VERMONT
AGENCY OF TRANSPORTATION

Route VT15
Bridge #00020 (Routine)
VT 00015 ML over LAMOILLE RIVER
Team Lead: Stephen Piro **Inspection Date:** September 07, 2021

Town: CAMBRIDGE

District 8, LAMOILLE County

Owner: 1-State Highway Agency

Maintenance Responsibility: 1-State Highway Agency

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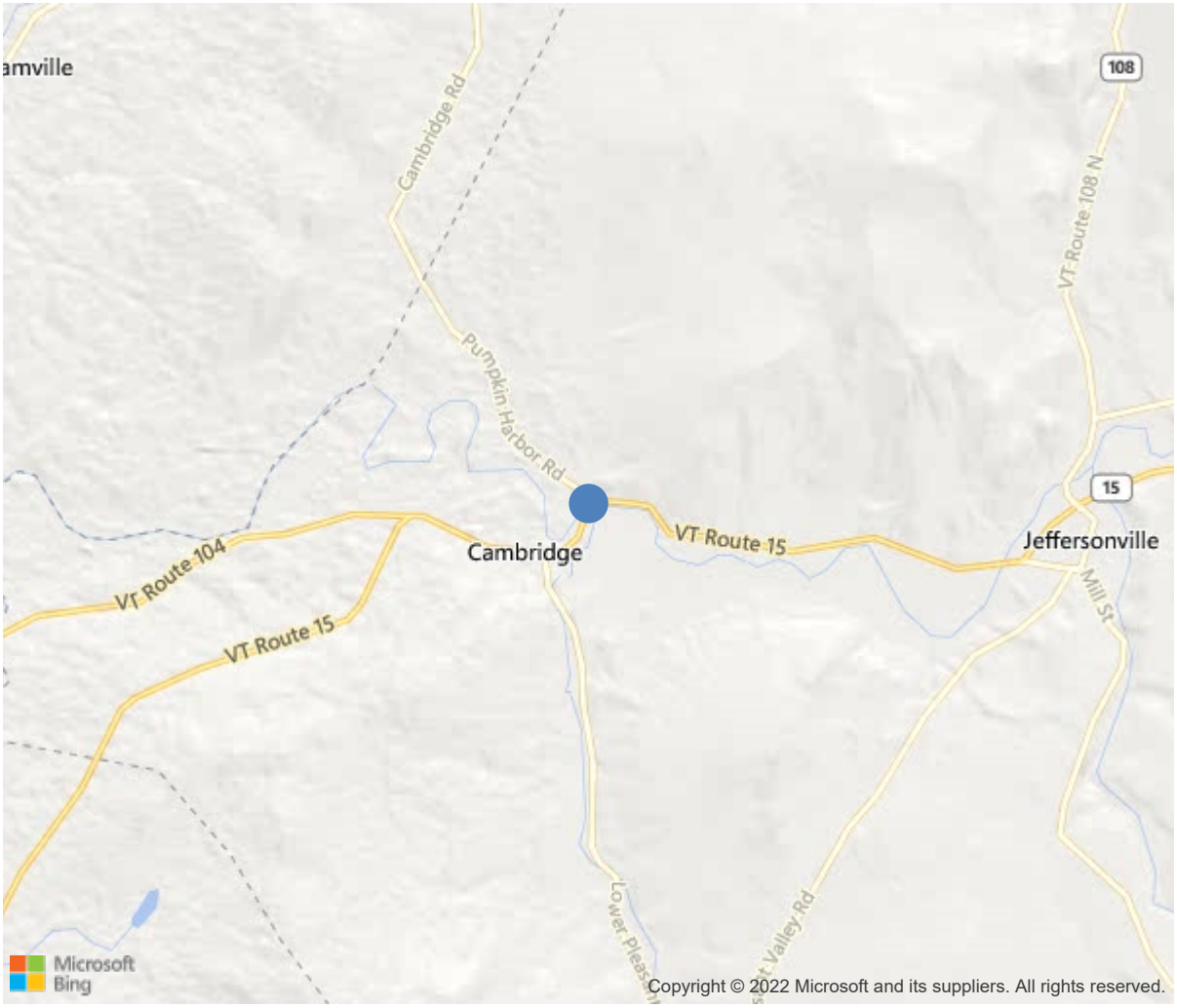
0.9 MI E JCT. VT.104 N



