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Freight Transport



2016 Regional Transportation Plan

6 Freight Transport

Freight transportation is an important issue for Franklin County. The accessibility and efficiency of freight transport plays a vital role in the economy and viability of the region. Most of the freight and goods coming to and from Franklin County are being transported by truck; however, a significant amount of freight that travels through the county is being hauled over its three main rail lines. This chapter will discuss freight transport to, from, and through the region by truck, rail, and air. This chapter will consider opportunities to improve the safety and efficiency of freight movement in the region and will also discuss the transport of hazardous materials in Franklin County.

Current Plans

Massachusetts completed a *State Freight and Rail Plan* in September 2010 that comprehensively examines the state's freight transportation system. This Plan looks at all modes of freight transportation and analyzes issues and opportunities for growth. The Plan notes the significance of the freight transportation links that exist in Franklin County and identifies recommendations for both the region and the state, which are incorporated into this chapter. The Plan estimates that total freight volumes in Massachusetts are projected to increase 70 percent by the year 2030. This large increase could have a significant impact on Franklin County with its major highway routes and railroad lines.

In 2013, the FRCOG conducted an assessment of the movement of goods in the region. This, *Overview of Freight Movement in Franklin County*, examined the current state of freight movement in the region and outlined the potential challenges and opportunities faced by freight in Franklin County. It found that as freight shipping increases in the future, special attention should be paid to the impacts of that on adjoining land uses with respect to potential negative effects from emissions, noise, and the transport of hazardous materials. These impacts apply to both roadway and rail freight shipping.

Existing Conditions

Major Freight Modes

Trucking

Currently, 87% of all freight movement in Massachusetts occurs by truck. Although there is no county-specific data available, this statistic is most likely higher for the Franklin County region which is more rural and as a result relies more heavily on trucking, especially for the "last mile" of delivery. The major trucking corridors in Franklin County are: Interstate 91 (which runs north-south) and Route 2 (which runs east-west). These two highways also

represent the busiest travel corridors in the region for non-commercial traffic. Other active truck routes in the region include Routes 5/10, Route 47, Route 116, Route 63, and Route 112. There are several truck parking facilities on most of the major routes in Franklin County. There are parking facilities located on Route 2 West (Charlemont, MassDOT Park & Ride), Route 2A (Greenfield, MassDOT Visitors Center), Route 116 (Sunderland), I-91 (Bernardston and Whately), and Route 5/10 (Whately). The Whately facility is located at the Whately Diner on Rt. 5/10, which is a full amenity truck rest stop with parking, refueling, showers, and food available.

Freight Rail

Franklin County has approximately 93 route miles of railroad, which are broken down into two north-south routes, one east-west route, and an east-west connector at the East Deerfield Rail Yard. This rail yard is one of the largest rail yards in New England. The map at the end of the chapter shows the location of the East Deerfield Rail Yard and the different railroad lines in Franklin County. There are two other active minor rail yards in the county in South Deerfield, Shelburne Falls, and Millers Falls.

Air Transport

There are two public airports in Franklin County, located in the Towns of Orange and Montague; however, neither of these airports provide air freight service. The closest locations for freight transport are Bradley International Airport, located near Hartford, the Worcester Regional Airport in Worcester, and Logan International Airport in Boston. New York City's major airports – LaGuardia Airport, J.F.K. Airport, and Newark Airport – also provide air freight services and are used by some shippers in the Franklin County region.

Freight Trucking

In order to provide safe and efficient transportation routes for trucks to and through the region, it is important that the region's infrastructure and systems are continually evaluated for possible deficiencies or constraints. The following projects are major improvements that have been planned or have been recently completed with the goal of advancing the safety and efficiency for both general and freight highway transport.

Route 2 East Improvements

Several major improvements have taken place or have been planned for Route 2, the major east-west trucking corridor in Franklin County. Route 2 East refers to the stretch of Route 2 from Greenfield to Philipston. Several projects along this section have been recently constructed, are underway, or have been designed. These improvements focus on overall traffic safety and efficiency, as well as the relationship between freight trucking and non-commercial traffic.

One major Route 2 East project that has been completed was the relocation of Route 2 away from the Erving Paper Mill in Erving. The relocation was necessary to relieve the on-road blockage that occurred when freight trucks were loading or unloading at the mill.



