

Local Concerns Meeting

WILLARD COVERED BRIDGE

HARTLAND BO CVBR(2)

Mill Street (TH 15), Bridge 22 over Ottauquechee River



Presentation Outline



- Purpose & Need
- Location Map
- Existing Bridge Information
- Inspection Findings
- Rehabilitation & Traffic Control Alternatives
- Cultural & Natural Resources
- Abutters & Right-of-Way
- Next Steps
- Anticipated Schedule
- Your Input is Needed

Purpose and Need



Purpose

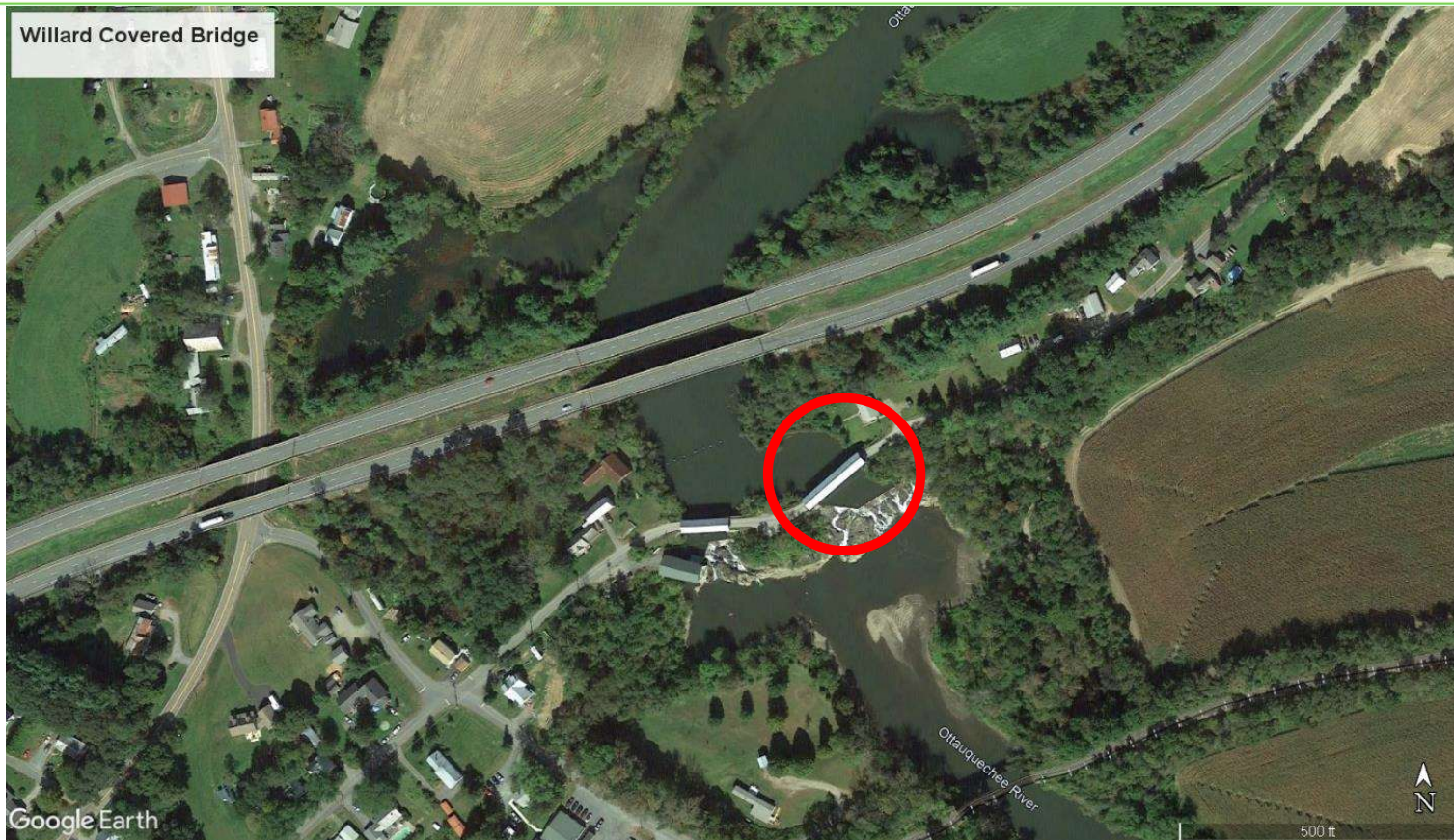
- Provide a safe crossing over Ottawaquechee River that meets the needs of the traveling public

