# The July 7-17<sup>th</sup> 2023 Storm Response and Recovery

# Presentation to the Vermont Senate Committee on Transportation

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

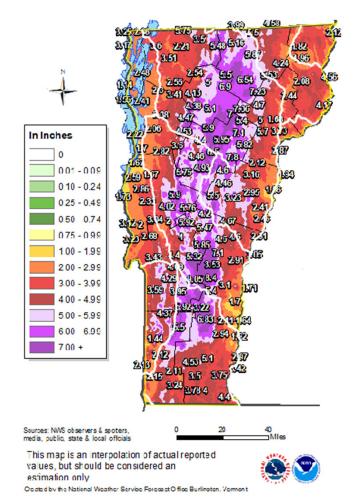
# Background February 7, 2024

VT RAIL AND AVIATION BUREAU

**DIRECTOR DAN DELABRUERE** 

VERMONT

AGENCY OF TRANSPORTATION



### **Background: Rainfall**



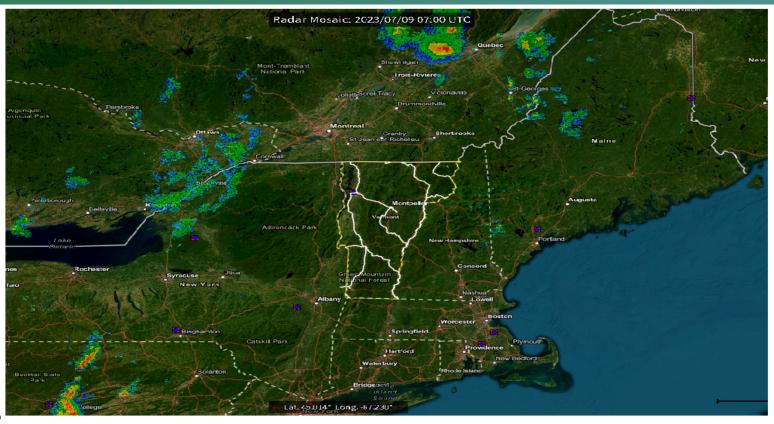
- Heavy rainfall occurred during July 10-11<sup>th</sup>.
- Rainfall amounts of 3 to 9 inches were observed across the state over 48 hours.
- The 5.28" rainfall at the airport in Berlin beat the previous record of 5.27" set with Tropical Storm Irene on 28 August 2011, setting a new record for rainfall in a single day.

Source: National Weather Service (NWS)
White lines are Rail Lines overlay

weather.gov



# Background: Radar, July 9-10th





The July 7-17th, 2023 Storm - Response and Recovery

# Background: Damage Apps



- Statewide State-owned Rail Lines had damage at 225 sites. There were 65 sites with debrisonly damage. There were 160 sites that had individual damage solicitations given to contractors. Of those 160 sites, 105 sites are completed and 55 sites are ongoing.
- Rail Damage Occurred in 23 VT Towns
- Damage spanned 123 miles out of the 298 miles of state-owned Rail Lines, or 41%.
- 25 Bridges and 32 Culverts were affected. 6 Culverts required replacement.



# Background: Damage Apps



Open / Closed Status Dashboard

- Using GPS data inherit in collection methods, GPS Coordinates, Town, Rail Line and Milepost are derived automatically
- GIS Dashboards were used to communicate Open / Closed Status of the Rail Lines to Vermont Emergency Management and Incident Command



# Background: Amtrak Service



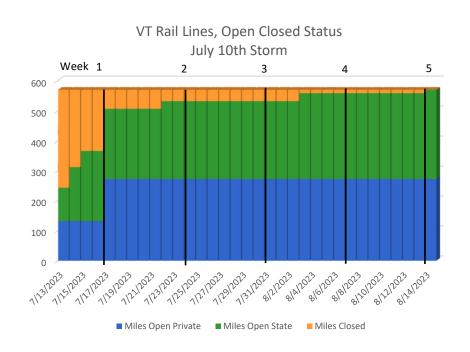
Photo by Vermont Rail System (VRS) 7/15/23

Amtrak Service was restored within 10 days

- Ethan Allen restored on July 15th
- Vermonter restored on July 19th



### Background: Timeline

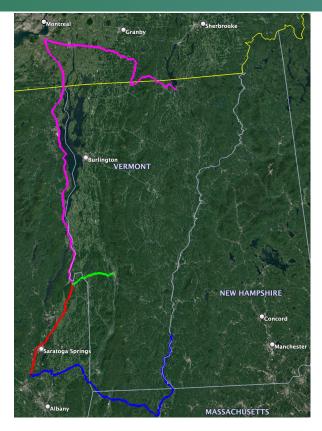


- After the storm, 58% of all VT Rail Lines were closed.
- In less than a week, only 11% of all VT Rail Lines were still closed.
- It took a total of 5 weeks to reopen all of VT Rail Lines.





### **Keeping Vermont Businesses Supplied**



Vermont Rail Systems (VRS) Freight Detour



## **Initial Damage**

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

### Initial Damage on Vermont Railway Bennington & Rutland Subdivision

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

Initial Damage – July 10<sup>th</sup> – 13th

Town: Sunderland

MP 16.2

Bennington





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

Town: Manchester

MP 18.9

MP 0

NORTH → 10

Bennington

Rutland

07.14.2023

Rail Bridge #65



The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

Town: Manchester

MP 21.4

MP 0 MP 54.22

Bennington





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

Town: Manchester

MP 22.4

MP 0 MP 54.22

Bennington

Rutland

13' long, 3' x 5' Concrete Culvert





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

Town: Dorset

MP 29.0

MP 0 MP 54.22

Bennington





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

Town: Dorset

MP 31.75

MP 0

■ NORTH → ■ 10 ■ 20 ■ 30 ■ 40 ■ 50

Bennington

Rutland

Rail Bridge #80





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

Town: Mount Tabor

MP 35.0

MP 54.22

Bennington

MP 0





The July 7-17th, 2023 Storm - Response and Recovery

Town: Danby

Initial Damage – July 10<sup>th</sup> – 13th

MP 37.7

Bennington

Rutland

Rail Bridge #85





The July 7-17th, 2023 Storm - Response and Recovery

Wallingford Town: MP 40.6

MP 0 MP 54.22

Bennington





The July 7-17th, 2023 Storm - Response and Recovery

Rutland

Initial Damage – July 10<sup>th</sup> – 13th

Initial Damage – July 10<sup>th</sup> – 13th

Wallingford

MP 42.67

Bennington

Town:







The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

Clarendon

MP 48.9

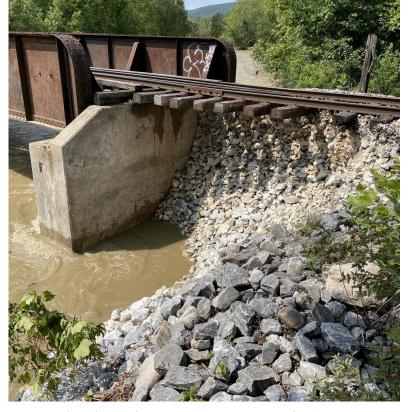
MP 0 MP 54,22

Bennington

Town:

Rutland

Rail Bridge #94





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

MP 49.7

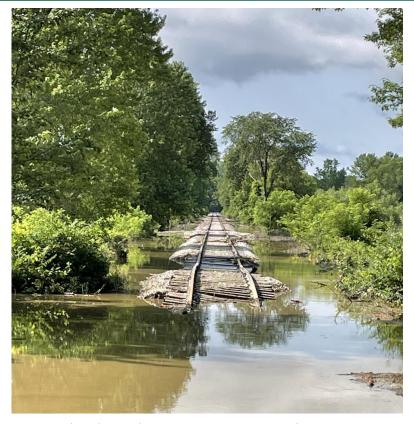
Rutland

Clarendon

MP 0 MP 54.22

Bennington

Town:





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

MP 50.15

MP 0

Town:

Clarendon

**1** 10 **2** 20 **3** 30

Rutland

MP 54.22

Bennington





The July 7-17th, 2023 Storm - Response and Recovery

### Initial Damage on Vermont Railway Northern Subdivision

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

Rail Line: Vermont Railway (VTR) – Northern Subdivision

Initial Damage – July 10<sup>th</sup> – 13th

26

Town: Proctor

MP 58.65





Rail Line: Vermont Railway (VTR) – Northern Subdivision

Initial Damage – July 10<sup>th</sup> – 13th

Town: Proctor

MP 58.66





The July 7-17th, 2023 Storm - Response and Recovery

Rail Line: Vermont Railway (VTR) – Northern Subdivision

Initial Damage – July 10<sup>th</sup> – 13th

Town: Proctor

MP 59.53



The July 7-17th, 2023 Storm - Response and Recovery

Vermont Railway (VTR) – Northern Subdivision Rail Line:

Initial Damage – July 10<sup>th</sup> – 13th

Proctor MP 59.58 Town:

MP 54.22 MP 123 Rutland Burlington

AGENCY OF TRANSPORTATION



The July 7-17th, 2023 Storm - Response and Recovery

2/7/2024

Rail Line: Vermont Railway (VTR) – Northern Subdivision

Initial Damage – July 10<sup>th</sup> – 13th

Proctor MP 60.11 Town:

MP 54.22 MP 123

Rutland





Burlington

Rail Line: Vermont Railway (VTR) – Northern Subdivision

Initial Damage – July 10<sup>th</sup> – 13th

Proctor MP 60.17 Town:

MP 54.22 MP 123 Burlington

Rutland

.VERMONT

AGENCY OF TRANSPORTATION



Rail Line: Vermont Railway (VTR) – Northern Subdivision

Initial Damage – July 10<sup>th</sup> – 13th

Proctor MP 60.19 Town:

MP 54.22 MP 123

Rutland

AGENCY OF TRANSPORTATION





Burlington

Vermont Railway (VTR) – Northern Subdivision Rail Line:

Initial Damage – July 10<sup>th</sup> – 13th

Town: Brandon

MP 68.10

MP 54.22 MP 123 Burlington





The July 7-17th, 2023 Storm - Response and Recovery



Burlington

Rail Line: Vermont Railway (VTR) – Northern Subdivision

Initial Damage – July 10<sup>th</sup> – 13th

Town: Brandon

.VERMONT

AGENCY OF TRANSPORTATION

MP 68.30

MP 54.22 MP 123



The July 7-17th, 2023 Storm - Response and Recovery

### Initial Damage on Green Mountain Railroad Bellows Falls Subdivision

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

Rail Line: Green Mountain Railroad (GMRC)

Initial Damage – July 10<sup>th</sup> – 13th

Town: Bellows Falls

NORTH

Rockingham MP 8.60

MP 0

MP 52.2



Rail Bridge #112



Initial Damage – July 10<sup>th</sup> – 13th

Rockingham MP 8.66 Town: **Bellows Falls** 

MP 0





Rutland

MP 52.2

Town: Chester

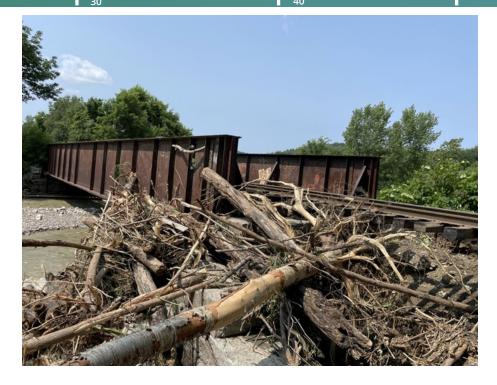
MP 12.80 **Bellows Falls** 

MP 0

Rutland MP 52.2

Initial Damage – July 10<sup>th</sup> – 13th





Rail Bridge #119



Initial Damage – July 10<sup>th</sup> – 13th

Town: Chester

NORTH

Bellows Falls MP 16.90 Rutland MP 0 MP 52.2



Initial Damage – July 10<sup>th</sup> – 13th

Town: Chester

Bellows Falls
MP 18.28
Rutland
MP 0
MP 52.2





en Mountain Railroad (GMRC)
Initial Damage – July 10<sup>th</sup> – 13th

Town: Chester

Bellows Falls MP 18.60 MP 0

NORTH → 1 10 20 1 30 1 40 1





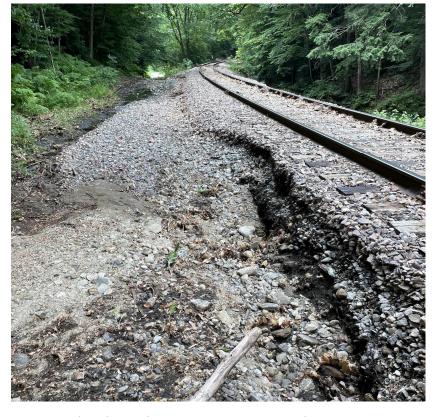


Rutland

MP 52.2

Initial Damage – July 10<sup>th</sup> – 13th

Town: Cavendish





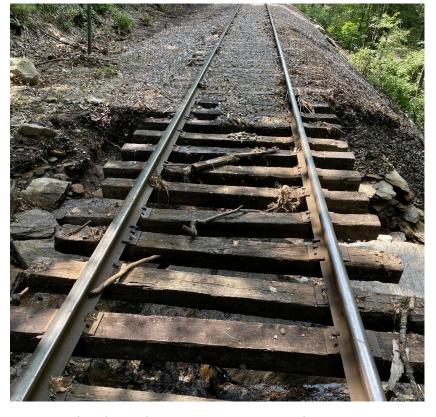
The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

