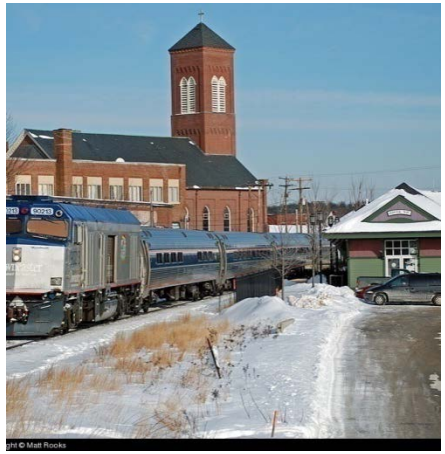
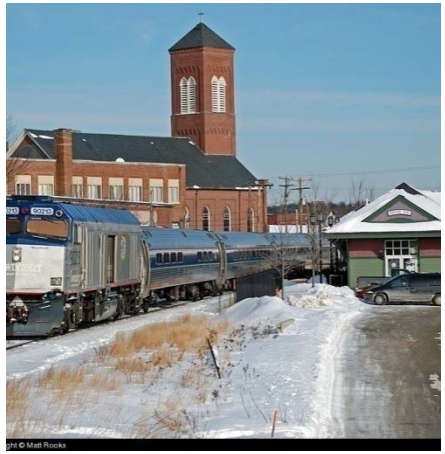
NH State Rail Plan Portsmouth Public Meeting

