

Peterborough 27712

Public Officials & Public Informational Meeting



U.S. 202 & N.H. 123 over the Contoocook River
October 3, 2023

Overview

- Introductions
 - NHDOT: Owner
 - Hoyle Tanner: Design Consultant
- Meeting Purpose
 - Follow up to initial Public Officials Meeting (3/16/2021)
 - Present findings, update on project status & schedule
 - Solicit Town, Stakeholder & Public input

Overview

- Brief Presentation Outline
 - Project purpose and need
 - Existing conditions
 - Design considerations
 - Alternatives evaluated
 - Environmental, historic, cultural resource considerations
 - Schedule & funding
 - Questions



Purpose and Need

- Purpose
 - The project result is a long term, cost-effective, safe, and sustainable bridge that accommodates multimodal movement of bicycles, pedestrians, and motorized vehicles over the Contoocook River
- Need
 - Address the deteriorating condition of the bridge as demonstrated by the Bridge's overall poor rating and inclusion on the State Red List
 - Address the scour critical nature of the bridge and its inclusion on the State's scour critical bridge list



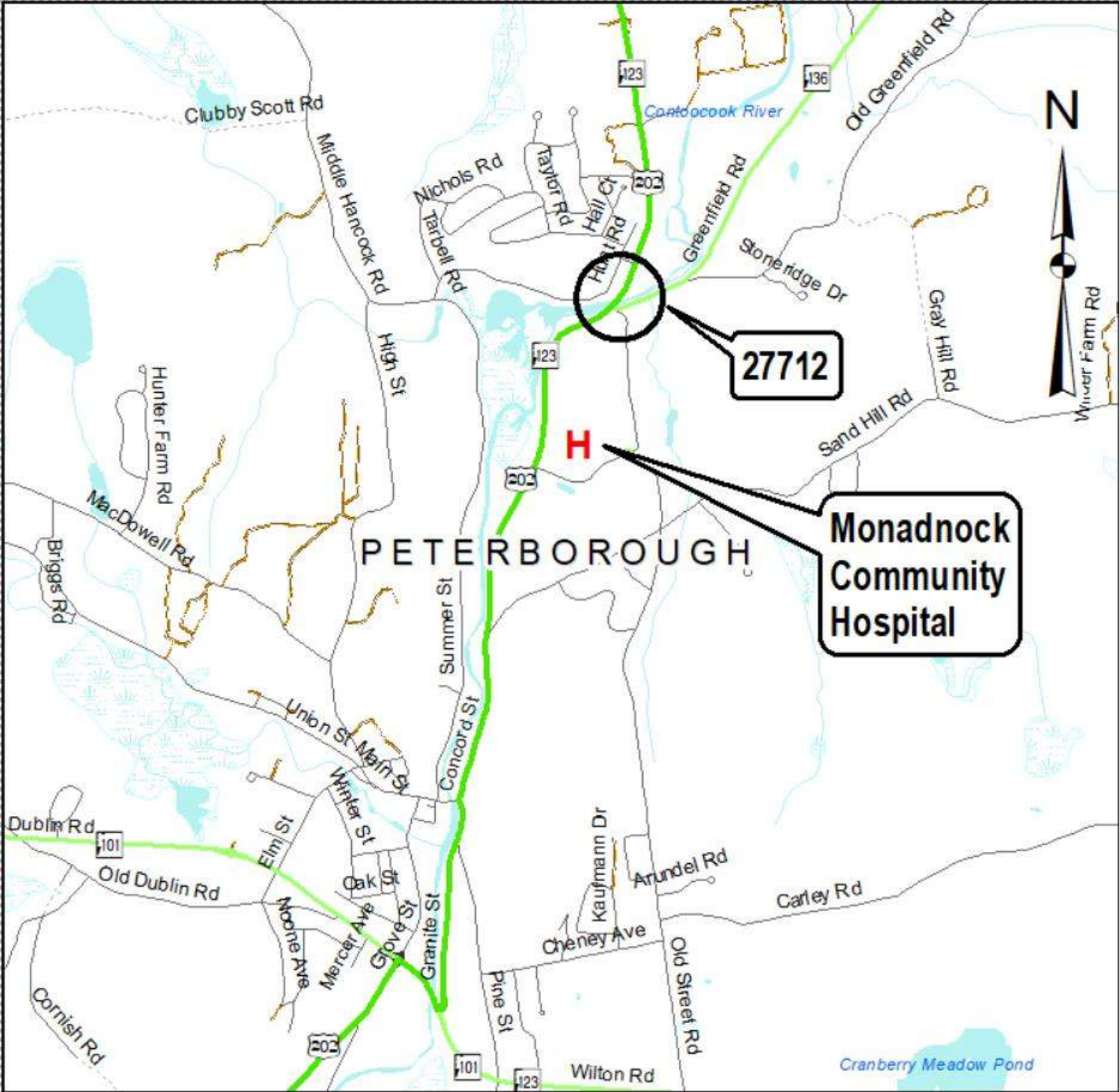
Cultural and Historic Resource Consultation (National Historic Preservation Act - Section 106)