Town: Cavendish

Bellows Falls
MP 0
MP 21.20
Rutland
MP 52.2
NORTH 10

Rutland





Initial Damage – July 10<sup>th</sup> – 13th

Town: Cavendish

NORTH

Bellows Falls
MP 21.38
Rutland
MP 52.2





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

Town: Cavendish

Bellows Falls
MP 22.64
MP 0
MP 52.2

NORTH → 10 20 130 140





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

Town: Cavendish

NORTH

Bellows Falls
MP 0
MP 23.51
Rutland
MP 52.2





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

Town: Cavendish

Bellows Falls

MP 23.54

MP 0

MP 52.2

NORTH → 1 10 1 20 1 30 1 40





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

Town: Cavendish

Bellows Falls
MP 0
MP 23.55
Rutland
MP 52.2
NORTH 10

NORTH 40





Initial Damage – July 10<sup>th</sup> – 13th

Town: Cavendish

Bellows Falls
MP 0
MP 23.60
Rutland
MP 52.2

NORTH → 1 10 20 1 30 1 40





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

2/7/2024

Town: Cavendish

Bellows Falls
MP 0
MP 23.75
Rutland
MP 52.2

NORTH → 10 120 130 140





Town: Cavendish

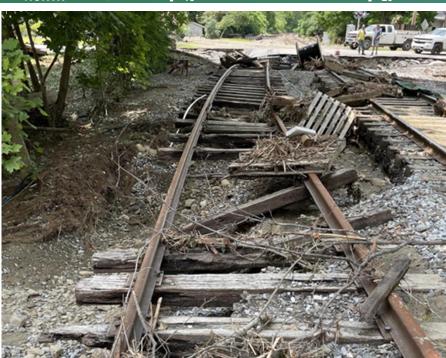
Bellows Falls

MP 0

NORTH → 1 10 1 20

Initial Damage – July 10<sup>th</sup> – 13th

Rutland MP 52.2







MP 23.80

Town: Cavendish

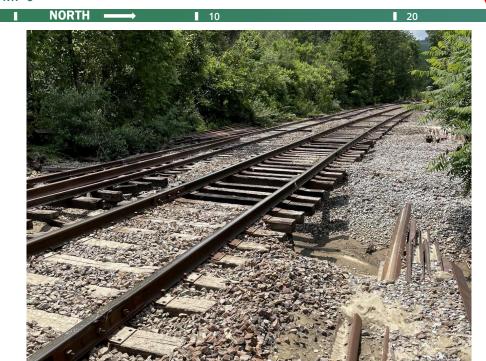
Bellows Falls

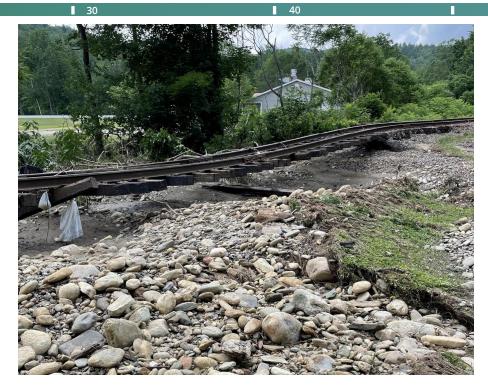
MP 0

MP 24.05

Initial Damage – July 10<sup>th</sup> – 13th

Rutland MP 52.2







Town: Cavendish

Bellows Falls

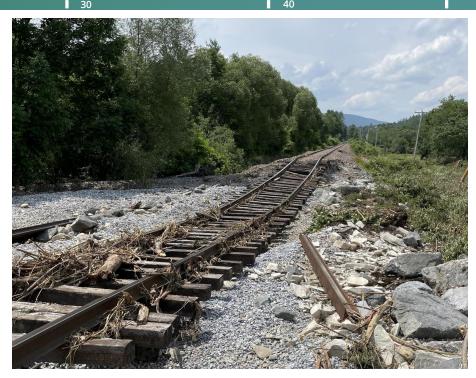
MP 0

MP 24.35

Initial Damage – July 10<sup>th</sup> – 13th

Rutland MP 52.2







Initial Damage – July 10<sup>th</sup> – 13th

Town: Cavendish

NORTH

Bellows Falls
MP 24.37
Rutland
MP 0
MP 52.2



The July 7-17th, 2023 Storm - Response and Recovery

Town: Ludlow

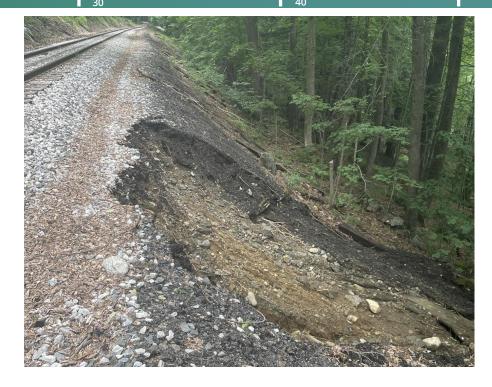
Bellows Falls

MP 0



## Initial Damage – July 10<sup>th</sup> – 13th

MP 28.45 Rutland MP 52.2

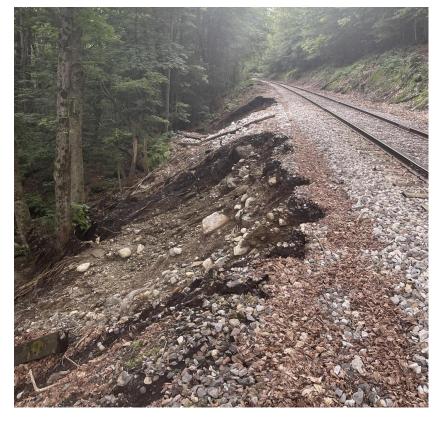




Initial Damage – July 10<sup>th</sup> – 13th

Town: Ludlow

Bellows Falls
MP 0
MP 28.55
Rutland
MP 52.2
NORTH 10
20
30
40

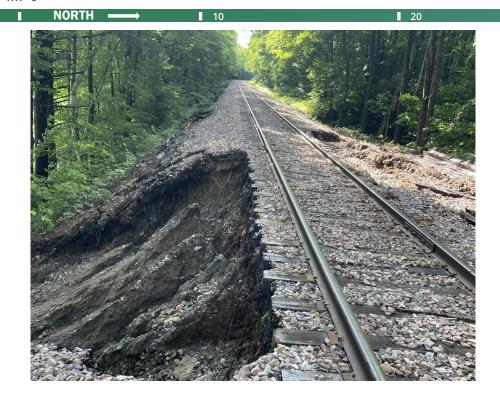




Town: Ludlow

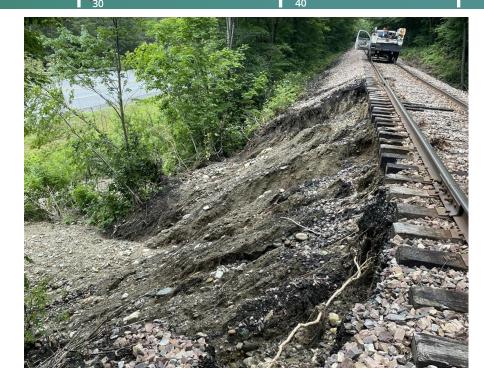
Bellows Falls

MP 0



### Initial Damage – July 10<sup>th</sup> – 13th

MP 30.70 Rutland MP 52.2



Town: Ludlow **Bellows Falls** MP 0

MP 30.81 Rutland MP 52.2

Initial Damage – July 10<sup>th</sup> – 13th



NORTH

The July 7-17th, 2023 Storm - Response and Recovery

**Mount Holly** Town:

**Bellows Falls** 

Rutland MP 0 MP 52.2 NORTH





MP 31.68

Initial Damage – July 10<sup>th</sup> – 13th

**Mount Holly** Town:

**Bellows Falls** 

MP 0 MP 52.2 NORTH





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

MP 32.42

Rutland

Initial Damage – July 10<sup>th</sup> – 13th

Town: Mount Holly

NORTH

Bellows Falls
MP 0

MP 32.72 Rutland MP 52.2





Town: Mount Holly

Bellows Falls

MP 0

/IP 0

■ NORTH → ■ 10 ■ 20







Initial Damage – July 10<sup>th</sup> – 13th



Initial Damage – July 10<sup>th</sup> – 13th

MP 32.85

Town: Mount Holly

Bellows Falls MP 0

NORTH → 10 20 130 40





Rutland

MP 52.2

Initial Damage – July 10<sup>th</sup> – 13th

Town: Mount Holly

NORTH

Bellows Falls
MP 0

MP 33.28 Rutland MP 52.2





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

MP 35.67

**Mount Holly** Town:

**Bellows Falls** 

MP 0

MP 52.2





Rutland

Initial Damage – July 10<sup>th</sup> – 13th

Town: Mount Holly

Bellows Falls
MP 0

MP 35.87

Rutland
MP 52.2





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> – 13th

Town: Mount Holly

NORTH

Bellows Falls
MP 36.59
Rutland
MP 0
MP 52.2





Initial Damage – July 10<sup>th</sup> – 13th

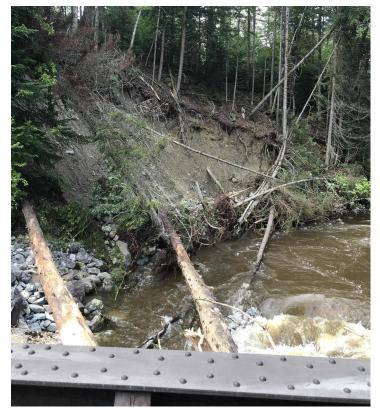
MP 37.60

**Mount Holly** Town:

**Bellows Falls** 

MP 0

MP 52.2 NORTH



Rail Bridge #142



**Rutland** 

Initial Damage – July 10<sup>th</sup> – 13th

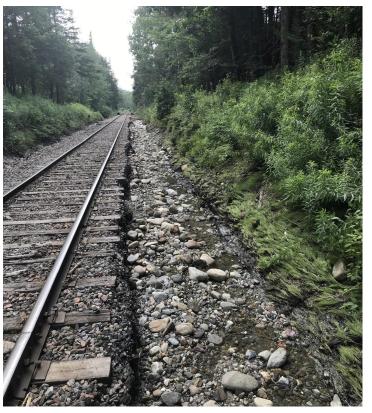
MP 37.70

Town: Mount Holly

Bellows Falls

MP 0

| NORTH → | 10 | 20 | 30 | 40





The July 7-17th, 2023 Storm - Response and Recovery

**Rutland** 

MP 52.2

Initial Damage – July 10<sup>th</sup> – 13th

MP 40.09

Wallingford Town:

**Bellows Falls** 

MP 0







**Rutland** 

Initial Damage – July 10<sup>th</sup> – 13th

Town: Shrewsbury

Bellows Falls

MP 0





# Initial Damage on Washington County Railroad Montpelier & Barre Subdivision

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

Initial Damage – July 10<sup>th</sup> –

Town: Berlin

MP 3.45

MP 0

Montpelier Barre Town







MP 11.17

Initial Damage – July 10<sup>th</sup> –

Town: Berlin

MP 5.04

MP 11.17

■ EAST → ■ 2 ■ 4 ■ 6 ■ 8 ■ 10

Montpelier

MP 0







2

Town: Barre City

MP 6.35

MP 0

■ EAST → 2 4 4 5 6 8 8

Montpelier Barre Town





Initial Damage – July 10<sup>th</sup> –



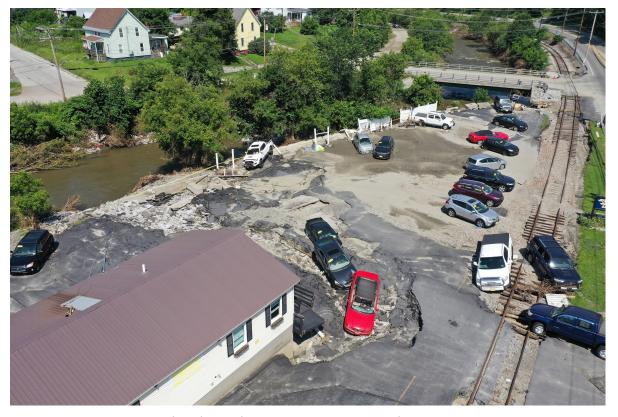
MP 11.17

Initial Damage – July 10th – 1

Town: Barre City

MP 6.8

Montpelier





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> –

Town: Barre City

MP 6.9

MP 11.17

Montpelier

MP 0





The July 7-17th, 2023 Storm - Response and Recovery

Initial Damage – July 10<sup>th</sup> –

**Barre City** Town:

MP 6.9

MP 11.17

Montpelier

MP 0





The July 7-17th, 2023 Storm - Response and Recovery

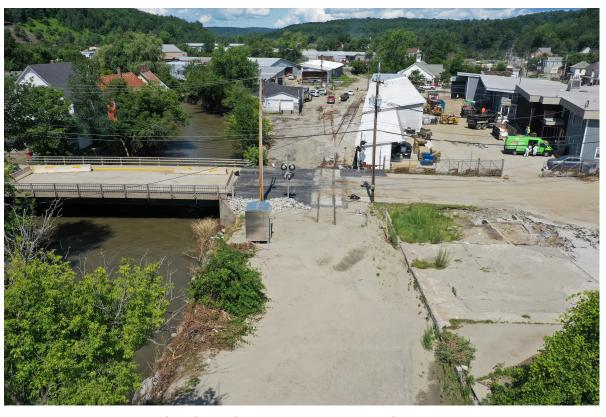
Initial Damage – July 10<sup>th</sup> –

Town: Barre City

MP 7.1

MP 11.17

Montpelier





The July 7-17th, 2023 Storm - Response and Recovery

**Barre City** Town:

MP 8.0

MP 11.17

Barre Town

Initial Damage – July 10<sup>th</sup> –

Montpelier

MP 0





The July 7-17th, 2023 Storm - Response and Recovery

Town: Barre Town

Initial Damage – July 10<sup>th</sup> – 1

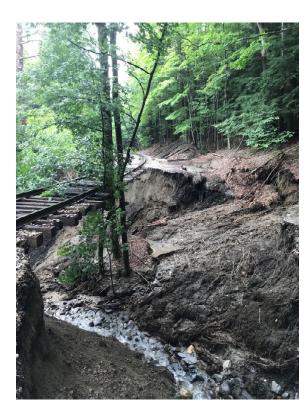
MP 9.31

MP 0

Montpelier

**Barre Town** 

MP 11.17







### **Before and After Images**

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

#### Before and After on Green Mountain Railroad Bellows Falls Subdivision

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

MP 52.2

Rail Line: Green Mountain Railroad (GMRC)

Rockingham MP 8.6 Town:

MP 0







Recovery

After Recovery





Recovery

Rockingham MP 11.6 Town:

MP 0 MP 52.2

**Bellows Falls** Rutland





After Recovery **Initial Damage** 



Recovery

Town: Rockingham

MP 16.8

MP 0

20 30

Bellows Falls Rutland





Initial Damage After Recovery



MP 52.2

MP 52.2

Rail Line: Green Mountain Railroad (GMRC)

\_ . . .

Recovery

Town: Rockingham

MP 18.18

NORTH -

MP 0

20 30







After Recovery



MP 52.2

Rail Line: Green Mountain Railroad (GMRC)

Town: Cavendish

MP 0

Recovery

**1** 20

MP 21.10

■ 30







After Recovery



Town: Cavendish

Recovery

MP 24.30

MP 0 MP 52.2







After Recovery

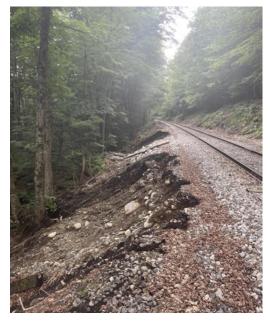


Town: Cavendish

MP 0

Recovery

MP 28.50







After Recovery



### Before and After on Washington County Railroad Montpelier & Barre Subdivision

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

Recovery

MP 11.17

Barre Town

Town: Berlin

MP 3.4

**EAST** 

Montpelier

MP 0



**Initial Damage** 



**After Recovery** 



Recovery

Town: Barre City

MP 6.8

MP 11.17

MP 0

**EAST** → 1 2

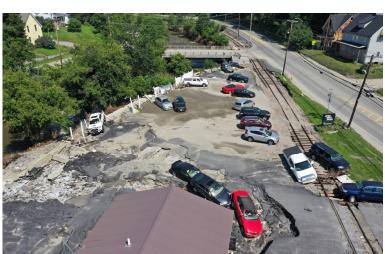
■ 4

6

8

Barre Town

Montpelier





Initial Damage After Recovery



Recovery

Town: Barre City

MP 6.92

MP 11.17

Montpelier

EAST

MP 0



Initial Damage



**After Recovery** 



Recovery

**Barre City** Town:

MP 7.55  $\nabla$ 

MP 11.17

**EAST** 

Barre Town

Montpelier

MP 0



**Initial Damage** 





Recovery

MP 9.30

MP 11.17

MP 0

**Barre Town** 

EAST -

Town:

| {

Barre Town

Montpelier



**Initial Damage** 



After Recovery



Town: **Barre Town** 

Barre Town

Recovery

**EAST** Montpelier

MP 0



**Initial Damage** 





## **Large Project Sites**

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

# Project Site in Chester, Bridge 119 at MP 12.8 on Green Mountain Railroad Bellows Falls Subdivision

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

Recovery

Town: Chester July 18th

MP: 12.80 BR119

July 10th

Sept. 21st





Recovery

Town: Chester July 19th

MP: 12.80 BR119

July 10th

Sept. 21st

Present

**Storm Event** 







Recovery

Chester July 20th Town:

MP: 12.80 BR119

July 10th

Sept. 21st





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Chester July 20th Town: MP: 12.80 BR119

July 10th Sept. 21st





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Chester July 21st Town:

MP: 12.80 BR119

July 10th

Sept. 21st





The July 7-17th, 2023 Storm - Response and Recovery

Chester July 21st Town: MP: 12.80 BR119

July 10th Sept. 21st





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Chester

July 24th

MP: 12.80 BR119

July 10th

Sept. 21st





The July 7-17th, 2023 Storm - Response and Recovery

## Project Site in Chester, Bridge 123 at MP 17.82 on Green Mountain Railroad Bellows Falls Subdivision

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

Recovery

Town: Chester

July 26th

MP: 17.82 BR123

July 200

Sept. 21st

Present

Storm Event

July 10th





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Chester

July 27th

MP: 17.82 BR123

July 10th

 $\nabla$ 

**4 5** 

Sept. 21st

Present

Storm Event







MP: 17.82 BR123

Chester July 28th

July 10th Sept. 21st

Storm Event

Town:





Recovery



Chester

MP: 17.82 BR123

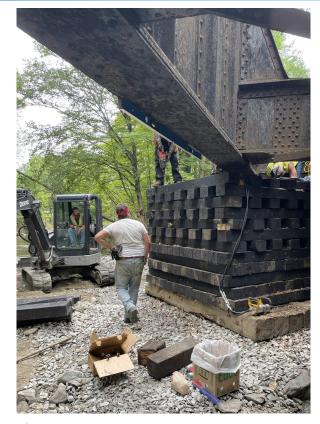
July 29th

July 10th Sept. 21st

Storm Event

Town:





Recovery



Recovery

Town: Chester

MP: 17.82 BR123

July 31st

**■** WEEK

Sept. 21st

Storm Event

July 10th





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Chester

17.82 BR123

MP: August 1st

**■** WEEK

Sept. 21st

Storm Event

July 10th





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Chester

MP: 17.82 BR123

MP: August 3rd

July 10th

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Sept. 21st

Present

Storm Event





The July 7-17th, 2023 Storm - Response and Recovery

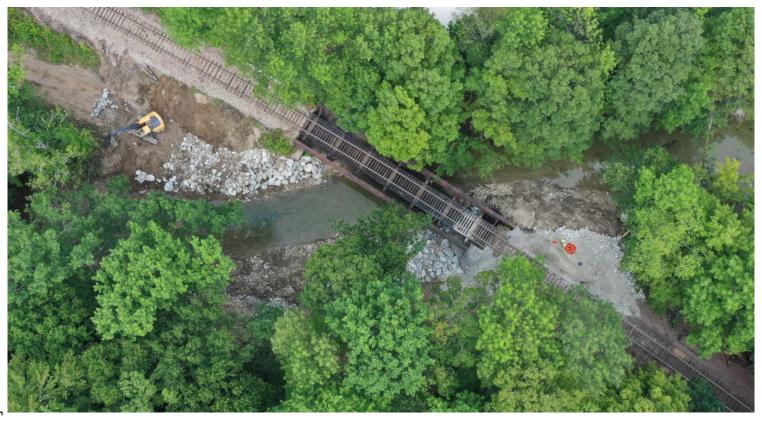
Recovery

Town: Chester MP: 17.82 BR123 August 4th

July 10th **■** WEEK

Sept. 21st

Storm Event





The July 7-17th, 2023 Storm - Response and Recovery

## Project Site in Ludlow at MP 28.07 on Green Mountain Railroad Bellows Falls Subdivision

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

Recovery

Town: Ludlow MP: July 10<sup>th</sup> - 13th

July 10th Sept. 21st

28.07

Storm Event





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Ludlow MP: 28.07

July 10th - 13th

July 10th Sept. 21st

**Storm Event** 





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Ludlow

MP: 28.07

July 10th - 13th

 July 10th
 Sept. 21st

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**Storm Event** 



7/11/23

Present

VERMONT AGENCY OF TRANSPORTATION

The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Ludlow

MP: 28.07

July 10th - 13th

July 10th Sept. 21st

Storm Event



7/11/23



The July 7-17th, 2023 Storm - Response and Recovery

Ludlow

MP: 28.07

July 10th - 13th

July 10th Sept. 21st

**Storm Event** 

Town:





Recovery

7/11/23



The July 7-17th, 2023 Storm - Response and Recovery

MP: 28.07

Ludlow July 15th

July 10th

Town:

Sept. 21st Storm Event Present





Recovery



Ludlow July 17th MP: 28.07

July 10th

Sept. 21st

**Storm Event** 

Town:





Recovery



MRC) Recovery MP: 28.07

Town: Ludlow July 19th

July 10th Sept. 21st

**Storm Event** 







The July 7-17th, 2023 Storm - Response and Recovery



Recovery

Ludlow July 19th Town:

MP: 28.07

July 10th Sept. 21st

**Storm Event** Present





The July 7-17th, 2023 Storm - Response and Recovery

MP: 28.07

Ludlow July 20th

July 10th Sept. 21st

Storm Event Present





Town:

The July 7-17th, 2023 Storm - Response and Recovery

Recovery

> Ludlow July 21st MP: 28.07

July 10th Sept. 21st

Storm Event

Town:





Recovery



The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Ludlow

July 25th

MP: 28.07

July 10th

Sept. 21st

Storm Event





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Ludlow

July 26th

MP:

28.07

July 10th Sept. 21st

Storm Event





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Ludlow

July 26th

MP: 28.07

July 10th

Sept. 21st

Storm Event





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Ludlow

MP:

28.07

July 27th

July 10th Sept. 21st

Storm Event





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Ludlow

July 27th

MP:

28.07

July 10th Sept. 21st

Storm Event





The July 7-17th, 2023 Storm - Response and Recovery

Ludlow

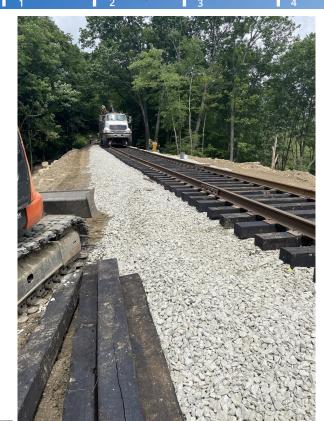
MP: 28.07

July 27th

July 10th Sept. 21st

Storm Event

Town:





Recovery



MP: 28.07

Town: Ludlow

July 31st

July 10th Sept. 21st

Storm Event





Recovery



Ludlow

MP: Aug. 3rd 28.07

July 10th Sept. 21st

**Storm Event** 

Town:





Recovery



Recovery

Town: Ludlow

MP: 28.07 Aug. 4th

July 10th

Sept. 21st

Storm Event





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Ludlow

MP: 28.07 Aug. 4th

July 10th

I WEEK

Sept. 21st

Storm Event Present





The July 7-17th, 2023 Storm - Response and Recovery

Ludlow MP: 28.07 Aug. 7th

 July 10th
 Sept. 21st

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**Storm Event** 

Town:





Recovery



Ludlow MP: 28.07 Aug. 7th

 July 10th
 Sept. 21st

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Storm Event

Town:





Recovery



Ludlow MP: 28.07 Aug. 7th

 July 10th
 Sept. 21st

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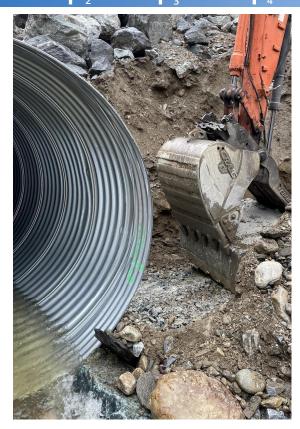
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**Storm Event** 

Town:





Recovery



The July 7-17th, 2023 Storm - Response and Recovery

Town: Ludlow MP:

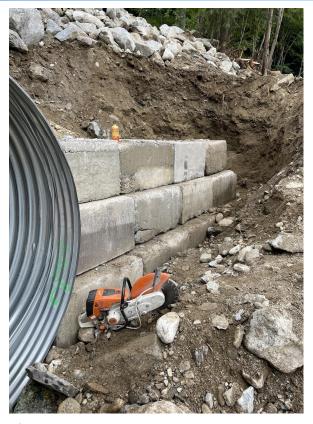
28.07 Aug. 8th

July 10th I WEEK Sept. 21st

Present

Storm Event





Recovery



Recovery

Town: Ludlow 28.07 Aug. 9th MP:

July 10th Sept. 21st

Storm Event





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Ludlow MP: 28

28.07 Aug. 11th

July 10th Sept. 21st

**Storm Event** 





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Ludlow MP: 28.07

Aug. 14th

July 10th Sept. 21st

**Storm Event** 





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Ludlow MP: 28.07

Aug. 15th

 July 10th
 Sept. 21st

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The July 7-17th, 2023 Storm - Response and Recovery