February 29, 2012

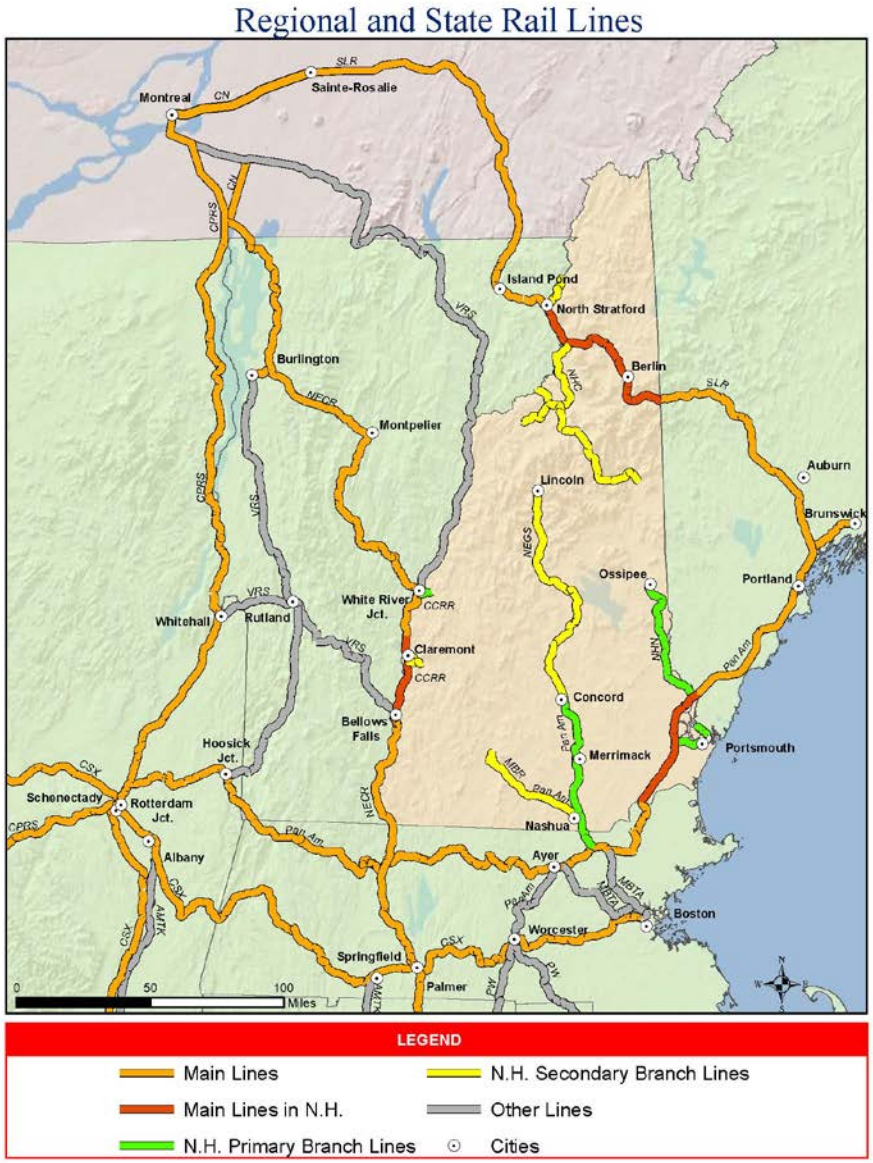


HDR Engineering and NHDOT

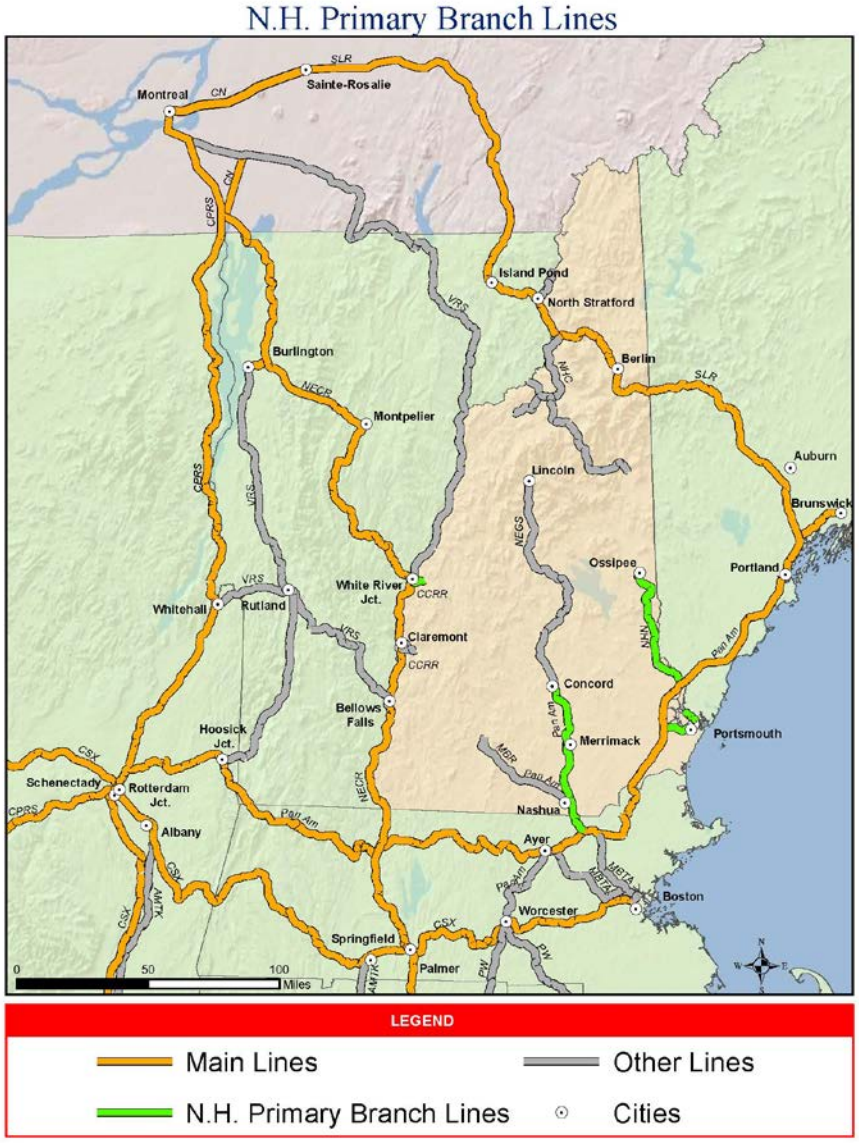
Freight and Passenger Rail Overview



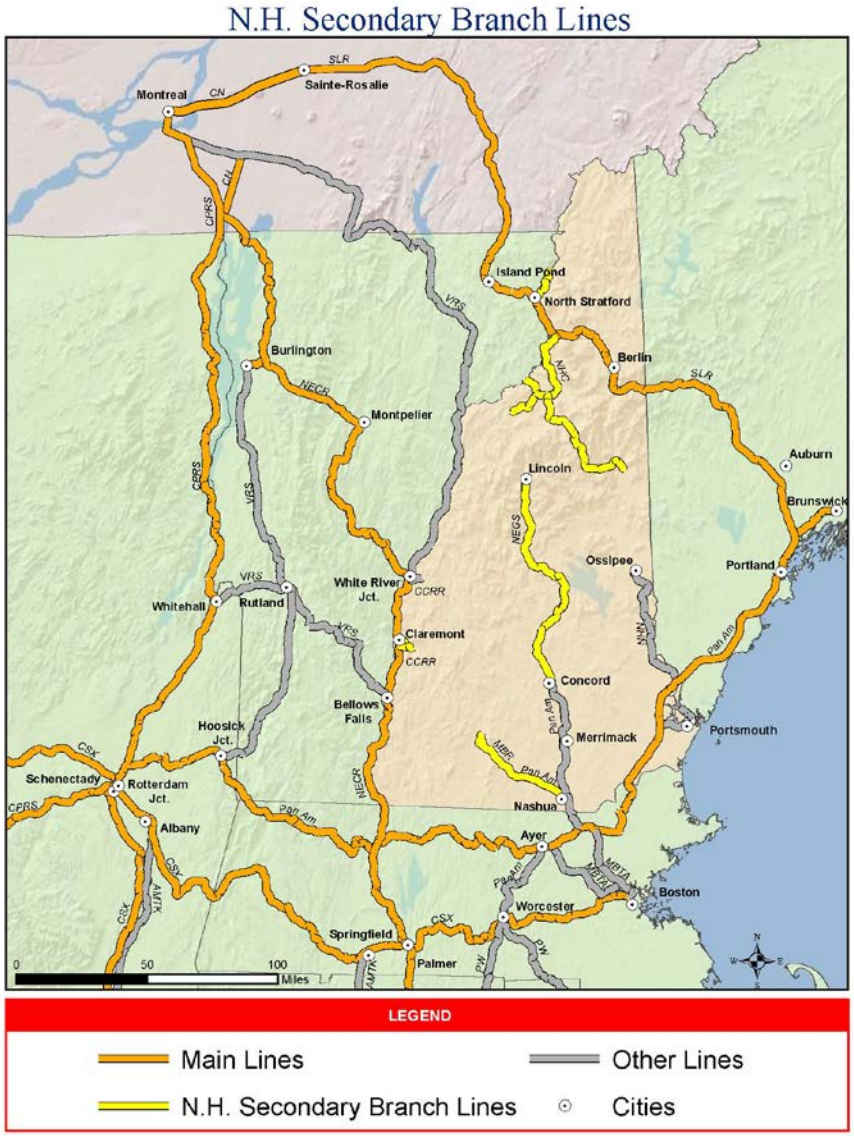
NH Rail Lines are part of the Regional Network



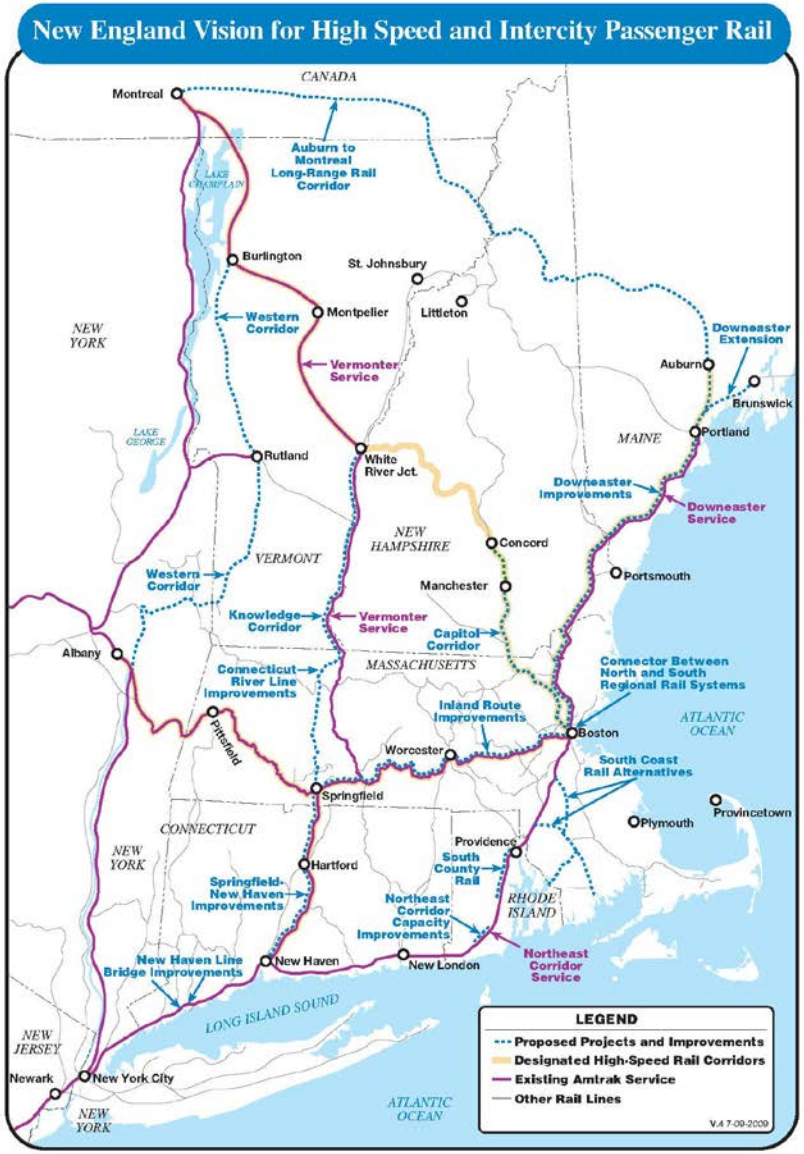
Primary Branch Lines carry significant volumes



