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Environmental Assessment
For Rehabilitating Historic Sites and
Landscapes in the North Bridge Unit



Minute Man

National Historical Park • Massachusetts

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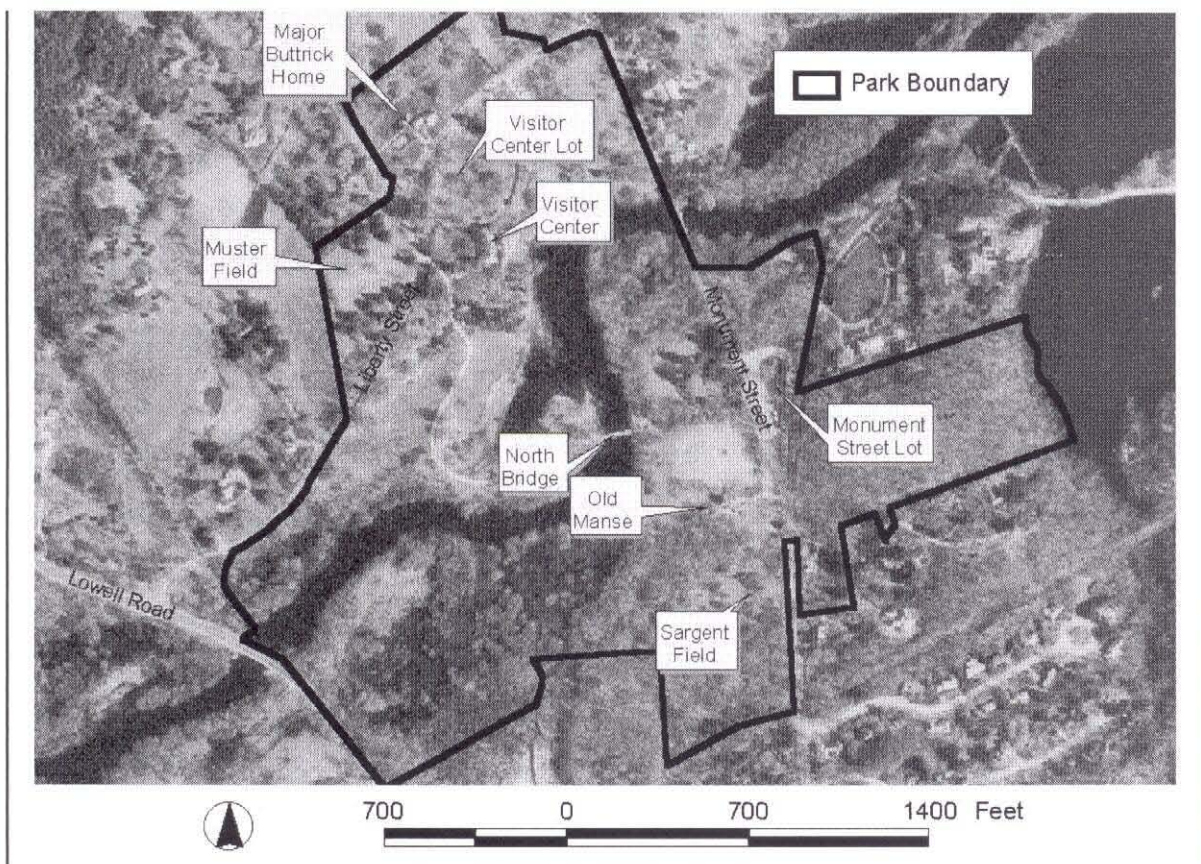


Figure 2. North Bridge Unit Map.

RELATIONSHIP TO EXISTING PLANS

The park is managed under a 1989 General Management Plan (GMP) that defines priority actions that include preservation, rehabilitation and restoration of historic structures and cultural landscapes in accordance with the park's establishing legislation. In particular, the GMP lists protection, restoration, and interpretation of the events and scene of April 19, 1775, and associated landscapes as prominent goals (NPS 1989). The preferred alternative would support GMP goals by re-establishing landscape features and views; restoring structural integrity to the North Bridge; removing non-native plants that detract from the historic scene of 1775; and enhancing interpretive elements and opportunities in the area.

