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MEMORANDUM

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NEW ENGLAND PUBLIC POLICY CENTER

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To: Carrie Conaway, Deputy Director, NEPPC
Cc: Robert Tannenwald, Director, NEPPC
From: David R. Agrawal, Intern, with Antoniya Owens, Research Assistant
Date: October 31, 2006
Re: Transportation and freight movement policy issues in New England

This memo is in response to your request for a summary of the key policy and economic issues regarding transportation and freight movement in New England.

Summary

The New England states share similar physical and infrastructure characteristics, creating common transportation policy concerns. The region ships only 3.8 percent of its freight tonnage by rail, as compared with 14.5 percent for the nation as a whole. At the same time, commuters are moving farther away from their workplaces and traveling more vehicle-miles on highways. As a result, highways are overloaded, creating congestion for both freight and consumers and reducing the region's economic potential.

A fundamental problem facing the region is choosing the mix of transportation infrastructure—highways, commuter rail, freight rail, or airports and seaports, among others—that yields the best result for the region's limited regional transportation dollars. Because of the interrelationships among transportation options, policymakers must tread carefully as they address the region's major transportation concerns, such as railroad capacity, highway congestion, and the potential need for regional cooperation. But it is important for the economy of every state and for the region as a whole that they attend to these issues, for efficient transportation infrastructure is a key element of our region's potential for economic growth.

Freight transportation in New England

The vast majority of New England's freight currently moves via road networks. In 2002, tbe New England states shipped between 74 and 90 percent of their freight by truck (see Table 1). Truck volume in the region was about 649 million tons in 1998, representing 2.7 percent of the total truck tonnage transported in the United States—within state, through state, leaving the state, or entering the state markets. The type of truck traffic varies widely. For example, about 50 percent of truck volume in Connecticut and Rhode Island simply passes through the state. The majority of New Hampshire's truck tonnage is devoted to within-state shipments, while between 40 percent and 50

percent of freight shipments in Massachusetts and Maine occur within the state.[1] Overall, the individual New England states are net importers of goods arriving by truck, except Maine, which is a net exporter of goods.[2]

Though only 3.8 percent of all freight tonnage was moved by rail in the region in 2002, railroads are the second most common means of shipment. As shown in Table 1, the amount of freight moved by rail in New England varies from a low of 1.9 percent (Rhode Island) to a high of 6.3 percent (Maine). Air and sea travel account for relatively insignificant, though growing, shares of freight transport. No New England state ships more than 1 percent of its interstate freight tonnage by air or water. While still small in relative terms, water transportation is more prominent in receiving freight *from* other states, especially in Rhode Island and Connecticut. In 2002, Rhode Island and Connecticut received by water 8.5% and 5.2%, respectively, of all shipments to their states). By comparison, 77 percent of the nation's freight tonnage is transported by truck, 15 percent is shipped by rail, and 8 percent is shipped by water.

Commuter transportation in New England

Beyond their value to local economies from freight transportation, the road and rail infrastructure also benefits commuters. Over the last several years, New England has seen job growth in professional, service, and government-related industries along with major declines in manufacturing.[3] Service-based industries create different pressures on the New England transportation structure. They generally require the timely transportation of individuals, rather than products. And because so much of the region's value-added comes from labor, moving commuters efficiently is equally as important as moving freight to the region's economic health and potential.

In 2003, vehicles traveled 130 billion miles of road in New England, most of it in Connecticut, and Massachusetts. This represents 4.5 percent of all national vehicle miles traveled.[4] There are 11,628 miles of interstate and other principal arterial highways in the region.[5] Average commute times for the region as a whole are almost identical to the nation, at about 24 minutes according to the 2005 American Community Survey. However, workers in the Boston area have much longer commutes, at an average of 30.4 minutes. The number of commuters using public transportation remains higher than the national average but is relatively low for many communities considering their proximity to cities. In addition, northern New England faces greater demands to serve rural neighborhoods and sees lower volume on its commuter highway systems.

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[1] U. S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework 2: Tonnage by State for 1998 and 2020. 1998.
[2] U. S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework 2: Tonnage by State for 1998 and 2020. 1998.
[3] U. S. Department of Labor, Bureau of Labor Statistics, "Massachusetts and Connecticut Lead New England Job Growth in 2005." http://www.bls.gov/ro1/neempa.htm/. Accessed 6/1/2006.
[4] Author's calculations from U. S. Department of Transportation, Federal Highway Administration, Highway Statistics 2003, Federal-Aid Highway Travel Annual Vehicle-Miles. 2003.
[5] Author's calculations from U. S. Department of Transportation, Federal Highway Administration, Highway Statistics 2003, Public Road Length. 2003.