- Individuals or organizations with a demonstrated interest in the potential impacts to historic resources may become more involved in an advisory role through meetings and commentary. They may become what are known as Consulting Parties under Section 106 of the National Historic Preservation Act.
- To be more formally involved, you can request to participate in project review as a consulting party under Section 106 of the National Historic Preservation Act. Please contact Jamie Sikora at FHWA to request to become a consulting party:

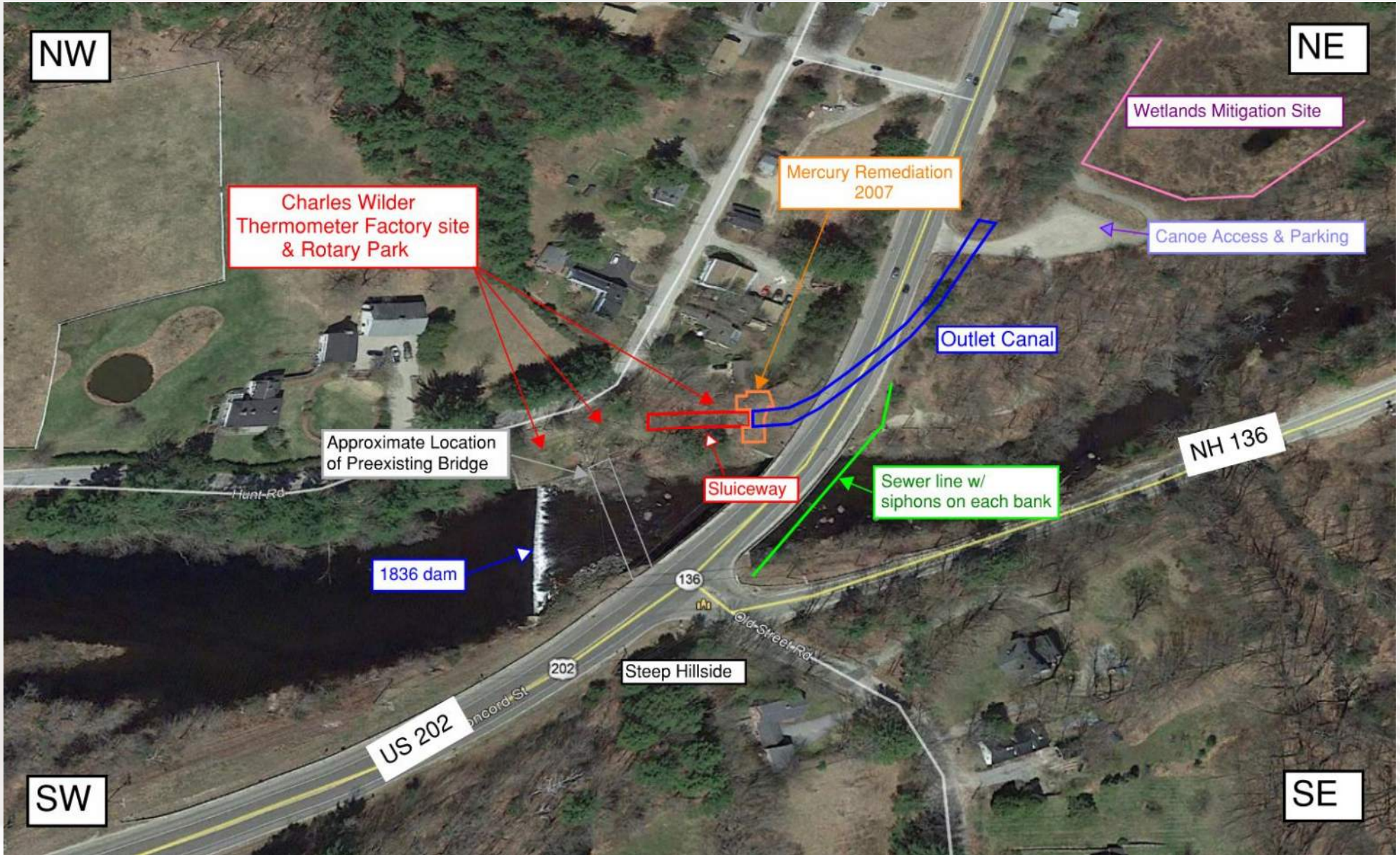
Jamie.Sikora@fhwa.dot.gov

<https://mm.nh.gov/files/uploads/dot/remote-docs/2011-section-106-consulting-party-process-in-nh.pdf>

Location Map



Bridge Site



Cultural & Historic Resource Considerations

Bridge

- North Village area is historic, but not a Historic District.
- Bridge is not eligible for listing on the National Register.