The park also is managed under a 1993 Resource Management Plan (RMP). The RMP defines goals of eliminating or reducing non-native species that degrade native communities and cultural landscapes; rehabilitating degraded historic structures; and maintaining and/or enhancing historic views (NPS 1993). The preferred alternative would support RMP goals by reducing the extent of

non-native plants, restoring multiple views, and repairing historic structures, including the North Bridge and commemorative features.

In addition, the park's 2001-2005 Strategic Plan contains priority goals that include controlling non-native species and improving cultural landscapes and historic features (NPS 2000). The North Bridge Unit supports two, designated cultural landscapes that are in 'fair' condition. The preferred alternative would support Strategic Plan goals by reducing acreage of non-native plants and rehabilitating landscape features necessary to improve landscape conditions.

IMPACT TOPICS

Impact Topics Analyzed in this Document. Analyses of the impacts of the project alternatives on the following environmental features are presented in this EA: (1) noise/soundscapes, (2) biodiversity and wildlife, (3) fish and fish habitat, (4) wild and scenic river values, (5) agriculture, (6) views and viewsheds, (7) North Bridge, (8) monuments, (9) cultural landscapes, (10) archeological resources and (11) visitor experience.

Impact Topics Dismissed from Further Analysis in this Document. The topics listed below either would not be affected or would be negligibly affected by the project alternatives considered in this EA (negligible effects are localized and immeasurable or at the lowest levels of detection). Therefore, these topics have been dismissed from further consideration and analysis.

Geology, Including Prime and Unique Farmland Soils. According to the U.S. Department of Agriculture, a variety of soils occur in the project area, including "prime" farmland soils (i.e., Charlton Fine Sandy Loam, 3-8% slope) and "locally important" farmland soils (i.e., Charlton Fine Sandy Loam, 8-15% slope) (NRCS 1995; Figure 3). In addition, several soils in the area are classified as "hydric", including Scarboro Loamy Sand, 0-3% slope; Saco Mucky Silt Loam; and Wareham Loamy Sand, 0-5% slope.

Geology underlying the park is dominated by igneous bedrock of granite that formed approximately 280 million years ago when the African continental plate collided with the North American continental plate (Freeman and Nasuti 1998).

Although the project area supports important soils, including prime farmland and hydric soils, the alternatives considered in this EA would not remove natural soils; increase erosion; disturb subsurface soils in fields; or eliminate historically farmed areas from potential cultivation. In addition, no activities would affect underlying geological features. Therefore, soils and geology were dismissed from further consideration.

Air Quality. Air quality at the park is influenced by regional industries and urban development, including commuter and commercial traffic and regularly meets federal standards for all pollutants except ozone, which occasionally exceeds federal criteria (NPS 1993).

↑ Resource management Plan

The Clean Air Act of 1963, as amended, and NPS policy require the NPS to protect air quality in parks. Although the preferred alternative would require limited use of trucks and/or heavy equipment during limited construction activities (e.g., regrading paths and bridge repairs), emissions and dust associated with these activities would be short-term and negligible in a local and regional context. Therefore, this topic was dismissed from further consideration.

Bridge piles would not be replaced during bridge repairs and lumber would be treated off-site with NPS-approved products to prevent contamination of the river and other water sources. Carpentry work, such as hand-hewing timber, that could generate debris also would be completed in upland areas away from wetlands and waterways.

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foregoing information, the actions evaluated in this EA are exempt from NPS 'Statement of Findings' requirements for actions that affect floodplains in accordance with exemptions V(B)(1), V(B)(2) and V(B)(4) of the NPS's *Floodplain Management Guideline*, which cover "actions which are functionally dependent upon locations in proximity to water" [including debris removal], "functions that are often located near water. . .but do not involve overnight occupation", and "historic. . .structures, sites, or artifacts whose location is integral to their significance".