Major regional concerns

The challenge of setting effective transportation policy is that rail lines, ports, highways, and airports, as well as freight and commuter traffic, all interrelate and affect one other. If freight rails are improved, some suppliers may need to use fewer highway trucks, thus reducing road congestion. Then again, if commuter rails become more efficient and fewer people travel by car, freight haulers may be lured back to those more open roadways. In addition, delays caused by commuter-related congestion directly slow freight deliveries, and increases in highway freight delivery slow commuters.

Three overlapping transportation policy issues challenge the region and illustrate the importance of recognizing interrelationships in policymaking:

- How to expand the region's railroad capacity and ability to move freight;
- How to find alternatives to highway lane expansion;
- How to create a structure of regional cooperation on transportation issues.

Railroad capacity

New England transports freight via railroad at one-quarter the national average rate. The region might consider expanding its railroad capacity as a way to speed freight delivery, reduce truck congestion on highways, and benefit rail commuters. But there are significant challenges to taking this approach.

First, the region's railroad system is small and localized. The New England railway is also characterized by narrow passes and low bridges, precluding wide and tall loads. Because the tracks used to transport freight systems are often not adequate for heavy shipments, placing high-bulk and high-weight loads on the rail system is often not an option, forcing businesses to ship their freight via the highway system.

An additional complication is that some of the rail track in New England is owned by Amtrak, with freight companies given trackage rights on the lines. In most of the rest of the nation, freight companies own the lines and then allow Amtrak to use them. Amtrak's ownership of the lines in New England has resulted in serious backlogs of investment over the past several years. Amtrak estimates that it must invest nearly $4 billion over the next five years to prevent further delays and that $6 billion of investment is needed to expand capacity, including for high-speed passenger rail, in the northeast corridor.[6] Failure to make these investments will further slow down the rail lines, causing more people to use the highway system.

Finally, New England lacks an extensive Class I railroad system, the type of line most frequently used for inter-regional connections and freight shipments via rail.[7] New England has a total of only 503 miles of Class I railroad lines, limiting the region's ability to use the rail system to transport goods

[6] American Society of Civil Engineers. 2005 Report Card for America's Infrastructure. http://www.asce.org/reportcard/2005/index.cfm/. Accessed 10/31/2006.

[7] As defined by the U.S. Department of Transportation's Surface Transportation Board, Class 1 railroads are line haul freight railroads with gross annual operating revenues exceeding $250 million (in 1991 dollars). This amount is indexed annually to reflect inflation, as measured by the BLS's Railroad Freight Index. For 2005, this translated into nominal operating revenues of $319.3 million.

nationally. Most New England rail systems are regional or local-line haul systems. Regional railroads usually serve a region of two to three states, while local-line haul railroads serve only point-to-point transportation (usually within one state).

Highway congestion

With the majority of freight and people being transported via roadways, there is pressure on the region to expand its highway infrastructure system to alleviate congestion. Congestion is especially severe around major commuter bottlenecks, such as Boston, Providence, and New Haven, but even smaller cities along the I-95 corridor are experiencing long delays. As these regions face higher traffic volumes, congestion will increase and additional maintenance of the roads will be needed to prevent rapid deterioration. The challenge facing the states will be to increase access and capacity, while also improving aesthetics in order to gain public support.

Enhancing and expanding the ease with which commuters can travel throughout the region will also improve how quickly and cost-efficiently freight can be transported through the region. Rather than mutually exclusive, the two goals are complementary. States must seek ways to guarantee that their roadways and alternative modes of transportation are safe—both for commuters and freight carriers.

Up to now, the New England states have mainly sought to alleviate highway congestion by expanding lanes. It's not clear, though, that more highway lanes reduce congestion in the long run, since they can serve to increase the number of commuters. And many highways, especially those running through narrow city passes, will not be improved by lane expansion alone. Any solution to this problem must consider the interaction of highways with other forms of transportation and must find ways to move commuters, freight, or both to non-highway or public transportation modes.

Regional cooperation

Many policies to improve the region's transportation cannot be successful without regional cooperation. With a large number of commuters crossing state borders and freight shipments passing through multiple states, transportation is a natural issue for the states to work on cooperatively.