44.64779, -72.87252

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IDENTIFICATION	
(1) State Names	Vermont
(8) Structure Number	200030002008022
(5) Inventory Route	00015
(2) Highway Agency District	8
(3) County Code	15-015 - LAMOILLE
(4) Place Code	11425
(6) Features Intersected	LAMOILLE RIVER
(7) Facility Carried	VT 00015 ML
(9) Location	0.9 MI E JCT. VT.104 N
(11) Mile Point	24.576 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0013100015
(16) Latitude	44.6477944444444
(17) Longitude	-72.8725194444444
(98) Border Bridge State Code	
(99) Border Bridge Structure No.	
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	32
Material	3-Steel
Type	2-Stringer/Multi-beam or girder
(44) Approach Structure Type	00
Material	0-Other
Type	0-Other
(45) No. of Spans in Main Unit	5
(46) No. of Approach Spans	0
(107) Deck Structure Type	1-Concrete Cast-in-Place
(108) Wearing Surface/Protective System	
Type of Wearing Surface	6-Bituminous
Type of Membrane	2-Preformed Fabric
Type of Deck Protection	1-Epoxy Coated Reinforcing
AGE AND SERVICE	
(27) Year Built	1950
(106) Year Reconstructed	2008
(42) Type of Service	15
On	1-Highway
Under	5-Waterway
(28) Lane	
On	2
Under	0
(29) Average Daily Traffic	8400
(30) Year of ADT	2018
(109) Truck ADT	5 %
(19) Bypass, Detour Length	41 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	83 ft
(49) Structure Length	399 ft
(50) Curb or Sidewalk Width	
Left	5 ft
Right	0.2 ft
(51) Bridge Roadway Width Curb to Curb	37.3 ft
(52) Deck Width Out to Out	40.4 ft
(32) Approach Roadway Width (W/Shoulders)	32 ft
(33) Bridge Median	0-No median
(34) Skew	15 Deg
(35) Structure Flared	No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	37.3 ft
(53) Min Vert Clear Over Bridge Rdwy	99.99 ft
(54) Min Vert Underclear	0 ft
Ref:	
(55) Min Lat Underclear RT	0 ft
Ref:	
(56) Min Lat Underclear LT	0 ft
NAVIGATION DATA	
(38) Navigation Control	0-No navigation control on water
(111) Pier Protection	-
(39) Navigation Vertical Clearance	0 ft
(116) Vert-Lift Bridge Nav Min Vert Clear	0 ft
(40) Navigation Horizontal Clearance	0 ft

CLASSIFICATION	
(112) NBIS Bridge Length	Y
(104) Highway System	0
(26) Functional Class	6-Rural Minor Arterial
(100) Defense Highway	1-The inventory route is on a In
(101) Parallel Structure	N-No parallel structure exists.
(102) Direction of Traffic	2 - way traffic
(103) Temporary Structure	
(105) Federal Lands Highways	0-N/A
(110) Designated National Network	0-The inventory route is not part of
(20) Toll	3-On free road. The structure is toll-
(21) Maintain	1-State Highway Agency
(22) Owner	1-State Highway Agency
(37) Historical Significance	5-Bridge is not eligible for the NRHP
CONDITION	
(58) Deck	7
(59) Superstructure	6
(60) Substructure	7
(61) Channel & Channel Protection	6
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	9-MS 22.5 / HS 25
(63) Operating Rating Method	1
(64) Operating Rating	
Type	1-Load Factor(LF)
Rating	90
(65) Inventory Rating Method	1-Load Factor(LF)
(66) Inventory Rating	
Type	5
Rating	54
(70) Bridge Posting	5-Equal to or above legal loads
(41) Structure Open/Posted/Closed	A-Open, no restriction
APPRAISAL	
(67) Structural Evaluation	6
(68) Deck Geometry	4
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	7
(72) Approach Roadway Alignment	4
(36A) Bridge Railings	1-Inspected feature meets currently a
(36B) Transitions	1-Inspected feature meets currently a
(36C) Approach Guardrail	1-Inspected feature meets currently a
(36D) Approach Guardrail Ends	1-Inspected feature meets currently a
(113) Scour Critical Bridges	8-Bridge foundations determined to be
PROPOSED IMPROVEMENTS	
(75) Type of Work	
(76) Length of Structure Improvement	ft
(94) Bridge Improvement Cost	$
(95) Roadway Improvement Cost	$
(96) Total Project Cost	$
(97) Year of Improvement Cost Estimate	
(114) Future ADT	8820
(115) Year of Future ADT	2028

