National Park Service
U.S. Department of the Interior

Keweenaw National Historical Park

QUINCY MINE HISTORIC LANDSCAPE

Cultural Landscape Report and Environmental Assessment



May 2010



Cover Illustration: View of the Quincy Mine Hoist Houses and surrounding landscape, taken from the No. 2 Shaft-rockhouse, facing east, 2006 (source: Quinn Evans Architects)

Publication Credits: Information in this publication may be copied and used, with the condition that full credit is given to the authors, their companies, and the National Park Service. Appropriate citations and bibliographic credits should be made for each use.

Notice: The manuscript has been authored by Quinn Evans Architects, Woolpert, Inc., and Keweenaw National Historical Park, under Task Order No. Q641007K472 with the National Park Service. The United States Government retains and the publishers, by accepting the article for publication, acknowledges that the United States Government retains a non-exclusive, paid-up, irrevocable, world-wide license to publish or reproduce the published form of this manuscript, or allow others to do so, for United States Government purposes.

United States Department of the Interior Mission Statement: As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally-owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

Quincy Mine Historic Landscape

Keweenaw National Historical Park

CULTURAL LANDSCAPE REPORT/

ENVIRONMENTAL ASSESSMENT

PREPARED FOR:
NATIONAL PARK SERVICE
KEWEENAW NATIONAL HISTORICAL PARK
AND
MIDWEST REGIONAL OFFICE

PREPARED BY:
QUINN EVANS | ARCHITECTS
1037 SHERMAN AVENUE
MADISON, WISCONSIN 53703
AND
WOOLPERT, INC.
1910 PINE STREET, SUITE 420
ST. LOUIS, MISSOURI 63103
AND
KEWEENAW NATIONAL HISTORICAL PARK

GOVERNMENT TASK ORDER: Q641007K472

Final
May 2010

THIS PAGE LEFT BLANK INTENTIONALLY

PROJECT CREDITS

NATIONAL PARK SERVICE
Keweenaw National Historical Park
James Corless, Superintendent
Steven K. DeLong, ASLA, Landscape Architect
Jo Urion, Historian

NATIONAL PARK SERVICE
Midwest Regional Office
Marla McEnaney, Historical Landscape Architect

QUINN EVANS | ARCHITECTS
Steven C. Jones, AIA, Principal-in-Charge
Brenda W. Williams, ASLA, Project Manager
Catherine Dammann, MALA

WOOLPERT, INC.
Will Ballard, Environmental Specialist

GOVERNMENT TASK ORDER: Q641007K472

Final
May 2010

THIS PAGE LEFT BLANK INTENTIONALLY

A C K N O W L E D G E M E N T S

A number of groups and individuals have added substantial value to this document by generously contributing their knowledge and time at various points in the process of developing the report. Throughout the project, the staff at Keweenaw National Historical Park has provided information, assistance, criticism, and dedication to the resources, greatly enhancing the report. Steven K. DeLong served as the project manager and has worked diligently to ensure that the report meets a high standard of quality. He prepared sections of the report focused on the Quincy Smelter, the Mine Management Area, and Portage Lake Overlook. In addition, he and Jo Urion conducted research and crafted the narrative for the Landscape History section of the report. Other staff members have participated in planning meetings and patiently answered questions throughout the project. Superintendent James Corless has provided insight and support as well as strong communication with Keweenaw Heritage Site partners and other entities.

The Keweenaw Heritage Site partners have been an essential part of this project and their participation has been exceptional. The willingness of representatives of the Quincy Mine Hoist Association and the A.E. Seaman Mineral Museum to come to the table and discuss how their organizations may operate in the future helped to ensure that this Cultural Landscape Report will provide a useful guide for years to come. In addition, participation by representatives of the Michigan Department of Transportation, Franklin Township, the City of Hancock, and members of the general public, helped to develop suitable recommendations for treatment in the light of the overall community.

Members of the National Park Service Midwest Regional Office have provided helpful review comments and technical advice throughout the project.

THIS PAGE LEFT BLANK INTENTIONALLY

Finding of No Significant Impact: Quincy Mine Historic Landscape Cultural Landscape Report / Environmental Assessment Keweenaw National Historical Park, Michigan

Background

Keweenaw National Historical Park was established by Public Law 102-543 in 1992. The park commemorates the rich and complex story of copper mining on the Keweenaw Peninsula. The purpose of Keweenaw National Historical Park is fourfold:

- *Tell the story of the role of copper in the development of an American industrial society and the effects on the Keweenaw Peninsula of providing that copper.*
- *Identify, study, and preserve the nationally significant historical and cultural sites, structures, districts, landscapes, and other resources of the Keweenaw Peninsula for the education, benefit, and inspiration of present and future generations.*
- *Interpret the historic synergism among the geological, aboriginal, sociological, cultural, technological, economic, and corporate influences that relate the stories of copper on the Keweenaw Peninsula.*
- *Develop and sustain into the 21st century the park and the community through a blend of private, local, state, and federal management, investment, and ownership.*

The National Park Service (NPS) has completed a Cultural Landscape Report and Environmental Assessment (CLR/EA) that provides an analysis of the environmental consequences for the management concept of rehabilitating the historic landscapes of the Quincy Unit of Keweenaw National Historical Park. The focus of this integrated CLR/EA was on the Quincy Unit, which includes approximately 1,120 acres immediately northeast of Hancock, Michigan. The 1,120 acres includes lands owned by the NPS, non-profit organizations and private landowners.

A purpose of the CLR/EA is to document and record the historical and current conditions of the Quincy Unit landscape and provide guidance for its future treatment and use. Another purpose of the CLR/EA is to inform the NPS and the Keweenaw Heritage Site (KHS) partners (as well as any potential partners), local government and private landowners on preservation of significant cultural and natural resources while providing for visitor education and use.

The CLR / EA is needed to guide treatment and use of the aboveground resources associated with the significant historic landscapes within the Quincy Unit. The park's General Management Plan indicates the need for a CLR, in part because the NPS owns only a small portion of the land within the Quincy Unit. Private landowners, non-profit and institutional organizations, own the majority of land within the Quincy Unit. The CLR provides a comprehensive understanding of the historic development of the landscapes, evaluation of their

significance and treatment recommendations that are appropriate to the historic characteristics. These treatment recommendations were needed to accommodate current and future needs of the NPS, KHS partners and visitors.

Alternatives

The CLR/EA includes four alternative landscape treatments for the Quincy Unit in its entirety and a smaller area focus on the Historic Industrial Core of the Quincy Unit. The landscape treatments for the Quincy Unit are at a broader, general scale while the treatment recommendations for the Historic Industrial Core of the Quincy Unit are at a more detailed scale.

The treatment alternative descriptions include the current management (no action alternative) and three action alternatives with proposals for changes to the management of the landscape. The Current Management Alternative (no-action alternative) provides the basis for evaluating changes and impacts associated with the three action alternatives. The action alternatives are titled Treatment Alternative A, Treatment Alternative B, and Treatment Alternative C. No other alternatives were evaluated.

Current Management Alternative (no-action)

Under the no-action alternative, the historic landscape at the Historic Industrial Core of the Quincy Unit would continue to be managed as it is currently and no new policies would be implemented. With this treatment alternative, the primary historic landscape resources, including the major intact buildings, large building ruins, and limited landscape features, would be preserved and interpreted.

This alternative would not meet project objectives because many of the unit's resources, including an extensive collection of landscape features, would be left to deteriorate. This would eventually result in the loss of significant resources. Successional vegetation would fill in where not impeded, decreasing historic integrity while increasing wildlife habitat and creating a more naturalistic environment in the Historic Industrial Core. The emphasis of this treatment alternative is on maintaining existing features.

Treatment Alternative A

This alternative provides for rehabilitation of cultural resources with an emphasis on landscape preservation. This treatment alternative recommends establishment of a visitor center at the Supply House. This alternative better meets project objectives than the no-action alternative and Treatment Alternative B, but would not meet project objectives as well as Treatment Alternative C. Treatment Alternative A would result in less documentation and evaluation of existing conditions of the historic landscapes than the other action alternatives.

Treatment Alternative B

This treatment alternative also provides for rehabilitation of cultural resources with an emphasis on landscape restoration; however this treatment alternative recommends establishment of a NPS visitor center outside the Historic Industrial Core; which would provide for less effective visitor contact. This treatment alternative would meet project objectives better

than the no-action alternative, but would not meet project objectives to the extent that Treatment Alternatives A and C would.

Selected Alternative (Preferred Alternative) – Treatment Alternative C

Treatment Alternative C was determined to be the selected alternative and the environmentally preferable alternative because it meets the project objectives better than the no-action alternative and any other treatment alternative. Treatment Alternative C provides for rehabilitation of cultural resources with more emphasis on landscape restoration than the no-action or other treatment alternatives. Treatment Alternative C recommends that one combined visitor center would serve the A.E. Seaman Museum, the NPS and the Quincy Mine Hoist Association. Treatment Alternative C was determined to be the environmentally preferred alternative when measured against the six criteria listed in Section 101 of NEPA. The recommended treatments for the Selected Alternative are summarized below.

Criterion 1

Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations, is best met by the Selected Alternative, which emphasizes:

- Reuse and restoration of existing lands already disturbed by past mining activities.
- Minimal disturbance of undisturbed lands.
- Selective removal of vegetation to allow interpretation of viewsheds and cultural resources.

Criterion 2

Assure for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings, is best met by the Selected Alternative, which emphasizes:

- Reestablishment of visual connections between physical features of the park and the surrounding landscape.
- Restoration and enhancement of landscape features.
- Stabilization and preservation of historic industrial ruins.
- Increased accessibility to historic landscapes and structures.

Criterion 3

Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences, is best met by the Selected Alternative, which emphasizes:

- Coordination with landowners and the Michigan Department of Transportation on roadway signage guidelines.
- Coordination and cooperation with local communities, non-NPS landowners and park partners on planning and implementation of the CLR recommendations.
- Minimizing pedestrian-vehicle conflicts by providing visitor parking on both sides of U.S. 41.

Criterion 4

Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice, is best met by the Selected Alternative, which emphasizes:

- Maximizing the rehabilitation of significant cultural features in the historic landscapes and reduce the number of the non-contributing and incompatible landscape features.
- Working with private landowners to relocate or redevelop incompatible infill development and restore landscape elements compatible with the historic core.
- Working with local communities and landowners on guidelines for compatible development.
- Increasing the ability of visitors to experience the historic landscapes through establishment of pedestrian pathways and linkages to regional trails.
- Providing numerous interpretive waysides along pedestrian paths to allow for self-guided tours.
- Minimizing disturbance to undisturbed areas, and avoiding disturbance to archeological sites.

Criterion 5

Achieve a balance between population and resource use that will permit high standards of living and wide sharing of life's amenities, is best met by the Selected Alternative, which emphasizes:

- Providing increased accessibility between non-NPS landowners to provide pedestrian access.
- Developing research partnerships with universities.
- Coordination of all planning and implementation efforts with partner organizations, local communities and non-NPS property owners.
- Providing visitor amenities such as picnic areas and multiple opportunities for self-guided or tour-led interpretation.

Criterion 6

Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources, is best met by the Selected Alternative, which emphasizes:

- Reuse of numerous on-site buildings and structures for visitor contact, interpretation and administrative functions.

Why the Selected Alternative Will Not Have a Significant Effect on the Human Environment

The intensity or severity of impacts resulting from implementation of the Selected Alternative is evaluated using the ten (10) criteria listed in 40 CFR 1508.27. Key areas in which impacts were evaluated include cultural resources, socioeconomics, visitor experience and park operations. As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Criterion 1

Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

The Selected Alternative would result in long-term minor and moderate beneficial impacts to cultural resources at the Quincy Unit of Keweenaw National Historical Park. The benefits to cultural resources result from proposals for restoration, rehabilitation and preservation of

cultural landscape features, historic structures and removal of non-contributing elements. Proposed actions in the Selected Alternative would result in no adverse effects to resources listed or eligible for listing in the National Register of Historic Places. There would be long-term moderate benefits to the socioeconomic environment because of the enhanced partnerships, construction activities, adaptive use of historic structures, and anticipated increases in tourism revenue and staff employment for the NPS and partner organizations. There is a potential for long-term, moderate beneficial impacts to visitor experience due to numerous landscape improvements. Landscape improvements providing benefits to visitors would include wayside exhibits throughout the Quincy Unit, improved pedestrian circulation and enhanced coordination with KHS partners. The selected alternative would result in short and long-term minor to moderate benefits to park operations through cooperative interpretive and management efforts with park partners.

Criterion 2

The degree to which the proposed action affects public health or safety.

The Selected Alternative would improve public safety and health for both NPS staff and visitors by providing multiple parking lots, which would minimize pedestrian-vehicle conflicts, since U.S. 41 bisects the Quincy Unit. The CLR/EA recommendations include improving pedestrian access and circulation throughout the landscape as well as providing trailheads for regional bike trails. New facilities would be constructed to be accessible, as specified by the criteria of the Architectural Barriers Act of 1968. Measures would be implemented to mitigate safety hazards to visitors and workers during periods of construction. Public and staff safety would be maintained through efforts such as performing construction activities during non-peak visitor season, preventing visitors and staff to enter construction areas, and limiting the extent of the construction zones.

Criterion 3

Unique characteristics of the geographic area such as proximity to historic or cultural resources, parklands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

The Selected Alternative does not affect any parklands, prime farmland, or wild and scenic rivers. Wetlands would be avoided by proposed actions of the selected alternative. There are no known federally listed species, or critical habitat within the park. Most extant historic and cultural resources would be rehabilitated, restored, preserved or stabilized. Landscape features that are incompatible or non-contributing to the historic significance of landscapes within the Quincy Unit would be removed from NPS owned property. Private landowners would be provided guidance on the removal of non-contributing features.

Criterion 4

The degree to which the effects on the quality of the human environment are likely to be highly controversial.

The Selected Alternative is not highly controversial. No issues arose during the preparation of the CLR/EA from park staff and no issue was brought to the park's attention during the public review period that indicated a dispute with either the methodology or results of the analysis of topics.

Criterion 5

The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

There were no highly uncertain, unique, or unknown risks identified during either the preparation of the CLR/EA or the public review period.

Criterion 6

The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The Selected Alternative does not establish a precedent for future actions with significant effects since the alternative improves existing facilities while reducing impacts to the park at an already disturbed site. Furthermore, the level of development at this site proposed by the Selected Alternative is within the guidelines set by the park's Draft Resource Stewardship Plan and General Management Plan.

Criterion 7

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

The CLR/EA was prepared to protect the resources of the Quincy Unit from both individual impacts associated with the selected alternative and identified cumulative impacts. Likely future actions taken individually or collectively under the Draft Resource Stewardship Plan or the General Management Plan as currently written would not result in a cumulative impact to the human or natural environment.

Criterion 8

The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

The selected alternative would not have an adverse impact on cultural landscapes or historical buildings or structures listed in or eligible for listing in the National Register of Historic Places. The recommendations for archeological inventories will identify the potential for eligible archeological resources at the Quincy Unit. The Michigan State Historic Preservation Officer (SHPO) was initially contacted early in the preparation of the CLR/EA to provide background information on the project. A draft CLR/EA was forwarded to Michigan SHPO in the winter of 2008 for their comment. The Michigan SHPO responded with a letter stating their general concurrence with draft CLR's landscape treatment guidelines and recommendations for archeological inventories, but would wait until the public review period to fully evaluate the potential affects of the treatment alternatives. The Michigan SHPO reviewed the public review draft of the CLR / EA, which was distributed on August 10, 2009. In a phone conversation with Steve DeLong (KEWE), Brian Grenell from the SHPO explained that SHPO did not concur with the findings that there would be adverse effects to archeological resources from the proposed archeological inventories. The SHPO stated that there would be no adverse effects from the archeological inventories. An Errata Sheet was prepared addressing changes made to the document to correct this evaluation (changed from "adverse effect" to "no adverse effect"). The revised sections of the CLR / EA were forwarded to Michigan SHPO, which responded in a letter dated 28 April 2010, with concurrence that there would be no adverse effects from the proposed Selected Alternative. The Errata Sheet is included at the beginning of the CLR/EA.

Criterion 9

The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

There are no federally listed plant or animal species known within the boundaries of the Quincy Unit. Park staff sent a Section 7 coordination letter to the U.S. Fish and Wildlife Service (USFWS) on June 29, 2007 requesting data on Threatened or Endangered species. The Michigan Natural Features Inventory (MNFI) was also contacted with a letter in July 2007. The USFWS and MNFI responded with data on the Canada lynx, a federally listed threatened and state-listed endangered species that may occur in the region. Suitable habitat for the Canada lynx is large boreal forests (primarily spruce and firs) which is not present at the Quincy Unit. The MNFI also provided data on Douglas' hawthorn, a state listed species of concern that is located in Houghton County and may be within the park. Suitable habitat for the Douglas' hawthorn could exist in the disturbed lands of the Quincy Unit; however, selective vegetative management would avoid taking of this species. Subsequent to distribution of the CLR / EA for public review on August 10, 2009, the U.S. Fish and Wildlife Service relisted the gray wolf as an endangered species. The U.S. Fish and Wildlife Service relisted the gray wolf in September 2009. There are no known gray wolf individuals or packs in or in the vicinity of the Quincy Unit. Treatments presented in the Selected Alternative would result in selective vegetation

management and reuse, rehabilitation of cultural resources at the Quincy Unit, which would have no effect on the gray wolf.

Criterion 10

Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

The Selected Alternative would not violate any environmental protection law or regulation. Appropriate consultation, coordination, and permitting actions would be necessary prior to implementing the Selected Alternative. These actions would include Section 106 consultation under the National Historic Preservation Act, Section 7 of the Endangered Species Act, and Section 404 and 401 permits under the Clean Water Act, as necessary.

Mitigation Measures

The following mitigation measures have been developed to minimize the degree and/or severity of adverse effects, and would be implemented, as needed, during implementation of the Selected Treatment Alternative (Alternative C).

Cultural Resources (Mitigation Measures)

- Proposed projects that would affect historic features of the cultural landscape (structures, vegetation, landscape character, etc) must comply with the requirements of *The Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* and *Cultural Resource Management Guideline*.

- Until the Keweenaw National Historical Park Archaeological Inventory is completed, NPS shall conduct site/project specific archaeological assessments to determine if NRHP-eligible resources are present. If NRHP-eligible resources are identified, project redesign (to avoid impacts) or other appropriate mitigation measures would be determined through consultation with the SHPO or other appropriate parties.

- Any contractors and subcontractors utilized for construction projects would be instructed on procedures to follow in case previously unknown archaeological resources are uncovered during construction. If previously unknown archaeological resources are unearthed during construction, work shall be stopped in the area of discovery and the NPS will consult with the SHPO and appropriate parties. If impacts to significant resources cannot be avoided by redesign, mitigating measures shall be developed in consultation with the SHPO to help ensure that the informational significance of the sites is preserved. If appropriate, provisions of the Native American Graves Protection and Repatriation Act of 1990 would be implemented.

- The NPS will ensure that any contractors and subcontractors utilized for construction are informed of the penalties for illegally collecting artifacts or intentionally damaging archaeological sites or historic properties.

- To minimize the amount of ground disturbance, staging and stockpiling areas will be located at previously disturbed areas, away from visitor use areas and circulation to the extent possible. All staging and stockpiling areas will be returned to pre-construction contours following construction.

Visitor Experience (Mitigation Measures)

- To minimize the potential impact to park visitors, variations on construction timing may be considered, such as conducting a majority of the work in shoulder seasons (off peak tourist seasons).

- Construction zones shall be identified and delineated with construction tape, snow/safety fencing, or some other material prior to any construction activity. All protection measures will be clearly stated in the construction specifications and workers will be instructed to avoid conducting activities beyond the construction zone.

- Temporary interpretive panels will be provided during the construction period to inform and educate visitors regarding the project and its importance to the overall historic landscape of the Quincy Unit.

Park Operations (Mitigation Measures)

- Because soils are susceptible to erosion until revegetation takes place, standard NPS erosion control measure BMPs will be used as necessary to minimize potential erosion, including silt fences, sediment traps and erosion check dams.

- Fugitive dust generated by construction will be controlled by spraying water on the construction site, as needed. Water needed for dust control will come from park-approved sources or will be provided by contractors from sources outside the park.

- To reduce noise and emissions, construction equipment will not be permitted to idle for long periods.

- To minimize potential petrochemical leaks from construction equipment, the equipment will be regularly monitored to identify and/or repair any leaks.

Public Involvement

During the preparation of the CLR/EA, formal and informal efforts were made by the NPS to involve the public; and federal, state, and local agencies in the planning process. The park staff publicized meetings through direct letters, press releases to all local media outlets, flyers at local businesses and interviews on the local public radio station. The park staff conducted an early meeting with KHS partners and stakeholders on June 17, 2008 and a public scoping meeting on June 18, 2008. These meetings were conducted at the Franklin Township Fire Hall, which is in the Quincy Unit. Twenty persons representing many partner organizations, state and local

government and Michigan Tech University attended the stakeholder meeting. Twenty-seven individuals from the surrounding communities attended the public scoping meeting. Both scoping meetings included a walking tour of the Historic Industrial Core area. On both days, additional individuals that could not attend the meeting in the Fire Hall joined in the walking tours. Comments from the stakeholders ranged from presentation of ideas for site development to general questions regarding the unit. Individuals attending the public scoping meeting did not present any direction or recommendations that could be used for treatment alternatives, but they did ask many questions related to the unit.

A second stakeholder meeting was conducted on October 10, 2008. Meeting attendees provided comments ranging from land acquisition to site treatment possibilities.

A second public meeting was conducted on March 4, 2009 at the City of Hancock Council Chambers. This meeting generated discussion and input regarding pre-decisional landscape treatment concepts. Thirty-three individuals attended the public meeting and comments ranged from the need to prepare land development ordinances to site parking needs.

On August 10, 2009 the CLR / EA was distributed for public review and comment for a 30-day period beginning. Park staff distributed a press release to media outlets, various agencies, and members of the public that are on the park's mailing list. The Environmental Assessment was made available at the Park's administrative office and on the Park's website. When requested, copies of the Environmental Assessment were mailed to interested individuals. Copies of the Environmental Assessment were available for review at the CLK Public Library in Calumet; the Portage Lake District Library in Houghton; and the Hancock School Public Library in Hancock. The park received three comment letters, which were in support of the selected alternative. The park responded directly to each commenter with a letter. These NPS response letters are in Chapter IX: Consultation and Coordination of the environmental assessment.

Finding of No Significant Impact and No Impairment

Based on my review of the facts and analysis contained in this Environmental Assessment, which is incorporated herein, I conclude that the Selected Alternative for the CLR/EA at Keweenaw National Historical Park would not have a significant impact either by itself or in consideration of cumulative impacts. Accordingly, the requirements of the National Environmental Policy Act, regulations promulgated by the President's Council on Environmental Quality, and provisions of National Park Service Director's Order-12 and Handbook (Conservation Planning and Environmental Impact Analysis and Decision-Making) have been fulfilled. Furthermore, the Selected Alternative selected for implementation would not impair park resources or values and would not violate the NPS Organic Act. The Selected Alternative supports the enabling legislation establishing Keweenaw National Historical Park under the Antiquities Act of 1906 with the intended purpose of preserving the scientific and public interests for future generations. An Environmental Impact Statement is not required and will not be prepared for implementation of the Selected Alternative.

Recommended: _____ May 28, 2010
James Corless, Superintendent Date

Approved: _____ 8-5-2010
Ernest Quintana, Regional Director Date

THIS PAGE LEFT BLANK INTENTIONALLY

Quincy Mine Historic Landscape

Keweenaw National Historical Park
Calumet, Michigan

CULTURAL LANDSCAPE REPORT/

ENVIRONMENTAL ASSESSMENT

Approved: _____ *Date:* 5/1/10.

Superintendent,
Keweenaw National Historical Park

Concurred: _____ *Date:* 5/3/10

Advisory Commission
Keweenaw National Historical Park

May 2010

THIS PAGE LEFT BLANK INTENTIONALLY

Quincy Mine Historic Landscape
Keweenaw National Historical Park
Quincy Unit Cultural Landscape Report
Environmental Assessment

Errata Sheet

November 17, 2009

Substantive comments were received from the U.S. Fish and Wildlife Service (USFWS) and the Michigan State Historic Preservation Officer. The comments focused on two issues: Special Status Species and the effects of conducting the Archeological Inventory at the Quincy Unit.

To address the comment regarding special status species, the following has been added following the section on Canada Lynx on page 21 of Chapter I under the "*Impact Topics Considered but Dismissed from Further Analysis*" section in the Public Review Draft dated July 2009:

Gray Wolf

At the time of the distribution of this CLR/EA for public review, the gray wolf had been delisted from Endangered Species Act (ESA) of 1973 regulatory protections and was not addressed in the CLR/EA. The CLR/EA was published for public review in July 2009. However, in September 2009, in response to a settlement agreement and court order, the USFWS reinstated the protections for the gray wolf in the Western Great Lakes region. With that change, the gray wolf is now a Federally-listed endangered species in Houghton County, Michigan.

The gray wolf is the largest member of the canine family that hunts large hoofed mammals. The species live, travel, and hunt in packs with transient lone individuals separating from the pack in attempts to originate new packs. There are no known gray wolf individuals or packs present in the park or immediate vicinity.

The Quincy Unit of Keweenaw National Historical Park is a heavily disturbed landscape from decades of mining activities and is within an expanding urban area of Hancock and Houghton, Michigan. The Preferred Alternative involves cultural resources rehabilitation with an emphasis on landscape restoration and a new combined visitor center for the A.E. Seaman Mineral Museum, National Park Service, and Quincy Mine Hoist Association. The combined visitor center would be implemented through the rehabilitation of an existing structure in the Historic Industrial Core area. This alternative includes selective removal of woody vegetation in the Historic Industrial Core, the No. 6 Area, the Dryhouse Area, the No. 7 and Railroad Corridor Areas. Although landscape modifications are proposed by the preferred alternative, the landscape modification will be minor and selective. The Preferred Alternative would result in no effect to gray wolf individuals, packs, or the overall population.

To address the comment regarding the effects of conducting the Archeological Inventory, the following explanation and changes are provided:

Cultural Resources
The evaluation of potential impacts to archeological resources from Treatment Alternatives considered limited ground disturbing activities associated with the Archeological Inventory to potentially result in adverse impacts to resources that may be eligible for listing in the National Register of Historic Places (NRHP). However; it is unknown if any archeological resources eligible for listing in the NRHP exist at the Quincy Unit of Keweenaw National Historical Park. The Archeological Inventory is intended to determine if the potential exists for NRHP-eligible archeological resources at the Quincy Unit. The Michigan Department of History, Arts and Libraries (Michigan SHPO) commented that conducting the proposed Archeological Inventory would in fact, not constitute an adverse effect to archeological resources. The Midwest Archeological Center of the National Park Service concurred with the Michigan SHPO's comment. The following changes were made to the CLR/EA as a result of this commentary:

Chapter VI: Treatment Alternatives

Page 57 – *Table 6-3 Environmental Impact Summary for Each Treatment Alternative*

Under Section 106: Change Adverse Impact to No Adverse Effect in the columns for Treatment Alternatives A, B and C.

Under Archeological Resources: delete - Adverse Effect, consult with SHPO and prepare Memorandum of Agreement. Replace with - No adverse effect.

Chapter VI, page 59: Third line: change "adverse effects" to "adverse impacts" and add a new bullet point after the second bullet:

- Park operations, management and administrative functions would result in numerous low-impact or repetitive activities that could potentially affect historic properties at Keweenaw National Historical Park. These activities should be mitigated through the use of the *2008 Programmatic Agreement Among the National Park Service (U.S. Department of Interior), The Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers for Compliance With Section 106 of the National Historic Preservation Act,* or consult with the Michigan SHPO to develop a park-specific programmatic agreement to simplify and streamline the Section 106 process.

Chapter VII: Impacts from Treatment Alternatives/Environmental Consequences

Page 12, text line 5 – delete reference to adverse effect and replace with no adverse effect.

Page 12, text lines 7-11 – Delete: "In addition to archeological investigations, other ground disturbing activities that might result from maintenance functions could result in an adverse effect to NRHP-eligible archeological resources and should be mitigated through the use of the 1995 NPS Servicewide Programmatic Agreement, or consult with the Michigan SHPO to develop a park-specific programmatic agreement to simplify the Section 106 process."

Page 13, text line 32 – delete reference to adverse effect and replace with no adverse effect.

Page 13, text lines 34-38: Delete sentence: "In addition to archeological investigations, other ground disturbing activities that might result from maintenance functions could result in an adverse effect to NRHP-eligible archeological resources and should be mitigated through the use of the 1995 NPS Servicewide Programmatic Agreement, or consult with the Michigan SHPO to develop a park-specific programmatic agreement to simplify the Section 106 process."

Page 15, text line 3 – delete reference to adverse effect and replace with no adverse effect.

Page 15, text lines 5-9: Delete sentence: "In addition to archeological investigations, other ground disturbing activities that might result from maintenance functions could result in an adverse effect to NRHP-eligible archeological resources and should be mitigated through the use of the 1995 NPS Servicewide Programmatic Agreement, or consult with the Michigan SHPO to develop a park-specific programmatic agreement to simplify the Section 106 process."

Throughout report:

Some confusion arose due to the use of the term "Archeological Overview and Assessment" to refer to the "Archeological Inventory." Throughout the report "Archeological Overview and Assessment" has been replaced with "Archeological Inventory."

THIS PAGE LEFT BLANK INTENTIONALLY

TABLE OF CONTENTS

Acknowledgements
Finding of No Significant Impact (FONSI)
Signature Sheet
Errata Sheet
Table of Contents
Chapter I: Introduction (Purpose and Need)
Scope of the Report…… Chapter I, page 1
Report Methodology (Applicable Regulatory Requirements)…… Chapter I, page 1
Purpose and Need …… Chapter I, page 2
Project Objectives …… Chapter I, page 3
Park Purpose/Significance…… Chapter I, page 3
Description of the Study Area …… Chapter I, page 4
Quincy Unit Landscape Character Areas and Landscape Character Types…… Chapter I, page 8
Relation to Other Planning Projects…… Chapter I, page 16
Environmental Assessment Impact Topics…… Chapter I, page 17
Impact Topics Selected for Analysis …… Chapter I, page 17
Impact Topics Considered but Eliminated from Further Analysis…… Chapter I, page 18

Chapter II: Landscape History
Introduction…..……
Prehistory ……
Early History: the Arrival of the Ojibway…….…… Chapter II, page 6
The Fur Trade…….…… Chapter II, page 8
Treaties and American Mining…… Chapter II, page 9
Company Origins on the Quincy Lode: 1846-1855…… Chapter II, page 12
Mine Growth on the Pewabic Lode: 1856-1887…… Chapter II, page 19
Rebuilding the Mine Surface Plant: 1888-1907…… Chapter II, page 47
20th Century Operations: 1908-1945…… Chapter II, page 69
Reclamation: 1946-1967…… Chapter II, page 85
Post-Operation: 1968 - Present…… Chapter II, page 86

Chapter III: Existing Conditions/Affected Environment
Unit-Wide Existing Conditions…….. Chapter III, page 5
Land Use…….. Chapter III, page 5
Transportation and Circulation…… Chapter III, page 9
Vegetation……... Chapter III, page 12
Archaeological Resources…… Chapter III, page 15
Socioeconomics…… Chapter III, page 16
Visitor Experience…… Chapter III, page 17
Park Operations…… Chapter III, page 19
Quincy Unit Landscape Character Types and Landscape Character Areas…… Chapter III, page 20
Landscape Character Type 1 - Historic Mine/Industrial Landscapes…….. Chapter III, page 27
Landscape Character Type 2 – Historic Company Housing Locations…… Chapter III, page 53
Landscape Character Type 3 - Non-Historic Land Uses…… Chapter III, page 77

Chapter IV: Landscape Analysis

Introduction……
National Register Status……
National Register Boundary and Quincy Unit Boundary……
Landscape Analysis…… Chapter IV, page 5
Land Use…… Chapter IV, page 5
Spatial Organization……Chapter IV, page 12
Vegetation……Chapter IV, page 15
Topography and Views……Chapter IV, page 19
Circulation……Chapter IV, page 24
Buildings and Landscape Features …… Chapter IV, page 28
Cultural Traditions…… Chapter IV, page 33
Summary of Integrity……Chapter IV, page 34

Chapter V: Landscape Management Philosophy and Management Issues

Landscape Management Philosophy……
Landscape Management Overview……Chapter V, page 2
Definition of the Quincy Unit & Historic Industrial Core……Chapter V, page 3
Management Issues ……Chapter V, page 5
Quincy Unit Management Issues ……Chapter V, page 5
Management Issues Related to the Historic Industrial Core ……Chapter V, page 9

Chapter VI: Treatment Alternatives

Overview…… Chapter VI, page 1
Historic Industrial Core Current Management Approach (No Action Treatment Alternative) ….. Chapter VI, page 2
Treatment Recommendations and Alternatives for the
Quincy Unit & the Historic Industrial Core …… Chapter VI, page 7
Vision Statement for all Action Treatment Alternatives …… Chapter VI, page 7
Goals Common to all Action Treatment Alternatives …… Chapter VI, page 7
Objectives Common to all Action Treatment Alternatives …… Chapter VI, page 7
Quincy Unit Landscape Treatment Guidelines (common to all alternatives) …… Chapter VI, page 8
Treatments Common to all Historic Industrial Core Alternatives …… Chapter VI, page 22
Historic Industrial Core Alternative A …… Chapter VI, page 27
Historic Industrial Core Alternative B …… Chapter VI, page 35
Historic Industrial Core Alternative C, Preferred Alternative…… Chapter VI, page 45
Summary of Alternatives …… Chapter VI, page 55
Environmentally Preferred Alternative …… Chapter VI, page 58
Mitigation Measures …… Chapter VI, page 59
Treatment Alternatives Considered and Dismissed …… Chapter VI, page 60

Chapter VII: Impacts from Treatment Alternatives/Environmental Consequences

Environmental Consequences ……Chapter VII, page 1
Cumulative Impacts…… Chapter VII, page 2
Impairment Analysis…… Chapter VII, page 3
Impacts to Cultural Resources…… Chapter VII, page 4
Socioeconomics…… Chapter VII, page 14
Visitor Experience……Chapter VII, page 18
Park Operations……Chapter VII, page 21

Chapter VIII: Implementation

Overview ..... Chapter VIII, page 1
Project A: Preserve Historic Structures in the Quincy Unit ..... Chapter VIII, page 1
Project B: Preserve Existing Significant Views by Influencing New Development ..... Chapter VIII, page 5
Projects Related to Vegetation Management ..... Chapter VIII, page 6
Project C: Establish View Corridor to Interpret No. 2 Adit Location ..... Chapter VIII, page 6
Project D: Establish and Maintain Views along the Pewabic Lode ..... Chapter VIII, page 9
Project E: Establish and Maintain View from Lower Pewabic to the No. 2 Area ..... Chapter VIII, page 10
Project F: Widen and maintain View Corridor at Cog Tram Route ..... Chapter VIII, page 11
Project G: Removal of Woody Vegetation in the Foreground Vegetation Management Zone of the Historic Industrial Core ..... Chapter VIII, page 12
Project H: Removal of Woody Vegetation in the Middleground Vegetation Management Zone of the Historic Industrial Core ..... Chapter VIII, page 13
Project I: Quincy Mine Historic Landscape Blitz ..... Chapter VIII, page 14
Projects Related to Interpretation of the Historic Landscapes
Project J: Wayside Planning, Design, Fabrication & Installation ..... Chapter VIII, page 15
Project K: Develop Self-guided Brochures for Historic Landscapes ..... Chapter VIII, page 15
Project L: Design and Implement Signs at Historic Housing Locations ..... Chapter VIII, page 16
Projects Related to the Historic Industrial Core
Project M: Establish short-term route for multi-use trail ..... Chapter VIII, page 17
Project N: Establish long-term multi-use trail over short-term base ..... Chapter VIII, page 17
Project O: Implement Pedestrian Route on West Side of U.S. 41 ..... Chapter VIII, page 18
Project P: Develop Parking, Vault Toilet, and Picnic Area at No. 2 Road ..... Chapter VIII, page 18
Project Q: Improve Historic Landscape at Quincy Mine Office ..... Chapter VIII, page 19
Project R: Construct Vertical Elements that represent the missing/non-extant Pulley Stands between the No. 2 Shaft-rockhouse and the Hoist Houses ..... Chapter VIII, page 20
Project S: Develop Picnic Area near No. 2 Hoist Houses ..... Chapter VIII, page 21
Project T: Develop Parking Lot near No. 2 Hoist Houses ..... Chapter VIII, page 22
Project U: Remove Parking Area on West Side of No. 2 Hoist Houses ..... Chapter VIII, page 22
Project V: Construct Road and Parking from Lower Pewabic Road to Supply House ..... Chapter VIII, page 23
Project W: Preserve Poor Rock Piles in the Historic Industrial Core ..... Chapter VIII, page 24
Project X: Restore Portions of Railroad Grades, Tracks, and Trestles adjacent to the No. 2 Shaft-rockhouse ..... Chapter VIII, page 25
Project Y: Restore portions of Railroad Grades, Tracks and Trestles adjacent to the No. 5 Boiler Plant ..... Chapter VIII, page 26
Project Z: Develop the A.E. Seaman Mineral Museum Area Landscape ..... Chapter VIII, page 26

Project AA: Survey National Park Service Property within the Quincy Unit ..... Chapter VIII, page 27
Project BB: Provide vertical elements at shaft locations ..... Chapter VIII, page 27
Project CC: Provide Assistance and Guidance to Landowners to Encourage Compatible Development ..... Chapter VIII, page 27
Project DD: Work with MDOT to improve the Portage Lake Overlook ..... Chapter VIII, page 27
Project EE: Develop an Archeological Research and Education Program ..... Chapter VIII, page 27
Project FF: Provide a Picnic Table at the No. 4 Area for Visitor Use ..... Chapter VIII, page 28
Project GG: No. 7 and Railroad Corridor ..... Chapter VIII, page 28
Project HH: Interpret Underground Network of Drifts and Stopes ..... Chapter VIII, page 28
Project II: Interpret the View of Quincy Hill from the Waterfront in Houghton ..... Chapter VIII, page 29
Project JJ: Develop a design palette for Site Amenities in the Quincy Unit ..... Chapter VIII, page 29

Chapter IX: Consultation and Coordination

Internal Scoping…… Chapter IX, page 1
External Scoping…… Chapter IX, page 1
Agency Consultation …… Chapter IX, page 2
Cultural Landscape Report/Environmental Assessment Review…… Chapter IX, page 2

Bibliography

Chapter I: Introduction

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter I: Introduction (Purpose and Need)

Scope of the Report

The intent of this combined *Cultural Landscape Report and Environmental Assessment* (CLR/EA*)* is to guide treatment and use of the above-ground resources associated with the significant historic landscapes within the Quincy Unit of Keweenaw National Historical Park. A thorough investigation and evaluation of the historic landscapes has been conducted using National Park Service (NPS) and National Register of Historic Places guidelines. The documentation of historic significance and evaluation of integrity of the historic landscapes serves as a framework upon which treatment recommendations are developed. The report provides park managers with a comprehensive understanding of the physical evolution of the historic landscape, and guidance for landscape management. The report has been prepared by a project team composed of the staff of Keweenaw National Historical Park, Quinn Evans | Architects (QEA), and Woolpert, Inc., to fulfill a contract with the Midwest Regional Office of the National Park Service.

Report Methodology (Applicable Regulatory Requirements)

The report was prepared according to federal standards guiding cultural landscape projects and environmental assessments including *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques, The Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes,* federal regulations (40 CFR 1500-1508) implementing the *National Environmental Policy Act of 1969* (NEPA), regulations of the *Council on Environmental Quality* (40 CFR 1508.9), *NPS Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-Making,* and the *National Historic Preservation Act of 1966* (as amended). Other applicable regulatory requirements include: the *National Park Service Organic Act,* the *American Indian Religious Freedom Act,* the *Act for the Preservation of American Antiquities of 1906,* the *Historic Sites Act of 1935*, the *National Park Service Director's Order #28, Cultural Resource Management,* and the *Archaeological Resources Protection Act.*

Archival research and preparation of the landscape history chapter was conducted by Steve DeLong and Jo Urion, both members of the staff at Keweenaw National Historical Park. The majority of the research was conducted at the park library and archives and at the archives of Michigan Technological University. Field inventories of existing conditions and landscape features were conducted by Quinn Evans | Architects in fall 2006.

The *Environmental Assessment (*EA) analyzes the impacts of each of the treatment alternatives on natural and cultural resources. The EA portion of the project was coordinated by Woolpert, Inc., a consulting firm that specializes in environmental planning. Quinn Evans | Architects assisted in the preparation of this portion of the report.

Although the federal government has standard guidelines for the preparation of CLRs and EAs, there are no guidelines for preparing a combined report. The Midwest Regional Office of the National Park Service has recognized that combining the two documents increases the efficienty of the process by integrating the information generated through the CLR with the in-depth evaluation process inherent to the *Environmental Assessment*. Merging the documents can

improve and validate the recommended treatment while reducing the costs associated with the preparation and printing. This report has been organized as indicated below:

Chapter I: Introduction (Purpose and Need)
Chapter II: Landscape History
Chapter III: Existing Conditions / Affected Environment
Chapter IV: Landscape Analysis
Chapter V: Management Philosophy and Landscape Management Issues
Chapter VI: Treatment Alternatives
Chapter VII: Impacts from Treatment Alternatives / Environmental Consequences
Chapter VIII: Implementation and Project Phasing
Chapter IX: Consultation and Coordination
Bibliography

Purpose and Need

Purpose

The purpose of the combined CLR/EA is to document and record the history and current conditions of the historic landscapes within the Quincy Unit of Keweenaw National Historical Park and to provide guidance for the future treatment and use of these landscapes. The document informs preservation of significant cultural and natural resources while providing opportunities and facilities for visitor education and use. Since Keweenaw National Historical Park is a partnership park, the document is meant to help inform the National Park Service and its Keweenaw Heritage Site (KHS) partners in the Quincy Unit, namely the Quincy Mine Hoist Association and the A.E. Seaman Mineral Museum operated by Michigan Technical University. The document may also be useful to potential KHS partners within and adjacent to the Quincy Unit; these include the Michigan Department of Transportation, Franklin Township and the City of Hancock.

Need

The combined CLR / EA is needed to guide treatment and use of the above-ground resources associated with the significant historic landscapes within the Quincy Unit of Keweenaw National Historical Park. The park's General Management Plan indicates the need for a Cultural Landscape Report for the Quincy Unit. It is needed to provide a comprehensive understanding of the historic development of these landscapes and to evaluate their significance and provide treatment recommendations that respond appropriately to their historic characteristics while accommodating current and future needs. This is particularly necessary due to the makeup of land ownership/management within this partnership park. The National Park Service owns only small properties within the park boundary. In contrast to the traditional national parks, within partnership parks like Keweenaw National Historical Park, the majority of the land within the boundary is owned and managed by private owners, public entities, non-profit and institutional organizations.

In addition, the General Management Plan indicates that the park's principal visitor center be established in the Quincy Unit, to provide visitors approaching from the Houghton/Hancock area a first destination point. This facility would provide general orientation and interpretation

to the Keweenaw Peninsula and Keweenaw National Historical Park.[1] The location of the visitor center in the Quincy Unit is not defined by the GMP. The CLR process explored alternatives for locating a visitor center within the Quincy Unit.

Project Objectives

The objectives for the report include:

- Document the development of the historic landscapes within the Quincy Unit of Keweenaw National Historical Park.
- Document the existing conditions of the historic landscapes within the Quincy Unit of Keweenaw National Historical Park.
- Evaluate the significance and integrity of the historic landscapes within the Quincy Unit of Keweenaw National Historical Park.
- Provide treatment recommendations for managing the historic landscape resources within the Quincy Unit of the park.
- Recommend landscape treatments to address management needs identified by the NPS and park partners in the Quincy Unit.
- Provide management recommendations and schematic designs for specific historic landscapes within the park that accommodate current and future needs while preserving the historic character and significant features present.
- Streamline planning and compliance processes for the historic landscapes within the Quincy Unit of Keweenaw National Historical Park.
- Enhance visitor experience through providing information about the history of the development of the park, to interpreters and site managers.
- Provide recommendations for efficiently managing the historic landscapes within the Quincy Unit of the park while taking into consideration budget constraints.
- Recommend, on the basis of landscape considerations, a preferred location for the park's principal visitor center.

