



Phillips Brook Watershed Management Plan

Public Meeting
February 27, 2017



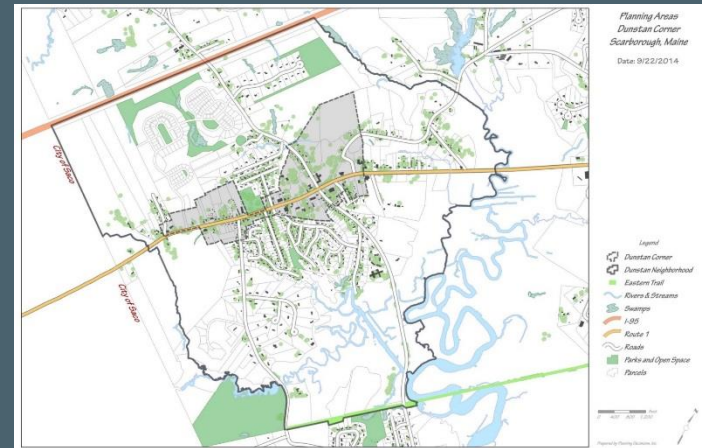
Watershed Management Plan?

- Plan & program to maintain & restore the health & functions of a waterway & watershed for the benefit of the plant, animal & human communities within it
- Critical for Phillips Brook – as impairments & impacts have occurred due to cumulative changes & urbanization within the watershed



Dynamics in Dunstan

-

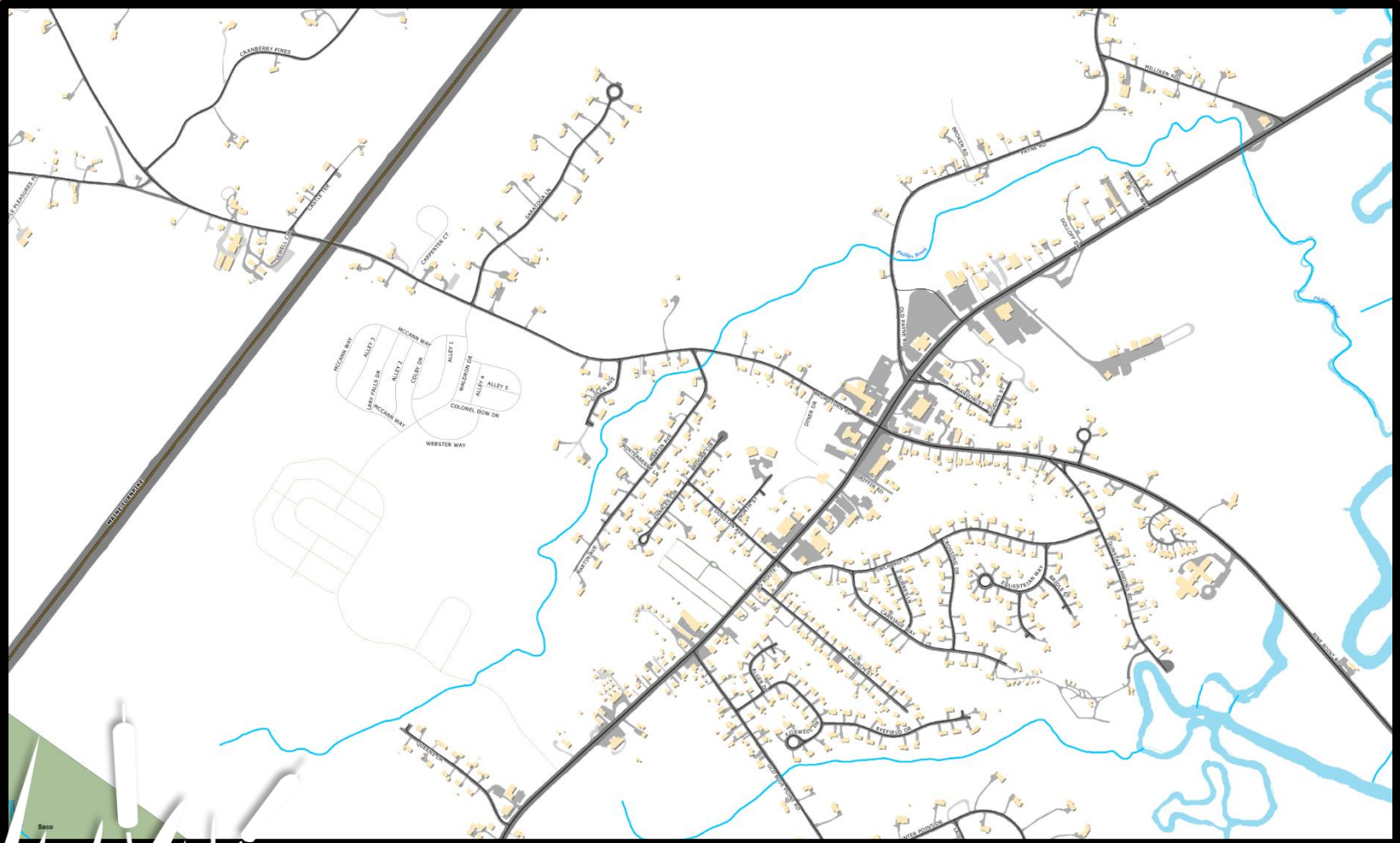


Management Plan Goals

- Produce a locally-supported Watershed Management Plan
- Prioritize watershed needs
- Gear the Plan to integrate with other plans, initiatives & future developments
- Craft actions, measures & initiatives to restore & sustain the health of the brook & watershed



Phillips Brook



Total Length = 2.77 miles

Runs from wetlands at Saco Town Line to Scarborough Marsh

Phillips Brook Watershed



Total area = 1 sq. mile

What do we know about Phillips Brook?