Need

- Address structural deficiencies and ongoing deterioration
- Extend bridge service life
- Bridge requires rehabilitation to continue to meet load capacity needs of the community

Community Needs and Considerations ?

Location Map



Willard Covered Bridge

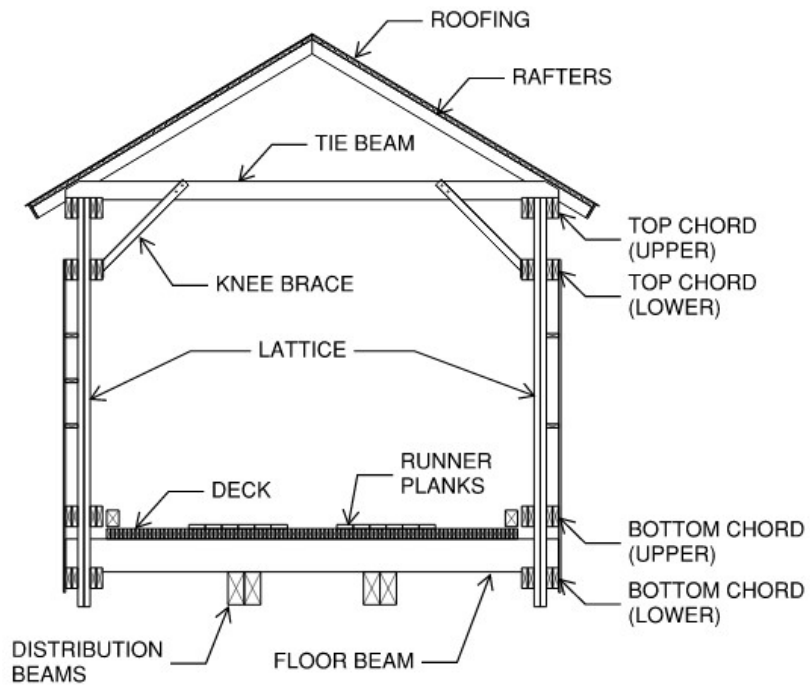


Existing Bridge Information

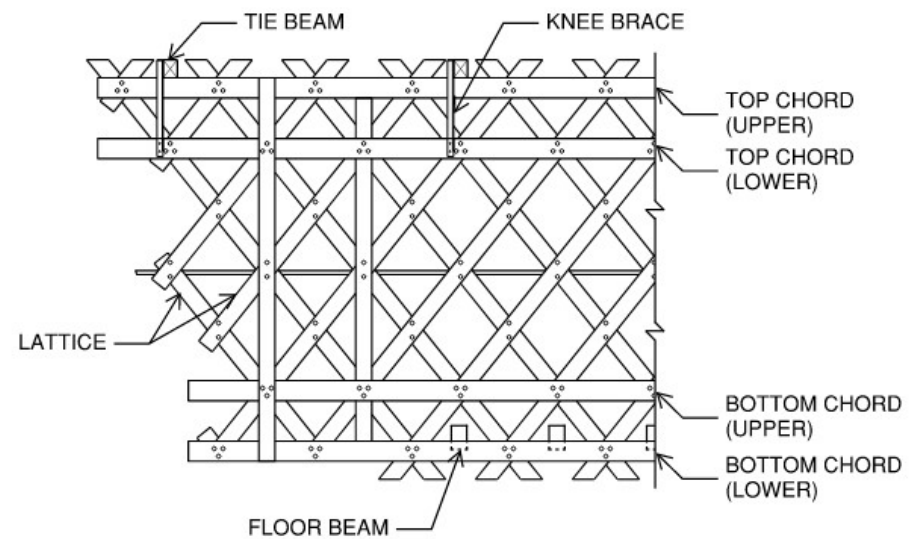


- Bridge Constructed in 1871, Rehabilitation in 1952, New Roof in 2008
- Listed in National Register of Historic Places in 1973
- Town Lattice Truss
 - 125' Long
 - 15'-10" Horizontal Clearance
 - Vertical Clearance is posted for 12'-0" (varies from 12'-0" to 13'-6")
 - Currently posted for 10,000 Pound Weight Limit (5 Tons)
- Substructures:
 - Abutments - Laid up stone with concrete facing
 - Wingwalls – Laid up stone

Section and Elevation View



Typical Section



Partial Elevation

Inspection Findings



- Overall Bridge Condition = **4 (Poor)**
- Deck Condition = 5 (Fair)
- Superstructure Condition = 4 (Poor)
- Substructure Condition = 5 (Fair)
- Channel Condition = 8 (Very Good)

Condition Rating	Description
