

Vermont Agency of Transportation

July 2023 Flooding Impacts and Response Activities

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PRESENTATION TO THE JOINT TRANSPORTATION OVERSIGHT COMMITTEE



July Storm Event & Declarations of Emergency

- Heavy Rain/River and Areal Flooding Event began July 7 and according to FHWA has yet to end. FEMA event also began July 7 and tentatively ended in mid-July. The Administration requested that event be extended to July 21st and it was approved.
- The Governor Declared a State of Emergency on July 9, 2023 and is still on-going.
- President Biden approved the Governor's request for a State of Emergency for Vermont on July 14.

Impacts to Transportation Systems

- **Highway Flood Facts as of 9/15/23**

- 962 Damage Sites
- 765 Damage Sites Fixed
- 832 culverts, bridges and multi-plates impacted
- 479 culverts cleaned
- 62 culverts replaced
- 140,221 linear feet of ditching completed
- 23 miles of paving completed
- 592 State bridges inspected for damage
- 248 Town bridges inspected for damage
- 383,486 Tons of stone used
- 7,764 linear feet of damaged guardrail replaced
- 199 Slopes/slides repaired



Cavendish VT106 Washout



Reading VT106 Washout





Reading VT106 Washout

Green Mountain Railroad Rail Line Washout in Ludlow





Initial Damage



After Recovery

Washington County Railroad (WACR) – Montpelier & Barre in Barre City



Initial Damage



After Recovery

Green Mountain Railroad (GMRC) in Chester

Impacts to Transportation Systems

- **Lamoille Valley Rail Trail**

- Significant damage occurred to the LVRT, estimated at \$12 million in repairs.
- Currently, 138 individual sites are damaged.
- The majority of damages are concentrated in Lamoille and Caledonia Counties with the hardest hit towns being Hardwick and Wolcott.



- MP 22.73, Town of Walden, Caledonia County
- Length 35', Width 35, Depth 20'
- Damage Main line washout (trail surface, subsurface, and ballast).



- MP 30.17, Town of Hardwick, Caledonia County
- Length 60', Width 50', Depth 20'
- Damage: Culvert plugged and main line washout.



- MP 42.61 (Bridge 49) Town of Wolcott, Lamoille County
- Length 600', Width 30', Depth 5'
- Damage: Trail and bridge approach washout on western side of bridge



Impacts to Transportation Facilities

- **Route 302 (Berlin) Central Garage and Training Center Facilities Impacts**
 - 6 structures impacted, 1 total loss, 5 significantly impacted.
 - As of Sept 15, the Central Garage facility is partially operational in temporary quarters within the current location. Operationally, the functions of the Central Garage will be sustained by sharing workloads across the other locations.

Route 302 Complex



Emergency Highway & Rail Projects Undertaken

- 262 emergency projects have been programmed out of 315 Detailed Damage Inspection Reports (FHWA's term for identifying an affected & eligible area)
- The # of Projects contracted through ID/IQ
 - Number of projects under ID/IQ contract:
 - All emergency work since day 1: (including solicited projects)
 - ✓ Emergency Highway: 204
 - ✓ Emergency Railroad: 57

Most costly highway sites are bridges and culverts, with the following cost estimates:

- Plymouth VT100 Bridge#108 – \$8.4M
- Jamaica VT30 Bridge#42 – \$5.8M
- Middlebury VT116 Bridge#3 - \$4.8M
- Bridgewater VT100 Bridge#116 (11' Culvert) – \$3.4M
- Plymouth VT100A Bridge#7 – \$3.1M
- Chelsea VT110 Bridge#13 – \$2.9M

Emergency Projects Undertaken

- Rail damages are estimated at \$70 million:
 - Statewide State-owned Rail Lines had damage at 225 sites. There were 65 sites with debris-only damage. There were 160 sites that had individual damage solicitations given to contractors. All railroads are open and operational, with work on 105 sites completed but additional permanent work on 55 sites is ongoing.
 - Rail damage occurred in 23 towns and cities in Bennington, Caledonia, Orleans, Rutland, Washington, Windham and Windsor Counties
 - Damages 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.

Ongoing and Future Challenges

- There are still some original highway sites that were significant enough to need considerable time and effort to re-build. Currently:
 - Two roads are closed: VT 116 Middlebury, I-91 Hartford- I-91 NB Exit to I-89 SB
 - Partially Closed: VT125 Ripton, VT125 Middlebury, VT103 Cavendish, VT107 Stockbridge, US 4 Hartford, US 5 Norwich, VT131 Weathersfield, I-91 SB Fairlee)
- Need to merge emergency projects with those already planned for in the Capital Program. Priorities have to be re-established to determine what has to be done, how quickly, and with what funds. This may result in changing timelines for previous programmed capital projects.

Preliminary Cost and Federal Reimbursement Estimates

- Current estimated damage totals, as of Friday, 9/15/2023:
 - FEMA: \$160.5M
 - FHWA: \$130.7M