Kristin Feindel

Watershed Management Unit
Division of Environmental Assessment

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

Protecting Maine's Air, Land and Water

Clean Water Act Goals



Fishable



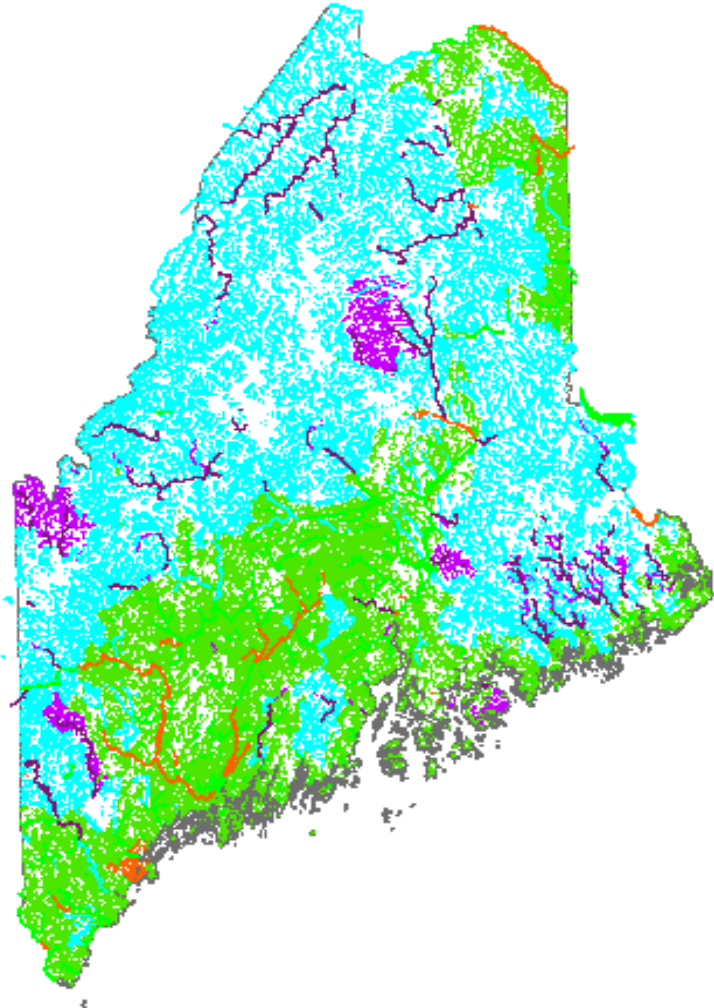
Swimmable



Drinkable