Project Area

- NW - Surface features from Wilder Thermometer Factory (c. 1860 to 1903)
- NE - A portion of the former mill's outlet canal remains
- SE - Former 19th century structures. 2 remaining meet criteria for individual listing on the National Register. Archaeological monitoring during construction recommended.
- SW - North Village Dam (c. 1836)



SE quadrant



NE quadrant

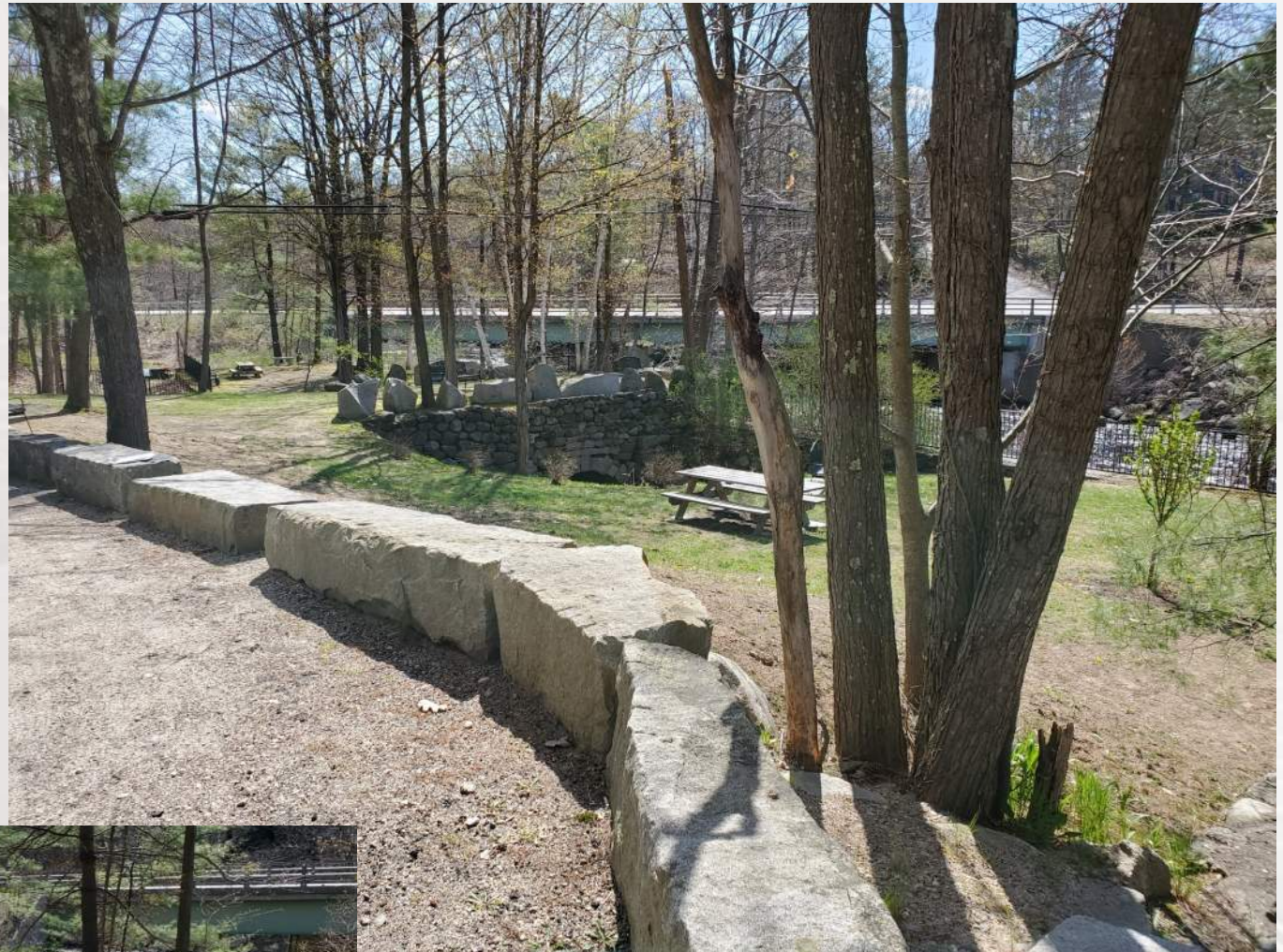


Recreational Resources

- Canoe launch
 - Access road and parking can be maintained
 - Launch area impacts can be mitigated with temporary launch