Trucks on Route 2 in Gill.

Other recent

improvements on

Route 2 East include the addition of climbing lanes and turning lanes to improve the roadway's safety. Two bridges were also reconstructed in Erving, with the road profile lowered to improve sight distance. Additional turning lanes and traffic flow improvements are planned for Farley and Erving Center and are currently under design.

Another major improvement project that has been completed is the creation of a truck weigh station on Route 2 westbound in Athol. This is the first weigh station along the Route 2 corridor. The presence of the weigh station will help ensure that freight trucks on Route 2 are not carrying excessive weight that could potentially cause safety issues.

Route 2 West Improvements and Studies

Improvement projects have also been completed, designed, or explored for Route 2 West, which in Franklin County spans from Greenfield to Charlemont. A number of issues related to the safe and efficient movement of freight by trucks on Route 2 West have been identified. Improvements have taken place to address some of these issues, but further exploration and funding is needed to address all of the identified problems.

Along Route 2 West in Charlemont, there were three bridges that needed either replacement or rehabilitation. Due to their poor conditions, all three had weight restrictions that limited their use by heavy freight trucks. These projects have now been completed with designs to ensure safe passage for freight trucks and other vehicles.

Another major improvement project along Route 2 West that has been completed is the redesign of the Route 2 Rotary. The improvements were aimed at addressing safety issues,

including trucks crowding out other vehicles on the rotary. The project also redesigned Route 2 at Colrain Road, just west of the rotary, to facilitate trucks turning onto Colrain Road and to add pedestrian facilities. Recent studies have shown that this project has been a large success in terms of safety.

In the 2009 *Route 2 West Safety Study*, FRCOG recommended that a climbing lane be added to the westbound lane of Route 2 over Greenfield Mountain. Slow-moving traffic (usually freight trucks) going up Greenfield Mountain on Route 2, which has one lane in each direction, often used the roadway shoulder as a second travel lane. However, the shoulder was not wide enough to accommodate tractor-trailers, leaving these large trucks to straddle both the breakdown lane and travel lane, creating a hazardous situation as the faster moving vehicles in the travel lane were forced into the oncoming lane in order to pass. In 2012, MassDOT widened the shoulder to allow slow-moving trucks to pull fully onto the shoulder to act as an informal climbing lane and posted signage saying “Slower Trucks Use Shoulder.” In 2013, the FRCOG evaluated the effectiveness of these changes and found that it does improve safety along this stretch.

Additionally on Greenfield Mountain, there has been concern about safety issues related to trucks traveling eastbound down the mountain towards the congested commercial area just prior to the rotary. This section of Route 2 has a steep 6 percent grade and the concerns were related to trucks’ ability to safely brake before the congested area. The *Route 2 West Safety Study* recommended that ITS (Intelligent Transportation Systems) be installed on Route 2 eastbound coming down the mountain to warn freight truck drivers if they are at risk of overheating their brakes as they travel down the incline.

Challenges to Freight Trucking

Aside from Route 2, there are other locations in Franklin County that present challenges to freight trucking and may need improvements. Listed below are a few specific constraints associated with freight trucking in the region:



A tractor trailer stuck under the Bank Row underpass.

- Bank Row, Greenfield: There is a clearance problem with the train overpass. Freight trucks are forced to avoid this central artery to downtown Greenfield. An overheight vehicle detection system could alert truck drivers to take an alternate route before they reach the overpass. This site has not yet been identified as a priority bridge improvement.
- Turners Falls Road, Montague: Trucks traveling north on Turners Falls Road have difficulty turning onto Turnpike Road. This intersection has not yet been planned for improvements.
- Montague City Road and Cheapside Street intersection, Greenfield: There is a low bridge at the curve where Montague City Road and Cheapside Street intersect. The low bridge limits truck access to the nearby industrial area, and as a result, trucks often need to use long alternative routes. Options such as raising the bridge or lowering the road would pose significant challenges. Another option is widening the sharp curve. This intersection needs further study before improvements can be planned.
- General Pierce Bridge, Greenfield: This bridge is currently under preliminary design for a major rehabilitation. Local trucking companies have expressed concern with the current weight limit on this bridge, which is 36 tons. For larger trucks that exceed this, they must use an alternate route on Mountain Road, which was not designed for large trucks. To resolve this conflict, there are two options. The first is to raise the railroad bridge on Cheapside Street to 13'6." The other option is to increase the weight limit on the General Pierce Bridge, when it is rehabilitated, to 49 tons.
- Iron Bridge, Shelburne Falls: The historic iron bridge separating the towns of Shelburne and Buckland in Shelburne Falls is a historic bridge that was rehabilitated in 1997. Its low clearance prevents larger trucks from accessing the Buckland side of Shelburne Falls from Route 2/Maple Street. Trucks must travel further west on Route 2 and enter Buckland via State Street to avoid being stuck at the Iron Bridge. An overheight vehicle detection system, supplemented by better signage and better information provided by GPS companies are needed to help freight trucks access the correct side of Shelburne Falls by the correct exit from Route 2.

