



Technical Memorandum

Bruce Freeman Rail Trail
Concord, MA

Cultural Resources Survey

January 10, 2008

Submitted to:

Vanasse Hangen Brustlin, Inc.

530 Broadway

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Introduction

The Town of Concord, Massachusetts has contracted with Vanasse Hangen Brustlin, Inc. (VHB) for professional design and engineering services for a non-motorized multi-use recreational path/rail trail over the 3.5 mile section of the proposed Bruce Freeman Rail Trail from the southerly side of Route 2 south to the Sudbury town line (Figure 1). The design and engineering services include a survey and documentation of the historic resources along the proposed trail alignment.

PAL entered into a Subconsultant Contract with VHB for the historic resources survey and documentation. The survey's purpose is to identify historic railroad-related resources along the rail corridor, to document these resources in writing and with photographs, and to provide recommendations for incorporating existing railroad infrastructure in and creating educational opportunities along the rail corridor.

This technical memorandum describes the field and research methodologies employed by PAL in conducting fieldwork and archival research, presents the results of the field survey, and provides recommendations for the integration of railroad-related resources into the landscape design and interpretive programming elements of the finished rail trail.

Methodology

PAL employees John Daly (industrial historian) and Quinn Stuart (architectural assistant) completed a site walk of the 3.5-mile proposed rail trail corridor on August 23, 2007. Prior to the site walk, PAL employees met representatives of the Town of Concord to discuss priorities for the survey. Valarie Kinkade of the Concord Historical Commission, Ashley Galvin of the Concord Historic District Commission, and Henry T. Keutmann, a local rail historian, were in attendance. Henry Keutmann also accompanied PAL staff on the rail corridor walk-over.

PAL staff members documented rail-associated features along the proposed rail trail corridor using a hand-held Global Positioning System (GPS) unit. GPS coordinates for each feature were recorded. Notes on the function, materials, position, condition, and integrity of the features were made. Digital photographs were taken to document the features and their setting. The locations of intact trackage,

