Stony Brook Road over Stony Brook

MassDOT Project No. 608861

Public Informational Meeting

June 17, 2020

6:00 PM

Introductions

- TEC, Inc. – Engineering Consultant for MassDOT
  - Panelists: Bob Niccoli, Jody Trunfio, Jake Carmody
- Town of Westford – Bridge Owner
  - Panelists: Paul Starratt, Jeremy Downs, Steve Cronin
- Residents of the Town of Westford – **Welcome!!**

Agenda

- Project Background
- Existing Conditions
- Project Goals
- Evaluation Criteria
- Alternatives Analysis
- Next Steps
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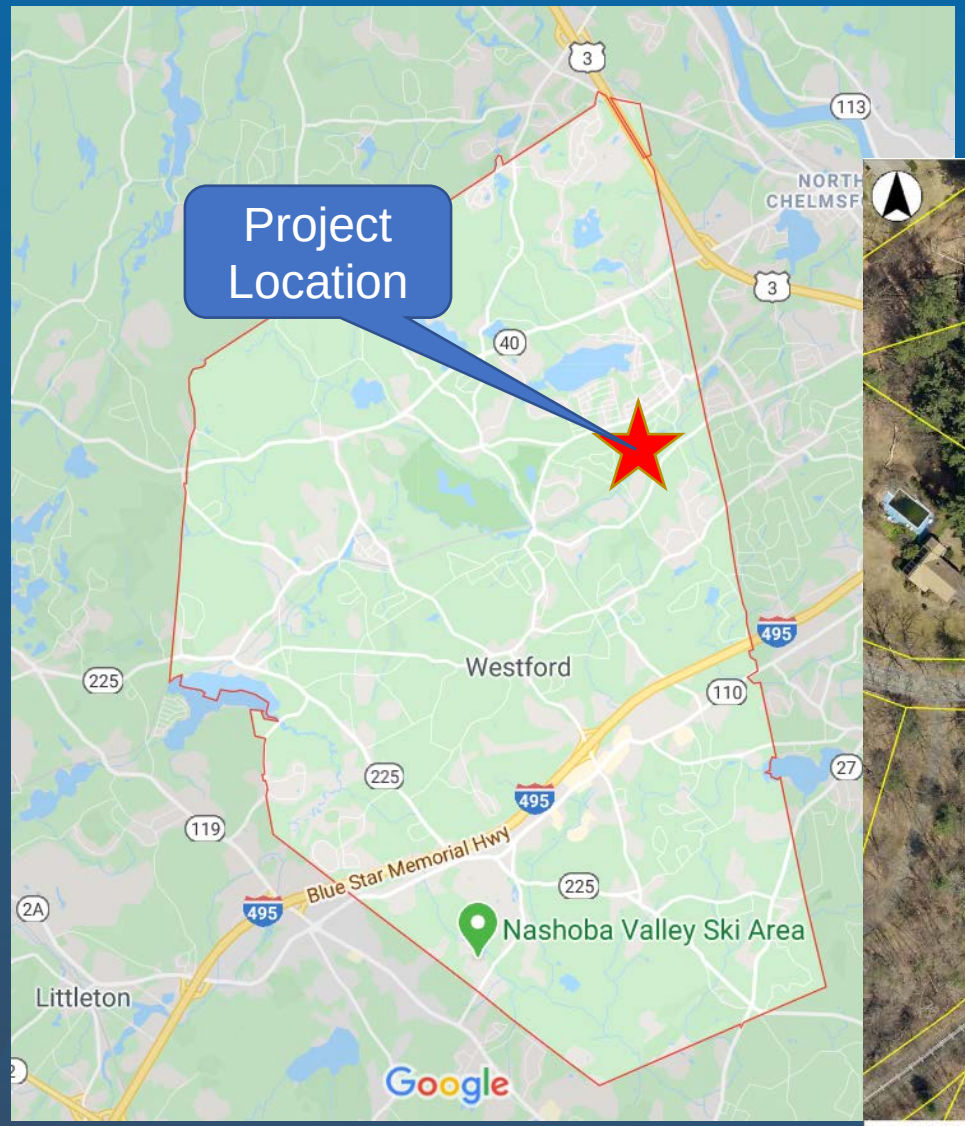
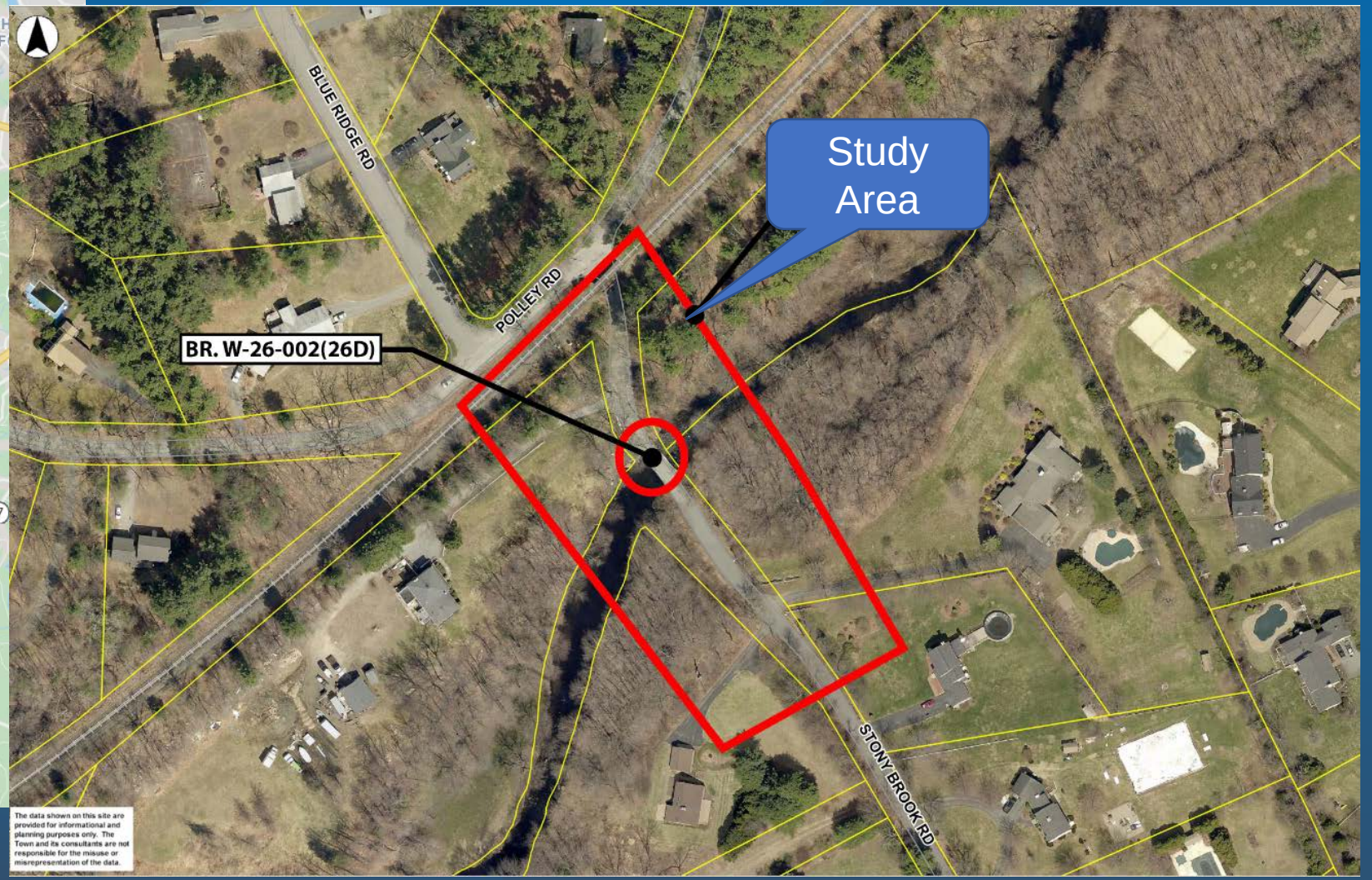
Project Background