Maine Water Quality Goals



Class AA

Class A

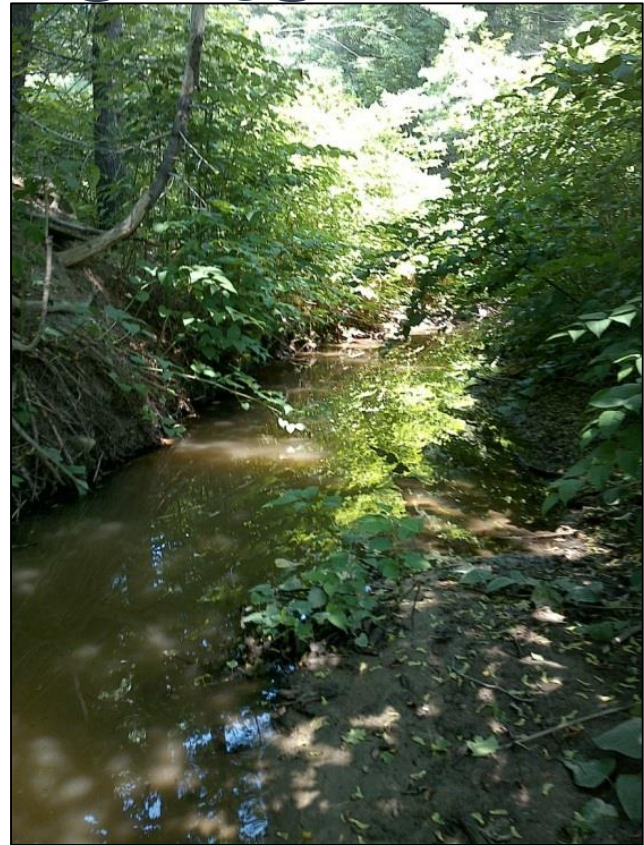
Class B

Class C



Phillips Brook Impairments

- Habitat
- Dissolved Oxygen



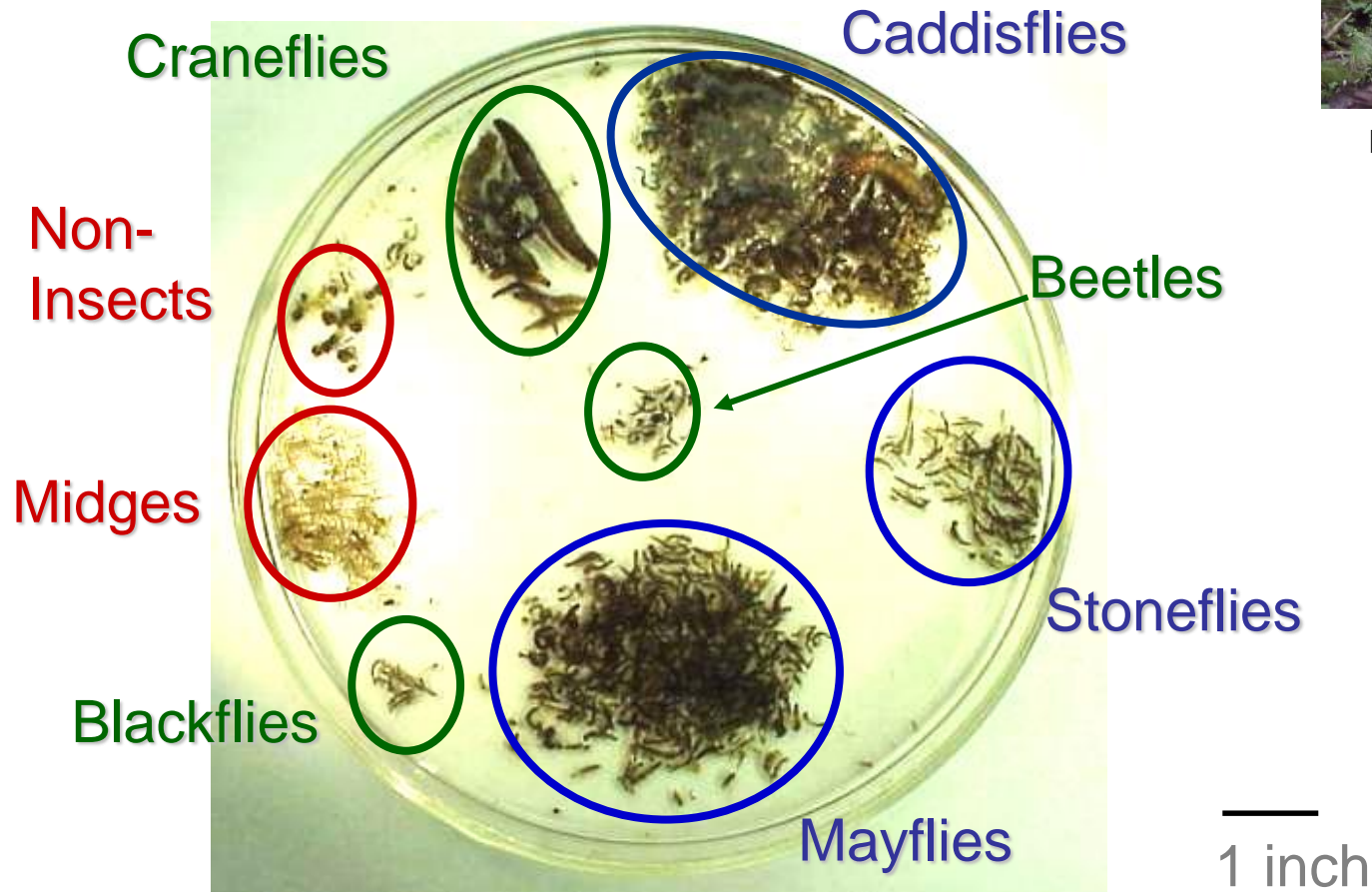
Aquatic Life



Healthy Stream



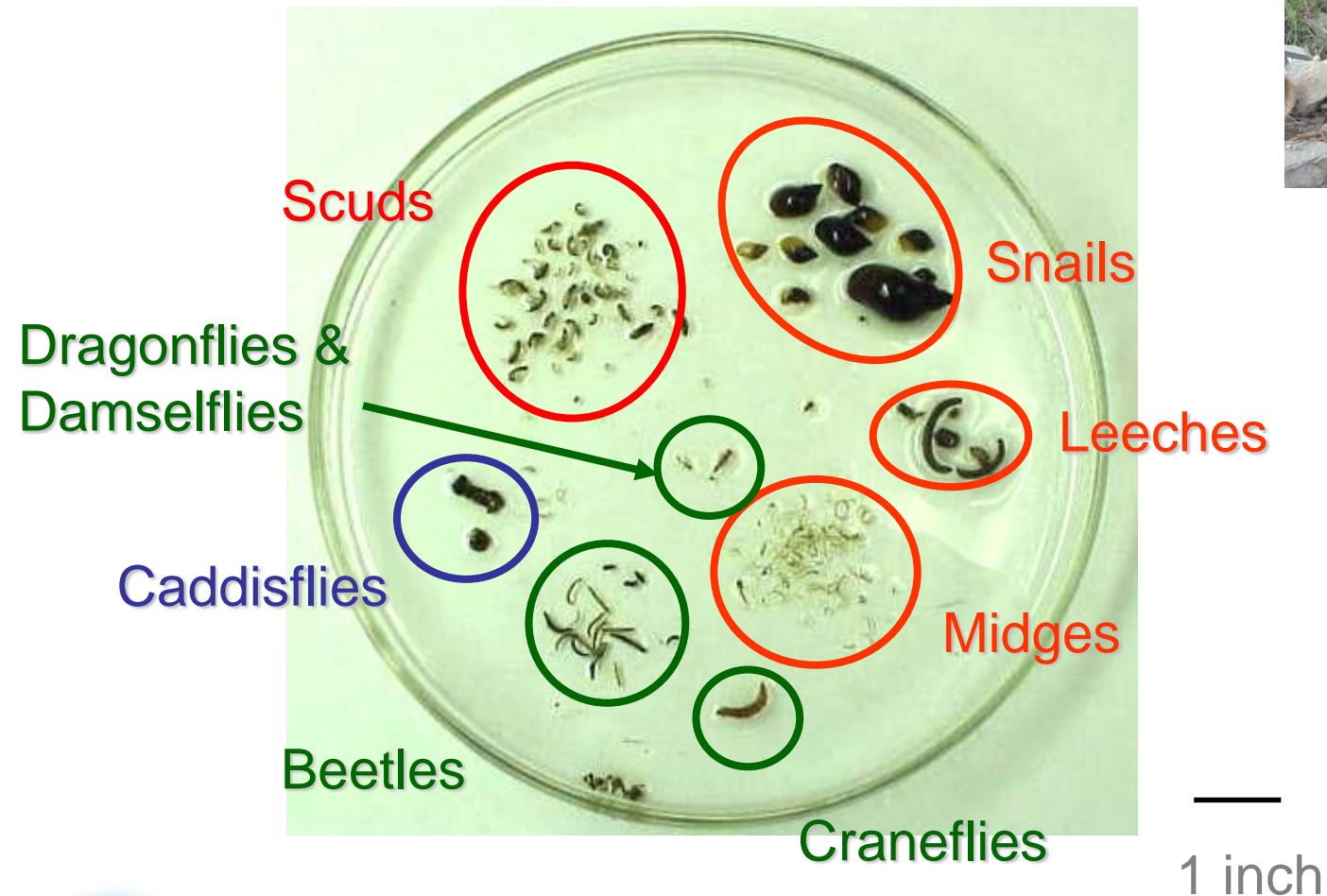