Secondary Branch Lines serve many NH businesses

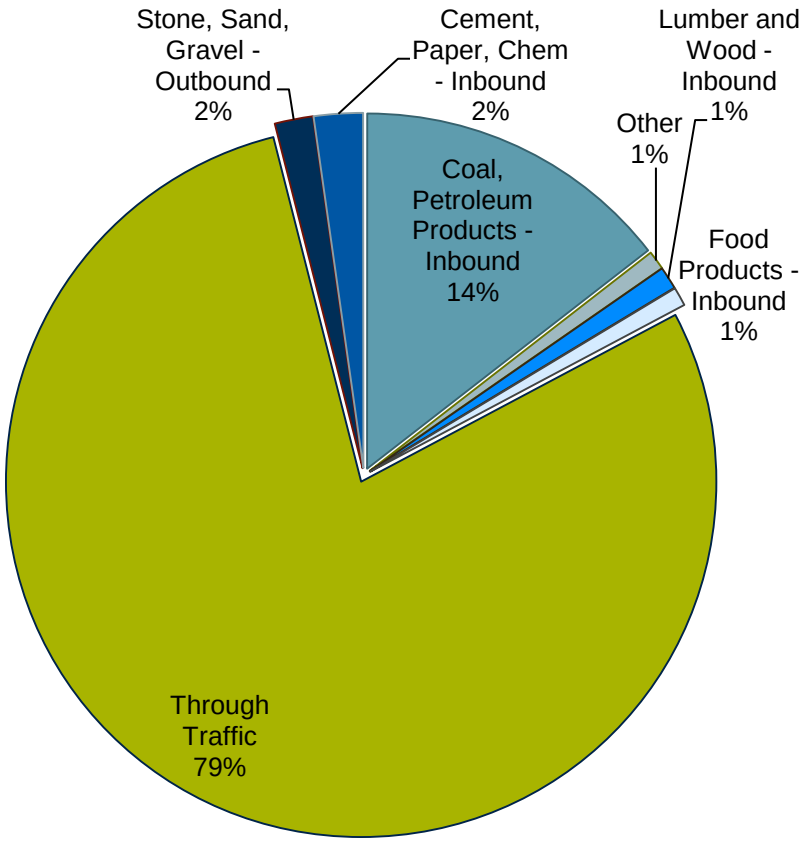


A Regional Vision for Passenger Rail



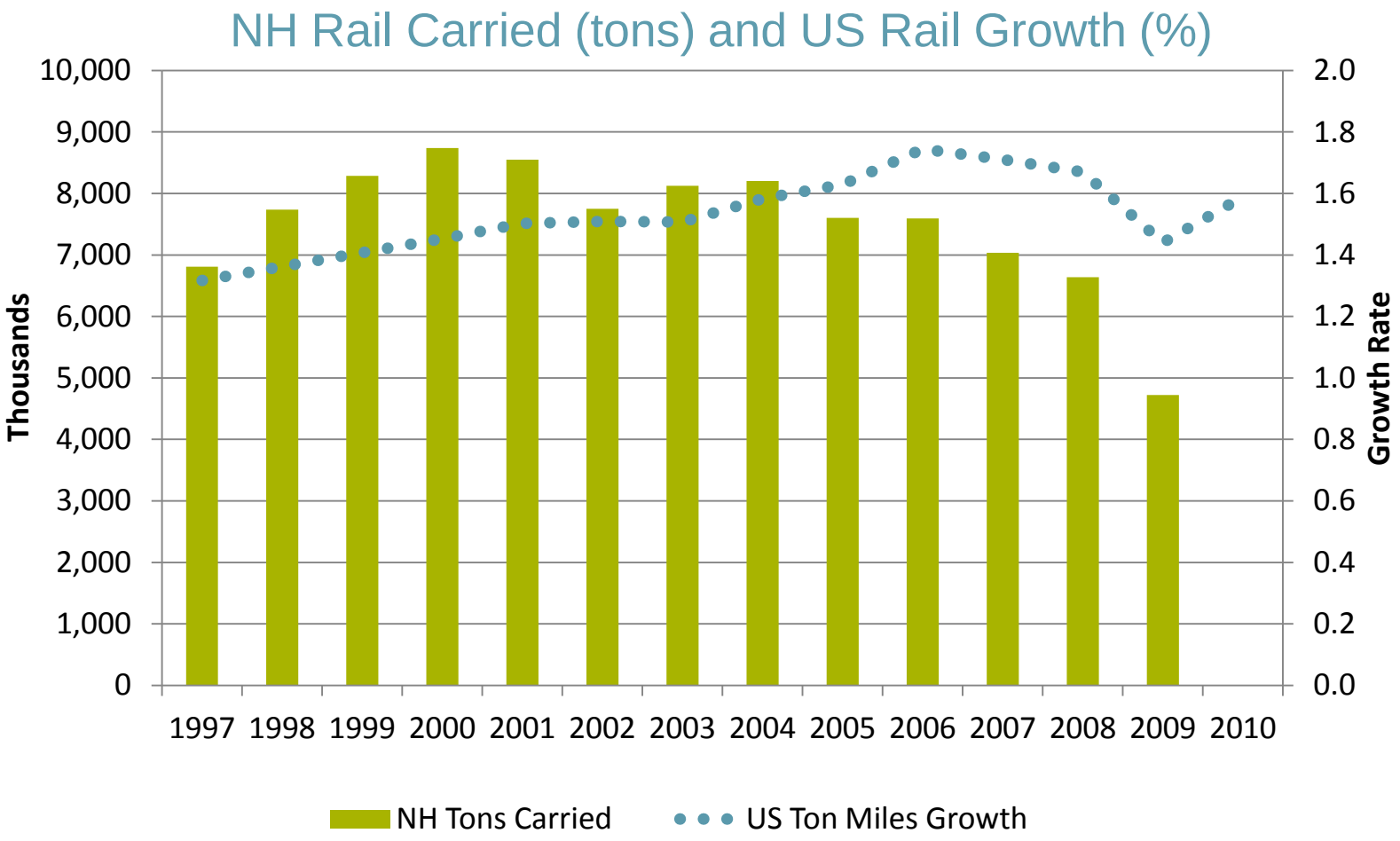
Mainlines carry most volumes within New Hampshire

Through Traffic compared to Inbound/Outbound Traffic



2009 NH Freight Rail Traffic by Commodity/Direction (% carloads)

New Hampshire Freight Rail Trends



NH Rail Volume Growth 2000-2009 = -46%

US Rail Volume Growth 2000-2009 = 10.9%

2007-2009 Average Tons Carried in NH = 6.1 million tons

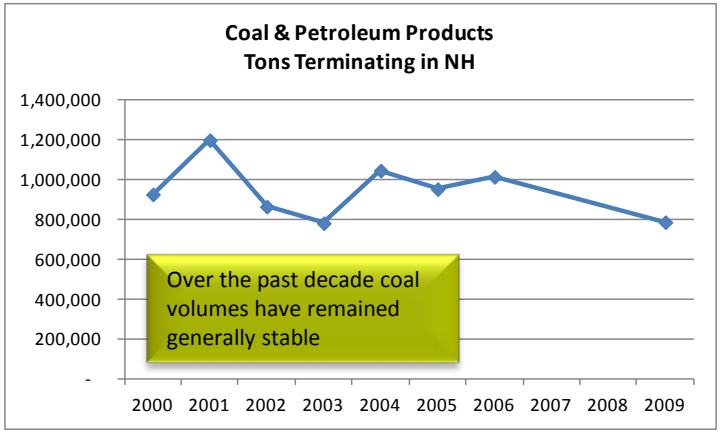
Source: AAR

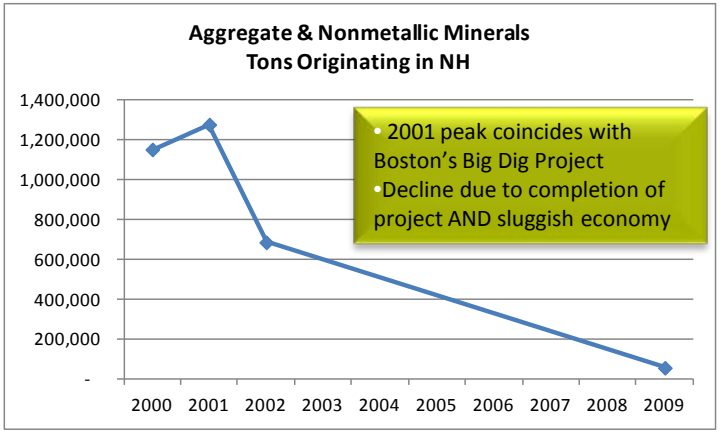
New Hampshire freight rail volumes are comparable to most New England states

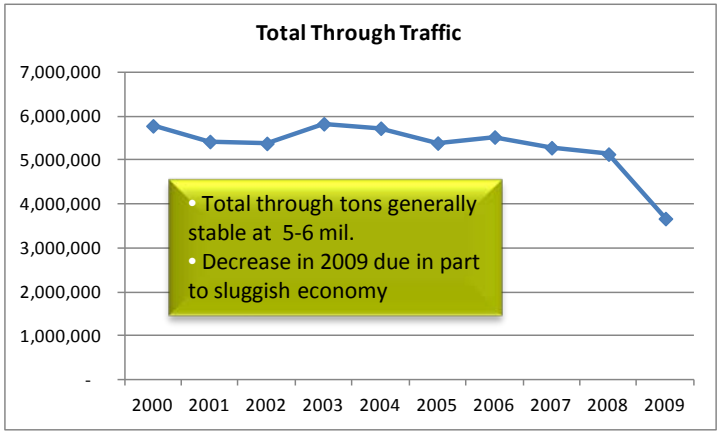
State	Rail Miles	National Rank	Land area (sq. mi.)	2009 Population (Mil.)	Annual Tons (Mil.)	Annual Carloads	Carloads per mile
NH	442	46	8,968	1.32	4.72	58,000	126
ME	1151	40	30,865	1.32	4.39	56,600	49
MA	952	42	7,840	6.59	13.05	344,400	302
VT	590	44	9,250	0.62	6.11	113,100	177
CT	327	47	4,845	3.52	2.67	29,700	42
RI	85	49	1,045	1.05	0.72	9,900	116
"New England"	3,520	"12"	62,813	14.42	31.66	611,700	146

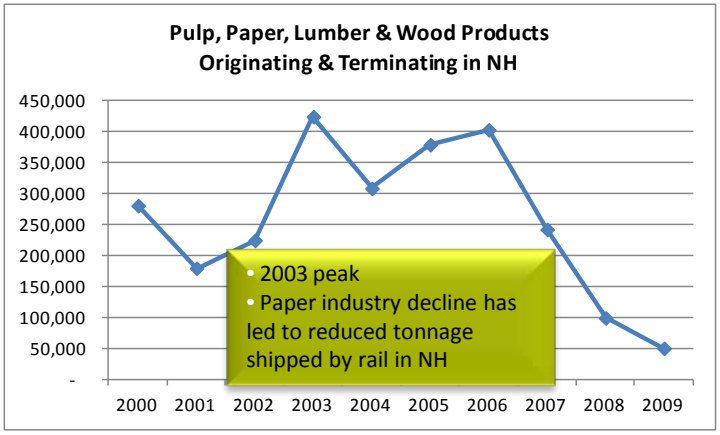
Sources: AAR/U.S. Bureau of the Census

New Hampshire Freight Traffic Reflects Industry Trends









Source: AAR

Management of NH Freight Rail System

Freight Rail System Managers/Operators

New Hampshire Department of Transportation: manages state-owned corridors; oversees railroad safety (track inspections, grade crossings)