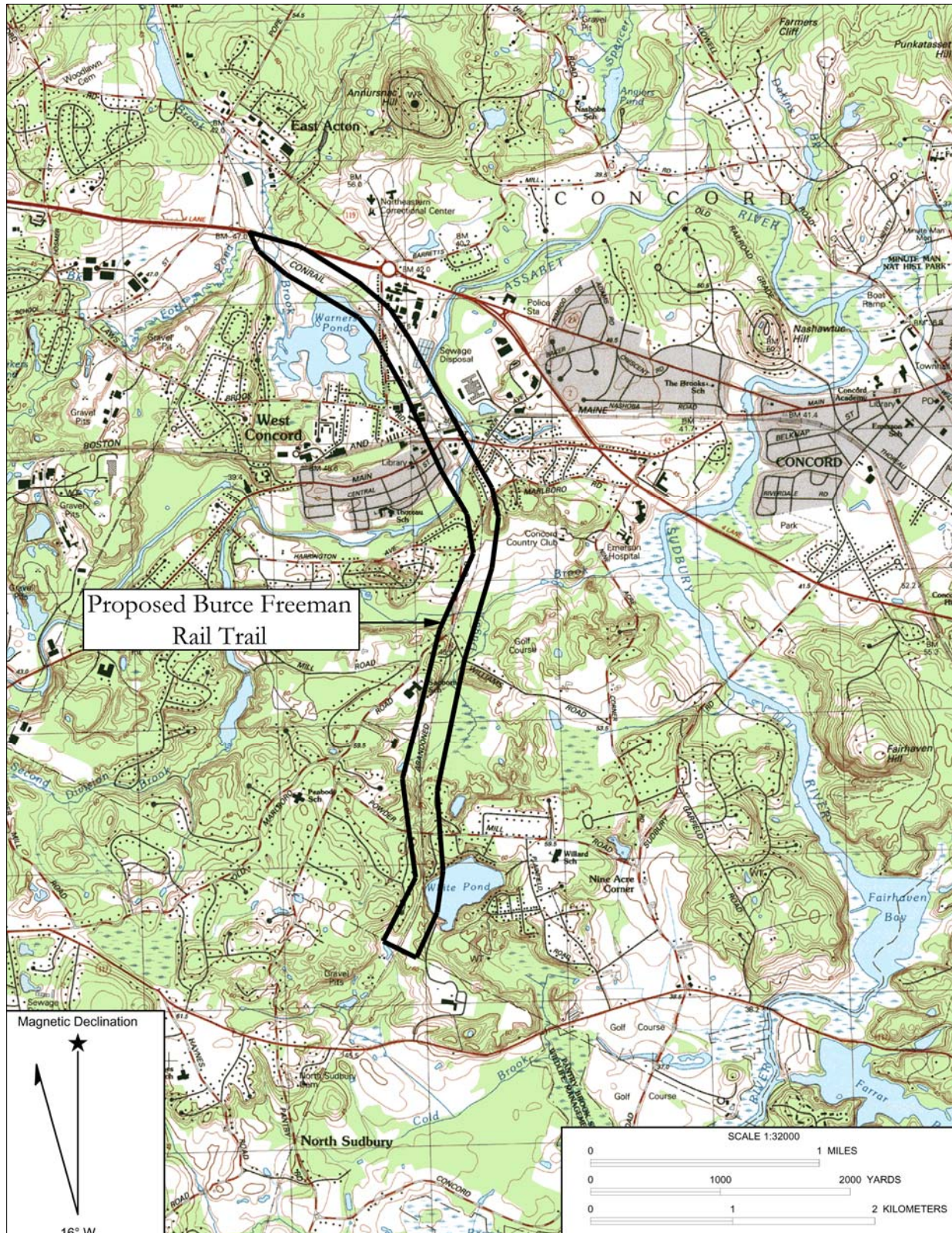


Figure 1. Location of the proposed Bruce Freeman Rail Trail project area on the Maynard, MA, USGS topographic quadrangle.

already included on the base map provided by VHB, were not plotted by PAL staff, but the various track configurations were confirmed in the field. Photographs of and GPS data points for representative samples of the numerous telegraph poles and concrete pipe battery wells along the right-of-way were taken.

Following the field survey, PAL staff conducted basic research to provide a historical context for the resources identified. Secondary sources were consulted to identify the railroad corporations that were historically active in the proposed trail corridor. The Massachusetts Historical Commission's (MHC) *Massachusetts Cultural Resource Information System* (MACRIS) database was queried for previously documented railroad-related historic structures and features about the trail alignment.

Results

Historical Narrative

The route of the Bruce Freeman Rail Trail was built by the Framingham and Lowell Railroad (1872–1978) and hosted the traffic of two other local railroads, the Nashua, Acton & Boston Railroad (1873–1925) and the Middlesex Central Railroad (1873–1962). The rail alignment also crosses the historic right-of-way of the Fitchburg Railroad (1842–1900), which passes through West Concord on its route between Boston, Fitchburg, and points west. In the late nineteenth and early twentieth centuries, a series of acquisitions and mergers brought the route under the control of larger regional and national corporations: the Old Colony Railroad (1879–1893); the New York, New Haven & Hartford (1893–1968); and the Penn Central (1968–1976), and Conrail (1976–1999) before the route was discontinued.

The Framingham and Lowell Railroad was incorporated in 1870 and opened in 1871. The line was subsequently leased by the Boston, Clinton, & Fitchburg Railroad and then the Old Colony Railroad, a dominant railroad in southeastern New England, before it was taken over by the New York, New Haven & Hartford Railroad (the New Haven) in 1893. The line was located in the northern portion of the New Haven's network of lines in southern New England and was primarily a bridge line for freight traffic that originated in Maine, was transferred to the Framingham and Lowell branch at Lowell, and moved to points in southern New England. Little freight traffic originated along the line. Passenger traffic was also scarce. The New Haven replaced steam-powered passenger trains with gas-electric rail cars and highway buses in the 1920s and 30s. After the merger of the New Haven into the Penn Central in 1968, the Fitchburg and Lowell branch fell into disuse, with only about two freight trains per week running over the line in the 1970s. The reorganization of the Penn Central into Conrail in 1976 resulted in further decline of freight traffic on the former Fitchburg and Lowell and a series of abandonments. Only the portion of the line between Framingham and South Sudbury was incorporated into Conrail. The portion of the line through Concord and running between South Sudbury and Chelmsford was owned by the Commonwealth of Massachusetts, who paid Conrail to operate the line. Service between South Chelmsford and North Acton was discontinued in 1982, and portions of the line between South Sudbury and West Concord and from Chelmsford and South Chelmsford were abandoned at the same time. The line between West Concord and North Acton was last used by the Bay Colony Railroad in 1993 and the remainder of the line between Lowell and South Sudbury is now owned by the Commonwealth (Karr 1995:218–219).

