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A Path Forward: A Report to the Town of Natick on the Cochituate Rail Trail

Prepared by: Bronner Group, Center for Transportation Management

Prepared For: Natick Town Officials

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Table of Contents

Introduction/Issues:

What is the situation now?

Overarching Question: How can the Town of Natick make the best possible use of the inactive Saxonville Branch rail right-of-way (ROW) that is owned by CSX and that runs between Natick Center, the Natick Collection, and Cochituate State Park? Can that ROW help Natick connect transit services, neighborhoods, job centers, commercial areas, and recreational resources?

This larger question is best broken into two major sections:

- What is the town's vision for its segment of the ROW and how can it be funded? For many years, a dedicated group has been working to turn the Natick portion of this ROW into a shared use bicycle/pedestrian path – the Cochituate Rail Trail (CRT). That vision is consistent with the Town of Framingham's current plan for its segment of the Saxonville ROW, which is currently under construction as a shared-use trail. For the Town of Natick a key challenge is the need to match the Town's desires with the most likely sources of funding.

- The ROW is owned and controlled by a private entity with a long history of imposing difficult terms (financial and otherwise) for selling property. How can Natick initiate a process that gives a real possibility of moving that private entity from stasis to cooperation? How does Natick get adequate control of the ROW so that it can implement its vision?

The goal of this report is to provide information and a roadmap for Town officials and stakeholders so that the town can choose how best to move forward with a realizable project using the Natick portion of the Saxonville ROW (the "Project").

Executive Summary

Natick faces two main challenges in trying to create a smart-transportation use for this right-of-way.

First, it must reach agreement with a private landowner with little active interest in selling this property. Even though the rails have been removed, CSX has traditionally not been eager to rid itself of this right-of-way and has placed a high value on it, even though it has proposed to abandon it for rail use. Second, funds for transportation projects are becoming more difficult to come by. As needs overwhelm resources for core transportation assets (bridges, buses, etc.) the impact may be particularly felt by those seeking funding for less heavily used systems such as bicycle and pedestrian projects.

To break this logjam, first, the Town needs to develop a new approach to working with CSX, the landowner. Using the example of another town's recent success and leveraging Massachusetts Department of Transportation's (MassDOT) more integrated program structure, it may be possible to work with a number of other towns through MassDOT and develop a process for an independent appraisal that would lead to a fair and accepted price. This process would aim to produce a price that both parties can agree upon, as well as a process for disposition.

Second, it is worth examining the inclusion of transit as part of an alternate use of the right-of-way, particularly given new transit-related funding opportunities. As a practical matter, including transit on the line itself (at least in the near term) may create too many new complications – additional costs and the fact that a compatible, ADA compliant small-scale transit vehicle has not yet been approved by the Federal Transit Administration (although the industry is certainly evolving). Nevertheless, as Natick explores uses for the right of way and refines possible activity use limitations, it should ensure that its actions do not preclude funding options or a future transit component that might help meet expected transit demand.

These considerations lead to the suggestion that the Town focus primarily on the bike/ped project and explore the myriad of funding sources that may be able to be brought to the table to help pay for this project, including traditional and new federal funding sources. Because funds are scarce, it may make sense to pursue more than one source and to create a variety of phases that can be implemented piece-meal so that there is not a need to seek "too much" at any one time from any one funder. An incremental approach might include early acquisition of the Wonder Bread spur or any final work needed to bring the project to 25% design.

Existing Corridor Context

Corridor Description

The Natick segment of the Saxonville Branch begins at a former junction with the Boston and Albany railroad (now used by CSX transportation and the MBTA) in Natick Center and runs approximately 2 miles northwest toward MA Routes 27 and 30, where it ends at the Framingham border behind Home Depot.

In Natick the ROW crosses Lake Cochituate before reaching Cochituate State Park. There is also a short (0.2 mile) ROW segment formerly used by the "Wonder Bread" spur track. This spur segment extends west from a switch near Milepost 2.1 on the Saxonville Branch towards commercial uses along Speen Street, as well as the Natick Collection mixed use development.

The right of way, exclusive of the Wonder Bread spur, is approximately 20 acres.

The ROW is below street level at Natick Center where it begins just west of the current MBTA Natick Commuter Rail train platform. Going northwest it remains in a cut between mixed residential and commercial uses before transitioning up to street level near Kansas Street. The ROW alternatively occupies cut and fill sections, rising above surrounding grades as it approaches Route 9 and gradually returning to street level near Route 30.

At some points, including those listed below in Table 1, the ROW is quite wide:

Table 1:

Location within ROW	ROW Width
Rear, 21 Jackson Ct & 41 Second Street	80'
North of Kansas Street Intersection	65'-70'
Lake/Washington/N.Main Street	40'
Rear, 19 Harrison Street	50'
South of Lagrange Street	60'
Loker Street Overpass	80'
North abutment, MA Route 9 Bridge	80'
Amvets Post @ pump station	60'

However, the usable portion of the ROW is often only 15'-20' on center as a result of topographic variations and existing structures. Two points which are particularly constrained

are the 18' wide area at the Cochituate Street overpass and the crossing of Lake Cochituate. The bridge over Route 9 is a third point of concern. (Photos of these areas are Figures 1, 2, and 3). The costs of overcoming such physical chokepoints would severely decrease the viability of alternatives that call for separate travel paths for separate uses.

Figure 1 -View leaving Natick Center Train Station

The rails have been removed in the ROW, although various structures (notably the railroad bridge over Route 9) remain. The bridge substructure is in place and 12' wide, but it lacks a deck surface to make it suitable for bicycle, pedestrian, or vehicular use. [1] The ROW crosses eleven culverts, including a stone culvert across Lake Cochituate. This stone culvert and the adjacent ROW have eroded and will require rehabilitation. The ROW is intersected by five roads and three driveways. These crossings and the other conditions are described in some detail in the CRT study prepared in 2010 by Fay, Spofford and Thorndike (FST).

The ROW passes through a residential area (relatively close to some seemingly new houses), as well as industrial and commercial districts. The Project area has a network of local streets, as well as several state-numbered routes (9, 27, 30) and the MassPike (I-90). All of the state and

[1] One can currently walk the ROW with few, if any obstacles; however, the access to the bridge is restricted by signs and barriers at each end.

Interstate routes experience increasing traffic congestion during peak commuting hours. The northern end of the Project area is particularly congested, not only during peak commuting hours, but also during weekends and holidays.

Figure 2 – Old Rail Bridge over Route 9

Off-peak trips are expected to grow as workplace practices change (flextime/telecommuting) and suburb to suburb trips increase.

These roadways – just like the surrounding neighborhoods – form the context in which the CRT will operate. But the roadways also host local traffic that the CRT could help mitigate. The next section will discuss some of the demographics that contribute to that traffic.

At some points the CRT right of way is quite wide, but there are several significant physical chokepoints. The costs of overcoming such physical chokepoints would severely decrease the viability of alternatives that call for separate travel paths for separate uses.

Figure 3 – Culvert Approaching Crossing of Lake Cochituate

Demographics

Demographics help determine utilization and utilization is key to any proposal to dedicate public funds (particularly Federal funds) to a new project.

If the project is likely to be used by many people or if it is likely to enhance usage of other public assets, the rationale for public funds is strengthened. In the case of the CRT, the number of people who will use the CRT will be limited by Natick's relatively small population, but there is potential for the CRT to increase use of the transit system and also a State Park.

While largely suburban in character, the area is classified as urbanized with pockets of higher density at the northern and southern ends of the Project ROW. The highest population density along the ROW is at the southern end in Natick Center. Proceeding north, the density fluctuates, and then increases near Speen Street.

Clusters of newer residential development are displayed in Table 2, and include several Chapter 40B projects, as well as a 40R project and other moderately dense residential projects:

Table 2:

Area	# Residential Units	Status
Cloverleaf	183	Developed
Chrysler Road Apartments	407	In Development
Grants' Place	24	Developed
Natick Collection	215	Developed
20 South Avenue	25	Developed
Natick Paperboard Factory	150	In development

The 2010 population density for Natick is reported at approximately 2,160 persons per acre, compared to the Massachusetts average of 844.30. This relative lack of density has constrained transit as a mainstay of commuting, but the increase in concentrated housing developments (i.e. not traditional suburban single family subdivisions) can make transit more relevant and can highlight the importance of convenient access to transit.

The Town of Natick, like many Massachusetts communities, has an aging population. In 2010, the median age of Natick residents was 39.3 compared with the Massachusetts median age of 37.10 (Source: http://www.clrsearch.com/Natick_Demographics/MA/). According to the USDOT's 2010-2015 Strategic Plan and the American Association of Retired persons (AARP) "71% of older households want to live within walking distance of transit". To the extent that the CRT increases walkable access to transit it can help serve Natick's new senior population.