Freight Railroads: private companies that own, manage, and operate the infrastructure and services

Pan Am Railways

NECR

St. Lawrence & Atlantic

a Genesee & Wyoming Company

New Hampshire Central

Green Mountain Railroad

NHN

New England Southern

Milford-Bennington Railroad

Claremont Concord Railroad

Federal Railroad Administration: Federal Safety Oversight

HDR

New Hampshire has two Amtrak Routes

Existing Services

Amtrak *Vermonter*

NH Area Station Ridership (2011)

White River Jct. VT:	14,109
Windsor, VT:	687
Claremont, NH:	1,240
Bellows Falls, VT:	4,364
Brattleboro, VT:	15,223
TOTAL:	**35,623**

Amtrak *Downeaster*

NH Station Ridership (2011)

Dover:	59,091
Durham:	53,087
Exeter:	90,968
TOTAL:	**203,146**

Tourist/Excursion Trains : 170,000 annual trips

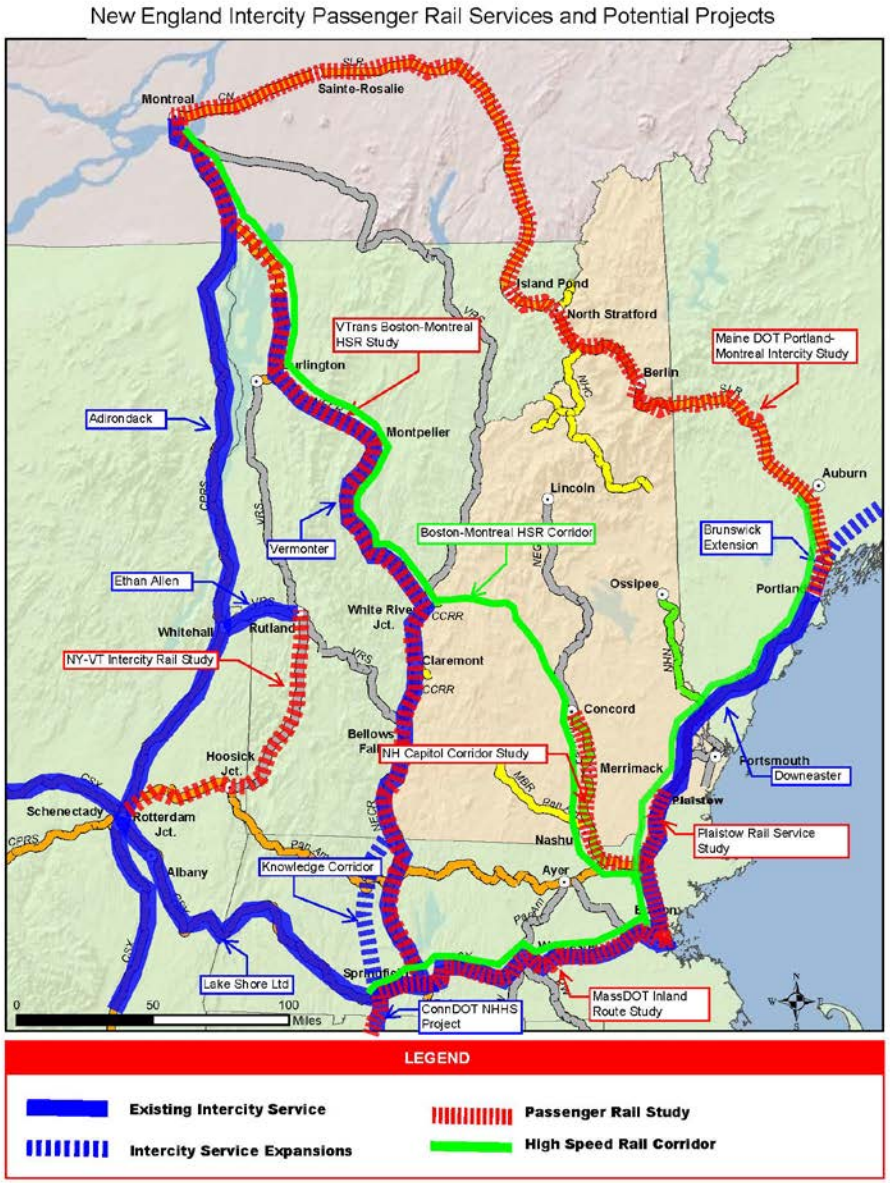
HOBO Railroad LINCOLN, NH

CONWAY SCENIC RAILROAD

WINNIPESAUKEE SCENIC RAILROAD

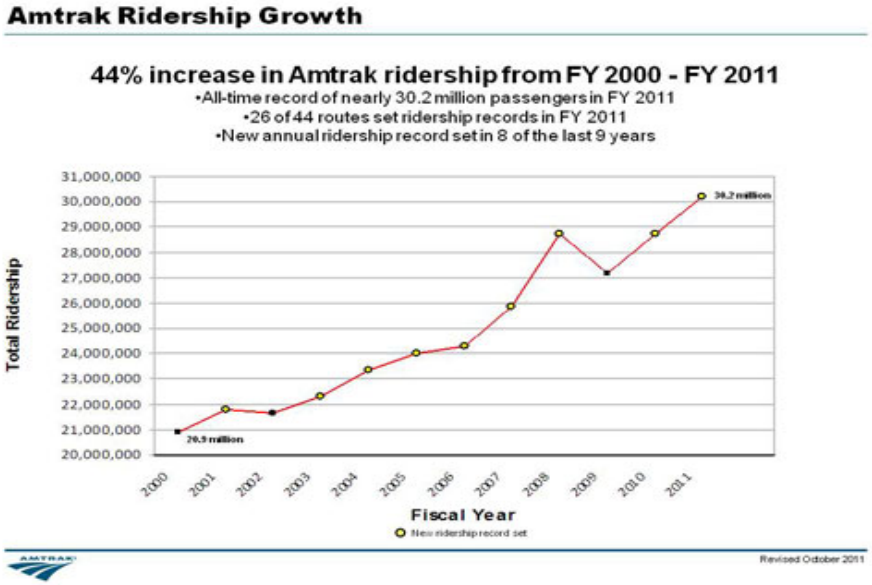
HDR

New England Rail System: Improvements Planned and Underway

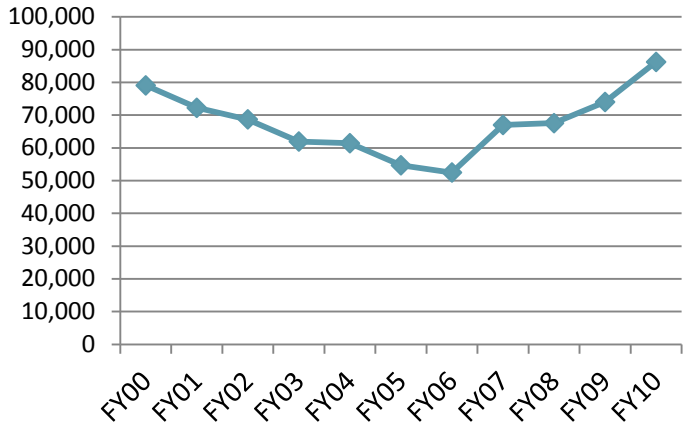


NH Passenger Rail Ridership is Growing

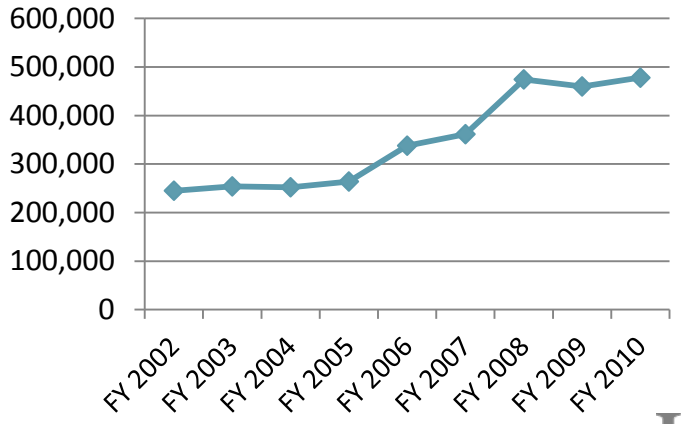
National



Vermonter Ridership Growth



Downeaster Ridership Growth



Source: Amtrak

Management of Passenger Rail System

Passenger System Managers/Operators:

New Hampshire Department of Transportation: manages state-owned corridors; oversees planning and design, negotiates agreements

New Hampshire Rail Transit Authority: provides guidance to NHDOT on passenger rail priorities; and coordinates public relations and represents local and regional interests on passenger rail projects

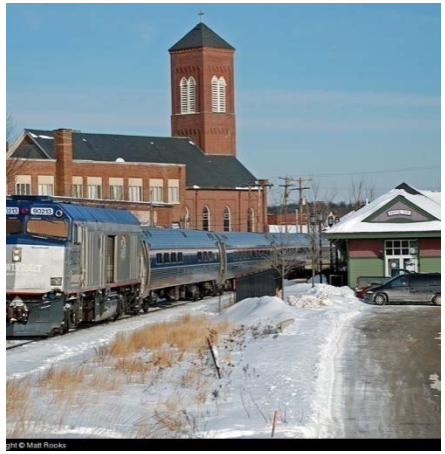
Northern New England Passenger Rail Authority: Manages the Downeaster Service

Vermont Agency of Transportation: Manages the Vermonter Service

Amtrak: Operates Intercity Services including the Downeaster and Vermonter Services

Massachusetts Bay Transportation Authority: Owns and manages Commuter Rail services in Massachusetts and Rhode Island

Rail System Benefits



Freight Rail Supports the NH Economy

- Approximately 4.7 million tons in state annually transported by rail
  - 7.3% of all freight tonnage in NH
- A 75-car freight train has capacity of 280 trucks
  - In NH, annual rail tonnage equates to more than 188,000 trucks
- Freight trains are 3-4 times more fuel efficient than trucks
  - 17.4 million gallons ($66.8 million) of fuel are conserved annually by using rail to ship freight in NH
  - A ton-mile of freight moved by rail versus truck reduces greenhouse gas emissions by at least two-thirds
- NH freight railroads directly employ approximately 200 people.
- According to US Bureau of Labor Statistics, freight dependent NH industries directly employ more than 245,000 people
  - Rail shipping is estimated to support 17,000 of those jobs
- These 17,000 direct jobs support other jobs in NH:
  - For example: A Propane retailer directly employing 90 people - generates 86 indirect jobs across the country, 118 induced jobs, and $17.7 million in labor income, and business and property tax revenue

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Passenger Rail Provides Mobility Options

Mobility Enhancements

- Train travel can reduce commute time compared to highway
- Example – For NH residents commuting to Boston
  - NH to Route 128 highway travel can take 40% longer during peak commuting hours
  - Route 128 to Boston highway commuting times can be 100% longer during peak periods
  - At least once a month, a highway commuter can expect a commute that is nearly four times as long as during non peak periods
- Commuting by public transit results in reduced emissions. For example:
  - An Exeter to Boston driving commuter creates nearly 23,816 pounds of carbon dioxide annually. A daily train commuter's carbon dioxide contribution is 2,500 pounds annually.

Passenger Rail Benefits Economic Development

Economic Benefits

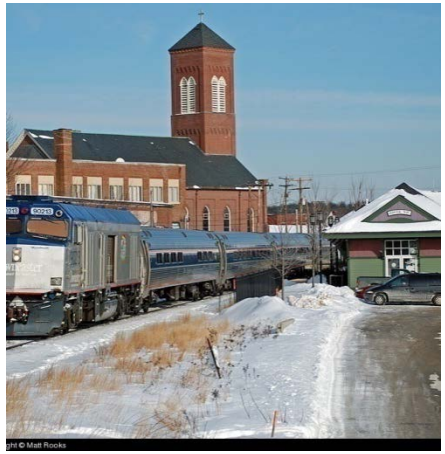
Economic Benefits are affirmed by the utilization of the Amtrak *Downeaster*
More than 200,000 trips are generated from the Exeter, Durham and Dover stations alone

- Passenger rail in NH can support increased property values near stations and support downtown revitalization
- Household transportation options and mobility are enhanced with passenger rail through improved access to jobs
- Rail transportation reduces driving and automobile ownership costs
  - Households using public transportation daily save over $8,400 annually

Rail Can Support Future Transportation Needs

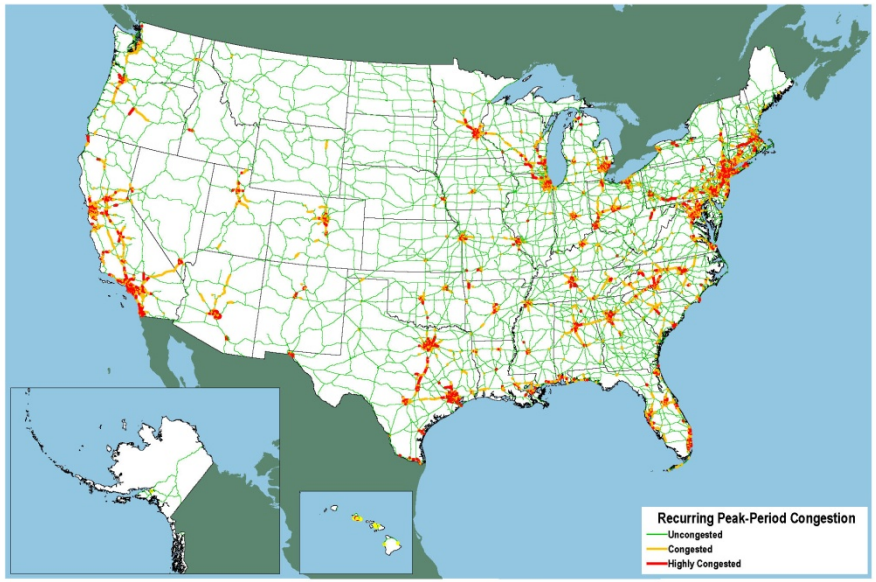
- According to FHWA, freight tonnage in New Hampshire is forecast to grow by 53% between 2007 and 2040.
- Ability to expand NH Highway system is limited while rail network has ability to increase capacity using existing right of way by adding more trains and/or more tracks
- Rehabilitation of a rail mile costs between $1-$3 million as compared to $15 million to add a lane to a mile of highway
- Freight railroads operate primarily on infrastructure they maintain with revenue from railroad operations
- Rail investment increases sustainability and effectiveness of the NH rail system
- Use of rail reduces highway system maintenance costs

Freight Rail Issues



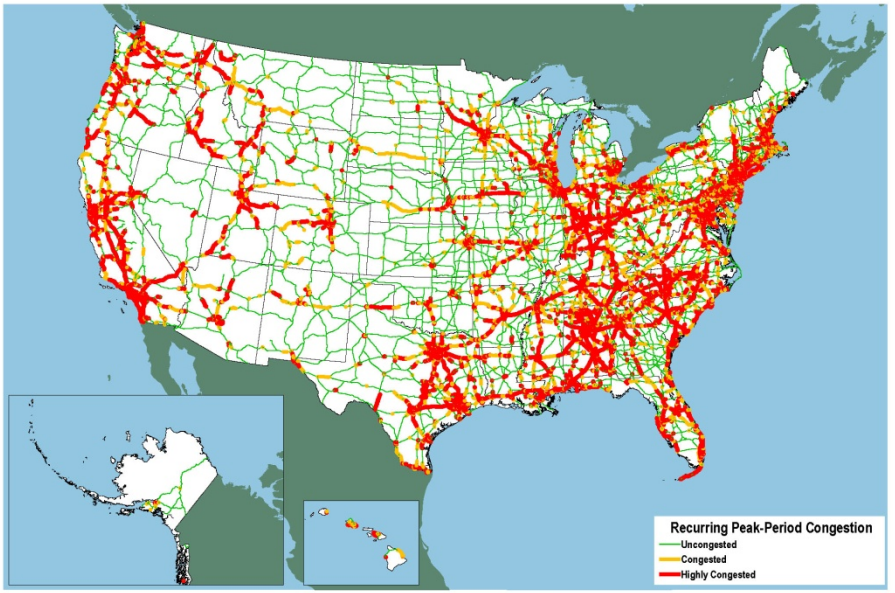
Highway Congestion will increase dramatically by 2040

Peak-Period Congestion on the National Highway System: 2007



Note: Highly congested segments are stop-and-go conditions with volume/service flow ratios greater than 0.95. Congested segments have reduced traffic speeds with volume/service flow ratios between 0.75 and 0.95.
Source: U. S. Department of Transportation, Federal Highway Administration, Office of Highway Policy Information, Highway Performance Monitoring System, and Office of Freight Management and Operations, Freight Analysis Framework, version 3.1, 2010