- MassDOT responsible for performing inspections on bridges every 2 years and reporting to municipality for town-owned structures
- Results of inspections (i.e. deficiencies) could lead to programmed projects on the state's Transportation Improvement Program
- Stony Brook Bridge identified for Federal Fiscal Year 2022 construction action
- MassDOT hired TEC to evaluate alternatives for addressing bridge deficiencies

Project Background





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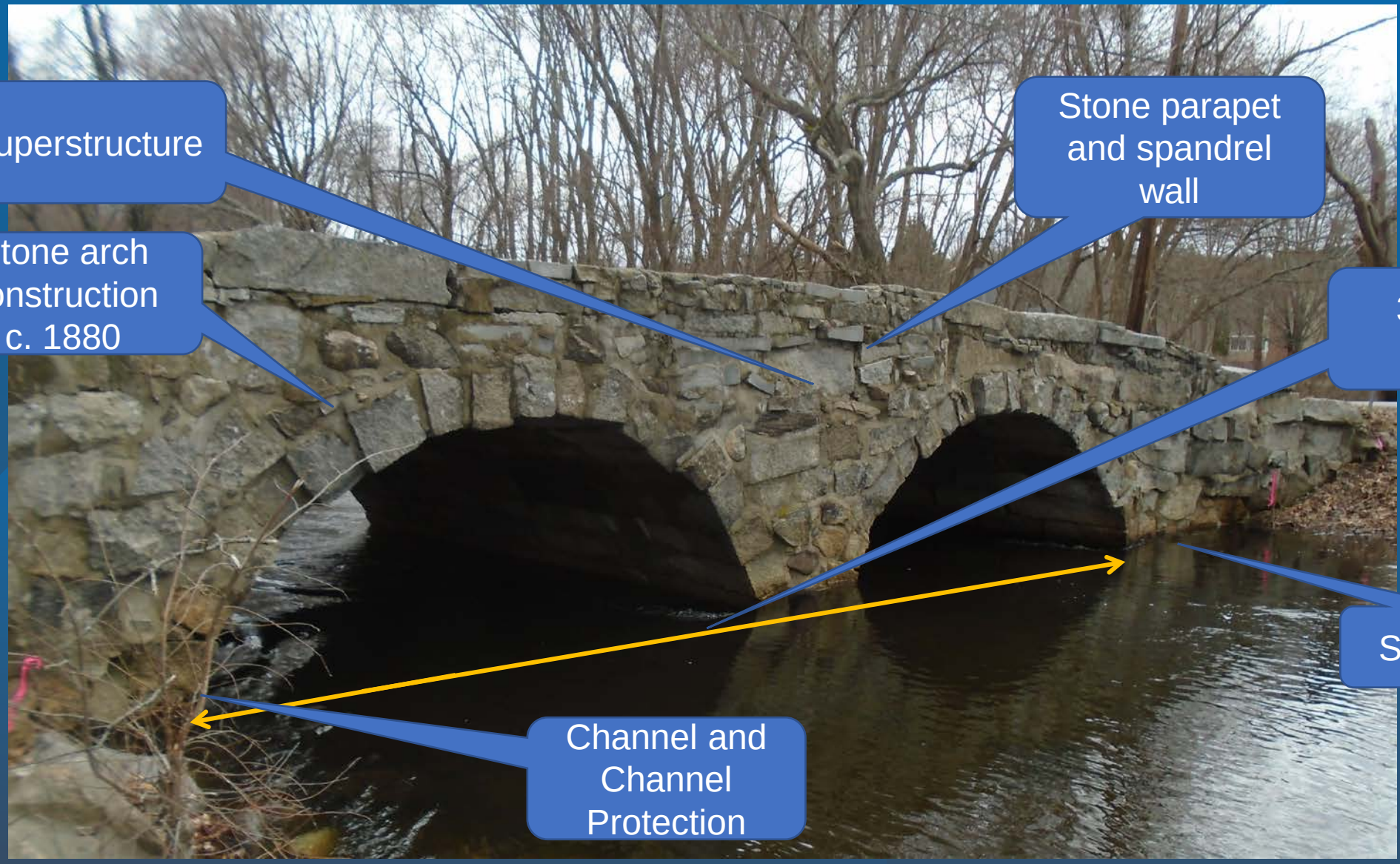
Existing Conditions - Bridge



Existing Conditions - Roadway

Existing Conditions - Access

Existing Conditions

Range: 0-9

Structural Element	Rating	Description
Superstructure:	5	➢ FAIR – All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
Substructure:	6	➢ SATISFACTORY – Structural elements show some minor deterioration.
Channel & Channel Protection	7	➢ GOOD – Some minor problems.

Takeaway – Bridge is potential candidate for rehabilitation; consider alternatives