9	Excellent Condition
8	Very Good Condition
7	Good Condition
6	Satisfactory Condition
5	Fair Condition
4	Poor Condition
3	Serious Condition
2	Critical Condition
1	Imminent Failure Condition

Roofboards and Rafters

- Splits
- Rot
- Roof leaks ^{TSO}



Slide 9

TS0

There were definitely splits and rot. Not sure about broken rafters or if the rot was caused by old or current roof leaking.

Sumner, Todd A., 2024-06-10T15:48:21.191

Rafters Extensions

- Extension provides more overhang protection
- Increases snow loads



Tie Beam Members

- Splits
- Breaks
- Rot
- Impact Damage



TS0



Slide 11

TS0

I could not find a picture of impact damage.

Sumner, Todd A., 2024-06-10T17:23:58.061

Cross Bracing and Knee Braces



Cross Bracing

- Splits
- Poor Connection

Knee Braces

- Original replaced with steel angles
- Impact damage



Top Chord Members



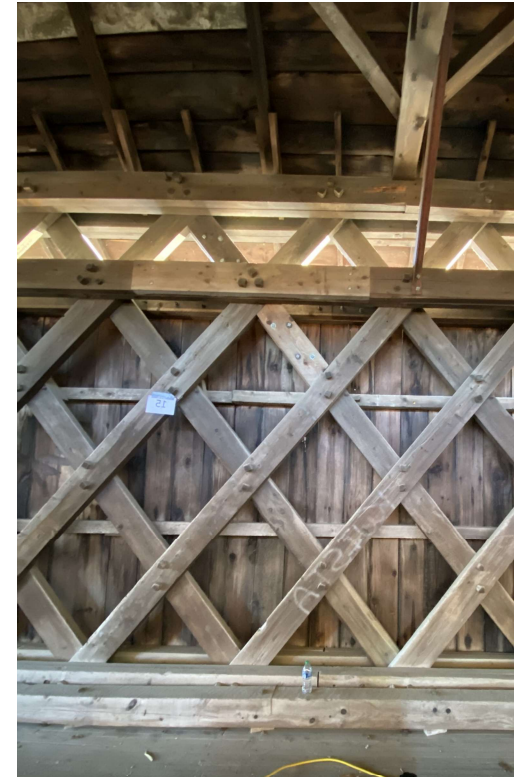
- Minor Rot
- Hidden Rot



Top Chord Members (continued)



- Short Trunnels
- Short Chord Lengths



Lattice Members

- Rot



Lattice Members (continued)

- Splits
- Splices



Lattice Members (continued)