Wetlands and Jurisdictional Waters. Jurisdictional waters of the United States and areas potentially subject to regulation under the State Wetlands Protection Act are present in the project area. Jurisdictional waters were determined in accordance with U.S. Army Corps of Engineers (Corps) criteria (40 Code of Federal Regulations 110 *et sequentia*; Corps 1987) and Massachusetts Department of Environmental Protection (DEP) criteria (310 Code of Massachusetts Regulations 310 *et sequentia*; DEP 1995). Wetland boundaries in other areas were determined according to NPS criteria (NPS Procedural Manual 77-1, *Wetland Protection* [NPS 77-1]; USFWS 1979) in accordance with Executive Order 11990, *Protection of Wetlands*. According to Corps criteria, jurisdictional wetlands must support wetland hydrology, wetland vegetation and hydric soils, while NPS wetlands must only support wetland hydrology and either wetland vegetation or hydric soils. According to Corps criteria, linear waterways characterized by a distinct "bed and bank" also are considered jurisdictional waters. In the project area, a variety of features, including the Concord River and tributaries, as well as adjacent wetlands, meet regulatory and NPS criteria. Any actions that would discharge pollutants regulated under the Federal Clean Water Act into jurisdictional waters would be subject to Corps, as well as DEP, jurisdiction. Actions that do not discharge regulated pollutants would not require permitting. Wetlands and waterways present in the project area include the Concord River and an unnamed tributary, scrub-shrub wetlands, emergent marsh and hardwood swamps.

No actions proposed under the preferred alternative would fill or discharge regulated pollutants into wetlands or waterways subject to the Federal Clean Water Act and no Federal permits are required. Prior to removing sediments from the Concord River, necessary permits would be obtained from the State and local governments (see "Consultation and Coordination" section below for further information). Effects on wetland habitats and wildlife are considered below under effects of project alternatives on 'biodiversity and wildlife' and 'fish and fish habitat'.

Threatened and Endangered Species. Based on biological surveys of the project area and known distributions and life history requirements of potential species of concern, the park has determined that federally threatened, endangered, proposed or candidate species, or critical habitat for such species, are not present in the project area and would not be affected by the preferred alternative. The U.S. Fish and Wildlife Service has concurred with this determination (Appendix A) and effects on federally-regulated species and habitats were dismissed from further consideration.

Although State-species of concern have been documented in the park, no such species have been identified in the North Bridge Unit, despite extensive surveys (Thompson and Jenkins 1992; Windmiller and Walton 1992; Zielinski 1992; August et al. 1993; Wildlife Conservation Society unpublished data; Paton unpublished data). For instance, the State-threatened Blanding's turtle

(*Emydoidea blandingii*) and Britton's violet (*Viola brittonianna*) have been documented in the Battle Road Unit. Other species of concern also occur in the Battle Road Unit, including Cooper's hawk (*Accipiter cooperii*), blue-spotted salamander (*Ambystoma laterale*), spotted turtle (*Clemmys guttata*), mystic-valley amphipod (*Crangonyx aberrans*), and elderberry long-horned beetle (*Desmocerus palliatus*). Therefore, based on the absence of suitable habitat or absence of sensitive species where suitable habitat exists, the NPS has determined no species of State concern would be adversely affected under the preferred alternative.

Socioeconomics and Environmental Justice. Socioeconomic conditions in and adjacent to the park are influenced primarily by town and regional corporations and businesses, as well as tourism associated with the park and other historic and educational facilities in the area. Business and tourism would not be affected under the preferred alternative. Furthermore, median-housing costs in Concord exceed \$600,000 (The Warren Group 2002) and few socially or economically disadvantaged households are present in the area, none of which would be affected by the alternatives considered in this document. Therefore, socioeconomics and environmental justice are not considered further in this EA.

ALTERNATIVES INCLUDING THE PREFERRED ACTION

NO ACTION

Under the no-action alternative, the park would not initiate actions to repair and rehabilitate features or control non-native, invasive plants in the North Bridge Unit. Historic structures and cultural landscapes would continue to deteriorate. The North Bridge would be repaired on an "as-needed" basis with planks and timbers being replaced as they break or become hazardous to visitors. Commemorative monuments would not be stabilized and associated landscapes would not be rehabilitated. The Liberty-Street crossing from the North Bridge Visitor Center to the Major John Buttrick House would not be formalized and the Monument-Street crossing would not be improved. Actions would not be taken to curtail erosion of pathways, maintain existing fields or control non-native, invasive plants. Amphitheaters near the Visitor Center and North Bridge, general-site furnishings, and allee plantings and the eastern approach to the North Bridge would not be rehabilitated. In addition, plantings intended to conceal the Monument-Street comfort station would not be replaced and safety concerns associated with overflow parking facilities at Sargent's Field, south of the Old Manse, would not be rectified and eroded, pathway sediments would not be removed from the Concord River near the northeastern Bridge abutment.