Although the Framingham and Lowell built the line, other railroads were important as contributors to commercial and residential development along the line's right-of-way, particularly in the development of West Concord. Concord's first railroad was the Fitchburg (now owned by the Massachusetts Bay Transportation Authority), which was chartered in 1842 as a line between Charlestown and Fitchburg,

Massachusetts. Line construction began in 1843, reached Concord and West Concord in 1844, and was completed through Fitchburg in 1845. In the late nineteenth century the Fitchburg emerged as one of New England's major regional carriers, with a double-tracked line carrying heavy traffic between Boston and upstate New York via the Hoosac Tunnel (Karr 1995:201–205). This line passed through West Concord, which was a small manufacturing village known as Warnerville and named after Ralph Warner, who had operated a pail factory and possessed extensive landholdings in the area (including Warner's Pond) from the 1850s to 1890s. After the construction of the Lowell and Framingham in 1871, West Concord expanded as a local manufacturing center. In addition to Warner's tub and pail business, late-nineteenth-century industrial activities included the Whitney Coal and Grain Company, the Waring Hat Factory, the Boston Harness Company, the Allen Chair Factory, and Burgess' Narrow Webbing Factory (Forbes 1988a and 1988b). Rail facilities built at Concord Junction included the Concord Junction Depot (a/k/a Union Depot)(Photo 23), built in 1893; a freight house, and an engine house and turntable (Allison 2002; Ramsey and Stokey 1987).

Two additional railroads played more minor roles in the development of the Framingham and Lowell Railroad through Concord. The Nashua, Acton, & Boston Railroad, chartered in 1871, connected with the Framingham and Lowell at North Acton and subsequently obtained rights to use the Framingham and Lowell's tracks between North Acton and West Concord, where it could directly interchange with the Fitchburg. After the Old Colony Railroad took over the Framingham and Lowell in 1879, it constructed a second line between West Concord and North Acton. This section of double track right-of-way can still be discerned between West Concord and Commonwealth Avenue (Photo 4c). The Nashua, Acton, and Boxborough was folded into the Boston & Maine Railroad in 1895, and was abandoned in 1926 (Karr 1995:215–217). Finally, the Lexington & Arlington Railroad was a peripheral and short-lived contributor to the story of railroads in West Concord. This line was first chartered under the name the Lexington and West Cambridge in 1846, but later was rechartered at the end of the Civil War as the Lexington & Arlington. In 1872, the Boston & Lowell Railroad, which had purchased the Lexington & Arlington, obtained an additional charter for a corporation named the Middlesex Central Railroad to extend the line from Lexington into Concord. The line was extended again from Concord Center past the Concord State Prison to connect with the Nashua, Acton, & Boston just north of West Concord in 1879. This junction, referred to as Middlesex Junction, was only active between 1879 and 1887. The line between Concord and the prison was abandoned in 1926, but a fragment of the interlocking for the junction still remains south of the prison (Photos 10 and 11) (Karr 1995:226–228). The interchange of these lines with the Framingham and Lowell line, and the interchange with the Fitchburg Railroad resulted in the relatively wide railroad corridor between West Concord village and Commonwealth Avenue.

Resources

The rail corridor is currently abandoned, but retains a moderate to high degree of integrity and is interpretable as a linear railroad landscape that passes through a variety of settings including active farmlands in the vicinity of Route 2; the remnants of the West Concord railroad junction, sidings, and yard; the built-up commercial village of West Concord; and areas of abandoned agricultural land near the Sudbury town line.

In addition to the right-of-way and intact trackage, PAL staff identified and documented 48 railroad-related buildings, structures, and landscape features along the right-of-way. A table of the recorded features, numbered sequentially from north to south, is included in this memorandum (Table 1). Corresponding photographs of the resources are provided in Photos 1 through 47. The resources identified are most easily classified and described according to their function. There are six track bed

support structures along the right-of-way. This category includes four water crossings or remnants thereof on the right-of-way: two steel girder bridges on stone abutments, the stone abutments of a now-missing bridge of an unknown type, and one concrete culvert. Also in this category is one retaining wall identified on the route. There are 21 resources relating to signaling and the regulation of train movements along the line. This category includes semaphores, electrical boxes for relays and switches, whistle posts, crossbucks, flanger signs, and mile markers. Included in this category but uncounted in the survey were the many battery wells and telegraph poles along the way. Because of their quantity and unremarkable design, only representative samples of telegraph poles and battery wells were recorded. Remnant track, switches and switch levers, and rail crossings accounted for eight features along the right-of-way. There are two buildings on or near the right-of-way associated with railroad operation: Union Station and one warehouse foundation. In addition to the active grade crossings, which were not documented as part of this survey, three more unusual private grade crossings where dirt and gravel domestic driveways or farm roads transect the rail corridor were identified and mapped. These crossings, particularly the farm roads, demonstrate the accommodation of established land use practices by the railroad and the adaptation of local landowners to the railroad. More research would be required to identify the original users of these features. In addition to specific railroad structures or features that were mapped in the field and summarized on the accompanying table, the linear earthen and gravel railroad track bed, along with accompanying cuts and fills should be considered an important element in the rail corridor.