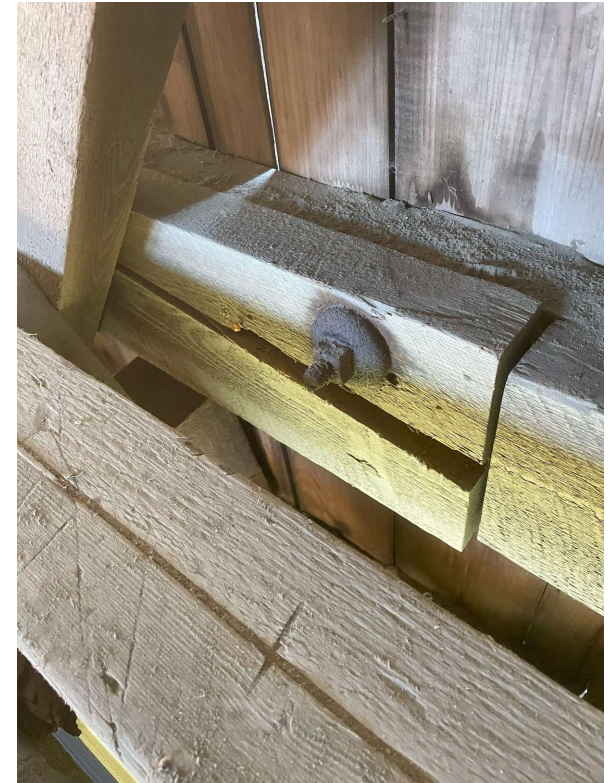
- Misaligned trunnels



Bottom Chord Members



- Splits
- Breaks



Bottom Chord Members (continued)



- Weathering
- Rot
- High moisture content



Bottom Chord Members (continued)



- Fire Damage
- Section Loss



Deck

- Rot



Floor Beams

- Satisfactory condition
- Possible hidden rot on top of floor beams



Distribution Beams

- Rot
- Rusted/failed hangers



Abutments and Wingwalls

- Concrete faced stone abutments



Abutments and Wingwalls (Continued)



- Spalling
- Poor Consolidation
- Round Aggregate



Abutments and Wingwalls (Continued)



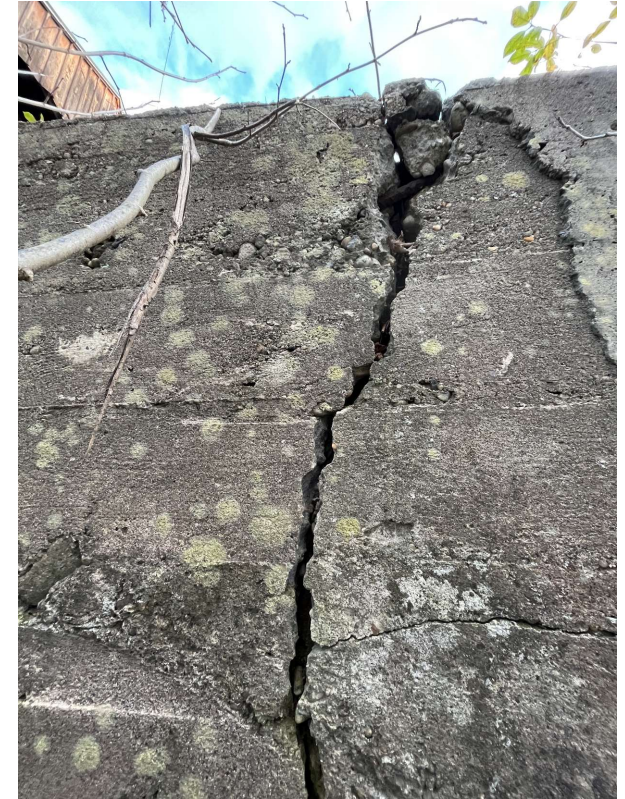
- Stone wingwalls



Abutments and Wingwalls (Continued)



- Southwest wingwall in poor condition



Portals

- Currently in satisfactory condition
- Past impact damage to portal support structure is evident



Roadway Approach and Railing



- Satisfactory condition
 - Guardrail repair southwest corner
 - Stormwater drains toward north end of bridge



Questions on Inspection Findings?