SAVE RESOURCES AND PROVIDE SAFE ACCESS (PREFERRED ALTERNATIVE)

The preferred alternative includes multiple options necessary to repair and maintain the structural integrity of historic features, rehabilitate and protect cultural landscapes, improve interpretive elements, and enhance visitor experience in the North Bridge Unit of the park. As presented below, options will be described from the northern edge of the project area near the unit Visitor Center and proceed southeast towards the bridge and Monument Street.

Liberty Street Crossing and Approach to the Major John Buttrick House. As part of the preferred alternative, a crosswalk would be created from the visitor-center parking lot to the

prefer higher-energy streams, such as brook trout and black-nosed dace, typically require gravelly substrates over which to breed.

WILD AND SCENIC RIVER VALUES

Wild and Scenic Rivers are designated based on "outstandingly remarkable values" that warrant protection and preservation of designated rivers in free-flowing conditions (Public Law 90-542). Rivers and river sections can be designated "wild", "scenic" or "recreational", depending on the condition of the waterway. Designated waterways typically fall under the jurisdiction of the NPS, which has the responsibility for determining the effects of proposed actions on designated rivers.

Portions of the Sudbury, Assabet and Concord Rivers (SuAsCo) were incorporated into the Wild and Scenic Rivers program in 1999. The section of the Concord River in the project area was designated 'recreational', which means it is easily accessible by road and supports shoreline development. Values for which the SuAsCo was designated include outstanding ecology, outstanding history, outstanding scenery, outstanding recreation and outstanding place in literature. Features in the project area support all of these values.

Ecology - The North Bridge Unit supports one of the largest patches of protected land along the Concord River and includes a variety of ecologically important habitats including forests, meadows, marshes and swamps. These habitats support a variety of wildlife, as described above.

History - Minute Man National Historical Park was established for historic events that transpired in the area, particularly skirmishes that occurred on April 19, 1775 at the North Bridge.

Scenery - Views of diverse landscapes and historic features create remarkable scenery from the river by boat, as well as from land. Autumn with its red, orange, and yellow foliate is a particularly popular time for visiting the North Bridge.

Recreation - Visitors arrive at the North Bridge from all over the globe by car, by bicycle, by foot and by boat to wander trails, to visit sites and to fish. Boating is particularly popular recreational past-time in the area.

Place in Literature - The North Bridge and the Concord River have been addressed and described in a variety of works by well-known authors, including Ralph Waldo Emerson, Henry David Thoreau and Nathaniel Hawthorne. For instance, Emerson's 1836 *Concord Hymn* is engraved on the Minute Man statue and Thoreau chronicled a trip on the Concord River in his 1849 *A Week on the Concord and Merrimack Rivers*.

AGRICULTURE

The project area is located within one of most endangered agricultural areas in the United States (American Farmland Trust [AFT] 1997). According to the AFT, urban/suburban development in the area nearly doubled between 1981 and 1997, while acreage of hayfields and pastures has declined by 60 percent since the 1940s (Vickery and Dunwiddie 1997).

Land within the North Bridge Unit has been farmed for centuries and nearby lands may have been farmed by Native Americans prior to the first arrival of Europeans in the area (Donahue 1994). Although open forests may have occupied most upland areas of the current North Bridge Unit prior to the 1600s, trees had been cleared from most of the area by the 1700s and land had

been converted to pasture and cropland (Malcolm 1985). Until the mid-1900s, agriculture was common in the area, including abundant orchards, hayfields, pastures and vegetable crops. In recent years, hay has been the most consistent crop in the North Bridge Unit. Although many crabapples have colonized sites, only three true apple trees remain in the project area.