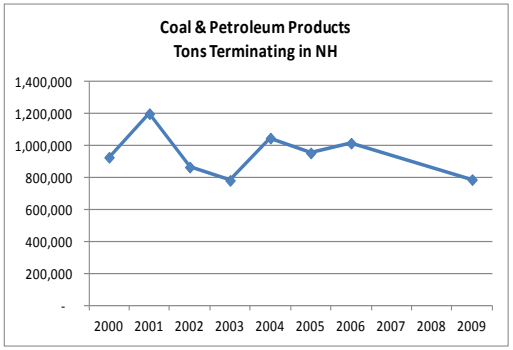
Peak-Period Congestion on the National Highway System: 2040

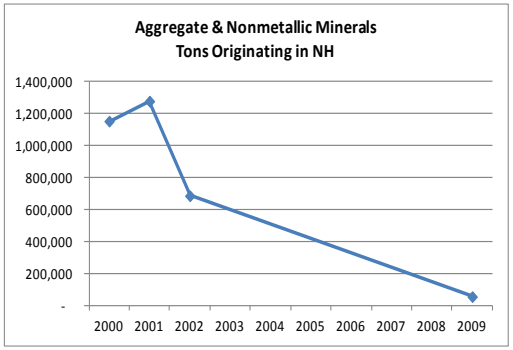


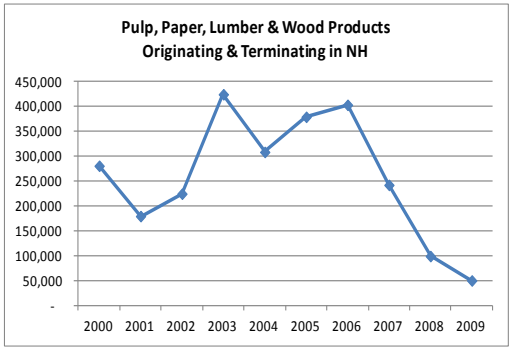
Note: Highly congested segments are stop-and-go conditions with volume/service flow ratios greater than 0.95. Congested segments have reduced traffic speeds with volume/service flow ratios between 0.75 and 0.95. The volume/service flow ratio is estimated using the procedures outlined in the HPMS Field Manual, Appendix N
Source: U. S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 3.1, 2010

Changing National Economy Affects NH

Trends of primary NH rail commodities



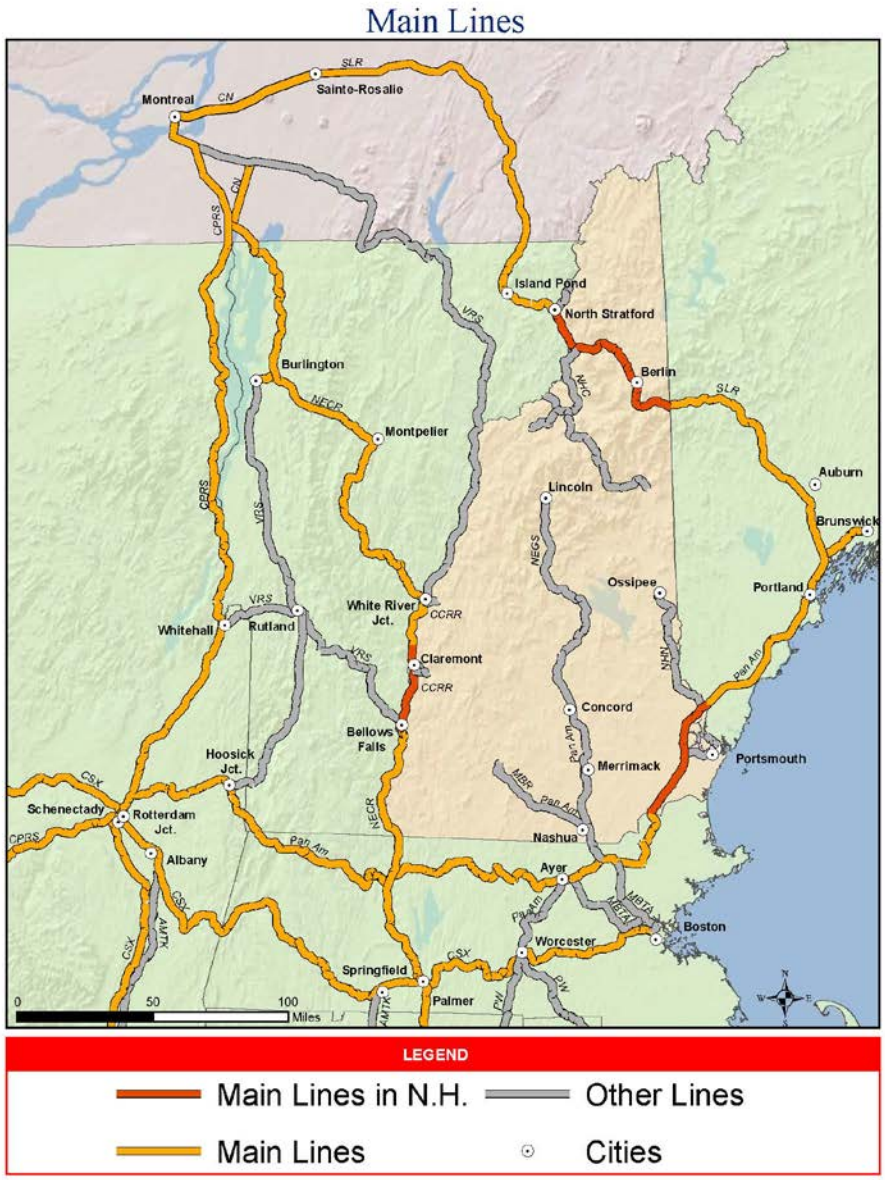




Potential Future Influences to NH Freight Rail Volumes:

- Fuel Price Fluctuations
- Truck Driver Shortages/Regulation Changes
- Panama Canal Widening and US Port Diversification
- Change in US Energy Imports/Exports
- Increased Highway Congestion

Support for Railroad Mainlines

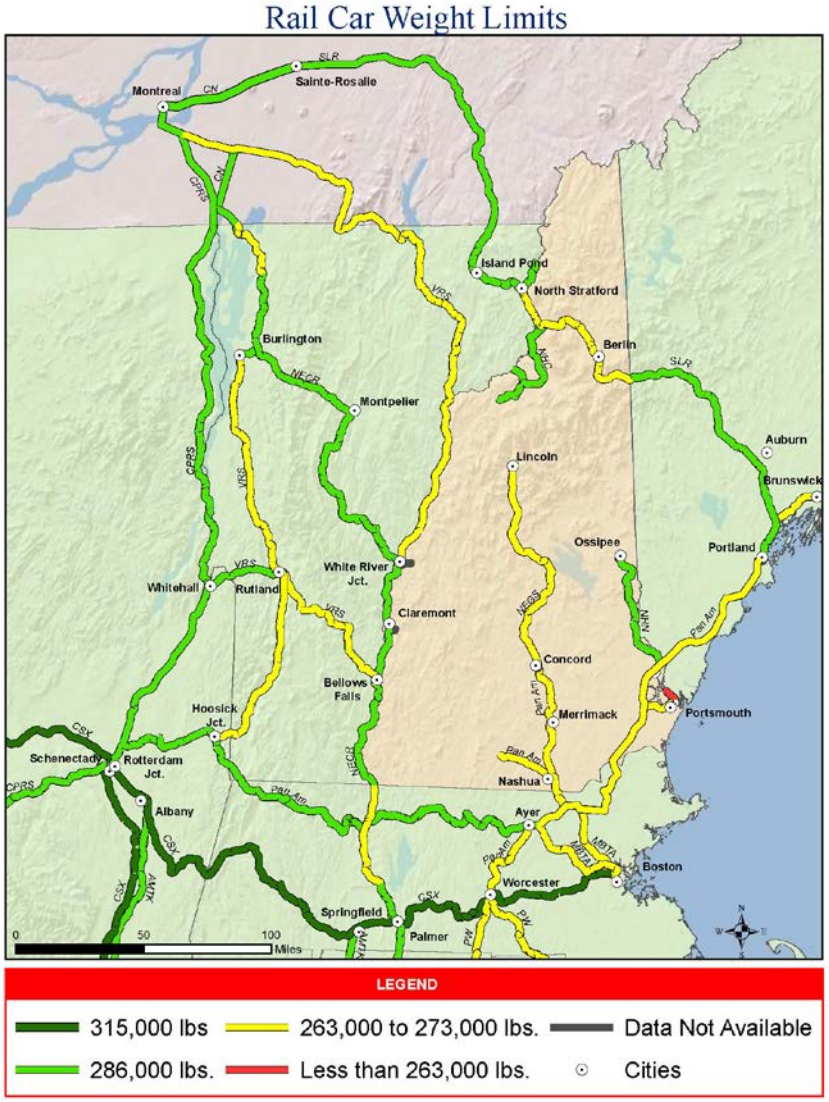


Increasing Carload Weights Enhances Rail Efficiency

National trend: Increased use of 286K pound railcars vs. 263K pound current standard

