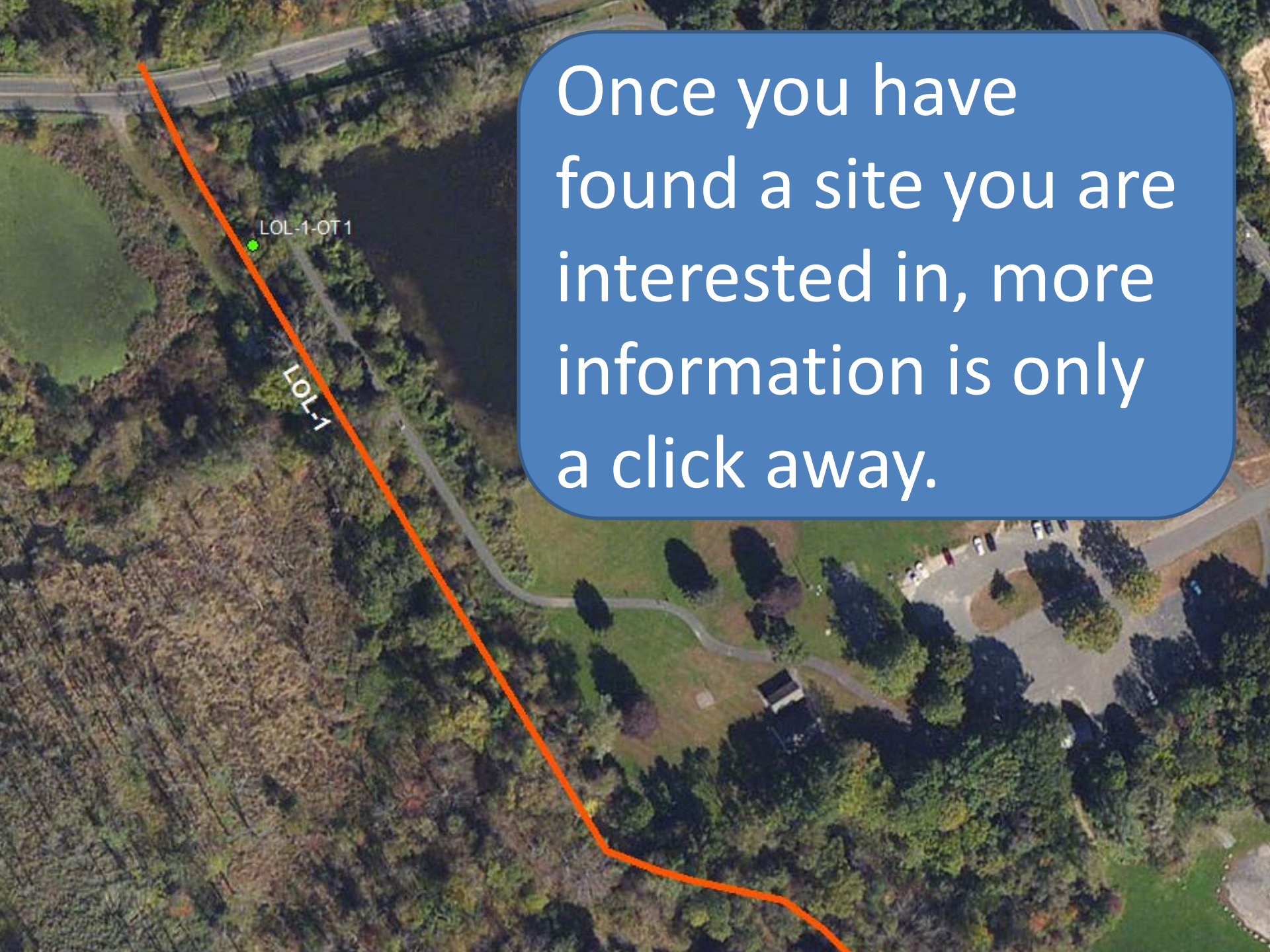


All of this information can then be incorporated into an interactive map which will include color-coded impact sites along each reach and throughout the entire Still River Watershed.