Eddy Brook, New Gloucester



Impaired Stream



Penjajawoc Stream, Bangor

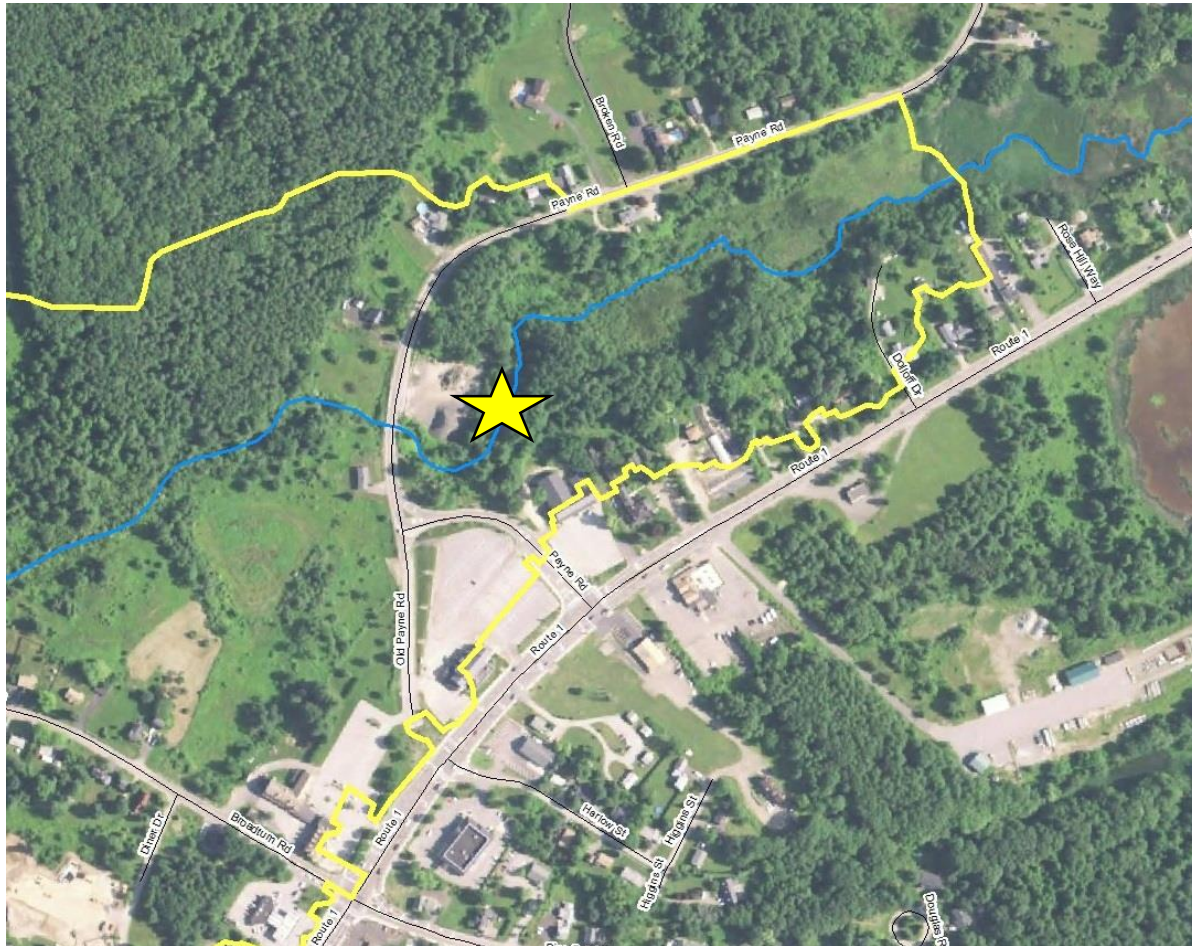


Phillips Brook's Aquatic Life

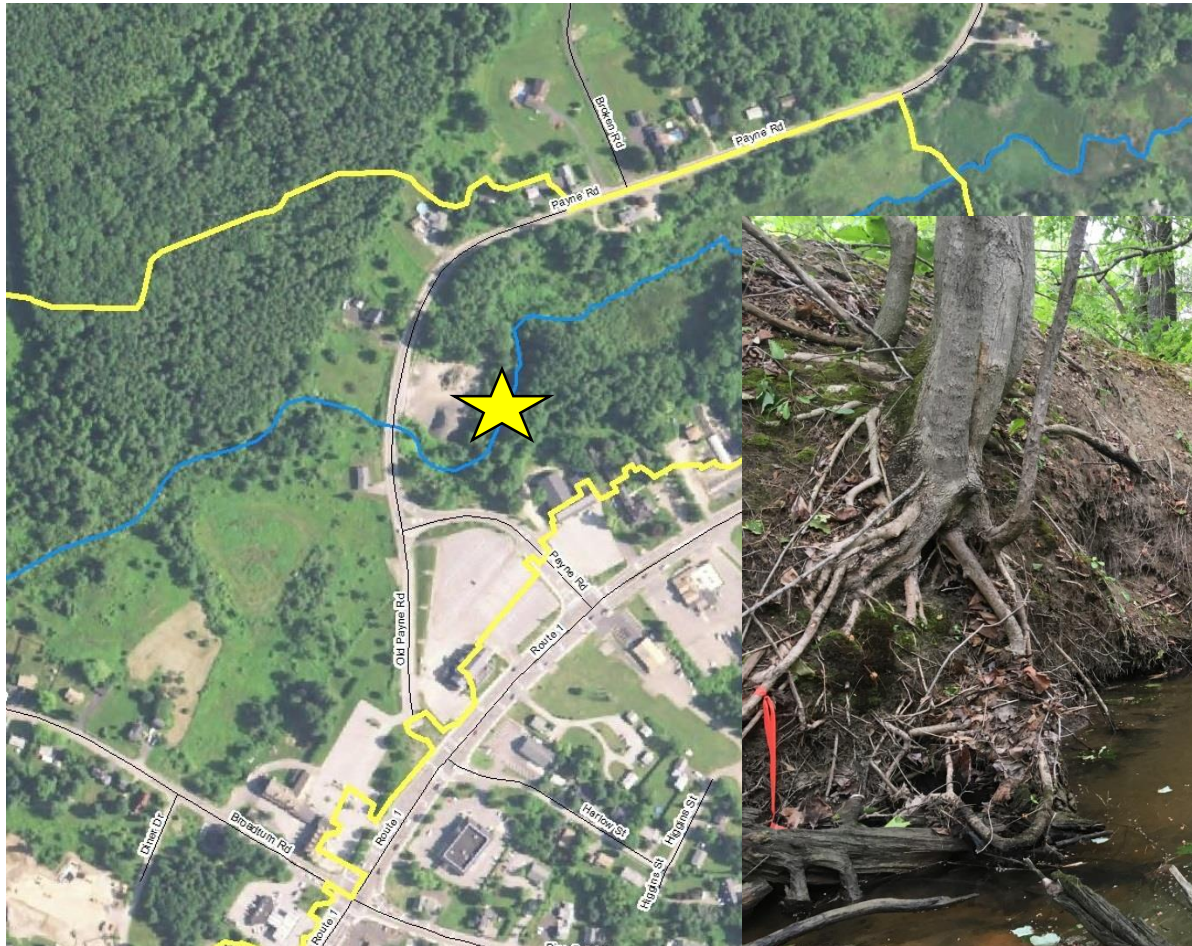




Payne Road



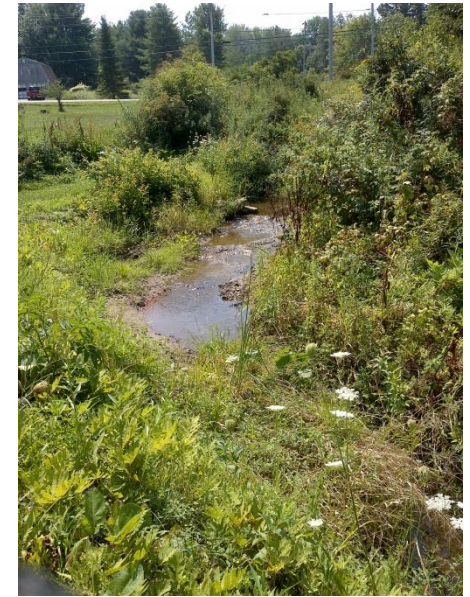
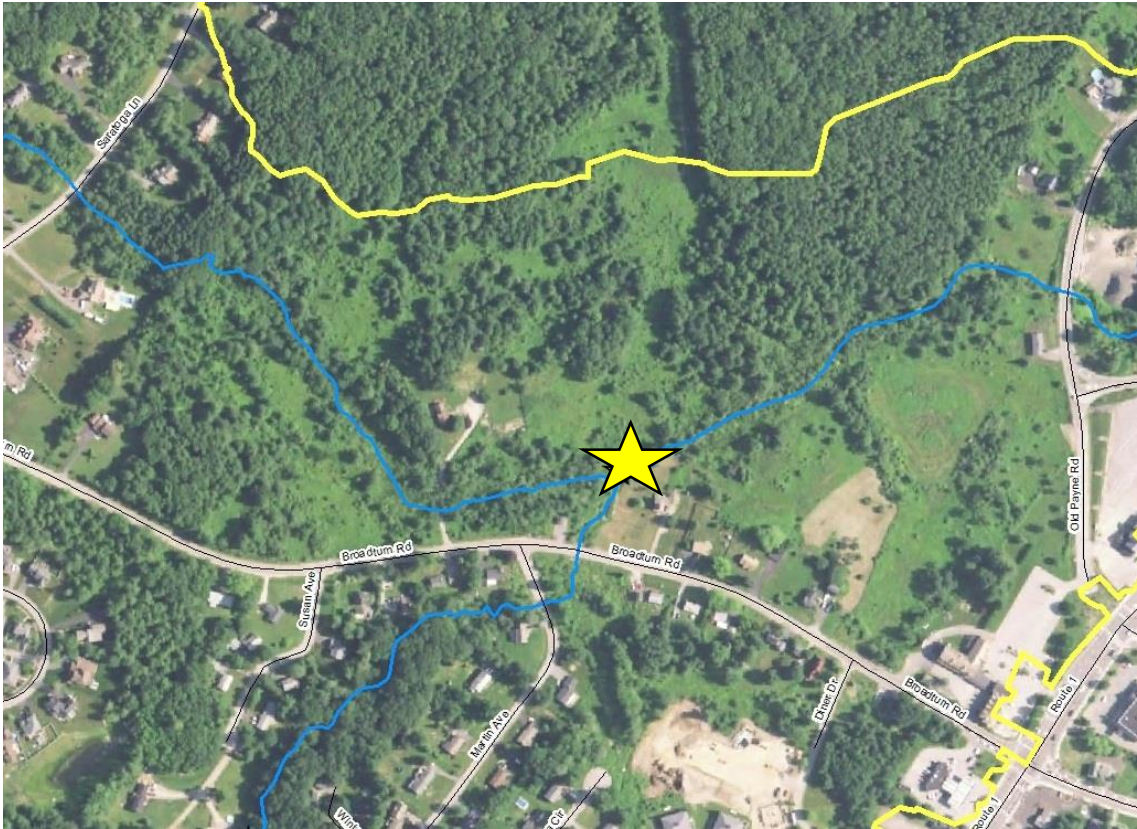
Payne Road