These factors suggest that the demand for transit and for bike/ped facilities in the Project area may continue to increase as the population ages, particularly if more "empty nesters" choose to stay in Natick, but in denser (transit served) developments and walkable areas.

Employment Centers

The study area contains a wide variety of employment. Some is clustered at the southern end of the Project right-of-way near Natick Center (US Army's Soldier Systems Center – "SSC"- sometimes called the Natick Army Labs); other employment centers are at the northern end along Speen Street. These clusters are well established. One such area of development is at the Natick end of the so-called "Golden Triangle" – the commercial district that is shared by Natick and Framingham, which includes the Natick Mall and the Home Depot on Speen Street. There are two hotels in the Triangle within ½ mile of the proposed CRT. Large office developments located in the area close to the CRT include the headquarters of TJX at the junction of Route 30

and Speen St. The main offices of IDG, Breyers, Leggat McCall, the American Heart Association, and the American Cancer Society are located nearby. Boston Scientifics' headquarters are in the old Carling Brewery building on Route 9, near Speen Street. Major employment centers proximate to the CRT are listed in Table 3.

Table 3:

Business	Employees
Crowne Plaza	170
Cognex	180
Klockner-Moeller	200
Mathworks	1,900
MetroWest Medical Center	600
Natick Collection	1,200
U.S. Army Soldier Systems Center	1,957
Hotels (est.)	278

As of this writing, one major employer (Boston Scientific), which has hosted 500 employees in the Golden Triangle portion of the CRT project area, is restructuring some of its operations. There is also a proposal to replace an existing 316,000 sq.ft. warehouse at 30 Superior Drive with a new 171,000 FedEx ground distribution facility. While only a short distance from Natick's town center, access to these job centers has tended to depend on auto access with bike, pedestrian and transit access being secondary – a pattern that is becoming less appealing to younger workers and that can make it difficult for people without a car to reach these job sites.

A growing number of job sites, as well as a state park and several new residential developments, are located near the CRT.

Other Land Uses

The Project area is also home to the Cochituate State Park, a popular regional park with water activities. The park is just east of the Speen Street / Route 30 intersection and abuts the CRT. Parking at the park is limited. The Massachusetts Department of Conservation and Recreation ("DCR") which owns and operates the park has worked with the MBTA to identify transit access to parks in Boston, but there is a less robust system of transit access to DCR's parks in the Western suburbs and central Massachusetts.

Commuting Patterns

Natick is a prime suburban location, offering both local employment centers and direct access to Boston. However, Natick's residents and workers encounter congestion and travel delay comparable to that in many parts of Massachusetts. That pattern is detailed in Table 4.

Table 4:

2010 Travel Time to Work	Natick	MA	USA
Travel time less than 15 Minutes	20.86%	23.50%	25.26%
Travel time 15-29 Minutes	25.78%	32.94%	36.15%
Travel time 30-59 Minutes	42.35%	32.97%	29.43%
Travel time 60+ Minutes	11.01%	10.58%	9.16%

The substantial commuting times are consistent with Natick's reliance on the crowded highway system. However, Natick's use of transit is slightly higher than the statewide pattern. Table 5 shows Natick's commuting choices.

Table 5:

2010 Mode of Transportation to Work	Natick	MA	USA
Car, Truck, Van to Work	84.92%	81.92%	87.32%
Public Transportation to Work	9.10%	8.66%	4.44%
Other Transportation to Work	2.31%	5.43%	4.00%
Work at Home	3.66%	3.99%	

Source: CLR Choice, Inc., http://www.clrsearch.com/Natick_Demographics/MA/

Table 6 provides a finer grain summary commuting choices for Natick residents that are particularly close to the CRT Project area:

Table 6:

Census Tract (Natick)	All workers	Drive alone	Carpool	Transit	Walk	Other (inc. biking)	Work from home
3821	2,607	2,282	134	79	18	19	75
3822	2,822	2250	181	178	27	69	115
3823	2,900	2,307	62	207	13	44	267
3824	2,131	1,840	174	143	14	30	104
3825	2,634	1,875	64	147	135	83	330

(from Journey to Work Estimates 2006-2010; data for Census Tract 3826 not yet available)

Source: AmericanFactFinder http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml

The census tracts listed above are all within a 2 mile distance of the ROW, i.e., they reflect the size and commuting choices of the population most likely to use the rail trail. Almost 20% of the 13,094 workers reflected in the five listed census tracts are already choosing an alternative other than driving alone. A notable portion of the population is working from home-a situation than can sometimes favor travel choices such as walking and biking.

The number of vehicles in the Town is consistent with its suburban character. For example, in 2010 the number of vehicles per household was as follows:

Table 7:

# of household vehicles	In Natick	In Massachusetts
0	4.53%	11.41%
1	33.17%	36.30%
2	47.27%	37.34%
3	11.62%	11.21%
4+	3.40%	3.74%

Source: http://www.clrsearch.com/Natick_Demographics/MA/

Thus, almost half the households in Natick (47.27%) had two cars – 10% more than the statewide average. Only 4.53% of Natick's households had no car, while statewide 11.41% of all households have no car. Traditionally families that do not own a car have been the most likely to use transit; however, the escalating costs of operating a car are causing many people to reconsider driving as the constant solution – a pattern that is reflected in reduced vehicle miles traveled nationally and in increased transit ridership in Massachusetts. The fact that Natick has slightly above average transit use despite such universal car ownership suggests that Natick's residents (as well as many of its new workers) may be willing to leave the car at home and take an alternative such as transit, biking, or walking.

Air Quality

The Project Team found no air quality information that would influence the development of the CRT as a shared-use transportation facility. It is assumed, whatever option the Town selects, that bicycling and walking (and transit trips) would have a positive, although modest, impact upon community air quality. Table 8 contains relevant 2010 data sampled from various locations in the region, compared to U.S. averages

Table 8:

Characteristic	Metric	Benchmark
Air Quality Index (AQI)	29.9	About Average
Sulfur Dioxide	2.29 ppb	About Average
Nitrogen Dioxide	13.7 ppb	Worse than Average
Ozone	25.2 ppb	Below Average
Particulate Matter (PM 2.5)	8.96 μ^3	About Average
Particulate Matter (PM 10)	16.5 μ^3	Better than Average
Carbon Monoxide	.338 ppm	Average

(Source: http: //www.city-data.com/city/Natick-Massachusetts.html)

Should transit be incorporated into the Project, the proponent would be expected to prepare specific air quality information for the vehicles selected, type of operation and service frequency.

Transit Services and Demand

Natick is within the Massachusetts Bay Transportation Authority's (MBTA's) service district, but is also a member of the MetroWest Regional Transit Authority (MWRTA). The Project Team analyzed available transportation data for the Study area, obtained MWRTA fixed-route ridership information, and reviewed available Census data in order to develop an understanding of potential transit ridership along the CRT corridor.

The MBTA provides frequent Commuter Rail to Boston service on weekdays, with a lesser level of service on weekends. There are a total of 20 trains in each direction on weekdays. Inbound, 18 stop in Natick Center and 19 stop in West Natick. Outbound, 15 stop in Natick and 19 in West Natick. However, there is limited parking at Natick, as at many other stations on the line, so rail customers must often drive to several Commuter Rail stations to find parking (Central MA Joint Trail/Busway Right-of-Way Study, April 2011).

The MBTA generally welcomes local projects that can increase access to stations and that do not require MBTA investment in parking facilities.

The CRT could provide access to Natick Station, at which 20 MBTA trains stop each weekday, as well as 5 of the MWRTA's 14 bus routes. Those bus routes already carry over 110,000 passengers a year.

MWRTA ridership in 2010 totaled almost 420,000 passengers. The majority of this ridership, almost 317,000 passengers, was on fixed-route service (MassDOT, Beyond Boston Transit Study; http://www.massdot.state.ma.us/planning/BeyondBostonTransitStudy/MWRTAProfile)

By 2011, the MWRTA was reporting that fixed route ridership had grown to 351,251 passengers, including substantial ridership on some of the routes that intersect the ROW. This ridership on routes that touch the CRT totals 111,242 and is detailed in Table 9.

Table 9:

Route	Ridership
Route 1 (Green Line Shuttle)	46,399
Route 4 (Market Basket/Beaver Park/Natick Collection)	12,178
Route 10 (Natick Daily)	25,911
Route 11 (Natick)	8,559
Boston Commuter Service	18,195

The fact that almost one third of MWRTA's riders travel near the CRT route suggests that the CRT could be a helpful adjunct to the transit system – either as a feeder or as part of a route. Details on these near-by routes are provided below:

- Route 1 (Green Line Shuttle, below) provides weekday daily transit service perpendicular to the CRT, with a potential connection to the CRT via the Natick Collection. While there might be some potential for CRT users to make this connection, the multiple-seat trip and existing route schedules would severely constrain potential ridership. A more likely option would be that pedestrians and bicyclists use the CRT to access the MWRTA Route 1 at the Natick Collection stop.