Existing Conditions – Property

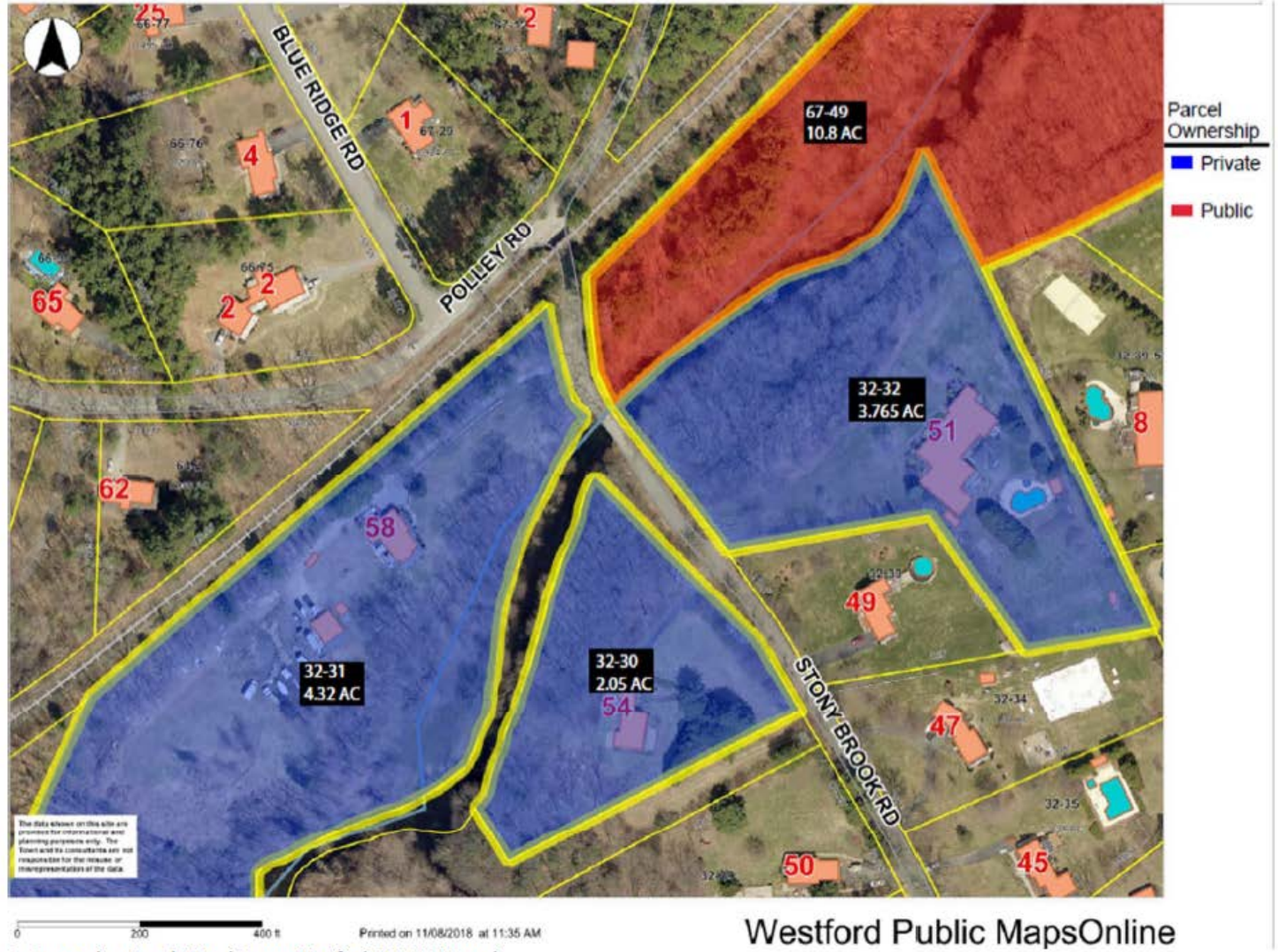
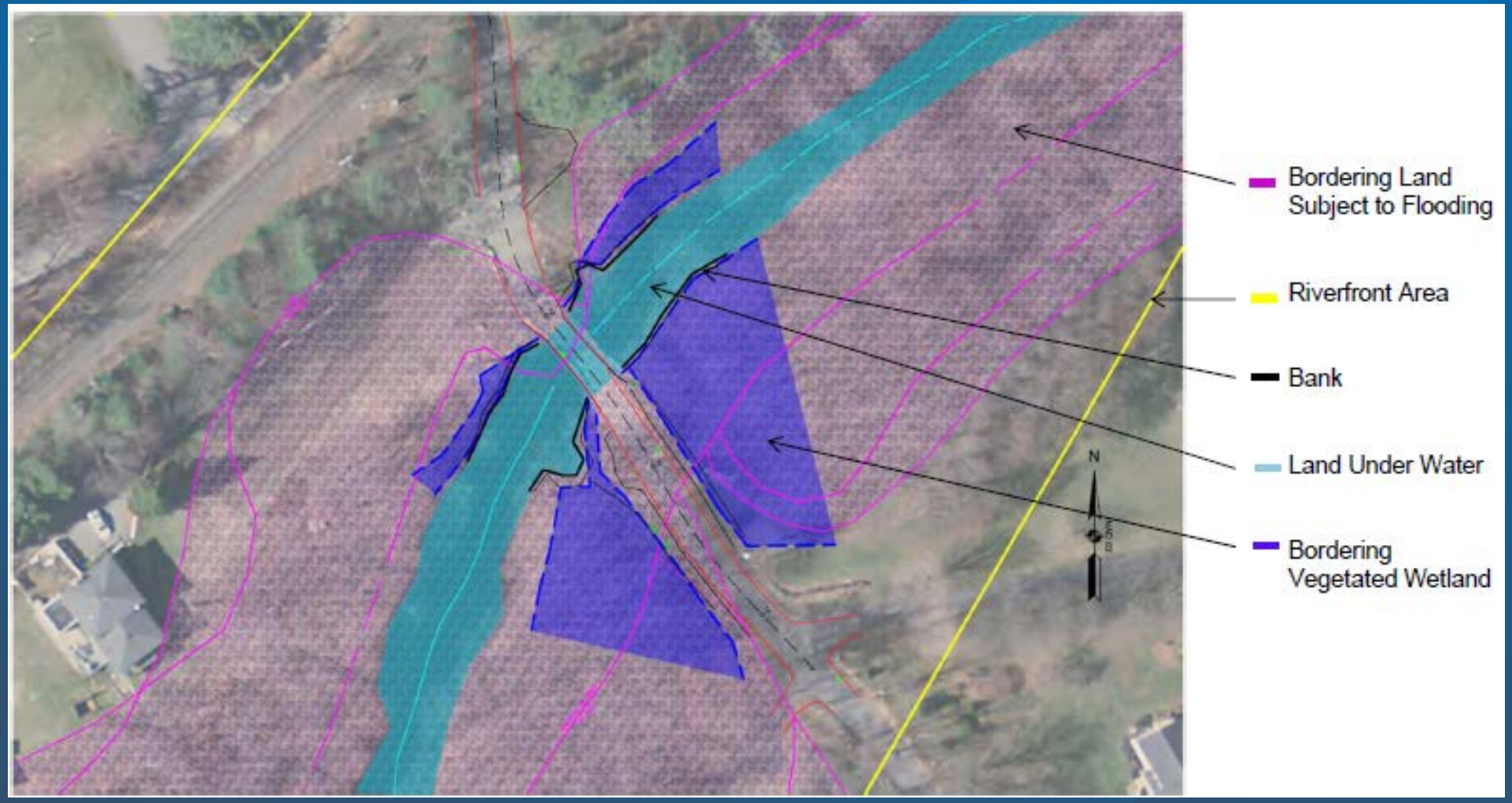


Figure 3: Surrounding Parcels Map (Source: Westford, MA GIS Viewer)