Park Purpose/Significance

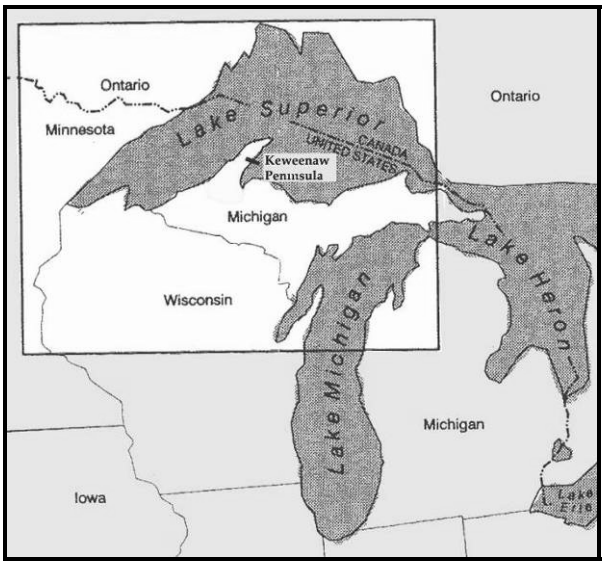
Keweenaw National Historical Park was established by Public Law 102-543 in October 1992 to commemorate the rich and complex story of copper mining on the Keweenaw Peninsula. The purposes of the park are four-fold:

- *Tell the story of the role of copper in the development of an American industrial society and the effects on the Keweenaw Peninsula of providing that copper.*
- *Identify, study, and preserve the nationally significant historical and cultural sites, structures, districts, landscapes, and other resources of the Keweenaw Peninsula for the education, benefit, and inspiration of present and future generations.*
- *Interpret the historic synergism among the geological, aboriginal, sociological, cultural, technological, economic, and corporate influences that relate the stories of copper on the Keweenaw Peninsula.*
- *Develop and sustain into the 21st century the park and the community through a blend of private, local, state, and federal management, investment, and ownership.*[2]

[1] United States Department of the Interior, National Park Service, *Final General Management Plan and Environmental Impact Statement, Keweenaw National Historical Park*, 50.
[2] Ibid., 13-14.

Description of the Study Area

Keweenaw National Historical Park is located in the western portion of Michigan's Upper Peninsula (see Figure 1-1). The Keweenaw Peninsula extends approximately 100 miles north into Lake Superior and includes the Lake Superior Copper Range, a "highland that forms a spine along the length of the peninsula and beyond."[3] The Copper Range held vast deposits of copper, attracting mining companies and workers who came to extract the copper. Keweenaw National Historical Park is located along the Copper Range spine, near the center of the peninsula. The park is made up of two units (Quincy and Calumet) that include extensive heritage resources associated with the copper mining industry (see Figure 1-2).[4] The current project is focused on the Quincy Unit of the park (see Figure 1 -3).



Regional Location of Keweenaw Peninsula
(Source: General Management Plan, Keweenaw National Historical Park, 9)

[3] General Management Plan, Keweenaw National Historical Park, 1998, 5.
[4] Ibid.

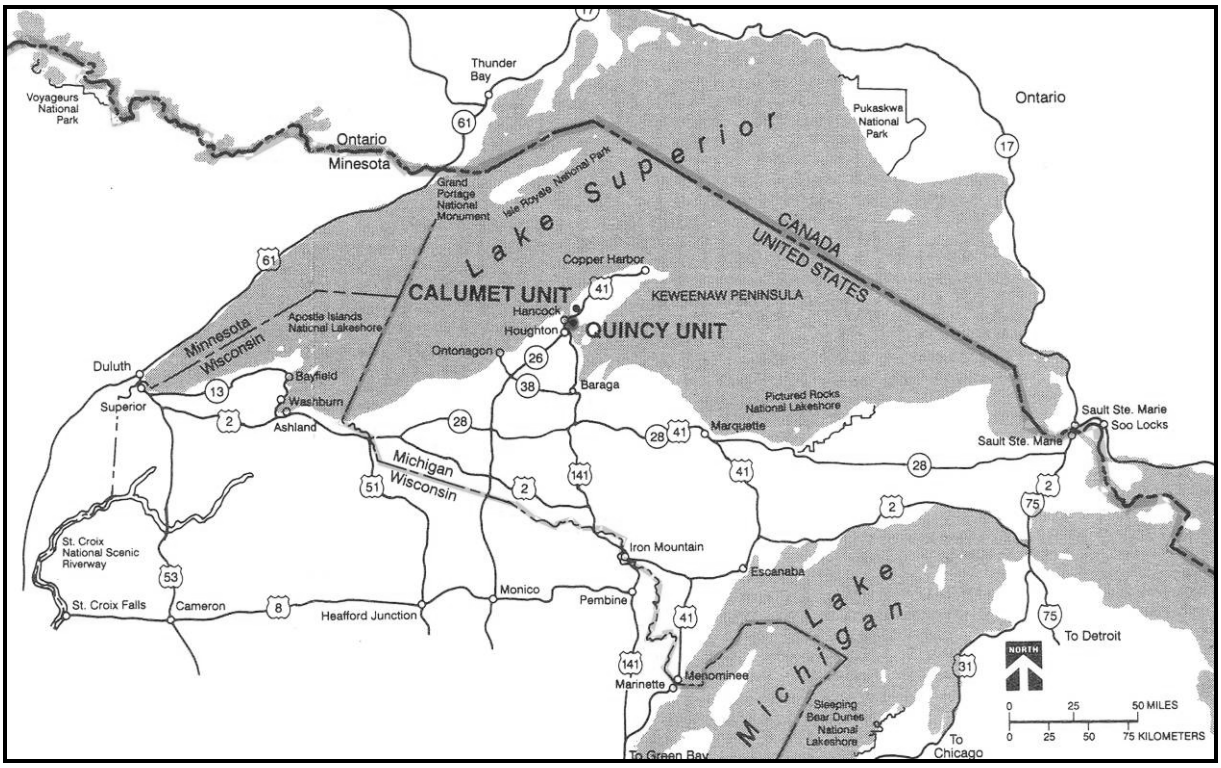


Figure 1- 1: Location of park
(Source: General Management Plan, Keweenaw National Historical Park, 9)

The Quincy Unit of Keweenaw National Historical Park includes about 1,120 acres northeast of Hancock, Michigan, and adjacent to Portage Lake. The unit includes the remnant structures and mines of the Quincy Mining Company and its associated historic landscape. Quincy's operations stretched northeast to southwest along the hill above Portage Lake and the City of Hancock.[8] Of the 1,120 acres included in the unit, the National Park Service owns 136.56 acres. The remainder of the Unit is owned by public and private entities, some of whom partner with the National Park Service in decision making and management of the sites.

When the park was established, the U.S. Congress stipulated that the National Park Service and the park's advisory commission would partner with sites owned and operated by state and local governments, private businesses and nonprofit organizations. The Keweenaw Heritage Sites program, administered by the Keweenaw National Historical Park Advisory Commission, is one aspect of the partnership. Keweenaw Heritage Sites contain significant cultural and/or natural resources and make a unique contribution to the copper mining story. Embodying stories of hardship, ingenuity, struggle and success, each site allows exploration of the role mining played in people's lives. Heritage sites operate independently of the National Park Service.

The Quincy Mine, a Keweenaw Heritage Site (KHS), is located within the Quincy Unit; the A.E. Seaman Mineral Museum, also a Heritage Site that is operated by Michigan Technological

[8] Ibid.

University, will be relocating from their main campus location in Houghton to a site adjacent to the Quincy Mine and Hoist. Together, their holdings include more than 110 acres on Quincy Hill. Other potential park partners with holdings in or adjacent to the Quincy Unit include the Michigan Department of Transportation, Franklin Township and the City of Hancock.

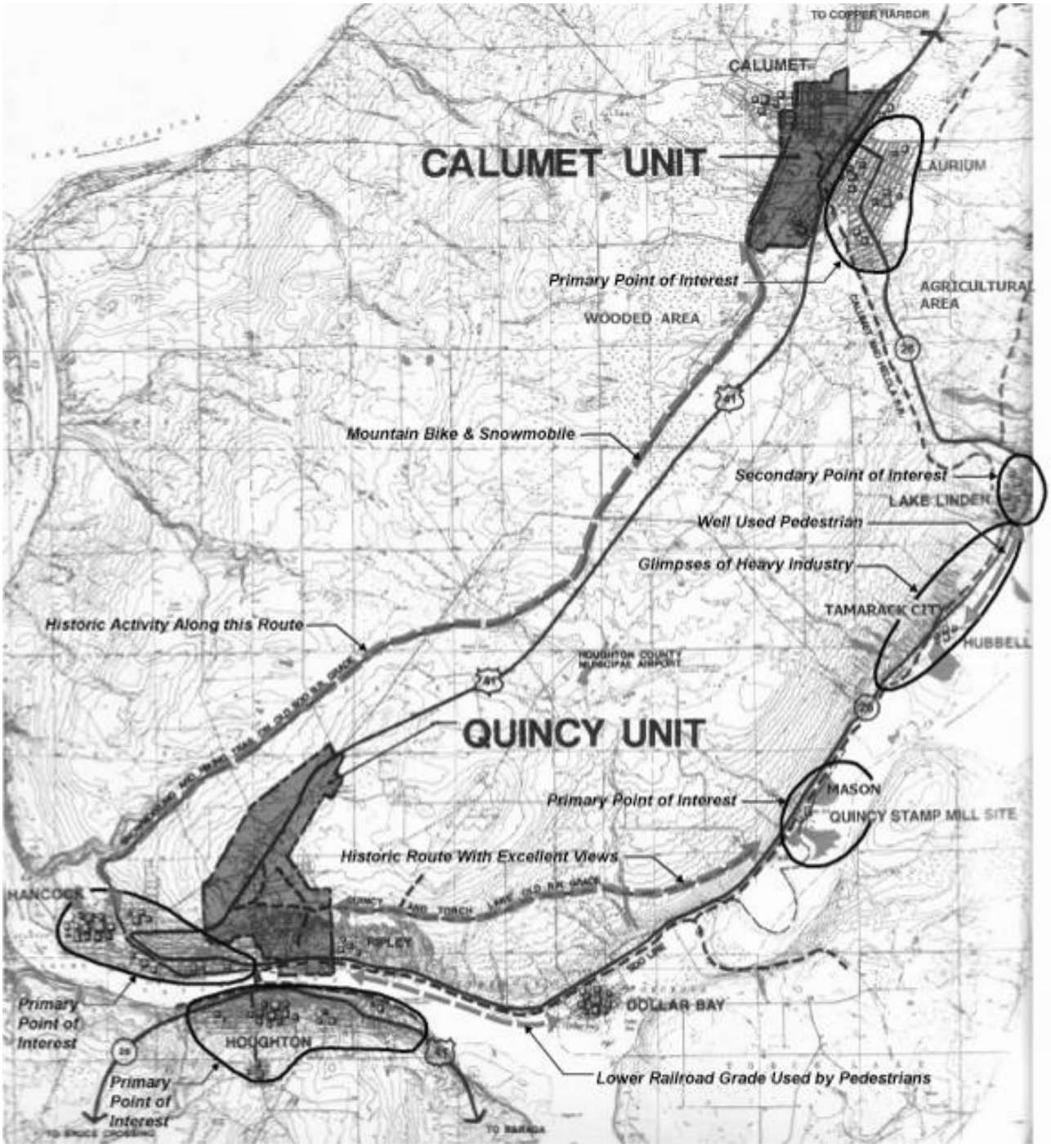


Figure 1- 2: Quincy and Calumet Units of Keweenaw National Historical Park (source: General Management Plan, Keweenaw National Historical Park, 9)

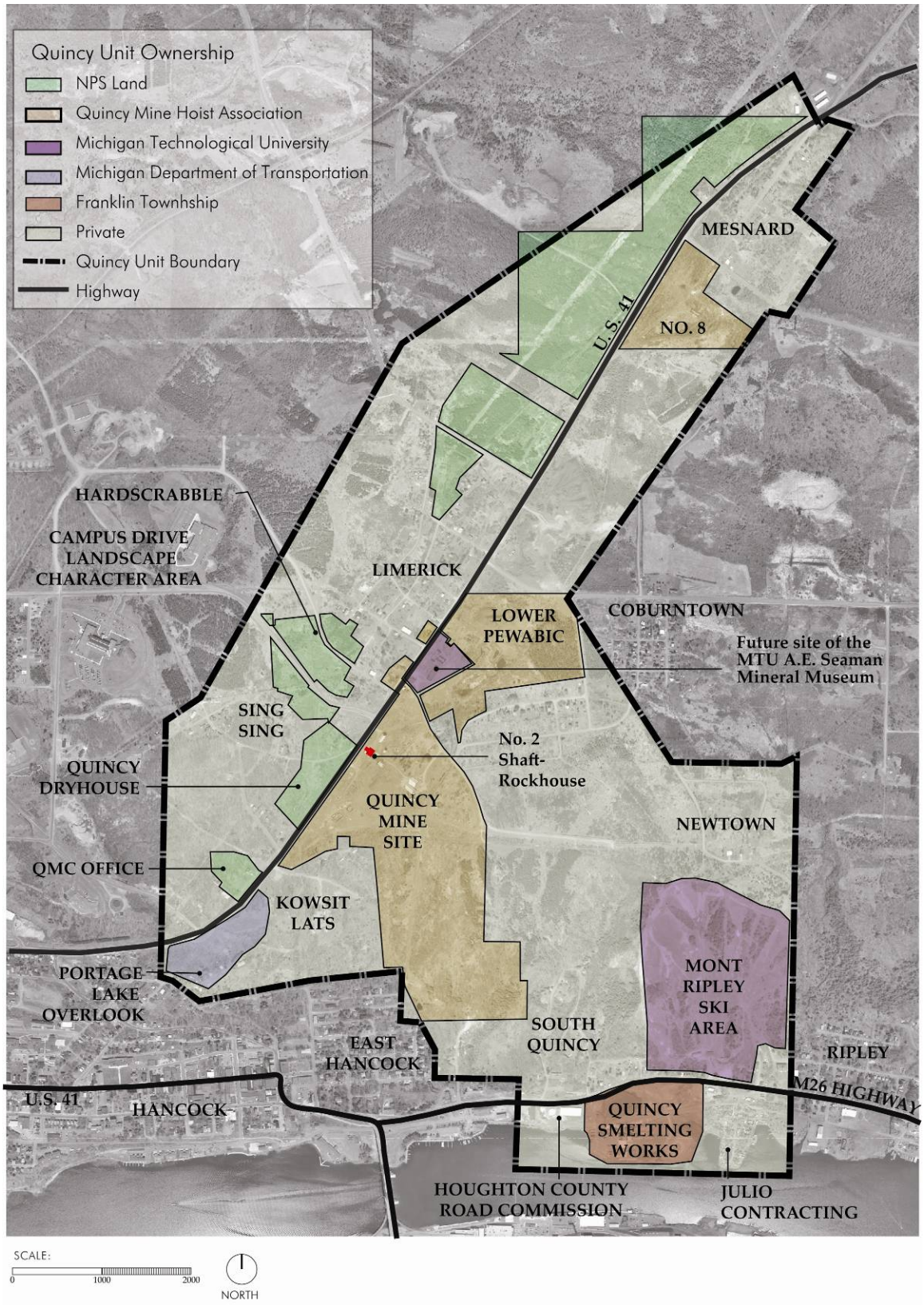


Figure 1- 3: Quincy Unit: Land owned by the NPS, heritage sites and local governments/public agencies.

Historic resources included in the unit are: seven Quincy mine shafts, associated mining and industrial surface works, features and ruins, several company housing locations, circulation routes and paths, and remnant administrative and service buildings and managers' residences. Of these the No. 2 shaft-rockhouse and the No. 2 hoist house are of particular significance. The No. 2 shaft-rockhouse is built over a shaft that extends 9,300 feet on the incline. The No. 2 hoist house contains the world's largest steam hoisting engine. The Quincy smelter, located on Portage Lake, is the only remaining smelter associated with 19th century Michigan copper mining.[9] In addition to the historic resources, the unit includes numerous non-historic developments.

Quincy Unit Landscape Character Areas and Landscape Character Types

The landscapes within the Quincy Unit are described herein as landscape character areas that are defined by their physical qualities (such as landforms, vegetation, and topography) and the cultural resources present (see Figure 1-4).[10] Given the variety and number of landscape character areas, three *landscape character types* have been identified to group the landscape character areas for purposes of inventory and analysis. The landscape character types include 1) character areas related to historic mining and industrial activities (see Figure 1-5), 2) character areas that including historic mine housing locations (see Figure 1-6), and 3) character areas that contain non-historic and adjacent land uses (see Figure 1-7).

[9] Ibid., 6.

[10] Page, Robert R., Cathy A. Gilbert, and Susan A. Dolan, 1998. A Guide to Cultural Landscape Reports: Contents, Process, and Techniques (Washington, DC: U.S. Department of the Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program), 75. The document defines landscape character areas as: "defined by the physical qualities of a landscape (such as landforms, structural clusters, and masses of vegetation) and the type and concentration of cultural resources. Character areas are based on the existing condition of the characteristics and features that define and illustrate the significance of the landscape."

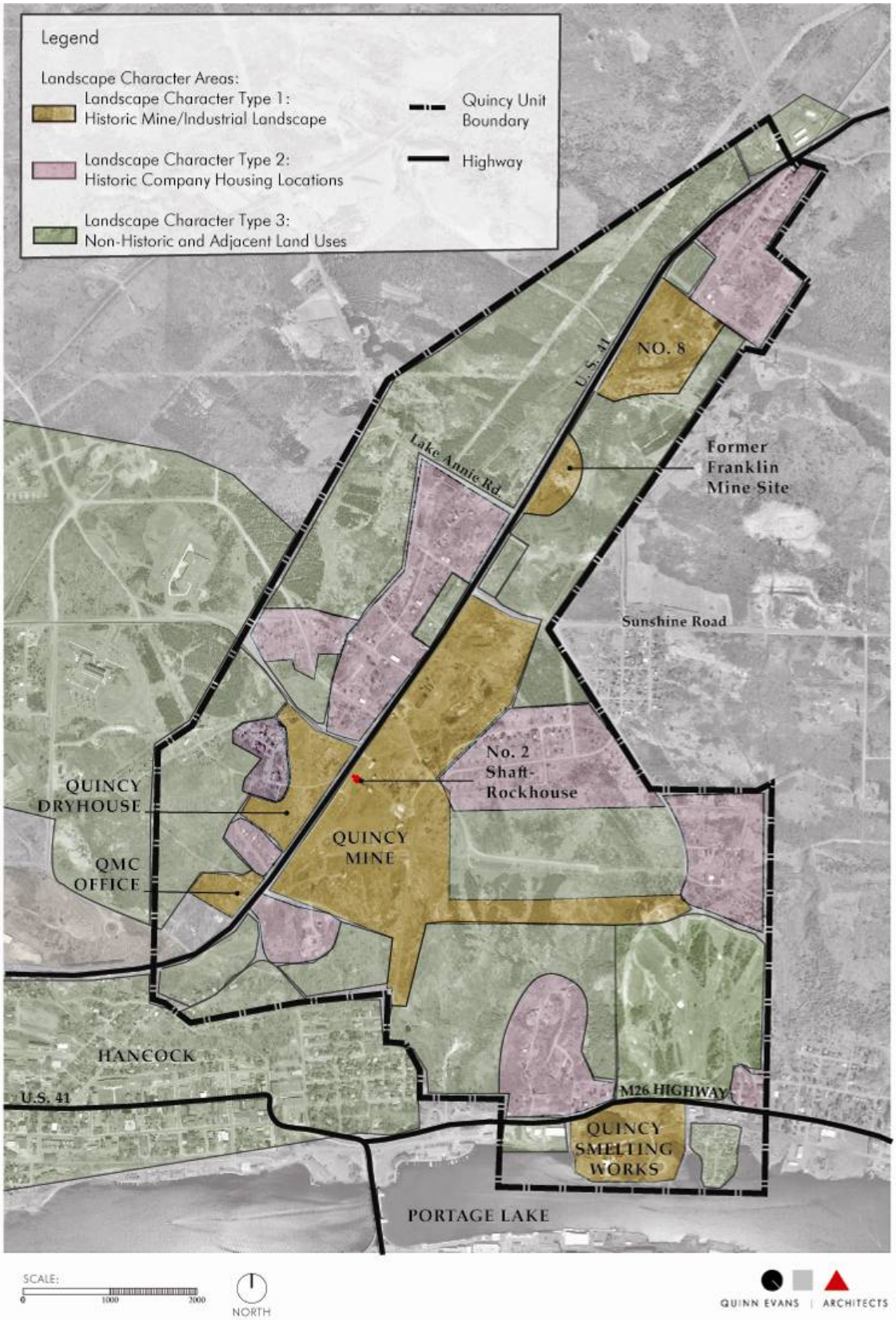


Figure 1- 4: Three Types of Landscape Character Areas

Landscape Character Type 1 - Historic Mine / Industrial Landscapes

Quincy Mine Site landscape character area
Quincy Smelter landscape character area
Quincy Mine Office and Superintendent's Residence landscape character area
Quincy Dryhouse landscape character area
No.8 landscape character area

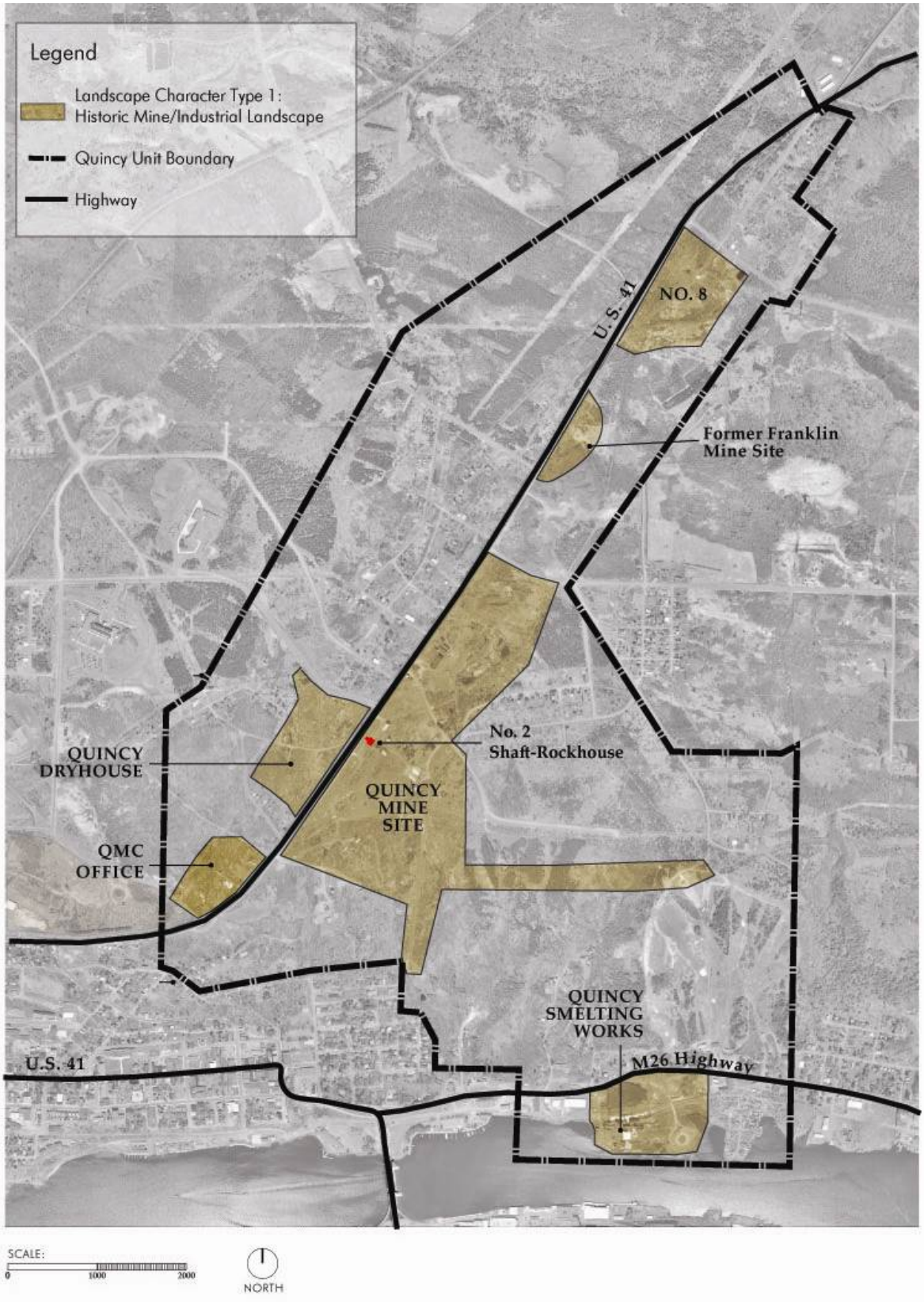


Figure 1- 5: Quincy Unit Landscape Character Area Type 1: Historic Mine / Industrial Landscapes

Landscape Character Type 2 – Historic Company Housing Locations

Limerick landscape character area
Hardscrabble landscape character area
Kowsit Lats landscape character area
Lower Pewabic landscape character area
Sing-Sing landscape character area
Coburntown landscape character area (adjacent to unit boundary)
Frenchtown landscape character area
Ripley landscape character area (adjacent to unit boundary)
Mesnard landscape character area
Newtown landscape character area
South Quincy landscape character area

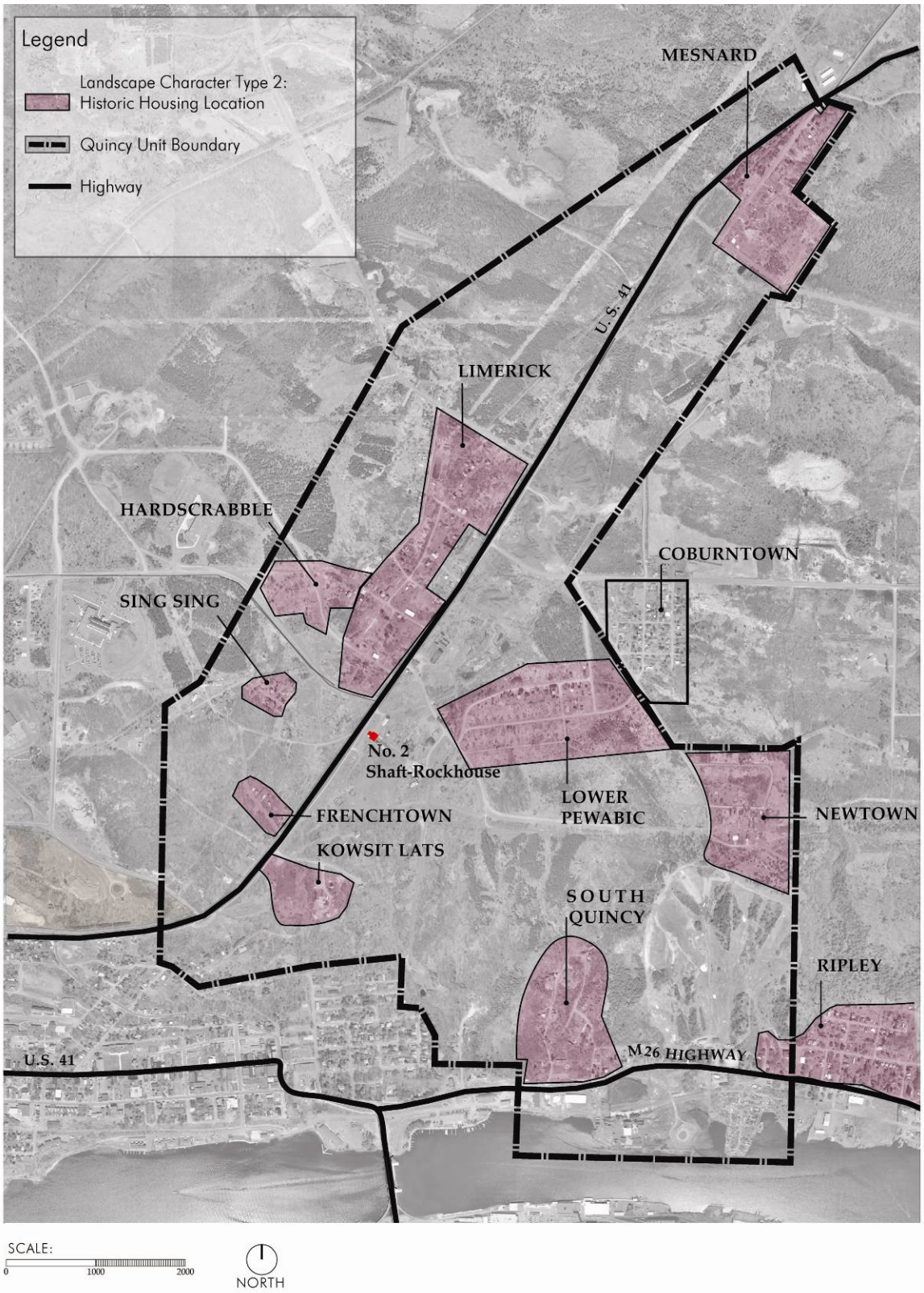


Figure 1- 6: Quincy Unit Landscape Character Area Type 2: Company Housing Locations

Landscape Character Type 3 - Non-Historic and Adjacent Land Uses

Hancock landscape character area (adjacent to unit boundary)
Portage Lake Overlook landscape character area
U.S. 41 landscape character area
Community: Campus Drive landscape character area (adjacent to unit boundary)
Houghton County Road Commission Service Facility landscape character area
Julio Contracting landscape character area
Mont Ripley Ski Area landscape character area
Wooded landscape character area

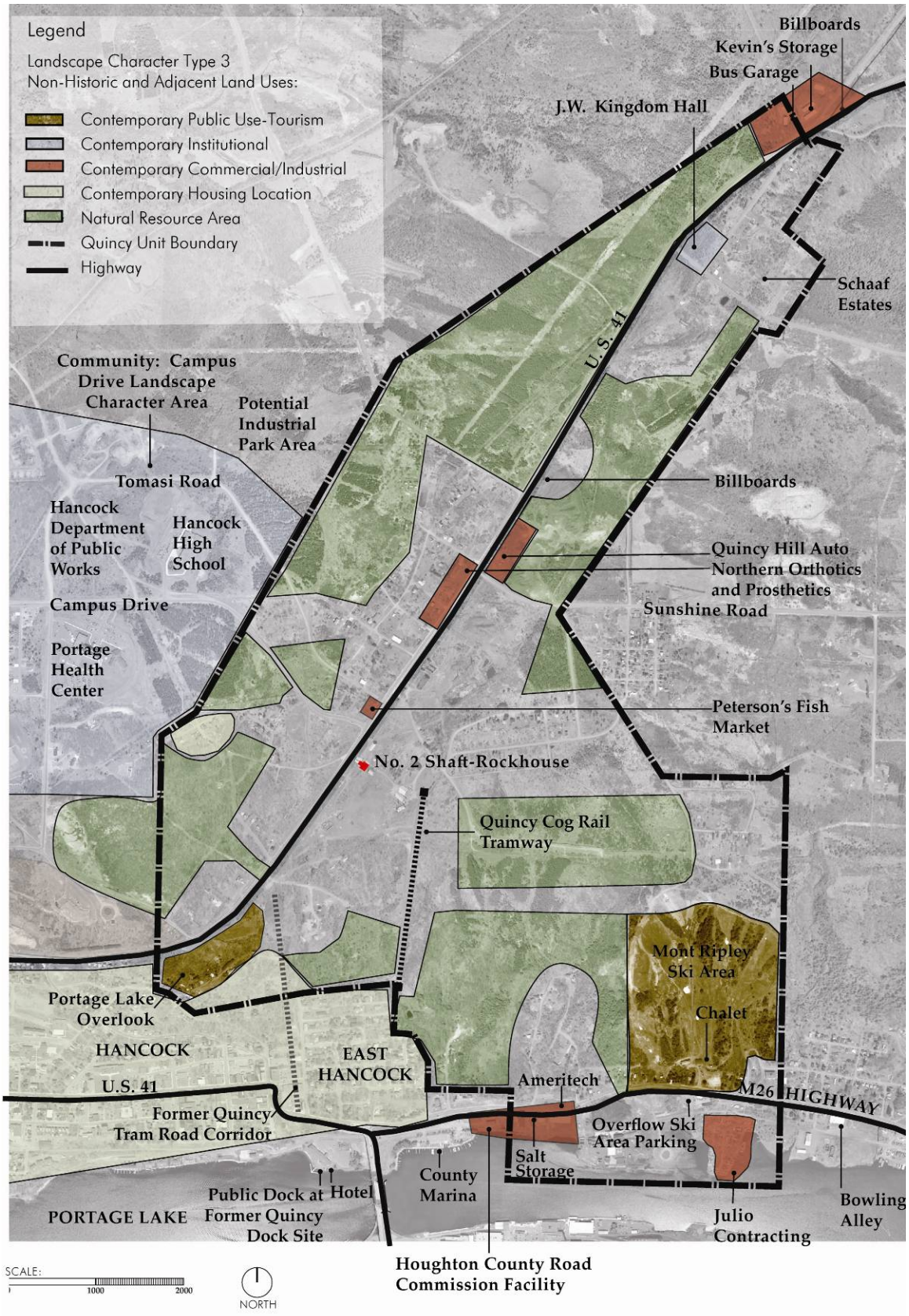


Figure 1- 7: Landscape Character Area Type 3: Non-Historic and Adjacent Land Uses

Relation to Other Planning Projects

Several previous planning project reports provided background and management information for this CLR/EA including: the *Final General Management Plan and Environmental Impact Statement* (1998), the *Houghton County, Michigan Land Use Plan* (2004), *Keweenaw National Historical Park Visitor Study* (2004), the *Fire Management Plan* (2005), the *Environmental Assessment and Finding of No Significant Impact for the Fire Management Plan* (2005), and the *Strategic Plan for Keweenaw National Historical Park, Fiscal Years 2005-2008.* These documents, along with research conducted as part of this CLR/EA, inform the development of treatment alternatives and analysis of potential impacts to park resources.

Project initiation meetings were held at Keweenaw National Historical Park headquarters in Calumet, Michigan in September 2006. Meeting attendees included Keweenaw National Historical Park staff members Steve DeLong, Landscape Architect, Abby Sue Fisher, Chief of Museum, Archives & Historical Services, Kathleen Harter, Chief of Interpretation and Education, and Jo Urion, Historian. Also in attendance were Marla McEnaney, Historical Landscape Architect, Midwest Regional Office of the National Park Service, and Brenda Williams, Quinn Evans | Architects project manager. During the meetings park staff indicated that the park General Management Plan (GMP) is very general and not effective in providing direction for the CLR/EA for managing the landscapes within the Quincy Unit. There is no Development Concept Plan or Site Development Plan for the park to help address the gaps left by the current GMP. During the winter of 2007-2008, the park underwent an internal, informal planning process to determine the best location for a visitor center within the Quincy Unit. The process determined that a visitor center should be located either within the Historic Industrial Core of the unit—the area on Quincy Hill that includes the resources associated with the No. 2, No. 4, No.6 and No. 7 locations, or at the Smelter site.

A Long Range Interpretive Plan (LRIP) is being developed for the park to provide an overall direction for interpretation of the resources. Kathleen Harter, Chief of Interpretation, and Dan Brown, Interpreter, have been included in development of the CLR treatment alternatives and selection of a preferred alternative for the CLR/EA to ensure that the CLR/EA and LRIP processes are integrated.

The park Resource Stewardship Plan is in draft form. It has been utilized to inform the development of treatment alternatives. The park has developed a standard for Heritage Sites wayfinding signs that will be taken into account during the development of treatment alternatives for the Quincy Unit. The park will develop a signage and wayfinding plan that may also be used to inform the treatment alternatives.

During the majority of the time that this Cultural Landscape Report / Environmental Assessment was being developed, the Quincy Smelting Works was the focus of a United States Environmental Protection Agency (EPA) remediation project. Although the physical site was not accessible during the field investigations phase of the CLR, the CLR has incorporated recommendations from the remediation project into the treatment recommendations common to all alternatives.

Environmental Assessment Impact Topics

Park resources were considered in accordance with NPS *Management Policies 2006*. The NPS is charged with managing park resources and maintaining them in an unimpaired condition for future generations in accordance with the NPS-specific statutes, including the Organic Act of 1916 and the National Parks Omnibus Management Act of 1998; general environmental laws such as the Clean Air Act, the Clean Water Act, the Endangered Species Act of 1973, NEPA, The National Historic Preservation Act, and the Wilderness Act; Executive Orders; and applicable regulations. NEPA is the basic national charter for protection of the environment. It requires Federal agencies to use all practicable means to restore and enhance the quality of the human environment and to avoid or minimize any possible adverse effects of their actions upon the environment.

The CLR/EA only evaluates the treatment alternatives developed as part of the project. At this time, impact topics have been selected for analysis or eliminated from further analysis based on the anticipation that treatment alternatives developed for this project would not impact certain resources. After developing the alternatives, the impact topics will be revisited. If it appears that an alternative affects resources at an impact level of minor or greater, the affected topic(s) will be added to those analyzed within the CLR/EA.

Specific impact topics are identified for analysis and to allow comparison of the environmental consequences of each alternative. Impact topics that are analyzed for this project are: cultural resources including cultural landscape and archaeological resources; wetlands; special status species; socioeconomics; visitor experience; and park operations.

Impact topics that were dismissed from analysis for this project are: geology, soils; prime and unique farmlands; floodplains; water quality air quality; environmental justice; soundscape management; lightscape management; Indian trust lands; and ethnographic resources.

These impact topics were identified based on federal laws, regulations, and Executive Orders; NPS *Management Policies 2006*; and NPS knowledge of limited or easily impacted resources. A brief rationale for the selection of each impact topic is given below, as well as the rationale for dismissing specific topics from further consideration.

Impact Topics Selected for Analysis

Cultural Resources

The environmental analysis will include all landscape characteristics (natural systems and features, vegetation, topography, spatial organization, land use, circulation and viewsheds). Cultural resources at the park include the exterior of historic structures and how they interact with surrounding landscape. The Quincy Unit encompasses the Quincy Mining Company Historic District, a National Historic Landmark on the National Register of Historic Places.

There is great potential for both prehistoric and historic archaeological resources at this unit as well as throughout the park. Although archaeological resources have not been comprehensively inventoried within the Quincy unit, a number of projects have been conducted

that indicate the area contains extensive archaeological resources.[11] Implementation of any treatment alternative could affect cultural resources at Keweenaw National Historical Park; therefore this topic will require analysis in this document.

Socioeconomics

The local economy of Houghton County is based on tourism/outdoor recreation, higher education, healthcare and professional services, light industry and agricultural services. Keweenaw National Historical Park and its partner organizations are an important part of the region's tourism and outdoor recreation economy. Potential treatments to the cultural landscape of Keweenaw National Historical Park —when evaluated within the greater context of the region and socioeconomic synergies with park Keweenaw Heritage Site Partners—could have effects on the regional economy; therefore, this topic will be addressed in this document.

Visitor Experience

Keweenaw National Historic Park staff does provide some guided tours, however many of the visitor contacts and services for Keweenaw National Historic Park are provided through the Keweenaw Heritage Sites, the park's partners. During summer, the National Park Service operates a visitor information desk at the Quincy Mine Hoist Association Gift Shop, formerly the historic Supply House.[12] Keweenaw National Historical Park staff are involved in the process of establishing a comprehensive interpretive / education program for the park. Because implementation of any treatment alternatives could affect the visitor experience at the Quincy Unit, as well as the rest of Keweenaw National Historical Park and Keweenaw Heritage Sites, this topic will be addressed in this document.

Park Operations

Keweenaw National Historical Park is open year-round, although most of the Keweenaw Heritage Sites are closed during the winter. Park staff is based in park headquarters in Calumet, Michigan. Maintenance and interpretation of the Quincy Unit is a partnership with Keweenaw Heritage Sites, which requires the park staff to coordinate the implementation of these efforts to meet the NPS standards. Implementation of potential alternatives may affect staffing levels, logistics and costs for maintenance and interpretation at Keweenaw National Historical Park; therefore this topic will be addressed in this document.

Impact Topics Considered But Eliminated from Further Analysis

Geology

Surficial geology in the region underlying the Quincy Unit of Keweenaw National Historical Park consists of basalt bedrock.[13] The bedrock is referred to as Portage Lake Volcanics according to the 1987 Bedrock Geology of Michigan, and is composed of pre-Cambrian

[11] Mishkar, Land Use History and Archaeological Survey, A.E. Seaman Mineral Museum Project, Quincy Mine National Historic Landmark, Houghton County, Michigan; Whittlesey, Ancient Mining on the Shores of Lake Superior, Smithsonian Contributions to Knowledge; other unpublished projects conducted by Michigan Technological University.

[12] United States Department of the Interior, National Park Service, Keweenaw National Historical Park website, http://www.nps.gov/kewe/index.htm, accessed 23 July 2007.

[13] United States Department of the Interior, National Park Service, *Environmental Assessment and Finding of No Significant Impact for Fire Management Plan for Keweenaw National Historic Park*.

andesites and felsites, as well as basalts.[14] There may also be sandstone bedrock, which predominates eastward of the park. The Jacobsville Formation is composed of sandstones, rare conglomerates, and shales and is of the Cambrian age.[15] The Keweenaw Fault runs southwest to northeast through the Quincy Unit. However, because the proposed action would not disturb bedrock, there would be no impacts to geologic resources. Therefore, further analysis of geology will be dismissed from this document.

Soils

According to the United States Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS), there are 15 soil types representing 10 soil series within the Quincy Unit.[16] The most dominant soils include Keweenaw-Kalkaska-Waiska complex, dissected, on slopes of 15 to 70 percent; Trimountain-Paavola-Waiska complex on slopes of 1 to 8 percent; Udipsamments and Udorthents on nearly level slopes; and Urban lands. These soils account for 75 percent of the Quincy Unit soils, and generally consist of well drained to excessively well drained sandy loams and sand. None of the soil types within the Quincy Unit meet the criteria of "prime farmland" as defined in the Farmland Protection Policy Act.

Because proposed cultural landscape treatment alternatives would result only in short-term, direct negligible impacts, further analysis of soils will be dismissed from this document. Nevertheless, all soil disturbing activities are subject to applicable regulations; including the National Pollutant Discharge Elimination System (NPDES) and Stormwater Pollution Prevention Plan (SPPP) requirements, such as implementation of NPS Best Management Practices (BMPs).

Prime and Unique Farmlands

In August 1980, the Council on Environmental Quality (CEQ) directed that Federal agencies assess the effects of their actions on farmland soils classified by the USDA NRCS as prime or unique. Prime or unique farmland is defined as soil that particularly produces general crops including common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts.

Active farmland does not currently occur within the Quincy Unit or near the area of potential impacts by the proposed cultural landscape alternatives and consequently this topic will not be analyzed further in this document. The proposed cultural landscape alternatives are exempt from the requirements of the Farmland Protection Policy Act because there are no prime farmlands associated with the cultural landscape project area, and there are no potential impacts that would directly affect wetland areas associated with agriculture. Therefore, this topic is dismissed from further consideration in this document.

[14] Michigan Technological University website, http://www.geo.mtu.edu/ accessed 20 July 2007.
[15] Ibid.
[16] United States Department of Agriculture website, http://websoilsurvey.nrcs.usda.gov/app/, accessed 20 July 2007.

Wildlife

NEPA requires federal agencies to use all practicable means to restore and enhance the quality of the human environment and to avoid or minimize all possible adverse effects of their actions upon the environment. NPS policy is to protect the components and processes of naturally occurring biotic communities, including the natural abundance, diversity, and ecological integrity of plants and animals.[17]

Treatment actions are expected to result in loss of wildlife in an amount proportional to the amount of habitat lost, which would be minimal. The project area has been previously affected through years of disturbance, mining, and other development. These landscapes will tend to feature species typical of forested and disturbed settings. Wildlife adapted to disturbed and partially disturbed habitats that are likely to occur in the Quincy Unit include several mammals; least chipmunk, house mouse, red squirrel, raccoon, coyote, and white-tailed deer, and birds including mourning dove, northern flicker, American crow, black-capped chickadee, American robin, European starling, chipping sparrow, song sparrow, and house sparrow.[18]

Wildlife in the area are habituated to human activity, noise, or departed entirely. Larger wildlife are likely to avoid a project area to a certain extent during construction activities. During construction some small animals, like rodents, may be killed or forced to relocate to areas outside a project area. Overall, populations of affected species might be slightly and temporarily lowered during construction, but no permanent negative effects to wildlife are anticipated. Any treatment alternative may have short-term, negligible, localized, adverse impacts on wildlife therefore; this topic will not be addressed further in this document.