Collectively, these resources span a broad range of the railroad's history, from its origins in the third quarter of the nineteenth century up to the 1930s. The majority of rail-related resources identified in the field (29) appear to be associated with early to mid-twentieth century New Haven Railroad operations, as indicated by their materials and construction. This includes all of the electrical and signal equipment on the line and all of the cast concrete whistle posts. The single bridge ruin in the project area, south of West Concord Village at the Assabet River, is possibly attributed to the New Haven by virtue of its heavy stonework (Photos 29a, 29b, 30). Two resources, the intact bridges on the route, are probably New Haven bridges. These bridges (Photos 4a-c, 16a-b), both spanning the Nashoba Brook, appear to be ca. 1920 steel girder structures erected on earlier stone abutments that were modified for the new spans. Stone abutments likely date to the last quarter of the nineteenth century. Three mileposts made of quarry-faced granite may date to the Lowell and Framingham's period of operation (Photos 8, 33, 46).

The proposed Bruce Freeman Rail Trail also passes in close proximity to several resources that are listed in the National Register, have been listed in the Massachusetts *State Register of Historic Places*, or have been locally surveyed. Union Station (also known as Concord Junction Depot), built 1893, is listed in the National and State Registers of Historic Places and occupies a prominent location in West Concord Village, immediately west of the proposed rail trail alignment (Photo 23) (MHC 2007:118; Ramsey and Stokey 1987). The Concord Historical Commission has completed multiple MHC Inventory survey forms for the village of West Concord. The village has a history of settlement dating to the late seventeenth century and emerged as an important commercial and manufacturing center after the arrival of the railroad in 1844 (Forbes 1988a and 1988b). Also surveyed at the local level is Warner's Pond west of Commonwealth Avenue, which was developed as a power source by Ralph Warner in the mid-nineteenth century and developed into a popular local recreation area in the 1880s and 1890s (Forbes 1988c).

Recommendations

Rehabilitation and Preservation

General Recommendations

Historically sensitive rehabilitation of the Framingham and Lowell Railroad right-of-way as a rail trail requires the identification of historic resources, the salvage and reuse of these resources where possible, and planning for the long-term preservation, maintenance, and upkeep. General principles for the rehabilitation of historic landscapes and structures are summarized in *The Secretary of the Interior's Standard for the Treatment of Historic Properties*, attached as Appendix A. For more detailed information, the full text of *The Secretary of the Interior's Standard for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, & Reconstructing Historic Buildings* (Weeks and Brimmer 1995) and *Preservation Brief 36: Protecting Cultural Landscapes – Planning, Treatment and Management of Historic Landscapes* (Birnbaum 1994) should be consulted.

In general, changes made to the historic rail corridor should maintain those characteristics that identify it as such. Important railroad-related features on the proposed rail trail alignment should be retained in situ where possible and if moved, should be replaced in positions approximating the original. In addition to the specific resources documented in this report, the ballast slope, drainage ditches, and the slope of cuts or embankments were designed to meet specific railroad design requirements for drainage and load-carrying capacity. These features are important, if subtle, visual aspects of the right-of-way and are important visual elements of the railroad corridor. At present, the majority of the railroad right-of-way is in the process of reversion to woodland, creating a landscape where the industrial and the natural commingle. An example of this type of landscape exists at Middlesex Junction. Where possible, elements of this reclamation should be preserved along the right-of-way by minimizing the clearing required for construction and by the use of native plant materials in new landscape designs.

To assist trail engineers and designers in prioritizing preservation activities, historic resources identified in the field have been ranked based on the following criteria:

- integrity;
- condition;
- degree of relevance to railroad operations;
- uniqueness as a technological or cultural resource;
- importance as a visual component in the landscape of the railroad corridor; and
- interpretive value.

Resources were assigned a preservation classification of “high,” “medium,” and “low” based on their adherence to these criteria.