INSPECTIONS*			
(90) Inspection Date			09/2021
(91) Frequency			24 Months
(92) Critical Feature Inspection	Req.	Freq. (Mon)	Date
A: Fracture Critical Detail	Yes		
B: Underwater Inspection	Yes		
C: Other Special Inspection	Yes		

* The inspection date and frequency information in this box contains the current NBI date and frequency information. Please refer to the report header for the date this inspection was conducted.

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Deck

ELEM #	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	16740	16665	75	0	0
1130	Cracking (RC and Other)	SF	75	0	75	0	0
510	Wearing Surfaces	SF	13287	13287	0	0	0
301	Pourable Joint Seal	LF	95	95	0	0	0
304	Open Expansion Joint	LF	79	79	0	0	0
330	Metal Bridge Railing	LF	812	812	0	0	0

58-Deck Condition (7)
Comment: Reinforced concrete deck is in fairly good condition. Deck soffit has multiple hairline transverse shrinkage cracks present.

Existing pavement depth on bridge (3")

Wearing Surface (Good)
Comment: Asphalt is in fairly good condition having some light wearing in the wheel paths.

Curb (Good)
Comment: Concrete curbs are in fairly good condition having some very light surface scaling and a few scattered hairline cracks.

Sidewalks (Good)
Comment: Concrete sidewalk is present along the downstream side only having some very light surface scaling and a few hairline transverse cracks scattered throughout.

Rail (Good)
Comment: Three (3) tier painted aluminum tear drop rail is in fairly good condition having some various scrapes along the face of rail. Spindles are present along the downstream side only.

Posts (Good)
Comment: Pedestal mounted painted aluminum posts with aluminum offsets are in fairly good condition. The upstream bridge rail posts near the eastern end of the structure have impact damage present.

Joint (Good)
Comment: Asphaltic plug joints are present over both abutments are in fairly good condition having some light wearing. Vermont type joints are present over pier #1 and pier #2 are in fairly good condition. Concrete headers have some light wearing along the top surface with asphaltic plug joints present along both sides of the steel plates.

Joint Trough (Good)
Joint Trough Comment: Fabric troughs are present at pier #1 and pier #2 and are in fairly good condition.

Drains (Good)
Comment: Grated deck drains with steel tube downspouts are in fairly good condition having some light surface corrosion along the lower portions.

Fascia (Good)
Comment: Reinforced concrete fascia's are in fairly good condition having multiple vertical hairline cracks.

APPROACH

72-Approach Roadway Alighment (4)

Approach Rail(Good)
Comment: Galvanized steel beam rail is in fairly good condition.

Approach Post(Good)

Comment: Galvanized steel posts with composite offsets are in fairly good condition.

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Superstructure

ELEM #	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
107	Steel Open Girder/Beam	LF	2820	2290	200	330	0
1000	Corrosion	LF	530	0	200	330	0
515	Steel Protective Coating	SF	25255	25255	0	0	0
311	Movable Bearing	EA	35	35	0	0	0
313	Fixed Bearing	EA	35	35	0	0	0

59-Superstructure Condition (6)
Comment: Seven (7) painted steel rolled beams are in satisfactory condition having scattered minor to moderate previous pitting along the flanges and webs throughout. Superstructure was painted in 2008 and is holding up fairly well.

Lateral Bracing (Good)
Comment: Spans #1 and #5 have five (5) painted steel c-channels while remaining spans have six (6) painted steel c-channels present per bay that are welded to steel T-plates that are welded to the webs of the rolled beams are in fairly good condition.

Bearing (Good)
Comment: Fabric bearings are present throughout. Fixed bearings are present at both abutments with anchor bolts straight up in slots.