Sluice Way – Wilder Mill Complex – Rotary Park



NW quadrant

1836 - North Village Dam



Southern Bridge Abutment



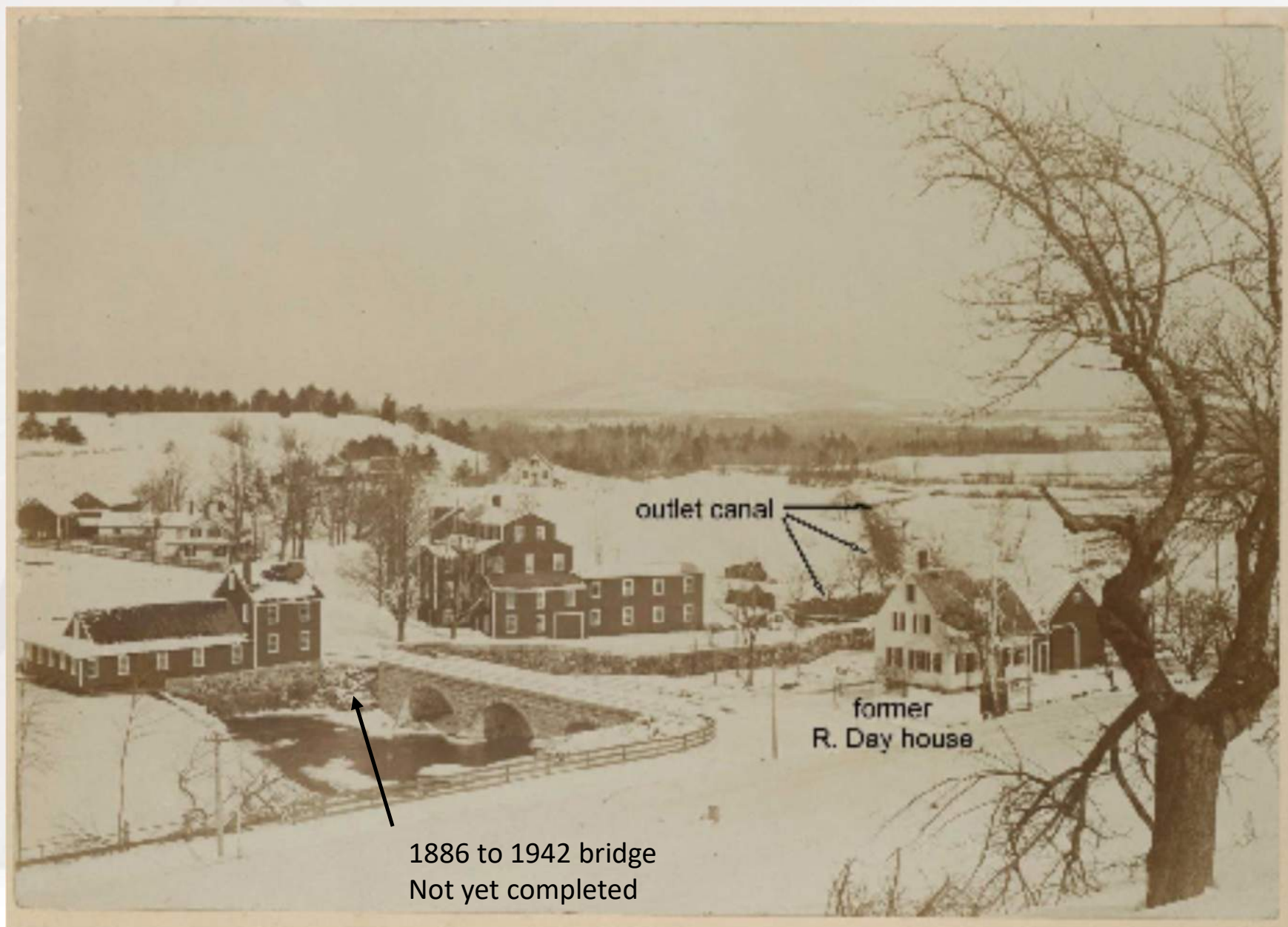
Looking west



Looking south

SW quadrant

Mill, Canal & R. Day house ca. 1890s



Design Considerations

- Site Features / Constraints
 - North Village Dam
 - Route 136 Intersection
 - Cartop Boat Launch
 - Wilder Thermometer Factory / Rotary Park
 - Utilities
- Traffic Control
- Environmental & Cultural Resources
- Hydraulics & Scour
- Right-of-Way
- Construction Access