New construction should be distinguishable from historic fabric, but designed to reflect characteristics of the railroad landscape. Rail trail elements such as access points, rest areas, fencing and barriers, railings, benches, and plantings should be planned to be minimally intrusive and to require as little alteration to historic features as possible. Designs for street furniture and other new elements should be plain in material and décor to harmonize with the historically austere treatments of railroad rights-of-way. For example, fencing in rural areas might consist of wood planks and posts. The creation of a false sense of

history through the introduction of faux historic materials should be avoided. Where additions need to be made to historic elements, new and old building fabric should be distinguishable and the installation of new fabric should allow for long-term technical reversibility.

Ongoing maintenance and repair needs after the construction of the rail trail will require a more detailed analysis of historic structures and features along the right-of-way. Such a preservation plan should identify the specific maintenance requirements of each structure and identify the parties responsible for upkeep work. Volunteers might also be solicited for basic upkeep work, providing an additional means of public education and outreach.

Specific Recommendations

Bridges, bridge abutments, and underpasses are a highly visible element of the railroad landscape and should be treated accordingly. Design solutions for new bridges, such as at the Assabet River, might include a modern pony truss or a rolled steel I-beam span with a wood deck support system approximating the size and spacing of railroad ties supporting a plank deck and railings. If a new underpass is required where the railroad passes under Powder Mill Road (Photo 48), a simple precast concrete culvert design would be appropriate. Where existing bridge crossings need to be adapted for the rail trail, such as the northernmost crossing of Nashoba Brook (Photos 4a–c), new bridge decks should be designed to harmonize with the existing structure in materials and design. Timber deck support systems with plank deck and railings should be implemented where appropriate historically. Solid concrete decks are a modern, less desirable design solution for historically open deck support structures. Where new bridge railings are necessary for safety, the construction type and material should approximate simple industrial railing construction in shape and mass, without attempting to replicate a pre-existing or speculative structure. Where abutments need to be repaired, or rebuilt, care should be taken to retain the historic stonework and develop appropriate mortar tooling profiles. New bridgework should not attempt to replicate historic structures, but should approximate their massing and construction type. The southern Nashoba Brook Crossing, located approximately 800 feet north of Union Station, presents a preservation challenge because of its extreme width, which allows for three tracks and special work for switches at either end (Photo 16a). In order to preserve and interpret portions of intact track on the bridge and the operable switch just south of the bridge (Resource 19), the trail surface should be routed up the west side of the bridge and the eastern longitudinal half left unmodified. Railings between modified and unmodified portions of the bridge deck and between the trail and the side walls of the deck, which is currently unfenced, would need to be constructed. Fencing constructed of painted steel or aluminum pipe would be the least intrusive design solution in this location.

The switch immediately south of the southern Nashoba Brook Bridge is still operable and presents a unique hands-on interpretive possibility, as mentioned in the Interpretation section below (Photos 18 and 19). In order to maintain the switch in operable condition, the ballast, ties, track, and switch mechanism must be left exposed. Provisions to provide access to the switch mechanism while providing for the protection and maintenance of the resource will need to be developed. The enameled sheet metal day target on the switch stand is now missing, but has been recently photographed (Keutmann 2006) and would be worthy of restoration.

The freight yard landscape between Middlesex Junction (Resource 10) (Photo 10) and the southerly Nashoba Bridge (Resource 16) (Photo 16a) is a particularly compelling example of the commingling of industrial and natural resources in the rail corridor. This portion of the right-of-way contains three tracks and passes through both wooded and open, grassy landscapes. Clearing and grubbing should be kept to a

minimum and the grassy area at Middlesex Junction preserved. The aesthetics in this area are dependent in part on the wide right-of-way occupied by the multiple tracks. Special care should be taken to minimize the amount of track removed from the right-of-way to preserve the sense of activity that the multiple-track corridor conveys.

Access gates that have been requested on the trail south of the Concord State Prison for security concerns should conform to the general stylistic guidelines outlined above. They should be consistent in scale, massing, and materials with typical design solutions found on railroad rights-of-way in urban areas. Bent tubular steel and woven wire fencing mounted on wood posts would be an appropriate design solution.

Interpretation

Interpretation for the rail trail should assist the user in understanding the historic railroad infrastructure as it relates to railroad operations in general and to the greater Concord landscape. Programming should not only explain the history and operation of the Framingham and Lowell Railroad and related lines, but is also an opportunity to explore the historical relationship of the railroad with the town of Concord and its residents.

