

Developing a Modern-Day Tidal Crossing Assessment Protocol

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The Nature
Conservancy
New Hampshire



Project Funders & Partners

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What's Similar?

Draft 8/09/2016
New Hampshire's Tidal Crossing Assessment Protocol Data Sheet

CROSSING TYPE & CONDITION (field evaluation)

Crossing Type:

Round Culvert
Elliptical Culvert
Box Culvert
Embedded Round Culvert
Open Bottom Arch
Bridge with Abutments
Bridge with Side Slopes
Bridge w/ S. Slopes and Abutment
Ford

Structure Materials:

Concrete
Plastic-Corrugated
Plastic-Smooth
Tank
Stone
Steel-Corrugated
Steel-Smooth
Aluminum-Corrugated
Wood
Other

Structure of at Crossing

Crossing Dimensions (feet):

	Upstream	Downstream
Dimension A:		
Dimension B:		
Dimension C:		
Dimension D:		

Note any Obstructions at Structure Openings:

SKETCH OF STRUCTURE

Low Tide Perch:

Upstream	Downstream
N/A	
None	None
Low	Low
Medium	Medium
High	High

High Tide Perch:

Scour at Outlet:

Angle of Stream Flow Approaching Structure:

Upstream	Downstream
Sharp Bend (>45°)	Sharp Bend (>45°)
Mild Bend (5-45°)	Mild Bend (5-45°)
Naturally Straight	Naturally Straight
Channelized Straight	Channelized Straight

Crossing Condition:

New
Old
Eroding
Collapsing
Rusted

Crossing Corrosion Severity:

None
Low
Medium
High
N/A

Crossing Deformation:

None
Low
Medium
High

Spalling Severity:

None
Low
Medium
High
N/A

Joint Separation

None
Partial
< 1"
1 - 3"
> 3" or soil infiltration
no joints
N/A

Headwall Materials:

Metal
Concrete
Masonry
Gabion
Dry Fit Stone
Plastic
Other
None

Headwall Condition:

Upstream	Downstream
Excellent	Excellent
Good	Good
Fair	Fair
Poor	Poor

Scour Around Structure (circle all applicable):

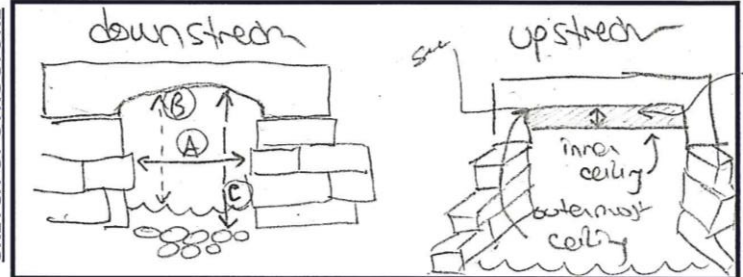
Upstream	Downstream
None	None
Culvert	Culvert
Footer	Footer
Wing Walls	Wing Walls
Abutment	Abutment
None	None
Low	Low
Medium	Medium
High	High

Crossing Type/Condition Comments:

Severity of Scour:



SKETCH OF STRUCTURE



1-7 ft height difference to inner ceiling



What's Different?

Draft 8/11/2016
New Hampshire's Tidal Crossing Assessment Protocol Data Sheet

LONGITUDINAL PROFILE AND HIGH WATER INDICATORS (field evaluation)

Elevation data will be referenced to the road centerline, when possible, for best results of tying to LIDAR elevations

Height at Road Centerline:

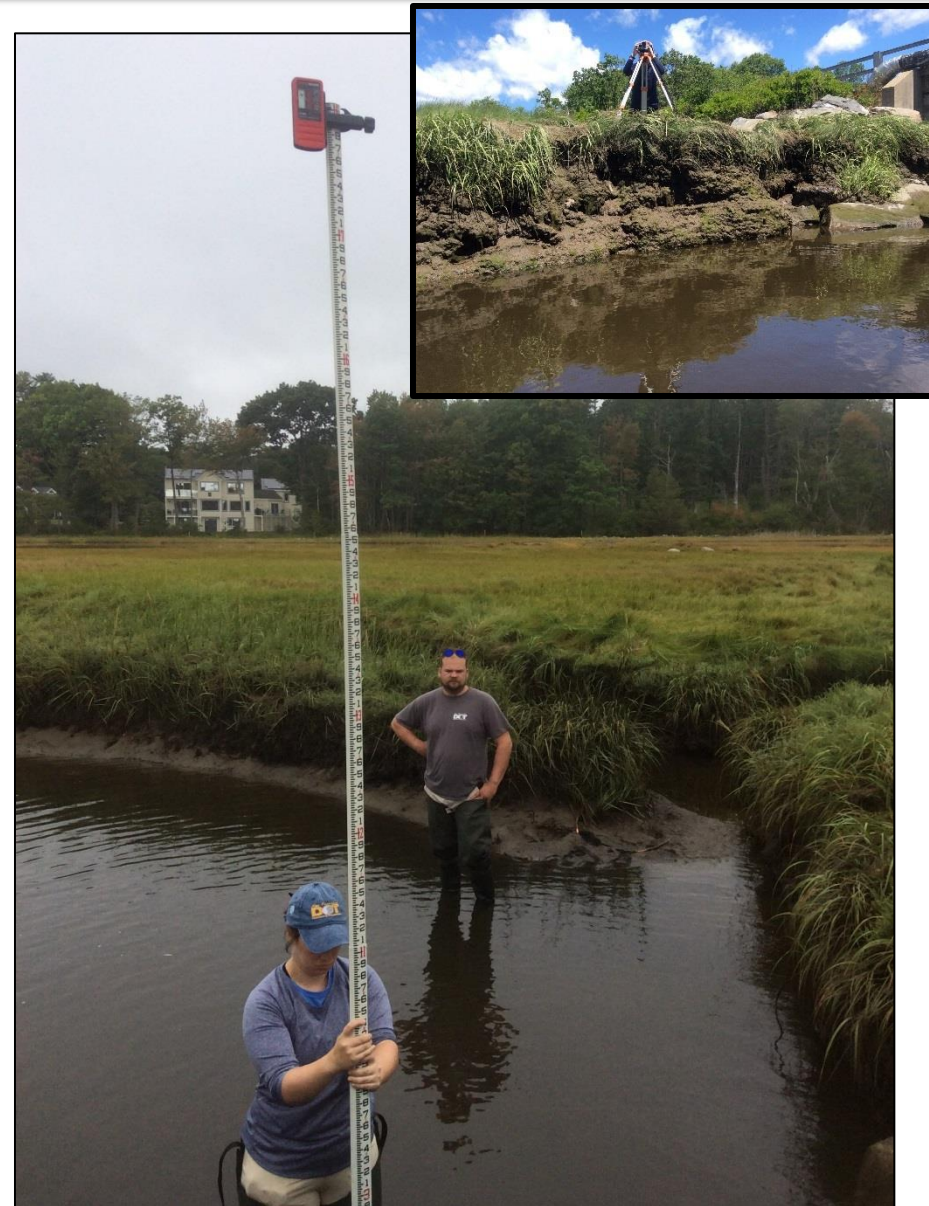
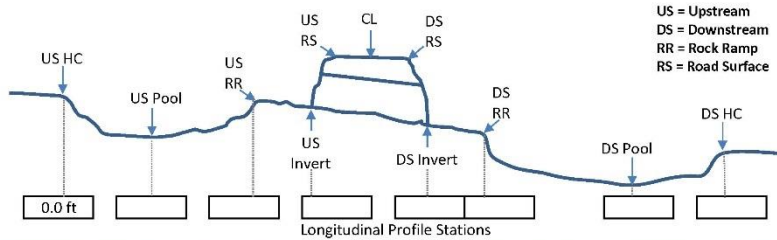
Indicate in the solid outlined boxes below if the elevation was taken from the:

- Roadway level setup (R)
- Upstream level setup (U)
- Downstream level setup (D)

Specify if different reference point is used:

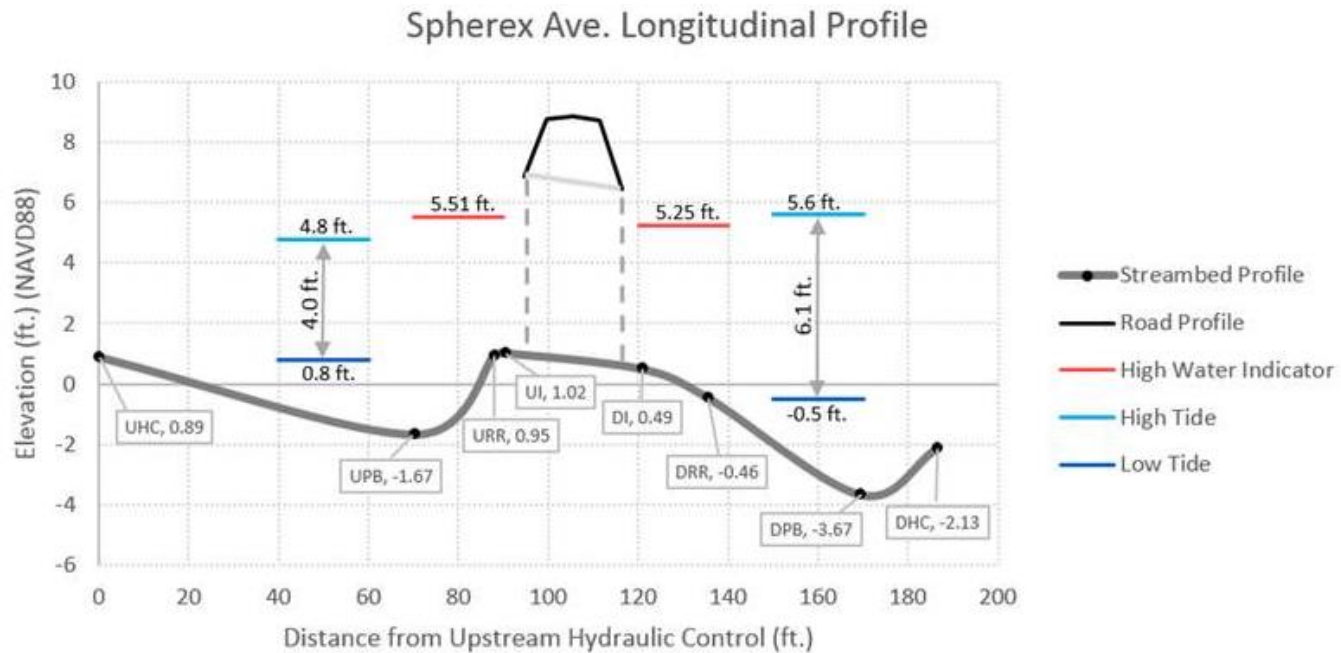
	Road Surface*	Ceiling of Structure	HWI Stain	HWI Wrack	High Marsh Elevations			
					Shot 1	Shot 2	Shot 3	Shot 4
Upstream:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Downstream:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	TP Foresight	TP Backsight	Hydraulic Control	Pool Bottom	Rock Ramp	Invert*	Low Tide Water Level
Upstream:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Downstream:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Longitudinal Profile:

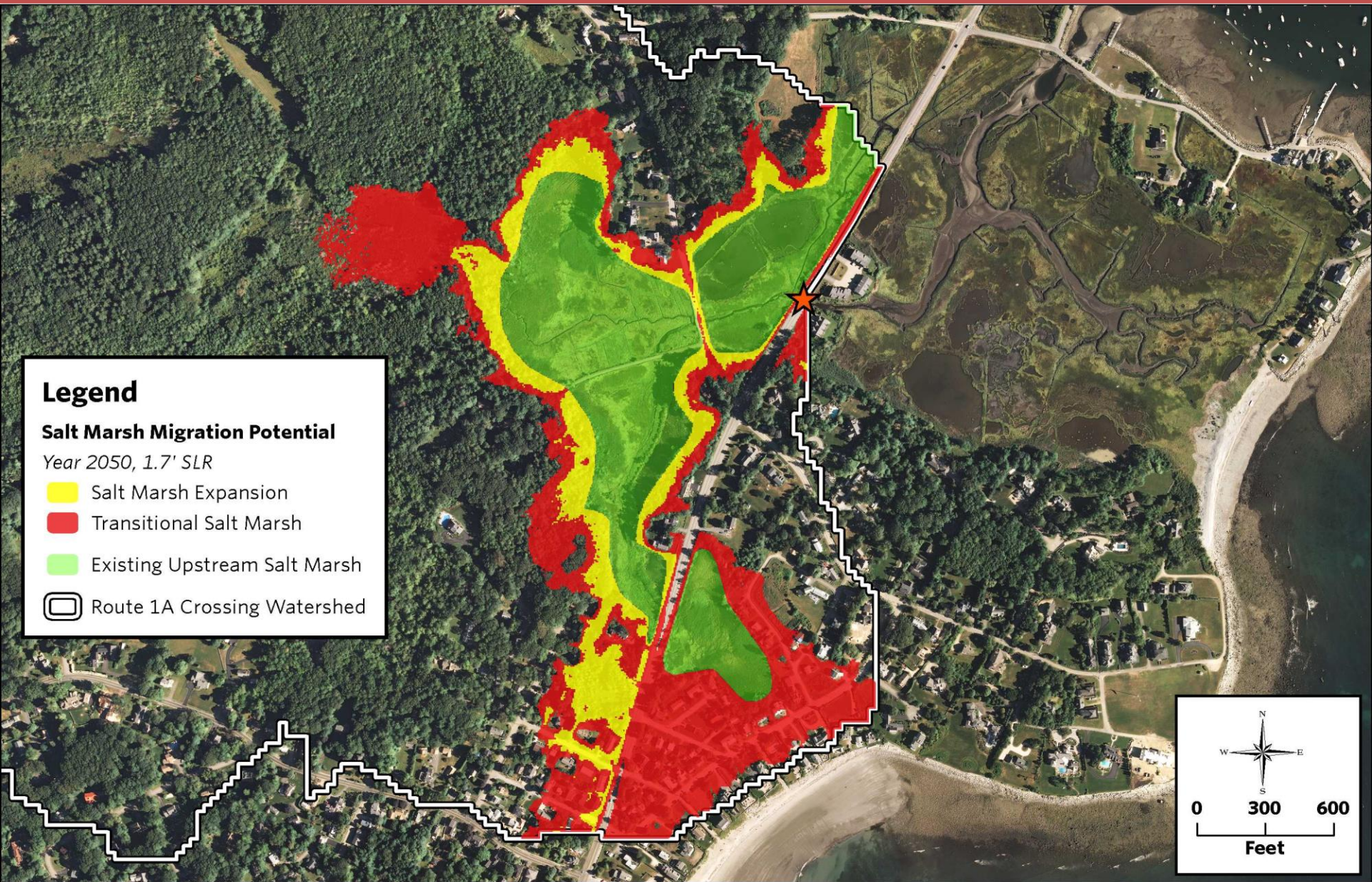
Inundation & Flood Risk, Tidal Range & Restriction