Priority Lines for Weight Capacity Upgrades

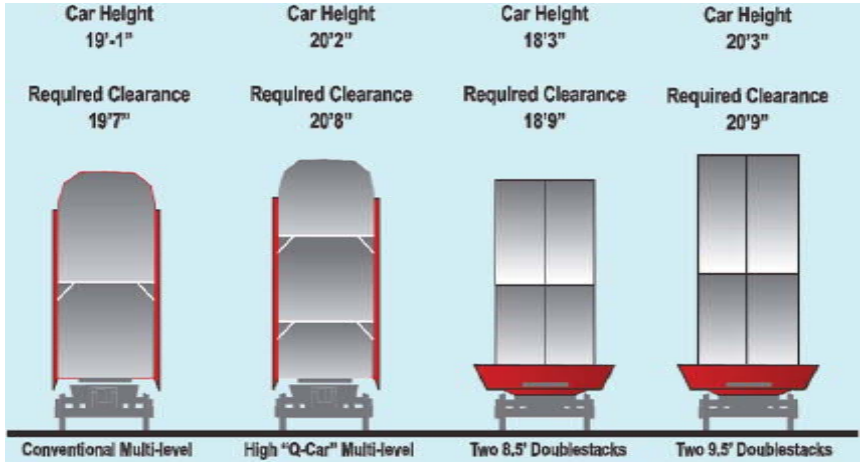
- St. Lawrence and Atlantic (16 miles in NH)
- PAR Mainline (restrictions in MA – track owner MBTA obligated for 263k)
- New Hampshire Mainline (restrictions in MA – track owner MBTA obligated for 263k)



Note: 286K constraints are being eliminated on NECR Mainline and PAR Mainline (in NH and ME) through Amtrak *Vermonter* and *Downeaster* related projects

Rail Intermodal is Fastest Growing Freight Sector

With increased use of intermodal traffic there is greater demand for doublestack vertical clearances



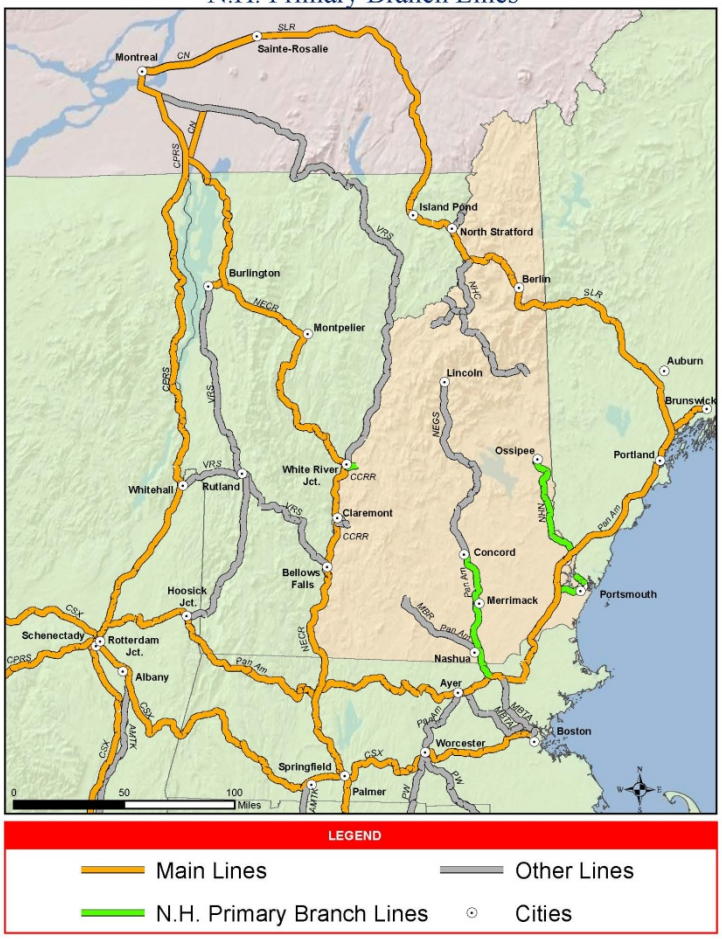
New Hampshire Bridge Clearance Standard is 22' 6"

New Hampshire main line and primary branch clearances

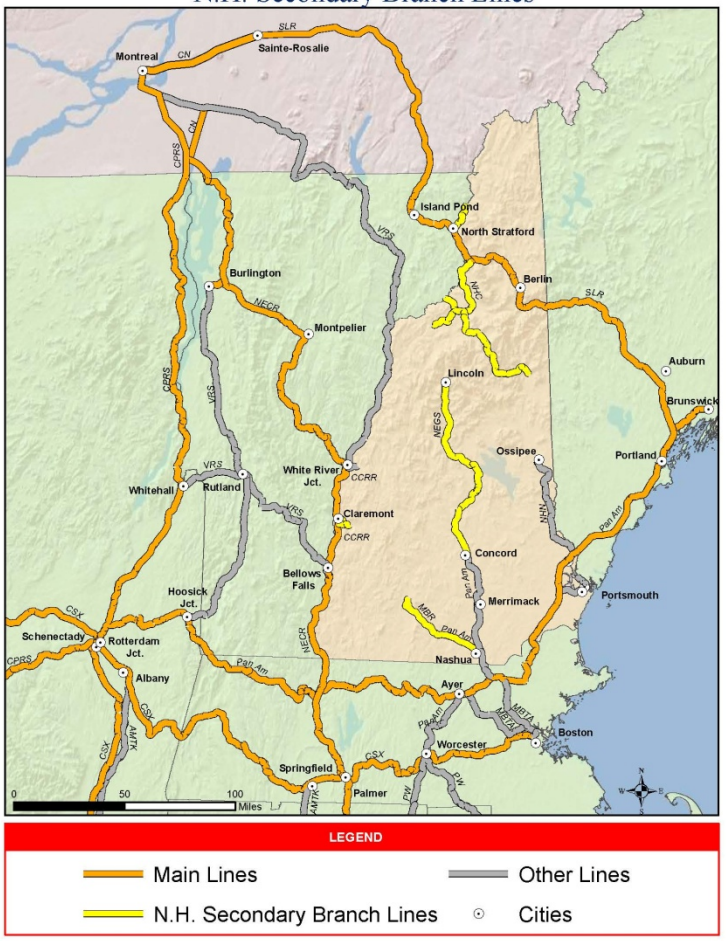
- SLR – Full Doublestack
- NECR – Autorack/Mixed Doublestack
- PAR Mainline – Below 19' 6"