- MWRTA Route 4 (Market Basket/Beaver Park/Natick Collection, figure below) provides weekday daily transit service accessible to the CRT at The Natick Collection. Eight round trips with ninety-minute service is offered. There is no evening or weekend service.

- MWRTA Route 10 operates in the area that appears most likely to draw local transit riders to a potential service. It offers twelve weekday daily round trips on an hourly frequency and seven Saturday round trips on an hourly frequency.

- Route 11 provides a total of eleven daily weekday round trips, alternating at two times in the midday to serve the region's senior centers. There is no Saturday service. (Route map is unavailable as of April 9, 2012.)

- The Natick Commuter Shuttle provides weekday morning and evening service to/from several points proximate to the CRT. Morning service carries passengers between MBTA Commuter Rail trains and adjacent major employers between 6:45 and 9:52 a.m.; evening service operates between 5:02 and 6:26 p.m. (Route map unavailable as of April 9, 2012). Route stops near the CRT include the SSC (Kansas Street / MA-27) and Boston Scientific.

The following three maps (Figures 4, 5, and 6) show the CRT (in red) and its relation to 3 of the MWRTA's current routes.

Figure 4 - MWRTA Route #1 (46,399 riders annually)

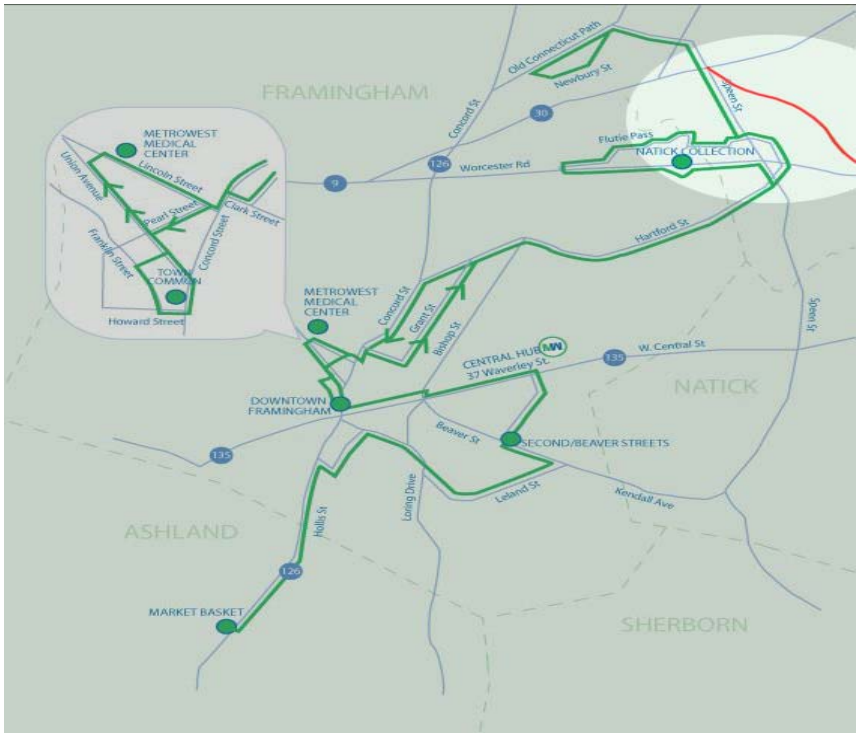


Figure 5 – MWRTA Route #4 (12,178 riders annually)

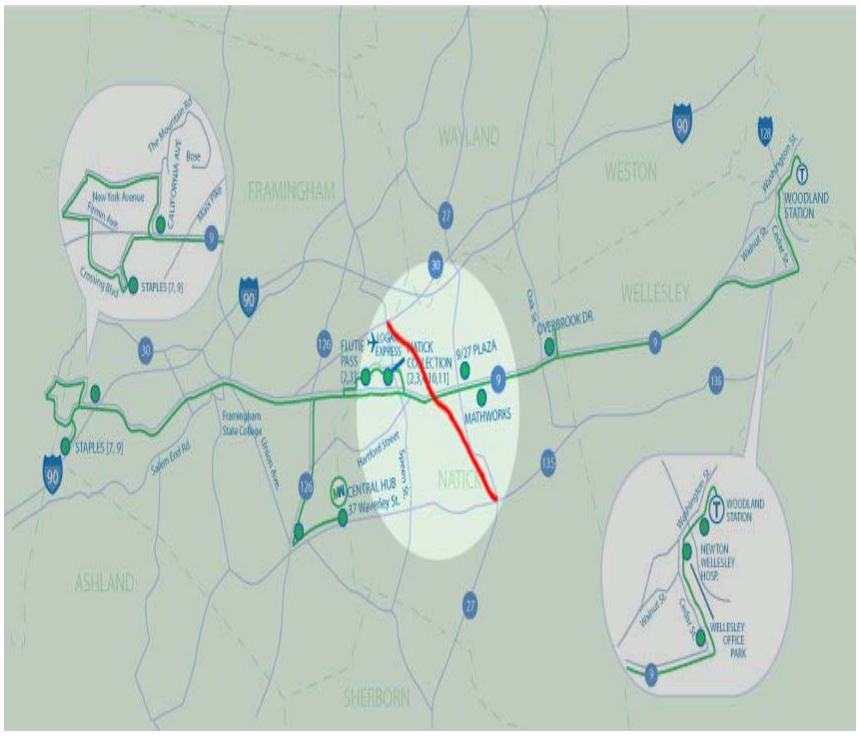
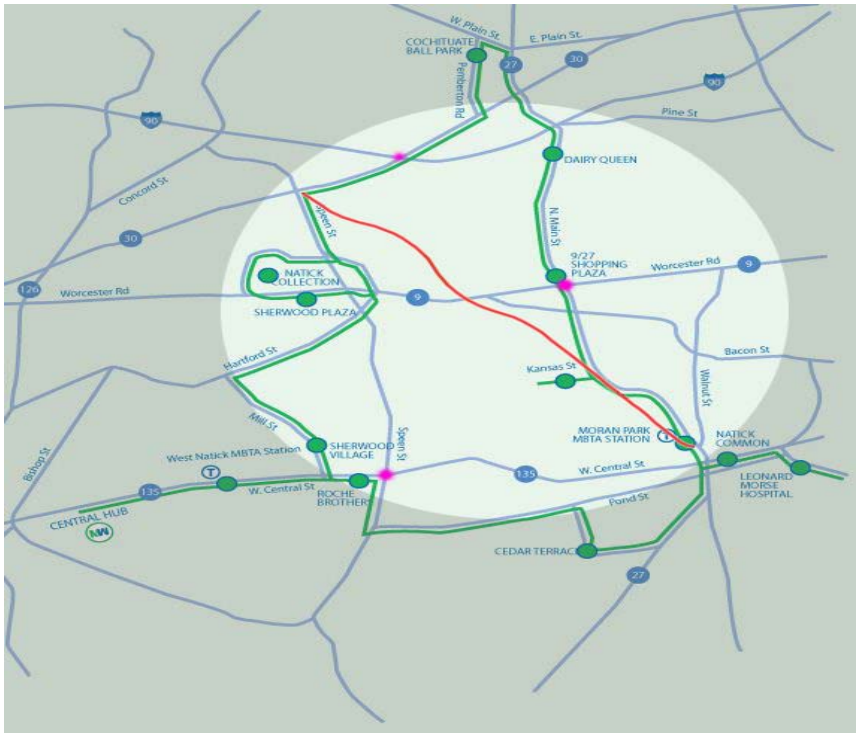


Figure 6 – MWRTA Route #10 (25,911 riders annually)



The MWRTA's system map is available at http://www.mwrta.com/images/System-map.pdf

MWRTA Service Planning

The Project Team consulted with the MWRTA to learn about service planning that has been conducted for the existing routes. The Team's objective was to understand how these routes are operating today, to anticipate ridership that might develop on a CRT route, and to explore how a possible CRT transit service would integrate with existing routes and schedules. Separately, the MWRTA has asked that the technical staff of the Boston MPO prepare a MWRTA system-wide service analysis, but that work has not yet been undertaken.

The MWRTA does not anticipate any service modifications to the above described five routes at this time, although it is keenly interested in ways the possibility that the CRT could help support the transit system. The MWRTA has some interest in a bus stop that could serve its existing routes and future CRT-related transit near Washington and Kansas Streets, as well as an improved transfer point near the Natick Collection.

The MWRTA has made significant strides establishing transit service in Natick and the surrounding communities. It was the first RTA in Massachusetts to implement a virtual map service showing bus locations in real time online and it accepts the MBTA's Charlie Card – a significant convenience for riders. Prospects for overall RTA ridership appear positive, as significant growth within MetroWest is expected. In 2010, 57% of employed MetroWest residents worked in MetroWest, while only 12% work in Boston. These statistics suggest that there are significant mobility needs within the RTA service area, and that even fairly local projects (such as the CRT) could help residents connect new trip origins and destinations (MassDOT, "Beyond Boston", 2012).