Existing Bridge Details

- Constructed in 1942, widened in 1974
- Scour mitigation completed in 2019
- 176' long, curved two span bridge
- Roadway width: 44'-0"
 - (12' lanes, 10' shoulders)
- 5' Sidewalk on upstream side
- 6,915 vehicles per day, approx 7% trucks 2018
- Overall bridge condition is rated 4 (Poor)
- **Added to Red List in 2012, ranked #17 on 2022 list**



Alternatives Evaluated

- Bridge Rehabilitation
 - Bridge will remain on the State Red List.
 - Substructure cannot be addressed
 - Bridge will remain scour critical.
 - Service life is significantly less than bridge replacement.
 - Lower initial cost vs. replacement, but still major investment.
 - Higher long-term maintenance costs.

Conclusion: Does not meet purpose and need



Alternatives Evaluated

- Bridge Replacement Alternatives
 - Three ‘big picture’ alternatives:
 - Upstream shift
 - Downstream shift
 - Replacement in existing location
 - Traffic control & site impacts major considerations in evaluation



Alternatives Evaluated

- Upstream Shift
 - **Goal: Maintain traffic on existing bridge; avoid sewer siphon**
 - Could include permanent over-widening for traffic control.
 - Range of potential impacts to North Village Dam (NVD).
 - Potential impacts to Wilder site / Rotary Park / mercury contamination.



Alternatives Evaluated

- Upstream Shift (minimal)



Alternatives Evaluated

- Upstream Shift
 - Upstream shift impacts south abutment of North Village Dam (NVD).
 - Impacts vary with magnitude of shift.
 - Any impact would trigger upgrades, per NHDES Dam Bureau.
 - Significant dam upgrades outside scope of this project.
 - Minor upgrades *could* potentially be incorporated into project.

Conclusion: Upstream Shift alternatives that avoid major NVD impacts *could* meet Purpose and Need

Alternatives Evaluated

- Downstream Shift
 - **Goal: Maintain traffic on ex. bridge; avoid dam, Rotary Park**
 - Impact to Town sewer line & siphons.
 - Impacts to NH Rt. 136 intersection & adjacent historic eligible parcel



Alternatives Evaluated

- Downstream Shift
 - Proximity of Route 136 / Old Street intersection is a challenge.
 - Amount of shift necessary for 'best' traffic control not likely feasible.

Conclusion: Some Downstream Shift Alternatives meet Purpose and Need



Alternatives Evaluated

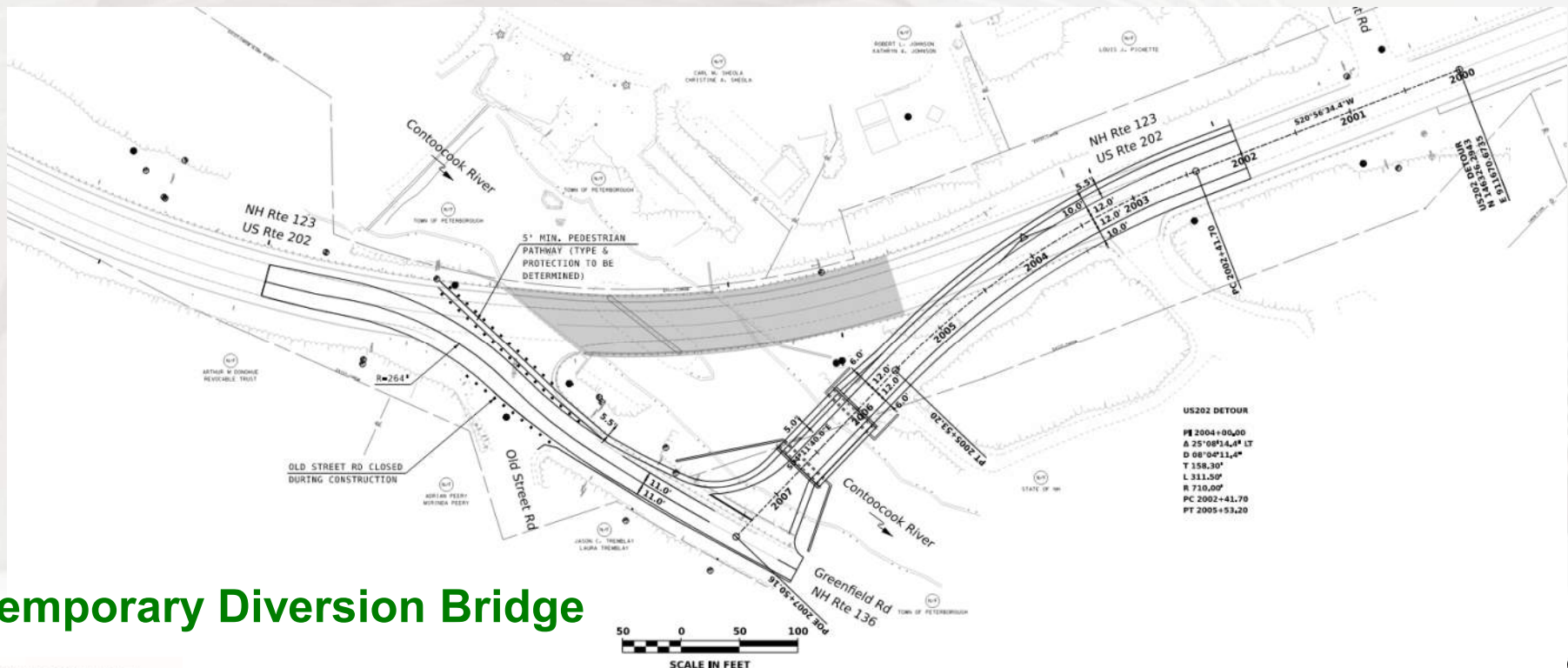
- Replacement in Existing Location
 - **Goal: Minimize or avoid impacts to Sewer, Rt. 136, & North Village Dam, and Rotary Park**
 - Complete closure with detour (**Not Feasible**), or
 - Phased construction in existing location would reduce traffic to single lane
 - Multiple seasons of alternating single lane traffic