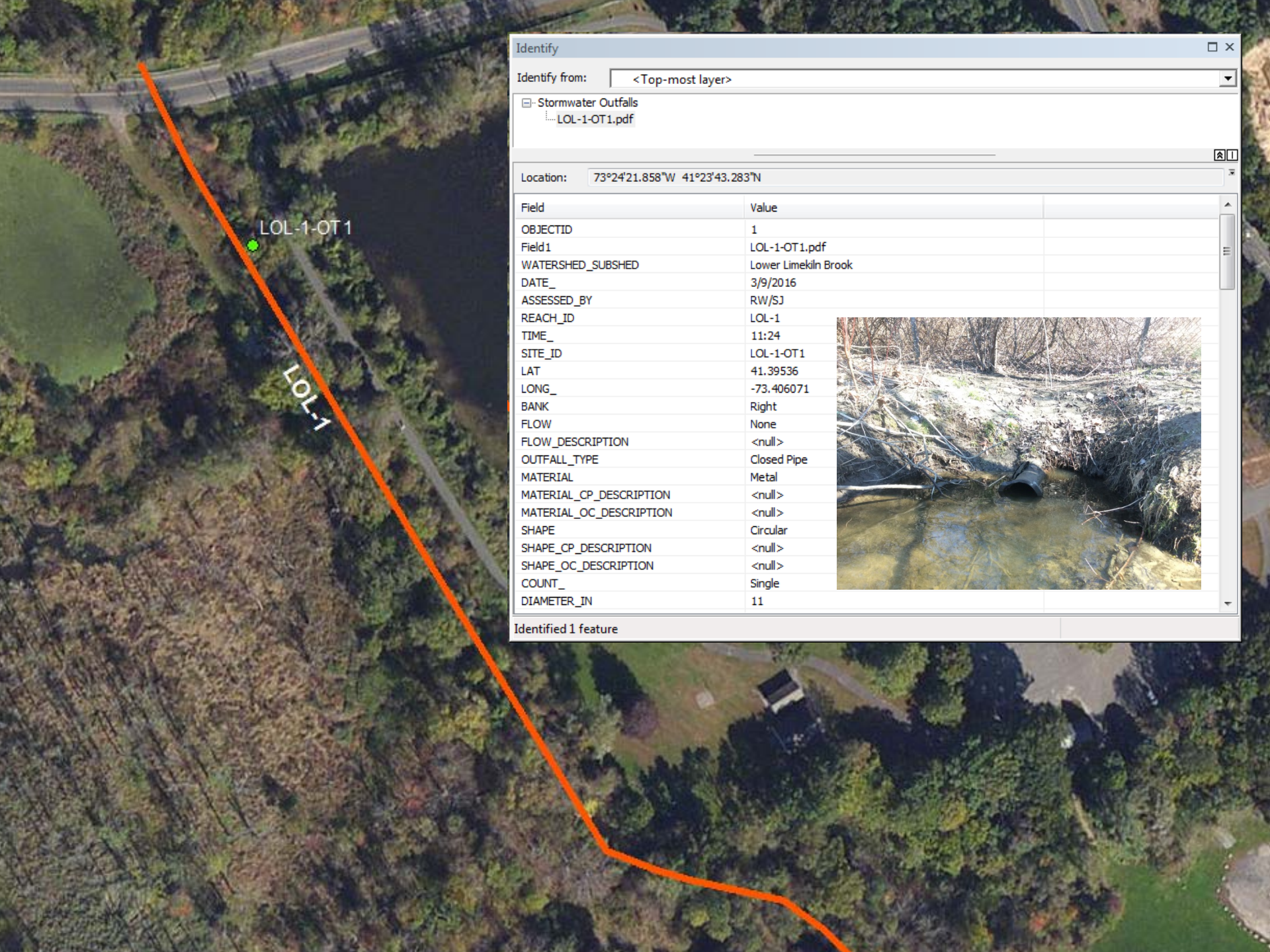
Partners will be able to look at all of the impacts at once…



…or at a specific type of impact on a specific stream reach.



Once you have found a site you are interested in, more information is only a click away.



Identify

Identify from: <Top-most layer>

- Stormwater Outfalls
  - LOL-1-OT1.pdf

Location: 73°24'21.858"W 41°23'43.283"N

Field	Value
OBJECTID	1
Field1	LOL-1-OT1.pdf
WATERSHED_SUBSHED	Lower Limekiln Brook
DATE_	3/9/2016
ASSESSED_BY	RW/SJ
REACH_ID	LOL-1
TIME_	11:24
SITE_ID	LOL-1-OT1
LAT	41.39536
LONG_	-73.406071
BANK	Right
FLOW	None
FLOW_DESCRIPTION	<null>
OUTFALL_TYPE	Closed Pipe
MATERIAL	Metal
MATERIAL_CP_DESCRIPTION	<null>
MATERIAL_OC_DESCRIPTION	<null>
SHAPE	Circular
SHAPE_CP_DESCRIPTION	<null>
SHAPE_OC_DESCRIPTION	<null>
COUNT_	Single
DIAMETER_IN	11

Identified 1 feature

This tool, in conjunction with the raw data, will serve as an important tool for identifying and prioritizing restoration projects in the Still River Watershed.