Transit, Walking and Bicycling Potential

A major goal of modern multimodal passenger transportation planning is to reduce automobile dependence and increase use of public transportation, biking and walking. Recent research suggests that strong bicycle infrastructure (bicycle lanes, secure, weather-protected bicycle parking that connects to public transit) can increase transit ridership, drawing people from a wider area around a given transit stop.

A recent study undertaken for the Boston MPO assumed that a typical transit rider would walk about 1/2 mile (ten-minute walk) to a transit stop, while cyclists are willing to travel

approximately two miles (ten minute ride) to reach transit. (CTPS, Central MA Joint Trail / Busway Right-of-Way Study). FTA assumes an even greater impact, i.e. that a bicyclist would travel 3 miles. The potential for increased access to transit through relatively low cost bike/ped feeders systems (rather than costly garages in often congested downtown neighborhoods) is prompting transit planners to give greater prominence to projects that integrate bicycle facilities and transit lines. As noted above under the discussions of Natick's demographics and travel patterns, there is already strong local interest in travel choices other than driving alone and there is a population of over 13,000 workers within the described bike/ped catchment area.[2]

The 2+ mile CRT is consistent the Federal Transit Administration's guidelines for a path that can help more riders reach transit - up to 3 miles for biking and one-half mile for walking.

Whether designed as simply an off-road alternative to driving, a feeder to transit, or a more fully integrated part of the transit network, the ROW has the potential to be a well used segment of the Town's transportation network.

As discussed briefly above there will be several geographic conditions to overcome if the right of way is to again become a transportation asset for Natick and the cost of overcoming the CRT's several chokepoints will constrain corridor development. But the first step in such a process is acquisition. Strategies to that end are discussed in the next section.

[2] There are 13,094 workers within the five census tracts for which data is available. When the sixth is added, it can fairly be assumed that the total number of workers would be in excess of 15,000.

ROW Acquisition

How can Natick Secure the ROW?

Any future use of the ROW is largely contingent on the Town (or another public entity) obtaining a sufficient ownership interest to direct and control its own destiny relative to the proposed vision for the ROW. In other words, without a proper interest in the ROW, much of the discussion about funding and uses is important but extremely difficult to effectuate. Given that reality, a path to securing sufficient rights in the property is the key first step even though the Town should concurrently be developing its vision for the use of the ROW.

CSX is not required to sell the ROW to Natick and the potential financial gain to CSX is not crucial to the company. While eminent domain is a theoretical possibility, adverse eminent domain would be very vigorously resisted by the railroad and is not recommended while other options are available. Nor is it realistic to expect CSX to donate the ROW.

Natick's goal, therefore, is to incent CSX to sell the ROW for a value that can be funded with public funds, i.e. a value that an approved appraisal process accepts as "Fair Market Value" (FMV). Four potential approaches have been identified:

- ***Resume discussions with CSX:*** Given the real estate market's decline since the last appraisals were completed, some diminution in price can be expected. However, appraisals are generally valid for no more than 12-15 months so even if the appraisals are significantly reduced, the Town should either be ready to go forward with the closing in a year or it should make a delayed payment part of the negotiations.

- ***Learn from the examples of Town of Holliston (MA) and City of Leominster (MA):*** Both Leominster and Holliston persuaded CSX to accept an independent appraiser's valuation that the Town was also willing to accept. These agreements allowed the projects to move forward to other issues, albeit issues that pose other problems:

    - CSX also agreed to give Holliston a lease pending sale while the Town secures its funding. In fact, Holliston has purchased one segment and is leasing two other

segments. Holliston is very pleased with this arrangement and notes that the independent appraiser's valuation was virtually identical to the Town's. However, the Town will not be able to conclude the deal or improve the ROW until the state makes bond funding available. The time frame for that is unknown.

- Leominster's acquisition has been delayed indefinitely by a dispute over environmental damage caused by a culvert. Leominster assumes that CSX stands ready to conclude the deal on the original terms, but the transaction has been held in abeyance until a dispute with a third party is resolved.

- ***Piggyback on a Commonwealth of Massachusetts transaction with CSX*:** Efforts to piggyback on a state/CSX transaction were unsuccessful when CSX sold the Worcester mainline to the Commonwealth, but there may be another such opportunity. MassDOT and CSX continue to have periodic (but less complex and more constructive) interactions as they each try to improve assets that cross over or under assets owned by the other. However, MassDOT will still need to be persuaded that local concerns will not jeopardize statewide interests and the Town will need to demonstrate that it is prepared to move forward with the project if MassDOT helps to bring CSX to the table.

- ***Developing a new multi-town initiative:*** Natick's experience with CSX is not unique. Sherborn, Holliston, Fitchburg, and Leominster are some towns that are having or have had difficulty gaining acceptable terms from CSX and (along with Natick) considered joint action when MassDOT was acquiring the Worcester Main Line. The effort failed, but a new approach might be worthwhile. For example, the Towns could propose a system for independent appraisals (such as Holliston used) that could be overseen (and hopefully advanced) by MassDOT. This notion (a process managed by MassDOT by which fair/independent appraisals are conducted and the parties agree to abide by the results) would create a framework for Natick to have more certainty in its discussions with CSX.

Several factors may make it more likely that MassDOT would be interested in facilitating a transaction that was fair to CSX and the Towns. MassDOT's interest in modal integration has been accelerating and the creation of a combined rail/transit unit has encouraged MassDOT to look at rail rights of way as part of a longer term strategy. For example, MassDOT recently acquired passenger rights in an active freight line running to Concord NH and MassDOT sponsored a TIGER grant that would build a DCR trail as a bike/ped feeder for the MBTA.

The most promising course would build upon the approach followed by Holliston and Leominster. Nevertheless, price is not everything. Holliston cautions that it spent the better part of a decade getting to agreement with CSX, including time negotiating other key terms (indemnifications, environmental remediation, payment mechanisms, etc.) after the price had been settled. Leominster's example demonstrates that agreement on the terms of acquisition is only the first step – and one that can be disrupted by disputes that are tangentially related to the Town's plans.

Using the example of another town's recent success and leveraging Massachusetts Department of Transportation's (MassDOT) more integrated program structure, it may be possible to develop a process for an independent appraisal that would lead to a fair and accepted price. This process would aim to produce a price that both parties can agree upon, as well as a process for disposition.

Achieving Holliston's end result (i.e., the parties agree to accept the conclusions of an independent appraiser) through a broader strategy (either the multi-town approach or piggy-backing on a state transaction) could help to make CSX a willing seller if the Town is ready to be a willing buyer. Further information on implementation of this strategy is provided in Appendix 1.

Whatever acquisition strategy is used, the Town will be faced with a significant funding challenge. The final section addresses resources that may be available and some of the factors that may govern funding availability. However, before funding can be pursued, the Town must be able to tell prospective funders its plans for the right of way. Is there a use pattern that reflects the Town's vision and that would offer significant benefits to regional, state, and Federal funding sources? This question is explored in the next section.

Plans for the Saxonville Branch

How would the Town use the ROW?

Assuming control of the ROW, what is the Town's "fundable" vision for the transportation project? The Project team reviewed the "Base Case" developed by FST and then explored other alternatives that might warrant other funding and help the town demonstrate that the ROW can be an effective part of the area's transportation network.

Base Case

The 2010 FST report explained how the ROW could be developed for bicycle and pedestrian use. That report provided a detailed and thorough analysis of the ROW and it recommended design standards for shared bicyclist and pedestrian facilities. The FST recommendations are grouped into the following five typical "Sections" and form the current plan for the right-of-way (i.e., the "base case"):

1. Section A: 12' Trail (includes Spur Trail)
2. Section B: 10' Trail with Retaining Walls
3. Section C: 10' Trail over MA Route 9 Bridge
4. Section D: 12' Trail adjacent to Driveway
5. Section E: Typical 10' Trail in Constrained Area

The construction cost estimate included clearing, grading, selective installation of fences, intersection and at-grade crossing improvements, parking, drainage and other essential work. It was assumed that all existing culverts and bridges would remain in place and upgraded where necessary. It was also assumed that the path would connect to the Natick Collection property via the Wonder Bread spur and the existing signal just north of the spur on Speen Street. When adjusted for contingencies, and inflation, FST calculated a $3.0 million construction cost.

FST calculated an approximate $360,000 design fee (10% to 20% of the project construction cost) in accordance with recommended MassDOT design processes. The 25% design phase constituted 42% of the total design fee ($150,000) which included preparation of preliminary alignment plans, a complete topographic survey including delineation of environmental resource areas, and other design basics including bridge sketch plans. While this might vary

slightly if MassDOT did not oversee the project's funding, FST's calculations provide a reasonable estimate.