Special Status Species

The Endangered Species Act (ESA) of 1973 (16 USC 1531 et seq.) requires examination of impacts on all federally-listed threatened, endangered, and candidate species. Section 7 of the ESA requires all federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitats. In addition, the NPS *Management Policies 2006* and Director's Order 77 *Natural Resources Management Guidelines* require the NPS to examine the impacts on federally-listed, endangered and candidate species, as well as state-listed threatened, endangered, candidate, rare, declining and sensitive species.

Potential impacts to special status species or their habitats were evaluated based on species presence and the potential effects of actions related to treatments to the cultural landscape at Keweenaw National Historical Park. For the purposes of this analysis, the USFWS, Michigan Department of Natural Resources and the Michigan Natural Features Inventory were contacted to determine if federally-listed and state-listed species occur on or near the project area. As noted in Section 2, the USFWS indicated that there are no known records of threatened or endangered species in the project area. However, they commented that the federally threatened and state endangered Canada lynx (*Lynx canadensis*) may occur in the area. The Michigan

[17] National Park Service, *Management Policies* 2006.

[18] United States Department of the Interior, National Park Service, *Fire Management Plan for Keweenaw National Historic Park*, February 3, 2005; Kurta, *Mammals of the Great Lakes Region,* 1995; and United States Geological Survey website, http://www.mbr-pwrc.usgs.gov/bbs/, accessed July 2007.

Natural Features Inventory indicated that there are occurrences of a state-listed species of concern (Douglas' hawthorn-*Crataegus douglasii*) within Houghton County and possibly within Keweenaw National Historical Park.

Canada Lynx

Canada lynx is a medium sized cat, and is a specialized predator of the snowshoe hare. In the Great Lakes region, Canada lynx occupies large boreal forests comprising conifer trees (primarily spruce and firs). Woodlands in the Historic Industrial Core and the overall Quincy Unit were entirely cleared for the industrial development that historically occurred at the site. Volunteer trees have become established in areas that were abandoned or uncultivated since areas of the site became inactive in the late 19th middle of the 20th century, however, boreal forests are not common. Since large tracts of boreal forests comprised of conifer forests are not present, habitat for Canada lynx does not exist. Therefore, all of the proposed alternatives will have no effect/no adverse modification to Canada lynx. This conclusion is reached when the proposed action and its interrelated and interdependent actions will not directly or indirectly affect listed species or destroy/adversely modify designated critical habitat. Formal Section 7 consultation is not required when the no effect conclusion is reached.

Gray Wolf

At the time of the distribution of this CLR/EA for public review, the gray wolf had been delisted from Endangered Species Act (ESA) of 1973 regulatory protections and was not addressed in the CLR/EA. The CLR/EA was published for public review in July 2009. However, in September 2009, in response to a settlement agreement and court order, the USFWS reinstated the protections for the gray wolf in the Western Great Lakes region. With that change, the gray wolf is now a Federally-listed endangered species in Houghton County, Michigan.

The gray wolf is the largest member of the canine family that hunts large hoofed mammals. The species live, travel, and hunt in packs with transient lone individuals separating from the pack in attempts to originate new packs. There are no known gray wolf individuals or packs present in the park or immediate vicinity.

The Quincy Unit of Keweenaw National Historical Park is a heavily disturbed landscape from decades of mining activities and is within an expanding urban area of the Hancock and Houghton, Michigan. The Preferred Alternative involves cultural resources rehabilitation with an emphasis on landscape restoration and a new combined visitor center for the A.E. Seaman Mineral Museum, National Park Service, and Quincy Mine Hoist Association. The combined visitor center would be implemented through the rehabilitation of an existing structure in the Historic Industrial Core area. This alternative includes selective removal of woody vegetation in the Historic Industrial Core, the No. 6 Area, the Dryhouse Area, the No. 7 and Railroad Corridor Areas. Although landscape modifications are proposed by the preferred alternative, the landscape modification will be minor and selective, the Preferred Alternative would result in no effect to gray wolf individuals, packs, or the overall population.

Douglas' Hawthorn

Douglas' hawthorn is an understory deciduous tree occurring on rocky and/or disturbed ground. The Quincy Unit was originally described by copper speculators in the mid 1800's as being forested with high quality pines, occasional swamps, and other forests of sugar maple, birch, fir, oak, and white pine. It is possible that the forest types of the time could have provided habitat for Douglas' hawthorn. However, after the Quincy Mining Company became established in the area, the company cleared land for roads, crops, and mine development. Also, coal for steam powered mining equipment was not available. Therefore, nearly every tree in the area was cut for fuel wood in the mid-late 1800's. At the top of the mines, sorting of copper from rock was undertaken and the waste rock was discarded in piles.

Since the abandonment of the Quincy Mine area in the mid-20th century, habitat for the establishment of Douglas' hawthorn was created by the numerous rock piles and slopes present on the site from the mining process. This "new habitat" probably has led to an increase in the number of Douglas' hawthorn trees present at the site when compared to landscape conditions prior to the mid-19th century. However, actual tree surveys have not been conducted at the site.

There would likely be some losses of Douglas' hawthorn trees at similar levels for each of the alternatives, especially along rock slopes and/or rock piles. Therefore, any of the alternatives may affect, but are not likely to adversely affect species/critical habitat. This conclusion is appropriate when effects to the species or critical habitat are expected to be beneficial, discountable, or insignificant. However, to compensate for the loss of Douglas' hawthorn individual trees, a species presence/absence survey and a voluntary programmatic incidental take and reporting agreement between the National Park Service and the Michigan Natural Features Inventory should be considered.

The potential impacts to special status species would be negligible direct negative impacts; therefore, special status species will not be addressed in this document.

Wetlands

Section 404 of the Clean Water Act (CWA) and Executive Order 11990 requires federal agencies to avoid impacts to wetlands whenever possible. Further, the NPS Management Policies 2006, section 4.6.5, Wetlands and DO-77-1 (Wetland Protection) provide guidelines for development proposed in wetlands, which includes a sequenced approach. Based on the policy, the NPS employs a sequence of:

a) avoiding adverse wetland impacts to the extent practicable,
b) minimizing impacts that could not be avoided, and
c) compensating for remaining unavoidable adverse wetland impacts via restoration of degraded wetlands.

Furthermore, the state of Michigan Department of Environmental Quality (DEQ) under the authority of the Wetland Protection Act, Part 303 of the Natural Resources and Environmental Protection Act, MCL 324.30301 et seq., also regulates impacts to wetlands within the state.

The Quincy Unit was originally described by copper speculators in the mid 1800's as being forested with high quality pines, occasional swamps, and other forests of sugar maple, birch, fir,

oak, and white pine. However, after the Quincy Mining Company became established in the area, the company cleared land for roads, crops, mine development and fuel wood. Other than widening of the Portage River, descriptions of specific dredging or filling of vegetated wetlands are not present in recorded histories. However, based on the records, it is likely that forested wetlands were cleared of vegetation, but may not have been drained or filled.

No comprehensive wetland determinations have been conducted in the Quincy Unit; however United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps identify the potential for forested/scrub-shrub wetlands in the northern part of the Quincy Unit on both sides of U.S. 41. This area is north of the Quincy Unit's Historic Industrial Core. The USFWS NWI identifies potential areas of wetlands (small freshwater ponds) in the Quincy Unit Historic Industrial Core. These potential wetland areas are former cooling ponds associated with mining activities. Impacts to wetlands can include losses of functions and values, diversion of contributing water sources, vegetation removal, dredging, filling, and conversion to non-natural land cover. The various alternatives propose vegetation removal (primarily to restore views and interpret and stabilize the park's cultural resources), but wetland filling or dredging is not proposed and vegetation removal in the vicinity of wetlands would be avoided. Since no filling or dredging, or vegetation removal will occur in, or in the vicinity of potential wetland areas, no impacts requiring federal or state permits are proposed by any of the alternatives, therefore wetlands will not be addressed in this document.

Air Quality

The 1970 Clean Air Act, as amended in 1990 (42 U.S.C. 7401 et seq.), requires federal land managers to protect park air quality, while the 2006 NPS *Management Policies* address the need to analyze air quality during park planning. The 1970 Clean Air Act provides that the federal land manager (the Assistant Secretary for Fish and Wildlife and Parks and the Park Superintendent) has an affirmative responsibility to protect the park's air quality related values (including visibility, plants, animals, soils, water quality, cultural and historic resources and objects, and visitor health) from adverse air pollution impacts. Section 118 of the 1970 Clean Air Act requires the park to meet all federal, state, and local air pollution standards. Section 176(c) of the 1970 Clean Air Act requires all federal activities and projects to conform to state air quality implementation plans to attain and maintain national ambient air quality standards.

Keweenaw National Historical Park does not conduct air quality monitoring. The effects of air pollution on the park's natural resources and historic structures are unknown. A Fire Management Plan addresses air quality and various means to mitigate smoke impacts from prescribed fires.[19] If fires are prescribed as part of any treatment alternatives, the prescribed burns will be conducted within the guidelines of the Fire Management Plan.

According to the US Environmental Protection Agency (EPA), Michigan has no non-attainment areas for carbon monoxide, nitrogen dioxide, one-hour ozone, sulfur dioxide, particulates (and <10 micrometers), and lead.[20] As of June 2007, nine counties in the state are in non-attainment

[19] United States Department of the Interior, National Park Service, *Fire Management Plan for Keweenaw National Historic Park*, February 3, 2005.
[20] United States Environmental Protection Agency website, http://www.epa.gov/air/data/nonat.html?st~MI~Michigan, accessed 23 July 2007.

for the eight-hour ozone and seven counties are in non-attainment for the < 2.5 micrometers particulates standards. However, Houghton County is not among the counties in non-attainment for these two criteria. Consequently, Keweenaw National Historical Park does not occur within any areas of non-attainment for criteria air pollutants, and therefore this subject will not be further analyzed.

Local air quality would be temporarily affected by dust and vehicle emissions during the period of construction for any cultural landscape alternative. Operating equipment during this period would result in increased vehicle exhaust and emissions. Hydrocarbons, nitrous oxide, and sulfur dioxide emissions would be rapidly dissipated by air drainage since air stagnation is rare in the park vicinity. To reduce equipment emissions, the park would apply appropriate mitigating measures limiting idling of motorized vehicles.

Fugitive dust plumes from equipment would intermittently increase airborne particulates in the area near the construction sites, but loading rates are not expected to be significant. To partially mitigate these effects, project construction activity can be coupled with water sprinkling to reduce dust.

Overall, there would be negligible, short-term, adverse impacts to local air quality due to dust generated from motorized equipment. These effects would last only as long as the life of the project so local and regional air quality is unlikely to be affected by any of the alternatives. Therefore, air quality is dismissed as an impact topic in this document.

Water Resources

Floodplains

Executive Order 11988 (Floodplain Management) directs Federal agencies and their actions to avoid, to the extent possible, the long-term and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. Although low-lying portions of the Quincy Unit border Portage Lake, the cities of Hancock and Houghton have no designated floodplains as defined by Executive Order 11988.[21] As floodplains do not occur within the project area, floodplains will be dismissed as an impact topic in this document.

Water Quality

Section 404 of the Clean Water Act also requires federal agencies and their actions to avoid impacts to other waters of the United States, which includes lakes, ponds, streams, and rivers. According to the United States Geological Survey (USGS) topographic quadrangle of Hancock, Michigan and the National Wetlands Inventory mapping by the USFWS, several small ponds are depicted within the Quincy Unit, although there are no USGS-mapped streams or rivers, with the exception of Portage Lake bordering the south edge of the Unit.[22]

[21] Houghton County, 2007. Personal communication by email (25 July 2007) with Tracy Smith of the Houghton County Building Department (building@houghtoncounty.net)

[22] United States Geological Survey website, http://www.mbr-pwrc.usgs.gov/bbs/, accessed July 2007; and United States Fish and Wildlife Service, National Wetlands Inventory website, http://www.fws.gov/nwi/, accessed 19 July 2007.

Michigan DEQ under the authority of the Shorelands Protection and Management Act, Part 323 of the Natural Resources and Environmental Protection Act, MCL 324.30301 et seq., regulates impacts to coastal areas within the state. Coastal areas are defined as occurring within 1,000 feet landward from the ordinary high water mark of a Great Lake or a connecting waterway. Within this zone, the Act places emphasis on areas at high risk for erosion and flooding. Although ponded areas are mapped within the project area, any proposed treatment alternative would have negligible adverse impacts ponds, lakes, streams, or rivers and consequently water quality is dismissed as an impact topic in this document.

Hazardous Materials

A federal and state database search was conducted for the Quincy Unit and adjacent areas within a 1.5-mile radius from the intersection of U.S. 41 and 5th Street. A total of 80 records were obtained within this search radius, although only three records occur within the Quincy Unit.

- Lakeside Auto at 416 Royce Road, which is a Resource Recovery Conservation Act (RCRA) Generator Site. The detailed information indicates that this site is a Conditionally Exempt Small Quantity Generator of less than 100 kg/month of hazardous materials/wastes.
- David J. Hanke and Superior Oil Company at 801 Royce Road. Under Mr. Hanke's file, five underground storage tanks that held gasoline, diesel fuel, or kerosene were removed from the ground in 1990 and 1997. Under Superior Oil Company, two underground storage tanks were removed from the ground, but no other information is available as of the report revision dated 1 July 2001.
- Julio Contracting Company on Royce Road. In 1990 two underground storage tanks (one gasoline, one diesel) were removed from the ground.

No National Priority List (NPL) or Superfund sites were found in this database search. However, the Quincy Smelting Works site is part of the Torch Lake Area of Concern and currently included on the National Priorities List. At this site the USEPA has conducted asbestos abatement at the barn and garage in addition to removal of hazardous materials from other buildings on site. Additional cleanup (*i.e.*, mitigation) will allow the site to be de-listed from the NPL. Delisting is expected to provide access to state and federal Brownfield resources.

Any site where the presence of hazardous materials is considered to be in question would be avoided in developing treatment alternatives; however if any potentially hazardous sites are within an area designated for treatment, all appropriate measures will be taken to mitigate hazardous working conditions. Park staff would adhere to appropriate NPS policies and directives; Michigan EPA; and Occupational Safety and Health Administration (OSHA) safety precautions for workers at the project sites. These actions are required of any treatment alternative that is considered for the site. Therefore, this topic will not be addressed further in this document.

Environmental Justice

Under a policy established by the Secretary of the Interior, to comply with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations,* departmental agencies should identify and evaluate, during the scoping and/or planning

processes any anticipated effects, direct or indirect, from the proposed project or action on minority and low-income populations and communities, including the equity of the distribution of the benefits and risks. Data from the U.S. Census Bureau reveals a very small minority population within the census tract that includes the Quincy Unit, local communities and Houghton County. All geographic areas evaluated in the socioeconomic section of this report have a percentage of the overall population that exceeds the State of Michigan poverty rate.

Although there are residents within the Quincy Unit and surrounding communities that are minority and low income, any proposed treatment alternative would not likely result in direct or indirect impacts on minority or low-income populations. Potential short-term, direct, minor beneficial impacts could result from treatment alternatives. Therefore, environmental justice is not included as an impact topic in this document.

Indian Trust Resources

Secretarial Order 3175 requires any anticipated impacts to Indian trust resources from a proposed project or action by Department of Interior agencies be explicitly addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights and it represents a duty to carry out the mandates of federal law with respect to American Indian and Alaskan Native tribes.

There are no Indian trust resources at the park. The lands comprising the park are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Therefore, Indian trust resources are dismissed as an impact topic in this document.

Ethnographic Resources

Impacts associated with ethnographic resources typically deal with questions about contemporary groups or peoples, their identity, and their heritage. As defined by the NPS, an ethnographic resource is a site, structure, object, landscape, or natural resource feature assigned traditional, legendary, religious, subsistence or other significance in the cultural system of a group. The Keweenaw Bay Indian Community has identified no sacred Indian sites on the subject federal lands.[23] At this time the NPS has no knowledge of any other traditionally affiliated organizations or groups.

Copies of this CLR / EA will be sent to the Keweenaw Bay Indian Community and any other interested tribes for their review and comment. If the tribes subsequently identify the presence of ethnographic resources, appropriate mitigation measures would be undertaken in consultation with the tribes. Also, the park has requested an Ethnographic Overview and Assessment be completed for Keweenaw National Historical Park. This document will not be prepared before the CLR/EA process is completed. In the unlikely event human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act of 1990 and Executive Order 13007 would be followed (25 USC 3001). Therefore, Ethnographic Resources will not be discussed further as an impact topic in this document.

[23] United States Department of the Interior, National Park Service, *Environmental Assessment and Finding of No Significant Impact for Fire Management Plan for Keweenaw National Historic Park*.

Museum Collections

Keweenaw National Historical Park has an extensive museum collection. As of September 2007, there are 435,208 items in the collection and these items are stored in two locations. The two facilities are the Keweenaw History Center and Warehouse No. 1. The park is continually upgrading collections facilities to meet NPS requirements for curation and storage. The ongoing upgrades to collections facilities are required because the park's collections grow on an annual basis.

Although the park's collections continue to grow, it is not anticipated that implementation of any treatment alternative would result in a large number of new items that require storage and curation in the park's museum collections. Implementation of any treatment alternative would result in negligible impacts to museum collections. This topic has been dismissed from further analysis in this document; however if it is determined that treatment alternatives would result in impacts that exceed minor, this topic would be evaluated.

Soundscape Management

In accordance with NPS *Management Policies 2006* and Director's Order #47, *Sound Preservation and Noise Management*, an important part of the NPS mission is preservation of natural soundscapes associated with national park units. Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all natural sounds that occur in park units, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive and can be transmitted through air, water, or solid materials. The frequencies, magnitudes, and duration of human-caused sound considered acceptable varies among NPS units, as well as potentially throughout each park unit, being generally greater in developed areas and less in undeveloped areas.

Human-caused noise that is experienced at the developed areas of the park is what a visitor would expect from a small town. Visitors would likely expect to hear sounds from vehicle traffic and general "white noise" emanating from an urban area. Construction associated with any treatment alternative would be consistent with the normal background of noise of a small town and would only occur during length of construction resulting in short-term, negligible adverse impact to the soundscape of the Quincy Unit; therefore, soundscape management is dismissed as an impact topic in this document.

Lightscape Management

In accordance with NPS *Management Policies 2006*, the NPS strives to preserve natural ambient landscapes, which are natural resources and values that exist in the absence of human-caused light. Keweenaw National Historical Park is located within a rural town setting which includes lighting associated with streets, businesses, and small neighborhood residential areas. There are no sources of light associated with treatment alternatives; therefore, lightscape management is dismissed as an impact topic in this document.

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter II: Landscape History

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter II: Landscape History

Introduction

The oldest verifiable evidence of metal working in North America is a nearly 7,000 year old spear point found in Minnesota.[1] It was made of copper from the Lake Superior region, as were many beads, awls, bracelets, fishhooks, and other items that have been found in Native American archaeological sites throughout North America. Based on the number of prehistoric mining pits on Isle Royale National Park, it has been suggested that there were as many as 3,000 on the Keweenaw Peninsula itself.[2] Several of those pits were located in what is now the Quincy Unit of Keweenaw National Historical Park.

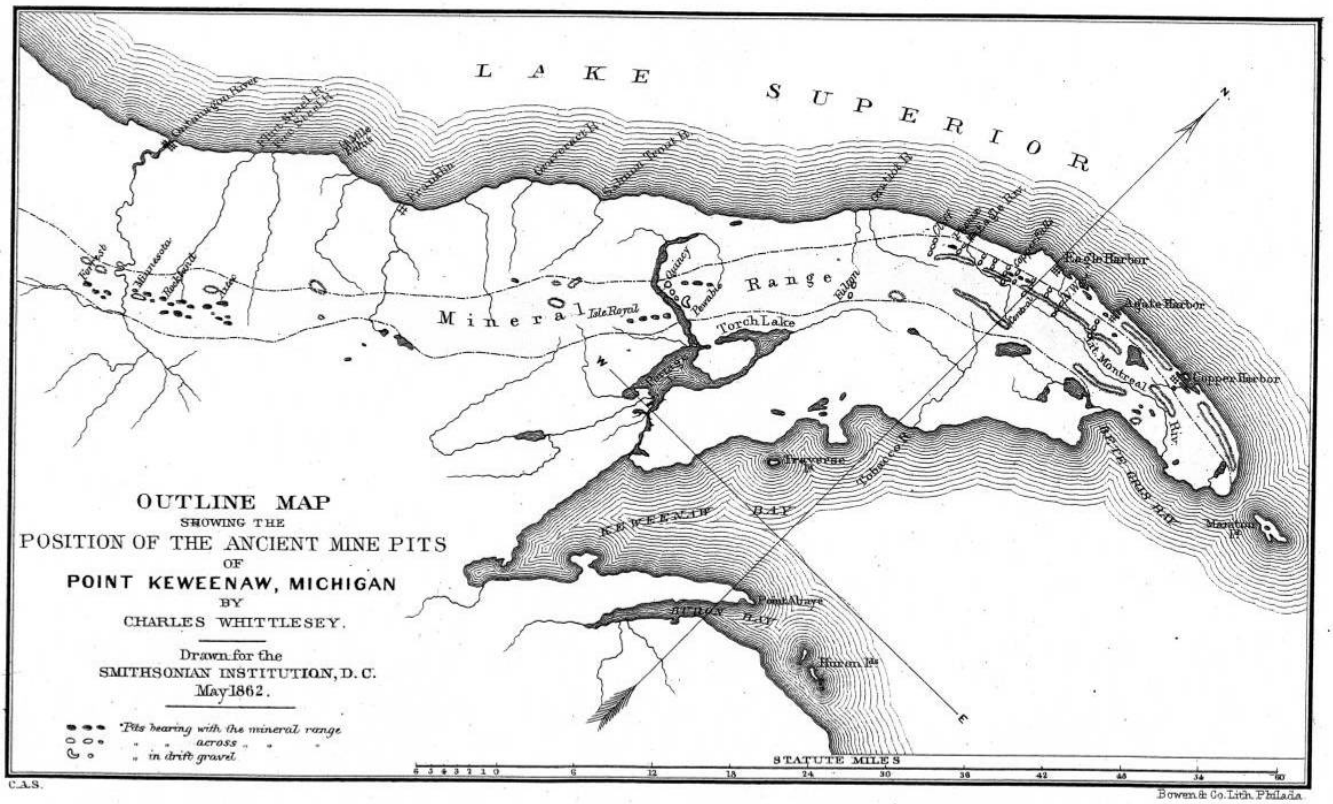


Figure 2- 1: Locations of prehistoric mines, as mapped by Charles Whittlesey (source: Whittlesey, 1863)

[1] Susan Martin, Wonderful Power: The Story of Ancient Copper Working in the Lake Superior Basin (Detroit: Wayne State University Press, 1999), 143.

[2] See page 92 of Ron Morton and Carl Gawboy's Talking Rocks: Geology and 10,000 Years of Native American Tradition in the Lake Superior Region (Minneapolis: University of Minnesota Press, 2000) for information about the number of prehistoric mining pits in the Keweenaw, and Charles Whittlesey, "Ancient Mining on the Shores of Lake Superior," (Washington City: Smithsonian Institution, 1863), for a description of same in the Quincy area.

Descriptions of the copper-rich peninsula led 17th and 18th century Europeans to the area. Among them was British explorer Alexander Henry, who attempted to start a mine near Ontonagon in the 1770s. Although early efforts such as his were "doomed to failure," they drew attention to the Keweenaw's native copper resources.[3] The Ontonagon Boulder, a 3,700 pound mass of pure copper found near the banks of the Ontonagon River, further intensified interest in the Keweenaw, particularly after it was taken east in 1843. In addition to mining and trading copper, the Peninsula's early residents played a role in the fur trade. Priests and preachers came to minister to the Ojibway and early European-American settlers. As the fur trade waned, the federal government secured title to the land, American mining efforts intensified and settlements became permanent.

Douglass Houghton, Michigan's state geologist, wrote about the area in 1841; the following year the Treaty of LaPointe ceded Ojibway title to the Upper Peninsula (U.P.) and the copper rush began.[4] Despite Houghton's recommendation that people exercise caution with regard to the extent and accessibility of the metal, "explorers and speculators flocked to [the Keweenaw] from all quarters, and in 1845 the shores of Keweenaw Point were whitened with their tents."[5] At least 300 mining operations were launched between the 1840s and the 1860s.[6] Individual miners and mining companies staked claims and broke ground, frequently right over prehistoric workings, obliterating them in the process. The Quincy Mining Company (Q.M.C.) was one such business.

Nearly 160 years of intense activity has predictably created some roadblocks in efforts to understand the Quincy Unit's prehistory and archaeological record. The heavy undergrowth and maturing trees that obscure parts of the present landscape may give the impression of an undeveloped area, but in fact the opposite is true: crisscrossed by abandoned rail lines and roadways, the site is full of crumbling foundations, broken bottles and crockery, and remnants of gardens. Indeed, while they may hide the ground, rhubarb, lilacs, lilies, and other domestic plants point to the location and suggest the layout of abandoned neighborhoods. This is a rich landscape, but a difficult one for those wanting to understand the landscape's cultural significance in prehistory.

Though difficult, and challenging to piece together, the Quincy Unit's pre- and early history demonstrates that it was a cultural landscape long before 1846. The 19th century records that document ancient mine sites indicate that prehistoric inhabitants knew the area well. The Portage Lake waterway that provides today's travelers with a shortcut across Lake Superior provided the same benefit thousands of years ago, albeit with a portage; it follows that people got to know the area they traveled through. As the Ojibway settled in the area in the 16th century, they too traversed and explored the area, becoming familiar with its resources.[7] The

[3] Larry Lankton, Cradle to Grave: Life, Work, and Death and the Lake Superior Copper Mines (New York: Oxford University Press, 1992), 7.

4 Some claim that the Keweenaw was in fact the site of the nation's first mining rush. See David J. Krause, The Making of a Mining District: Keweenaw Native Copper 1500-1870 (Detroit: Wayne State University Press, 1992), 135, and Lankton, Cradle to Grave, 8.

5 Whittelsey, 4.

6 Lankton, Cradle to Grave, 9.

7 While ethnographic research has been conducted with Great Lakes Ojibway, work with the Keweenaw Bay Indian Community needs to be completed to understand its history more fully.

Quincy Mining Company may have been one of the earliest mining companies to set up shop in the Keweenaw, but its paths, mining pits, and processing plants modified ones that were there before.

Prehistory

Few archaeologists have examined the Keweenaw Peninsula, and when it is mentioned in literature, descriptions are usually relegated to "peripheral commentary in general accounts of eastern North American archaeology."[8] That being said, Great Lakes archaeologists themselves have been accused of dismissing other sources of native copper in the United States.[9] Academic wrangling aside, that 7,000 year old copper spear point found in Minnesota is significant for the mining industry it represents. An archaeological site in northern Keweenaw County containing copper beads, a crescent-shaped knife, awls, and a point has been dated to roughly 7,800 years before present, and demonstrates that people were here relatively soon after the last glacier retreated from the region.[10] Archaeologists believe that the people occupying the Keweenaw during this time lived in small, mobile groups.[12]

A major pre-contact trade center existed at present-day Sault Ste. Marie; it peaked between 1000 and 1450 AD.[13] Given its location at a crossroads where three Great Lakes come together, researchers have suggested that thousands of people congregated there several times a year. Copper was likely one of the many items being traded and we can assume that the Keweenaw's residents participated in these gatherings. Raw copper changed hands, as did bracelets, beads, knives, and other finished items. Extensive trade networks facilitated the dispersal of Keweenaw copper: it has been argued that "[n]early all of the copper used by prehistoric Indians in eastern North America probably originated in the Lake Superior basin."[14]

8 Martin, 16.
9 John R. Halsey, ed., Retrieving Michigan's Buried Past: Archeology of the Great Lakes State (Cranbrook Institute of Science: Bloomfield Hills, Michigan, 1999), 115.
10 Martin, 142. See also Halsey, 183-184.
12 Martin, 153.
13Helen Hornbeck Tanner, Ed. The Settling of North America: the Atlas of the Great Migrations into North America from the Ice Age to the Present (New York: Macmillan, 1995), 28.
14 John R. Halsey, *Miskwabik – Red Metal: the Roles Played by Michigan's Copper in Prehistoric North America* Eagle Harbor, MI: Keweenaw County Historical Society, 1992), 2.



Figure 2- 2: Copper spear point (source: Courtesy National Park Service, Midwest Archaeological Center, EFMO 6255). Although the source of the copper is unknown, it is likely that it is from the Keweenaw area.

In the course of prospecting in 1847, the Minesota [*sic*] Mining Company found a six-ton mass of copper at the bottom of a twenty-six foot deep ancient shaft.[15] The mass was supported by timber bracing, and had been worked extensively. The labor, tools, and technology required to extract copper from such a depth is indicative of a specialized mining system. Extraction was straightforward. Fire was used to heat copper-rich rock, and when it got hot enough, water was poured over it. This cracked the encasing rock to the point where stone tools could be used to break it away and remove the copper.[16] The hammers used by prehistoric miners ranged in size from small hand-held tools to others weighing forty pounds.[17] People cleared debris from work sites using wooden shovels, baskets, and leather bags. Some pits were modest in size, reaching only a few feet deep, but others were much larger, including one fifteen feet deep with a diameter of 120 feet.[18] Stores of raw copper were kept in caches; one such cache was said to have led to the discovery of the Calumet conglomerate lode.[19] There is evidence to suggest that caches were also located on top of Quincy Hill.[20]

Given the purity of native copper, it was not necessary to smelt it. Rather, it was worked by one of two processes: cold hammering or annealing. Hammering made copper brittle, but annealing, a process in which metal is heated and slowly cooled, made copper stronger and much more malleable. This allowed metalworkers to fabricate a wider variety of tools and

15 Naturally, Minesota [sic] personnel removed the boulder. See Lankton, Cradle to Grave, 10.
16 Many sources describe these techniques. See Halsey, Martin, and Arthur Thurner's Strangers and Sojourners: A History of Michigan's Keweenaw Peninsula (Detroit: Wayne State Press, 1994) for a broader discussion. Whittlesey also provides location-specific details.
17 Halsey, 115.
18 Whittlesey, 6. Unfortunately, he did not provide its location.
19 Thurner, 90. Edwin Hulbert, who staked claim to the Calumet conglomerate in 1864, denied later reports that it was in fact an ancient mine, not a cache.
20 An undated map in the Quincy Mining Company Collection at Michigan Technological University Archives and Copper Country Historical Collections seems to indicate a line of three caches roughly paralleling U.S. 41. See "Map of Mesnard and Pontiac," in the folder labeled "Surface Maps – Site Layout."

decorative items.[21] Yet the industry began to decline. One historian suggests that copper's malleability was also its downfall, "for a copper knife would not last long."[22] Regardless, by the time the Ojibway arrived in the Keweenaw, North America's first metal mining industry had ended.



Figure 2- 3: Copper serpent (source: Courtesy National Park Service, Effigy Mounds National Monument, EFMO 7027) Again, the exact source of the copper used to make this piece is unknown, but it is most likely from the Keweenaw.

Between 1848 and 1850, descriptions of the Keweenaw's prehistoric copper workings were widely publicized and as Charles Whittlesey later observed, "[s]ince then our knowledge of the subject has been much enlarged by the prosecution of mining operations on the very sites of the ancient works."[23] His report – "Ancient Mining on the Shores of Lake Superior" – was published by the Smithsonian Institution in 1863. In it, he stated that one found evidence of prehistoric mining right by Quincy Landing on the north shore of Portage Lake. Whittlesey mapped ancient pits in the Quincy and Pewabic properties, and while stockholders profited from their discovery, today's scholars never will: as he admitted, 19th century investigations of the pits ultimately destroyed them.[24]

21 Halsey, 115.
22 Thurner, 20.
23 Ibid.
24 It is unknown at this point if any evidence of these ancient pits actually remains, but it is doubtful. Obviously, 19th and 20th century developments have reshaped the waterfront and hillside. Determining their location by comparing Whittlesey's map with a modern one would likely yield more information.

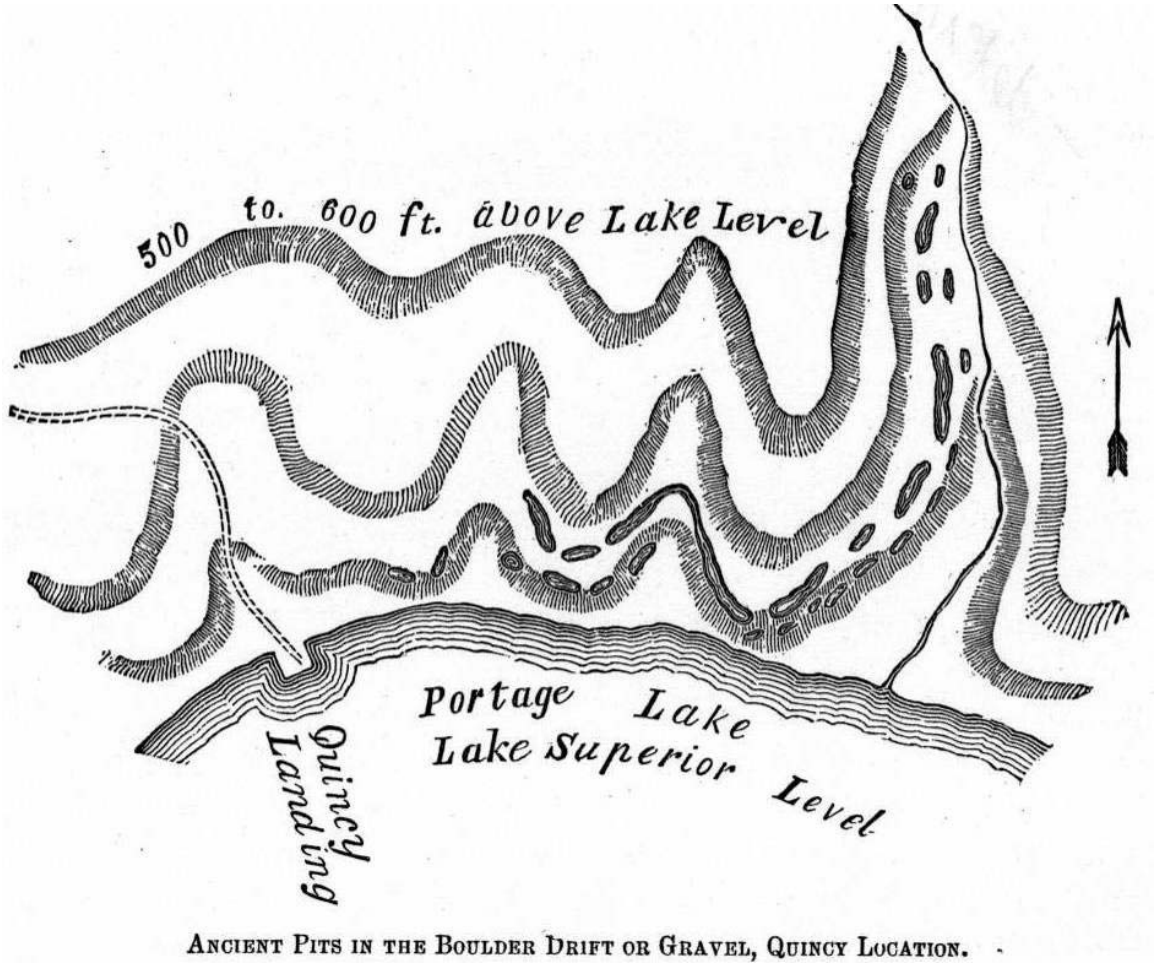


Figure 2- 4: Prehistoric mines in the Quincy Unit (source: Whittlesey, 1863)

Early History: the Arrival of the Ojibway

The Ojibway have been identified with the Keweenaw and the Great Lakes for centuries. Before the Ojibway arrived, the Menomini controlled the Upper Peninsula of Michigan.[25] The Menomini's neighbors were the Ojibway to the east, Winnebago to the south, and Dakota, Fox, Kickapoo, and Mascouter to the west. The Cree dominated lands north of Lake Superior. Although each was a distinct cultural group, they had in common a semi-nomadic way of life, occupying seasonal villages as hunters, fishers, and harvesters of wild rice. By 1608, maps indicate that territories had shifted, largely in response to displacement caused by Europeans acquiring – or appropriating – land, and the impact of European diseases on Native populations. That displacement saw the Ojibway move into the U.P. in the 16th century, forcing the Menomini south.

The Ojibway are an Algonquian-speaking people who once occupied more territory than any other Native group in North America. Also known as Chippewa, the Ojibway emerged from an earlier, ancestral group called the Anishinabe ("original person"), whose homeland was

25 Tanner, 31.

present-day New Brunswick, Canada.[26] Anishinabe and Ojibway are at times used interchangeably, but Anishinabe may also be used to refer specifically to the ancient ancestral Ojibway.[27] Individual bands were identified by distinct names, such as the Amikwa, Saulteur, Marameg, and others; then and now, they were united through networks of clans. The Ojibway likely arrived at the eastern end of Lake Superior some time during the late 1400s, and settled Spirit Island, Wisconsin during the 1500s. Conservative estimates date permanent Ojibway occupation of the western Great Lakes by the mid-to-late 1500s.[28]

Historic Ojibway culture revolved around acquiring and preserving enough food during the summer to support themselves through harsh winters.[29] In late fall, they built up stores of wild rice, maple sugar, and dried fish and game. Bands split into family units and traveled to winter hunting camps, which passed down from father to son.[30] After setting up camps, men trapped and hunted large game. Women sewed, repaired fishing nets, and worked on other indoor tasks. In spring, the bands moved to maple sugar camps and made birch bark canoes before reuniting for the summer in large villages close to lakeshores and rivers. There, they fished, gathered plants, and gardened; potatoes and pumpkins were popular vegetables.[31] Medicinal plants and berries were harvested in August, as was wild rice. In early fall, men would go duck hunting and trapping, make preparations to winter camps, and the cycle would repeat.

In the 1650s, Ojibway informants told French explorers, priests, and traders that their ancestors were not the Keweenaw's ancient copper miners.[32] This is to be expected, as their arrival in the U.P. has been dated to the 16th century and mining had been occurring for thousands of years before. Yet copper had undeniable significance in Ojibway culture: 17th century Jesuit missionaries documented the Ojibway's spiritual beliefs about the metal as well as the places it was found.[33] Records also confirm the spiritual importance of copper in the 19th century. It was carried in medicine bundles, and was particularly valued and revered. Considered a sacred gift, offerings would be left when copper was removed from the ground.[34] Johann G. Kohl, a German traveler who lived with the Ojibway during the mid-1800s, noted that explorers and traders would ask the Ojibway for the locations of metal deposits.[35] Given the number of

26 M. Nieves Zedeño et al., "Final Report: Traditional Ojibway Resources in the Western Great Lakes: An Ethnographic Inventory in the States of Michigan, Minnesota, and Wisconsin," (University of Arizona in Tucson, Bureau of Applied Research in Anthropology, 2001), 27.
27 Ibid., 26-27. According to Morton and Gawboy, the form one uses depends on the subject: 'Ojibwe' when discussing cultural things, 'Chippewa' in political and formal contexts, and Anishinabe 'is what the Ojibwe call themselves, one Ojibwe to another.' See Morton and Gawboy, 67.
28 Zedeño et al., 28-29.
29 Ibid., 42-43. Unless otherwise indicated, all ethnographic information comes from the Ojibway ethnography prepared by Zedeño et al.
30 Morton and Gawboy, 73. That winter territory was inherited indicates that while land was occupied seasonally, its ownership and use was determined through longstanding sociopolitical frameworks. Therefore, it is logical to assume that the Keweenaw, as with other Ojibway-controlled territories, was associated with certain families and bands during the winter.
31 Ibid., 71.
32 Thurner, 20.
33 Zedeño et al., 66.
34 Ibid., 67.
35 Ibid. Given the spiritual importance copper had in Ojibway culture, it is not surprising that they did not always reveal locations to Europeans and Americans. In fact, the Jesuits admit to having used

artifacts that have been found in Historic Period archaeological sites, other Native groups continued to value copper for its practical and ornamental applications.[36] Regardless, new enterprises in the 17th century drew attention to a much different resource.

The Fur Trade

In 1621 the French explorer Samuel Champlain sent Etienne Brule on a mission to learn the Ojibway language and build trading relationships with the many independent Ojibway bands.[37] By the mid 1600s the Ojibway had allied themselves with the French and were well-engaged in the fur trade. The Keweenaw was certainly rich territory: in 1659, the explorers and traders Radisson and Groseilliers paddled along the south shore of Lake Superior to Keweenaw Bay, where they encountered an industrious population of beavers, pieces of native copper, and a convenient, well-established portage route that made traveling across the lake much easier.[38] Ten years later, Jean Talon, the man in charge of the colony of New France (French Canada, founded by Champlain), sent Louis Joliet to "find the copper mine from which pieces of pure copper had been brought." Although he failed to locate it, his journey was one among many which opened the door for French priests to establish thriving missions around Lake Superior.[39]

The resources of the Superior basin factored greatly in the Ojibway's success in the fur trade. They established permanent communities, with key locations at La Pointe and Keweenaw Bay;[40] another settlement is believed to have existed on the shores of Portage Lake although its location remains unclear.[41] The creation of these settlements transformed Ojibway society from "mobile bands into village-centered sociopolitical entities."[42] Their success initiated other changes, including challenges: the Iroquois, allies of the British, began encroaching on Ojibway

---

"artifice" in order to learn from the Ojibway "secret[s] which they did not wish to reveal." See Volume LIV, Chapter XI, "Of the Copper Mines Which are Found in Lake Superior," accessed online at http://puffin.creighton.edu/jesuit/relations/.

36 Much like historians, who organize the past into time periods of similar cultures and events in order to aid our understanding of the past (for example, the Middle Ages, the Renaissance, and the Gilded Age), archaeologists divide prehistory into a chronology of traditions based on similarities and differences in materials found at archaeological sites. Traditions are further divided into phases. Broadly speaking, the Paleo-Indian tradition begins approximately 9500 years before present (BP), and leads into various stages of the Archaic tradition (roughly 8000 BP) and the Woodland tradition (some 2000 BP). During the Historic tradition (which began approximately 500 BP), many of the First Nations we know today were established. See Martin, 142.

37 Carl O. Sauer, Seventeenth Century North America (Turtle Island: Berkeley, 1980), 121. See also Russell M. Magnaghi, A Guide to the Indians of Michigan's Upper Peninsula (Marquette, MI: Belle Fontaine Press, 1984), 1.

38 Sauer, 123. According to Radisson, the beavers had felled so many trees that there was not enough fuel to build a fire. The portage route is followed to this day, but by watercraft through the Portage Lake Shipping Canal instead of on foot via an overland trail.

39 Ibid., 132-133. One of the early missions included Saint-Esprit, which was established by Father Claude Allouez in 1655 for the Ottawa and Huron living at Chequamegon Bay in 1665. Father Rene Menard, another Jesuit missionary, unsuccessfully tried to establish a mission at Keweenaw Bay in 1661. See Magnaghi, 2-3.

40 Zedeño et al., 30.

41 Burt's survey drawing identifies "Indian clearings" on the north shore of Portage Lake, near the current day site of the Quincy Smelting Works.

42 Zedeño et al., 30.

territory in the mid 1600s, sparking a war which the Ojibway eventually won in 1662.[43] Events of the 17th and 18th century are characterized by war, threats of war, and the growing complexities of expanding trade networks.[44]

Treaties and American Mining

Along with accommodating a growing population and westward expansion, copper was one of the main reasons why the U.S. government wanted to acquire Ojibway land in the Upper Peninsula. In 1822, Schoolcraft wrote of the copper-rich territory that "[w]ith respect to the practicability of extinguishing the Indian title, no difficulty is to be apprehended."[45] The government tried to negotiate for subsurface mining rights on the Keweenaw in 1826, and ultimately succeeded in doing so with the Treaty of 1842. The Treaty of 1842 also permitted individual miners to open mines.[46] In all, the Ojibway ceded much of their land in the Lake Superior area to the U.S. government in a series of four treaties (1836, 1837, 1842, and 1854).[47] Land use in the Keweenaw changed dramatically in the 19th century, as copper became the target of prospectors, investors, and entrepreneurs.