A brief comparative analysis of themes and events in the history of the town of Concord to the resources and landscapes of the rail corridor suggests that the following interpretive topics would be appropriate for the proposed rail trail:

Railroad History and Infrastructure

The remaining railroad infrastructure, consisting of Union Station, switches and switch stands, signal equipment, and bridges invites a discussion of the general history of the line, the history of the lines it interchanged with, and the function of different types of infrastructure. Possible locations for the interpretation of this topic include the West Concord track junction “diamond” trackwork and Union Station, the northern Nashoba Bridge crossing (whose abutments show alterations in stonework from successive periods of construction), the operable switch at West Concord, Middlesex Junction, the semaphore signal, and any of the granite mile posts (Resources 23, 24, 4, 18, 19, 42, 8, 33, 45) (Photos 23, 24, 4, 18, 19, 42, 8, 33, 46).

Railroads and the Economic Development of West Concord and Concord

As related in the Historical Narrative section above, railroad service through West Concord was integral to the village’s growth in the late nineteenth century. Rail connections to Boston also benefited Concord’s late-nineteenth-century agricultural economy by allowing farmers to sell perishable foodstuffs in the urban market. Concord’s tourism industry has been driven by its two-fold significance as a starting point of the American Revolution and a focal point of the American cultural renaissance, specifically the Transcendentalist movement. Railroads played a critical role in bringing tourists to Concord and shaped the scope and evolution of the tourist industry (Maynard 2005). Suitable locations for the discussion of these topics would be Union Station in West Concord Village, the southernmost farm crossing, and possibly Warner’s Pond (Resources 23 and 48)(Photos 23 and 47).

Railroads and the Transcendentalists

Railroad technology generally and the arrival of railroads in Concord specifically were observed and commented upon by both Henry David Thoreau and Ralph Waldo Emerson (Stilgoe 1983:ix-x, 140, 250). The extension of the Lexington & Arlington Railroad (a/k/a Middlesex Central Railroad) in 1879 to West Concord was opposed by residents of the town on the grounds that it would entail the destruction of a hemlock grove that was a popular recreation site. Emerson was among the signatories on a petition that protested the destruction of the Leaning Hemlocks (Chapin 1997:72–73). A suitable location for the interpretation of this topic would be Middlesex Junction, where the Lexington & Arlington intersected with the Lowell and Framingham (Resource 10) (Photo 10).

The interpretation of these topics might be accomplished by one or a combination of several means, including:

- wayside signs at trail gateways and/or at prominent interpretive landmarks;
- self-guided trifold brochures keyed to numbered trail markers and made available at trail gateways and/or available via the world wide web;
- an interpretive “podcast” with audio segments keyed to numbered trail markers; and
- volunteer-led tours.

Opportunities also exist for developing tours for local schools and for the Massachusetts Historical Commission’s annual Archaeology Week.

Multiple considerations, including initial cost, upkeep, accessibility, and ease of use enter into a choice of interpretive methodologies. Because it is anticipated that other towns will also host portions of the rail trail, it is recommended that final interpretive design be coordinated with those towns so that interpretive methodologies and topical frameworks may be fully integrated. This will facilitate access of interpretive information by the trail-using public by providing a homogeneous interpretive product and a consistent point of access for the interpretive information.

To assist in interpretive and preservation planning activities, each resource has been assigned an Interpretive Value in the data table accompanying this report. Values are based on the following criteria:

- relevance to interpretive topics;
- visual prominence; and
- ability to convey information.

Interpretive values should be considered interim in nature as a full interpretive program for the trail has not yet been developed. Where specific interpretive possibilities for historic resources have been identified, these are noted in the comments column of the data table.

National Register of Historic Places Eligibility

Evaluation of the Bruce Freeman Rail Trail right-of way for eligibility for listing in the National Register of Historic Places was not part of this project scope. Abandoned historic railroad rights-of-way containing similar resources and of similar integrity have been determined eligible for listing in the State and National Register by the MHC (e.g., Wayland, MA). Evaluation of the trail right-of-way and

associated historic and archaeological resources for eligibility as a historic and/or archaeological district should be considered as part of future work.

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Photo 1. Resource 1, Beginning of extant rail and ties, looking southeast.



Photo 2. Resource 2, Relay cabinet, looking northwest.



Photo 3. Resource 3, Relay box on pole, looking east.



Photo 4a. Resource 4, Northerly Nashoba Brook Bridge, looking northwest.