**Payne Road Crossing –
Sept 2015 Storm 5.5 inches**



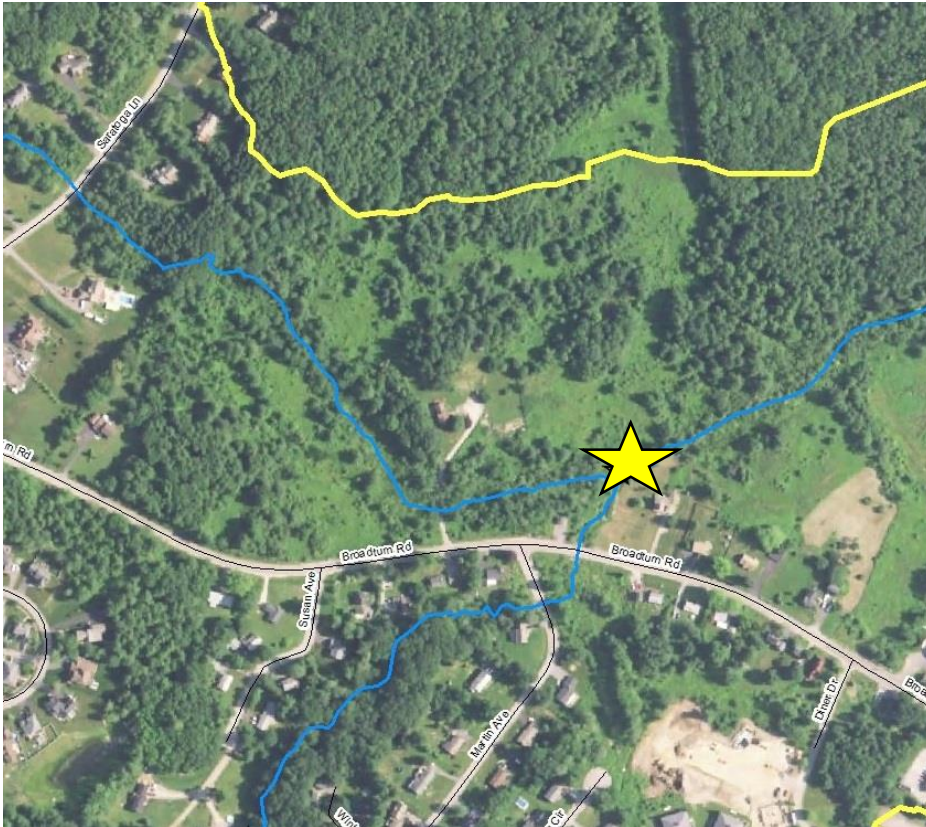
Broadturn Road



Broadturn Road



Broadturn Road

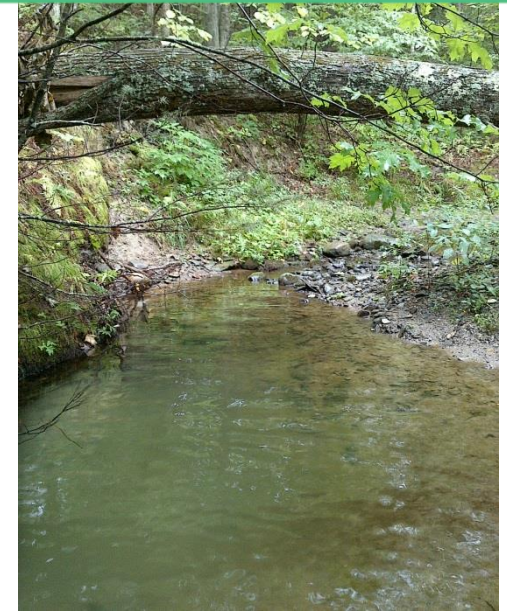
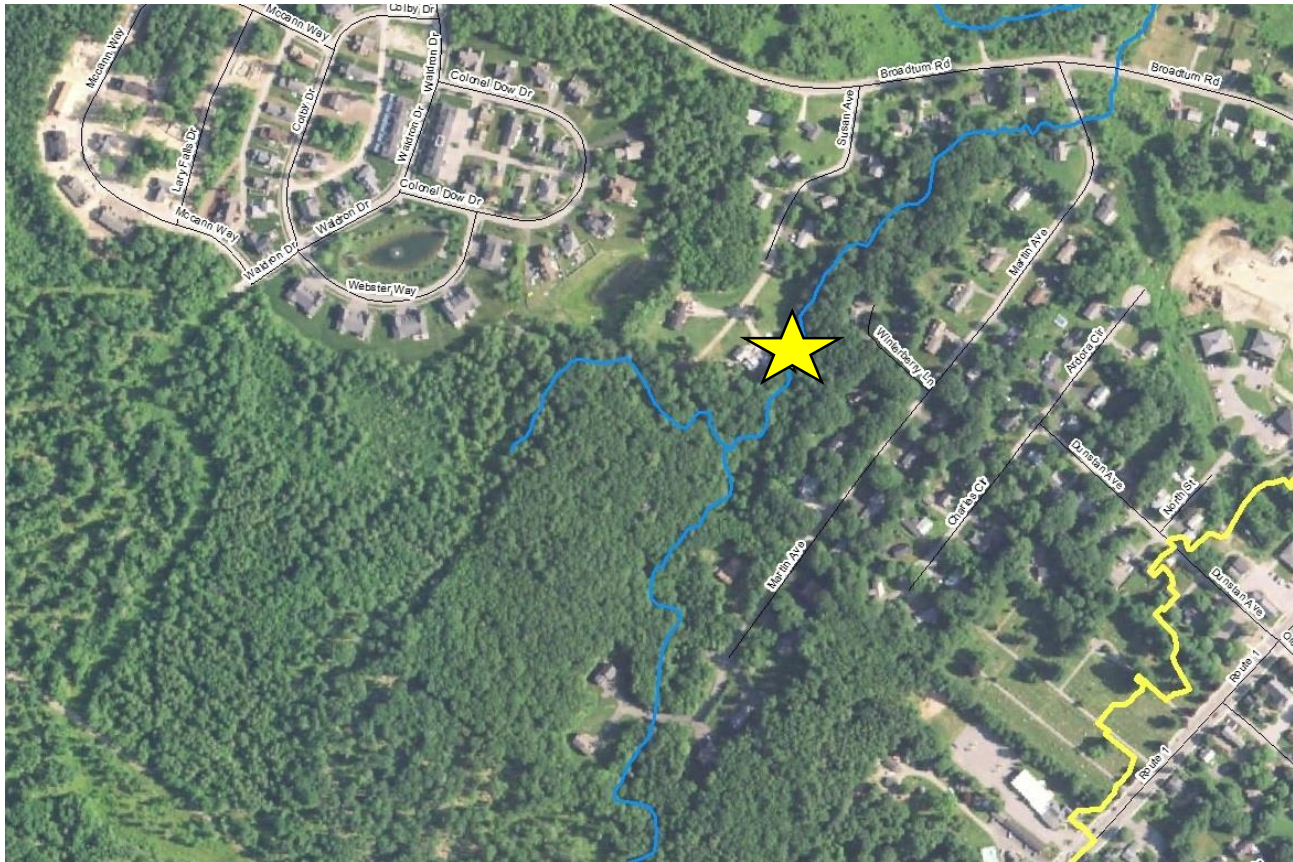