In May 1844, the US government established Fort Wilkins near Copper Harbor, where companies A and B of the United States Fifth Infantry were posted in order to protect copper miners from "resentful natives."[48] The Keweenaw was beginning to develop. As Whittlesey described it some years later, Keweenaw Point was white with tents – marked contrast to Keweenaw Bay, where in 1826, "[n]othing [was] heard but the roar of the waves on the shore, nor seen, but the forests that line it, the lake, and the sky."[49] By 1845, the federal government had received over 700 requests for permits to explore.[50] Due to the lack of an accurate land survey and the absence of any kind of oversight in the lease-permitting system that had been established, speculation, corruption, and pessimism grew.[51]

---

43 Ibid., 32.
44 Magnaghi's work offers a comprehensive chronology that will not be duplicated here.
45 Henry Schoolcraft, as cited in Magnaghi, 36.
46 Krause, 135.
47 It is important to recognize that treaties are legally binding agreements made between sovereign nations; understanding treaty history is complicated by their number, their purposes, and the territories to which they pertain. The Treaty of 1836 concerned land in the Upper and Lower peninsulas of Michigan; 1837's ceded territory in parts of Wisconsin and Minnesota; 1842's ceded land in northern Wisconsin and the western UP, including the Keweenaw Peninsula; and the Treaty of 1854 ceded land northeast Minnesota. Many reservations were also created by this treaty. Tribal rights to fish, hunt, and gather on ceded lands were important guarantees of many treaties, including the Treaty of 1842. See the Great Lakes Indian Fish & Wildlife Commission publication "Treaty Rights," 2004 edition. The Keweenaw Bay Indian Community (KBIC) was established in 1936; the Keweenaw Bay Reservation was developed in 1854 following the Treaty of 1854. See "Treaty Rights" and www.coppercountry.com/KBIC.php for information about the establishment of the community and reservation.
48 Thurner, 42. The army was also ordered to remove any Ojibway who remained living in the area following the treaty.
49 Ibid., 35.
50 Krause, 138.
51 Ibid., 140.

Bela Hubbard and William A. Burt assisted Michigan's state geologist, Douglass Houghton when he began to survey the Keweenaw in 1837; their report was printed in 1846 following Houghton's untimely death in Lake Superior in 1845.[52] They noted "scattering pines of an excellent quality" northeast of Portage Lake, and observed the occasional swamp and marsh.[53] Hubbard mentioned that "[t]he whole, is, in general…clothed with an abundant growth of sugar maple, birch, fir, oak, and white pine."[54] However, the bulk of their text was devoted to describing the region's geological resources and identifying the mining operations already in progress. One could argue that, as mining in the Keweenaw was even then a foregone conclusion, the surveyors felt it unnecessary to describe vegetation in detail; one is left to assume that the top of Quincy Hill was covered with a forest that stretched all the way to Copper Harbor.

By 1847 the land had been surveyed, and the ownership issue was settled.[55] The Cliff Mining Company's employees were extracting mass copper from the Cliff lode, and in 1849 became the first company on the Keweenaw to pay dividends to its stockholders. When two other mass copper mines, the Minesota and the Central, began paying, the three "became the talk of the mining world."[56] These mass mines would soon be eclipsed by operations on the vast conglomerate and amygdaloid lodes of the central Keweenaw Peninsula, including Quincy's.[57]

For the most part, the prehistory of the Quincy Unit will remain unclear, as will its history prior to 1846. There is no doubt that the area was worked by prehistoric miners over a long period of time, and that copper was significant in Ojibway culture. Other questions – such as whether the Quincy Hill area contained travel corridors and culturally significant sites – still need to be answered. Despite these unknowns, it is important to recognize that the Quincy Unit holds more stories than those suggested by what is visible on the landscape today.

52 Jacob Houghton, Jr., Reports of William A. Burt and Bela Hubbard, esqs., on the Geography, Topography, and Geology of the U.S. Surveys of the Mineral Region of the South Shore of Lake Superior, for 1845; accompanied by a List of Working and Organized Mining Companies; a List of Mineral Location; and a Correct Map of the Mineral Region, also a Chart of Lake Superior, reduced from the British Admiralty Survey. Detroit: C. Wilcox, 1846. Unfortunately, the maps have been removed from the copy held at Michigan Technological University; they may contain more detailed descriptions of vegetation.
53 Ibid., 7.
54 Ibid., 29.
55 Krause, 182.
56 Ibid., 217.
57 Conglomerate and amygdaloid refer to two different types of copper-containing rock found in the Keweenaw. Conglomerate rock is composed of fragments of varying sizes – like sand, pebbles, and boulders – that have been cemented together. Copper is found in the spaces between the fragments. Amygdaloid rock is igneous and contains cavities (amygdules) frequently filled with pure copper.

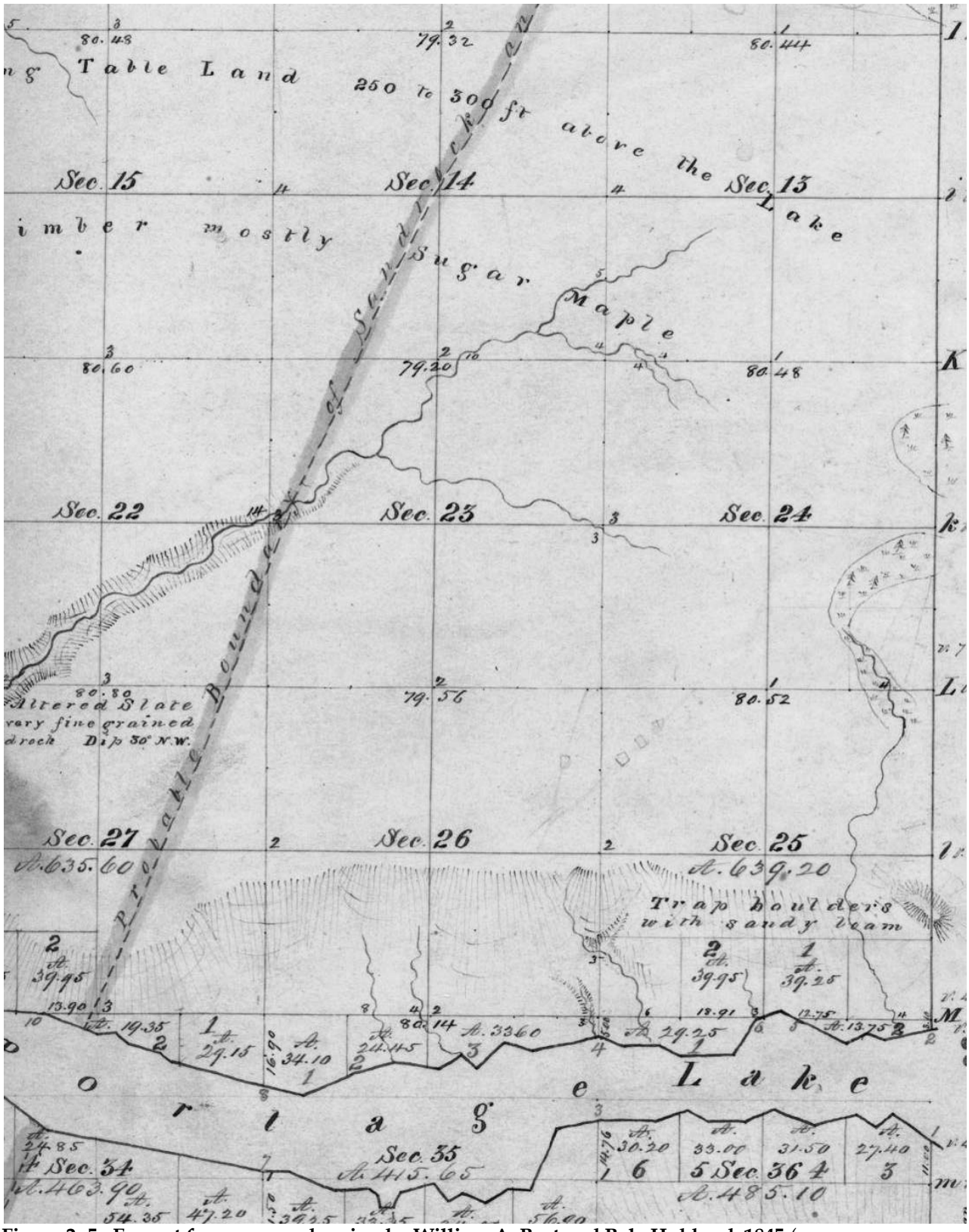


Figure 2- 5: Excerpt from survey drawing by William A. Burt and Bela Hubbard, 1845 (source: Courtesy Archives of Michigan)

Company Origins on the Quincy Lode: 1846-1855

Despite having a long history of human occupation, the Keweenaw Peninsula was viewed as a remote wilderness by most white settlers in 1846. As various explorers encountered this land they marveled not only at its mineral wealth, but also at the beauty and spirit of this landscape. Vast expanses of forest were interrupted by rock outcroppings and great bodies of water offering opportunity for travel along their wild, natural and scenic shores. The following excerpt offers an early explorer's view of the region as he encountered Portage Lake and its surroundings for the first time in the fall of 1846:

> Next morning we breakfast at daylight, and continue our voyage along the winding shores. Our gay Canadian voyageurs sing as they row. At the helm I can observe small pines where the lake (Portage Lake) makes a bold turn to the northwest, affording a view in several directions. This is the widest part of the lake – two or three miles. Soon after, as we advance, the lake takes the form of a majestic river one half mile wide, and the wooded banks on either hand swell up to a great height. We are charmed with the beautiful scenery; often we rest on our oars to enjoy the charming effects. The native forests, almost unbroken starting from the water's edge, slope up toward the sky precipitately, presenting many pleasant shades and colors, from the soft neutral-tinted maple, the lemon colored birch and poplar, to the dark green of the hemlock and fir…The surface of the lake is perfectly smooth, and reflects like a mirror, each overhanging promontory. As we row silently along we hear no sounds except those made by dipping oars: we see no life save an occasional loon darting his anxious head above the water, uttering a shrill quavering scream and diving again: the air is balmy; the repose of nature is profound, Man with his restless spirit has as yet scarcely disturbed the scene. A little clearing (where now stands the great smelting works) has been made at one place, and a trail winds up the hill to a point where exploring for copper has been attempted.[64]

The reference to the trail, and its connection to copper exploration, reinforces our understanding that the early exploration of the Keweenaw was undertaken by people with varied backgrounds, interests and missions. The Ojibway were well acquainted with the land, its abundant natural resources – including copper – and how those resources could provide subsistence and meet their societal needs. Although voyageurs explored the region over a two hundred year period prior to the U.S. Government's negotiated settlement with Ojibway leaders, they and new settlers navigated the forested environs of the Keweenaw Peninsula using pre-existing paths, and with the assistance of Ojibway guides. Copper diggings and pits established by early inhabitants of the peninsula served as landmarks and revealed the mineral riches of the land.

In 1846, the newly organized Quincy Mining Company (Q.M.C., or Quincy) began efforts to make its property profitable, as well as attractive to potential workers. During these early years Quincy focused on exploring and developing their property for industrial operations, above and below ground: men cleared land and dug exploratory trenches, established shafts and

64 As cited in Lankton and Hyde, Old Reliable, 6.

constructed a basic surface plant. The company cleared land for farming and leveled early roads. Workers built log homes. Quincy Hill was beginning to change rapidly as a single company defined its purpose. Their efforts intensified in 1856 when they began to work the Pewabic lode.

Quincy's origin was initially unplanned. It resulted from the merger of two existing mining ventures – the Portage Mining Company and the Northwestern Mining Company of Flint – that had claims to mineral rights to the same property. A meeting among stakeholders, held in Marshall, Michigan on November 17th 1846, resolved the dispute between the two companies and formed a third.[65] Once formed as an association, Quincy purchased Section 26 of Township 55 North, Range 34 West on September 7th 1846 from Eurotas P. Hastings for the sum of $1,600.[66] Hastings was the second recorded private owner of the land. He had acquired it from James A. Hick, a Portage Mining Company stockholder, who had purchased the property less than one month earlier on August 11, 1846, following issuance of a permit by the War Department.[67] The Q.M.C. was established far from the one square mile of land that would soon begin to change as a result of this speculative venture.

The Q.M.C. was not officially incorporated until 1848. However, they began exploring their property in the summer of 1847 when they hired Columbus Christopher Douglass "to visit the mines and to report the present condition of the same."[68] Douglass had studied geology at the Massachusetts Institute of Technology, and had previously assisted his cousin, Douglass Houghton, on a land survey of Houghton County in 1844.[69]

Ransom Shelden was also closely tied to early Quincy operations. He first settled near L'Anse in 1846, where he began trading with Native Americans. He moved his family to a log dwelling at the entrance of Portage Lake one year later where he established a store with Douglass, his wife's father. Records show he worked for Quincy in 1849 "securing and putting in crops," but he also spent time exploring and trading copper before accepting a position with Quincy and moving to a log home on the side of Quincy Hill as one of the earliest residents in 1851.[70] The following year he moved his store to the Quincy Mine location.[71]

Despite the abundance of copper within the Keweenaw Peninsula, it proved challenging for companies to find a good place to begin profitable large scale mine operations. Large masses of copper were scattered across the landscape, left by retreating glaciers. Ancient diggings revealed veins that looked promising on the surface. Yet both of these indicators that attracted attention, and were often used to determine property value, proved unreliable.[72] Since mass

65 Charles K. Hyde, "An Economic and Business History of the Quincy Mining Company," in HAER No. MI-2, an unpublished report for the National Park Service, Historic American Engineering Record (Washington, DC: 1978), 7.
66 Larry D. Lankton and Charles K. Hyde, Old Reliable: An Illustrated History of the Quincy Mining Company (Hancock, MI: Quincy Mine Hoist Association, 1982), 5.
67 Hyde, "Business History," 10.
68 Hyde, "Business History," 11.
69 Ibid., 15.
70 Ibid., 16. He is listed as "R. Sheldon."
71 Lankton and Hyde, Old Reliable, 6.
72 Hyde, "Business History," 5.

copper occurred randomly in the landscape, digging beneath it often yielded barren ground. Likewise, mass copper found in fissure veins and early diggings often proved limited in size and extent.

From October 1846 until March 1851, the company focused on locating copper bearing fissure lodes that could be profitably mined.[73] Quincy's early efforts concentrated on exploring the hillside up from Portage Lake rather than the hilltop itself, and workers moved rather slowly. While they found some mass copper, they failed to find it in lodes or veins rich enough to be profitably mined and warrant full production efforts.[74]

During this time, Quincy employed French-Canadian lumberjacks equipped with saws and axes to clear openings in the forest.[75] They were followed by small crews of less than a dozen contracted workers. The crews would labor grubbing out vegetation and stumps. Next they dug exploratory trenches with shovels, picks, sledgehammer driven drill steels, and occasionally black powder and fuse, to help locate copper bearing rock.[76] The company later sank shafts where those preliminary excavations revealed promising ground. Exact locations of these early workings are unknown, as Douglass's drawings were lost, and no accurate documentation or physical evidence has been located.[77]

Images of this newly developing mining landscape in the Lake Superior region do not exist and sketches and drawings are rare. However, excerpts from company records, journals, letters or diaries offer written accounts of the landscape at the beginning of the historic mining period. One report from 1848, when Quincy was the only active mine on Portage Lake, described a single log house occupying the side of Quincy Hill. The mine consisted of one shaft measuring four feet square by sixty-seven feet deep, and penetrated a lode running forty-three degrees northeast while dipping fifty-eight degrees to the northwest.[78]

73 Ibid., 11.
74 Larry D. Lankton, "Technological Change at the Quincy Mine, c. 1846-1931," in HAER No. MI-2, an unpublished report for the National Park Service, Historic American Engineering Record (Washington, DC: 1978), 273-274.
75 Lankton and Hyde, Old Reliable, 8.
76 Ibid., 6.
77 Hyde, "Business History," 23
78 Lankton and Hyde, Old Reliable, 6.

In 1850, J.W. Foster and J.D. Whitney provided a "Report on Geology of the Lake Superior District." They observed:

> When it is considered that nearly the entire copper region is an unreclaimed wilderness, the miner's settlements appearing like mere dots on its surface, covered with a dense growth of trees, through which the copper with difficulty forces a path; and that, except where the streams have worn their beds in the rock, or the hills terminate in bold and craggy ledges, the ground is covered with a thick carpet of mosses and lichens, effectively concealing every trace of veins, - it is surprising that such an amount of mineral wealth has been revealed in so short a time.[79]

During this early exploration period, Quincy began laying the foundation for the landscape we recognize today. Paths widened and became trails under the traffic of men, horses and wagons seeking solid footing, direct travel routes, and gentle gradients that could accommodate heavy loads. Gradually, forested areas were cleared to facilitate mine operations and to build housing for workers. Log homes were built on the hillside, and favored functional relationships to the mine workings, topography and natural features over any regard for achieving a designed community aesthetic. Efforts to establish this mining community appear rough and unplanned by today's planning practices and standards. Its vernacular forms and spatial organization were heavily influenced by the environmental conditions that settlers found in this location and the industrial exploration and settlement practices they brought with them. Features commonly found at new mine locations included "a small farm, a blacksmith shop, a carpenter's shop or a small saw mill, a log bunkhouse or two, a store house, a rock house, and sometimes a stamp mill."[80] This description likely fits the Quincy location prior to 1856, although the exact details and arrangements of these structures cannot be documented.[81]

Douglass had expanded the mining operation by 1853 and, with a workforce of thirty-three men, successfully exposed three veins and sank one shaft to a depth of 100 feet.[82] By 1854, Douglass was credited with discovering "the first extensive vein of amygdaloid copper" on top of the Hill, approximately 600 feet above Portage Lake.[83] This vein was called the Quincy lode. It ran southwest to northeast, just west of a road crossing the mine site.[84] They sank another shaft by early 1855, but were eventually disappointed by the small yield of copper.[85]

79 Foster & Whitney, as cited in Lankton, Cradle to Grave, 3.
80 Sarah McNear, "Quincy Mining Company: Housing and Community Services, c. 1860-1931," in HAER No. MI-2, an unpublished report for the National Park Service, Historic American Engineering Record (Washington, DC: 1978), 516.
81 Ibid.
82 Hyde, "Business History," 16. See also Lankton and Hyde, Old Reliable, 8.
83 Lankton and Hyde, Old Reliable, 8. See also Hyde, "Business History," 24.
84 Lankton, "Technological Change," 274. The road is now U.S. 41, the primary travel corridor on the peninsula.
85 Lankton, Historic Resource Study, 57. See also Lankton and Hyde, Old Reliable, 10.

As restless investors called a halt to mining operations and contemplated the money they had invested in Quincy to date, Douglass found the lode they were seeking. His 1855 exploration of ancient pits that crossed the border of Quincy and into the neighboring Pewabic mine helped locate the now famous Pewabic lode.[86] Within one year of its discovery, Quincy's neighbor, the Pewabic Mine, uncovered a promising amygdaloid deposit; Quincy traced it back to its property. The company's fortune was about to change.

Next Page: Figure 2- 6: Quincy Unit, 1846-1855 Period of Change Plan

86 Lankton and Hyde, Old Reliable, 10.

Legend

- Existing Quincy Unit Boundary
- Quincy Mine Surface Operations (1846-1855)
- Quincy Mining Company Ownership (1846-1855)
- Pewabic Mining Company Ownership (1846-1855)
- Quincy Lode
- Pewabic Lode
- Conjectural Road Location
- Section Numbers (23 24 / 26 25)
- Portage Lake Shoreline
- ① Chronological Order of Copper Exploration

Sources

S.W. Hill, "Geological Diagram of the Quincy and Hancock Locations," November 1859.
"Map of Quincy Mine and Vicinity, Houghton County Michigan," date unknown (ca. early 1900s).(shows ownership parcels)
Eric. M. Hanson, "Quincy Mining Company Surface Map: 1865," HAER Heritage, Conservation and Recreation Service, 1978.

Note

When overlaying the existing conditions over the HAER historic maps, the city of Hancock does not align with other areas in the Quincy Unit. Adjustments were made to correct this difference. The period of change maps are for analysis purposes only.

Chronology

1846
Forest covered the majority of the landscape. Species present included maple, birch, poplar, hemlock, and fir (*Lankton and Hyde, 6*).

1846-1851
QMC copper exploration focused on the hillside southwest of the Quincy Lode.

1847
Ransom Shelden occupied a log cabin dwelling at Portage Entry.
He established a store with Douglas Houghton (*Lankton and Hyde, 16).*

1848
One Mine/Vein was in operation.

1850s
Lumberjacks continued to clear forested areas.

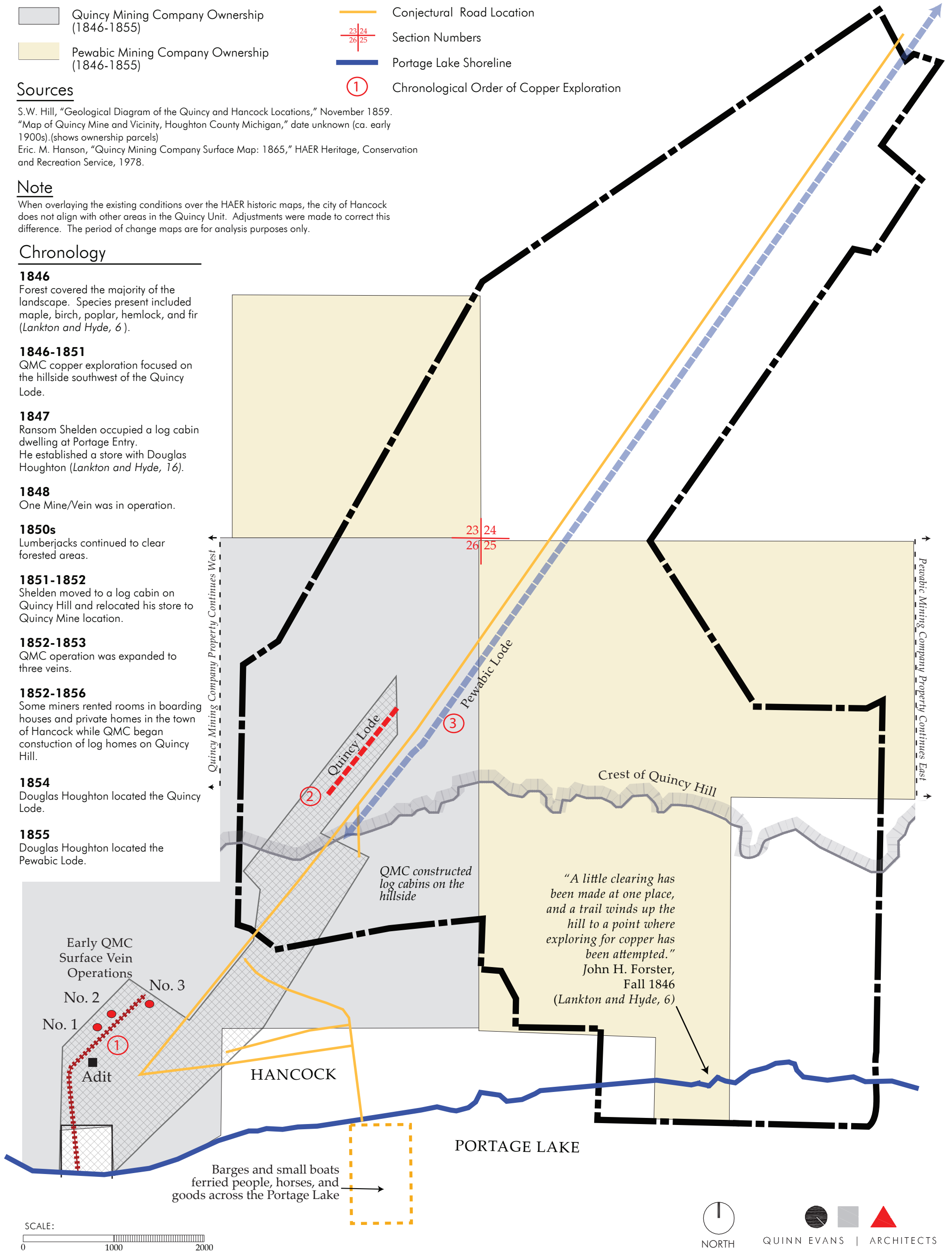
1851-1852
Shelden moved to a log cabin on Quincy Hill and relocated his store to Quincy Mine location.

1852-1853
QMC operation was expanded to three veins.

1852-1856
Some miners rented rooms in boarding houses and private homes in the town of Hancock while QMC began constuction of log homes on Quincy Hill.

1854
Douglas Houghton located the Quincy Lode.

1855
Douglas Houghton located the Pewabic Lode.



QUINCY UNIT, 1846-1855 PERIOD OF CHANGE PLAN

Cultural Landscape Report — **Keweenaw National Historical Park**

Mine Growth on the Pewabic Lode: 1856 – 1887

Although exploratory operations on the Quincy lode continued, the discovery of the Pewabic lode pulled Quincy in a different direction. The first Pewabic shaft was sunk in November of 1856 and two more shafts were subsequently added in 1857.[87] The company worked both lodes at the same time for several years.

Like the Quincy lode, the Pewabic lode ran northeast to southwest along the top of Quincy Hill. This geologic spine provided an axis upon which subsequent shafthouses would emerge and align themselves, along with a corresponding network of roads and paths. These developments were similar to the operational patterns along the Quincy lode, but were located slightly east. Shafts at this time were simply large holes in the ground that men entered on wooden ladders fastened to the rock. They were protected by "simple board and batten shafthouses erected over the shaft collar," and they probably housed hand-powered windlasses used to raise poor rock and copper in iron kibbles or buckets.[88]

Men sorted and separated copper from rock at the top of each shafthouse. Poor rock was discarded on nearby waste or burrow piles, while mass and barrel copper were transported directly to the dock.[89] From there it was shipped to the Waterbury and Detroit plant in Detroit for smelting.[90] Large pieces of amygdaloid, or "copper rock," needed to be refined somewhat before being shipped: this process, called calcining, involved heating the rock in large, wood-fired kilns, and cooling it rapidly to crack the rock free from the copper it contained. It was then shipped to Detroit along with the mass and barrel copper. The process of separating copper and disposing of waste rock would continue to be refined through the lifetime of Quincy's operation.

During the exploratory years of the middle 1850s, the company built some log homes for workers and their families to attract and retain stable, qualified workers to this remote region. Housing was regarded as part of the infrastructure necessary to operate a mine, and Quincy began building homes out of necessity.[91] Due to the limited number of company-owned houses, some miners rented quarters in privately owned homes and boardinghouses in the growing town of Hancock. At the same time, a national mining publication advocated for improved conditions at mine locations:

> How pleasant it is to see taste and comfort consulted in the arrangement of our mining locations…We would like to see the agents, in laying out the village or location lots, leave a reasonable garden plot to each house. Every family might have from 25-125 feet for garden and yard to make their house attractive to themselves and others. We believe that stockholders, by consulting the comfort of their workmen, are consulting their own interest in the long run. Men who

87 Lankton, Historic Resource Study, 58. See also Lankton and Hyde, Old Reliable, 20.
88 Lankton, "Technological Change," 288. See also Lankton, Cradle to Grave, 48.
89 Mass copper was pure copper occurring in large (mass) pieces. Barrel copper was copper brought to the surface in pieces small enough, and pure enough, to be packed directly in shipping barrels.
90 Hyde, "Business History," 70.
91 McNear, 517.

> have spent long hours several hundred feet below the reach of sunshine must have recreation. And many who now become disorderly would not frequent the bar-room if they had a garden to cultivate or a comfortable house to bring themselves about.[92]

It took a full decade for the Q.M.C. to negotiate business and property deals, explore land holdings, recruit workers, establish a small remote community, and locate the most productive copper deposits on the hill. Stockholders grew anxious, skeptical and weary as years ticked by without a single dividend returned on their investments. Finally, through perseverance and good fortune, Quincy discovered an abundant source of copper in the Pewabic lode and moved closer to the establishment of a full scale mining operation. The company recruited workers, built homes and supported the growing community of Hancock. Collectively, these efforts transformed a steep wooded hillside into a full scale mining operation and community.

In 1858, Quincy sank a fourth shaft on the Pewabic lode and improved its surface plant. An inventory taken that year illustrates the modest size of its operation. It included three houses for mine officials, four boardinghouses, and twenty-seven log houses.[93] Construction of at least sixteen more log houses on the hill also began in 1858, and they would be completed over the next four years.[94] In addition to their hewn log construction, the homes were chinked and their exteriors were covered with clapboards.[95] In the next few years Quincy's surface operations grew considerably, and became readily visible upon the landscape. In all their efforts, Quincy was influenced by and relied heavily upon the Keweenaw's abundant natural resources, including vegetation, topography and water.

Hoisting copper and rock from mine shafts was difficult and strenuous labor. Workers at Quincy first performed this task by mustering enough strength to move large pieces with the aid of ropes, iron bars and animals. As they used hand powered windlasses, their strain became focused on pulling back levers repeatedly to inch heavy iron kibbles laden with rock or copper to the surface. Although Quincy used a horsewhim at shaft No. 6 for a short while, two portable steam engines arrived in 1858 and they were immediately utilized for hoisting.[96] Steam hoists made work easier, but they placed a new demand on the company and the land: fuel and water were both needed to power the engines.

Coal was not one of the Keweenaw's natural resources. As a consequence, Quincy satisfied their need for cordwood fuel, mine timbers and lumber with the vast forestlands of the Keweenaw. Men cut, split and stacked wood to fire Quincy's boilers. Steam engines had a huge appetite for wood, and no tree was spared as clear-cutting was company practice.[97] Lumberjacks left large fields of stumps as they moved to other forested lands. At the same time, Portage Lake quenched the thirst of company machinery.

---

92 The Mining Magazine (1856) as cited in Lankton, Cradle to Grave, 142.
93 Hyde, "Business History," 42.
94 McNear, 518.
95 Ibid.
96 Lankton, "Technological Change," 288.
97 Lankton, Cradle to Grave, 42.



Figure 2- 7: A clear cut area, location unknown, n.d. (source: courtesy of Michigan Technological University Archives and Copper Country Historical Collections)



Figure 2- 8: Unidentified lumberjack crew, location unknown, n.d. (source: courtesy of Michigan Technological University Archives and Copper Country Historical Collections)

In 1858 Quincy began construction of a 100 by 180-foot timber framed stamp mill on the shoreline of Portage Lake directly below Quincy Hill. This was a large investment for Quincy, and represented a significant advancement in their ability to process larger volumes of copper rock. The building was completed and covered in clapboards in 1860.[98] The mill's location enabled the company to use water from Portage Lake for three main purposes: in an adjacent boiler house that supplied power; in a nearby tailings wash house east of the mill; and to facilitate the disposal of crushed rock tailings directly into Portage Lake via a launder.[99] Waste disposal was an extremely important part of the milling operation, because 97 to 98 percent of the copper rock milled by Quincy proved to be waste rock.[100] The site also provided for the construction of a dock and warehouse for shipping mineral, mass copper and other goods.[101]

Transportation was important to all facets of Quincy's operation. The company needed to move materials and supplies to the mine, around the mine site itself, and throughout the community. It also needed to move rock and copper to process it, dispose of it, or ship it. Timber, lumber and cordwood were transported for building and heating, while water was moved for boilers and steam engines.

The earliest known map of the Quincy mine site indicates the transportation routes that served the mine location. This tracing, labeled "Geological Diagram of the Quincy and Hancock Locations," is dated November 1859 and was produced by Samuel W. Hill, Quincy's agent.[102] The tracing documents early landscape conditions by depicting the primary features Quincy built. The extent of Quincy's land ownership is shown along with Hancock, newly platted by Quincy in 1859. Additionally, mine workings are displayed along with the road and tramroad routes connecting them.

Hill depicted the most prominent road between the Quincy and Pewabic lodes. It ran parallel to them, and extended down the hillside into Hancock where it connected to Quincy Street. The northernmost connection to this road traversed the hillside slope where it met Reservation Street. Hill also showed the newly constructed elevated tramroad designed to move copper and rock from the Pewabic lode to the new stamp mill. The location of the tramroad capitalized on existing hillside topography and gravity to lower one car on a cable while hoisting another on a parallel track.[103] While the tramroad serviced the movement of copper and rock, dirt roads and informal walking paths met the needs of transporting other materials and the movements of workers and residents.

98 Lankton, Historic Resource Study, 61. See also Charles F. O'Connell, Jr., "Quincy Mining Company: Stamp Mills and Milling Technology, c. 1860-1931," in HAER No. MI-2, an unpublished report for the National Park Service, Historic American Engineering Record (Washington, DC: 1978), 579.
99 O'Connell, "Stamp Mills," 579.
100 Lankton and Hyde, Old Reliable, 27.
101 Hyde, "Business History," 43.
102 It is included as an image in the HAER No. MI-2 report. See HAER No. MI-2-1.
103 Lankton and Hyde, Old Reliable, 27.

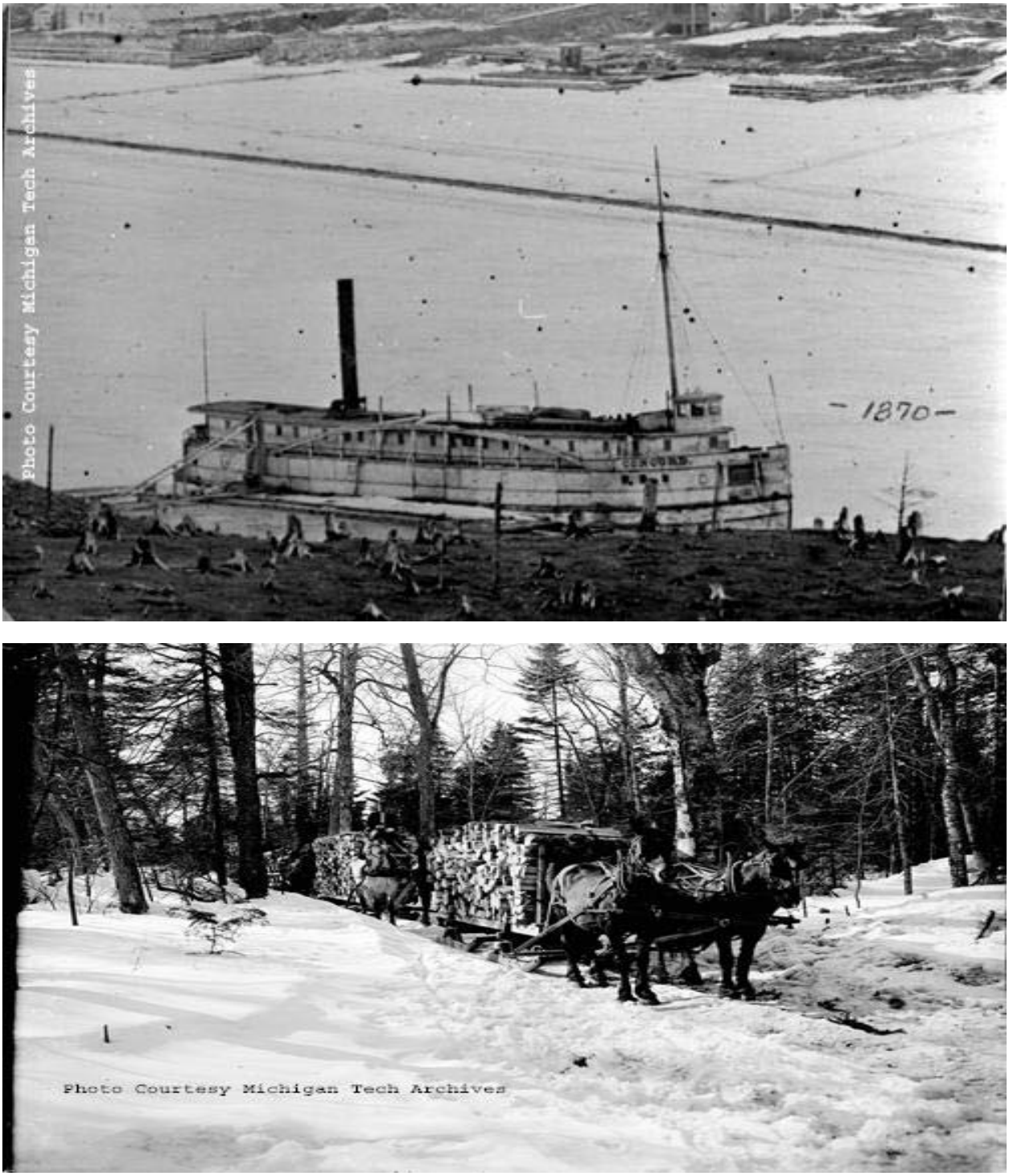


Figure 2- 9: Early Great Lakes shipping efforts by the Quincy Mining Company were handled by large sailing ships, later replaced by steam powered vessels (top) while early overland transport relied on draft animals hitched to wagons or sleighs (bottom) (source: Images are courtesy of Michigan Technological University Archives & Copper Country Historical Collections).

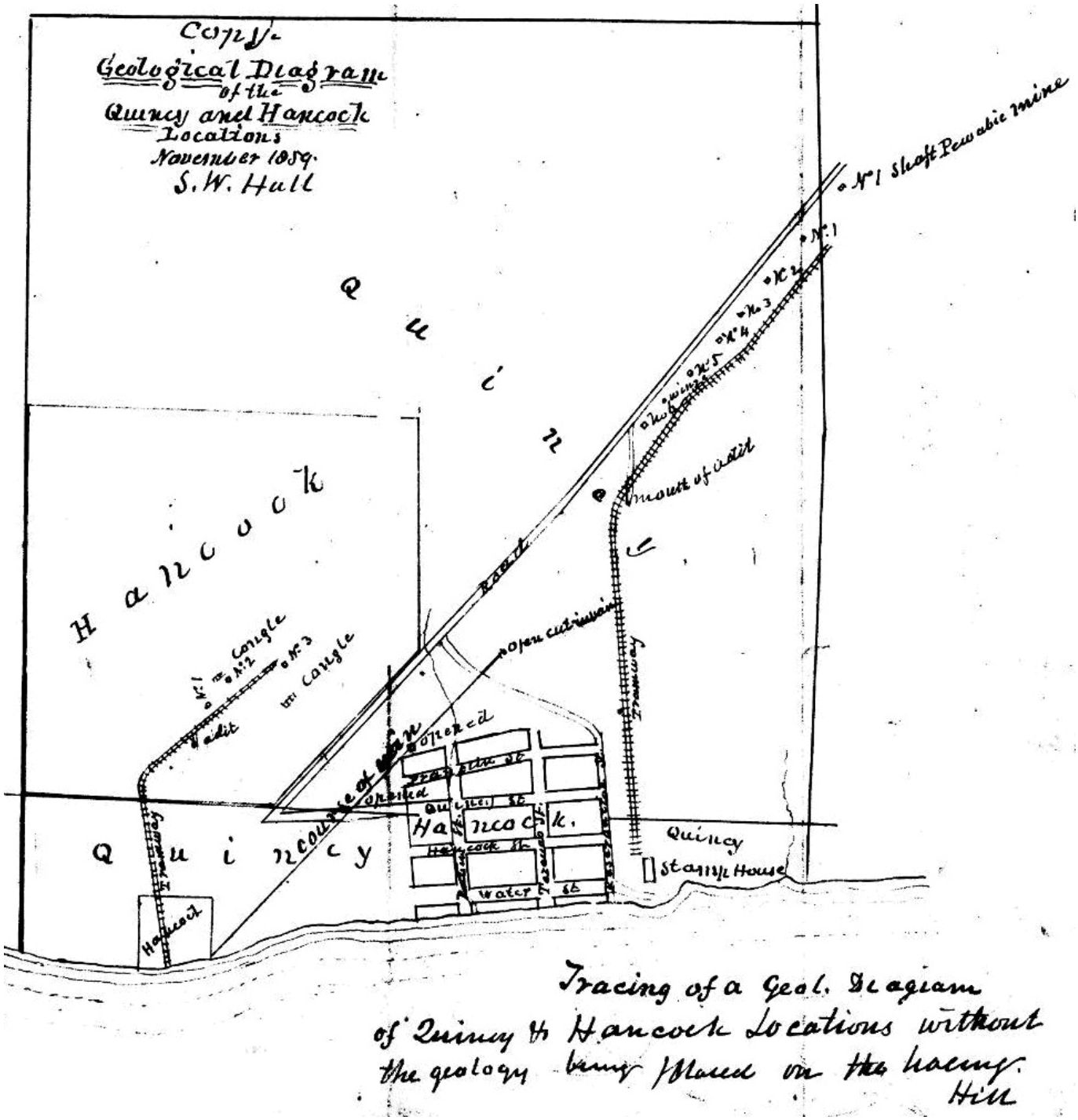


Figure 2- 10: Hill's 1859 tracing of the mine site (source: Courtesy National Park Service, Historic American Engineering Record, HAER No. MI-2)

Hill's tracing is indicative of the company's mindset at this early stage of its development. It affords us an opportunity to view adjacent Hancock, an emerging community whose growth was influenced by early Quincy mining efforts and company philosophy regarding the services they wanted to provide for workers. The tracing shows the community developing as a grid of

regularly spaced streets oriented north-south and east-west. This is consistent with community settlement patterns of the time, and a sharp contrast to the irregular spatial arrangement of structures that had occurred previously. While Hill's map does not offer great detail regarding buildings or small scale features in the landscape, it indicates that Quincy was establishing itself as a distinct entity, set apart from the community. It also reveals that the early road network and street names correspond to those still present and traveled in the landscape today. In fact, they are located at the core of the downtown Hancock community and extend up the hill to connect with present day U.S. 41.

It is curious that while Hill depicted the Pewabic shafts and abandoned workings in the area labeled Hancock, he did not illustrate the shafts established in the 1840s and 1850s on the Quincy lode. This suggests that Quincy had finished working that disappointing lode by the end of 1858, and was looking ahead to a more profitable future.

Shafts 5 and 6 on the Pewabic lode were sunk in the summer of 1859, and followed the January re-numbering of their existing shafts to Nos. 2, 3 and 4.[107] Multiple shafts, spaced regularly along the lode, provided miners with more places to descend into the underground workings and improved mine ventilation once shafts were connected through horizontal drifts. By this time, Quincy employed 257 men who worked to open the underground and subsequently remake the landscape.[108]

As the labor force grew, so did Quincy's concern with housing. Between 1859 and 1861 the company constructed more than 100 wood frame houses.[109] Workers unable to rent a company-owned home could rent from boardinghouses, privately owned homes, or build a home on land leased from the company. Most boardinghouses were privately run in Hancock, but the company also managed a few.[110] In addition to providing this additional housing, Quincy hired a doctor.

Although Quincy was concerned about improving the mine location and addressing the needs of their employees, acceptable conditions in 1859 were remarkably different than they are today. The thickly forested hillside was transformed into a coarse landscape; evidence of Quincy's past activity appeared as fields of stumps, abandoned exploration trenches and growing piles of waste rock.[111] Company buildings were tailored specifically to the function they served, with adornments and decoration often limited to the contrasting materials, colors and textures afforded by the stones and lumber used to construct them. The Keweenaw's remoteness and isolation continued to affect company operations and community life. Throughout the 1860s, mail was delivered to the region by dogsled in the winter and by boat during the shipping season.[112]

---

107 Quincy's numbering system for their shafts is confusing, as it changes based on the acquisition of other properties and their own numbering sequence of operations. See HAER maps for the various periods described, as well as Lankton, Historic Resource Study, 58; O'Connell, "Stamp Mills," 579; and Hyde, "Business History," 40.