These cost estimates were prepared with the assumption that the shared-use path would use only the 'currently usable' portion of the right-of-way that supported the former rail bed, including existing culverts and the MA Route 9 bridge. If the Town chose to include the first transit alternatives described below, this option would require use of most or all of the right-of-way in every cross-section. Further, the project would have to:

1) Address drainage in the cut section between the MBTA Natick Center station and Kansas Street;
2) Provide for transition to local streets adjacent to the MBTA Natick Center station,
3) Provide a more stable and substantial crossing of Lake Cochituate, and
4) Provide for substantial alteration or replacement of the Route 9 bridge

A project that offers substantial regional benefits to a range of actual beneficiaries is more likely to be funded than one with a narrow goal. A project with multiple purposes can pursue multiple funding sources.

With respect to 2) above, FST proposed four alternatives, three of which would exit the right-of-way north of its junction with the CSX / MBTA 'main line' (at Spring Street, Willow Street or on MBTA property). If a transit element is incorporated into the Project, the options would likely require property acquisition and substantial infrastructure construction to overcome grade changes in this area. The costs of these elements would significantly add to the cost of the Project.

The plan described by FST accords well with the Town's vision, but funding for bicycle and pedestrian projects is minimal and the demand is great. Available funding is certainly not adequate to meet CSX's most recent demand, but – even if that demand were to be reduced – the cost of the full project would still be significant.

Metro-West's growth will continue to demand more alternatives to roadway congestion and these options can help shape Natick's vision for how the CRT can form part of an effective and sustainable transportation network

To give some sense of perspective, MassDOT's most recent Capital Investment Plan said that over the next five years there will probably be adequate funding for only 10% of the bike/ped projects being developed across the state. That funding stream (based largely on Federal funding) may be further reduced if – as

proposed in the House – Federal funding is focused on the national highway system, set aside programs such as Federal Transportation Enhancements (TE) are eliminated and allocations for Congestion Mitigation Air Quality (CMAQ) projects are excluded from the Highway Trust Fund. This means that bicycle and pedestrian projects will find

it even harder to compete against traditional transportation projects that are eligible for the same funding. Since the current Federal transportation program expires June 30, 2012, this situation will be developing over the next several weeks.

Given the overwhelming demand for funding there are advantages in being able to call on multiple funding sources, including those that are focused on transit. The following section of this report therefore addresses the potential to incorporate transit into the future CRT ROW.

Four Additional Options

Four additional options were considered in tandem with "base case" (development of the CRT on the ROW)[3]:

> ***Option 1 - Transit/Bike-Ped (shared use/physical separation):*** This option consists of a separated transit way and a bicycle/pedestrian path. Under this option there would be a physical barrier separating the non-motorized uses and the active transit line. Examples of such facilities are described in Appendix 2.
>
> This alternative would require significant construction at several points along the CRT, particularly in elevated sections of the ROW and across Lake Cochituate. It would forseeably necessitate reconstruction of the Cochituate and Loker Street bridges, as well as the MA Route 9 bridge. Quite apart from the environmental concerns that the latter work would raise, the costs of this work would likely outweigh the benefits to be gained from access to FTA funding. The transit operation would also be hindered by the fact that the ROW is physically isolated from the surrounding roads and job centers and connections would have to be created. Until transit demand grows and congestion reaches some community determined levels of unacceptability, these costs are likely to preclude this option.[4] However, it could then offer funding options (Federal Transit

[3] Transit as its own alternative was not reviewed/analyzed.

[4] Note also that (1) this would require transit vehicle to be purchased, operated and maintained and that (2) in a recent study of another project that sought to incorporate transit and bike/ped

formula funds) that could otherwise be difficult to prioritize to the project, so Natick might wish to revisit this alternative at some point.

Option 2 - Transit/Bike-Ped (shared use/temporal separation): This option would consist of a single shared path that could be alternatively used by two user groups: (i) transit vehicles and (ii) bicyclists and pedestrians. Each group would be permitted to use the path at specific times. In other words, when the trail was being used for transit, it would not be available for bicyclists or pedestrians and vice-versa.

The Project Team has not identified applicable trail precedents for this approach, although it is analogous to that used by FRA and FTA when different types of rail equipment share a right of way. Given the apparent lack of comparable examples and the fact that the Advisory Committee had significant reservations about the final use pattern, this option has not been analyzed in greater detail. As with the option above, this could offer additional funding options (Federal Transit formula funds), so Natick may wish to revisit this alternative.

Option 3 - Transit-Lite/Bicyclist-Pedestrian Shared Use Path: This option consists of a very modest transit-like use running in concert with the bike/ped uses without either physical or temporal separation. This could be as simple as a bike-share program (becoming extremely popular in Boston), a pedi-cab or even a small-scale "green" vehicles such as are used in airport terminals. Given potential user conflicts, it is highly unlikely that any motorized transit under this option could be even the size of a van. However, Massachusetts does allow the contemplated type of small vehicle to operate on surrounding low-speed streets posted for speeds of no more than 30 mph.

At this point, there is no small-scale FTA approved transit vehicle that would meet the needs of this project. However, it is clear that the industry is evolving rapidly so regular follow-up with FTA is recommended. Further information on vehicle types, as well as on engineering, operational and legal issues, is provided in Appendix 3.

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jointly, it was estimated to require up to 43 feet for the full concept (33 feet if there was only a unidirectional bike lane). This is much wider than the current base case concept and at several points it is much wider than the now usable right-of-way.

Option 4 - Transit Adjacent with Direct Connections to Shared-Use Path: This option consists of existing or modified transit operations on local roadways with direct connections at key nodes between the CRT and those transit services – both the MBTA's Commuter Rail and the MWRTA's bus routes. This option would not include transit on the ROW itself (although it could be combined with the transit element described in Option 3 to form a modified Option 3) but it would provide improved access to transit. It could be combined with new connections to Cochituate State Park and help overcome some of the parking constraints that the Park now faces. Further information on this option (operational, legal, and engineering issues) is provided in Appendix 4.

It is readily apparent that there are constraints on the immediate pursuit of any of these four options. However, Metro-West's growth will continue to demand more alternatives to roadway congestion and these options can help shape Natick's vision for how the CRT can form part of an effective and sustainable transportation network.

In considering these choices and their funding implications it must be remembered that most Federal funds (and also most State funds) are provided for projects that are regional in nature and that offer significant non-local benefits. Bicycle and pedestrian projects (including the CRT) tend to offer clear local benefits, but have a harder time competing as regional projects – particularly when viewed against needs such as structurally deficient bridges or vans for the disabled. Local funding sources should therefore also be considered as part of the picture, even if the shortfall at the local level is as great as it is at the state and Federal levels.

The next section explores some of the funding sources that could help the Town achieve its vision for the CRT right of way.

Funding Strategies and Alternatives

Where will the money come from?

If CSX can be persuaded to enter a process that would produce a value consistent with the Town's expectations, there are still several choices to be made and hurdles to be overcome.

What are the potential funding sources for (1) acquisition, (2) design/permitting, and (3) construction?

The answer to this question depends in part on the ultimate uses (and any activity use limitations) planned for the completed facility.

For example:

- If the ROW is to be used for transit or to help commuters bike or walk to the train station or MWRTA bus stops, Federal Transit Administration (FTA) funding can be used for (1), (2), and (3). This funding option became available as of August 2011 and provides a new way to pay for bike/ped feeder systems. However, this change does not mean that there are more FTA funds available for the area – simply that the project is now able to compete for those which are available.

- In communities that adopt the Massachusetts Community Preservation Act (CPA) and if the right of way were to be purely for bicyclists and pedestrians (and not transit vehicles), local open space funds raised under the Massachusetts Community Preservation Act (CPA) can be used for (1), (2), and (3). While Natick has not adopted the CPA, Natick's special system of development requirements (that secure contributions from larger projects) could achieve a similar purpose with greater flexibility.

- Funding from either the Federal Highway Administration (FHWA) or the Commonwealth's local roads program under Chapter 90 can be used for (1) and (3) whether the ROW is to be used for bike/ped travel or transit. The Town would not need to hold title to the ROW before spending these funds on design. However, in Natick (as in many towns) Chapter 90 funding is in short supply and FHWA funding is increasingly being prioritized to keeping the existing road and bridge system in good repair.

Funds for transportation projects are becoming more difficult to come by. As needs overwhelm resources for core transportation assets (bridges, buses, etc.) the impact will be felt by those seeking funding for less heavily used systems such as bicycle and pedestrian projects. A strong local commitment is essential.

As an example of how the different funding might work, Chapter 90 funds (if available) could be used for preliminary (25%) design even if the Town did not yet own the ROW; Federal transportation funds could then be used for acquisition, final design, permitting, and construction whether the final use includes transit or is limited to bicyclists and pedestrians.