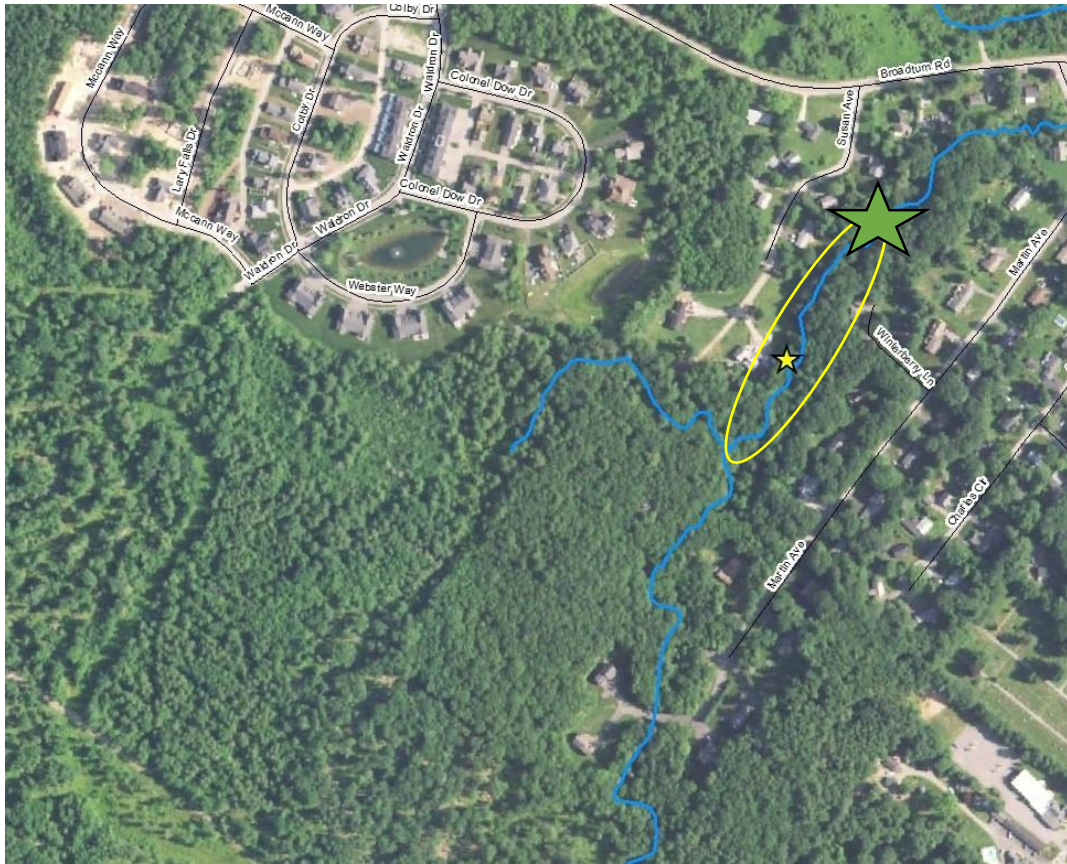
**Broadturn Rd Crossing –
Sept 2015 Storm 5.5 inches**