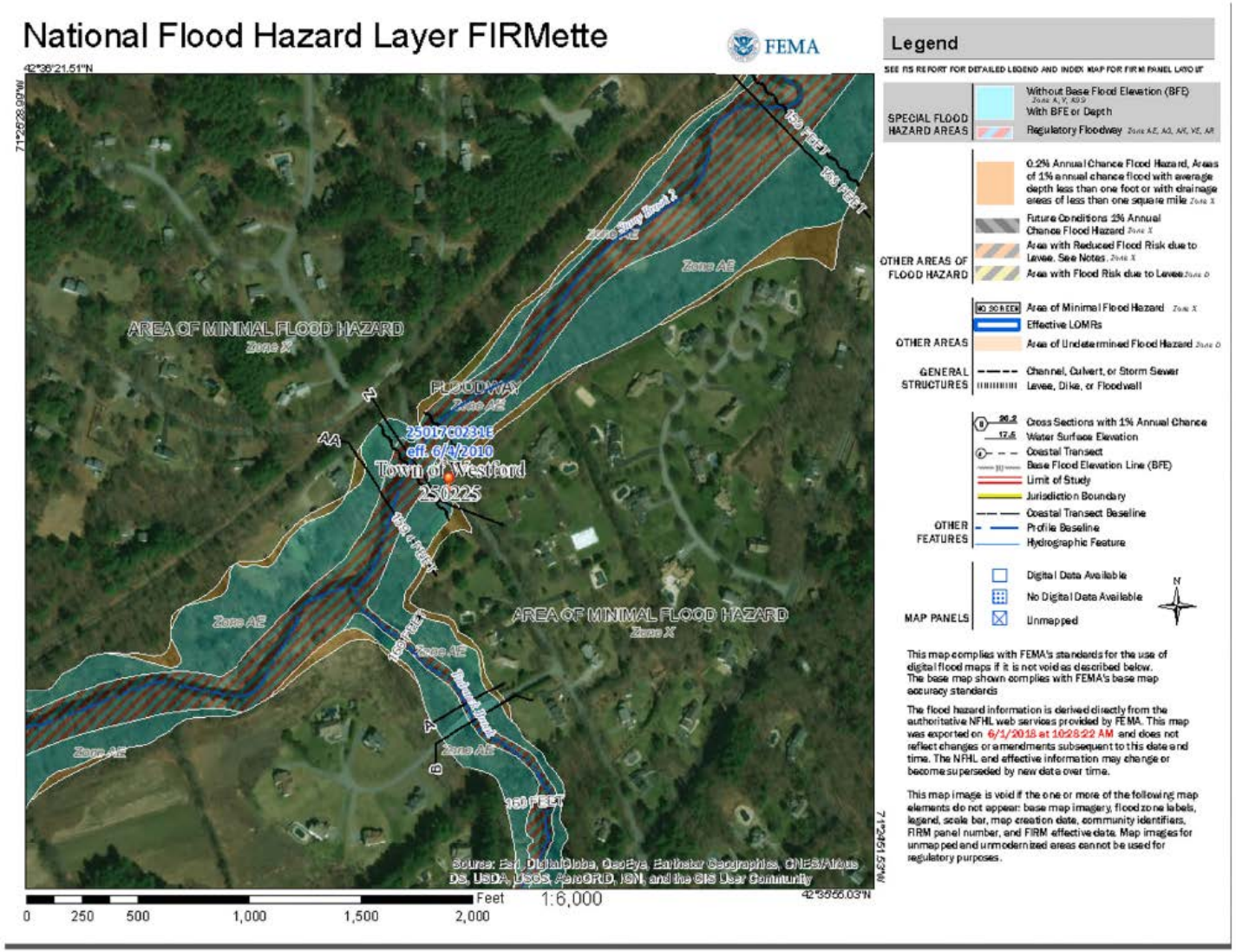
- Surrounding areas include private residences, wetlands, and one parcel owned by Westford Conservation Commission

Existing Conditions - Environmental Resources



- Resource Areas adjacent to project site that are subject to local, state, and federal regulations

Existing Conditions - Environmental Resources



- The bridge is located in a FEMA regulatory flood area

Existing Conditions - Historic Resources

- Stony Brook Bridge is listed as a historic site on both the Massachusetts Cultural Resource Information System (MACRIS) and the national Register of Historic Places
- Stony Brook is listed as a scenic road by the Town of Westford

Massachusetts Cultural Resource Information System
MACRIS

MACRIS Search Results

Search Criteria: Town(s): Westford; Street Name: Stony Brook; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
WSR.926	Stony Brook Bridge	Stony Brook	Westford	1988

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Project Goals

- ✓ Increase **traffic safety** along the bridge
- ✓ Increase the **load carrying capacity** of the bridge
- ✓ Reduce impacts to **abutting properties**
- ✓ Reduce impacts to **environmentally sensitive areas**
- ✓ Maintain **historic appearance** within the project limits

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Evaluation Criteria

- Traffic Safety
- Preserve the Historic Aesthetic of the Bridge
- Extending the service life of the Bridge
- Environmental Impacts
- Right of Way and Property Impacts
- Cost

Each Criterion was scored ranging 1 (Poor) to 5 (Excellent) with total aggregate score identifying the preferred engineering alternative

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Alternatives Analysis

- Alternative 1: No-Build
- Alternative 2: Preservation
- Alternative 3: Replacement
- Alternative 4: New Adjacent Bridge
  - use current bridge for pedestrians only

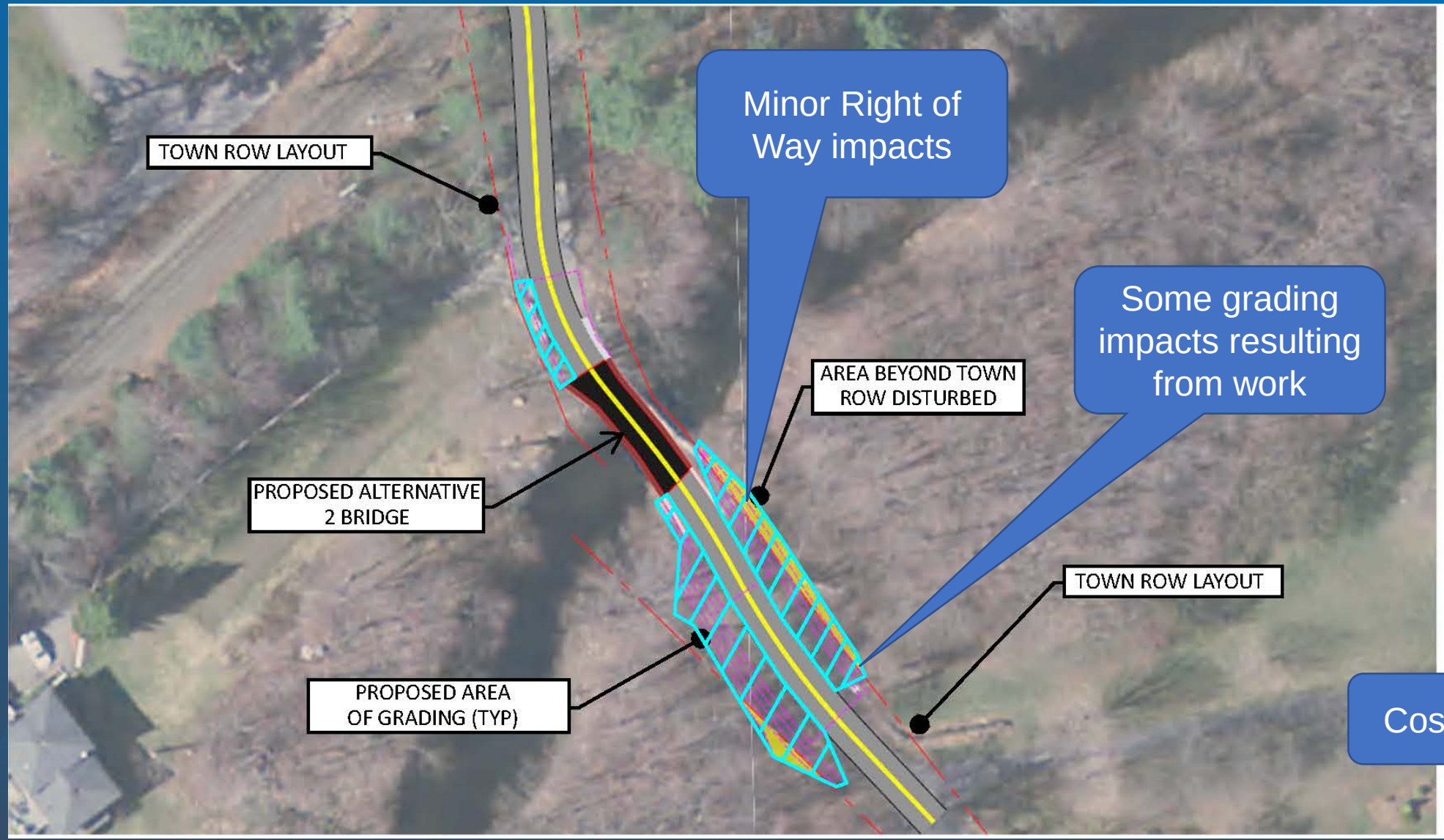
Alternative 1 – No-Build

Reduced bridge capacity remains in place

Non-compliant issues remain

Cost = $0

Alternative 2 - Preservation



LEGEND:

Grading Impact

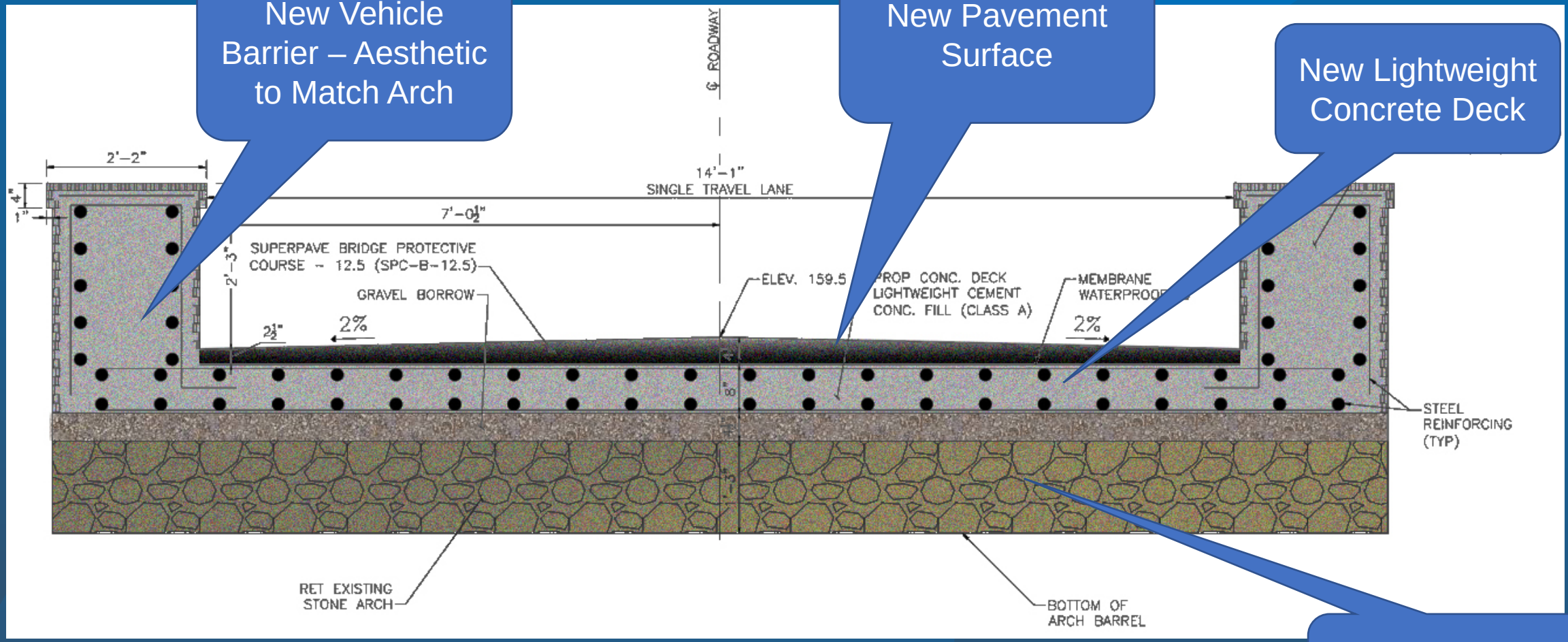
ROW Impact

SUMMARY:

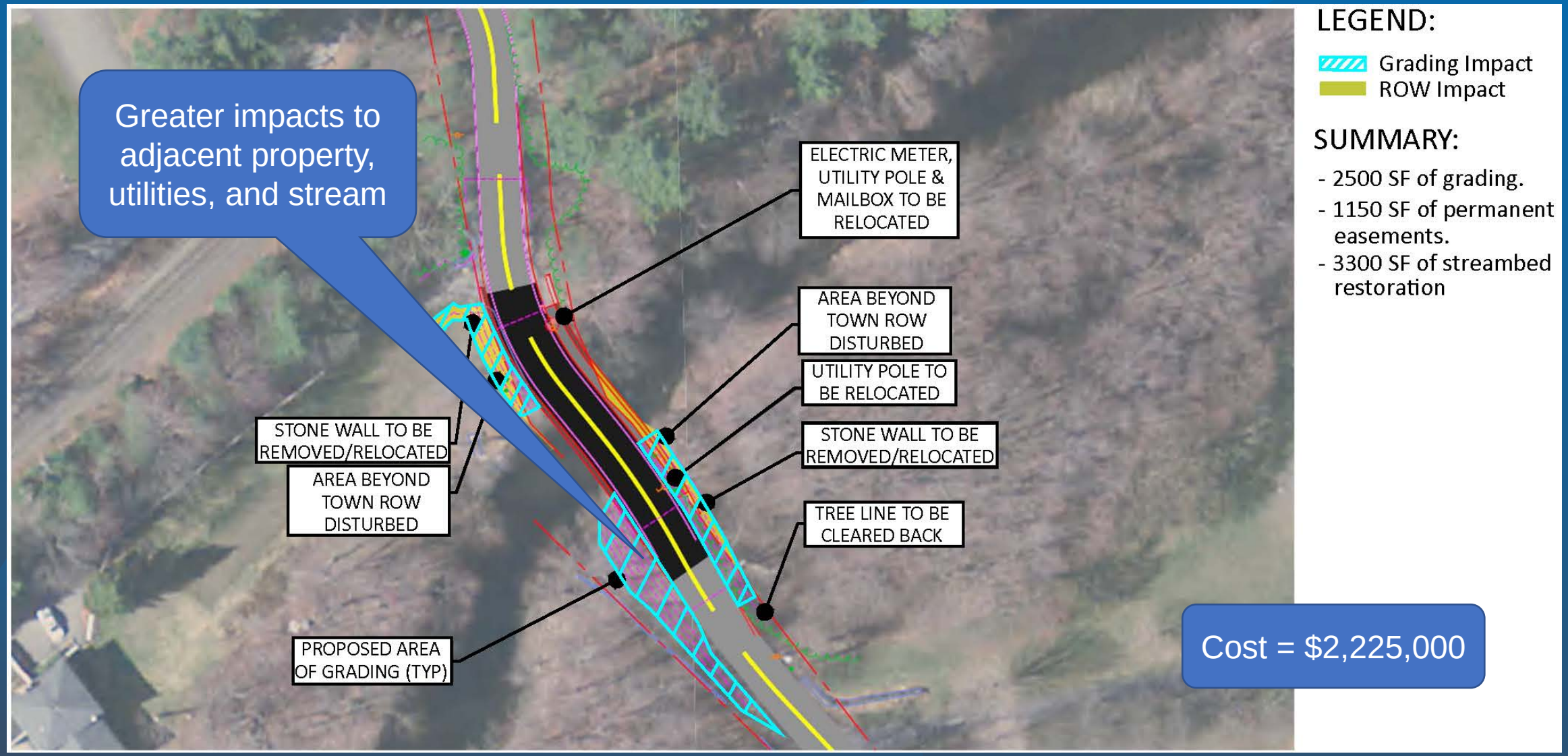
- 2500 SF of grading.
- 700 SF of permanent easements.