Creator: Alex Driehaus | Credit: Valley News

Alternatives Evaluated

- Replacement in Existing Location with temporary bridge diversion
 - **Goal: Minimize or avoid impacts to Sewer, Rt. 136, North Village Dam, and Rotary Park**
 - Requires temporary diversion bridge cost & impacts **OR**
 - Long detour



Temporary Diversion Bridge

Temporary Diversion Bridge

- Benefits
 - Avoids impacts to North Village Dam
 - Minimizes Route 136 impacts (temp. & perm.)
 - Reduced construction duration (vs. phased)
 - Significantly less driver delay (vs. single lane phased const.)

Traffic Control Delay Comparison

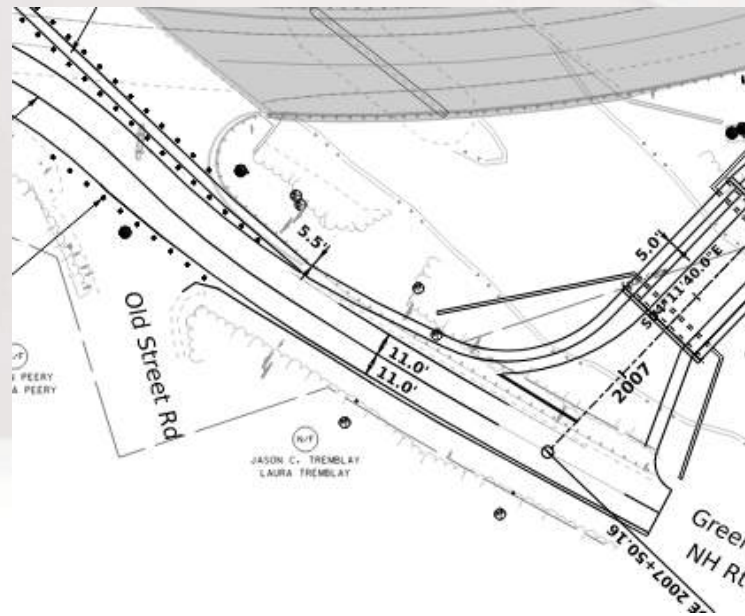
27712 NHDOT Peterborough

	One-Lane Two-Way Traffic				Detour Bridge with Traffic Signal			
	2023 AM		2023 PM		2023 AM		2023 PM	
	LOS	Delay (S)	LOS	Delay (S)	LOS	Delay (S)	LOS	Delay (S)
NB Thru (US 202)*	F	120.8	F	236.4	B	12.1	B	14.9
SB Thru (US 202)*	F	130.9	F	244.4	B	17.6	C	23.8
WB (NH 136)	F	102.7	F	111.2	A	7	A	5.9

* NB Thru becomes EB Left & SB Thru becomes SB Right with Detour Bridge. Corresponding LOS & Delay for this lane group have been shown.