Susan Ave



Susan Ave



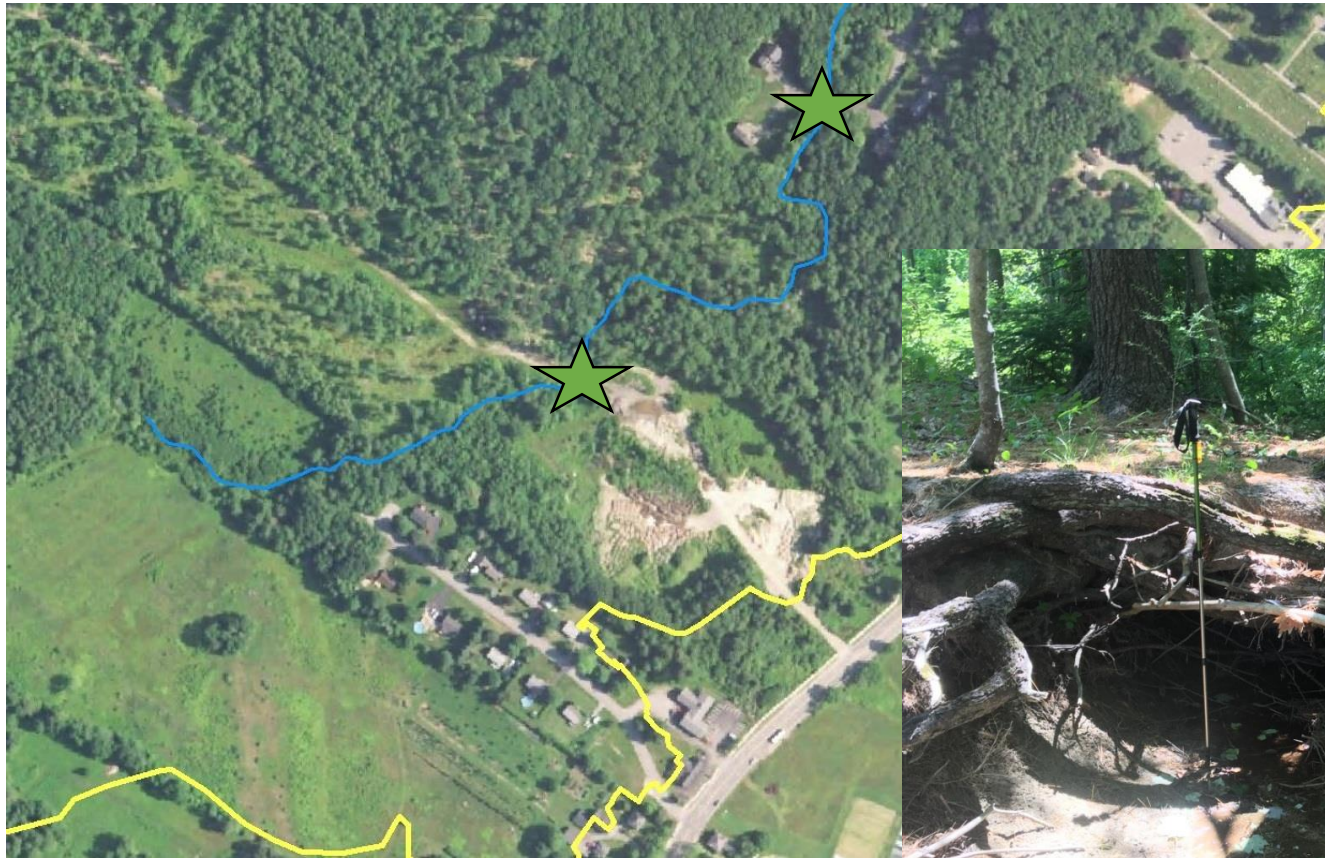
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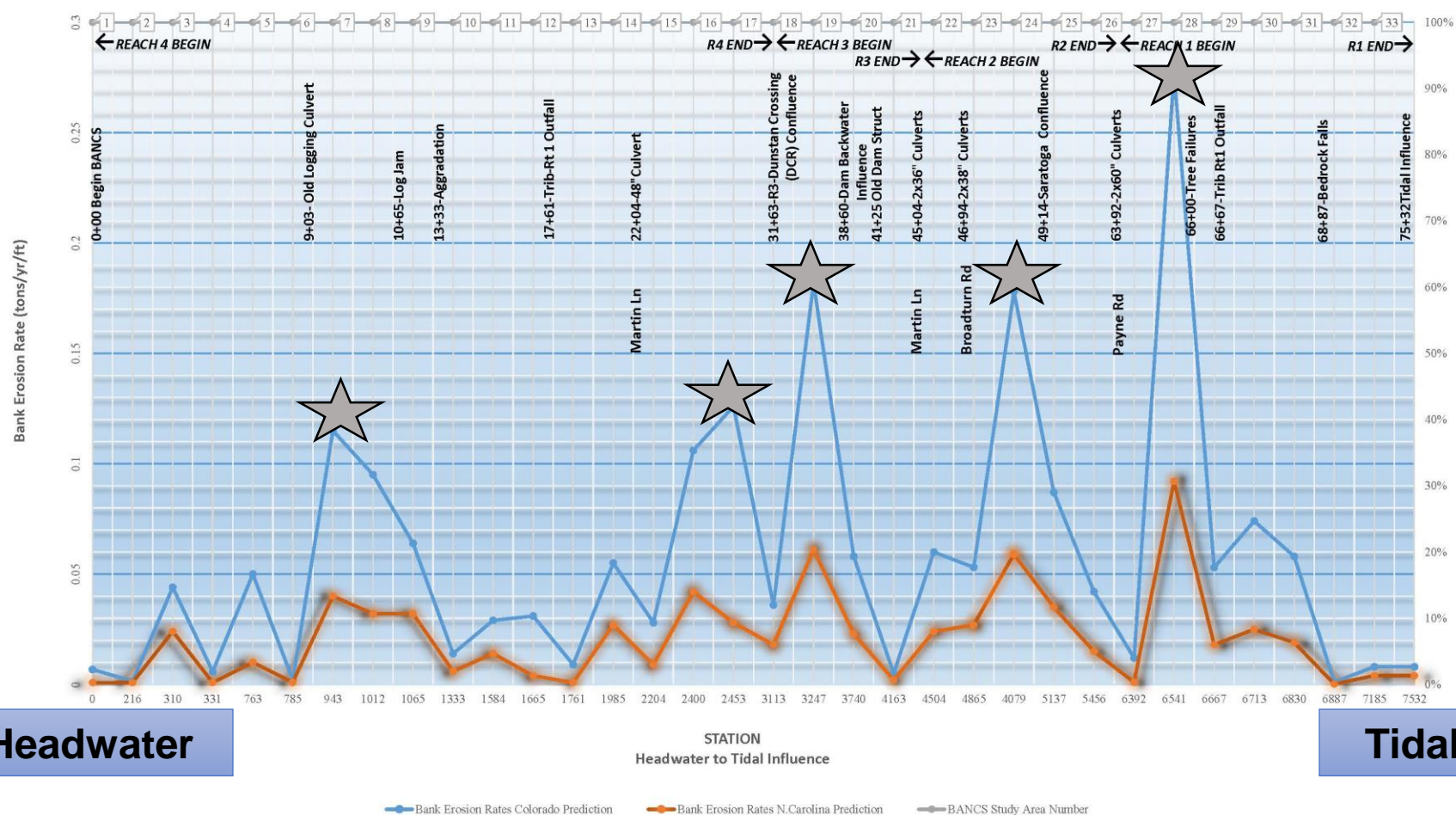
Susan Ave



Upstream Areas



Bank Erosion Rate Prediction

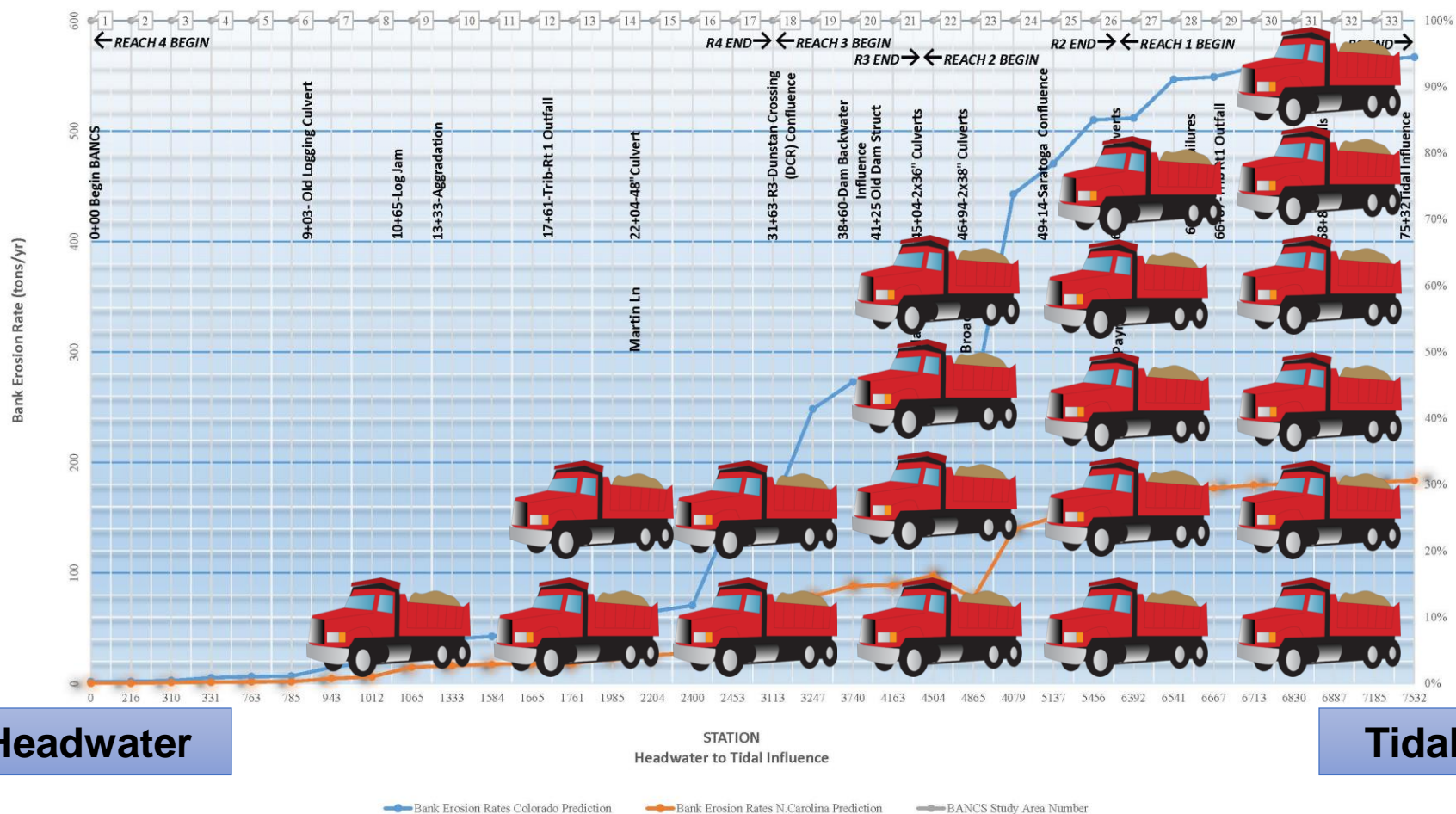


Headwater

Tidal



Cumulative Bank Erosion Prediction



So, what are the major issues for Phillips Brook?