Photo 4b. Resource 4, Northerly Nashoba Brook Bridge, looking south.



Photo 4c. Resource 4, Northerly Nashoba Brook Bridge, detail of east abutment showing seat for second bridge span, looking southeast.



Photo 5. Resource 5, Flanger sign, looking northwest.



Photo 6. Resource 6, Whistle post



Photo 7. Resource 7, Whistle post



Photo 8. Resource 8, Mile post, looking west.

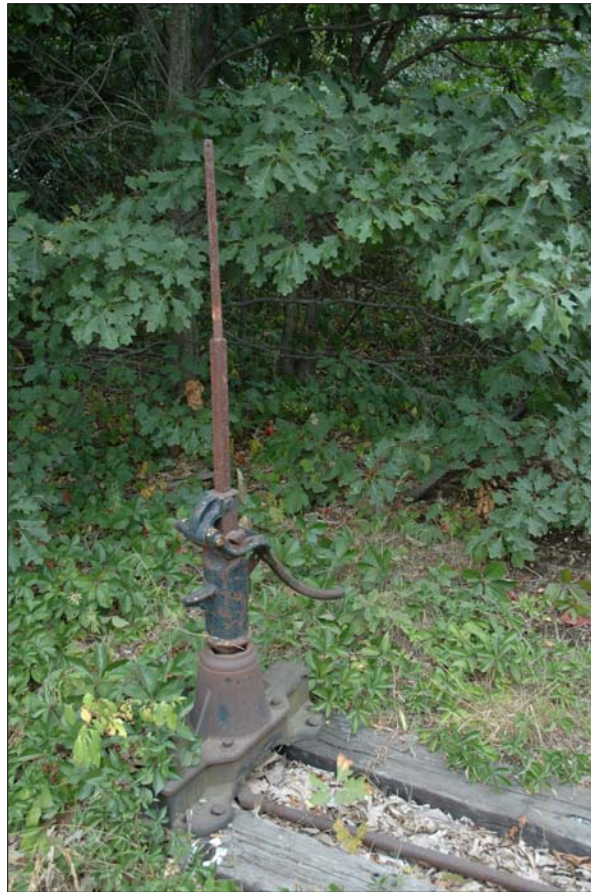


Photo 9. Resource 9, Switch lever, looking east.



Photo 10. Resource 10, Interlocking and track, looking east.



Photo 11. Resource 11, Retaining wall and multi-track yard, looking northeast towards Middlesex Junction.



Photo 12. Resource 12, Whistle post, looking north.



Photo 13. Resource 13, Whistle post, looking southwest.



Photo 14. Resource 14, Loose railroad car coupler knuckle.



Photo 15. Resource 15, Switch lever.



Photo 16a. Resource 16, Southerly Nashoba Brook Bridge, looking north.



Photo 16b. Resource 16, Southerly Nashoba Brook Bridge, looking southwest.



Photo 17. Resource 17, Footing.



Photo 18. Resource 18, Switch, looking west.



Photo 19. Resource 19, Switch stand, looking west.



Photo 20. Resource 20, Warehouse foundation, looking southwest.



Photo 21. Resource 21, Footing.



Photo 22. Resource 22, Flanger sign, looking west.



Photo 23. Resource 23, Union Station, looking south.



Photo 24. Resource 24, Concord Junction diamond, looking south.



Photo 25. Resource 25, Battery well, looking east.



Photo 26. Resource 26, Telegraph pole, looking southeast.



Photo 27. Resource 27, Footing, looking west.



Photo 28. Resource 28, Footing, looking west.



Photo 29a. Resource 29, Assabet River Bridge, north abutment, looking north.