Temporary Diversion Bridge

- Challenges
 - Cost
 - Environmental impacts
 - Temp. impacts to canoe launch / wetland mitigation parcel
 - Truck turning movements
 - Wider bridge = better accommodation of trucks
 - Results in greater environmental and/or cost impacts
 - Truck exclusion feasible but not preferred
 - Old Street Road



Natural Resources Considerations

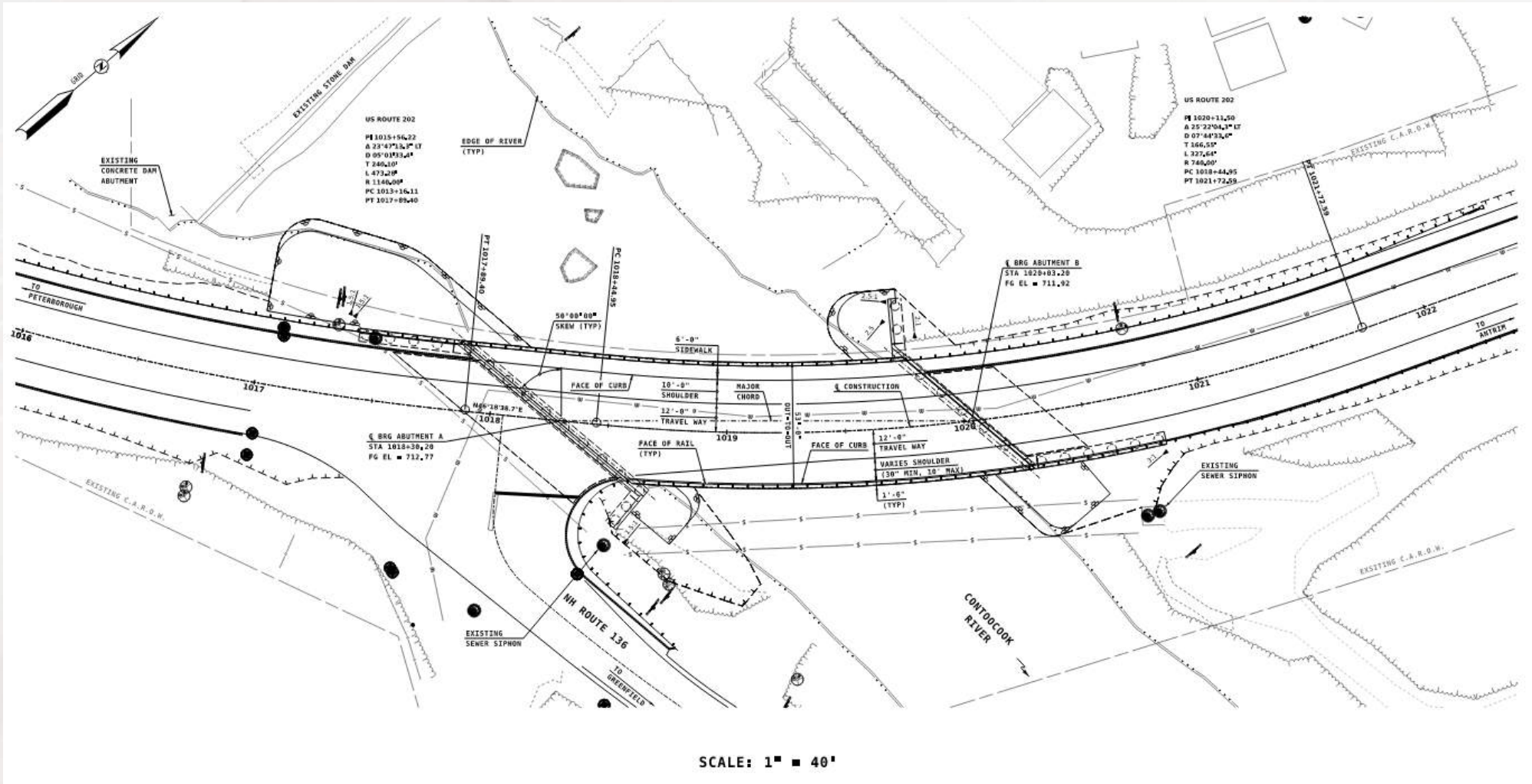
- Environmental Permitting
 - NHDES Wetlands & Shoreland Permits (for temp. & perm. impacts)
- Threatened & Endangered Species
 - Coordination with NH Fish and Game & US Fish and Wildlife Service
- Hydraulic / Floodplain
 - Floodplain wetland impacts
 - 100-year flood elevations
- Stormwater Treatment

Known 'Unknowns'

- Are truck turning movements restrictions acceptable?
- What are the scale of dam impacts?
- Is full pedestrian accommodation required?
- How to balance permanent vs. temporary recreational impacts (4(f))?
- Sewer siphon – is complete avoidance possible?