Ludlow MP: 28.07

Recovery

Aug. 22nd

July 10th Sept. 21st

**Storm Event** 

Town:





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Ludlow MF

MP: 28.07

Aug. 22nd

July 10th Sept. 21st

Storm Event





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Ludlow MP: 28.07

Aug. 24th

 July 10th
 Sept. 21st

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Storm Event Present





Ludlow MP: 28.07

Recovery

Aug. 24th

 July 10th
 Sept. 21st

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Present

Storm Event

Town:





The July 7-17th, 2023 Storm - Response and Recovery

Town: Ludlow MP: 28.07

Recovery

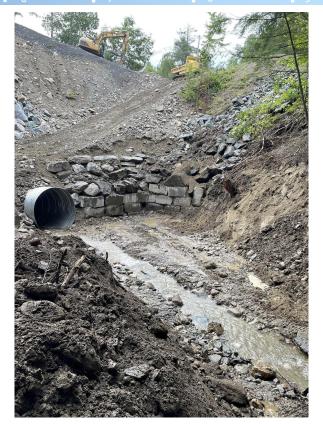
Aug. 28th

 July 10th
 Sept. 21st

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Storm Event







The July 7-17th, 2023 Storm - Response and Recovery

> Ludlow MP: 28.07

Recovery

Aug. 28th

July 10th Sept. 21st **■** WEEK

Storm Event

Town:





The July 7-17th, 2023 Storm - Response and Recovery

Town: Ludlow MP: 28.07

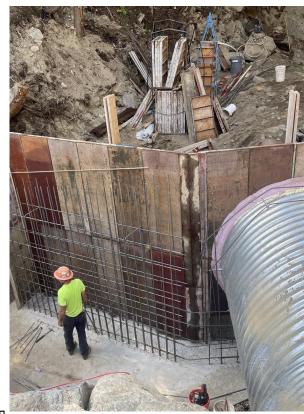
Recovery

Sept. 6th

July 10th

Sept. 21st

Present







Town: Ludlow MP: 28.07

Recovery

Sept. 7th

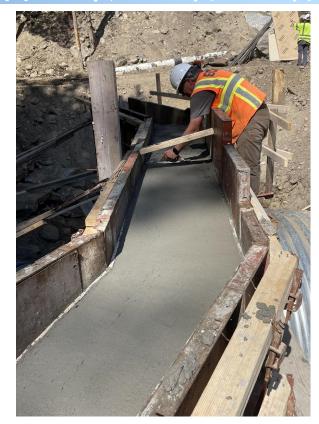
July 10th

WEEK 1 1 2 1 3 1 4 5 6

Sept. 21st

Storm Event







Town: Ludlow MP: 28.07

Recovery

Sept. 12th

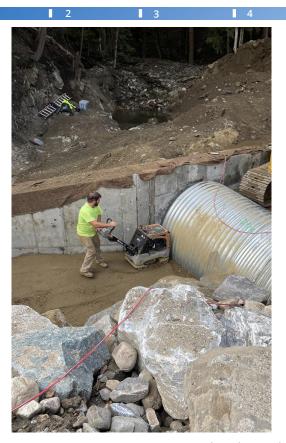
Sept. 21st

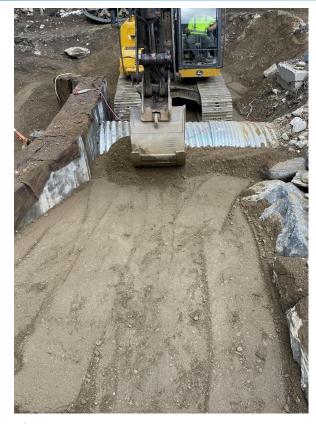
10

Present

July 10th

WEEK







The July 7-17th, 2023 Storm - Response and Recovery

Town: Ludlow MP: 28.07

Recovery

Sept. 13th

Sept. 21st

Present

 July 10th

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The July 7-17th, 2023 Storm - Response and Recovery

Town: Ludlow MP: 28.07

Sept. 13th

Recovery

 $\nabla$ 

Sept. 21st

Present

July 10th

WEEK 1 1 2 1 3





The July 7-17th, 2023 Storm - Response and Recovery

## Project Site in Wallingford at MP 39.94 on Green Mountain Railroad Bellows Falls Subdivision

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

Recovery

Town:

Wallingford MP: 39.90

July 11th
July
10th

WEEK 1 2 3 4 5 6 7 8 9 10

Storm Event Present





The July 7-17th, 2023 Storm - Response and Recovery

Sept. 21st

Recovery

: Wallingford July 13th Town: MP:

July 10th Sept. 21st

39.90

Storm Event





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Wallingford July 17th Town:

MP: 39.90

July 10th

Storm Event





The July 7-17th, 2023 Storm - Response and Recovery

Sept. 21st

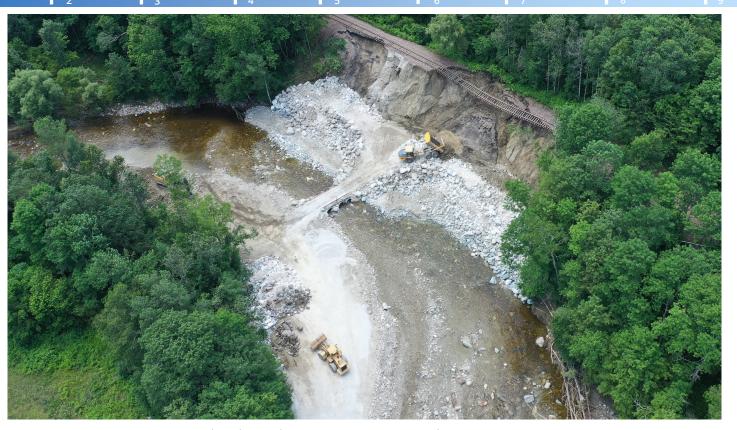
MRC) Recovery MP: 39.90

Wallingford July 19th

July 10th Sept. 21st

**Storm Event** 

Town:





The July 7-17th, 2023 Storm - Response and Recovery

> Wallingford July 22nd MP: 39.90

July 10th Sept. 21st

**Storm Event** 

Town:





Recovery



> Wallingford July 24th MP: 39.90

July 10th Sept. 21st

**Storm Event** 

Town:





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Wallingford MP: 39.90

July 25th

July 10th Sept. 21st

**Storm Event** 

Town:





Recovery



Recovery

Town: Wallingford

MP: 39.90

July 28th

July 10th Sept. 21st

Storm Event Present





The July 7-17th, 2023 Storm - Response and Recovery

Town: Wallingford MP: 39.90

July 28th

July 10th Sept. 21st

**Storm Event** 





Recovery



The July 7-17th, 2023 Storm - Response and Recovery

Wallingford

MP: 39.90

July 29th

July 10th Sept. 21st

**Storm Event** 

Town:





Recovery



Recovery

Town: Wallingford

MP: 39.90

July 31st

July 10th Sept. 21st

Storm Event





The July 7-17th, 2023 Storm - Response and Recovery

Wallingford MP: 39.90

July 31st

July 10th Sept. 21st

**Storm Event** 

Town:





Recovery



The July 7-17th, 2023 Storm - Response and Recovery

Wallingford Town: MP: August 2nd 39.90

July 10th Sept. 21st

**Storm Event** 





Recovery



Wallingford MP: 39.90 August 4th

August 4th

 July 10th
 Sept. 21st

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Storm Event

Town:





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Wallingford

MP: 39.90 August 4th

July 10th Sept. 21st

**Storm Event** 

Town:





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

MP: 39.90 August 4th

Wallingford

July 10th Sept. 21st

Storm Event

Town:





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

## Project Site in Berlin, Bridge 307 at MP 3.5 on Washington County Railroad Montpelier & Barre Subdivision

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

Recovery

Berlin July 15th Town: MP: 3.5 BR307

July 10th Sept. 21st

Storm Event Present





Recovery

Town: Berlin MP: 3.5 BR307

July 23rd

July 10th Sept. 21st

Storm Event Present





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

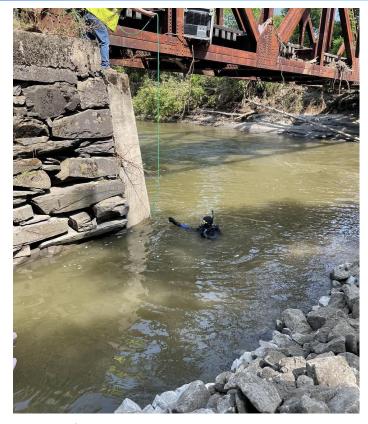
Town: Berlin MP: 3.5 BR307

July 24th

July 10th Sept. 21st

**Storm Event** 







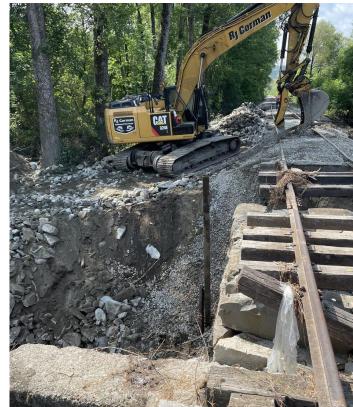
Recovery

Town: Berlin MP: 3.5 BR307

July 25th

July 10th Sept. 21st

**Storm Event** 







The July 7-17th, 2023 Storm - Response and Recovery

Washington Country Railroad (WACR) - Montpelier & Barre Rail Line:

MP: 3.5

**BR307** 

Recovery

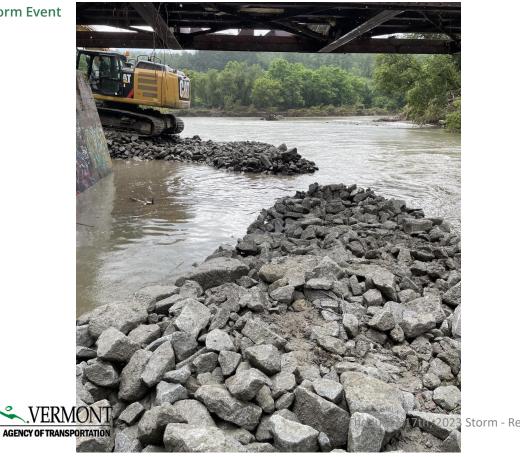
Berlin Town:

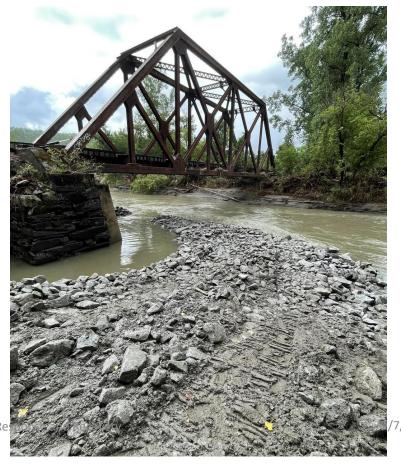
July 27th

July 10th

Sept. 21st

Storm Event





/7/2024

179

Washington Country Railroad (WACR) - Montpelier & Barre Rail Line:

MP: 3.5

Recovery

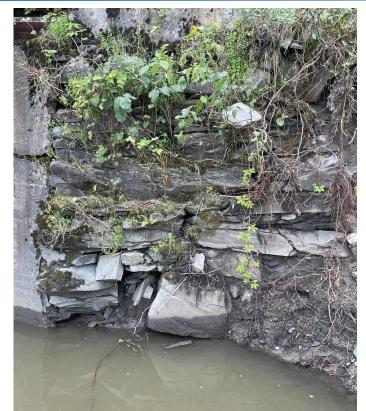
Town: Berlin

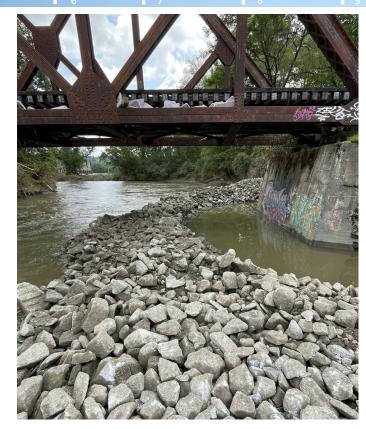
July 28th

July 10th Sept. 21st

**BR307** 

**Storm Event** 







The July 7-17th, 2023 Storm - Response and Recovery

MP: 3.5

Recovery

Town: Berlin

July 29th

July 10th

**BR307** 

Sept. 21st

Present

**Storm Event** 







The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Berlin MP: 3.5 BR307

July 31th

July 10th Sept. 21st

**Storm Event** 







The July 7-17th, 2023 Storm - Response and Recovery

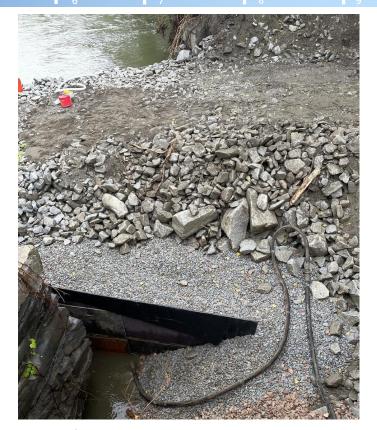
Recovery

Town: Berlin MP: 3.5 August 4th **BR307** 

July 10th Sept. 21st

Storm Event







The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Berlin MP: 3.5 August 7th **BR307** 

July 10th Sept. 21st

Storm Event Present





Town:

Recovery

Present

2/7/2024

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Town: Berlin MP: 3.5 BR307
August 7th

July 10th Sept. 21st

Storm Event







Recovery

Berlin MP: 3.5 BR307 August 9th

July 10th Sept. 21st

**Storm Event** 

Town:







Recovery

Town: Berlin 3.5 BR307 August 10th MP:

July 10th

Sept. 21st

Present

Storm Event







The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Berlin MP:

August 21st

 July 10th
 Sept. 21st

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Recovery

Town: Berlin

MP: 3.5 BR307

August 21st

July 10th

Storm Event Present





The July 7-17th, 2023 Storm - Response and Recovery

Sept. 21st

## Project Site in Barre City, Rail Yard at MP 6.8 – 7.9 on Washington County Railroad Montpelier & Barre Subdivision

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

Recovery

Town: Barre City

MP: 6.8 – 7.9

July 11th

July 10th

2

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**9** 

Sept. 21st

Present

**Storm Event** 







The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: July 11th

Barre City MP: 6.8 – 7.9

July 10th

Sept. 21st

Storm Event







The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Barre City July 20th Town:

MP: 6.8 - 7.9

July 10th Sept. 21st





Recovery

Barre City July 20th Town:

MP: 6.8 - 7.9

July 10th

Sept. 21st





Recovery

Barre City July 20th Town: MP:

6.8 - 7.9

July 10th Sept. 21st





Recovery

Barre City July 20th

Town:

MP: 6.8 – 7.9

July 10th Sept. 21st





Recovery

Barre City July 20th

ity MP: 6.8 – 7.9

July 10th

Sept. 21st

**Storm Event** 

Town:







The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Barre City July 22nd Town: MP: 6.8 – 7.9

July 10th Sept. 21st





Recovery

Town: Barre City MP: 6.8 – 7.9

July 25th

July 10th Sept. 21st

**Storm Event** 







The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Barre City MP: 6.8 – 7.9

July 25th

July 10th Sept. 21st

**Storm Event** 

Town:







The July 7-17th, 2023 Storm - Response and Recovery

MP:

6.8 - 7.9

Recovery

**Barre City** Town:

July 30th

July 10th Sept. 21st

**Storm Event** 







The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Barre City MP: 6.8 – 7.9
August 1st

July 10th Sept. 21st

Storm Event

Town:







The July 7-17th, 2023 Storm - Response and Recovery

Recovery

**Barre City** MP: August 2nd 6.8 – 7.9

July 10th Sept. 21st

**Storm Event** 

Town:







The July 7-17th, 2023 Storm - Response and Recovery

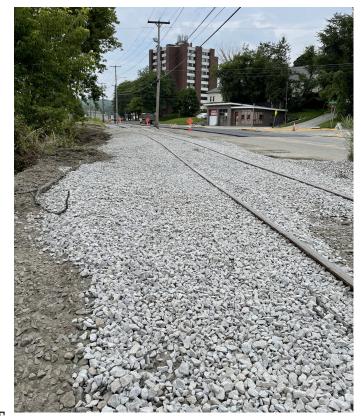
Recovery

Barre City MP: 6.8 – 7.9
August 2nd

July 10th Sept. 21st

**Storm Event** 

Town:







The July 7-17th, 2023 Storm - Response and Recovery

Recovery

**Barre City** Town: MP: 6.8 – 7.9 August 4th

July 10th Sept. 21st





The July 7-17th, 2023 Storm - Response and Recovery

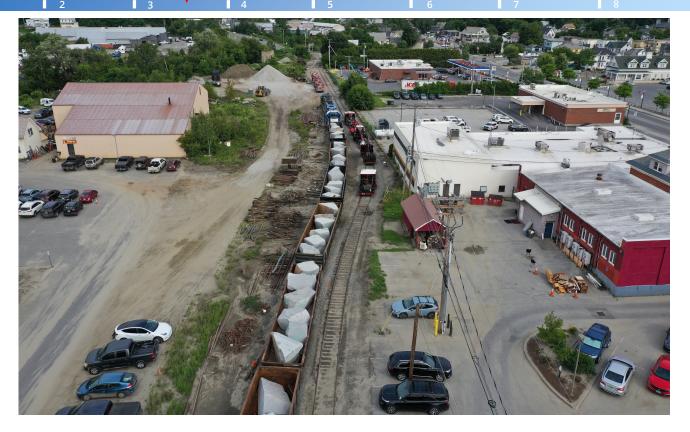
Recovery

**Barre City** MP: 6.8 – 7.9 August 4th

July 10th Sept. 21st

Storm Event

Town:

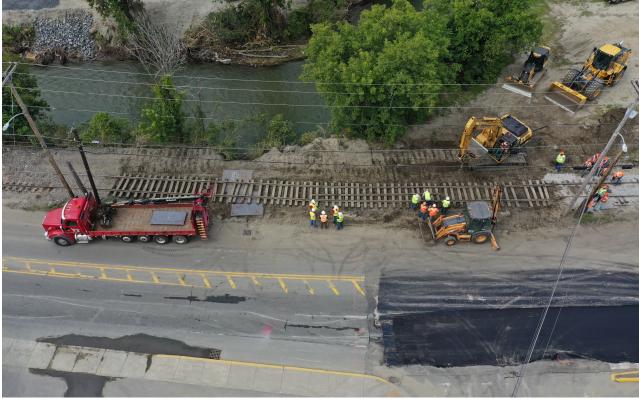




Recovery

**Barre City** MP: 6.8 - 7.9 August 4th Town:

July 10th Sept. 21st





The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Barre City MP: 6.8 – 7.9
August 9th

July 10th Sept. 21st

Storm Event







The July 7-17th, 2023 Storm - Response and Recovery

Recovery

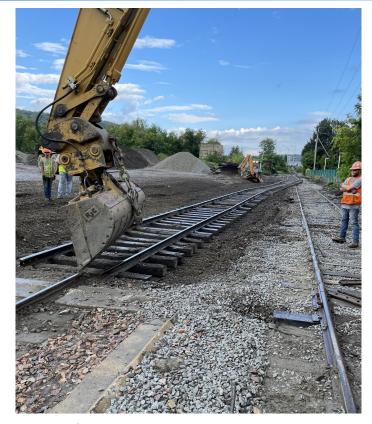
**Barre City** 6.8 – 7.9 August 13th MP:

July 10th Sept. 21st

**Storm Event** 

Town:







Recovery

6.8 – 7.9 August 15th **Barre City** MP:

July 10th Sept. 21st

Storm Event







Town:

The July 7-17th, 2023 Storm - Response and Recovery

## Project Site in Barre Town at MP 9.3 on Washington County Railroad Montpelier & Barre Subdivision

February 7, 2024



VT RAIL AND AVIATION BUREAU
DIRECTOR DAN DELABRUERE

Recovery

Town: Barre Town MP: 9.3

July 13th

July 10th V

Storm Event







The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Barre Town July 23th Town: MP: 9.3

July 10th Sept. 21st





Recovery

Town: Barre Town MP: 9.3

July 25th

July 10th Sept. 21st

**Storm Event** 







The July 7-17th, 2023 Storm - Response and Recovery

Recovery

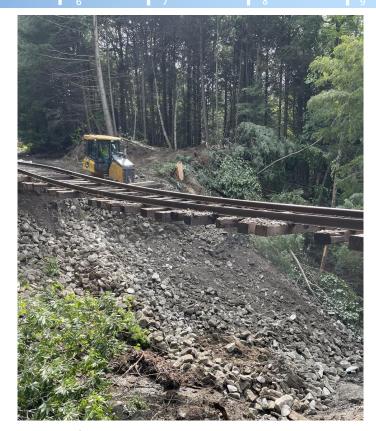
Town: Barre Town MP: 9.3

July 25th

July 10th Sept. 21st

**Storm Event** 







The July 7-17th, 2023 Storm - Response and Recovery

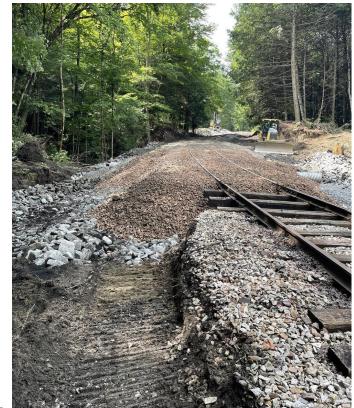
Recovery

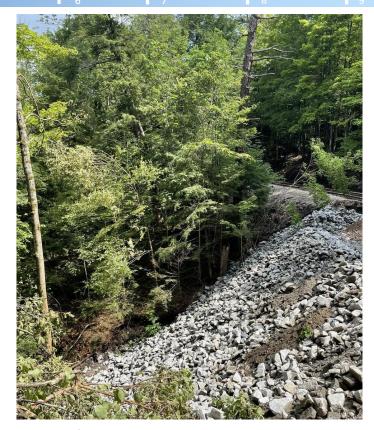
Town: Barre Town MP: 9.3

July 28th

July 10th Sept. 21st

Storm Event







The July 7-17th, 2023 Storm - Response and Recovery

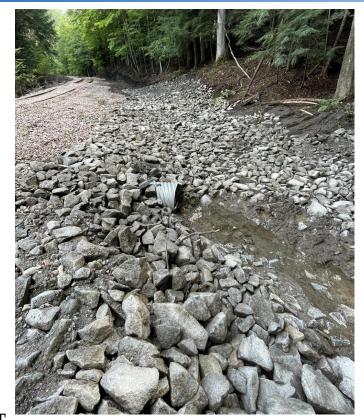
Recovery

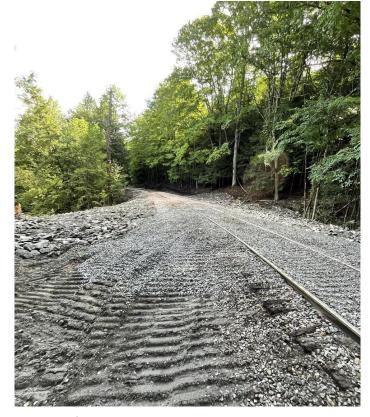
Town: Barre Town MP: 9.3

July 30th

July 10th Sept. 21st

Storm Event







The July 7-17th, 2023 Storm - Response and Recovery

Recovery

Town: Barre Town MP: 9.3
August 2nd

July 10th Sept. 21st

**Storm Event** 







The July 7-17th, 2023 Storm - Response and Recovery

## Thank you Questions?

February 7, 2024





VT RAIL AND AVIATION BUREAU

DIRECTOR DAN DELABRUERE

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VERMONT RAIL SYSTEMS

PRESIDENT SELDEN HOUGHTON