108 Lankton, Historic Resource Study, 58.

109 Ibid., 61. See also Hyde, "Business History," 44.

110 McNear, 515.

111 Lankton, "Technological Change," 296.

112 Lankton and Hyde, Old Reliable, 42.



Figure 2- 11: Mr. Antoine LeDuc, a mail carrier between L'Anse and Houghton, pictured with his sleigh and three dogs about 1870 (source: courtesy of Michigan Technological University Archives & Copper Country Historical Collections)

The Pewabic lode's discovery and the growing underground and surface operations coincided with another fortunate and significant event at the east end of the Upper Peninsula of Michigan. In June of 1855, the canal and locks around the St. Mary's Falls at Sault Ste. Marie opened. Shipping destinations across Lake Superior were now more easily connected to industry in the lower Great Lakes region and beyond to industries and markets on the east coast. Only a single shipping obstacle, the Portage River, remained between Houghton, Hancock and the rest of the world. Although wide, the Portage River was shallow and twisted like a serpent, and at the time, only two options existed to overcome this barrier: portage goods to another vessel in Portage Lake, or haul them by wagon to their final destination.[113] To overcome this difficulty, Quincy and other mining companies in the district worked together to widen and dredge the river in 1859.[114] The work advanced quickly, and by the following June the first large ship was able to dock at Hancock.[115]

By 1860, Quincy was devoting its full attention to the Pewabic lode on the northern end of their property and addressing the demands of a growing workforce.[116] To help accommodate its 469 employees, the company began working toward the establishment of a company-operated farm,

113 Hyde, "Business History," 44.
114 Ibid.
115 Ibid. See also Lankton and Hyde, Old Reliable, 16-17.
116 Lankton, Historic Resource Study, 57-58.

although its exact location and extent is unclear.[117] Later drawings prepared by Quincy suggest that the farm had a presence north of Frenchtown.[118] What is known about the company's farm is that, then as now, local conditions provided a challenge to farming agricultural crops: soils are often poor, the growing season is short, and the climate is cool. The company harvested hay, oats, timothy, onions, cabbages, squash, potatoes, and turnips.[119] Other vegetables and fruit were grown in individual gardens.[120]

The growth of Quincy's surface plant continued rapidly and by 1862, the work of the previous years was evident. Historian Larry Lankton offers a physical description of these conditions:

> By 1862, a shaft house, 35 to 40 feet tall, stood over each of the six shafts and their timber-cribbed collars. Along the row of shaft houses Quincy had erected four sorting houses and three hoist houses, timber-framed buildings that stood on poor-rock foundations. On one side of each hoist-house a tall wrought iron chimney stood atop a masonry base, and on another stretched long rows of cordwood, taken in 1862 and thereafter, from Quincy's own woodlots…. A little east of these structures stood four kiln houses. The hoist and shaft-houses were connected by pulley stands that supported the hoisting chains; narrow gauge tramways interconnected all the shaft, sorting, and kiln houses; and a tramway running past all the sorting and kiln houses terminated at the drum house on the southwestern end of the mine which served the stamp-mill incline.
>
> In addition to these major structures and facilities, by 1862 Quincy had its copper house for storing barrel and mass, a stone magazine for black powder, and a general-purpose warehouse. It had one change or dry house, two small blacksmith shops, plus a carpenter shop with a small steam engine for driving bench saws and a lathe. The road leading from the village of Hancock up to Quincy Hill neatly divided the mine location into halves. Excepting the blacksmith and carpenter shops, all the technological mine structures stood on the east side of the road. On the west side stood the company office, a store, a barn and root-house, a forty-bed hospital, and numerous company-built houses.[121]

117 The Quincy farm was established around 1859-1861. In "Business History," Hyde reports 1859 (see page 43). Lankton supports this in the Historic Resource Study (see page 65). However, based on references to actual expenditures on labor and supplies to support its development, McNear determines that the farm was not established until 1861.
118 See Quincy Farm drawing; Figure 2-43
119 Lankton, Cradle to Grave, 163.
120 McNear, 560.
121 Lankton, "Technological Change," 296-297. Quincy acquired surface rights to sections 15 and 22 in 1862. See also Hyde, "Business History," 49, and Lankton, "Technological Change," 346. Quincy built a hospital between 1862 and 1865, and some reports indicate that it had a 35 bed capacity. See also Lankton, Cradle to Grave, 182; Lankton and Hyde, Old Reliable, 36, and McNear, 542.



Figure 2- 12: The earliest known photo of Quincy's shafthouses Nos. 2 – 4 on the Pewabic lode, circa 1875. (source: courtesy of Historic American Engineering Record, HAER MI-2-8)



Figure 2- 13: An undated photo of blacksmiths standing outside their 1860 shop. (source: courtesy of Historic American Engineering Record, HAER MI-2-74)

Narrow gauge rails transported mine products across the surface plant. Small cars were loaded and pushed to their destinations. Mass copper went directly to the new copper house. Small rock went directly to the stamp mill by way of the tramroad, while larger pieces were transported to nearby kiln-houses. There, crews of ten to twenty-five men were contracted to "burn and dress copper" in preparation for the mill.[122]

122 Lankton, "Technological Change," 294-295.

The Quincy mine was finally paying off. 1862 marked the first year that the company returned dividends to investors.[123] As the company experienced financial success, it examined its operations and sought to improve living conditions for their workforce. The housing that had been constructed in the 1850s provided basic shelter, but it was relegated to land distant from valuable, workable ground; workers often preferred to live near the mine. Initially this resulted in homes scattered in an irregular manner across the steep hillside south of the mine, and situated among the stumps, rock piles and earlier attempts at prospecting for copper.[124] A report from 1862 indicates that the company also owned one large boardinghouse and ninety-five wood-framed two story tenement houses at this time.[125] Although their exact locations are unknown, irregular development patterns shown on later maps suggest that these homes may have been located near the top of the hill along the county road, and in a field to the west.[126]

Workers also continued to lease lots from the company and build their own homes. It is likely that forty-one such structures were constructed in "Shantytown," a small enclave of located on the Hill about halfway between the mine and Hancock.[127] In addition to leasing land to workers, Quincy donated land to the Congregational Church in 1862 for construction of a church in Hancock.[128] This practice continued in later years, as the company generally "encouraged the erection of churches."[129]



Figure 2- 14: View of Hancock and Quincy Hill ca. 1870 (source: Koepel Collection, Keweenaw National Historical Park Archives)

As Quincy's need for worker housing increased, the location of company-built homes gained heightened consideration. Housing locations constructed before the early 1860s lacked order in their spatial arrangement, but this began to change as Quincy gained a more complete understanding of its resources and entrenched itself in the development of a surface plant on the Pewabic lode. After this, company housing locations were developed in a more organized manner that more closely resembles the neighborhoods seen today.

123 Lankton, Historic Resource Study, 56.
124 Lankton, Historic Resource Study, 61. See also Lankton and Hyde, Old Reliable, 35.
125 McNear, 518.
126 Ibid.
127 Ibid., 515. See also Lankton and Hyde, Old Reliable, 35.
128 McNear, 568. See also Lankton and Hyde, Old Reliable, 37.
129 Lankton and Hyde, Old Reliable, 37.

Quincy also thought about how to provide food to its workforce. Beginning in 1862, the company leased its farm to O.K. Patterson & Co., the teamsters at the mine. The teamsters cleared 250 acres of land, and used most of the harvested feed for their animals.[133] The following year, the company built a store along the county road near the mine office to sell goods at or near wholesale. This was to provide workers with fair-priced goods and prevent local merchants from profiteering.[134] The store did not last long in company hands, and was sold in 1866 to Seth North.[135]

In the early 1860s, local mine companies again worked together in order to ensure an open shipping route. They established the Portage Lake and River Improvement Company in 1863. This company was responsible for making improvements to the channel and collecting tolls to pay for its maintenance. Within two years, Quincy held nearly 20 percent of the total stock value.[136] Quincy also purchased two wooden scows in 1863 to haul waste material to unspecified dumping sites in Portage Lake; Quincy paid the Portage Lake Towing Company through the 1863 navigation season for a "towing, dredging and dumping scow."[137]

The 1860s presented another challenge: Quincy felt the impact of the Civil War as demand for copper increased and prices rose. Yet these conditions, which normally produce greater profits, had an unexpected effect on Keweenaw copper mines. High copper prices encouraged new mine ventures needing skilled workers. This, coupled with voluntary enlistments and the draft, resulted in a serious labor shortage of experienced miners in the district.[138]

Another consequence of the Civil War was the government-funded construction of a military road connecting Fort Howard (near Green Bay) to Fort Wilkins (at Copper Harbor) in 1863. The road was originally intended to support the defense of the Keweenaw's copper mines, but by the time it was completed in 1869, its greatest value proved to be the improvement of overland transportation between rural communities. The meandering route of the road was directly influenced by Samuel Hill, Quincy's agent, and a team of his business partners who were seeking mineral rich lands.[139]

Despite the challenges the war presented, Quincy continued to build houses and develop neighborhoods west of their surface plant. These locations included garden plots that workers could rent for a few dollars per year, which were meant to increase their appeal to families seeking a good situation in a competitive labor market.[140] In 1864, Hardscrabble and Limerick locations were constructed along the northern boundary of Section 26, just west of the county road. They featured wood frame T-plan homes on poor rock foundations with more than thirty dwellings per neighborhood. The Swedetown neighborhood consisted of at least thirty-seven log homes, and was located considerably further west. Built for Scandinavian immigrants

133 McNear, 560.
134 Ibid., 522. See also Lankton, Cradle to Grave, 165.
135 McNear, 553. See also Lankton and Hyde, Old Reliable, 36.
136 Lankton and Hyde, Old Reliable, 16-17.
137 O'Connell, "Stamp Mills," 599.
138 Hyde, "Business History," 46. See also Lankton and Hyde, Old Reliable, 17.
139 "Military Road in Keweenaw Can Still Be Found in Places," Daily Mining Gazette, 16 January 1960.
140 Lankton, Historic Resource Study, 65.

recruited to work at Quincy, the location quickly proved to be a failure and was abandoned in the 1870s.[141]

Quincy initiated several other projects in 1864 that went beyond the construction of worker housing that shaped the landscape. It built a twenty-six foot diameter sand wheel at the stamp mill to assist with removing waste products.[142] It began building a small two-story wooden office building, west of the county road, to replace their first mine office structure, whose location is unknown.[143] The company also established a volunteer militia of about 150 men to enforce order and then erected a drill hall on Quincy Hill.[144] It closed shaft No. 6, which had proved to be a disappointment, and began to use its hoisting engine to saw wood and grind grain.[145] Company records also indicate expenditures on the hospital and two boardinghouses.[146]

Perhaps Quincy's most ambitious undertaking in 1864 related to its persistent exploration of the south end of their property. Initially, workers drove some exploratory shafts before opening an adit on the hillside near the tramroad, approximately halfway between the mill and the mine.[152] By driving the adit into the hillside in a northwest direction, Quincy could explore several copper veins as they drifted through them.[153] Any lodes worth mining would be revealed by this exploration, and copper could be more easily recovered. However, more than 1,100 feet and four years later the company still had not reached the Pewabic lode or any other deposit that proved workable from the south end.[154]

141 McNear, 519. See also Lankton and Hyde, Old Reliable, 17; and Lankton, Historic Resource Study, 69. Among possible reasons for Swedetown's failure are its distance from the mine, isolation from other communities, and old fashioned or substandard log housing.
142 O'Connell, "Stamp Mills," 586.
143 McNear, 557.
144 Lankton, Historic Resource Study, 69. See also Lankton, Beyond the Boundaries: Life and Landscape at the Lake Superior Copper Mines, 1840-1875 (Oxford University Press, 1999), 187; and Lankton and Hyde, Old Reliable, 41-42.
145 Hyde, "Business History," 80.
146 Ibid., 53-54. See also Lankton, "Technological Change," 306.
152 Lankton, "Technological Change," 308. An adit is a horizontal opening driven from the surface into a mine, as through a hillside.
153 Ibid., 307.
154 Hyde, "Business History," 54. See also Lankton and Hyde, Old Reliable, 22.



Figure 2- 15: An undated early photograph of Hardscrabble company housing and landscape. Note the fences separating agricultural use areas from other company owned land. (source: Image courtesy of Michigan Technological University Archives & Copper Country Historical Collections)

Next page
Figure 2- 16: Quincy Unit, 1856-1865 Period of Change Plan

Legend

- Existing Quincy Unit Boundary
- Quincy Surface Mine Operations (1856-1865)
- Quincy Mining Company Ownership (1856-1865)
- Pewabic Mining Company Ownership (1856-1865)
- Approximate Location of Pewabic Tram Road
- Approximate Location of Quincy Tram Road
- Quincy Lode
- Pewabic Lode
- QMC Mine Shaft
- Pewabic Mining Co. Mine Shaft
- Section Numbers (23 | 24 / 26 | 25)
- Road/Path
- Portage Lake Shoreline
- Platted QMC Housing Location
- Existing QMC Housing Location
- Pewabic Mining Company Housing Location
- Mine housing not affiliated with planned company housing location
- QMC Management Area

Sources

S.W. Hill, "Geological Diagram of the Quincy and Hancock Locations," November 1859.
"Map of Quincy Mine and Vicinity, Houghton County Michigan," date unknown (ca. early 1900s). (shows ownership parcels)
Eric. M. Hanson, "Quincy Mining Company Surface Map: 1865," HAER Heritage, Conservation and Recreation Service, 1978.
"Plan of the Underdground Workings of Quincy Mine and a Portion of Surface Detail," date unknown ca. 1900-1907.

Note

When overlaying the existing conditions over the HAER historic maps, the city of Hancock does not align with other areas in the Quincy Unit. Adjustments were made to correct this difference. The period of change maps are for analysis purposes only.

Chronology

1856
By 1856 forested areas were cleared to facilitate mine operations and to build housing for workers. Direct travel routes with gentle gradients to accommodate heavy loads were developed. Paths were widened \and became roads.

1856-1859
QMC sunk shafts No. 1 - No. 6 on the Pewabic Lode.

1858
Work ceased on the Quincy Lode.

Quincy Tramroad constructed.

1858-1860
QMC constructed log homes on Quincy Hill.

1859
Village of Hancock platted by Hill.

1859-1861
Houses constructed in Hardscabble and Limerick.

Quincy Stamp Mill constructed.

1862
250 acres were cleared for Quincy Farm (location unknown).

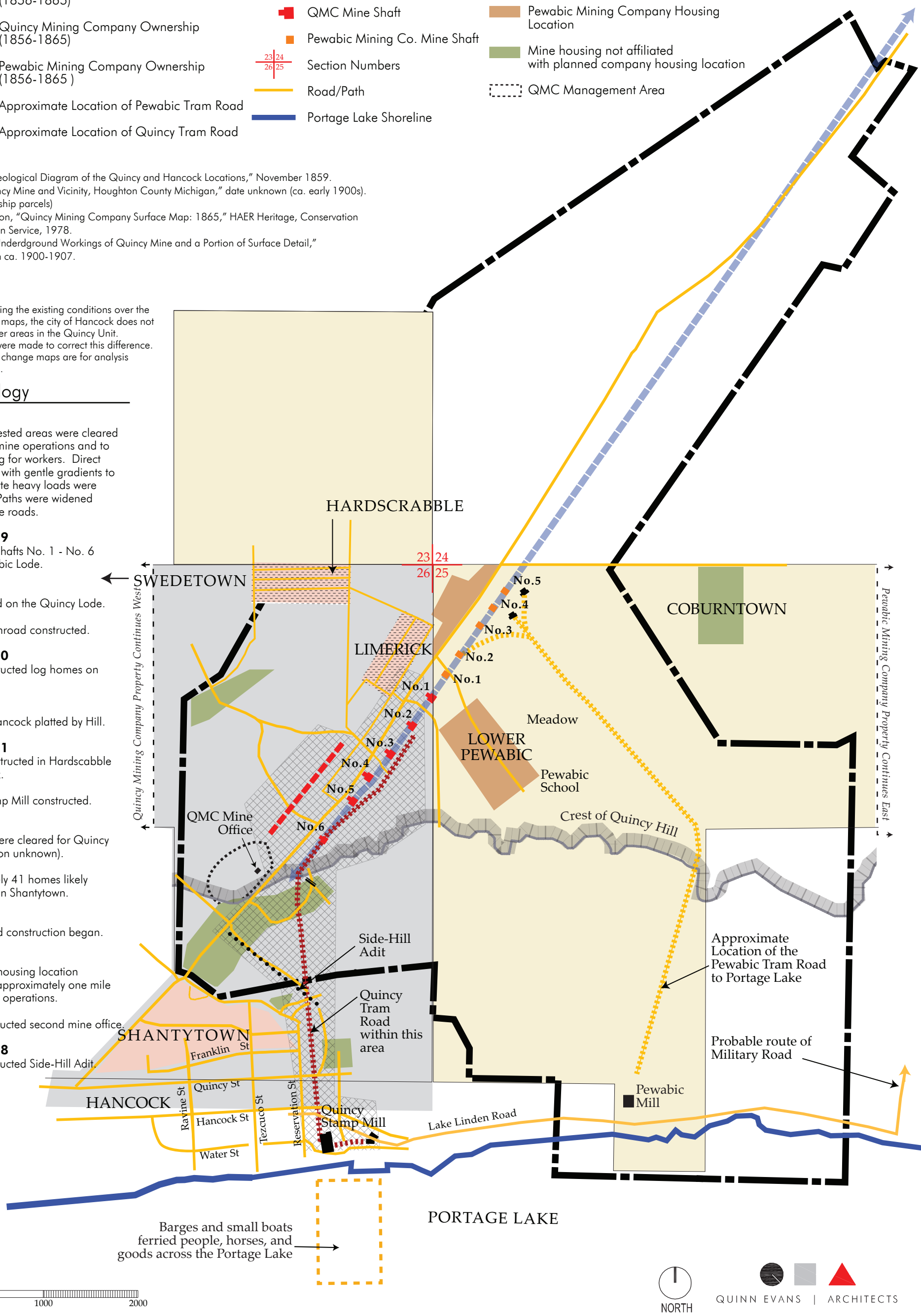
Approximately 41 homes likely constructed in Shantytown.

1863
Military Road construction began.

1864
Swedetown housing location established approximately one mile west of mine operations.

QMC constructed second mine office.

1864-1868
QMC constructed Side-Hill Adit.



SCALE: 0 1000 2000

NORTH

QUINN EVANS | ARCHITECTS

QUINCY UNIT, 1856-1865 PERIOD OF CHANGE PLAN

Cultural Landscape Report — **Keweenaw National Historical Park**

The company's mine had increased greatly in depth by 1866. To transport miners quickly up and down a mine shaft, and to conserve their energy for mining, Quincy installed a man engine. This device, essentially two reciprocating ladders side by side, allowed men to step back and forth between platforms to go up or down. It required its own shaft between No. 3 and No. 4 and was expensive to implement, but over time it resulted in labor savings for the company.[155]

Quincy had learned a lot about the deposits they were working, and began to realize some disappointment with the mine. By then it was clear that the adit was unlikely to discover any workable copper deposits of consequence, and so this effort was slowed.[156] Like No. 6, shafts 5 and 7 appeared to be of limited value, and they were closed by 1867.[157] Production at shaft No. 1 also ceased around the same time. By the late 1860s, only shafts 2, 3 and 4 were working.

The slowdown allowed Quincy to turn its attention to social concerns. Public education was becoming an issue, and was first addressed in 1867 when the Quincy Township school district was created. Although schools were legally a community's responsibility, Quincy was the principal taxpayer in the township and its workers comprised the majority of the population; the company assumed the responsibility to provide an education to its workers' children by default.[158] It chose a site west of the county road and constructed a wood frame school large enough to accommodate 150 students, and then rented it to the school district.[159]

Physical improvements to the surface plant also continued in 1867, which was the same year Quincy resumed paying dividends to shareholders following the Civil War.[160] The company initiated construction of a new hoist house, engine and boilers for shaft No. 2.[161] Down at the mill, the problem of sand disposal in Portage Lake continued; the company built a bulkhead "to prevent our waste sand from the stamp mill from encroaching on our neighbors."[162] Despite its construction, and multiple extensions afterwards, the problem remained.[163] In 1868, the company focused on reconstructing the tram road and installing improved washing machinery at the mill.[164]

155 Ibid., 53-54. See also Lankton and Hyde, Old Reliable, 22; and Lankton, "Technological Change," 293.
156 Ibid., 55.
157 Lankton, "Technological Change," 306.
158 Lankton, Cradle to Grave, 169. See also McNear, 547.
159 Lankton and Hyde, Old Reliable, 37. See also Lankton, Cradle to Grave, 169; and McNear, 547.
160 Lankton, Historic Resource Study, 56
161 Lankton, "Technological Change," 293.
162 O'Connell, "Stamp Mills," 599.
163 Ibid.
164 Hyde, "Business History,"53-54;138.

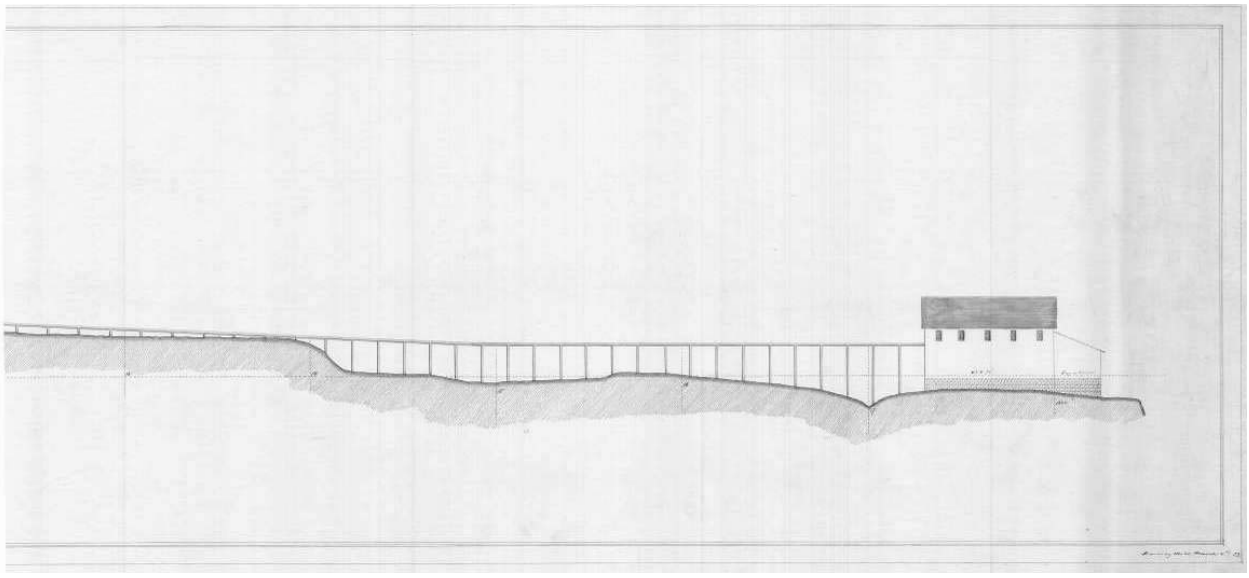


Figure 2- 17: Partial drawing (QD-2596, 1 of 3) produced by Phillip Scheuermann, Quincy Mining Company engineer, in 1872 to illustrate the new tramroad and proposed rockhouse with engine house shed addition. (source: Image courtesy of Michigan Technological University Archives & Copper Country Historical Collections).

Construction efforts in 1869 consisted of ten frame houses in Hancock built for stamp mill employees.[165] This development followed an April fire disaster in Hancock that devastated the community, whose population had grown to 2,000. The fire originated in the northwest corner of town, near Quincy and Ravine streets, and moved quickly. Within six hours, it had consumed 150 buildings and left more than 200 families without homes.[166] The impacts were felt by all who relied upon the goods, services and diversions that the commercial and cultural center offered.[167] Rebuilding efforts included a new telegraph system in the copper district, with the Quincy mine featured as one of the twelve office locations.[168]



Figure 2- 18: Informal housing clusters, view north from Portage Lake toward Quincy Hill, ca. 1869-1870 (source: Photo courtesy of Historic American Engineering Record, HAER MI-2-140).

165 Lankton and Hyde, Old Reliable, 35.
166 Ibid., 45.
167 Ibid.
168 Ibid., 44.



Figure 2- 19: Early conditions on the hillside between Hancock and the mine location, circa 1870
(source: Photo courtesy of Historic American Engineering Record, HAER MI-2-140).

A major shift in rock breaking methods was initiated when Quincy began moving toward the use of air powered drills. Using air drills meant the company needed to erect a steam powered air compressor, pump water from abandoned shafts to cisterns, and install air pipes down shafts and throughout the mine.[169] The Burleigh Rock Drill Company introduced their drills to several mines in the Keweenaw in 1868, and made several available for testing.[170] Quincy purchased seven, and put them to use in October of 1872. The investment was large and so was the disappointment: despite high interest in the machines, and the promise of increased production, the new technology did not meet the expectations of miners or managers. They were rejected by late 1873; hand drilling would remain the norm until the drills could be improved.[171] Quincy's willingness to experiment with the drills shows the company's early, and continued, interest in new technology.

The company also decided to change the way it reduced rocks before sending them to the stamp mill. Despite closing shaft No. 3 in 1872, they decided to build a large rockhouse to break rocks mechanically. This eliminated a bottleneck in production and, ultimately, kilnhouses.[172] Construction began on the three story heavy-timbered structure in 1872, which included an engine to power an endless rope tramroad extending to the shafthouses. The rockhouse was completed by 1873, and represented the company's largest investment in combined structure and machinery improvements.[173] Mine products from Quincy's two remaining operational shafts, 2 and 4, could now be loaded into cars at the shafts and moved across rails to a trestle,

169 Lankton, "Technological Change," 319, 346. Hyde discusses the need for additional cordwood to fire boilers and run steam engines as a result of air drilling. The increased need for fuel likely resulted in increased clear-cutting. See "Business History," 136.
170 Lankton, Cradle to Grave, 81. See also Lankton and Hyde, Old Reliable, 59.
171 Lankton, Cradle to Grave, 81-82.
172 Lankton, "Technological Change," 309, 330. See also Hyde, "Business History," 112.
173 Ibid., 330.

where they entered the top of the rockhouse.[174] The arrival of the rockhouse spelled the end of the kilnhouse at Quincy.

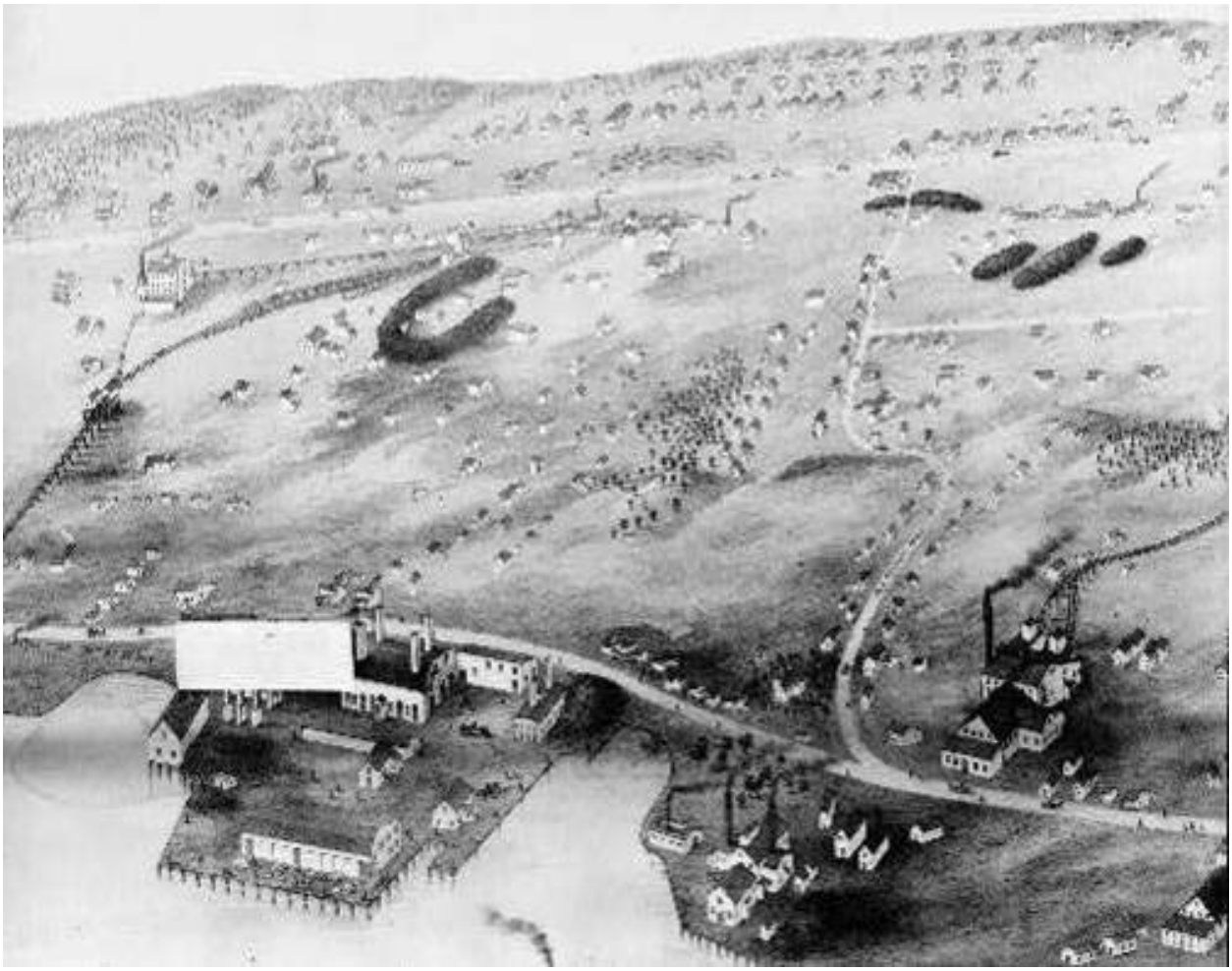


Figure 2- 20: Detail of an 1873 "Birds Eye View of Ripley, Quincy, Pewabic and Franklin" as drawn and published by A.J. Cleveland. Image shows Quincy's tramroad, rockhouse, shaft and engine houses, roads and worker housing (source: Photo courtesy of Historic American Engineering Record, HAER MI-2-3)

Quincy slowly but steadily implemented additional changes and improvements after the drill and rockhouse trials were completed. Fully engaged in working the Pewabic lode, these developments focused mainly on social infrastructure. The company built a two-story wood frame dispensary west of the physician's house.[175] Hancock had rebuilt and expanded after the fire, providing greater housing opportunities; Quincy needed to build only nineteen additional houses between 1875 and 1876.[176] These included six double houses in the log home settlement

174 Lankton, Cradle to Grave, 50. See also Lankton, "Technological Change," 309.
175 McNear, 542. McNear dates operation of the dispensary from 1874. Lankton and Hyde suggest that it was constructed "sometime around 1870." See Old Reliable, 36.
176 McNear, 522.

of Frenchtown, located a quarter mile west of the county road.[177] At nearly the same time, Quincy expanded the schoolhouse to ninety-six by twenty-six feet; by 1877 it could house 300 students.[178]

The 1874 Michigan census provides a snapshot of Houghton County's character; the number of occupations and total population are indicative of a landscape growing in complexity. The miners, engineers and mill workers that one expects in a mining community were joined by farmers, hunters, and woodchoppers, along with a few loggers and trappers. Civil order was maintained by officers of the law, lawyers, justices of the peace and a judge. Doctors and dentists looked after the physical well being of residents, while teachers and clergymen fostered intellectual and spiritual development. There were also hotel and saloon keepers, boardinghouse operators and "80 men who worked in water or land transportation."[179] As a county center, Houghton was establishing itself as a viable community, albeit one based primarily on a single extractive industry. Quincy Hill, at the center of that industry, was also at the heart of change. The heavily wooded hillside of just barely 25 years before had been irrevocably altered.

Other improvements adopted by Quincy during the 1870s were principally technology-related. Nonetheless, they resulted in alterations to the landscape. The No. 4 shaft was completely re-worked and received a new shafthouse eleven feet further south with a new engine, boiler, smokestack, and cistern.[180] This project was followed by expanding the stamp mill to the east for equipment upgrades in 1877.[181] Telephone lines were in use by 1879 at many of Quincy's key facilities: the dock, mill, mine office, store and supply office were all connected, and one line ran down the No. 4 shaft.[182] While each of these projects may be considered minor on an individual level, they had a cumulative effect on the physical environment.

Experiments with air drills and dynamite began again between 1878 and the early 1880s.[183] Quincy first tested the "Little Giant" air drill manufactured by the Rand Drill Company in 1879 and, unlike the Burleigh, it proved to be successful in the years that followed.[184] The drills gave miners the ability to drill holes faster and deeper, while the dynamite blasted more rock per charge than black powder.[185] Together, these changes increased production dramatically. The increased quantity of rock coming out of the mine meant more copper was being processed and, ultimately, more profits for Quincy. However, as the tonnage of ore increased, so did the amount of waste product that the company needed to handle, stockpile and remove.[186] These promising developments were temporarily obscured in smoke when the rockhouse burned to

177 Ibid., 523. See also Lankton and Hyde, Old Reliable, 80. The term "double house" is a local variant of "duplex."
178 McNear, 548.
179 Lankton and Hyde, Old Reliable, 38.
180 In "Business History," Hyde notes the new shafthouse appearing in 1875 (see page 113). In "Technological Change," Lankton indicates that it was 1877 (see page 341).
181 Hyde, "Business History," 117. See also O'Connell, "Stamp Mills," 588.
182 Lankton, "Technological Change," 339.
183 Lankton, Cradle to Grave, 96, 31. Refer also to Lankton, "Technological Change," 323.
184 Lankton, Cradle to Grave, 86. See also Lankton and Hyde, Old Reliable, 59.
185 Lankton, Cradle to Grave, 96.
186 Hyde, "Business History," 132, 114.

the ground on December 31, 1879.[187] It was rebuilt the following year at the same location, and was back in operation by March 10.[188]



Figure 2- 21: A photo of the southeast elevation of the Quincy Rockhouse - likely the 1880 version rebuilt after fire. (source: Photo courtesy of Historic American Engineering Record, HAER MI-2-68).

By the 1880s, Quincy had a well established, profitable mine and the company had reasons to be optimistic about its future. It was producing twenty percent of the world's copper supply and annual production was increasing.[189] New air drills and an improved facility for crushing and processing copper rock promised even greater output. The surface plant was modified to streamline production and included the installation of 16 additional stamps to the mill in 1880 to handle additional mine output.[190]

The implementation of Rand rock drills was followed by the installation of a Rand compressor in a new stone building north of No. 4 shaft.[191] Its construction demonstrated the increasing shift toward stone buildings for important industrial functions. Once operational, the facility allowed Quincy to operate fifteen drills instead of seven.[192] A corresponding improvement was addition of a pumphouse near Portage Lake in 1881. The pumphouse moved water from the lake nearly a mile uphill for the boilers and machinery at the surface plant.[193] That same year, Quincy rebuilt the No. 2 shafthouse.[194]

187 Lankton, "Technological Change," 335.
188 Ibid.
189 Lankton, Cradle to Grave, 71.
190 Hyde, "Business History," 138.
191 Lankton, "Technological Change," 322.
192 Lankton and Hyde, Old Reliable, 59.
193 Ibid., 76. See also Lankton, "Technological Change," 346.
194 Lankton, "Technological Change," 341.

The company's success in the early 1880s, and arguably its corporate philosophy, is reflected in the construction of a grand Italianate residence for the mine superintendent. Work on the residence began in 1880 and was completed two years later. The prominent home was built west of the county road at the south end of the mine, where it was a focal point on the Hill and offered occupants dramatic views extending to the Huron Mountains. It also offered a dramatic example of the company's priorities: Quincy spent a few hundred dollars to construct a typical worker's house, but they invested approximately $25,000 in the superintendent's home.[195]



Figure 2- 22: Superintendent's house and landscape in winter, ca.1885 (source: Koepel Collection, Keweenaw National Historical Park Archives)

The need for additional hoisting power on the surface increased as shaft No. 2 extended deeper into the earth. To address this, in 1882, Quincy built a new stone engine house east of the No. 2 shaft and converted the former hoist house into a machine shop.[196] It added a stone central boiler building east of the No. 4 shaft to service the surface plant. This facility housed tubular boilers and related infrastructure. Steam pipes in stone trenches connected the facility to No. 2 and No. 4 hoists and other mine operations.[197]

The company also made transportation improvements in 1882 when it "reduced grades on a wagon road running from Reservation Street in Hancock up to the mine in order to reduce their freight charges."[198] This reference to a wagon road reminds us how a common term can take on new meaning over time, as roads of this era were far less improved than even the most

195 McNear, 522, states it was completed in 1882. Lankton (Cradle to Grave, 152) argues 1881.
196 Lankton, "Technological Change," 342.
197 Ibid., 346.
198 Hyde, "Business History," 134.

marginal gravel roads in use today, and often contained stumps, boulders and other irregularities topped with poor surfacing. The wagon road also presents an opportunity to take a closer look at how development on top of Quincy Hill fit into a broader contemporary picture of the Upper Peninsula's mining landscape.

An article published in an 1882 edition of *Harper's New Monthly Magazine* described both the iron and copper ranges. It simultaneously applauded the industrial achievements being made and enthused over the rugged north woods, cold lakes, and other natural features: "Were it not for the mineral wealth it would remain permanently a wilderness," the author opined, adding that the land was "generally valueless from the farmer's point of view." Hinting at what Quincy Hill must have looked like years earlier, he observed the vast maple forests south of Portage Lake: "Until some discoveries of copper are made in it, it will probably remain one of the finest bodies of woodland in the country."[199] The author observed the civilized character of both miners and managers north in Calumet; true or not, his comments indicate that this area was seen as a place where civilization – industry - and wilderness co-existed.

A railroad connection between Houghton and Marquette, with connections to Chicago, was finally established in 1883.[200] To Quincy and the Keweenaw's other mining companies, this meant that freight transport could be extended into winter months, beyond the shipping schedule dictated by the Great Lakes. The first railroad bridge across the Portage Lake was built in the mid 1880s, and railroad service to the Keweenaw began to expand.[201]

The railroad allowed Quincy to consider switching to coal as its primary fuel source. As they evaluated this option, concerns about their existing transportation network grew. Despite the recent improvements to the wagon road between the dock and the mine, the costs and transportation methods associated with hauling coal and freight were a concern. Quincy measured three main alternatives through 1884 and 1885: extending the existing tram road to the dock; constructing a new tram road from the mine to the dock; or connecting the dock to the mine via a railroad. The company chose the last alternative, and the Mineral Range Railroad constructed a branch line to the mine's boiler house in the summer of 1886.[202]

Even so, the shift to coal did not occur overnight. Quincy had relied on woodlots for more than twenty years, and it held significant timber resources.[203] Fuel was needed to power large industrial machinery including hoists, pumps, the man-engine, rockhouse crushers, the stamp mill, air compressors and assorted tools and equipment, and consequently it was a major expense for Quincy.[204] Only after the railroad line to the central boiler house was constructed, allowing ready delivery to the mine site, could it begin the shift in resource use to avoid serious fuel shortages.[205] This new line went into operation just before Quincy constructed a new stone

199 F. Johnson, Jr., "The Upper Peninsula of Michigan," in Harper's New Monthly Magazine, 64 no. 384 (May 1882): 892-893.
200 Lankton and Hyde, Old Reliable, 44.
201 Lankton, Cradle to Grave, 53.
202 Hyde, "Business History," 134.
203 Lankton, "Technological Change," 347.
204 Hyde, "Business History," 136.
205 Ibid., 137

hoist house east of No. 4 in 1885-86, and about the same time it recognized the challenges presented by their mill site.[206]

In the mid 1880s, the Portage Lake stamp mill was working near its capacity at a point when the company was capable of doubling or even tripling its output.[207] Its gravity stamps were outdated, the site offered no room to expand, and the rapidly growing accumulation of waste sands in Portage Lake presented a significant problem for the company due to the passage of the Federal River and Harbor Act of 1886.[208] This act established harbor lines that restricted the disposal of waste sands at its Portage Lake stamp mill location, and forced Quincy to seek a new mill site.[209] The company selected a site encompassing more than 300 acres on Torch Lake that offered the desired room for growth, access to shipping, and a deep lake for waste disposal. It purchased the site in 1887, and began building the new mill one year later.[210] This triggered a tremendous effort to rebuild the surface plant to meet changing operational needs.

The mill was located six miles from the mine. Dissatisfied with the freight rates that had been offered in negotiations with area railroads, Quincy decided to construct their own railroad between the mine and the mill.[211] This decision also required the construction of a large modern coal handling facility at the Torch Lake mill site, and resolved earlier concerns about transportation problems from the existing Portage Lake dock.[212] This shift toward milling at a distant site speaks not only to requirements imposed on Quincy, but also to the consumptive nature of the industry and the company's sense of entitlement to the land and its resources. The balance of economic costs and benefits became the single deciding factor of landscape change. Without requirements for public input or discussion of social or environmental impacts, the company presumed that any changes it could afford were satisfactory.

As Quincy began making plans to develop the Torch Lake mill site, it was sidetracked by another natural disaster: their second rockhouse was lost to fire when lightning struck on June 7, 1887.[213] Quincy's response was to construct "a third rockhouse, different in appearance than the first two, several hundred feet closer to shafts No. 2 and 4."[214] Additionally, Quincy decided to rebuild its tramroad in 1887; the new stamp mill and railroad were not yet complete, and repairs were necessary to sustain operations.[215]

206 Lankton, "Technological Change," 344.
207 Hyde, "Business History," 138.
208 Ibid., 139.
209 Hyde, "Business History," 139. See also O'Connell, "Stamp Mills," 603.
210 Ibid.
211 Ibid. See also Lankton and Hyde, Old Reliable, 77.
212 Ibid.
213 Lankton, "Technological Change," 335
214 Ibid.
215 Hyde, "Business History," 134.



Figure 2- 23: A photo, ca. 1887-1890, of Quincy's No. 4 Rockhouse and tramroad with the No. 4 shafthouse in the background. (source: Photo courtesy of Historic American Engineering Record, HAER MI-2-71).

Next Page:
Figure 2- 24: Quincy Unit, 1866-1887 Period of Change Plan

Legend

- Existing Quincy Unit Boundary
- Quincy Mine Surface Operations (1866-1887)
- Quincy Mining Company Ownership (1866-1887)
- Pewabic Mining Company Ownership (1866-1887)
- Approximate Location of Pewabic Tram Road
- Approximate Former Location of Quincy Tram Road
- Approximate Location of Franklin Tram Road
- Pewabic Lode
- QMC Mine Shaft
- QMC Mine Shaft (inactive this period)
- Pewabic Mine Shaft (activity level unknown this period)
- Road
- Railroad
- Adit
- Portage Lake Shoreline
- Platted QMC Housing Location
- Existing QMC Housing Location
- Pewabic Mining Company Housing Location
- Housing not affiliated with a planned company housing location
- Stamp Mill Sand Deposits
- Section Numbers (23 24 / 26 25)

Sources

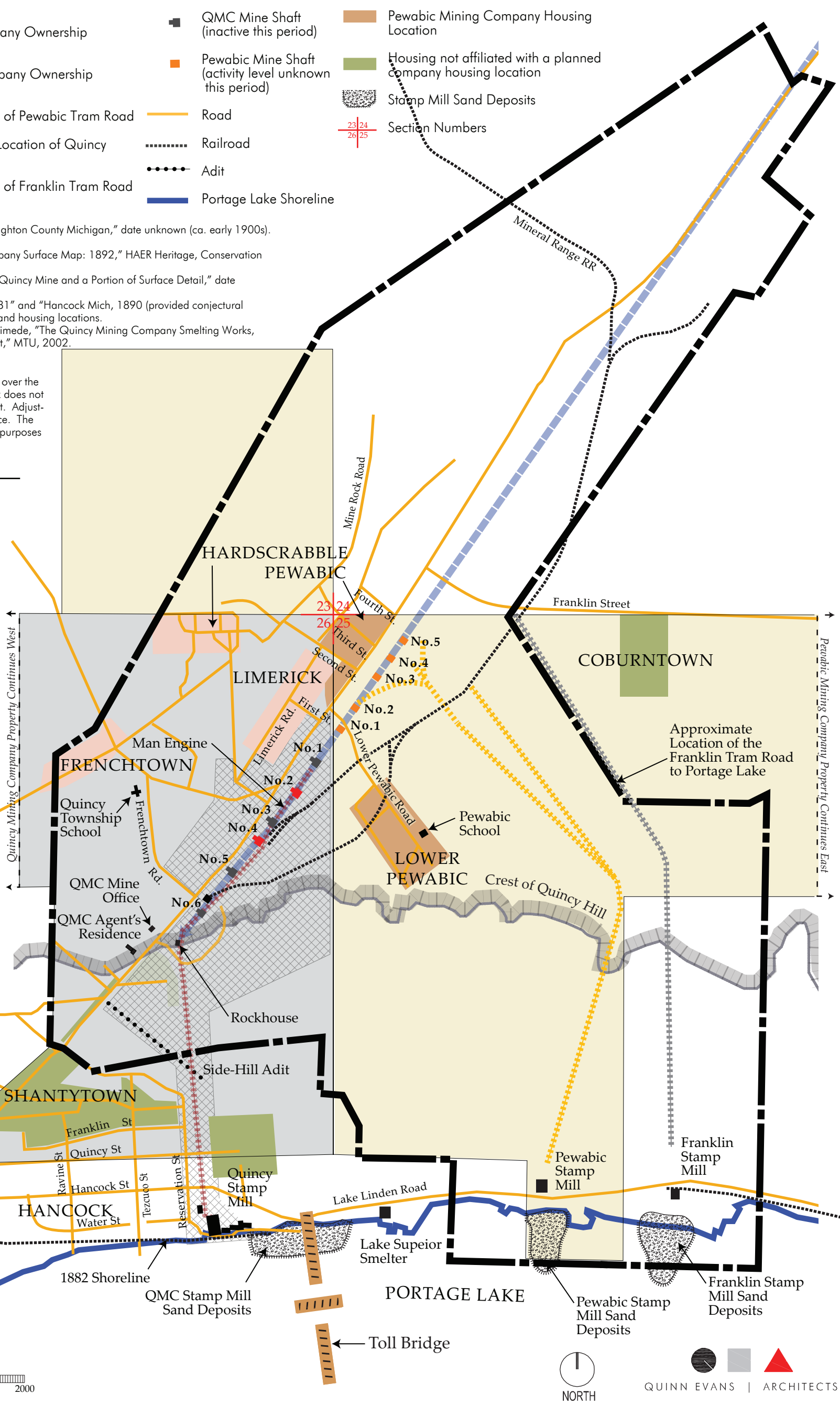
"Map of Quincy Mine and Vicinity, Houghton County Michigan," date unknown (ca. early 1900s). (shows ownership parcels)
Eric. M. Hanson, "Quincy Mining Company Surface Map: 1892," HAER Heritage, Conservation and Recreation Service, 1978.
"Plan of the Underground Workings of Quincy Mine and a Portion of Surface Detail," date unknown ca. 1900-1907.
Birds-eye Aerials: "Hancock Mich., 1881" and "Hancock Mich, 1890 (provided conjectural information in relation to period roads and housing locations.
Dr. Patrick Martin and Gianfranco Archimede, "The Quincy Mining Company Smelting Works, 1898 Historical Land Use Survey Project," MTU, 2002.