Cost = $500,000

Alternative 2 – Preferred Alternative



Alternative 3 - Replacement

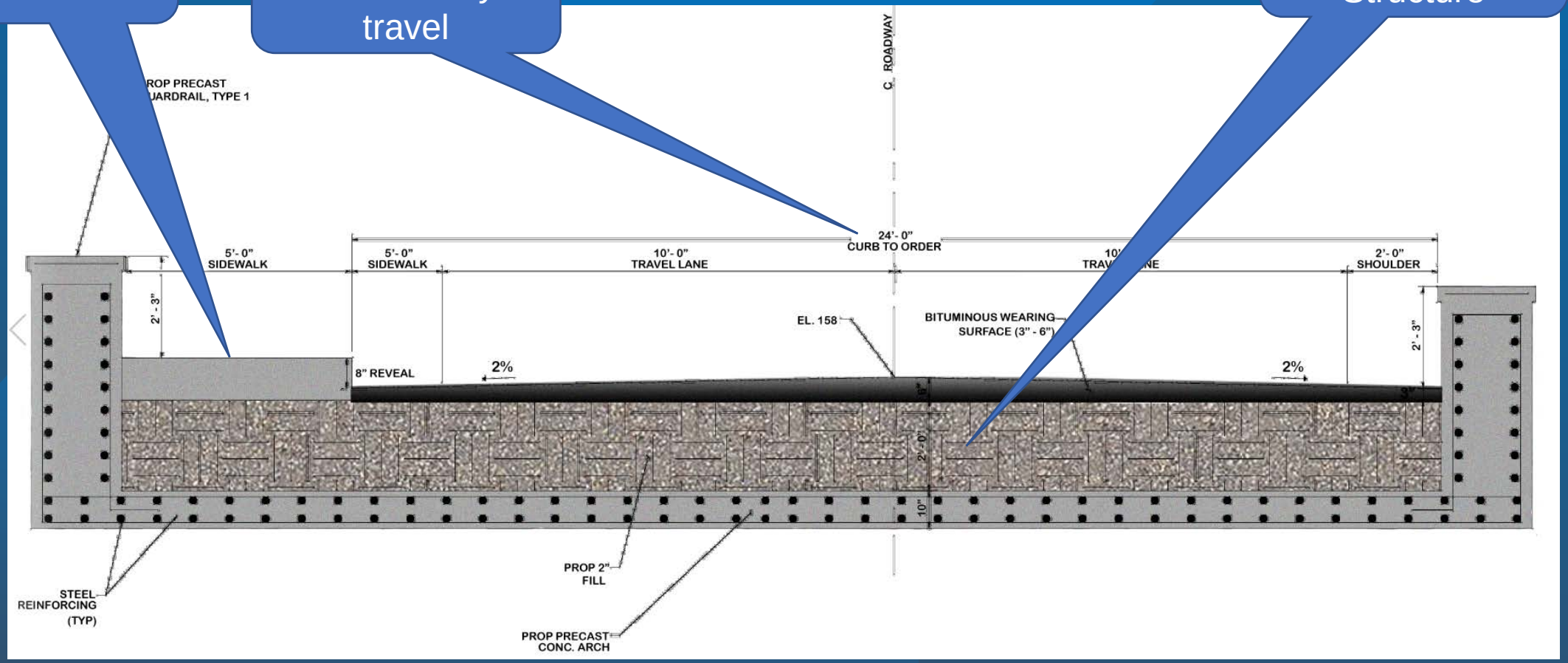


Alternative 3 - Replacement

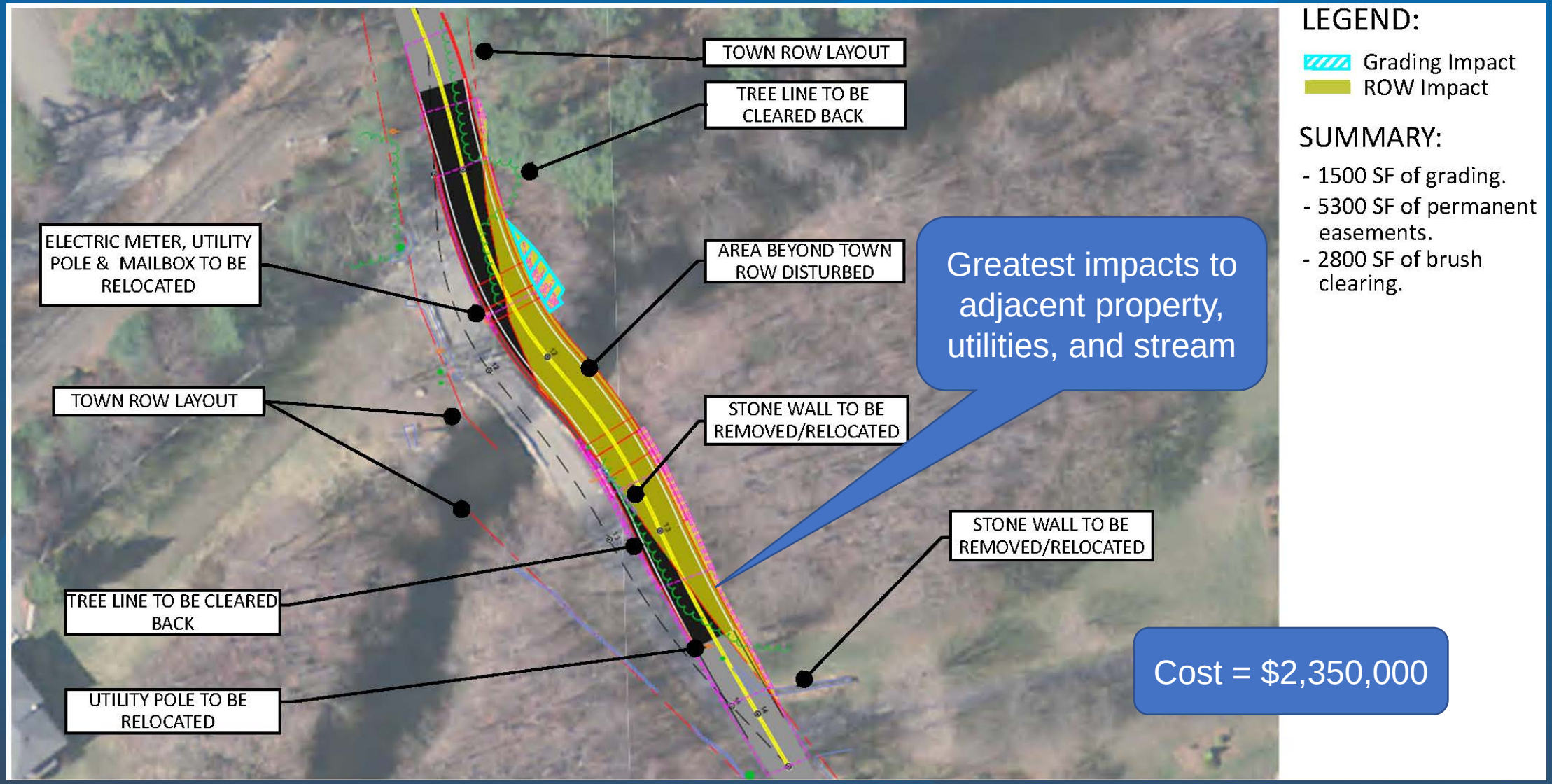
Pedestrian Separation

Wider Roadway for two-way travel

New Precast Concrete Structure



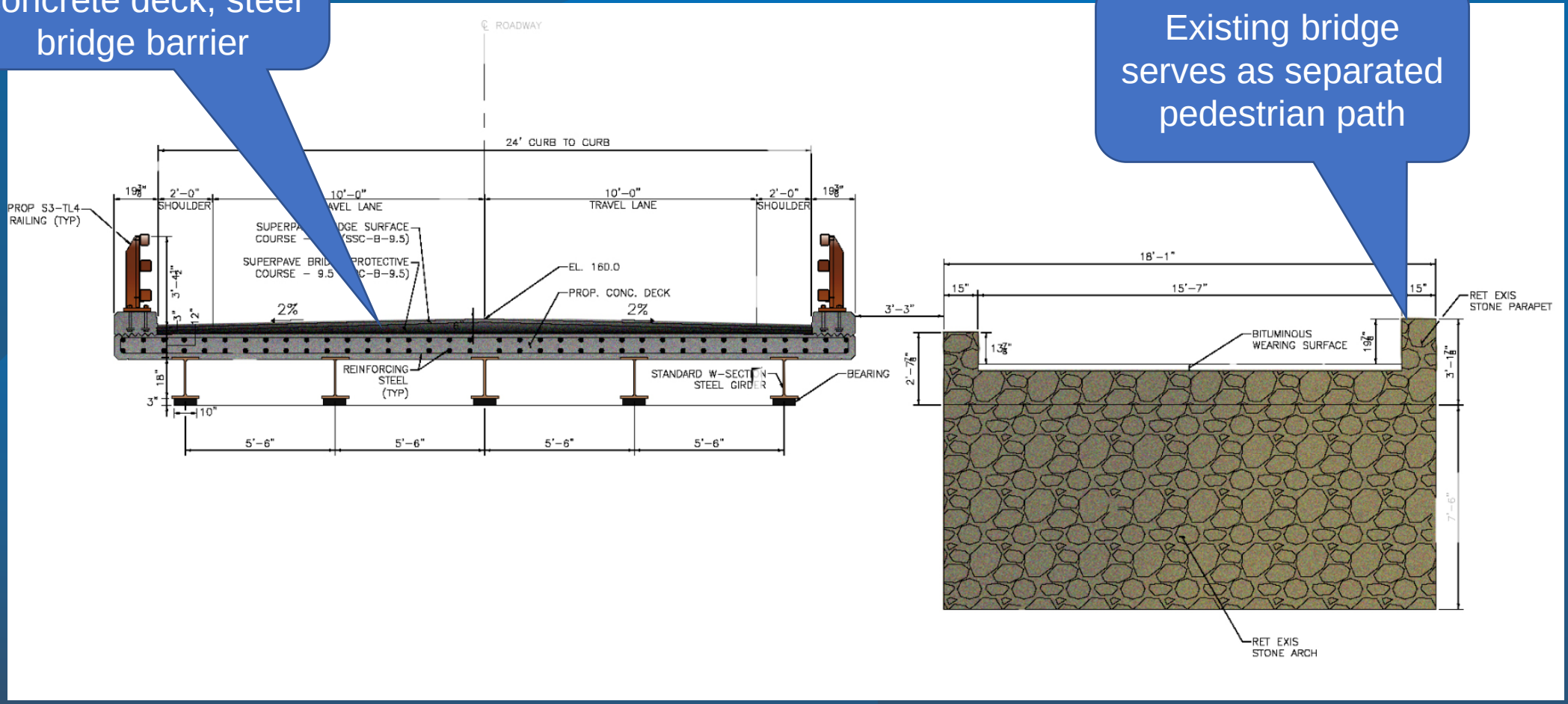
Alternative 4 – New Adjacent Bridge to Existing Bridge



Alternative 4 – New Adjacent Bridge to Existing Bridge

New vehicular bridge; steel beams, concrete deck, steel bridge barrier

Existing bridge serves as separated pedestrian path



Evaluation Matrix

Table 4: Alternative Evaluation Criteria Scoring

	Alternative 1 – No Build		Alternative 2 – Preservation		Alternative 3 – Replacement		Alternative 4 – New Adjacent Bridge	
Evaluation Criteria	**Score**	**Notes**	**Score**	**Notes**	**Score**	**Notes**	**Score**	**Notes**
Cost	5	$0 - No action taken.	4	$500,000 – Does not account for a temporary bridge or resident relocation.	2	$2,225,000 – Does not account for a temporary bridge or resident relocation.	1	$2,350,000 – Does not account for a temporary bridge or resident relocation.
Improve Overall Safety of the Bridge	1	Does not improve any of the existing safety issues.	3	Would improve the existing bridge railing but would still have a single lane for vehicular traffic and shared pedestrian traffic.	5	Would provide code compliant bridge rail for vehicle & pedestrian protection, two vehicular travel lanes & separate pedestrian area.	4	Would provide code compliant bridge rail for vehicles, but no handrail for
Extend the Bridge's Service Life	1	Does not improve the existing structure's load carrying ability.	4	Improved load distribution and other minor repairs would extend the service life significantly.	5	Would replace the existing bridge with a new bridge.	5	