Alternatives Analysis



- Bridge Rehabilitation is feasible for H-5 (5 Ton) capacity
 - Rehabilitation will extend service life
- Additional alternatives to be evaluated
 - H-5 (5-ton) Design Vehicle
 - H-12 (12-ton) Design Vehicle
 - H-15 (15-ton) Design Vehicle

Rehabilitation Alternatives Analysis



- Rehabilitation alternatives evaluation will include:
 - Initial Construction Cost
 - Fire Protection
 - Traffic Impact
 - Public Safety
 - Environmental Impacts
 - Property Impacts
 - Extending Remaining Service Life
 - Public Input



Traffic Control Alternatives



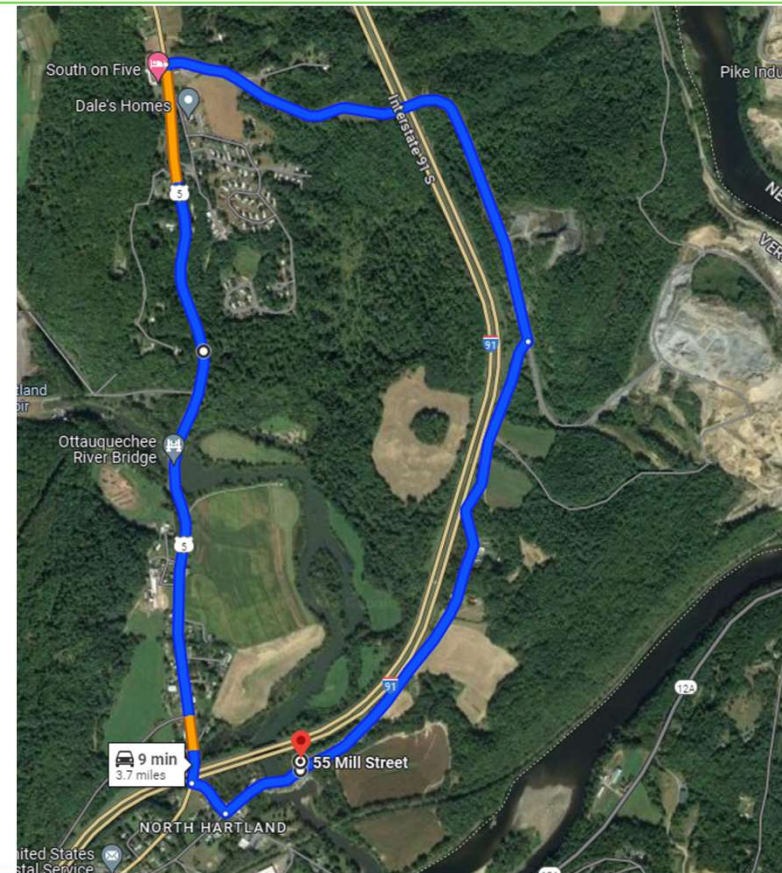
- ✘ Phased construction
 - ✘ One lane of alternating two-way traffic
 - ✘ Not Feasible – not wide enough
- ✘ Temporary bridge
 - ✘ Not Cost Effective – increased environmental & property impacts
- ✔ Bridge closure with off-site detour

Traffic Control Alternatives



✓ Offsite Detour

- ✓ Evarts Road to US Route 5 to Quarry Road to Mill Street
- ✓ 3.7 miles, 9 minutes



Cultural & Natural Resources



- Project must follow Section 106 of the National Historic Preservation Act
- Section 106 requires consideration of cultural resources, including:
 - Historic Buildings
 - Structures
 - Archaeological Deposits
- Coordination with State Historic Preservation Office (SHPO) and Historic Covered Bridge Preservation Committee (HCBPC)
- Natural Resources

Right-of-Way



- Currently do not anticipate any permanent property easements needed
- Temporary easements for construction access and potential temporary detour will be required

Next Steps



- Evaluate rehabilitation alternatives
- HCBPC presentation to get input & comments
- Hold Public Information Meeting to present recommended rehabilitation alternative
- Complete Scoping Report
- Begin National Environmental Policy Act (NEPA) Process for environmental permitting
- Begin development of Project Plans & Documents

Anticipated Schedule



Public Input

- Abutter concerns
- Emergency response routes
- Bridge usage
- Local events and impacts
- Bridge safety concerns
- Other concerns



Contacts

Laura Stone, PE

Laura.Stone@vermont.gov

(802) 917-4996

Todd Sumner, PE

tsumner@hoyletanner.com

(802) 557-1813