NH Railroad Branch Lines Serve NH Shippers

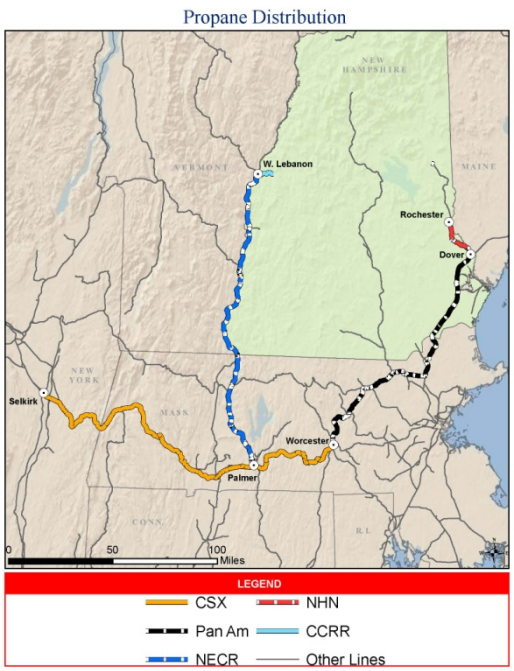
N.H. Primary Branch Lines

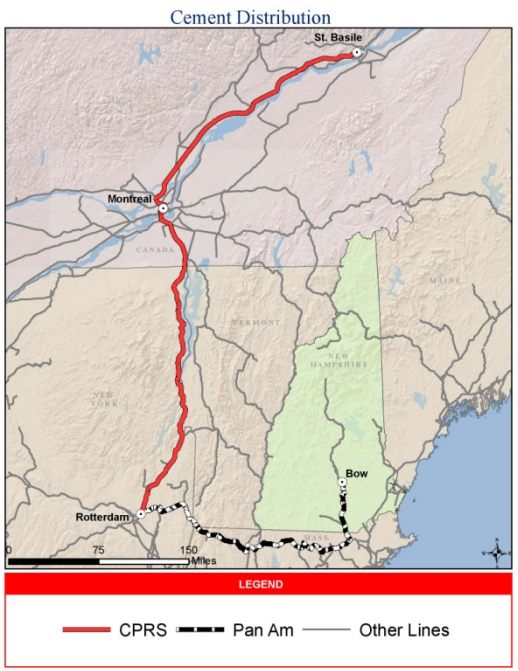


N.H. Secondary Branch Lines



Branch Line Traffic Originates/Terminates in NH





- New Hampshire Rail Lines are primarily Branches
- Branch Lines benefit New Hampshire Businesses
- Due to limited traffic, Branch Lines often require support for capital improvements

Branch Line Issues

- Freight Industry Consolidation/Limited Rail Accessible Sites
- Revenue must be sufficient to support continued capital maintenance
- High initial infrastructure costs for new customers
- Lack of shipper experience with rail inhibits use of mode

Freight Rail Recommendations

Network Maintenance

Main Line Policies

- Promote Reduction of Carload Weight Restrictions
  - Support grant funding for eliminating carload weight restrictions on the St. Lawrence & Atlantic Line
  - Work with Maine and Massachusetts to raise the weight limits on MBTA lines in Massachusetts that serve New Hampshire (Pan Am Mainline and NH Mainline)
- Promote Improvement to Clearances to Support Intermodal Traffic
  - Continue to design overhead bridges with 22'-6" clearance
  - Coordinate with New England states to develop a region-wide approach to eliminating vertical constraints on New England mainlines
- Continue Safety/Security Programs
  - Continue supporting maintenance/upgrade of at-grade crossings through allocation of federal funds to grade crossing improvements (Section 130 program)
  - Continue NHDOT support of track inspection program
  - Continue NHDOT coordination with industry and federal rail security programs

Freight Rail Recommendations

Network Maintenance

Branch Lines Support

- Promote Reduction of Carload Weight Restrictions
  - Work with Maine and Massachusetts to raise the weight limits on MBTA lines in Massachusetts that serve New Hampshire (Pan Am Mainline and NH Mainline)
  - Consider economic benefits to rail shippers in planning passenger-related improvements along rail lines that will eliminate weight restrictions (i.e. NH Capitol Corridor)
- Promote Development of Freight Distribution Areas
  - Provide technical support to identify and plan for freight distribution centers along rail lines
- Promote Improvement to Branch Lines
  - Support track and bridge maintenance on state-owned lines
  - Support grant funding for branch line upgrades
    - (Initial priority - New Hampshire Northcoast)
- Develop Industrial Rail Access Program
  - Initiate program to provide financial support (in partnership with shippers/railroads) for infrastructure improvements that increase rail access
- Establish Shipper Training/Support by State Officials
  - Initiate DOT/DRED program to provide information to shippers on how to utilize rail services

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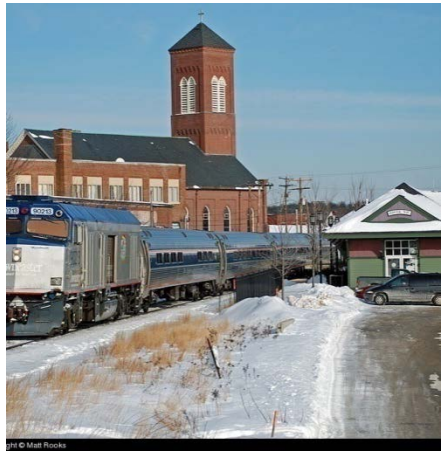
Freight Rail Recommendations

Network Maintenance

System Support

- New England Regional Coordination
  - Participate in regional coordination efforts to plan and improve the New England railroad network
- Preserve Rail Lines
  - Preserve integrity of state-owned abandoned rail rights-of-way for future railroad use
  - Continue policy of acquiring rail lines that are abandoned
- Rail Program System Monitoring/Planning
  - Continue NHDOT program of rail system monitoring and planning to identify ways to best leverage railroad asset for the state
    - Identify/support federal funding programs
    - Work with shippers to identify and plan for network needs
    - Respond to system crises (i.e. Hurricane Irene)
    - Advocate for federal policies that benefit the regional and NH rail system

Passenger Rail Issues



Recommended NH Passenger Rail Priorities

1. Continue Existing Services

- Amtrak *Downeaster*
- Amtrak *Vermonter*
- Tourist/Excursion Services

2. Priority Corridors for Expansion

- NH Capitol Corridor (Boston to Concord)
- Plaistow Service (Haverhill to Plaistow Commuter Rail Extension)

3. Secondary Corridors for Consideration

- Boston-Montreal HSR
- Portland-Montreal Intercity Service
- All Others

Shared Freight/Passenger Corridors Have Benefits

Sharing of operating and maintenance costs benefits both freight railroad and passenger service

Near-term NH opportunities for shared corridors include:

- *Downeaster* Corridor
- *Vermonter* Corridor
- New Hampshire Capitol Corridor

Examples of successful shared corridor improvements:

- Freight needs on Downeaster Corridor resulted in award of $10M Merrimack River Bridge grant, which will improve travel times for passenger service
- Passenger related improvements along the Downeaster and Vermonter Corridors will soon permit passage of 286K railcars on those lines

Tourist/Excursion Service Part of NH Economy

Plymouth & Lincoln

Conway Scenic

Benefits

- NH tourists spend an average of $65 per visitor
- Tourist railroad ridership in NH 170,000 – based on the visitor average, $11 million is spent annually by tourist railroad riders

Service Needs:

- Track and Bridge maintenance assistance

Station area development as a rail service component helps support the host communities

Saco Amtrak Station Area Development

Capitol Corridor Station Area Potential

Examples:

- Exeter
- Dover
- Durham

Regional Support is Needed to Continue Amtrak Services

Cost to States in order to Support Amtrak Service is Increasing

Vermont annual Vermonter subsidy ~$4 million

Maine annual Downeaster subsidy ~$8 million

- Subsidy increase forecast with fully-allocated costs of Amtrak

Regional support could take various forms

Service needs include:

- Annual Operating Costs (subsidy)
- Capital improvements (Track/Bridges/Vehicles)
- Station improvements(parking)

Passenger Rail Recommendations

Continue Existing Services

- Increase NH coordination with NNEPRA
  - Identify approaches to assist with implementation of Downeaster Service Development Plan outcomes:
    - Initial support for future Operational Improvements
    - Investment in Infrastructure (in NH)
    - Investments within corridor (outside NH) that provide benefits to New Hampshire riders such as equipment and terminal facilities
- Support Grants for Shared Freight/Passenger Corridors
- Encourage intermodal connections
- Encourage Transit Oriented Development
- Support Tourist/Excursion Services

System Expansion

- Implement recommendations of pending studies:
  - NH Capitol Corridor Studies
  - Plaistow Commuter Rail Extension

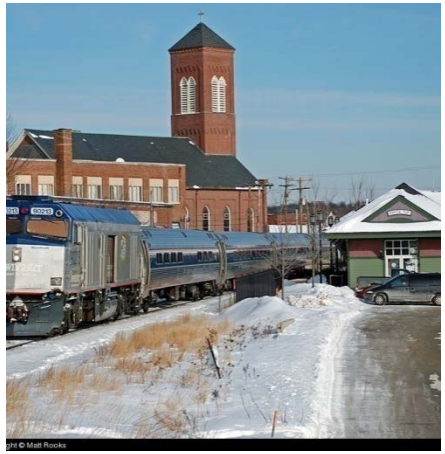
Conclusions

Rail is an important component of the New Hampshire and Regional Transportation Network

Rail Services (freight and passenger) provide multiple benefits for the state, including:

- Economic
- Environmental
- Mobility

- **Freight Rail services provide economic benefits to NH businesses**
- **Passenger Rail services improve mobility to New Hampshire residents**

Passenger and Freight together, as the NH Railroad System, is an important resource for the State of New Hampshire

Questions?