Preserve the Historic Aesthetic of the Bridge	5	Leaves the existing bridge undisturbed.	4	Would retain the arch structure and replicate the existing bridge rail with a more aesthetically appealing precast concrete barrier with stone face.	3	Will replicate the existing bridge's geometry and aesthetic look as much as feasible.	3	bridge to [illegible] not replic[illegible] historic
Limit Environmental Impacts	5	Would not result in any construction or environmental disturbance.	4	Keep proposed bridge footprint within existing, only permanent impact is approach grading (2500 SF).	2	Results in a wider bridge footprint than existing, streambed & wetland disturbance and approach g[illegible] (2500 SF).	1	Would add a new adjacent bridge which would result in significant wetlands and streambed disturbance, and grading (1500 SF – up to 6 feet).
Limit Right of Way/Property Impacts	5	Would not require any easements.	4	Would require 700 SF of permanent easements, no permanent impact to abutters.	2	Would r[illegible]e 1150 SF of permanent e[illegible]ments, and some permanent impacts to abutters.	1	Would require 5300 SF of permanent easements & have permanent impacts to abutters.
Sum	22	TEC recommends this alternative be discarded from consideration due to its safety concerns.	23	TEC recommends this alternative be selected for further investigation. It improves the major concern of safety for a significantly lower cost than Alternatives 3 & 4.	20	TEC recommends this alternative not be selected due it's significantly greater associated cost compared to Alternative 2.	15	TEC recommends this alternative not be selected due to its low score and significantly greater site impacts and cost compared to Alternative 2.