- Habitat issues
 - Bank erosion
 - Stream sediment moves around
 - Loss of access to floodplain
 - Culvert impacts
- Conductivity
 - concerns for future



More Study to Come

- 2016 aquatic life results
- Dissolved oxygen
- Conductivity
- Movement of sediment





Contact:

Kristin Feindel

kristin.b.feindel@maine.gov

207-215-3461

www.maine.gov/dep

What does this all mean?

Bank
Erosion



Culvert
Impacts



Loss of
Floodplain



Channel
Alteration



Possible Recommendations



Ordinance Changes

**Require use of Low Impact Development techniques
Land planning and engineering design to manage
stormwater runoff emphasizing conservation and use of
on-site natural features.**

**Mimic the natural drainage patterns and hydrology
of the watershed**



Ordinance Changes



Reduce amount of impervious cover

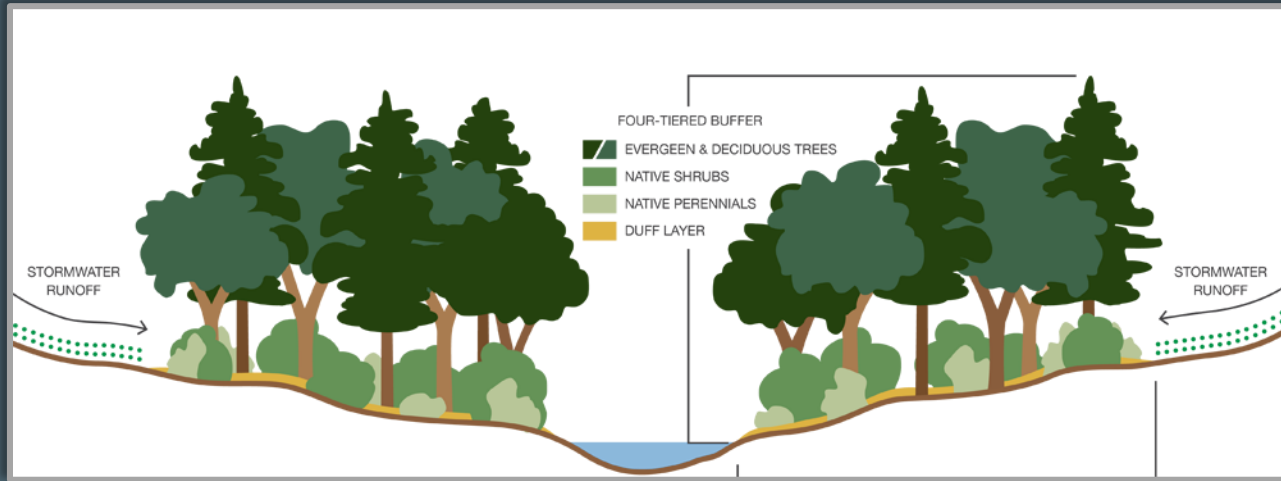
An aerial photograph of a parking lot where the asphalt has been replaced with permeable pavers. The pavers are arranged in a grid pattern with grass growing between them. A dark SUV is parked in the upper left corner of the lot. The surrounding area includes trees and a grassy field.



Minimize amount of connected impervious area

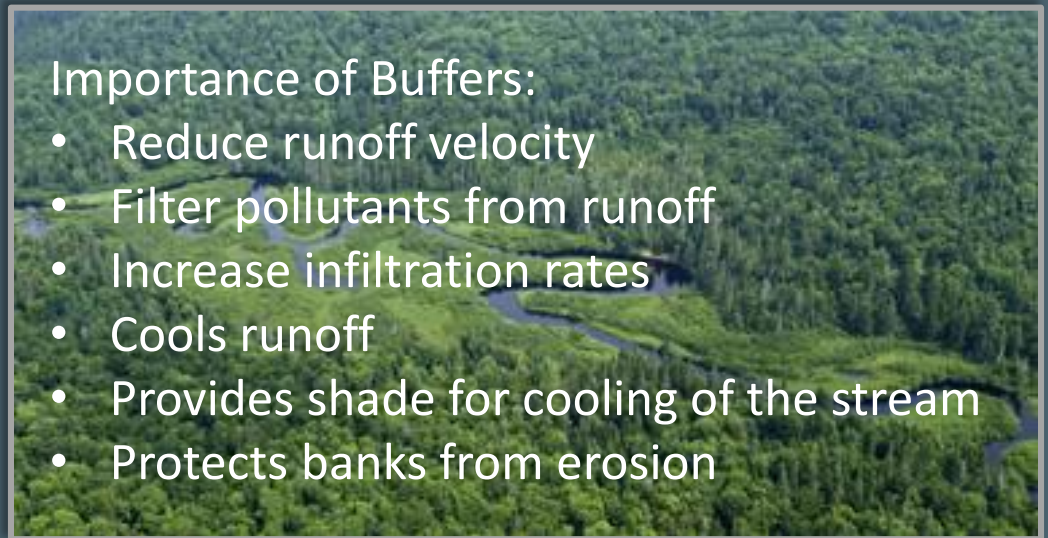
A close-up photograph showing a high-pressure water hose spraying a stream of water onto a dark asphalt surface. The water is creating a misty spray. A concrete curb is visible in the lower left corner of the frame.

Stream Buffer Standards



Importance of Buffers:

- Reduce runoff velocity
- Filter pollutants from runoff
- Increase infiltration rates
- Cools runoff
- Provides shade for cooling of the stream
- Protects banks from erosion



Stream Crossing Standards

Culverts installed under current State guidelines are not adequate to handle the flow



Undersized culverts lead to flooding upstream and high velocity and erosion downstream



Restoration Projects



WMP will identify projects on both private and public lands



Partnership with private land owners is needed

Modeling and Further Studies



Outreach and Education



Next Steps



Workshop

- June 2017
- Planning Board, Conservation Commission, Steering Committee, Public



Additional Field Work

- Summer 2017
- Collecting additional data based on last year's findings and public feedback



Final Report to Town Council

- Late Fall 2017
- Presentation at Council Meeting



Final Report Published

- December 2017

Group Map Exercise

Why are we breaking out into small groups?

What will the groups do?

Who will we involve in small groups?

Questions?

Angela Blanchette

Scarborough Town Engineer

ablanchette@ci.Scarborough.me.us

Kristin Feindel

DEP Grant Administrator

kristin.b.feindel@maine.gov

Jodie Keene

CCSWCD Outreach Coordinator

jkeene@cumberlandswcd.org