Alternatives Evaluated

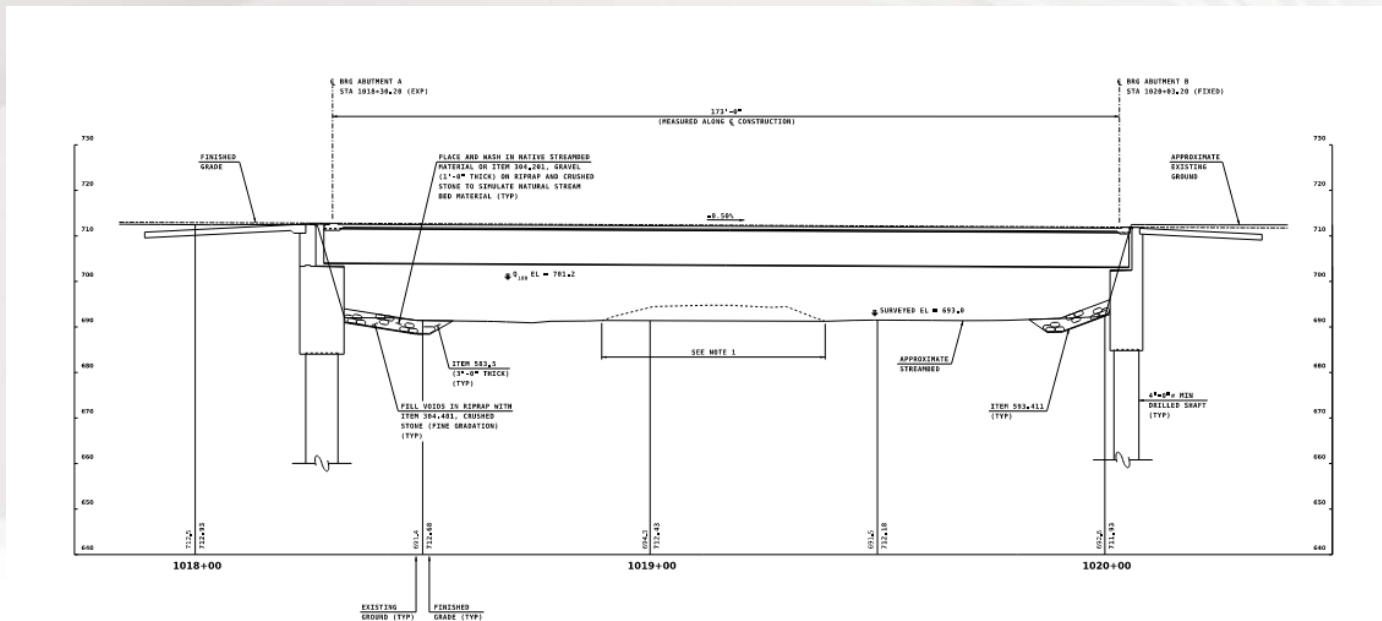
Replacement Bridge



Replacement Bridge

GU0

- Single span, 173' long curved girder bridge
- 44' curb-to-curb width plus 6' wide sidewalk (west)
 - 12' travel lanes, 10' shoulders
- Concrete deck with steel bridge rail
- Horizontal, vertical alignments close to existing
- Substructure alternatives under evaluation



Project Status

- Draft Alternatives Analysis Report under review
- Agency coordination and review ongoing:
 - NEPA, Cultural & Natural Resources, etc.
- Soliciting & evaluating Town & stakeholder input
- Transitioning into Preliminary Design

Project Funding

- Anticipated project cost \$10M - \$20M
 - To be refined as project progresses
- Sewer and water line relocations costs
(RSA 228:22 - Cost of Trenching for Relocation of [Municipal] Underground Utilities)
 - NHDOT
 - Trenching and backfill
 - Reimbursement for the book value of the facility
(Original cost minus depreciation)
 - Town
 - Engineering and materials

Current Project Schedule

- Finalize Alternatives Analysis: November 2023
- Preliminary Highway Plans: January 2024
- Public Informational Meeting: Spring 2024
 - Present Preferred Alternative
- Public Hearing: Summer 2024
- NEPA Approval: Fall 2024
- Final Design: 2025 – 2026
- Construction: 2027 – 2028

Your Input is Needed

- Emergency Response Routes
- Mutual Aid
- School Bus Routes
- Historic Concerns
- Past Flooding Concerns
- Bicycle and Pedestrian Concerns
- Local events
- Town Utilities upgrades/work (Sewer, Water, Dam)
- Other Concerns

Questions / Comments?



Timothy Dunn
NHDOT Project Manager
timothy.d.dunn@dot.nh.gov
(603) 271-1618