Scenic Byways

Another issue related to freight transport involves the region's many scenic byways and the fact that these scenic byways are located on roadways that also serve as major trucking routes. There are five designated scenic byways that run through the county. Scenic byways

represent travel corridors with unique scenic, cultural, and tourism value. Although no significant changes in freight trucking routes are recommended at this time, the special characteristics of scenic byways needs to be taken into consideration when planning improvements for these roadways. For more information on Franklin County’s scenic byways, please refer to Chapter 11: “Scenic Byways and Tourism.”

Transportation of Wide Loads

The increasing interest of renewable energy powered by wind has a potentially significant impact on the type and number of wide loads passing through the region. Franklin County, especially the western portion of the county, and neighboring Berkshire County are rich in wind resources. The wind turbines are constructed on-site with very large prefabricated components ranging from 115 to 160 feet in length and must be transported via roadway to often remote areas. For comparison, the average 18-wheeler tractor-trailer ranges in length from 70 to 80 feet in length from the front of the cab to the end of the trailer.

Many of the wide-load trucks cannot be accommodated on most roads in Franklin County, or much of New England. The wide loads are larger than one lane width and therefore can crowd other vehicles, forcing them aside as they pass through. The Commonwealth of Massachusetts Commercial Motor Vehicle Center is responsible for permitting the transportation of non-reducible loads, also referred to as “wide-loads.” If a transporter wishes to move a load of twelve feet or more in width over state highways, they are required to apply for a “daily trip” permit. For “super-loads” (over 130,000 pounds), MassDOT must conduct a full structural analysis of the planned roadway to ensure that the roads and bridges can handle the weight and size of the load.

In 2013, the FRCOG examined the most likely routes in the region to transport wind turbines and the range of impacts this transport could have on the region. The impacts include: the construction of temporary roads leading to the final sites, increased traffic (not just wide-loads) associated with the construction of the projects, and traffic flow disruption. When a wind generation facility is being planned in the region, these factors should be addressed.

Freight Rail Transport

While the vast majority of freight is shipped by truck in New England, MassDOT has projected that the amount of rail freight shipments will double over the next 20-30 years. This increase could have a significant impact on Franklin County as two major New England rail lines pass through the region.

Rail Lines

As highlighted earlier, Franklin County has 93 route miles of railroad, including two north-south routes and one east-west route. There is a map of the rail lines at the end of this chapter. The north-south routes are the Connecticut River Main Line (owned by the Commonwealth of Massachusetts) and NECR Main Line (owned by New England Central Railroad). The east-west line is the Patriot Corridor route for Pan Am Southern. This route runs along Route 2 and follows the Deerfield and Millers Rivers. A small east-west/north-south connector, the East Deerfield Route, is also owned by Pan Am Railways.

Patriot Corridor: (also known as the Freight Main Line) is the most important rail line in the Commonwealth of Massachusetts – serving up to 5 million tons annually of freight between eastern Massachusetts and eastern New York (near Albany) at Rotterdam Junction. It provides an important link for the paper and lumber industries in northern New England and Canada. There are two east-west rail lines in



Freight train passing through Franklin County.

Massachusetts (the other roughly follows the Massachusetts Turnpike), but this route has less severe grades because of the 4.75 mile long Hoosac Tunnel that runs through, rather than over, the Berkshire Mountains. While the Hoosac Tunnel is an important advantage for this line, it does limit the freight capacity that can be hauled due to tunnel height restrictions (19'6"). At Ayer this line branches off to Boston, Lowell (NH), and Maine.

