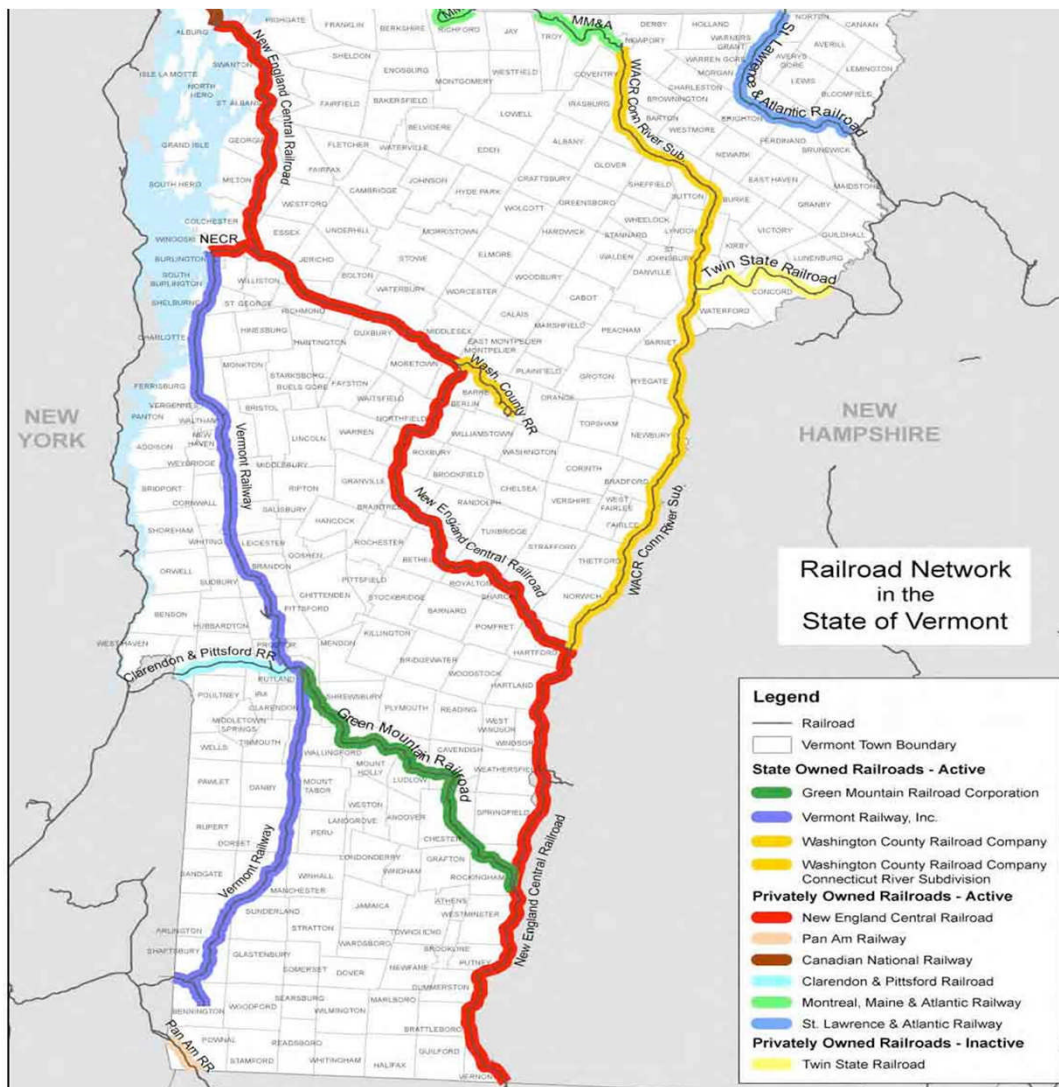


# Hazmat by Rail

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# Overview

- Large quantities of hazardous materials move through Vermont every year, either passing through the state or destined to state industry.
  - Gasoline
  - Ethanol
  - Chlorine
  - Ammonia
  - Spent nuclear fuel
- Railroads are federally regulated which limits state regulation





# Human Impacts

- 64 per cent had a human loss (fear for their lives or that of a loved one, was injured, etc.).
- 23 per cent had a material loss.
- 54 per cent had a negative perception (depression, post-traumatic stress, etc.).
- 17 per cent of people had an "intense exposure" (e.g. experienced all three of the above).
- 27 children were orphaned (either lost one or both parents).
- 621 people sought help from the centre set up for homeless and people affected by explosion.

# Environmental Impacts

- Railroads exist in close proximity to waterways and wetlands
  - Hoosic Watershed
  - Connecticut River
  - Otter River
  - Winooski River
  - Lake Champlain
- Derailments have potential to contaminate drinking water resources
- Derailments have to destroy ecological systems.
- 5,560,000 litres of crude oil released into the environment.
- 558,000 metric tonnes of contaminated soil to treat.
- 740,000 litres of crude oil recovered from train cars that did not explode.

# Economic Impact

- Fishing draws many to the state. A destruction of the fish habitats could pose economic impacts on regions that rely on wildlife as an economic draw
- Destruction of property has potential for long term negative impacts on functioning economy of a region
  - 44 Buildings Burned
  - 57,000 square meters of downtown Lac Megantic burned completely.

# Emergency Response

- Vermont is classified as a FEMA Type 1 Hazmat response state
  - prepared to handle any type of Hazmat
- Fire Departments have training with railroad disasters
- The local fire chief is the incident commander in a derailment. Can reach out to State Hazmat if he chooses.
- In a Hazmat derailment railroads are required to notify the state.



# Emergency Response

- 3 Hazmat trucks in the state
  - Pittsford
  - Essex Jct
  - Putney
- Special issues posed by ethanol movements
- Access to containment booms and USCG and EPA contractor resources

# Compounding Problems

- Aging railroad infrastructure and railcar fleet
- Federal Regulations preempt State Regulation
  - Crew training
  - Train handling standards
  - Railcar standards
- Lack of transparency due to economic interests of industry and railroads

# Preventable Catastrophe?

- Derailments result from
  - Human Error/Negligence
  - Failed Infrastructure/Equipment
  - Vandalism
- Taking forward action to address these issues can mitigate the number and scale of derailments.

# Forward Steps

- Increase State Hazmat resources
- Fund improvements to aging rail infrastructure
- Negotiate voluntary improved safety actions with railroads and industries
- Continue training Fire Departments to handle derailments