A related difficulty, however, is the paucity of funding available from each of these sources, particularly compared to demand. The larger the funding amount being sought, the harder it is to secure a commitment of funds. It is significantly easier to persuade the MPO (the regional planning group that programs federal funds) to program $2-3 million for a project than $10 million. This means that there can be benefits in phasing the project or in using more than one source.

- Phasing would extend the time required for project completion, but could mean that a partial product is delivered sooner – either a minimum operating segment or a slightly improved condition. For instance, a relatively inexpensive first phase could involve clearing the ROW, decking the bridge over Route 9, and creating a packed dirt trail. [5] A costlier second phase could pave the ROW and address erosion. The first phase would be easier to fund, but could delay ultimate completion of the full project if funders were not persuaded of the further benefits to be derived from the additional costs of the second phase.

- If more than one source is to be used, it is important to avoid activity use limitations that will preclude other funding. But FTA funds could be used for acquisition and FHWA funds used for construction or vice versa. FTA and FHWA funds could also be pursued concurrently, thereby making it possible for the project to be delivered earlier.

What is Available?

***Federal overview*:** Events unfolding in Washington DC may severely impact the Town's ability to access federal funds in the coming years. Congress typically passes a multi-year

[5] If adopted, this approach might need to be part of any negotiations with CSX, since the railroad's standard terms tend to require more significant construction.

transportation bill (often referred to as "reauthorization") that provides Federal funds for a variety of transportation programs; the focus of these programs has been highways and transit, but bicycle and pedestrian projects are also eligible uses in some of the categories – CMAQ and Enhancements being two of the larger categories. As of 2011, Federal Transit funds can also be used for these projects.

The most recent reauthorization expired in 2009; Congress has been passing short-term extensions since then. The difficulty in passing a new multi-year bill has been magnified by the lack of funding – the accumulated balances in the Highway Trust Fund (HTF) have run dry and current revenues do not adequately support continuation of the current programs.

The House leadership and the Senate and the President have proposed very different plans. It is not at all clear which version will "win" or if a compromise will be constructed. *The range of alternatives may be clearer when the current short-term extension expires.* However, the funding shortfall is quite real and Congress is clearly reluctant to raise the gas-tax. Whatever the outcome, it appears certain that projects will need to compete even more than usual for limited federal funds.[6]

State overview: While Transportation Reform has improved the way Massachusetts plans, builds, and operates its transportation system, it is still significantly underfunded. In fact, MassDOT estimates that the shortfall has grown to $1.3b a year since the Transportation Finance Commission's 2007 report set the stage for Transportation Reform in 2009. State funding is principally provided through bonds. Chapter 90 funding is available to communities by formula, but even recent increases to the Chapter 90 program have left municipalities with a significant and chronic shortfall. Moreover, available funds are increasingly being dedicated to maintaining and repairing the existing system. This leaves new facilities (such as the CRT) scrambling for part of an even smaller pot of available funds. Further information on particular programs is provided in Appendix 4

[6] Federal transportation funding levels are in flux and will probably continue to be uncertain until a multi-year re-authorization of the Federal Surface Transportation program is enacted into law.

Recommendations

Choosing a way forward

Three strategies are recommended:

1. Acquisition: Work with partner towns, elected officials and MassDOT to establish a process to develop independent appraisals and purchase process/terms acceptable to CSX.

The Holliston example is instructive both because the Town persuaded CSX to an independent appraisal process and because the Town explored several legal devices: a lease, fee simple, and a permanent easement. The lease has allowed Holliston to secure "the deal" while it waits for state bond funds to be released. However, Holliston is neither able to improve nor use the sections under the terms of its lease agreements with CSX. If Natick were to lease the right-of-way, it should take steps to ensure that it can actually enjoy the use of the line.[7] Fee simple is Holliston's goal and will allow the Town to invest State and Federal funds in the ROW. A carefully drafted permanent easement (or even a very long term lease) could also suffice for that purpose and such an arrangement offers CSX the possibility of reversion should it ever have a freight use for the ROW. The flexibility that these alternatives offer might interest CSX.

MassDot's more integrated structure opens up new possibilities for a concerted approach to CSX.

Natick could benefit from a combined approach to be carried out with other stakeholders – either "piggy-backing" on a MassDOT transaction with CSX or framing a multi-town initiative with similarly situated municipalities. With either strategy, it would be important to (i) secure CSX agreement to a process such as the independent appraiser used by Holliston and (ii) coordinate and connect the timing of all parts of the process (appraisal, funding, design/construction) to avoid the "chicken and egg" dilemma that can so easily hamper implementation.

The above strategies could stand alone or follow an incremental approach. For example, if the Town elected to use its available mitigation funds to seek a lease with CSX that would allow the

[7] CSX may try to impose terms that commonly accompany disposition of an active rail line, but that seem onerous for an inactive line. Any proposed agreements would need to be reviewed carefully since the standard terms may be unreasonable where the rail has been removed.

Town to clear the right of way for rough trail use or to negotiate with CSX for a more permanent interest in the Wonder Bread spur, a multi-town combined approach for full acquisition could still be pursued through MassDOT and federal funding could be sought from both highway and transit programs. Further details are provided in Appendix 1.

2. Use: Focus on the development of the bike/pedestrian path

It is recommended that Natick consider adding to its vision for the ROW by making the CRT a bicycle and pedestrian feeder for existing transit services. Natick might also open up the CRT to a locally sponsored bike share operation or even a seasonal pedi-cab if there were interest and if revenue could be raised.[8]

These modifications would enhance bicycle and pedestrian use of the ROW by making it more accessible and would increase transit use in Natick, thereby relieving congestion and reducing the need for commuter parking. The CRT could significantly increase the reach of existing transit services and allow more people to travel locally "car-free"- to work in one of the offices near Speen Street/Route 30, to shop in Natick Center, or to enjoy Cochituate State Park. That Park has limited parking, so more transit and bike/ped options could increase Park utilization. It would also give Natick residents better access to the MBTA's commuter rail despite constrained parking in Natick Center. This vision would qualify the project for Federal Transit funds as well as other Federal funds typically used for bike/ped projects and support a wider and more "regional" set of beneficiaries for the project.

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While Natick should focus on a bike/ped project and not necessarily add a transit element, it should continue discussions with the FTA to determine if an appropriate vehicle is introduced by the industry and ensure that its immediate actions do not preclude transit in the future if at all possible. [9] In any discussions with FTA, MWRTA (and perhaps the MBTA) should be a partner.

[8] Including more traditional transit on the ROW itself would be problematical unless additional funding could be found adequate to meet the additional costs for safe combined usage.

[9] Neighborhood Electric Vehicles as set forth in the Appendix warrant periodic inquiries to FTA and any proposed use limitations that would impact funding should be thoroughly vetted.

3. *Funding: Position the project to pursue Federal Funding from a variety of sources.*

It is recommended that Natick pursue both Federal Transit and Federal Highway funds. This strategy would increase the likelihood of funding and would allow the Town to use either source when it was available, thereby reducing delays.

Ideally, Natick will be able to pursue discretionary Federal programs. However, the future of those programs is uncertain and the larger ones (ex: TIGER) are looking for projects with very significant regional benefits and a favorable benefit/cost ratio. Programs targeted at smaller projects (such as the Livability initiative sponsored by USDOT, HUD, and EPA) would be far likelier sources.

Federal formula funds are more likely to continue close to current levels, but those funds are programmed 2-5 years in advance and are expected to give preference to projects that serve a regional – not just a local – travel need. These funds also tend to become available in smaller amounts - $3 million or less for FHWA funds and much less for FTA funds. Federal transit formula funds are allocated to the Transit Authority (which always has abundant needs) rather than to the MPO. This makes MWRTA and the MBTA potentially important partners for Natick.

Federal sources are extremely competitive and will tend to favor smaller funding requests from projects that are “ready to go” and that bring a local contribution.

This suggests that not only phasing, but also a “mix and match” approach to funding should be prepared – i.e., break the project into small pieces (25% design; 75% design; acquisition of (i) the Wonder Bread Spur and (ii) the main line; clearing and securing an unpaved path; building the paved path with improvements) that can be advanced with whatever funding may be available. [10]

Both FHWA and FTA sources are and will remain extremely competitive and will tend to favor smaller funding requests from projects that are “ready to go” and that bring a local contribution. Natick should therefore also consider phasing the project and using local funds (chapter 90, developer contributions, etc.) to confirm the 25% design work that was earlier undertaken or to secure an interest in the Wonder Bread Spur.[11]

[10] MassDOT is willing to accept a “project” before the Town gain s rights to the ROW. This allows the Project to compete for funding and get MassDOT review of early actions such as design.
[11] Local expenditures made in advance of Federal funding do not qualify towards the 20% match required for most Federal projects. However, the required match is often provided by the state and an early local investment can help show that there is a strong local commitment. This timing issue should be kept in mind as the Town’s funding strategy is further developed.