This rail line is owned by Pan Am Southern (PAS), which is a joint venture between Norfolk Southern and Pan Am Railways (PAR) that was formed in 2008. A part of this joint venture includes the rehabilitation of 138 miles of track, replacement of ties, and the addition of over 35 miles of new rail between Ayer, MA and Mechanicville, NY. These improvements will allow for increased freight capacity to be transported with a higher 286,000 pound weight limit and first generation double-stack capability. The improvements will also increase track speeds. The joint venture will create another Class I freight railroad in Massachusetts for increased competition.

Connecticut River Main Line: This rail line is owned by the Commonwealth of Massachusetts. The Commonwealth (MassDOT) purchased the rail line in 2014 from Pan Am Railways (PAR). The Line has connections to the NECR rail line in Northfield. This line is now carrying Amtrak passenger service with a stop in Greenfield at the John W. Olver Transit Center. This service was made possible due to funding received from the 2010 American Recovery and Reinvestment Act (ARRA), which funded track improvements and passenger platform construction along the line. The track improvements also allow for greatly increased speeds along this line for freight traffic.

NECR Main Line: This rail line is owned by New England Central Railroad (NECR), which is a Class III railroad. The line is composed of 53 miles of right-of-way between Monson and Northfield. It has a major rail facility located in Palmer in Hampden County, where it interchanges with CSX. The line also interchanges with the Connecticut River Main Line in Northfield and Montague in Franklin County. These large numbers of connections makes this line competitive with the national rail system. This line is also a major north-south corridor for the New England region, connecting Canada with Connecticut and New York. Average annual freight rail tonnages is 1.3 million tons, much of it composed of lumber products and lime slurry shipped from Canada.

Rail Yards

There are limited public railroad loading areas suitable for transloading in Franklin County. A transloading facility refers to a terminal where freight is transferred from one mode to another. Transloading facilities enable companies that are not located along rail lines to combine lower cost rail hauling with truck delivery. Typical goods that move through transloading terminals include: lumber, sheetrock, plastic pellets, bulk paper rolls, pipes, and bulk liquids such as fuel oil.¹ Modern transloading facilities are accessible to major highways, have many tracks, covered warehousing, and room for storing and moving tractor-trailers. While Franklin County does not have a transloading facility, below is an inventory of the rail facilities in Franklin County and a general evaluation of the facility's potential for transloading freight.

- East Deerfield Rail Yard: The East Deerfield Rail Yard, located off River Road, is partially owned by the Commonwealth (MassDOT), but is subject to permanent easement for railroad uses by Pan Am Southern. The rail yard is located on the Patriot Corridor that travels east-west and is connected to the Connecticut River Main Line that travels north-south. The yard is approximately one and a half miles long and a half-mile wide. It has the capacity to sort and hold up to 900 rail cars

¹ Indus-Rail Co., Preliminary Report Freight Diversion Study, conducted for the Franklin Regional Council of Governments, 1999, p. 5.

per day. Approximately 600 to 900 cars pass through the yard on a daily basis. The rail yard is used primarily as a classification yard for trains coming from the Pan Am north-south and east-west main rail lines. There are several public unloading tracks, and other tracks with the potential for public unloading. Only one track appears to be used for unloading now, primarily for unloading sodium chloride. The East Deerfield Rail Yard is located between two rivers (the Connecticut and Deerfield) on the east and west, wetlands on the north, and a residential neighborhood on the south. The road access to the rail yard was improved in 2003 as a result of a project that increased bridge clearance at the River Road bridge. This helped immensely in providing direct road access from the facility to the Route 5/10 corridor and Greenfield. The Deerfield Master Plan (2000) suggested that the rail yard could be an appropriate location for a future transloading facility. The rail yard was used for some transloading of freight historically. A modern transloading facility would require additional storage space and equipment at the rail yard, but is feasible for the site. One result of a new transloading facility would be increased traffic in and out of the rail yard. Another concern of expanding the facility is the potential for contamination and adverse impacts on the natural resources in the vicinity, including the Deerfield River (located ¼ mile west from the rail yard) and the Connecticut River (located ¼ mile east and ½ mile to the north of the yard).