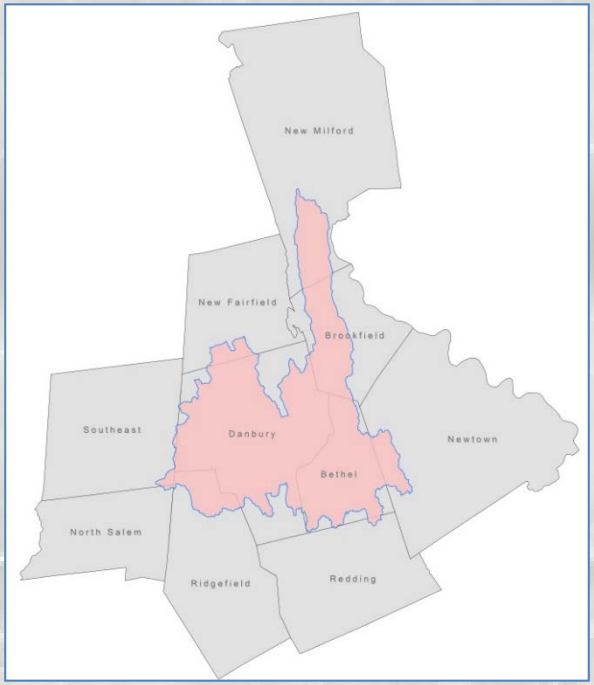
NEXT STEPS

- Based on what is discovered in the USA we will turn to the Unified Subwatershed and Site Reconnaissance (USSR) protocol also developed by CWP
- These assessments will look for potential sources of upland contributions to in stream pollution
- This will involve activities like the mapping of directly connected impervious area, depending on the impacts we identify during the USA

HVA watershed conservation

HVA watershed conservation

Looking Ahead: Draft ECR and Outreach, Vision and Goals, Implementation Strategy



Mike Jastremski, Housatonic Valley Association

HVA watershed conservation

Draft Existing Conditions Report

- Key milestone in planning process
- Major stakeholder and public outreach push

HVA watershed conservation

Draft Existing Conditions Report

- **What does this look like?**
  - ECR-based publications that are geared towards lay-people
    - Graphics-rich summary
    - Multi-media road-show
    - Story maps w/ opportunities for interaction and feedback

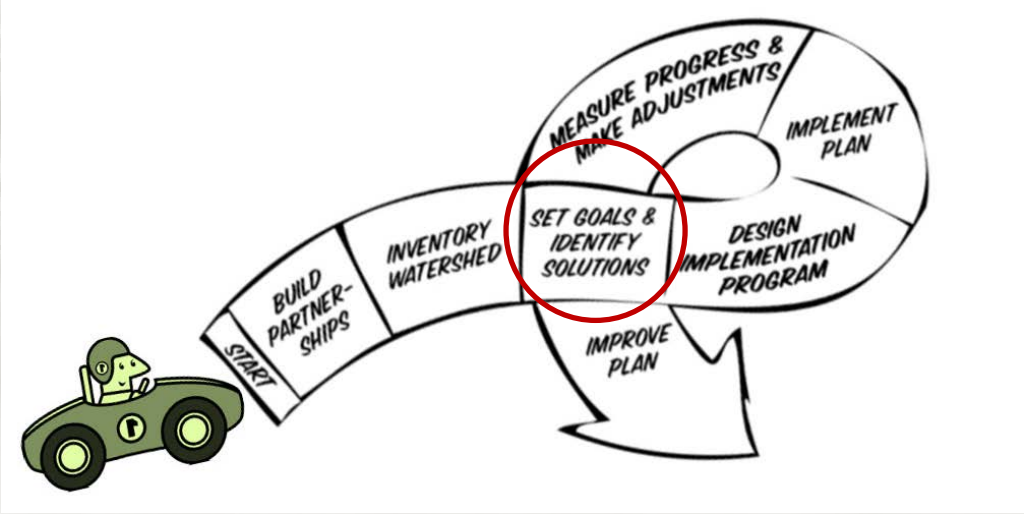
- **Goal is to have Draft ECR late Fall 2016**

http://clear3.uconn.edu/viewers/ctstory/

HVA watershed conservation

Watershed Vision and Goals

- Based on final ECR
- Developed by this group
- Will inform Implementation Strategy



HVA watershed conservation

HVA watershed conservation