Conclusion

Achieving the Town's vision for the CRT will not be simple, easy, or inexpensive. However, the Town can establish and follow a roadmap that would expand that vision, make the CRT part of a multimodal strategy, and then leverage that role into both a funding strategy and a coordinated approach to acquisition. That roadmap would call for integrated planning with transit providers (MWRTA and MBTA) to establish concurrence on the outcome, as well as close and ongoing cooperation with MassDOT as the project develops and is programmed. It would likely also require both financial participation from the Town and the type of sustained effort that is now providing Holliston with the opportunity that Natick is still seeking. With the requisite commitment, (both in terms of the day to day activities and a determination to prioritize and pursue resources for the project) the Town's vision could be realized.

Appendix 1

Acquisition Strategies

There is no doubt that CSX has little reason to negotiate favorable terms with any individual Town. However, there are currently several Towns (e.g., Fitchburg, Leominster, Sudbury, and Holliston) in addition to Natick that are similarly situated - aiming to convert an abandoned rail ROW to trail use and disadvantaged in their dealings with CSX. Together they are represented by three members of Congress as well as several state legislators. The former can be particularly relevant to securing federal discretionary funds; both groups could help interest MassDOT in a coordinated approach to CSX.

A sample approach could be as follows: the similarly situated towns agree to provide a portion of the local match from local funds if MassDOT secures CSX's agreement to sell on the basis of an agreed-upon third party appraisal. MassDOT and CSX also agree upon a standard form of contract that is acceptable to the Towns. MassDOT and each Town establish a funding strategy for the acquisition, including a timeline that will be incorporated in an agreement between CSX and MassDOT. If the Town is not able to complete the transaction when and as scheduled, the agreement could allow CSX to be compensated for delay through lease payments.

In this example, MassDOT would have to engage CSX directly, but would benefit from an initiative that would appeal to several communities, that would require no additional state resources, and that could be replicated for the benefit of additional communities. The Towns would need to contribute a portion of the funds and be ready to implement the funding plan, but would gain the opportunity to acquire the ROW for fair market value and would be able to cite the state-endorsed funding plan in their pursuit of Federal funds. CSX would have an opportunity to deal systematically with several Towns while establishing a negotiating relationship with MassDOT.

The above strategy is simply an example. However, preliminary inquiries to potentially key stakeholders (towns, MassDOT staff, advocates, and congressional staff) indicate interest in such a coordinated and combined approach.

Appendix 2

Multi-Use Corridors

It is not uncommon for urban corridors to be shared by many uses – the South West Corridor is one early example and the Green Line Extension in Somerville will be another – and other areas are looking at possible transit and trail projects. Some of those currently being explored are:

- The Midtown Greenway in Minneapolis, MN is a 5.7-mile trail The ROW does not accommodate transit and trail within same cross-section, but a proposed phase would use an existing railroad bridge to convey the trail at some point across a river. Portions of the right-of-way are in a cut.

- The Atlanta BeltLine concept is to implement a combined system of trails and transit that will connect Atlanta BeltLine neighborhoods and economic development centers. Atlanta BeltLine transit will include 22 miles of pedestrian-friendly rail-based transit such as modern streetcars or Light Rail vehicles. The Atlanta BeltLine will create more than 33 miles of multi-use trails within and around the railroad corridor. The trails will be multi-use – for walkers, joggers, bikers, roller-bladers, and people with disabilities.

- The Lake Oswego to Portland Transit and Trail Alternatives Analysis is comprised of two different components: transit and trail. The trail portion of this study derives from a Federal Transit requirement that a trail connection be studied as part of the project's Alternatives Analysis. Further information is available at http://library.oregonmetro.gov/files//loptt_aa_initiation_report.pdf.

Appendix 3

Vehicle Types

Safety issues are always front-and-center whenever vehicles may be added to a bike/ped use pattern. Size, speed, horsepower, and maneuvering qualities can all affect safe use. Where off-trail destinations are to be part of the route (as would often be the case with transit) some on-road capacity may also be needed.

Figure 7a

Figure 7b

"Green" Vans: If temporal or physical separation were to be used to allow shared use of the ROW, a vehicle such as that pictured above could be appropriate. The pictured vehicle (Figures 7a and 7b) is the Azure Dynamics Balance Hybrid Electric shuttle bus. It can accommodate up to eighteen passengers and is like those used by transit authorities and other organizations that provide transit service (i.e. paratransit, elder transportation). Similar vehicles are used by the hospitality and transportation companies to provide shuttle-type services.

This vehicle type would be the largest such vehicle recommended by the Project Team. Its benefits include proven ADA compliance, similarity to vehicle configurations on road, and ability to interline with other regional transit applications allowing the vehicle to provide multiple RTA services.

Use of this vehicle type would balance capacity with all-weather security for the foreseeable future ridership demand anticipated. It can also easily provide service on-and off the CRT, and is designed for use on all public roads. The above example is said to meet FTA standards that would permit its acquisition by public transit agencies using FTA funding. The manufacturer

advises that this vehicle may qualify for federal tax credit and/or individual state and agency programs, which could offset the additional cost of the hybrid technology. http://www.azuredynamics.com/about-azd/documents/Hybridbuslinepassestest.pdf

This vehicle type would be compatible with the vehicles that the MVRTA operates. It also is the only ADA-compliant vehicle under consideration in this analysis. Its capacity is probably the best match with expectations for a peak-hour level of service and would likely provide more than enough capacity for non-peak times. However, it is also the most costly and would require the greatest amount of modification to a shared use concept for the right-of-way.

***Neighborhood Electric Vehicles (NEVs)*:** Airport terminals provide an example of small motorized vehicles operating safely amongst pedestrians and therefore demonstrate a possible alternative to physical or temporal separation. A slightly more robust version of the golf cart type of vehicle used in airports is the Neighborhood Electric Vehicle (see Figure 8).

Figure 8

Global Electric Motorcars –USDOE; http://avt.inl.gov/nev.shtml

Neighborhood Electric Vehicles (NEVs) have top speeds between 20 and 25 miles per hour and weigh less than 2,500 pounds (Gross Vehicle Weight Rating). NEVs must be equipped with headlamps, stop lamps, turn signal lamps, tail lamps, reflex reflectors, parking brakes, rear view mirrors, windshields, seat belts, and vehicle identification numbers (http://avt.inl.gov/pdf/nev/aboutnev.pdf).

NEVs are permitted in Massachusetts on roadways posted 30 mph or less, and must have a maximum speed of 25 mph (Insurance Institute for Highway Safety, Low-Speed Vehicles.2012, http://www.iihs.org/laws/lowspeedvehicletypes.aspx)

To operate on a public way in Massachusetts, LSVs must be registered, titled, insured, and inspected. If an electrical motor or batteries solely powers the vehicle, no emissions test is required. Only Low Speed Vehicle plates will be available and be issued to Low Speed Vehicles. The only exception will be state and municipal vehicles, which should be issued the standard state or municipal plates. They may also be prohibited from other highly trafficked areas due to their inherent speed limitations. Local cities and towns may have their own ordinances regarding low speed vehicles. Source: MA Registry of Motor Vehicles, http://www.mass.gov/rmv/regs/lsv.htm

The above example is manufactured by Global Electric Motorcars, a division of Polaris Industries. It carries six passengers and has a driving range of 40.4 miles.

- Time to Recharge: To 80%: 7.4 Hours / To 100%: 9.6 Hours
- Length: 162.0 inches Width: 55.0 inches Height: 71.0 inches
- Approximate top driving speeds – 20 to 24 mph

A NEV would be a relatively low cost vehicle option. Its ability to operate on local streets under Massachusetts laws appears suitable for CRT crossings excepting Speen Street, where it would have to make use of a dedicated, signalized CRT crossing. A public transit agency could probably not purchase or operate this type of vehicle; however, it might be feasible for a private operator. Such vehicles could not be readily suited to peak-hour demand unless several such vehicles were in service. There also needs to be further discussion with the manufacturer about the ability to vehicle to operate comfortably in New England weather (it may not be prudent to choose a vehicle that cannot provide effective transit service from approximately November through March). The NEV examples reviewed did not accommodate wheelchair seating positions, and do not appear to comply with the Americans With Disabilities Act (ADA). MWRTA could presumably provide paratransit service, but FTA might have concerns if Federal transit funds were to be used for acquisition.

Use and operating constraints: Any combination of vehicle and non-motorized use without physical separation will raise questions of liability and in some areas of the ROW signal pre-emption would be advisable if this Option were to be pursued. Operation after dark and in winter would be problematical, although some vehicle types can be modified to be weather protected. Electric charging stations would be required, although the increasing popularity of electric vehicles (ex: Boston Scientific has used electric vehicles) may mean that they exist in the area for other purposes.