- **South Deerfield:** There is a small rail facility in South Deerfield, off of Elm Street and Tine Drive. The facility has two public unloading tracks and a small amount of use. The access is poor to both tracks and there are no storage capabilities. The site was used for small-scale transloading historically, but would likely not be suitable for a larger-scale facility now.
- **Millers Falls:** The Millers Falls rail yard is located off of East Main Street, at the junction of two major railroad lines, the NECR and the PAR. The yard includes a disconnected facility with a dock and ample trailer storage on the PAR side. NECR has three public railroad tracks used for unloading sodium chloride with poor track access and limited trailer storage.

Rail Sidings

In 2013, the FRCOG conducted an inventory of rail sidings in Franklin County. Rail was once historically very important to the local economy. As a result, the county has a number of rail sidings that have been constructed along the currently active rail lines in the region. Prior to

this project, the FRCOG did not know how many sidings existed or where they were located. For the Inventory, the FRCOG compiled a table of all existing sidings by rail line and direction with accompanying map. The FRCOG also created a second table with a list of all properties that have the potential for either accessing adjacent rail sidings or developing new sidings. Both of these tables can be used for understanding the potential of freight movement by rail in the county and also to promote economic development in the region.

Challenges to Freight Movement on Rail

Idling Issues Next to Residential Uses

Train locomotive idling is a recent issue that Franklin County has encountered, particularly in the Millers Falls rail yard where residential land uses closely abut the rail yard. Train locomotive idling occurs when trains are stationary, either at railyards or on the tracks or track sidings, and do not turn off the locomotives. Locomotive idling is necessary to some extent for a variety of reasons including weather conditions, safety testing, and car checks in which power is needed. The state of Massachusetts has a 30 minute locomotive idling limit. While a locomotive idles, air and noise pollution occur, which can be harmful and disruptive to neighboring land uses. There are ways to minimize the idling and its effects, such as using cleaner diesel fuel or various locomotive technologies, such as Auxiliary Power Units (APUs) which are small diesel-powered generators that maintain many locomotive systems within required parameters when the engines are turned off. These technologies are not always applicable and locomotives must sometimes idle for longer periods of time.

Safety of At-Grade Crossings

The upgrades to the Connecticut River Main Line to accommodate the return of Amtrak have allowed speeds to increase from an average 10 miles per hour to a much faster 70-75 miles per hour. As a result of these dramatically increased speeds, MassDOT conducted evaluations of all of the at-grade road-rail crossings to ensure that they are properly equipped with warning devices that will provide adequate safety for crossing vehicles with the higher train speeds. The FRCOG also provided recommendations at specific crossings where there may be pedestrian and bicycle activity. Because there is such a large increase in speed, the performance of these warning devices should be continually monitored. Maintenance and repair of grade crossing warning device equipment are the responsibility of the railroad owner. The Federal Railroad Administration has established minimum inspection requirements for railroad maintenance of the warning systems, and each operating railroad is responsible for inspecting crossing system signals and equipment. There are a number of private road crossings in Franklin County that are not required to have any warning devices. The much higher speeds on this line may warrant attention to this gap. Current improvements to the Freight Main Line by Pan Am Southern should also include

an evaluation of safety measures at the at-grade crossings. The speeds on this line are not expected to increase as fast as the Connecticut River Main Line, but any changes should be assessed for safety.

Safety of Freight Movement

Transport of Hazardous Materials

In August 2010, the Franklin County Regional Emergency Planning Committee (REPC) completed the creation of a Regional Hazardous Materials Emergency Plan (HMEP) with support from the FRCOG. The development of the HMEP serves several purposes, including compliance with the statutory requirements that all regional Emergency Planning Committees develop, exercise, and annually review a Hazardous Materials Emergency Plan. Also, no regionally focused planning tool had previously existed to describe and analyze hazardous threats in Franklin County. Third, a regional plan was needed to standardize Hazardous Materials release reporting, notification, and response.

Among the HMEP's priorities is addressing the potential issues associated with the freight transport of hazardous materials and having an emergency plan for hazardous material spills. The HMEP assumes that virtually all railway and road corridors transport hazardous materials at some times and that, consequently, any rail line or roadway can be a potential hazardous material spill site.