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Substructure

ELEM #	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
205	Reinforced Concrete Column	EA	7	7	0	0	0
210	Reinforced Concrete Pier Wall	LF	175	11	139	25	0
1080	Delamination/Spall/Patched Area	LF	65	0	65	0	0
1120	Efflorescence/Rust Staining	LF	55	0	30	25	0
1190	Abrasion/Wear (PSC/RC)	LF	44	0	44	0	0
234	Reinforced Concrete Pier Cap	LF	171	126	0	45	0
1120	Efflorescence/Rust Staining	LF	45	0	0	45	0

60-Substructure Condition (7)
Comment: Reinforced concrete abutment #1 is in fairly good condition having some slight undermining between the columns that penetrates to the backside along the downstream side and less along the upstream side. Reinforced concrete abutment #2 is in fairly good condition.

End Walls (Good)
Comment: Reinforced concrete curtain walls are present over both abutments are in fairly good condition.

Retaining/Wingwalls(Good)
Comment: Concrete wingwalls are in fairly good condition.

Pier Seat/Cap (Good)
Comment: Reinforced concrete pier caps are in fairly good condition having scattered various size rust stains throughout.

Pier Shaft (Good)
Comment: Reinforced concrete pier shafts are in fairly good condition having scattered previously patched areas along the pier walls with various size rust stains scattered along the faces. Lower portions of each pier has minor abrasion along the channel flow line.

Pier Footings (Good)
Comment: Pier #3 footing is exposed along the upstream side and is in fairly good condition.

CHANNEL

61-Channel Condition (6)
Comment: Lamoille River flows mainly through span #4 with remaining spans having smaller portions of flow due to elevation. Channel bottom is gravel and silty. Channel banks are well vegetated with good brush and tree growth. Abutment #2 has stone riprap and sandy material in front for protection while abutment #1 has sand build up in front.

GENERAL OBSERVATION

Structure is in fairly good to satisfactory condition.

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Deck Surface

Damaged Bridge Rail Upstream near Eastern End if Structure

Vermont Type Joint over Pier #2

Span #2 Deck Wearing Surface

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Separation Measurement at Pier #1

Vermont Type Joint over Pier #1

Abutment #2

Span #4 Superstructure

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Upstream Pier #3 Nose / Footing

Pier #4 Span #5

Pier #4 Span #4

Pier #3 Span #4

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Beam #5 in Span #4 Previous Pitting

Span #4 Deck Soffit

Beam #1 Span #3 Previous Pitting

Pier #3 Span #3

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Pier #2 Span #3 Side

Span #3 Deck Soffit

Beam #7 in Span #1 Previous Pitting

Span #1 Upstream Fascia / Beam #7 Previous Pitting

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Span #2 Deck Soffit

Pier #2 Span #2

Pier #1 Span #2

Beams #3 through #5 at Pier #1 in Span #2
Previous Pitting

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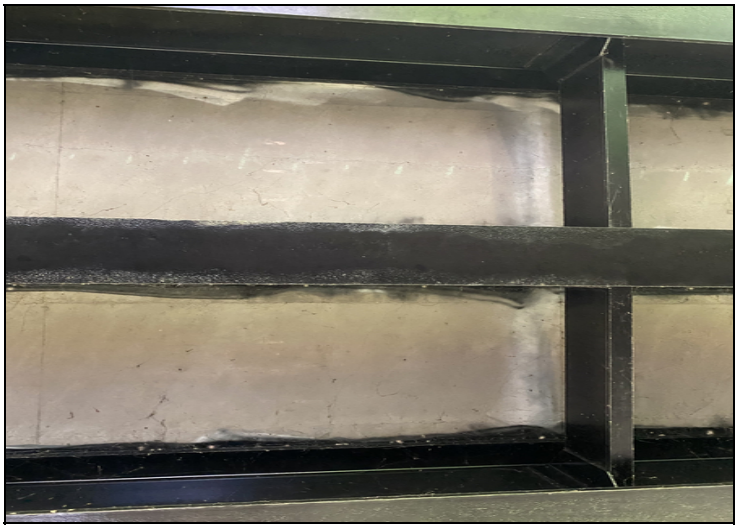

Beam #3 Span #1 Previous Pitting

Span #1 Deck Soffit

Pier #1 Span #1

Undermining at Abutment #1

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Abutment #1