Portions of the North Bridge Unit continued to be support productive hayfields and pasture under the park's agricultural leasing program until 2001. The largest area farmed in the project area is a hayfield located between the Visitor Center and the North Bridge. Although the field presently is less than four acres, photographs from the early 1900s indicate it previously was much larger (Figure 16). Loss of productive agricultural land to mostly non-native trees and shrubs has reduced farmable acreage in the project area to the point where it is no longer economically viable for local farmers to harvest them.

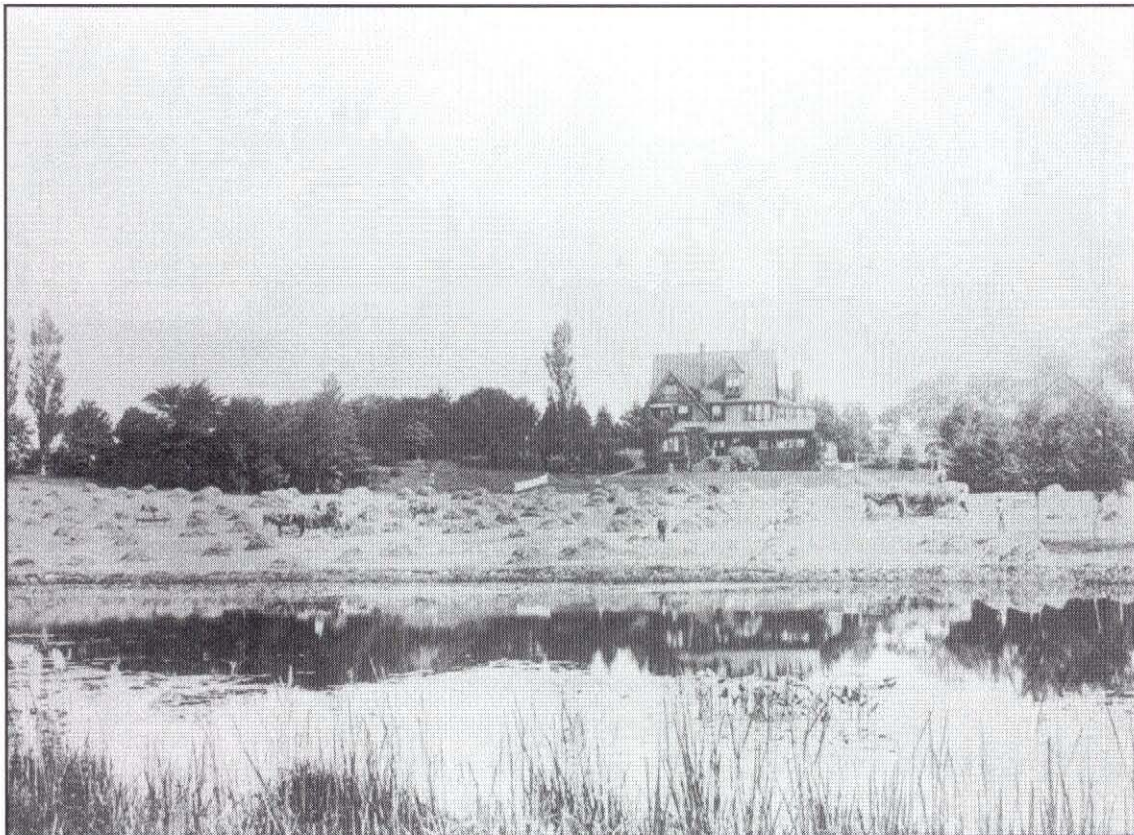


Figure 16. Hay being harvested in the 1880s along the Concord River in the field between the North Bridge and the present Visitor Center. The buildings in the photograph were demolished in the 1950s prior to establishment of the park. Photo courtesy of the Concord Free Public Library.

VIEWS AND VIEWSHEDS

Minute Man National Historical Park was established to preserve and interpret historic sites associated with the beginning of the American Revolution (Public Law 86-321). An important element that led to the minute men marching on British soldiers at the North Bridge were views from the Muster Field, located west of the present Visitor Center (Figure 2), to Concord Center