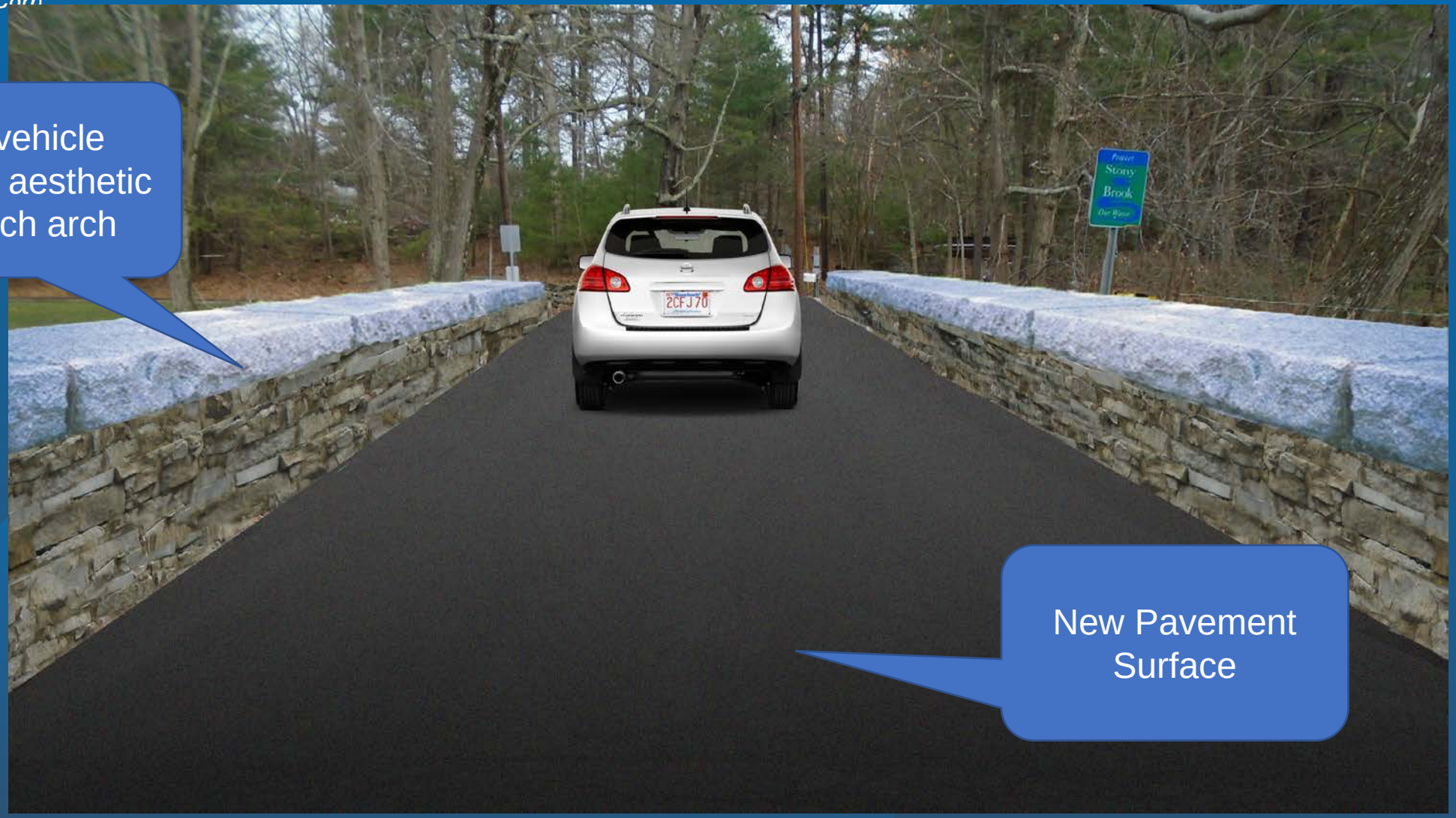
Scoring Scale 1-5:

1 – Poor 2 – Fair 3 – Satisfactory 4 – Good 5 – Excellent

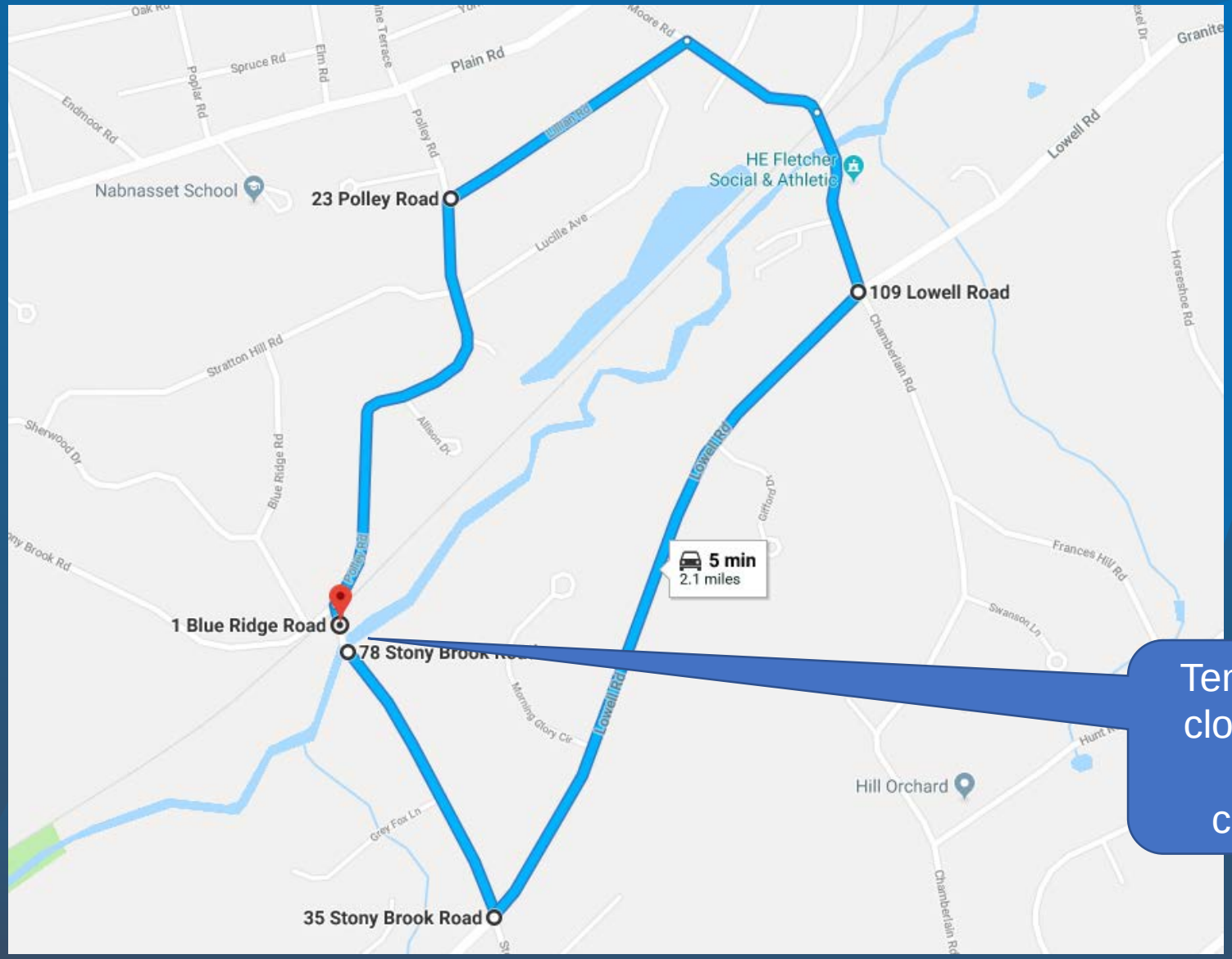
Alternative scored with highest score identified as preferred alternative

Preferred Alternative - Preservation

Preferred Alternative - Preservation



Detour Route – 2 miles; 5 minutes



- Emergency response coordination conducted with Town
- Low clearance at RR bridge not a concern at this time

Temporary road closure needed during construction

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Next Steps

- Incorporate public feedback into Final Alternatives Analysis Report
- Proceed with 25% Design
- Conduct Design Public Hearing with MassDOT after 25% design is completed.
  - Date: TBD
- Project advertised in 2022; Construction to begin in 2023.

Questions ?

Please send follow-up questions or observations to:

Paul Starratt, P.E. (Town Engineer)

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