If Natick wanted NEV type vehicles on the ROW it could:

- License the operation to be operated on a demand basis (akin to taxi cabs), with fares collected and a fee paid to the Town; or

- Pay for the service to be operated on a shuttle basis with modest or no fares.

The former alternative would appear preferable and could help generate modest revenue to help pay for maintenance. However, Town Counsel would need to be consulted before any plans were advanced. In either case, the Town would likely need to provide the vehicles in the first instance and carefully prescribe the points at which the vehicles could leave the ROW. Special attention would need to be paid to the Natick Center end of the ROW – a turnaround area would be needed near the platform and/or an exit to grade constructed at a point before the Station, likely on to Cochituate Street.

There is a general disinclination for motorized vehicles on federally funded paths.[12] There are exceptions for maintenance vehicles, some snowmobiles; and electric bicycles, the Recreational Trails Program discussed below, and other cases within the Secretary's discretion. Regular path use by motorized vehicles would require for extensive discussion with applicable federal agencies. (http://www.fhwa.dot.gov/environment/bikeped/framework.htm).

[12] Note that this prohibition is focused on motorized vehicles sharing a path with uses, such as biking or running. A wholly separated transit line is not the situation covered by this prohibition (see Los Angeles Orange Line, Bus Rapid Transit and bike path: http://www.streetfilms.org/las-orange-line-bus-rapid-transit-plus-bike-path/).

Appendix 4

Funding Sources

This discussion is limited to non-municipal sources, although as indicted in the text, local funds can play a pivotal role in securing other support.

***Traditional FHWA Bicycle and Pedestrian Funding*:** FHWA and FTA fund transportation projects. The key determining factor as to whether a project is for "transportation" (rather than "recreation") is whether there is an opportunity to travel somewhere via the path, i.e., not a closed loop trail within a park that can only be used for recreational purposes. As the Cochituate Trail is much more than a closed loop trail (running from a busy town center to a major retail site), it clearly qualifies as transportation for the purpose of the programs.

Most bicycle and pedestrian projects that receive Federal Highway funding are funded as either a Transit Enhancements (TE) or a Congestion Mitigation and Air Quality Mitigation (CMAQ) project[13]. A small amount of FHWA funding is also available through the Federal Recreational Trails (FRT) program.

TE[14] activities are federally funded, community-based projects that expand travel choices and enhance the transportation experience by improving the cultural, historic, aesthetic and environmental aspects of our transportation infrastructure. TE projects must be one of 12 eligible activities and must relate to surface transportation." 10% of the Surface Transportation program is set aside for TE projects. Bike paths are one of the 12 eligible activities.[15]

Bicycle and pedestrian projects are also eligible for CMAQ funding since they encourage alternatives to single occupancy vehicle use, thereby reducing congestion and improving air quality. [16]

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[13] There are other programs other than those listed that are eligible to fund a multi-use path; however, as a practical matter, the programs described here fund the majority of these projects.

[14] http://www.enhancements.org/index.asp

[15] "1. Pedestrian and bicycle facilities-Sidewalks, walkways or curb ramps; bike lane striping, wide paved shoulders, bike parking and bus racks; off-road trails; bike and pedestrian bridges and underpasses. "

[16] http://www.fhwa.dot.gov/environment/bikeped/cmaqfunds.htm

The Federal Recreational Trails Program (RTP) provides funds for trails and trail-related facilities for both non-motorized and motorized recreational trail uses. In Massachusetts, the RTP program is administered by the Department of Conservation and Recreation (DCR) which offers communities small grants that do not require a local match. Unlike some of the rules that govern the other programs, this program specifically allows for some motorized vehicles on trails while the other programs generally prohibit motorized vehicles (this could be relevant depending on the ultimate use that the town pursues).

FTA Funding for Bicycle and Pedestrian Projects: Federal transit funds can be made available to bicycle and pedestrian projects that share a certain nexus with transit. If the ROW were to be actively shared with transit, Federal transit funds could be used for acquisition and/or construction, even if the "sharing" were to include some restrictions. If transit is not on the ROW itself, Federal Transit funding could still be used, but FTA discretionary funds (rather than Formula funds) would be the preferred source.

Under FTA's new rule, a bicycle or pedestrian project is considered to have a de facto "functional relationship to public transportation" - specifically, "all pedestrian improvements located within one-half mile and all bicycle improvements located within three miles of a public transportation stop or station shall have a de facto physical and functional relationship to public transportation."[17] Based on this revised policy, bicycle improvements within 3 miles and pedestrian improvements within 0.5 miles are eligible for Federal Transit funds, although transit formula funds would be difficult to prioritize to the Project if transit is only an indirect beneficiary of the CRT.

New Federal Discretionary Programs: USDOT has issued a number of discretionary programs in the past 3 years. Many have created competitive processes to fund more traditional transportation projects; some are targeted at non-traditional projects. These new discretionary grant programs include the following:

- The most promising source for the CRT would seem to be a collaborative effort such as the partnership for Sustainable Communities, http://sustainablecommunities.gov/, formed with the US Department of Housing and Urban Development and the US Environmental Protection Agency. That initiative, which led to the Livability grant

[17] Link to new rule: http://www.gpo.gov/fdsys/pkg/FR-2011-08-19/pdf/2011-21273.pdf

program, has funded innovative, less traditional projects that focus on community building along with transportation.

- USDOT has created a very large Transportation Investment Generating Economic Recovery (TIGER) grant program. The TIGER program is a competitive funding program that began in 2009. The program "provides a unique opportunity for the U.S. Department of Transportation to invest in road, rail, transit and port projects that promise to achieve critical national objectives." The United States Department of Transportation administers the program, which is currently in its fourth iteration. The last three rounds have each made more than $500M available (although there are restrictions, such as a set aside for rural projects). So far, a grant round has been issued in each calendar year. It is not certain whether this program will continue going forward.

- A small number of bicycle and pedestrian projects have been funded under the TIGER program. Those projects have generally been larger efforts that have completed major bike networks with connections to many miles of trails – often in urban areas with an environmental justice component.

- FTA has also sponsored a "Transit Investments for Greenhouse Gas and Energy Reduction ("TIGGER") Program." If the Project were to include innovative clean vehicles, this Program might offer an innovative funding opportunity. http://fta.dot.gov/12351_11424.html

State funding: State funding is at least as constrained as Federal funding and generally takes the form of bond proceeds. Eligibility can be secured by legislative earmark, but Executive Branch discretion is required to release the funds.

Chapter 90 funds are allocated to Towns by formula and are generally used for local roadway projects. However, they can also be used for design and/or construction of bicycle and pedestrian projects. Some communities use Ch.90 funds to carry a bicycle/pedestrian project to 25% design, which increases the likelihood of FHWA funding for the balance of the design process.

The "MassWorks Infrastructure Program" is a state program was developed in 2010 under the MA Executive Office of Housing and Economic Development. Under EOHED, the MassWorks Infrastructure Program provides grant funding for:

- The construction, reconstruction and expansion of publicly owned infrastructure including, but not limited to sewers, utility extensions, streets, roads, curb-cuts, parking facilities, water treatment systems, and pedestrian and bicycle access.

- Eligible public infrastructure must be located on public land or on public leasehold, right-of-way, or easement.

A review of the current Program guidelines indicates that elements of, but not the entire Project, may be eligible in connection with mixed-use development along the right-of-way. Design and construction activities appear to be eligible for Program funding. The most recent funding application cycle closed in September 2011; the Program will likely operate on an annual cycle going forward. See http://www.mass.gov/hed/infrastructure for additional information.

Private: Particularly in a fast developing area such as Natick, private funding possibilities may exist. There are also foundations and non-profit groups that support projects such as the CRT. One such group is "Bikes Belong" (http://www.bikesbelong.org/grants/): This organization will pay construction costs (not planning). As described in its promotional material, "The Bikes Belong Grant Program strives to put more people on bicycles more often by funding important and influential projects that leverage federal funding and build momentum for bicycling in communities across the U.S. These projects include bike paths and shared use paths, as well as mountain bike trails, bike parks, BMX facilities, and large-scale bicycle advocacy initiatives. Since 1999, Bikes Belong has awarded 236 grants to municipalities and grassroots groups in 46 states and the District of Columbia, investing nearly $1.9 million in community bicycling projects and leveraging more than $657 million in federal, state, and private funding."

Another area for the Town to explore is the use of Tax Increment Financing to help fund the Project. This would essentially capture some portion of the additional property values to neighboring properties that results from the Project to help fund the Project (see Skokie, http://skokienet.org/node/26047; also Munster, http://www.nwitimes.com/news/local/lake/munster/article_323f1b86-942f-5950-aeb3-1a1d8bfe3265.html).