Note

When overlaying the existing conditions over the HAER historic maps, the city of Hancock does not align with other areas in the Quincy Unit. Adjustments were made to reflect this difference. The period of change maps are for analysis purposes only.

Chronology

1866
QMC constructed man engine.
1867
QMC constructed Quincy Township School (with addtition in1875-76), new No. 2 hoist house, engine house, and boiler house.
1868
Quincy Tramroad re-constructed.
1869
Fire in Hancock, destroyed 150 buildings.
Quincy built 10 new houses.
1870
Swedetown abandoned
1872-1873
QMC constructed rockhouse No. 1.
1874
QMC constructed dispensary
1875-1876
QMC constructed six double house dwellings in Frenchtown. Wooden, two lane toll bridge wth a swing center section was constructed over Portage Lake, linking the cities of Hancock and Houghton.
1877
QMC expanded schoolhouse and Stamp Mill; No. 4 shafthouse was rebuilt.
1879
Telephone lines appeared.
1880
QMC rebuilt rockhouse No. 2.
1880s
Railroad bridge constructed.
1880-1881
QMC Agent's residence was constructed.
1881
Pumphouse was constructed at Quincy Stamp Mill site and No. 2 shafthouse was rebuilt.
1882
Wagon Road was realigned.
1883
RR connection from Houghton to Marquette completed.
1886
Mineral Range RR built branch line to the Quincy Mine site.
1887
New Quincy Stamp Mill site purchased on Torch Lake (see regional context drawing for location) and rockhouse No. 3 was rebuilt.



QUINCY UNIT, 1866-1887 PERIOD OF CHANGE PLAN

Cultural Landscape Report

Keweenaw National Historical Park

Rebuilding the Mine Surface Plant: 1888-1907

Quincy's first step in constructing the Torch Lake mill was to build a boardinghouse for construction workers, whose final job would be converting it to a blacksmith, carpenter, and cooper shop.[216] The massive, sprawling mill that housed modern steam stamps stood partway up the hillside west of and across the road from the stone pumphouse, boilerhouse, oilhouse and warehouse. A large dock and coal handling facility improved the shipping and distribution of coal, while water was moved from the lake to the pumphouse via an adit with a stone cistern at the end.[217] A hoist and tram connected the dock and boilerhouse and fed fresh coal to the furnaces, while launders connected to two small creeks some 1,800 feet behind the mill and brought water to the boilers.[218] An elevated waste launder and an adjacent water and steam pipe conduit functioned as a covered bridge by supporting the infrastructure above the road while accommodating pedestrian traffic below.[219] The Torch Lake mill featured many of the facilities offered at the Portage Lake site, but its design incorporated the latest materials and technology, and resulted in a grander, more organized site.



Figure 2- 25: View of Quincy's mill on Torch Lake with boilerhouse and pumphouse and cordwood fuel in the foreground. Note the utility trestle above the road and the railroad trestle at the rear of the mill building, ca.1890. (source: Koepel Collection, Keweenaw National Historical Park Archives)

216 O'Connell, "Stamp Mills," 607.
217 Ibid., 609.
218 Ibid., 607.
219 Ibid., 609.



Figure 2- 26: An opposing view (to 2-25), ca. 1890, from the ravine offers a detailed look at landscape conditions near the trestle entering the mill with Torch Lake and support facilities in the distance. (source: Photo courtesy of Historic American Engineering Record, HAER MI-2-150)



Figure 2- 27: Quincy Mill, ca 1890s, as viewed from a launder used to deposit waste tailings directly into Torch Lake. (source: Photo courtesy of Historic American Engineering Record, HAER MI-2-149).

The new mill operation relied on a single critical link to the mine – the Quincy and Torch Lake Railroad. As with the mill site, construction began in 1888. The track was completed in 1890, with six miles of new narrow gauge rail waiting for locomotives burdened by the weight of copper rock to polish its surface.[220] The new railroad opened in time to service the newly completed mill, and featured fifty-foot diameter iron turntables on each end, coupled with water tanks, and a stone engine house at the mine site.[221] Later in the year, the railroad would extend a telephone line between the mine and the mill.[222]



Figure 2- 28: An undated photo showing the Engine House and turntable (1889) with the No. 4 Rockhouse (1887) in the background. (source: Photo courtesy of Historic American Engineering Record, HAER MI-2-72)

Recognizing the distance of its newly created operation from its neighborhood locations and other residential communities, Quincy quickly established quarters for the mill's workforce. The village of Mason emerged near the mill site, first as six "substantial frame dwelling houses" on Bunker Hill, north of the mill, followed by forty-eight single family dwellings and one boardinghouse located even closer to and south of the worksite.[223] Following this, the company built a twenty-six by thirty foot schoolhouse that seated the nearly thirty children of the workers who occupied the homes.[224] Closer to the mine, the company began speculating on property development by platting some of its lands bordering Hancock and selling residential lots. In 1890 it platted the Quincy Addition to Hancock just outside the eastern edge of the village, where today it is known as East Hancock.[225] This location proved desirable to early residents, as many stately and elaborate homes were constructed there.

220 Ibid., 650, 654, 659.
221 Ibid., 660.
222 Ibid., 664.
223 Ibid., 607. See also Lankton and Hyde, Old Reliable, 85.
224 McNear, 547-548.
225 Ibid., 522. See also Lankton and Hyde, Old Reliable, 92.



Figure 2- 29: A photo, ca. 1890, showing the landscape associated with the Carpenter Shop, Blacksmith Shop, Boarding house and Bunker Hill residences resulting from the Torch Lake mill development. (source: Photo courtesy of Historic American Engineering Record, HAER MI-2-171)

Quincy introduced balanced hoisting at shaft Nos. 2 and 4 shortly after the mill and railroad began operation in March of 1890.[226] This method of hoisting allowed counterbalanced skips to retrieve nearly double the output of copper rock at the surface and the increased waste required a second dump at both shaft houses.[227] Balanced hoisting also introduced man cars, which were able to take workers much deeper than man engines.[228]

Quincy was poised for rapid growth and expansion after building the new mill, the Quincy and Torch Lake Railroad, and the move toward balanced hoisting on double skip tracks. The company turned its attention to the mine's surface plant, which, although functional, was showing its age even after operating only two shaft houses for the last twenty years.[229] The successful growth of a large electrical industry would soon create demands for new products and the copper necessary to produce them.[230] This copper boom would lead to more changes

226 Lankton, "Technological Change," 341. See also O'Connell, "A History of the Quincy and Torch Lake Rail Road Company," in HAER No. MI-2, an unpublished report for the National Park Service, Historic American Engineering Record (Washington, DC: 1978), 663.
227 Lankton, "Technological Change," 341.
228 Lankton and Hyde, Old Reliable, 64. See also Lankton, Cradle to Grave, 35.
229 Lankton, "Technological Change," 362.
230 Lankton, Cradle to Grave, 23.

on the landscape, as Quincy worked to modernize its surface plant and increase copper production.

Quincy had begun assessing the lands of the Pewabic Mine, its northern neighbor, in 1884 for the purposes of expanding the mine and improving its surface operations.[231] The purchase transaction resulted in a legal dispute that was not settled until 1891, when they legally gained control of the Pewabic Mine property.[232] The acquisition of Pewabic's surface plant included a combination shaft-rockhouse, several shops, mine buildings and additional worker's homes, many in poor condition.[233] Buildings were rehabilitated, given new uses, or torn down to make way for other improvements.[234] One of the improvements was the extension of railroad tracks to service this newly acquired property.[235]



Figure 2- 30: Undated view of South Pewabic rockhouse and tramroad. (source: Image courtesy of Michigan Technological University Archives & Copper Country Historical Collections)

Quincy began construction of a new No. 6 shaft-rockhouse and associated rail lines by removing approximately 40,000 cubic yards of waste rock that Pewabic had generated. [236] This illustrates the tremendous amount of waste material the mines produced, as well as the company's matter-of-fact attitude toward overcoming huge industrial obstacles by expending great amounts of physical labor. The shaft-rockhouse was an architectural adaptation unique to

231 Hyde, "Business History," 143.
232 Ibid., 145.
233 Lankton, "Technological Change," 361. See also Lankton and Hyde, Old Reliable, 85.
234 Hyde, "Business History," 145. Refer also to Lankton and Hyde, Old Reliable, 52; and Lankton, "Technological Change," 351 and 361.
235 O'Connell, "Rail Road," 664.
236 Lankton, "Technological Change," 363.

the Keweenaw. It combined the workings of a shafthouse with those of a rockhouse.[237] By hoisting copper rock high enough, it could be dropped into a series of crushing equipment and sorting bins above railroad sidings.[238] Once crushed and sorted, the rock was directed into waiting rail cars below via a number of chutes. This process averted the bottlenecks that occurred if one rockhouse tried to process copper rock from multiple shafts.[239] It also eliminated labor and handling, because crushed and sorted material no longer needed to be transported to a stand-alone rockhouse for processing.[240]



Figure 2- 31: An undated photo of the Quincy No. 6 shaft-rockhouse front elevation taken by Earl Gagnon. (source: Image courtesy of Michigan Technological University Archives & Copper Country Historical Collections)

The resulting No. 6 shaft-rockhouse was consequently much larger than the shafthouses before it. Monumental in scale and standing more than 100 feet high, it became a multi-gabled wooden landmark on Quincy Hill when it began operating in 1892. No. 6 was linked by pulley stands that guided cables to a new masonry hoist house constructed of red Portage entry sandstone.[241] To support its operation, Quincy also erected a stone boiler house and stone compressor building to the southeast. [242]

237 Research by Scott See indicates that shaft-rockhouses are unique to the Keweenaw, designed in response to the demands of the Keweenaw's particular climate, geology, and mining methods. Ongoing personal communication; formal presentation at MTU Archival Speaker Series, January 23, 2006.
238 Lankton, "Technological Change," 365.
239 Lankton and Hyde, Old Reliable, 68.
240 Lankton, Cradle to Grave, 51.
241 Ibid. See also "Technological Change," 360, 363, and 365.
242 Lankton, "Technological Change," 368.



Figure 2- 32: A photo showing the No. 6 Boiler House, No. 6 Compressor House and No.6 shaft-rockhouse. (source: Photo courtesy of Historic American Engineering Record, HAER MI-2-84)

Quincy was already increasing the capacity of its new mill in 1891, and implemented several improvements. The mill was expanded to house additional steam stamps; pump and boiler houses also increased in size and capability.[243] The mill site also gained 400 feet of dock.[244] Quincy extended its side hill adit 200 feet, and reached the seventh level of the mine in 1892. It added a launder to intercept groundwater seeping into the mine and redirect it out through the adit.[245]

In 1893 Quincy further improved the Torch Lake mill site by relocating steam and water lines from a trestle to a tunnel. This tunnel was constructed between the mill and the boiler house "thus lessening the fire risk and saving many other annoyances."[246] By August of 1893, Quincy was disassembling their mill on Portage Lake.[247] In its place it constructed a sandstone pump and boilerhouse to provide water to the mine site. At the mine site itself, Quincy erected a new carpenter shop, supply office and oil house for lubricants, all in the vicinity of the No. 2 shaft.[248]

With the Pewabic acquisition complete, Quincy recognized a need to purchase additional acreage. Their two northernmost shafts, 2 and 6, were already near company boundaries, and unless it obtained title to the adjacent property, Quincy would be unable to extend the shafts deeper.[249] The purchase gave Quincy ownership of the western half and northeast quarter of Section 23; the mineral rights to the northwest quarter of section 24 (Franklin owned the surface rights); and the surface rights on the southeast quarter of Section 23 (Quincy owned the mineral

243 O'Connell, "Stamp Mills," 612.
244 Ibid., 611.
245 Lankton, "Technological Change," 369.
246 O'Connell, "Stamp Mills," 612.
247 Ibid., 601.
248 Lankton, Historic Resource Study, 151.
249 Lankton and Hyde, Old Reliable, 54.

rights).[250] With land secured, the company was able to make a large investment in No. 2 in 1894-95 by building a new shaft-rockhouse that mirrored the design of No. 6.[251] Late in 1894, it also installed a new switch at the No. 2 shaft and added a stall to the roundhouse to accommodate a new engine.[252]

Anticipating even greater production, the company began seeking a site for a second mill in 1894, ultimately choosing to locate it approximately 630 feet north of the Torch Lake mill. It was planned to be of similar design and construction to the neighboring mill, but with three heads of stamps with room for expansion.[253] To service the mill and aid in its construction, the railroad was extended 1,300 feet and included a 122-foot steel bridge spanning North Creek between the buildings. This work, along with replacement of wooden trestles and construction of a new 281 by 385-foot coal storage shed, was completed in 1895.[254]

Once the new mill was operational, Quincy turned its attention back to the mine site. Like No. 6, shaft No. 2 was remodeled into a shaft-rockhouse and began operating in 1895, with the addition of a new sandstone hoist house to the southeast.[255] The new structure accommodated double skip tracks and man cars, which allowed miners to quickly descend even deeper into the mine – an important consideration as Quincy's shafts were by that time among the deepest in the world.

Upgrades at the mine site continued through 1895. More support buildings were constructed, including a paint shop and a pipe house located northeast of the No. 2 shaft.[256] Across the county road, Quincy built an addition on the school to provide two more rooms and a connection to an outhouse wing.[257] The company's surface improvements also included expanding its real estate holdings, particularly as the difficulties of extracting rich copper ore from the depths of the Pewabic lode increased. Neighboring properties offered additional workable deposits; Quincy bought the Mesnard and Pontiac mining companies at a sheriff's sale in July 1896 for $34,050. Included in the purchase were two quarter sections on the Pewabic lode adjacent to existing holdings, and 901 acres in Osceola Township that included Torch Lake frontage.[258] This purchase gave Quincy exclusive ownership of the Pewabic lode at the surface, minus one parcel still owned by the Franklin Mining Company.[259]

250 Hyde, "Business History," 169.
251 Ibid., 158. See also Lankton, "Technological Change," 371.
252 O'Connell, "Rail Road," 666.
253 O'Connell, "Stamp Mills," 613.
254 O'Connell, "Rail Road," 667-668.
255 Lankton, "Technological Change," 372.
256 Lankton, Historic Resource Study, 151.
257 McNear, 548.
258 Lankton and Hyde, Old Reliable, 54. See also Hyde, "Business History," 171.
259 Ibid. See also Lankton, "Technological Change," 360.



Figure 2- 33: An undated photo of the Quincy schoolhouse near Frenchtown shows a landscape that included lawn and trees, unlike barren areas associated with the mine location. (source: Image 275 courtesy of HAER)

At the same time it was acquiring those properties, Quincy decided to invest in a new mine office.[260] It chose to build it next door to their old mine office, in the spot where North's store was located. The store was relocated further up the hill into a larger stone building, and the site was cleared.[261] This approach allowed the office to keep its prominent location on Quincy Hill, and for the existing wood frame office building to remain in use as the new building was being built.[262] When the project was completed in 1897, the front lawn was separated from the public road by a wood fence and sandstone curb. [263]

Crafted of Portage Entry sandstone and topped by a slate roof, the new office symbolized Quincy's corporate success and confidence. While improvements to mining and surface operations were justifiable expenses aimed directly at increasing productivity, a new and expensive office building did not afford the same return. Instead of addressing their need for improved office conditions pragmatically, as they did with other issues directly affecting their surface plant, Quincy's leaders used the new, elegant mine office to proclaim their corporate self esteem. In doing so, they were imitating their neighbor, the Calumet and Hecla Mining Company (C&H), located only twelve miles north; C&H had long expressed its corporate success and strength through impressive construction efforts.

260 McNear, 557.
261 Ibid., 553.
262 Ibid., 557.
263 Lankton, "Technological Change," 369. See also McNear, 557.



Figure 2- 34: View of Quincy Mine Office and landscape ca.1920. Note how Quincy retained wooded areas and trees near the management buildings and houses. (source: Koepel Collection, Keweenaw National Historical Park Archives)



Figure 2- 35: The old mine office (left) waiting to be removed as construction of the new mine office (right) is completed. (source: Photo MI-2-217 courtesy of Historic American Engineering Record)



Figure 2- 36: View looking north from front of mine office at the time of construction. (source: Photo MI-2-77 courtesy of Historic American Engineering Record)

Quincy's economic success was further demonstrated by additional building projects in 1897. They built an assay office on Quincy Hill, and began work on shaft-rockhouse No. 7 and its associated facilities.[265] This steel shaft-rockhouse was serviced by a nearby stone boiler house and sandstone hoist house.[266] When the company that was smelting their material closed in 1887, Quincy was forced to rely on the smelting capabilities of the Lake Superior Smelting Company and C&H until 1898, when they finally completed the construction of their own smelting facility on Portage Lake.[267] The smelter was also a response to the increased volume of rock mined by Quincy: even just ten years earlier they did not produce enough to justify the expense of building their own.[268] They located their smelter on the stamp sand-covered grounds of Pewabic's former stamp mill.[269]

The site's construction began with dredging the shoreline and inserting pilings for the loading dock. Then, foundations were laid for the two main buildings of the works, the reverberatory furnace building and the cupola furnace building, along with the blacksmith shop and engine room. These buildings were soon joined by three reverberatory furnaces and their 75-foot smokestacks. The smelting operation's complexity is reflected in the number of buildings that were then built to support its operation: a dockside warehouse; cooper shop; cooperstock building; coal shed; charcoal house; sand house; assay office; coal dock; oil house; scale house; and a barn were all completed by the end of 1898. The main office building, ice house and iron house were completed the following year.[270]

265 Ibid.
266 Ibid., 374, 376.
267 Hyde, "Business History," 172, Yarbough, Comments provided by Quincy Mine Hoist Association Manager.
268 Lankton and Hyde, Old Reliable, 79.
269 Lankton, Historic Resource Study, 155. See also Hyde, "Business History," 174.
270 Patrick Martin and Gianfranco Archimede, The Quincy Mining Company Smelting Works, 1898 - Historical Land Use Survey Project, (Industrial Archaeology Program, Michigan Technological University, June 2002) 5.

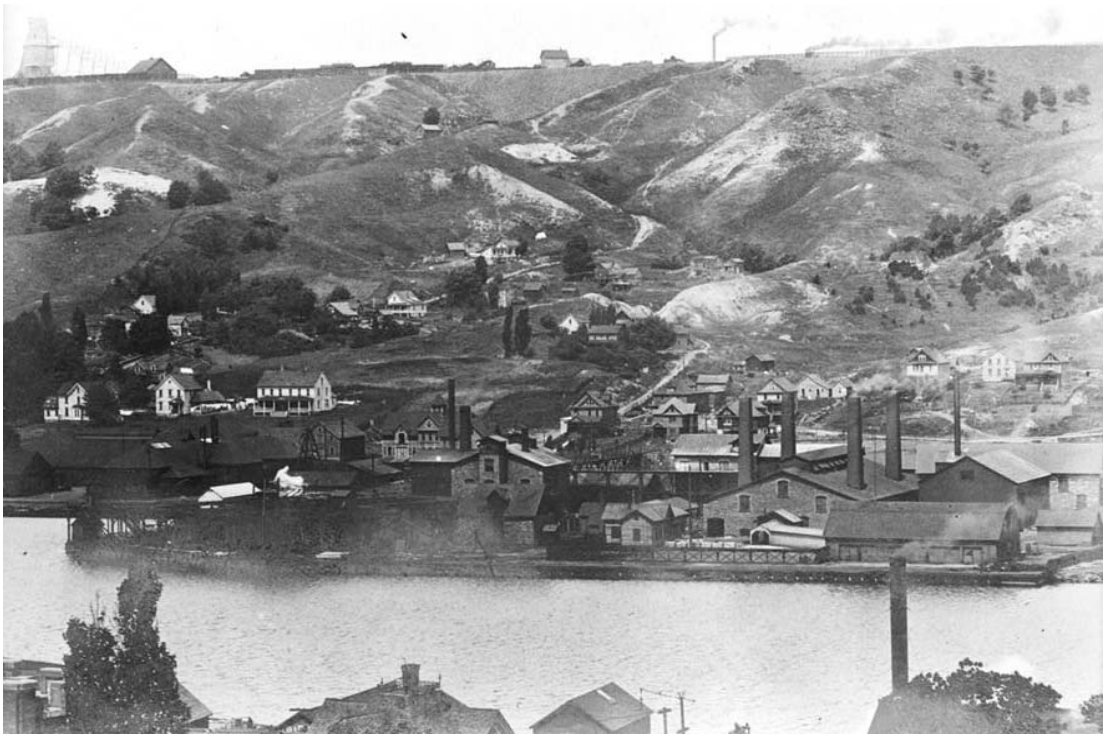


Figure 2- 37: The Quincy Smelting Works, with Quincy Hill in the background, as viewed from Houghton in the early 20th century. (source: Photo MI-2-174 courtesy of Historic American Engineering Record)

By 1898, company housing at Quincy had changed greatly. The acquisition of other mining companies and their assets contributed to the increase in the number of worker's houses that Quincy owned. The Pewabic purchase alone added three entire neighborhoods to Quincy's collection, including Newtown, Lower Pewabic, and one quarter mile of frontage along the west side of the county road.[271] Private home construction on leased company land, like the fifteen homes in the small enclave of Sing-Sing, also altered the Quincy landscape.[272] By 1898, Quincy managed several neighborhoods of worker housing, and owned more than 300 homes.[273] This was also the year that Quincy stopped leasing their farm, the location of which remains unclear.[274]

271 McNear, 525. Coburntown also figured in this transaction. In 1859, Augustus Coburn purchased a quarter section of land which he later sold to the Pewabic Mining Company, except for 5 acres that he platted in order to sell lots. This community was called the Village of Pewabic, but was informally known as Coburntown. When Quincy purchased the Pewabic properties, they platted East Quincy immediately adjacent to Coburntown, which remained an independent community. As Coburntown residents were beyond the reach of company control with regard to housing, the neighborhood became, in one researcher's words, a "safe haven" for employees who wished to discuss work conditions outside of company property. Coburntown became known as "Helltown," a nickname earned perhaps due to its two saloons – businesses notably missing from company-owned locations – and possibly because of its acceptance of dissenting opinions and activities. See Rachael Herzberg, National Register of Historic Places Registration Form: East Quincy (2004).

272 Ibid., 522.

273 Ibid., 526.

274 Ibid., 560. An uncataloged collection of maps at MTU indicated several possible locations of Quincy's farm, which appears to have been divided into several small workable areas or plots.

Other investments in 1898 included railroad improvements, the construction of several utility trenches, and a new sandstone blacksmith shop between No. 6 and No. 2.[275] Efforts to improve their infrastructure continued into the following year with the completion of a machine shop right next to the blacksmith's, powered by electricity. Quincy also built a boiler house for No. 2 adjacent to the No. 6 facility, and a compressor building.[276]

Quincy's preoccupation with real estate continued through 1899, when they platted the Quincy Hillside Addition north of Hancock.[277] The company directed this effort across Shantytown, a part of their property established in the 1860s and already settled through land leases. They exercised control of the built environment by platting lots in a manner they viewed as appropriate, regardless of the location of previously established dwellings. Residents that held land leases were offered discounts to purchase their lot, or were displaced by the development of roads. Those who inhabited homes that Quincy determined were of unacceptable appearance, size, or that were positioned at a poor angle to the street were subsequently reimbursed for the cost of their home and relocated to other company housing.[278] Residents had little agency in determining their surroundings, as the company made these decisions for them. Naturally, these actions were consistently in the company's best interest and driven by the pursuit of profit.

Eighteen homes were added at Mason and thirty six at Lower Pewabic in 1899.[279] Further up the Hill, Quincy began operations at an abandoned Mesnard mine they called No. 8.[280] Here, they built twelve more homes, presumably to meet the needs of workers at this location.[281] The company also constructed generous accommodations for the superintendent of the smelting works near Ripley, and for a mining captain on Quincy Hill.[282]

Quincy clearly paid a lot of attention to housing in 1899, but their single largest development effort remained industrial: they built a second mill at their Torch Lake site. This new mill was made of steel and featured a corrugated metal exterior that was built to last and be easier to maintain than their 1891 mill.[283] A new steel building served as the boiler house, while the pumphouse was made of brick and steel. Both buildings were connected to the mill by a masonry tunnel.[284] Rock was delivered to receiving bins at the rear of the mill by railroad, while coal was delivered to the site at a 216 by 40-foot wooden dock.[285] The new mill was operational by 1900. It had three stamps crushing rock, which met the needs of Quincy's larger mine operation which by October of that year again included shaft No. 7.[286]

275 Hyde, "Business History," 175.
276 Lankton, "Technological Change," 380.
277 Lankton and Hyde, Old Reliable, 92.
278 McNear, 522.
279 Ibid., 525. See also Lankton and Hyde, Old Reliable, 85.
280 Lankton, "Technological Change," 360.
281 McNear, 525.
282 Ibid., 523.
283 O'Connell, "Stamp Mills," 614.
284 Ibid., 615.
285 Ibid., 616 and 618.
286 Lankton and Hyde, Old Reliable, 78.See also Lankton, "Technological Change," 374.



Figure 2- 38: "Scheme for Shantytown," October 1899 (source: MS012-QD2176, image courtesy of Michigan Technological University Archives & Copper Country Historical Collections).

Quincy observed the turn of a new century amidst favorable reports of improvements and progress, which were noted in the Copper Mining Handbook of 1900. Specifically, the handbook mentioned that "streets have the appearance of having been swept every morning." It described the "tidiness" of the landscape at the mine and mill site, with "everything in its place."[295] The improvements were acknowledged as "giant strides" regarding "machinery and surface works improvements," on what they referred to as a "truly colossal scale."[296] In 1900, Quincy's surface operation extended across 7,500 feet of the Pewabic lode. It included three working shafts – 2, 4, and 7 – on their original property, while No. 6 operated on the former Pewabic Mine site and No. 8 at Mesnard.[297]

The growing prosperity and community development throughout the copper mining district presented an opportunity for the community to address public transportation. By 1900, the Houghton County Traction Company was organized and began constructing a rail line dedicated to streetcars and public transportation. Welcomed by some and resisted by others, the company established a line between Houghton and Red Jacket within a few years. It extended operations north to Mohawk and established a link to Lake Linden and Hubbell by 1910.[299] The tracks ran directly through several of Quincy's residential neighborhoods on top of Quincy Hill.

295 Lankton, "Technological Change," 360.
296 Ibid., 359.
297 Ibid., 360.



Figure 2- 39: This view of Lower Pewabic from No.2, ca. 1905-1915, shows the regular arrangement of streets, homes, yards and gardens and other landscape features that present an image of organization and tidiness amidst a larger industrial landscape. (source: Image is courtesy of the Koepel Collection, Keweenaw National Historical Park Archives)

Quincy continued its real estate development efforts into the 20th century, and in 1901 the company platted the Lake Shore Addition in West Hancock. Located between Portage Lake and the cemeteries, much of this area was donated to the Sisters of St. Joseph Hospital.[301] Furthermore, in 1901 Quincy began to resurvey the Quincy Addition to Hancock with an eye toward improving lots for development. The process of resurveying would not be complete until 1905, when the Dakota Heights Real Estate Company began filling an existing ravine to accommodate the proposed development. It would take more than ten years to complete the residential project that ultimately altered the appearance of Hancock, but provided no new housing options for Quincy's workers.[302] That occurred in 1903, when Quincy platted South Quincy between East Hancock and neighboring Ripley, in order to provide a residential area suited for the smelter workers. This was followed in the same year by the Second Hillside Addition, just north of the original Hillside Addition of 1900.[303]

299 Lankton, Cradle to Grave, 217.
301 McNear, 526.
302 Ibid.
303 Ibid.

Back at the mine location, Quincy was quick to migrate to electric locomotives to load and move rock underground. This change had occurred a few years earlier on the Marquette Iron Range; presumably, as the locomotives were manufactured by General Electric, the switch resulted in an increased presence of electric utility poles and wires to service the mine. Power to the site was provided by the Peninsula Electric Light and Power Company, a local utility.[304] Power was also an issue at the milling facilities on Torch Lake: expanding mill operations required additional fuel. With operations depending heavily on coal, Quincy initiated construction of an efficient coal unloading and storage facility in 1901. The facility included three steel towers, a 385 by 301-foot steel coal storage shed, and all the necessary railroad service connections.[305] It began operating in July of 1902.[306] Later, in 1904, a mineral house was constructed at the west end of Quincy's No. 1 mill site on Torch Lake.[307]

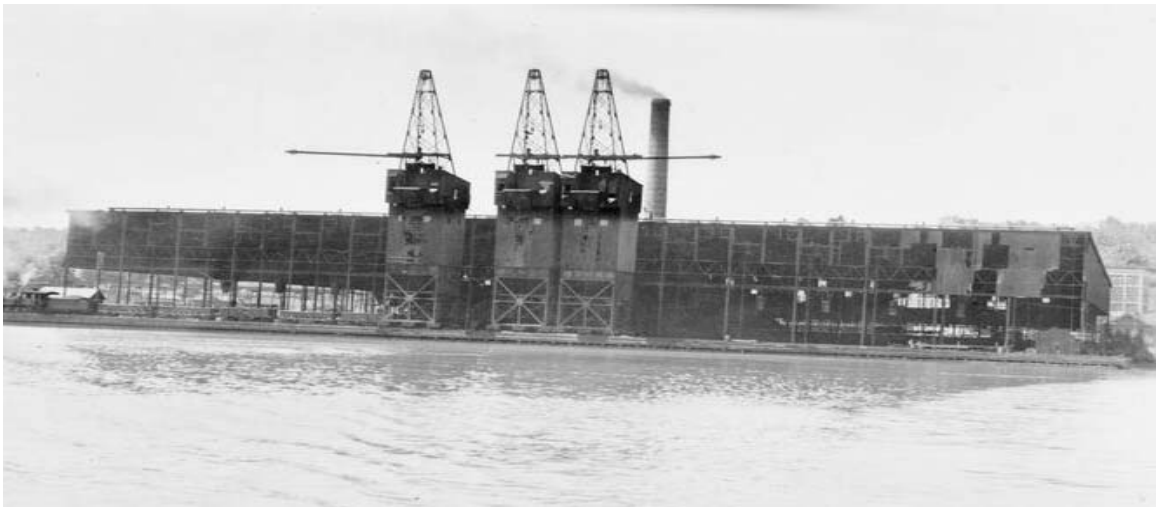


Figure 2- 40: Coal handling equipment and the adjacent coal shed at the Torch Lake mills. (source: Photo courtesy of Historic American Engineering Record, HAER MI-2-169)

1904 brought about changes with the railroad, but they were administrative in nature and do not seem to have resulted in immediate changes to the landscape. In June of that year, the Quincy and Torch Lake Railroad stockholders had authorized the sale of the railroad to the Quincy Mining Company. For $190,811.23 Quincy purchased the rolling stock, one turntable, the engine house and all of the switches and trestles owned by the railroad. The primary six mile rail line and right of way were retained by the railroad, and leased to Quincy for $850 a month. The deal was completed on April 4, 1905.[308]

304 Lankton and Hyde, Old Reliable, 61.
305 O'Connell, "Stamp Mills," 623.
306 O'Connell, "Rail Road," 670.
307 O'Connell, "Stamp Mills," 624.
308 O'Connell, "Rail Road," 677.

By that time, Quincy had grown accustomed to success. The company had endured difficulties and overcome many challenges during its nearly sixty years of operation. It had modernized and increased its footprint on the surface in a monumental fashion. Its success and prosperity were demonstrated in several ways, including: physical plant and technological improvements that reconstructed the landscape in which they operated; land and mine acquisitions; increased production that yielded twelve times more rock, at twice the depth, than in 1887; higher profits and payment of reliable dividends to stockholders; and a substantially larger workforce.[309] In fewer than twenty years, Quincy had grown demonstrably larger and more complex.[310] Acknowledgement of their achievements came at the St. Louis World's Fair in 1904, where they received international recognition and a gold medal for their copper mining exhibit.[311]

If one compares Quincy's operational history with climbing a mountain, then in 1905 the company was approaching the summit. However, Quincy was unaware that it was reaching the pinnacle of their success. The money required to sustain a mining operation of its magnitude and satisfy its appetite for mineral resources and wealth were demanding, and tied to variables beyond the company's control. Changing copper markets and mining practices, competition from other mines, and labor demands would soon require Quincy's managers to alter their practices radically, but they did not. Seemingly blind to changing circumstances, the company continued forward in much the same the manner that had brought it so much success in the past.

Following its major construction and rehabilitation efforts, Quincy's focus and expenditures shifted toward maintaining mine support facilities, where typically only minor modifications were needed to sustain operations.[312] Exceptions to this did occur and large projects still ensued but at a notably more modest pace and scale than the company's previous endeavors. For instance, in 1905-1906 Quincy modified the No. 8 shaft-rockhouse by rebuilding the wooden rockhouse portion, using steel-frame construction to increase its height. This action was repeated two years later at No. 7 when new rock sorting equipment was installed.[313] Also in 1905, Quincy enlarged the dispensary to provide additional office space.[314]

Land ownership remained an important issue for the company during the early part of the 20th century. Although new construction activities slowed, Quincy continued to acquire land strategically in order to expand its underground operations. The shaft at No. 8 would be limited to 2,500 feet if the company did not acquire property or mineral rights from the Arcadian Mine. Therefore, in 1906 Quincy spent $765,000 in 1906 to secure Section 13, and the north half of Section 18, Range 33 from the Arcadian Mine.[316] This is where the Pewabic vein saw the light of day as a rock outcrop.[317]

309 Hyde, "Business History," 180. Quincy had reached a depth of 5,000 by 1905.
310 Ibid.
311 Ibid., 185.
312 Lankton and Hyde, Old Reliable, 113. See also Hyde, "Business History," 213.
313 Lankton, "Technological Change," 452.
314 McNear, 542.
316 Ibid., 221 and 216.
317 Ibid.,

Events below the surface in 1906 also demanded the company's attention. That year, Quincy began to experience a series of troubling collapses within the mine.[318] These events, known as "air blasts," occurred when unstable overhead rock would fall, compressing air and forcing it rapidly through the existing drifts and shafts. The size and severity of these events varied greatly, but the outcome was never positive. October 13 saw a surface collapse between the No.6 dryhouse and a captain's office that claimed the life of John Shea, a forty-year employee. His years of experience laboring at the mine did not prevent him from being swallowed alive by a hole that extended 400 feet deep into the earth.[319] Even when no personal injuries resulted from collapse, flying rock and debris damaged equipment, interrupted work, created access problems, increased production costs, and likely lowered morale.[320] The blasts continued to plague Quincy intermittently through the late 1920s.[321]

The more reserved investment strategy exercised by Quincy can be seen in the 1907 construction report. Projects remained focused on installing new equipment within older structures, and rehabilitating older structures to accept new uses or improvements.[322] Yet the company continued to build where needed. A new compressor house at No. 8 and a new machine shop at the smelter were added at this time.[323] Quincy also built seven double and seven single saltbox style houses in Mesnard, in addition to repairing many others in 1907-1908.[324] These homes were arranged in rows parallel to the County Road, similar to the pattern in Limerick.[325]

318 Lankton and Hyde, Old Reliable, 107.
319 Lankton, Cradle to Grave, 128.
320 Lankton and Hyde, Old Reliable, 99.
321 Ibid., 107.
322 Hyde, "Business History," 213.
323 Ibid.
324 McNear, 529.
325 Ibid.



Figure 2- 41: An undated view from No. 6 north along County Road toward No. 8 with Mesnard beyond. (Source: Koepel Collection, Keweenaw National Historical Park Archives)



Figure 2- 42: View of Limerick from No. 2, ca.1920, (source: Koepel Collection, Keweenaw National Historical Park Archives)

Next Page: Figure 2- 43: Quincy Unit, 1888-1907 Period of Change Plan

Legend

- Existing Quincy Unit Boundary
- Quincy Mine Surface Operations (1888-1907)
- Quincy Mining Company Ownership (1888-1907)
- Mining Company Acquistions (1888-1907)
- Streetcar Route
- Portage Lake Shoreline
- Pewabic Lode
- QMC Mine Shaft
- Pewabic Mine Shaft (no longer active)
- Former Location Pewabic Tram Road
- Former Location Quincy Tram Road
- Franklin Tram Road
- Platted QMC Housing Location
- Existing QMC Housing Location
- Housing not affiliated with planned company housing location
- Adit
- Railroad
- Road
- Stamp Mill Sand Deposits
- Section Numbers (23 | 24 / 26 | 25)

Sources

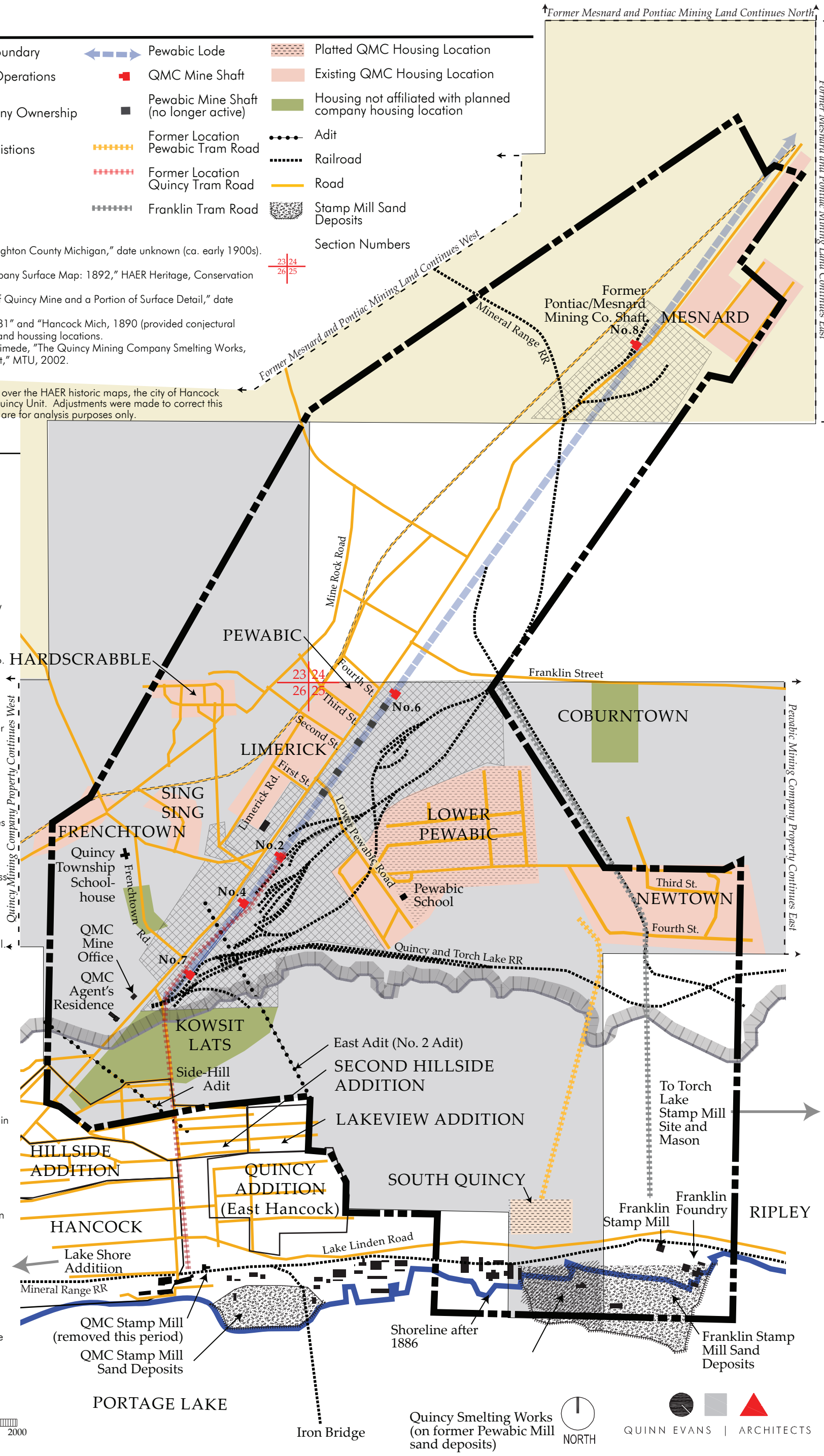
"Map of Quincy Mine and Vicinity, Houghton County Michigan," date unknown (ca. early 1900s). (shows ownership parcels)
Eric. M. Hanson, "Quincy Mining Company Surface Map: 1892," HAER Heritage, Conservation and Recreation Service, 1978.
"Plan of the Underdground Workings of Quincy Mine and a Portion of Surface Detail," date unknown ca. 1900-1907.
Birds-eye Aerials: "Hancock Mich., 1881" and "Hancock Mich, 1890 (provided conjectural information in relation to period roads and houssing locations.
Dr. Patrick Martin and Gianfranco Archimede, "The Quincy Mining Company Smelting Works, 1898 Historical Land Use Survey Project," MTU, 2002.

Note

When overlaying the existing conditions over the HAER historic maps, the city of Hancock does not align with other areas in the Quincy Unit. Adjustments were made to correct this difference. The period of change maps are for analysis purposes only.

Chronology

1888-1890
Construction of Quincy and Torch Lake Railroad.
1890
New Quincy Stamp Mill at Torch Lake opened with housing constructed on Bunker Hill followed by new homes in Mason. QMC platted the Quincy Addition to the city of Hancock.
1891
Pewabic Mining Company purchased by QMC; renovations began.
1892
QMC extended side-hill adit, expanded mill with seven boilers, reconstructed No. 6 as a shaft-rockhouse.
1893
QMC began disassembly of Stamp Mill on Portage Lake, new pump and boilerouse constructed. A new carpenter shop, supply office, and oil house were added to No. 2.
1895
No. 2 reconstructed as a shaftt-rockhouse.
1896
Mesnard and Pontiac Mining Companies acquired by QMC.
1897
QMC platted the Lake View Addition to the city of Hancock. Wood bridge across Portage Lake was replaced with iron bridge with a two lane roadway and railroad crossing underneath.
QMC completed new sandstone office building and assay offfice on Quincy Hill.
1898
QMC constructed smelter on Portage Lake at the former site of the Pewabic Mill.
1899
Captain Whittles' house constructed.
QMC platted Hillside Addition.
QMC constructed 18 homes in Mason and 12 homes in Mesnard.
1900
Construction of Streetcar Line began.
1899-1900
QMC constructed 18 additional homes in Hardscrabble and Limerick.
QMC constructed 36 homes in Lower Pewabic.
1901
QMC platted South Quincy.
1903
QMC platted Second Hillside Addition in the city of Hancock.
1905
The dispensary was enlarged, Dakota Heights real estate began filling Quincy Addition Ravine.
1905-1906
QMC rebuilt No. 8 shaft-rockhouse.
1907
QMC constructed 7 double and 7 single houses in Mesnard.
1907-1908
QMC rebuilt No. 7 shaft-rockhouse.