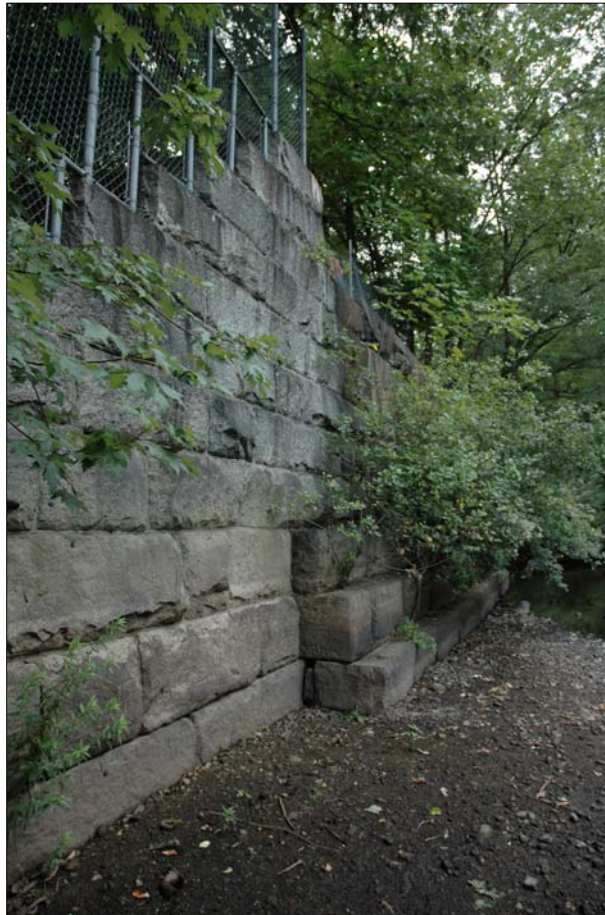


Photo 29b. Resource 29, Assabet River Bridge, north abutment, looking east.

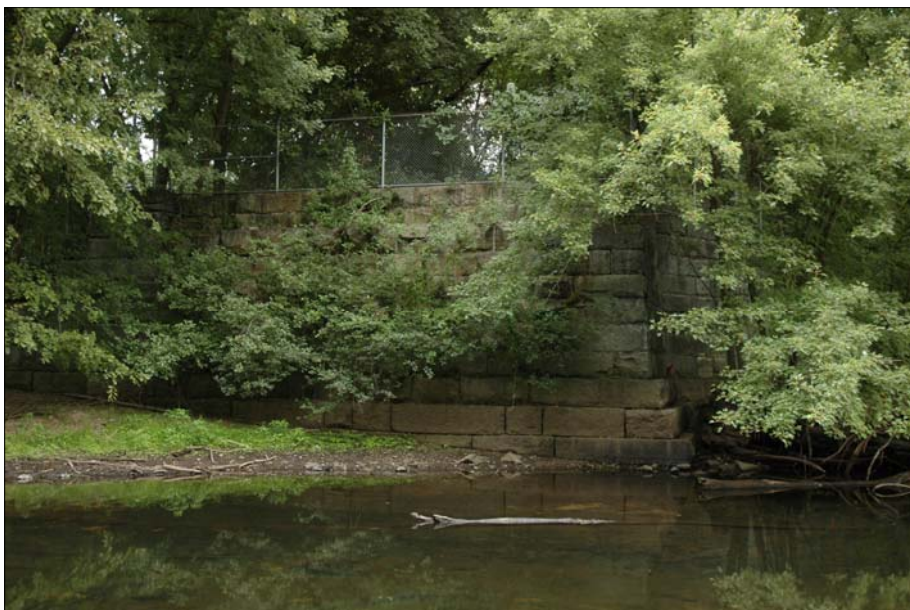


Photo 30. Resource 30, Assabet River Bridge, south abutment, looking south.



Photo 31. Resource 31, Relay box, looking northeast.



Photo 32. Resource 32, Extant rail and ties, looking south.



Photo 33. Resource 33, Mile post, looking north.



Photo 34. Resource 35, Relay box, looking west.



Photo 35. Resource 36, Whistle post.



Photo 36. Resource 37, Culvert.



Photo 37. Resource 38, Flanger sign, looking south.



Photo 38. Resource 39, Flanger sign, looking south.



Photo 39. Resource 40, Crossbuck sign, looking northwest.



Photo 40. Resource 41, Crossbuck sign, looking southeast.



Photo 41. Resource 42, Flanger Sign, looking south.



Photo 42. Resource 43, Semaphore, looking east.



Photo 43. Resource 44, Trough or conduit, looking west.



Photo 44. Resource 45, Private residential crossing, looking north.



Photo 45a. Resource 46, Warning sign, looking south.



Photo 45b. Resource 46, Warning sign, looking northeast.



Photo 46. Resource 47, Mile post, looking southeast.



Photo 47a. Resource 48, Farm crossing, looking southeast.



Photo 47b. Resource 48, Farm crossing culvert detail, looking south.



Photo 48. Culvert on railroad right-of-way below Powder Mill Road, looking north.

Appendix A

The Secretary of the Interior's Standards for Rehabilitation

The Standards (Department of Interior regulations, 36 CFR 67) pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and the interior, related landscape features and the building's site and environment as well as attached, adjacent, or related new construction. The Standards are to be applied to specific rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.