The HMEP includes an analysis of the level of hazardous materials transported in the region on major roadways and on rail lines. This analysis is based on a one-time study of the level of general freight transport on rail facilities and major roadways, and the amount of freight traffic that contained hazardous materials. This study was conducted in 2003. The study estimated that approximately 13 to 15 trucks per hour traveling through the region contain hazardous materials. Most of these trucks are on Interstate 91. For rail transport, it was estimated that there are 100 to 130 train cars with hazardous materials passing through the region each day. The study also found that up to 500 rail cars were stopped at the East Deerfield Rail Yard at any given time, with 20 to 50 of them containing hazardous materials. See Table



Freight train passing through a roadway underpass.

6-1 for a summary of transport of hazardous materials by rail in the region.

Table 6-1: Estimated Level of Hazardous Material Transport on Area Rail Lines

Rail Line	Trains per Day (General Merchandise)	Average Number of Cars per Train	Average Number of Cars per Train with Hazardous Material
Patriot Corridor Line	5 - 12	50	4
Connecticut River Main Line	2 – 3	30	2
NECR Main Line	1	60	5
East Deerfield Rail Yard	10 – 15*	n/a	2 – 5

*Trains passing through the yard. Source: Franklin County Regional Emergency Planning Committee, “Franklin County Hazardous Material Emergency Plan and Maps,” 2010.

The only known significant transportation change since the 2010 HMEP report is the increase in ethanol transport by rail through the county. The Patriot Corridor has been identified by the Massachusetts Emergency Management Agency (MEMA) as a potential primary rail route to carry Ethanol-85, which requires different fire suppression equipment and methods for extinguishing than for gasoline-fueled fires.

Chemical Incident Exercises and Response

The Franklin County Regional Emergency Planning Committee (REPC) has conducted a number of training exercises in the last few years for dealing with chemical spills. In 2004, in the first such training exercise in more than a decade, FRCOG and the REPC conducted a full-scale training exercise at the Buckland Trolley Museum Railyard in Shelburne Falls. The exercise provided an opportunity to practice chemical spill response through a scenario of a chemical leak caused by a car crash with a rail tank car on an active rail line. The exercise was attended by responding departments from surrounding towns, the regional district (District 4) Hazardous Materials Team, and rail employees.

Since the completion of the HMEP in 2006, mock chemical spill exercises have been carried out for four Franklin County communities as part of implementing the plan. These exercises were designed to test the regional preparedness for dealing with chemical releases and the coordination of different agencies in addressing such situations and in dealing with evacuations.

From 2010 on, the REPC has annually conducted tabletop exercises, primarily focused on scenarios involving the spilling of ethanol. The Massachusetts Department of Environmental Protection found that ethanol production and transport had increased, and was expected to continue to increase, leading to the REPC prioritization of ethanol response.

The REPC participated in the development of a local Ethanol Response Plan, and tested that plan in 2014. In the past year, PanAm railways and the Federal Railroad Administration provided the REPC with a safety seminar to address the concerns related to increased rail traffic and speed as passenger rail re-entered the region.

These types of preparedness activities help create a regional response that is timely and well-coordinated. Franklin County has experienced hazardous material spills in the past. In 1999, a train derailed in Charlemont and dumped an estimated 6,000 gallons of liquid latex into the Deerfield River. In September 2006, a freight train headed to the East Deerfield Railyard derailed onto its side with 20 cars carrying feed grain and vegetable oil going off the tracks. Fortunately, none of the cars ruptured. The rapid response to this derailment demonstrated successful coordination between local, regional, and state officials.

Recommendations for Freight Transport

- Continue to assist with the current and planned improvement projects on Route 2 East and to monitor how they impact freight trucking.
- Continue to work with local communities and highway officials to address safety concerns related to trucks transporting wide loads through Franklin County.
- Continue to monitor and assess the transport of hazardous materials in the region and to develop, update, and coordinate plans with the Regional Emergency Planning Committee and appropriate agencies for responding to a hazardous materials spill.
- Conduct a study to assess which roadway crossings of rail lines are potentially hazardous, and to recommend changes to improve the safety of these locations.
- Rehabilitate the General Pierce Bridge with an increased weight limit of 49 tons to make truck shipping through the region more efficient and safe.
- Evaluate the options of improving the low-clearance overpasses in Greenfield on Bank Row and at the Montague City Road and Cheapside Street intersection.
- Explore the installation of overheight vehicle detection systems at low clearance overpasses and bridges, including the Iron Bridge in Buckland and Shelburne.