QUINCY UNIT, 1888-1907 PERIOD OF CHANGE PLAN

Cultural Landscape Report

Keweenaw National Historical Park

20th Century Operations: 1908-1945

Quincy relied on strategic management and its financial resources to expand its operation and overpower many local competitors. By purchasing mineral lands west of the Franklin Mine in 1893, Quincy effectively boxed that company in and limited the extent of their operation. The maneuver meant that "Franklin could no longer function as a mine," and eventually forced a negotiated sale in 1908.[326] When the deal was inked, the purchase price of $170,000 included a valuable strip of Section 25 connecting Quincy's hilltop operations to Portage Lake, which provided the land needed to expand the smelter.[327] The acquisition of the Franklin Mine also meant the addition of no less than fifty company houses for Quincy. Most of these dated to 1890 or earlier, and were located in the Backstreet neighborhood, with the balance found in Franklin.[328]

Backstreet and Franklin were the latest additions to an eclectic collection of distinct neighborhood settlements on top of the Hill. The neighborhoods varied in many ways, including geographic location, spatial arrangement, circulation patterns, scale, orientation and architectural plans and styles. The increasing number of homes under Quincy's ownership reflected a growing population throughout the mining district. According to the 1904 state census, 6,029 people lived in the combined area of Quincy and Franklin Townships. Hancock was home to another 6,037.[329] By 1910, more than one hundred thousand people would populate the copper district within Keweenaw, Houghton and Ontonagon counties, with the vast majority – over 88,000 – living in Houghton County.[330] Whether in Quincy's oldest neighborhoods or its newest, residents petitioned mine managers for home improvements like electricity, indoor plumbing and painting.[331]

Quincy invested in several shaft-rockhouse projects in 1908. They raised the height of the No. 8 shaft-rockhouse by eight feet to provide increased rock storage capacity.[332] They began to disassemble the No. 2 shaft-rockhouse, and at the same time built a 150-foot tall steel replacement.[333] Construction of a new No. 9 shaft (Pontiac) 2,700 feet north of No. 8 proved to be a large financial undertaking, and it featured a much smaller timber shaft-rockhouse than those Quincy had previously built.[334]

326 Hyde, "Business History," 216.
327 Ibid., 217-218.
328 Backstreet was the larger community. McNear attributes 50 houses to Backstreet; Lankton and Hyde identify 60 houses in Backstreet and Franklin. See McNear, 529, and Lankton and Hyde, Old Reliable, 132.
329 Lankton and Hyde, Old Reliable, 92.
330 Lankton, Cradle to Grave, 22. See http://fisher.lib.virginia.edu/collections/stats/histcensus/php/newlong3.php for county-level population statistics.
331 Ibid., 153.
332 Lankton, "Technological Change," 453.
333 Ibid., 454. See also Lankton and Hyde, Old Reliable, 68.
334 Hyde, "Business History," 213. See also Lankton, "Technological Change," 445.

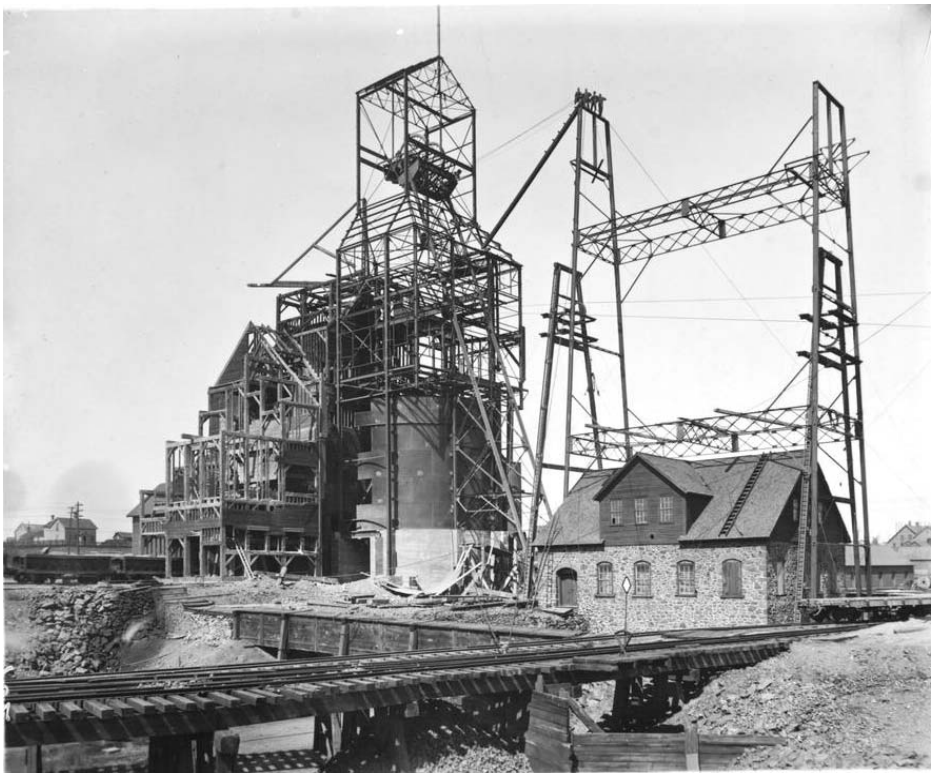


Figure 2- 44: The steel frame of the No.2 shaft-rockhouse is seen next to the wood structure it replaced (source: Photo MI-2-15 courtesy of Historic American Engineering Record)

About the same time that No. 9 began operations in 1909, Quincy's No. 4 was taken out of service. The shaft was closed and its rockhouse taken down, while support facilities like the boiler and compressor houses remained.[335] The closure of a single mine shaft meant others faced increased pressure to assume additional hoisting duties. It is also likely to have influenced the distribution of waste material on the surface. Poor rock removal was a necessary part of mining but it did not yield profits. The movement of this material was limited to keep costs low and to use labor for more important tasks. Limiting the number of shafts from which it was hoisted and removed may have concentrated large volumes of the poor rock around operational shafts and the railroad lines that serviced them.

In 1910, Quincy purchased 800 acres that included all of Section 14 as well as the northeast quarter of Section 22 from the St. Mary's Canal Mineral Land Company. The acquisition secured land with mineral rights which allowed for the extension of shafts Nos. 2, 6, 8, and 9.[336] As Quincy looked to the future, they explored further north along the Pewabic vein. These efforts "reflected the faith that Quincy's managers and stockholders placed in the…vein."[337] In fact, the company's success has been credited to its "unprecedented depths and sufficient richness."[338] Its extent could not be predicted, but the fortunes of the company, and the future

335 Lankton, "Technological Change," 445.
336 Hyde, "Business History," 217-18.
337 Ibid.
338 Ibid., 231.

of those who built their lives around it, depended upon the continued, profitable extraction of this finite resource – copper.[340]

By 1911, Quincy needed to address the condition of its railroad. Locomotive No. 2 had worn out, was removed from service, and scrapped a few years later.[341] In the following year they replaced their two turntables with "Y's" in the track section; the turntables were removed, the pits filled, and tracks were installed to allow the locomotives to turn around.[342] Steel trestles received additional care as they were repainted at the same time.[343] Improvements continued into 1912, and included installing new crushing equipment and raising the No. 6 shaft-rockhouse to accommodate a greater volume of rock. [344]

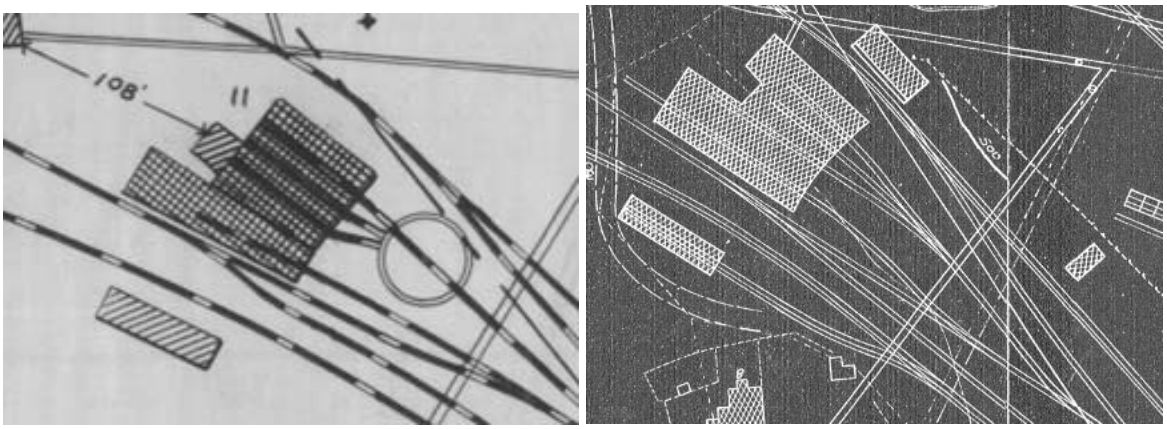


Figure 2- 45: Partial plan view dated October 1902 (left) and an undated partial plan (right) show the removal of a turntable and changes in railroad track layout. (Images courtesy of Michigan Technological University Archives & Copper Country Historical Collections)

Quincy invested in a significant timbering operation at No. 9 and demolished the No. 4 shafthouse in 1913 before they were affected by a bitter and lengthy worker's strike that was called at every copper mine in the district.[345] An indication of changing circumstances locally, regionally, and nationally, the strike was spurred by long work days, low pay, and unsafe work conditions; no doubt the air blasts that rocked Quincy's shafts heightened the concerns of underground workers. The strike began in July and lasted until March of 1914. During this time, Quincy stopped operations at No. 9; the shaft would never be re-opened.[346] Likewise, No. 7 was closed and essentially mothballed as a consequence of the strike.[347] The closures meant that Quincy relied exclusively on shafts 2, 6, and 8.[348]

In spite of the disruption, Quincy still managed to earn large profits during the strike, and continued to plan ahead. It acquired an additional 440 acres west of the stamp mills on Torch

340 Ibid.
341 O'Connell, "Rail Road,"662.
342 Ibid., 679
343 Ibid.
344 Lankton, "Technological Change," 453.
345 Ibid., 445-446.
346 Ibid., 447.
347 Ibid., 446 and 448.
348 Ibid., 449.

Lake in Sections 27 and 28 of Township 55, Range 33.[349] It continued to secure essential goods and supplies. The company also continued to rent houses to workers. By 1914 Quincy had weathered the strike, and normal operations resumed in the mine and at the surface plants. The company did not realize that the turbulence of the strike was but a glimpse of difficulties ahead, most unrelated to labor issues. Quincy was relieved to be operating successfully. With an eye toward securing future profits – and buoyed by the First World War's effect on copper prices – Quincy once again purchased additional land and mineral rights. The acquisition of eighty acres in the southeast quarter of Section 22 provided Quincy with additional property to be worked for the No. 2 and No. 7 shafts.[350]

Quincy continued to extend their paternalistic role in the community between 1915 and 1918 by attending to various social needs and desires. They added to the dispensary, built a new boardinghouse and remodeled three others, and initiated the construction of fifty houses. They also built a two-story brick community club house (also known as the bathhouse, because of the bathing facilities it offered) across the road from No. 2 and installed a new water system.[351] The construction of the bathhouse was an attempt to provide workers the same amenities offered by C&H, their northern competitor; C&H had constructed a bathhouse a few years earlier, and their facility served as a model for Quincy's. The company constructed a water system to supply service to the club house and nearby residences with running water. [352]



Figure 2- 46: The front elevation of the Quincy Club House ca. 1916-17. (source: Photo MI-2-264 courtesy of Historic American Engineering Record).

In 1916 an assay office was built at the smelter, while the mill site benefited from renovations to coal handling facilities and the erection of a 175-foot tall smokestack at the No. 1 boilerhouse.[353] In the mine, Quincy changed its dewatering method from bailing skips to electric pumps. The amount of water to remove was greatly reduced when the company installed a concrete gutter to intercept surface storm water and redirect it out of the mine via the sidehill adit. Quincy's

349 Hyde, "Business History," 218.
350 Ibid., 254. Quincy acquired this land from the Hancock Consolidated Mining Company.
351 McNear, 528 and 542. See also Lankton and Hyde, Old Reliable, 125 and 132; and Lankton, Cradle to Grave, 172.
352 McNear, 562.
353 O'Connell, "Stamp Mills," 630.

calculations claim that the gutter intercepted 45 million gallons annually that previously required bailing.[354]

Housing improvements focused not on the creation of new areas, but on infill and additions to existing locations. Of the homes built in 1917, "three…were built in Frenchtown, one in Sing-Sing, three behind the assay office, seven at a new location east of Hardscrabble, two in Limerick, eleven at Mesnard, and twenty four at Lower Pewabic." In addition, Quincy constructed six additional saltbox dwellings at its mill site in 1917-1918. This effort was spearheaded by Mine Superintendent Charles Lawton, and was the last housing constructed by the company.[355] Lawton recommended the project "so that we can have a steadier crew about the mine, fewer transient men, and more of the better families."[356] His interest in housing and neighborhood conditions suggest that the mine no longer conveyed its once tidy appearance. His specific concerns suggest that the workforce had become temporary, less stable, and beneath his standards – moral, educational, cultural, or otherwise.

Quincy must have been quite confident about their future to move ahead with its investments in company housing, not to mention a new schoolhouse in the Lake Annie District. Not surprisingly, industrial improvements were also initiated.[357] At the mine they began to construct a grand hoist house for No. 2. It featured classic geometry, cast-in-place concrete, red brick walls and a green tile roof.[358] It was located adjacent to the 1894 hoist house for the same shaft, and was designed to accommodate their 1917 order for the largest steam hoist in the world.[359] The hoist house was finished in 1918, but remained empty until late 1919, due to restrictions on heavy machinery production during the First World War.[360] In addition to the hoist house project, Quincy increased its stretch in 1919 when it purchased 140 acres in Section 22, again from the Hancock Consolidated Mining Company. This gave them additional land to be worked by shaft No. 2.[361]

With the No. 2 hoist house complete, Quincy again focused attention on the welfare of its workforce. Only two years after the clubhouse was completed, the company began to oblige workers with the toilets and bathing facilities they requested for their homes.[362] To understand Quincy's efforts to meet the needs of their workforce, it is helpful to note that workers desired company housing, but the company never fully met the demand. As an example, the company employed between 1,646 and 1,801 men at the mine in 1919.[363] At the same time, they owned approximately 419 houses.[364] Even in the absence of precise numbers, one can still observe that the number of company homes fell far short of the number of workers. As during Quincy's

354 Lankton, "Technological Change," 438.
355 McNear, 530.
356 Ibid., 529.
357 Ibid., 548.
358 Lankton, "Technological Change," 464.
359 Ibid., 461.
360 Ibid., 462. See also Lankton and Hyde, Old Reliable, 101.
361 Hyde, "An Economic and Business History," 254. See also Lankton, "Technological Change," 449.
362 McNear, 531 and 562.
363 Reports on the number of actual workers vary. Sarah McNear counts 1,646 employees, while Lankton and Hyde identify 1,801 at the end of 1919. See McNear, 532, and Lankton and Hyde, Old Reliable, 132.
364 Electronic correspondence with A.K. Hoagland, MTU, November 6, 2006.

early developmental stage, workers without company homes relied on boardinghouses or private housing to meet their needs.



Figure 2- 47: A southeast view from No. 2 taken August 13, 1918 shows the construction of the new hoist house and the surrounding landscape. Note the close proximity of worker homes and areas defined by vegetation. Other notable landscape features include snow fencing, a steam launder and a small bridge. (source: courtesy of the Koepel Collection, Keweenaw National Historical Park Archives)

The company was also concerned with the physical setting, or landscape, of company homes. Mine superintendent Lawton even suggested in a July 1918 letter to Parsons Todd, Quincy's vice president, that it was "essential to the general morale of the labor force" that the company build fences around the employees' "little gardens."[368] Gardens played an important role in the lives of miners and their families, although the relationship of the company farm, garden plots and family gardens is not fully understood. Records indicate that 250 bushels of potatoes were harvested from the farm in 1919, and that employees were able to "lease potato plots and garden lots at three locations, Frenchtown, Backstreet and Klondike 'farms,' for a ground rent of five dollars apiece."[369]

368 McNear, 513.

369 Ibid., 560. Another feature that remains unclear is Kowsit Lats. Not much is known about the area. However, we do know that the company provided this space for pasturing employees' cows. The name "Kowsit Lats" reflects a local Finnish pronunciation of the colorful English nickname that the pasture had earned. Wimppi Salmi, a local resident, successfully petitioned to have the nickname formally recognized when Houghton County assumed responsibility for the maintenancne of the road. Personal communication with Kathryn Remlinger, Grand Valley State University, June 26, 2007; personal communication with Ed Yarbrough, Quincy Mine Hoist Association, June 28, 2007.

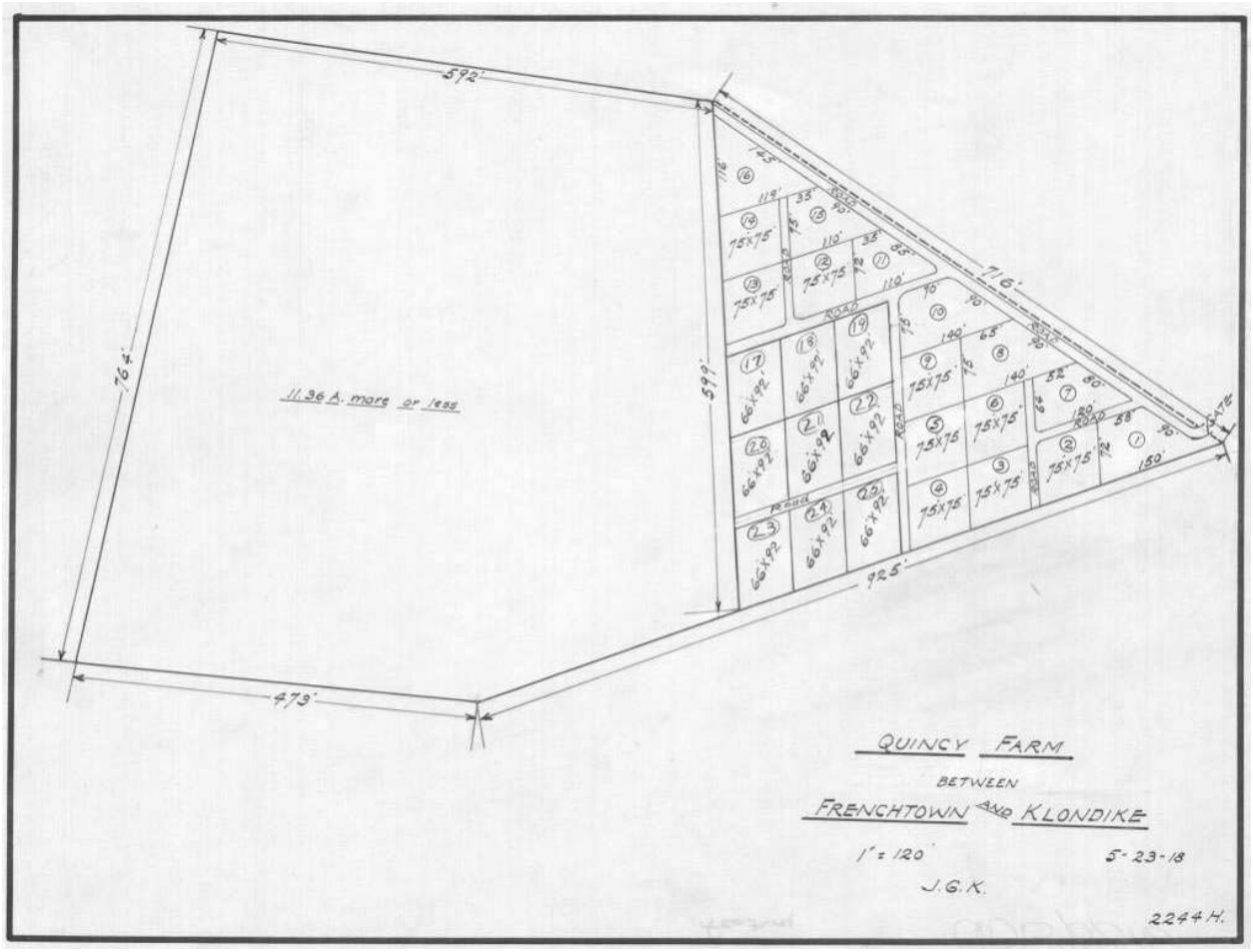


Figure 2- 48: A plan drawing showing garden plots on part of the Quincy Farm between Frenchtown and Klondike, 5-23-18. (source: Image courtesy of Michigan Technological University Archives & Copper Country Historical Collections)

The First World War had increased demand for copper, which pushed its price higher . As a result, Quincy decided to expand their mills on Torch Lake to make room for more equipment. By 1919, the reinforced concrete and red brick additions to both mills were finished. They featured large windows to provide natural light in work areas.[370] Quincy also began filling a ravine between the mills to make room for a building to house a "low pressure steam turbine to utilize the exhaust steam from the stamp heads to furnish electric power to operate the ball mills, crushing rolls, etc."[371]

370 O'Connell, "Stamp Mills," 631-632.
371 Ibid., 633.



Figure 2- 49: A view of the trestle spanning the ravine immediately north of Torch Lake Mill No.1 (left) and south of Torch Lake Mill No.2 (right). (source: Image is courtesy of the Koepel Collection, Keweenaw National Historical Park Archives)

By 1920, the high wartime copper prices had dropped. Quincy, which had been nicknamed "Old Reliable" for its reputation of paying dividends regularly, could no longer provide dividends to stockholders.[372] In the decade to come, Quincy would struggle to produce copper at lower costs and with greater efficiency. Changes to the landscape would begin to reflect these efforts, and also see the land begin to reclaim itself as Quincy struggled to earn a profit against market forces larger than itself.[373]

The population continued to dwindle in the Keweenaw as Quincy and other mining companies struggled against unfavorable economic conditions. The discovery and development of deposits in Montana and Arizona, coupled with advancements in technology, allowed mines in the west to produce copper at lower costs than Quincy could. The rise of automobile factories in Detroit, and the growth of other industries with good paying jobs, lured many workers from the Copper Country, and made it increasingly difficult to retain skilled labor and experience. In 1910, Houghton County had boasted 88,000 residents, but 16,000 had left by 1920.[374] Quincy did not face these harsh times alone.

Downsizing for Quincy occurred over a long period of time, but even small, initial reactions could be seen and felt across the landscape. By September of 1920, Quincy closed all four of its boardinghouses.[375] Within four months, they mothballed their newest mill on Torch Lake in favor of the older mill that housed more stamps.[376] On top of Quincy Hill, 113 houses – one quarter of their housing stock – stood vacant by the fall of 1921.[377] The company took notice of its need to retain workers during this difficult time, as Lawton explained to the company's vice president:

> Range miners are offered clean houses, and clean yards, paint, paper and muresco as an inducement whereas at Quincy there has been lower wages, a natural pessimistic atmosphere, and operating only two-thirds time, and for the

372 Lankton and Hyde, Old Reliable, 99. See also Hyde, "Business History," 249.
373 Ibid.
374 Lankton, Cradle to Grave, 246.
375 Lankton and Hyde, Old Reliable, 132.
376 Dates of closure vary. Lankton and Hyde cite the event in January of 1920, while O'Connell notes it occurred in January of 1921. See Lankton and Hyde, Old Reliable, 125, and O'Connell, "Stamp Mills," 632.
377 Lankton and Hyde, Old Reliable, 135.

> first time in many years we have not been cleaning up the yards and locations. Only recently have we been hauling away refuse that has been accumulating in the yards.[378]

These observations seem to echo Lawton's earlier observations and concerns about workforce stability and its connection to the built environment.

Quincy resolved to meet the challenges of the economic downturn, but it faced tremendous financial obstacles. In 1922, they were forced to add No. 8 to the growing list of facilities that they hoped would someday reopen.[379] During this same period of economic despair, the Quincy and Torch Lake Railroad virtually disappeared from the corporate priority list. An absence of records and silent annual reports offer few clues to its operation after 1920.[380]

Notwithstanding the bleak outlook, Quincy completed the building to house its new power generation unit located between the mills. The 36 by 38 by 45-foot building was constructed of materials similar to the mill additions and housed a General Electric 2000 kW steam turbine. This plant began operating in 1923 and reduced operating costs by generating power from exhaust steam expended by the stamps.[381] The availability of less costly electricity resulted in a greater use of electric motors and the installation of a power transmission line up Quincy Hill.[382]

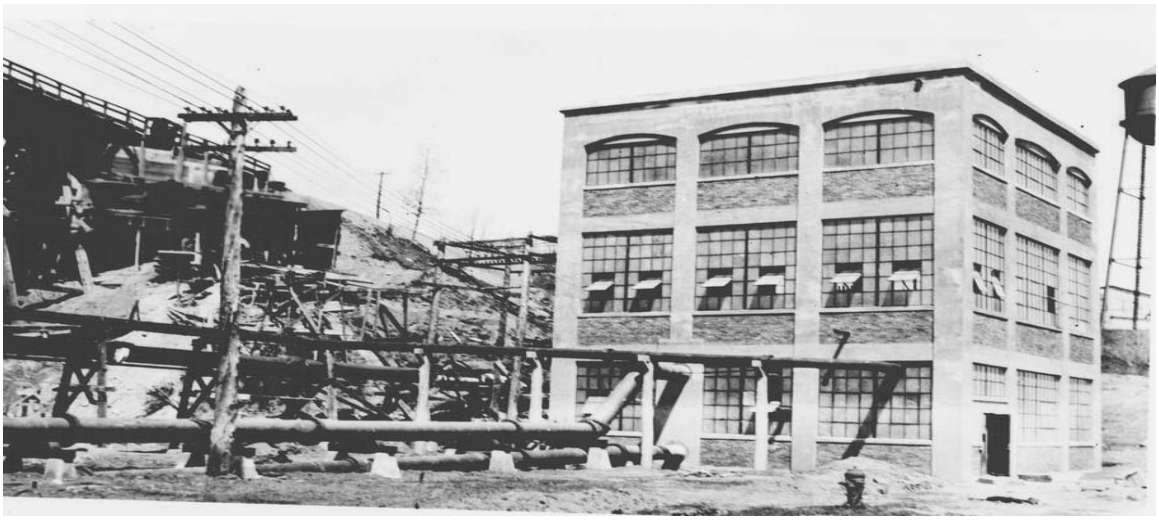


Figure 2- 50: Quincy's steam turbine facility, ca. 1925, constructed to generate electricity from exhaust steam. (source: Photo MI-2-164 courtesy of Historic American Engineering Record)

378 Ibid.
379 Lankton, "Technological Change," 475.
380 O'Connell, "Rail Road," 679.
381 Ibid., 633.
382 Lankton and Hyde, Old Reliable, 125.

Even with these cost-cutting measures, by 1926 the international price of copper was below Quincy's production cost. Financial losses for the company continued to mount at a staggering pace.[383] Fire added to Quincy's problems. It destroyed the Quincy School in 1927, and classes were moved to the company clubhouse.[384] Furthermore, a fire in the No. 2 shaft occurred in July, and it remained closed until August 10th.[385] Just as repairs began, several air blasts further damaged the mine, and it remained closed to normal operations until early 1929.[386] Damage to the No. 2 shaft transferred hoisting and production duties to No. 6.[387]

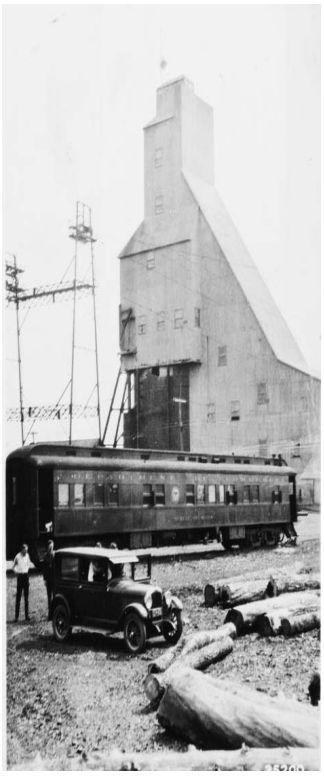


Figure 2- 51: Bureau of Mines railroad car number 8 parked in front of No. 2. Car number 8 transported an emergency team to Quincy to help fight an underground fire. (source: Photo MI-2-130 courtesy of Historic American Engineering Record)

Quincy faced serious financial difficulties, but the company spent money to insure that their infrastructure remained viable.[388] Facilities and machinery were mothballed and cared for so that they could be placed back in service as economic conditions improved. The Quincy and Torch Lake Railroad dissolved on February 1st, 1927, following the sale of its track to the mine company. However, the rail line continued in service under mining company ownership.[389]

383 Hyde, "Business History," 257.
384 Lankton and Hyde, Old Reliable, 125.
385 Hyde, "Business History," 259. See also Lankton, "Technological Change," 476.
386 Re-opening dates differ slightly. Hyde cites January 1929; Lankton, March 1929. See Hyde, "Business History," 259, and Lankton, "Technological Change," 492.
387 Lankton, "Technological Change," 489.
388 Lankton and Hyde, Old Reliable, 129.
389 O'Connell, "Rail Road," 681.

No. 8 was reopened in 1928 and a new Dorr thickener was installed at the mill to assist with reclaiming more copper from waste materials in 1929.[390]

Houghton County lost more residents between 1920 and 1930 – 19,000 people – and this affected several mines, including local giant C&H. Out-migration occurred in such large numbers that it left a county population of only 53,000.[391] Undeterred, and with failure as their only alternative, Quincy positioned itself to return to full production by repairing damages to No. 2 and mitigating wear and tear at the mine site. The sale of additional stock between 1929 and 1931 suggests that perhaps the company was actually optimistic about its future.[392] Unfortunately, their efforts coincided with two reversals: a drastic drop in copper prices, tied to a market that no longer valued the product they offered; and the onset of the Great Depression.[393]



Figure 2- 52: View of No. 7 shaft-rockhouse with housing in the foreground. Note the deteriorated conditions depicted by missing sheet metal, missing windows and mismatched, unpainted siding. (source: Koepel Collection, Keweenaw National Historical Park Archives)

390 Lankton, "Technological Change," 475. See also O'Connell, "Stamp Mills," 636.
391 Lankton, Cradle to Grave, 246.
392 Hyde, "Business History," 260.
393 Ibid., 261.

On September 22, 1931, after seventy-five years of mining the Pewabic lode, the Quincy Mining Company succumbed to economic forces and closed what was then the deepest mine in the United States.[394] They had held on longer than most Michigan mines, a small consolation for those facing not just the economic realities of unemployment but also the larger social issues related to a complete loss of lifestyle, identity and purpose.[395] The mine manager penned a letter to the company president the morning of the mine closure, and reflected upon it this way:

> The day opens very bright and clear for the morning of the suspension of operations. It has been cold and rainy during the past few days. Everybody in the immediate vicinity naturally is very much depressed, and we are doing everything we can to maintain the proper spirits and to look forward with interest to the future.[396]

The company retained only a minimum number of employees on staff to board up facilities at their mine, mill and smelter, and barely managed to escape bankruptcy in the process.[397]

The mine remained closed between 1931 and 1936, and the company published no annual reports. Aside from minor repairs, and guarding facilities, little is known about the activities of the small staff employed by the company during this time.[398] However, it is clear that Quincy continued to look after its former employees. It allowed those without incomes to stay in their homes rent free. It did not charge Quincy Hill residents for firewood cut on company lands. The company even plowed seven acres and allowed it to be used as garden areas.[399] While these efforts demonstrated compassion, it was not enough to retain residents who desired better conditions. Quincy Hill was transformed into neighborhoods of vacant homes when its residents left. By 1935, 183 of the 433 homes owned by Quincy on the hill were vacant.[400] Without income, Quincy was unable to pay its property taxes. This resulted in the loss of some of its less important lands to tax sales, as the company struggled to retain core assets.[401]

394 Lankton and Hyde, Old Reliable, 99, 106, and 129. See also Lankton, "Technological Change," 507.
395 Lankton, "Technological Change," 507.
396 Lankton, Cradle to Grave, 253.
397 Ibid.
398 Hyde, "An Economic and Business History," 262.
399 Lankton, Cradle to Grave, 254. See also Lankton and Hyde, Old Reliable, 142.
400 Lankton and Hyde, Old Reliable, 142.
401 Hyde, "Business History," 263.



Figure 2- 53: View of an abandoned Lower Pewabic following mine closure showing deteriorated housing and unkempt landscape conditions. (source: Image is courtesy of the FSA-OWI photographic collection, Library of Congress)

In 1937, a spike in copper prices encouraged the company to re-open the mine.[402] It levied an assessment on shareholders to gather the capital required to de-water the mine and make extensive repairs. The mine reopened on a limited basis, using No. 6 and No. 8 for underground production.[403] The spike was maintained by the onset of the Second World War, which increased the demand for copper and created stable, elevated prices guaranteed by the federal government. Quincy responded by securing a loan from the Metals Reserve Company in June of 1942 to construct a copper reclamation plant on Torch Lake, near the site of its stamp mills.[404] The reclamation plant allowed Quincy to further process their vast quantity of waste tailings from Torch Lake and recover copper from them. The plant opened in November 1943, and began production immediately. At the same time that it was providing copper for the war, Quincy and other mines in the Keweenaw began to sell excess steel for scrap to support the war effort. Approximately 40,000 tons were collectively contributed by the middle of 1943.[405]

The reclamation operation was very successful; by the end of the war in 1945 it had produced more copper than the mine.[406] When the war ended, so did the purchase agreement with the Metals Reserve Company.[407] With copper prices again in serious decline, the machinery and men of the mine stopped work for good. On September 1, 1945 the mine closed permanently

402 Lankton, Cradle to Grave, 256.
403 Hyde, "Business History," 264.
404 Lankton and Hyde, Old Reliable, 141. See also Hyde, "Business History," 265.
405 Lankton, Cradle to Grave, 257.
406 Hyde, "Business History," 265.
407 Lankton and Hyde, Old Reliable, 144.

and the rhythm of copper mining on the Keweenaw was changed forever.[408] Quincy's miners, trammers, oilers, skilled craftsmen, laborers and workers of all types went home and did not return to work. Locomotive No. 1 made its last haul after serving the mine through the entire history of the railroad.[409] Its bell was rung and its last breath spent on a mournful release of steam.

Shut Down
By Ruth Malgren

We miss the sounds of the Quincy Mine;
The sounds of the hoist wheels singing;
The bellow's blow and the blast below
And the locomotive ringing.

We don't catch sight of the carbide light
Some busy miner carries;
There're no more trips in the shaft house skips
For Toms or Dicks or Harrys.
No more dashing for the "dry"
With joking miners tangling;
No whistle's roar;
No falling ore;
No 'lectric signals jangling.

We miss the sounds of the Quincy Mine;
Old sounds, oft repeated.
Can such a long, tenacious life
Really be completed?[410]

Next Page:
Figure 2- 54: Quincy Unit, 1908-1945 Period of Change Plan

408 Ibid. See also Hyde, "Business History," 265.
409 O'Connell, "Rail Road," 662.
410 Bill Finlan and Margaret Gilbert, as cited in Lankton and Hyde, Old Reliable, 146.

Legend

- Existing Quincy Unit Boundary
- Quincy Mine Surface Operations (1908-1931)
- Quincy Mining Company Ownership (1908-1931)
- Franklin Mining Company (purchased by QMC 1908)
- Streetcar Route
- Mine Adit
- Portage Lake Shoreline
- Pewabic Lode
- QMC Mine Shaft (closes this period)
- Former Franklin Mine Shaft
- Railroad
- Former Location of Pewabic Tram Road
- Former Location of Franklin Tram Road
- Platted QMC Company Housing Location
- Existing QMC Housing Location
- Housing not affiliated with planned company housing location
- Road
- Section Numbers (23 24 / 26 25)

Sources

"Map of Quincy Mine and Vicinity, Houghton County Michigan," date unknown (ca. early 1900s). (shows ownership parcels)
Durward W. Potter Jr., "Quincy Mine Locations, Housing and Community Structures, C. 1920," HAER Heritage, Conservation and Recreation Service, 1978.
"Plan of the Underdground Workings of Quincy Mine and a Portion of Surface Detail," date unknown ca. 1900-1907.

Note

When overlaying the existing conditions over the HAER historic maps, the city of Hancock does not align with other areas in the Quincy Unit. Adjustments were made to correct this difference. The period of change maps are for analysis purposes only.

Chronology

1908
QMC Purchased Franklin and Pontiac Mining companies.

QMC Partially reconstructed shaft/rockhouses No. 6, 7 and 8 using steel frame construction.

The American Bridge Company completely rebuilt No. 2 shaft-rockhouse using steel frame construction.

QMC began construction of No. 9.

1909
QMC abandoned No. 4 shafthouse and demolished its rockhouse.

1910
QMC acquired 800 acres to the west to extend shafts 2,6,8, and 9.

1913
No. 4 shafthouse was demolished, No. 7 and No. 9 were closed.

1917
QMC built 50 houses in Frenchtown and Sing-Sing locations, as well as behind the assay office, east of Hardscrabble, Limerick, Mesnard and Lower Pewabic.

QMC began construction of new hoist and hoisthouse at No. 2 shaft, and ordered the largest steam hoist in the world.

1919
QMC purchased 140 acres in Section 22 from the Hancock Consolidated Mining Company for additional ground to be worked from No. 2 and No. 7.

QMC closed No. 7.

1920
QMC completed construction of new hoist and hoisthouse at No. 2 shafthose.

1921
113 vacant homes on Quincy Hill.

1922
QMC closed No. 8.

1927
Quincy Schoolhouse burnt down.

1928
QMC re-opened No. 8.

1929-1931
Copper market collapsed.

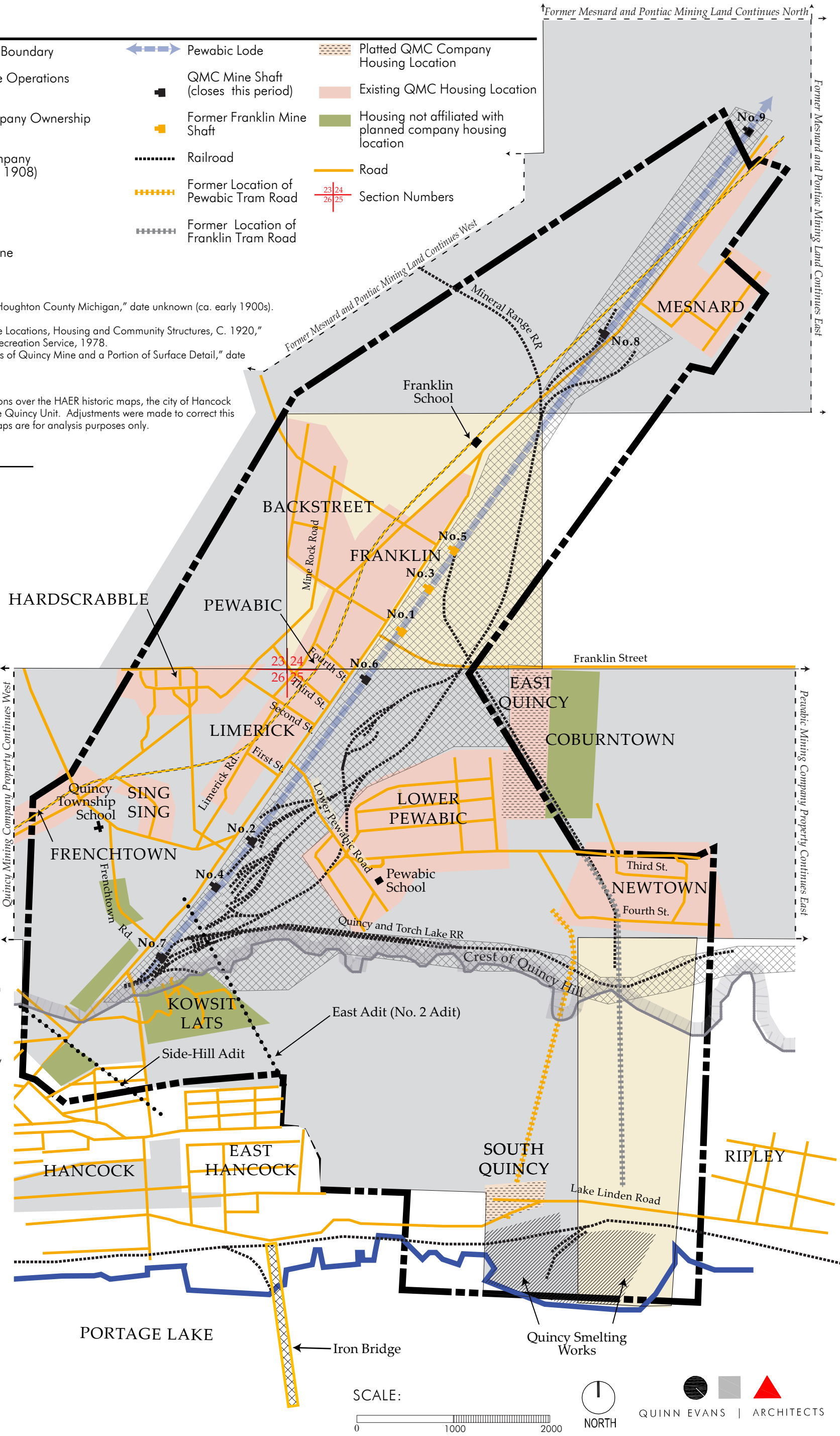
1931
QMC closed operations.

1935
183 homes vacant on Quincy HIll.

1937
No. 6 and No. 8 reopened.

1942-1943
QMC constructed and opened reclamation plant.

1945
Quincy Mine permanently closed.



QUINCY UNIT, 1908-1945 PERIOD OF CHANGE PLAN

Cultural Landscape Report

Keweenaw National Historical Park

Reclamation: 1946-1967

Although Quincy was finished with underground mining, reclamation operations continued. Reclamation was a less expensive operation than mining, and it yielded large amounts of cast copper.[411] Subsequently, Quincy was able to repay its Metals Reserve Company loan in the form of copper and profits by 1947, far ahead of schedule.[412]

Quincy's previous mining and milling efforts had deposited an enormous volume of waste rock material in Torch Lake over a fifty year period. This had a great impact on Torch Lake. In fact, some residents estimate that the lake's volume was reduced by as much as thirty percent from the fill material.[413] These actions changed the shoreline and its associated upland and aquatic habitats. The reclamation process continued to sculpt the shoreline. The operation relied upon a floating dredge that vacuumed tailings from the lake, which passed them through a long floating pipe to the reclamation plant on shore. At the plant, the tailings were processed and copper was retrieved. Finally, the mineral was transported to the smelter by truck where the copper was cast into ingots.

In June 1948, Quincy re-opened the Quincy Smelting Works, which had been dormant since 1931. C&H had been providing Quincy with smelting services during the lean operating years, but the success of the reclamation project meant that C&H was no longer able to meet Quincy's needs. Quincy operated the reclamation plant and smelter until May of 1967. Work stopped briefly when their dredge was lost to a January storm in 1956, and again for a ten-month shutdown in 1958. Another dredge, purchased previously from C&H, was able to assume its duties until the end of the operation.[414]

As the company focused its attention on reclamation, a diverse group interested in preserving the legacy of Quincy's mining operations on the Hill formed. The Quincy Mine Hoist Association, with leadership from Quincy's Board of Directors, Cleveland Cliffs, Michigan Technological University and local business leaders, was founded as a non-profit organization in 1958 , and received 501c3 status in May of 1961. This group was narrowly focused on preserving the No. 2 Nordberg steam hoist. Over time, the idea to preserve a much larger industrial site would grow.

411 Lankton, Cradle to Grave, 259.
412 Lankton and Hyde, Old Reliable, 144.
413 Local observations are in the ballpark of the Environmental Protection Agency's estimate. According to the EPA, 200 million tons of copper ore tailings were deposited in Torch Lake, displacing about 20 percent of the lake's original volume. See www.epa.gov/glnpo/aoc/trchlke.htrml, accessed April 16, 2007.
414 Lankton and Hyde, Old Reliable, 144.