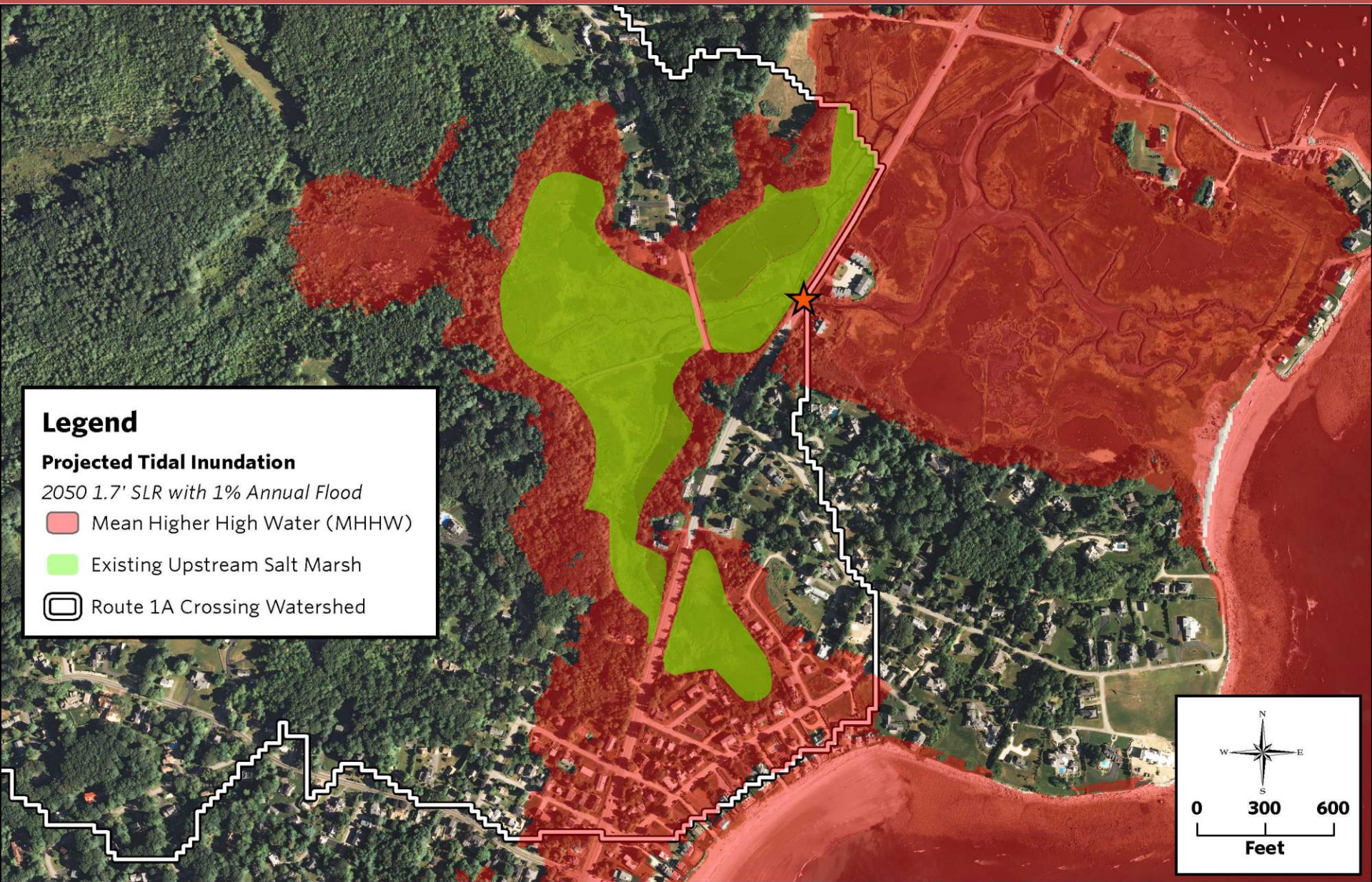
Flow



Desktop Analysis: Salt Marsh Migration Potential



Desktop Analysis: Flood & Inundation Risk to Public & Private Property



Thanks!