For instance, if the region seeks to expand the railroad system, rail expansion cannot occur just within individual state borders. As an example, a proposal for a Connecticut railway from New Haven to Bradley International Airport will better enhance the regional economy if it is linked to similar proposals in Massachusetts and Vermont. Yet thus far, state governments have acted independently when trying to enhance the rail system.

Similarly, augmenting the region's public transportation options also requires cooperation among the states. Many cities employ a labor force residing in more than one state. Facilitating rail commutes for workers who cross state lines can alleviate congestion on the road while providing workers with long commutes an opportunity to efficiently use their time. More generally, any sort of mode substitution—between road, rail, sea, and air—requires significant interstate cooperation, because any traffic or trade that is not simply internal to one state will choose the mode of transportation that provides the most efficient service throughout the region as a whole.

Another issue that could benefit from greater regional cooperation is the creation of a common truck weight limit for the region. Varying weight restrictions across states cause problems for truckers who cross multiple state borders. Because differences in laws among the states create added costs for businesses and shippers, working toward a common policy goal will be beneficial. A common standard is also important for areas where differences in weight limitations shift truckers from federally funded roads to state roads.

Building regional consensus around transportation infrastructure, however, is challenging. Many New Englanders are concerned about the environmental, historical, and small-town community impact of highways, railroads, and other infrastructure, even when the infrastructure may be an opportunity for economic growth for the state as a whole. States could benefit from one another's experiences in solving community concerns, for instance in finding mechanisms for smart growth or integrating land development and transportation policy. Existing institutions such as the New England Governors Conference are just one possible mechanism to achieve these common policy goals.

Regional cooperation alone, however, will not solve the region's transportation concerns. States also face serious intra-state issues that are placing stress on their own infrastructures. Solving local problems is also important to achieving an efficient regional transportation system.

Conclusions

Policymakers seeking to improve the transportation infrastructure should recognize the interrelationships between rail and highways, between freight and commuter traffic, and between local and regional needs when making policy choices. In addition, while choices on transportation infrastructure development obviously affect the efficiency of the region's transportation system and economy, they also affect other policy areas, including suburban sprawl, economic development, revenue-raising capacity, and regional safety. As states consider policies designed to improve transportation, states must also be aware of consequences—intended and otherwise—on policy goals.

Table 1: New England's freight shipments by truck and rail (2002)
Total tonnage (millions) and percent of total shipments

		Total tons	Truck	Rail
Connecticut	Within state	52.5	92.4%	<1%
	From state	29.2	71.6%	3.1%
	To state	50.2	62.5%	4.6%
	Total state	131.9	76.4%	2.5%
	Percent of total	100%	76.4%	2.5%
Maine	Within state	40.9	88.3%	1.7%
	From state	22.1	73.3%	14%
	To state	48.2	61.4%	6.4%
	Total state	111.2	73.7%	6.3%
	Percent of total	100%	73.7%	6.3%
Massachusetts	Within state	110.1	90.6%	<1%
	From state	42	83.6%	3.1%
	To state	85.2	70%	6.6%
	Total state	237.3	82%	3.3%
	Percent of total	100%	82%	3.3%
Rhode Island	Within state	15.2	86.8%	<1%
	From state	14.4	84%	<1%
	To state	17.6	59.1%	4%
	Total state	47.2	75.6%	1.9%
	Percent of total	100%	75.6%	1.9%
New Hampshire	Within state	31.1	92.6%	<1%
	From state	20.6	74.8%	4.4%
	To state	24.7	74.5%	8.5%
	Total state	76.4	81.9%	4.1%
	Percent of total	100%	81.9%	4.1%
Vermont	Within state	16.4	98.8%	<1%
	From state	10.3	85.4%	10.7%
	To state	11.3	82.3%	8%
	Total state	38	90.3%	5.5%
	Percent of total	100%	90.3%	5.5%
New England	Percent of region	100%	79.4%	3.8%
United States	Percent of national	100%	77.4%	14.5%

Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations.

Notes:
New England numbers are calculated by summing individual state data. These data include tonnage on shipments entering, leaving, and moving within a state; they exclude shipments simply passing through a state. For all New England states, freight shipments by truck and rail accounts for between 75% and 95% of all freight shipments. Other modes of shipment included in total freight tonnage include water, air, combined truck and rail, pipelines, and other. U.S. data are for 1998 and omit international freight. Rounding may cause percentages to add to a number greater than 100 percent.