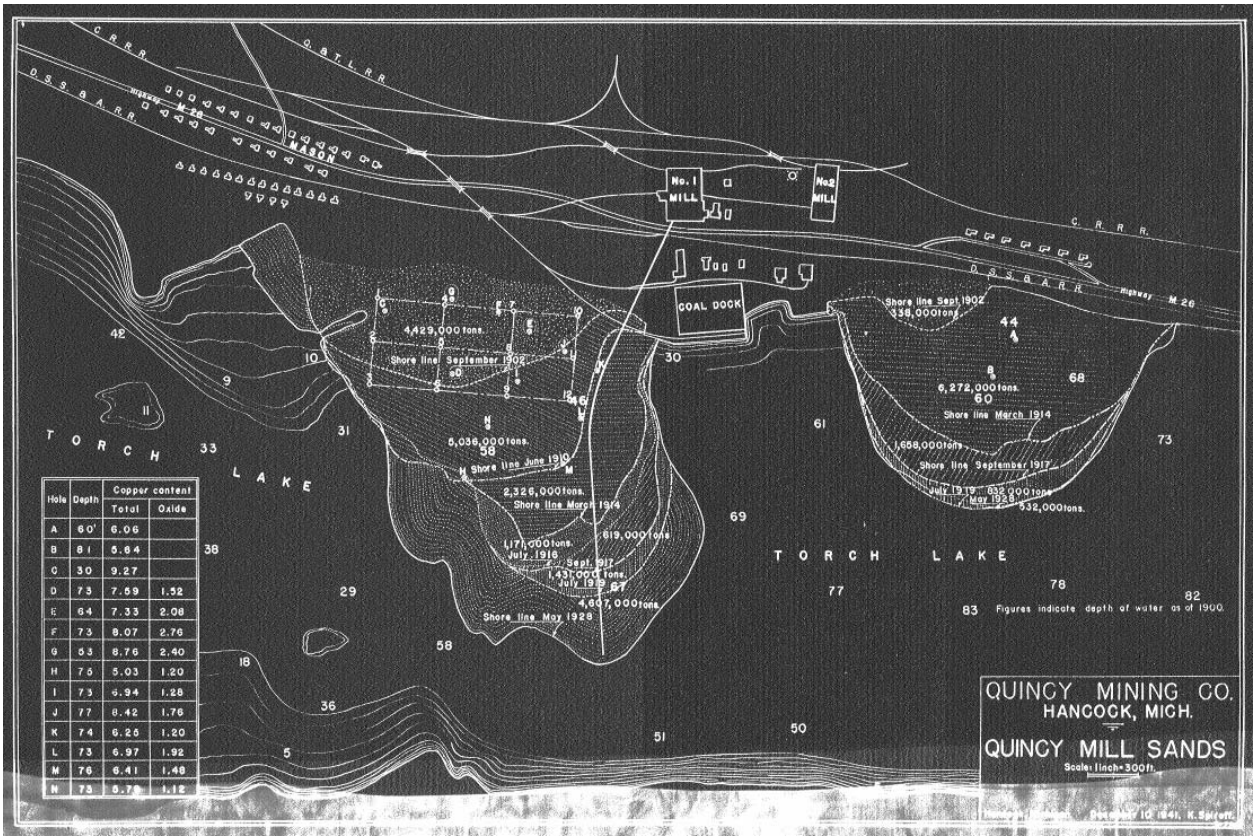


Figure 2- 55: Drawing (QD-0084) produced by Quincy Mining Company to depict areas and volumes of stamp mill sands affected by their reclamation efforts. (source: Image courtesy of Michigan Technological University Archives & Copper Country Historical Collections)

Post-Operation: 1968 – Present

Quincy remained closed until 1976, when it financed a joint venture with Homestake International as a partner. Quincy provided working capital for three main efforts: to erect a new hoist and headframe at No. 8; clear the shaft twenty levels deep; and provide exploratory diamond drilling in pursuit of copper deposits. Concurrently Michigan Technological University conducted diesel fuel emissions testing underground and trained students in rock dynamics, drilling, explosives and rock removal with heavy equipment in the east adit, at the south end of the Pewabic lode.[416] MTU's Mining Engineering program led to the expansion of the adit from a 3 by 5 foot passage to a 15 by 15 foot tunnel. Since 1992, MTU has maintained a limited access agreement with the Quincy Mine Hoist Association for infrequent use as a learning environment. Although the partnership with Homestake did not create a new mining venture, it demonstrated the difficulty that people had in accepting the extensive changes imposed upon their lifeways and heritage.

The resolve to rekindle a bygone industry was strong, but it was not enough to withstand economic forces. Many industrial structures and machines that were once integral parts of the Quincy landscape were sold for scrap. Partial buildings, ruins and fragments of a bygone

416 Ibid.,147.

industry dot a landscape that nature has tried to reclaim through weather and the establishment of volunteer vegetation. Corporate actions to dismantle what Quincy had worked so diligently to achieve were resented by some; their efforts refocused on new goals aimed at correcting environmental damage and developing a strong heritage tourism industry for the area. In 1978 the Historic American Engineering Record (HAER) undertook a study to document what remained from the Quincy Mining Company. HAER staff conducted research, took photographs, and carefully measured structures and ruins to record and document the remaining Quincy mine properties. Their work remains as an important reference. In 1984 the Quincy No. 2 mine hoist, owned and preserved by Quincy Mine Hoist Association, was recognized as a National Historical Mechanical Engineering Landmark.



Figure 2- 56: A 1978 photo by Jet Lowe shows the No. 7 hoist house ruin constructed of locally quarried Jacobsville sandstone. Prized for its appearance and value as a local construction material, this structure is among many that have disappeared from the Quincy landscape. (source: Image 2-63 courtesy of HAER)

In 1986, parts of the former Quincy Mining Company property were placed on the National Priorities List by the U.S. Environmental Protection Agency (EPA), creating the Torch Lake Area Superfund Site. Areas near the former mills, reclamation plant and smelter site, in addition to several other sites on the Keweenaw Peninsula, were determined to pose an environmental threat. This was largely due to the presence of high metal concentrations found within the stamp sands and byproducts present at both the mill and smelter complex. Exposure to wind and water provided erosive forces capable of moving the materials into the adjacent water bodies and damaging their benthic layer. By 1988, the EPA began investigation and remediation activities at Torch Lake, including in the tailings area known as the Mason Sands. In 1992, the EPA issued a Record of Decision to address the remediation of the Torch Lake Area Superfund Site. The remedy required covering several sites with soil and vegetation and long-term monitoring of mitigated areas. Remediation of the mill site sands involved grading and covering the 225-acre Mason sands site.



Figure 2- 57: Diagram indicating the Torch Lake Area of Concern. (source: courtesy of EPA website: http://www.epa.gov/glnpo/aoc/trchlke.html)



Figure 2- 58: Mason Sands Area before remediation. (source: courtesy of EPA http://www.epa.gov/glnpo/aoc/trchlke.html)



Figure 2- 59 Mason Sands Area after EPA remediation. (source: courtesy of EPA http://www.epa.gov/glnpo/aoc/trchlke.html)

The Quincy Smelting Works remained undisturbed until 2004. That year, the EPA removed abandoned laboratory chemicals from inside smelter buildings and performed asbestos testing, followed by limited asbestos abatement. An eight-foot high chain link fence was built around the core smelter buildings. The EPA also installed a geotextile fabric and rip-rap to stabilize the shoreline at the smelter. Additionally, they installed culverts beneath the former railroad grade to re-direct storm water away from the site and to improve site drainage. Michigan's Department of Natural Resources subsequently capped the former railroad grade, presently used as a snowmobile recreation trail, with a gravel surface to contain any metals or asbestos and prevent public exposure to these substances.



Figure 2- 60: Fence and sign at Quincy Smelter, 2007. (source: Image courtesy of NPS)

In 2008, the EPA abated the remainder of asbestos from within the built complex. In 2009, as a result of concerns raised by the Michigan Department of Environmental Quality (DEQ), the EPA took steps to amend the Record of Decision (ROD) to propose capping contaminated stamp soils outside the fence, except for two slag piles, but preserving the existing stamp sand surface inside the fence in anticipation of use of the site for historic interpretation purposes.



Figure 2- 61: Rock armoring / rip-rap placed along shoreline as part of EPA and MDNR remediation work, 2007. (source: Image courtesy of NPS)



Figure 2- 62: Gravel placed over the former railroad grade as part of EPA and MDNR remediation work, 2007. (source: Image courtesy of NPS)

As environmental issues related to mining were identified and remediation options evaluated, the cultural values associated with this industry were also being identified and examined. In 1989, the National Park Service established two National Historic Landmark (NHL) districts in the Keweenaw. One of them, the Quincy Mining Company National Historic Landmark District, encompasses the rich mining landscape and workers' housing areas found on Quincy Hill, and extends down the hillside to include the Quincy Smelting Works. The second NHL district was centered on Calumet and Hecla's industrial core and the Village of Calumet's civic presence that grew as a direct result of the copper mining industry.

In 1992 a new and unique national park was established. Keweenaw National Historical Park encompasses landscapes that offer distinct geology and abundant natural resources interconnected with the people who lived there, past and present. The area's copper mining heritage was seen and understood not through any one place, but through an array of historic landscapes, buildings and ruins – all of them associated with the culture found there today. The heritage tourism industry in the Keweenaw evolved as a grassroots community effort, and was literally built on the grounds and foundations that remain from the copper mining industry it honors. The park's enabling legislation reflects this community involvement by promoting partnerships, limiting federal ownership, and establishing a permanent park advisory commission.

Since the park was founded the Quincy Mine Hoist Association (QMHA) has expanded their mission beyond the No. 2 Nordberg steam hoist to include the mine, the landscape and artifacts; other actions have occurred to facilitate the interpretation of historic mining activities. In 1996 the QMHA installed a cog rail tram to transport visitors between the No.2 hoist house and the side hill adit. At the adit entrance visitors can enter the mine for an interpreted tour to experience the historic mine environment.

The QMHA sold the Blacksmith Shop and Machine Shop property on Quincy Hill to Michigan Technological University to serve as the new home to the A.E. Seaman Mineral Museum. The development of the Museum property provides new opportunities for cooperation between the Quincy Mine Hoist Association, A.E. Seaman Mineral Museum, and National Park Service.

Passing time and a lack of maintenance have reshaped the Quincy Mining Company landscape since the mine was operational. All but one of the many shaft-rockhouses, once visible for miles on the horizon, have been scrapped - torn down for the value of their steel. The capping of mine shafts to address public safety has consequently left many indistinguishable from the surrounding terrain. As the structural integrity of the extant smokestacks decline, they become expensive maintenance dilemmas and safety hazards. One smokestack at the Quincy Smelting Works was removed in 2008 when it was determined hazardous. The smokestack between the No. 2 Hoist Houses and the No. 5 Boiler Plant was also evaluated and removed. Weathered industrial buildings, crumbling masonry ruins, and rotting timber continue to erode beneath the immense weight of heavy annual snowfalls. Unsecured structures sometimes meet alternative fates, including fire and vandalism. Broken windows and decayed building shells are a common sight. Historic company housing locations, where they remain, are often a fragment of their former selves. Monumental poor rock piles that once dotted the land have been consumed, the rock crushed for use in construction activities elsewhere in the region.



Figure 2- 63: The remains of an historic rock pile are juxtaposed against a pile of crushed gravel. (source: Image courtesy of NPS)



Figure 2- 64: Smokestacks and ruins near the No. 6 dry are engulfed in volunteer vegetation. (source: Images are courtesy of the NPS)

New ventures continue to alter Quincy Hill. Former company homes are freely modified to meet the changing needs of today's occupants. Modern ranch homes, signs, and billboards located along U.S. 41 now represent new commercial endeavors while new roads bisect former housing locations. Quincy has been marked by modern industry as well, as communication towers blink into the night from strategic points on the hilltop. Volunteer vegetation now grows on once-barren mining lands, where it hides views, buildings, ruins, and landscape features. Foundation walls sometimes find roots deeply seated within cracks in their masonry.



Figure 2- 65: Billboards and signs along U.S. 41 compete for the attention of visitors, 2007. (source: Image courtesy of NPS)



Figure 2- 66: The historic view of the No. 2 hoist houses and beyond is obscured by volunteer woody vegetation , 2007. (source: Image courtesy of NPS)

At the same time that vegetation obscures the signs of industry, it also provides clues to settlement patterns and building locations. In many places, apple trees, lilacs and lilies indicate the location of orchards and yards. They lead the eye toward ruins and small-scale features, like fences and paths. Like tributaries, these features can be traced back to their source, often company-built roads and houses still in use. These subtle features offer glimpses of an earlier time, despite the layers of vernacular additions that have been made to both the landscape and its structures. Although time and neglect have taken their toll, much of Quincy is still visible on the landscape today. What remains is the most complete mining company landscape on the Keweenaw Peninsula.



Figure 2- 67: A poor rock house foundation in Lower Pewabic is marked by an apple tree in the foreground. The stacks in the background once served Quincy's boilerhouses. (source: Image courtesy of the NPS)

Copper mining, milling, and smelting were once the driving forces behind landscape change in the Keweenaw. Several hundred companies left their mark on the Keweenaw Peninsula, and they represent an important part of our nation's past. The Quincy Mining Company contributed greatly to this history. Part of their industrial landscape is now a National Historic Landmark District, which recognizes its national significance. The Quincy Unit of Keweenaw National Historical Park includes this exceptional property, and the park is charged with preserving and interpreting it. This provides a new opportunity for people whose lives were shaped and influenced by the Quincy Mining Company to honor their rich heritage and share their stories with the world.

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter III: Existing Conditions/Affected Environment

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter III: Existing Conditions / Affected Environment

This chapter describes existing conditions within the Quincy Unit at two levels of detail. Unit-wide existing conditions are those that relate to the overall Quincy Unit (Figure 3-1 illustrates the boundaries and existing conditions of the Quincy Unit). Unit-wide conditions addressed include land use, vegetation, circulation, archaeological resources, wetlands, special status species, socioeconomics, visitor experience, and park operations at a broad scale, providing a context for understanding the overall unit.

The remainder of the chapter provides more detailed descriptions of existing conditions in each of the landscape character areas within the Quincy Unit. Landscape character areas are defined by their physical qualities and cultural resources present. Chapter I includes an introduction to the landscape character areas addressed for the Quincy Unit.

The project area for this Cultural Landscape Report is defined by the boundary of the Quincy Unit of Keweenaw National Historical Park as described in Chapter I. The Torch Lake area is not included within the boundary of the Quincy Unit. Chapter II: Landscape History, addresses the Torch Lake area to help readers understand the comprehensive landscape development related to the corporate history of the Quincy Mining Company. Because the Torch Lake area is not within the project area, it is not covered by the Existing Conditions, Landscape Analysis, or Recommended Treatment sections of this Cultural Landscape Report.

Following page:
Figure 3- 1: Quincy Unit Existing Conditions

Legend

- Quincy Unit Boundary
- 2 Mine Shaft Location
- Streetcar Route
- Trace of Historic Route
- Historic Railroad Grade
- Extant Railroad Track
- Utility Easment/Corridor
- Rock Pile
- Significant View toward Quincy Unit
- Significant view from Quincy Unit
- Major Road
- Historic Industrial Core

J.W. Kingdom Hall
Kevin's Storage
Bus Garage
Billboards
9
Front-end Gable House with Outbuild-ings
MESNARD
Historic Water Tower
Schaaf Estates
8
Mine St.
Quincy No. 8 Shaft and Hoist House Ruins and Substation
New Garage
Quincy Franklin School Foundation
Billboards
Potential Industrial Park Area
Lake Annie Rd.
Mine Rock Road
5
Tomasi Road
Hancock Department of Public Works
Hancock High School
CAMPUS COMMUNITY
Campus Drive
3
Quincy Hill Auto
Fifth St.
Streetcar Road
Fourth St.
Third St.
1
PEWABIC
Quincy St.
Brick Barn
Sunshine Road
HARDSCRABBLE
Water Tower
LIMERICK
Second St.
First St.
Limerick Rd.
6
COBURNTOWN
Future site of the MTU A.E. Seaman Mineral Museum
First Street
Second Street
Modular Home
Historic House Foundations
Portage Health Center
SING SING
Raasio Rd.
No. 2 Road
LOWER PEWABIC
W. L. Pewabic St.
South St.
Back St.
South Lower Pewabic St.
Franklin Tram Road
NEWTOWN
Third St.
Service Building
Radio Tower
Fourth St.
Dryhouse Foundation
No. 2 Shaft-Rockhouse
2
QUINCY BLUFF
Lower Pewabic Road
FRENCHTOWN
3 Historic Residences
French Town Rd.
4
Private Road
QMC Office
Radio Transmitter
QMC Agent's House/ Superintendent's Residence
Kowsit Lats
KOWSIT LATS
7
No. 2 Adit
Quincy Cog Rail Tramway
MONT RIPLEY SKI AREA
PORTAGE LAKE OVERLOOK
SOUTH QUINCY
Chalet
Overflow Ski Area Parking
Ripley School Apartments
HANCOCK
EAST HANCOCK
Ameritech
U.S. 41
M26 HIGHWAY
RIPLEY
QUINCY SMELTING WORKS SITE
Salt Storage
County Marina
Portage Lake Lift Bridge
Former Salt Storage
Pump House
Julio Contracting
Bowling Alley
Pumphouse
Public Dock at Former Quincy Dock Site
Hotel
Houghton Co. Commission Service Facility
Isle Royale National Park Headquarters

SCALE: 0 1000 2000

NORTH

QUINN EVANS | ARCHITECTS

EXISTING CONDITIONS

Cultural Landscape Report

Quincy Unit

Keweenaw National Historical Park

Unit-Wide Existing Conditions

Land Use

The Quincy Unit of Keweenaw National Historical Park is located in Houghton County, about 210 miles east of Duluth, Minnesota and 340 miles north of Milwaukee, Wisconsin. Houghton County is located in the northwestern portion of Michigan's Upper Peninsula, on the southern shore of Lake Superior. The county lies on the Keweenaw Peninsula, a stretch of land that extends 75 miles into the lake. Houghton County encompasses an area of 667,904 acres. The County is comprised of 14 townships (Adams, Calumet, Chassell, Duncan, Elm River, Franklin, Hancock, Laird, Osceola, Portage, Quincy, Schoolcraft, Stanton, and Torch Lake), five villages (Calumet, Copper City, Lake Linden, Laurium and South Range) and two cities (Hancock and Houghton). The Quincy Unit is located within Franklin and Quincy Townships. It is adjacent to the City of Hancock and across the western arm of Portage Lake from the City of Houghton.

Existing Land Use

Land use in Houghton County is predominantly forest with 30 percent of all lands located in a state or national forest, park or recreation area. Agricultural land uses are located predominantly in the northeast portion of the county, while commercial, residential and recreational uses are concentrated in the north and north-central parts of the county (see Table 3-1).

The current land use designation in the Quincy Unit is mainly rural residential with scattered residential (see Figure 3-2). Public uses are identified at U.S. 41 and Pewabic Location Road and the Mt. Ripley Ski Area. Commercial is identified at U.S. 41 and Lake Annie Road. Commercial and Industrial activities are identified south of State Hwy 26 adjacent to Portage Lake. Site specific land use descriptions are in the Land Use portion of the Cultural Resources / Cultural landscape section.

Table 3-1

Houghton County Existing Land Use

Land Use	Acreage
Agricultural	0
Commercial	80.5
Commercial Forest	0
Private Forest	0
Public Forest	0
Industrial	17.5
Public, Institutions	120.7
Residential, Rural	768
Residential	117
Water	9.6
Source: Houghton County, 2007	

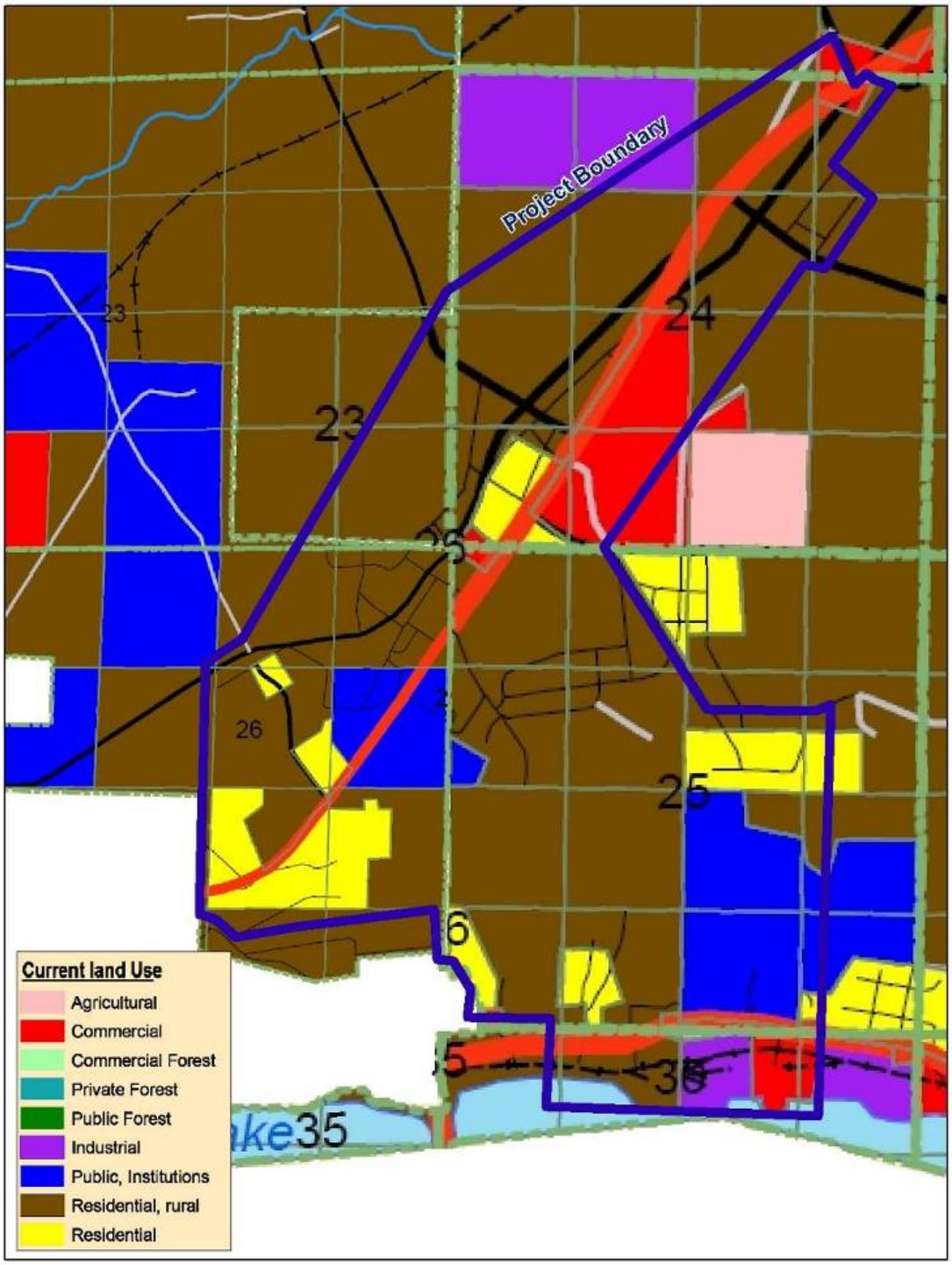


Figure 3- 2: Houghton County Land Use Plan, Current Land Use, 2006 (source: Houghton County, Michigan Land Use Plan)

Future Land Use

Figure 3-3 illustrates desirable future land use for the Quincy Unit. The majority of change between Existing Land Use and Future Land Use occurs within the Residential, Rural category. Residential, Rural on the Existing Land Use map becomes Forest and Residential on the Future Land Use map indicating a desire for natural resource restoration and preservation (see Table 3-2). Another significant change is the reclassification of land identified as Public, Institutions to Recreation. With the lack of land use controls in Houghton County, adherence to the Land Use Plan is not enforceable. The intention of the Future Land Use map is to guide the growth of townships and municipalities.

Table 3-2
Houghton County Future Land Use Definitions

Future Land Use	Description	Acreage
City Urban	Areas inside cities.	13.7
Agricultural		0
Commercial	Includes industrial.	125.1
Forest	Private and public.	373.9
Recreation	Non-forested.	117
Residential	More dense communities, villages, and small towns.	338.6
Residential, Rural	Year round residences, second homes, lakeshore houses, and camps. Year round access limited to local residents.	135.1
Water	Portage Lake	9.6
Source: Houghton County, 2007		

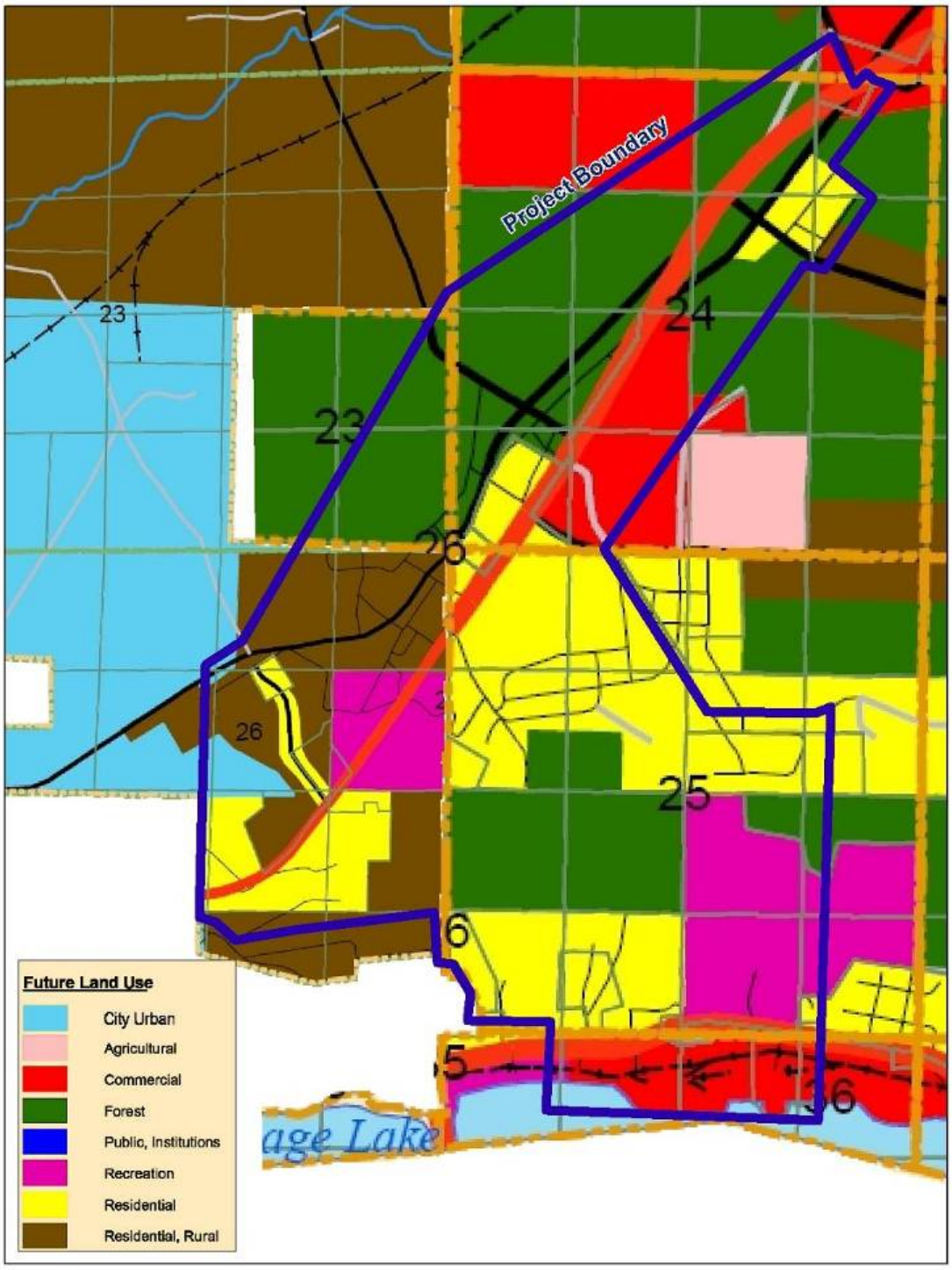


Figure 3- 3: Houghton County Land Use Plan, Future Land Use (source: Houghton County, Michigan Land Use Plan)

Zoning

No local governments that overlap the Quincy Unit of Keweenaw National Historical Park have adopted zoning to direct land use. A limited number of local ordinances address specific topics but community growth is shaped primarily through private interests and building codes.

Transportation and Circulation

The main access to the Quincy Unit is provided by automobiles. Large-scale circulation within the Quincy Unit is mainly dominated by vehicular routes. U.S. 41 is the primary road through the unit, providing access from both the north and the south. Highway 2 and Michigan Route 28 provide the primary east-west access to Houghton County and the entire Keweenaw Peninsula. There are no interstates in the vicinity.

Secondary roads provide access to neighborhoods and other facilities within the unit, as well as links to other areas (see Figure 3-4). In addition to the roads, historic railroad right-of-ways provide informal circulation corridors that are utilized by all terrain vehicles, snowmobiles, bikers, and pedestrians. The Quincy cog rail tramway provides access from the No. 2 hoist house area to the No. 2 adit. The No. 2 adit links the surface with the underground corridors of the mine (see Figure 3-5).

The Cities of Houghton and Hancock provide an on-demand bus service and there is a regional bus terminal in downtown Hancock. There is no passenger train service in the area. Houghton County Memorial Airport is located three miles northeast of the Quincy Unit and has two flights daily to and from Minneapolis-St. Paul International Airport. There are no road improvements planned by the Houghton County Road Commission or the Michigan Department of Transportation for roads within the Quincy Unit.

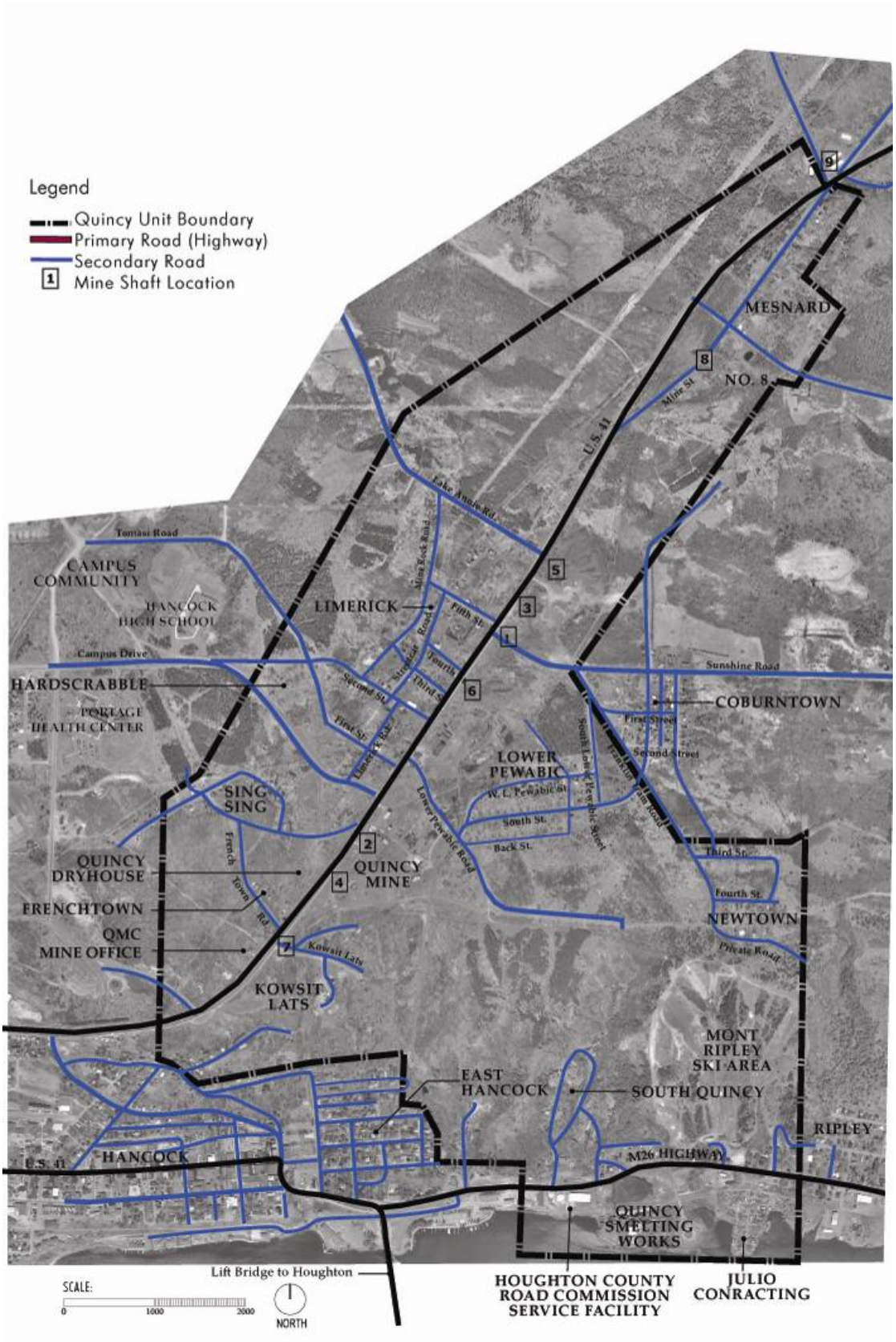


Figure 3- 4: Existing Roads

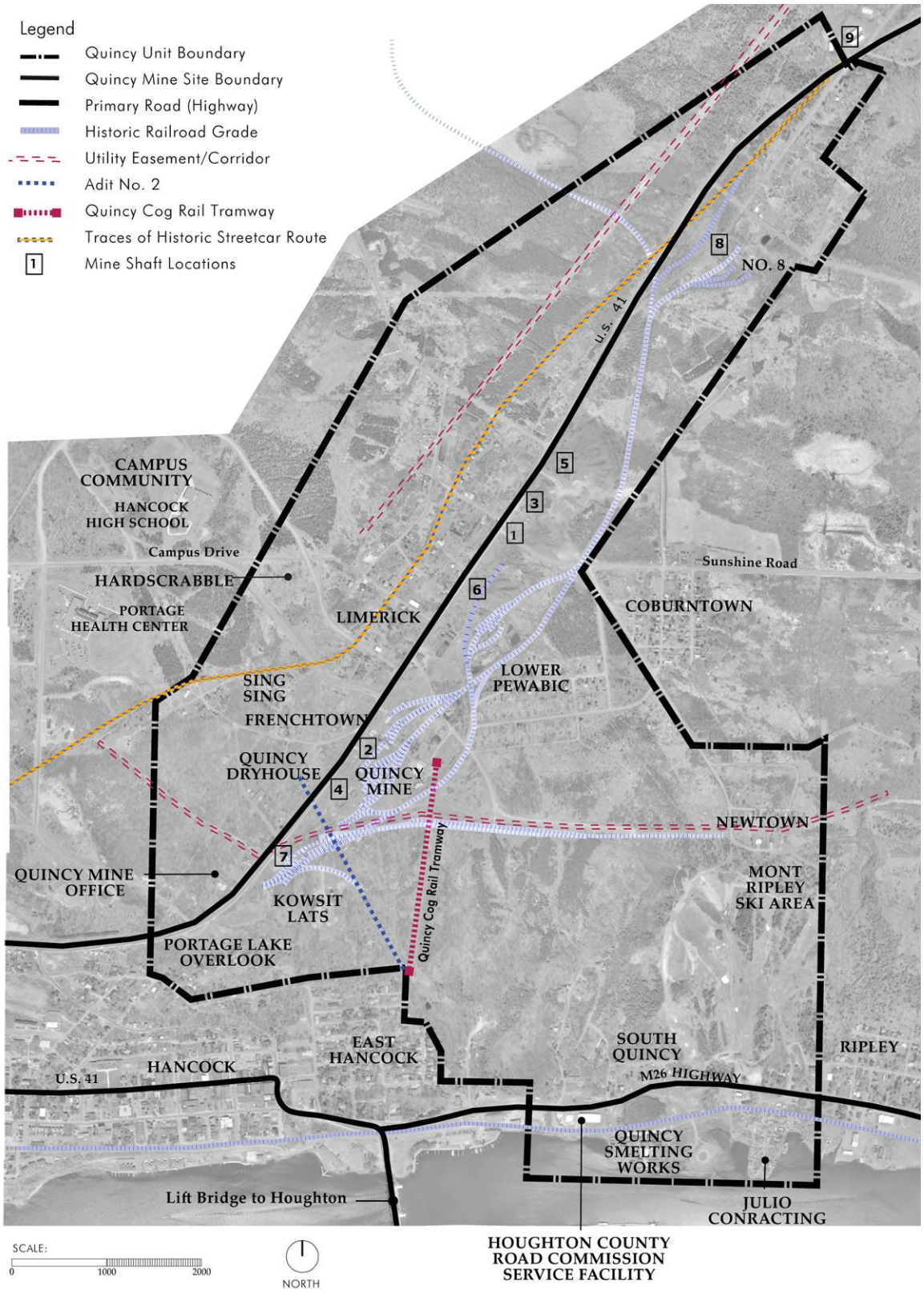


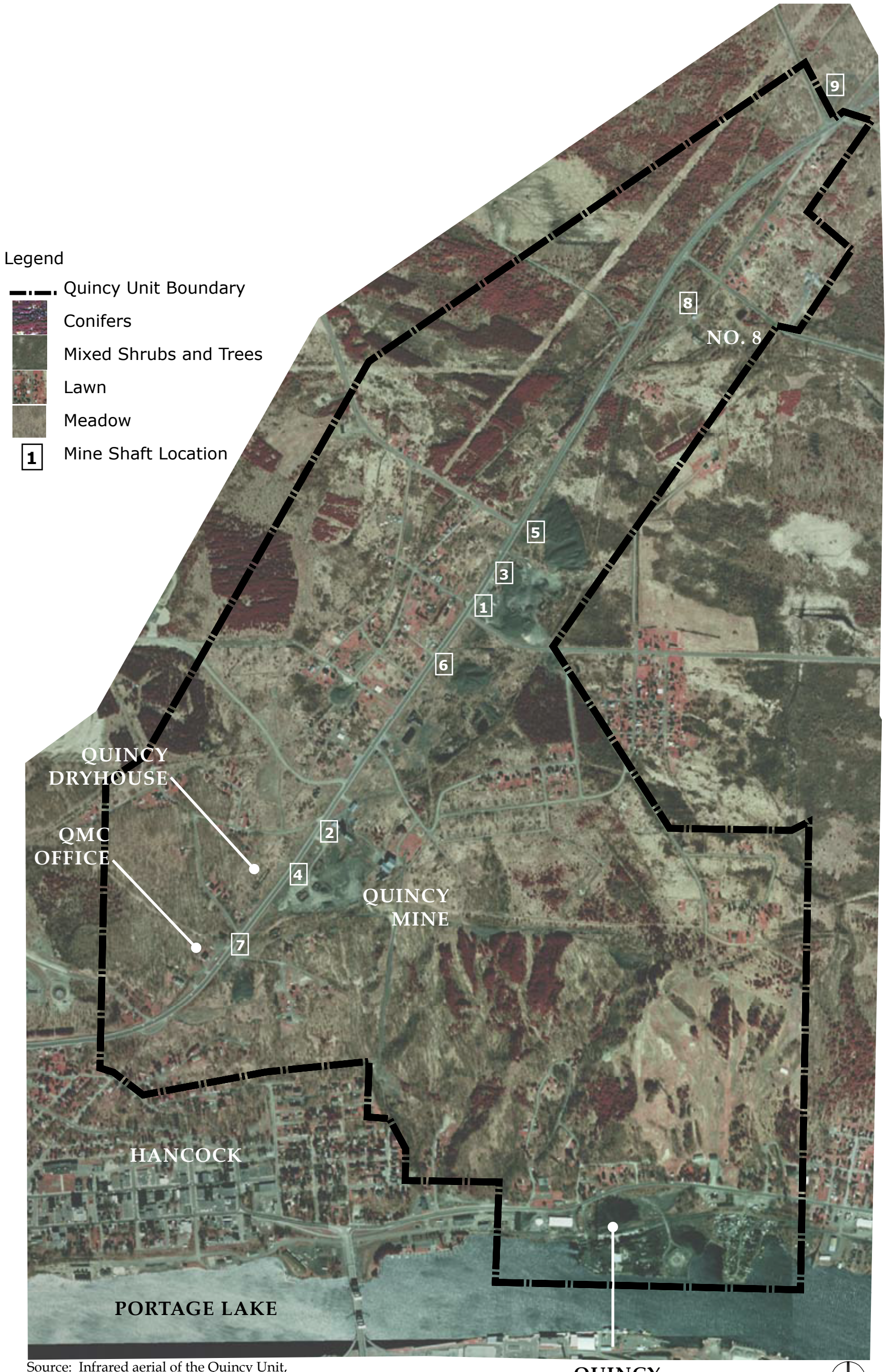
Figure 3- 5: Existing Railroad Grades and Tram Route

Vegetation

Vegetation within the Quincy Unit is addressed in association with Landscape Character Areas. A general overview of vegetation throughout the unit is provided in Figure 3-6. The figure includes an infrared aerial photograph of the unit that can be used to identify large areas of conifers, mixed shrubs and trees, lawn, and meadows. Conifers include mainly balsam fir, mixed spruce, mixed cedar, and red pines. Mixed shrubs and trees include a broad range of woody plants in various phases of succession and transition. These include mixed maple, oak, birch, aspen, alder, apple, and lilac species. Lawn areas are those that include grass species that are mown. Meadow areas contain mixed grass and forb species as well as scrub plants (woody plants that are seedlings or saplings).

Woodland covers large portions of the Quincy Unit. Vegetation in non-developed areas is highly disturbed with natural succession reclaiming cleared land. Within the Unit, there are two red pine plantations with even-aged trees of approximately 30-40 feet height. Abandoned industrial and company housing sites are overgrown with volunteer herbaceous and woody plants. Some of the domestic plants that were introduced to the area by residents have survived and spread, including rhubarb, lilacs, lilies, apple trees, and Lombardy poplar trees. These plants provide hints of former activities and help to identify historic company housing sites.

Following page:
Figure 3- 6: Quincy Unit Vegetation



Source: Infrared aerial of the Quincy Unit, Keweenaw National Historical Park.

QUNIN EVANS | ARCHITECTS

Archeological Resources

Although the purpose of this CLR/EA is to address above ground historic landscape resources, consideration of known and potential archeological resources is necessary. Data regarding the extent of archeological resources contained in the park is incomplete. However, it is indisputable that there is great potential for both prehistoric and historic archeological resources within the Quincy Unit. Although archeological resources have not been comprehensively inventoried within the Quincy Unit, a number of projects have been conducted that indicate the area contains extensive archeological resources. As early as 1863 Charles Whittlesey published his observations regarding early copper mining in the area. A recent report by Larry Mishkar focuses on the site of the A.E. Seaman Mineral Museum and numerous unpublished reports conducted by Michigan Technological University have focused on archaeological sites within the Quincy Unit. These have included a survey for the path of a water line that documented the presence of rail and tram lines; documentation of the presence of the first Euro-American cemetery associated with the Quincy Mining Company; and documentation of residential neighborhoods. Extensive buried deposits have been documented in the area near the Quincy Machine Shop and Blacksmith Shop.1 Plans are underway for the preparation of an Archaeological Inventory and Evaluation for the two units of the park. It is likely that extensive archaeological resources related to historic copper mining in Michigan's Keweenaw Peninsula will be identified. In addition, it is possible that prehistoric resources may be discovered. The Keweenaw Peninsula hosts one of the oldest known copper-working sites in North America, dating to the early Holocene. Although historic activity has resulted in extensive ground disturbance at Keweenaw National Historical Park properties, the prehistoric record has yet to be systematically investigated, and could offer additional information about early activity in the Upper Great Lakes.

[1] Mishkar, Land Use History and Archaeological Survey, A.E. Seaman Mineral Museum Project, Quincy Mine National Historic Landmark, Houghton County, Michigan; Whittlesey, Ancient Mining on the Shores of Lake Superior, Smithsonian Contributions to Knowledge; other unpublished projects conducted by Michigan Technological University.

Socioeconomics

Demographics

The population in Houghton County in 2000 was 36,016 (see Table 3-4). The populations of the City of Houghton and the City of Hancock both declined between 1990 and 2000 while the populations of Houghton County and the Census Tract increased. Per capita income of residents in Houghton County in 1999 was $15,078, compared to $22,168 for the State of Michigan. A comparison of per capita income, unemployment rate, and poverty rate can be seen in the table below.

In 2000, the largest employment sectors in Houghton County were in the areas of educational, health and social services (40.1 percent), retail trade (13.4 percent) and arts, entertainment, recreation, accommodation and food services (10 percent). The unemployment rate for Houghton County declined from 9.9 percent in 1990 to 7.9 percent in 2000, but was still significantly higher than the state and national level of 5.8 percent in 2000.

The Quincy Unit is completely contained within census tract 9905 of Houghton County. This census tract experienced a slight population growth in the 1990s. Although there is a relatively high unemployment rate in the census tract, the poverty rate is slightly lower than the cities of Hancock and Houghton and Houghton County.

Table 3-4: 2000 Census Data

	Census Tract 9905	City of Houghton	City of Hancock	Houghton County	State of Michigan
1990 Pop.	3,152	7,498	4,547	35,446	9,295,297
2000 Pop.	3,393	7,010	4,323	36,016	9,938,444
White	98.1%	89.2%	96%	95.5%	80.2%
Black	.4%	1.9%	.8%	.9%	14.2%
Native Amer.	.5%	.4%	.9%	.5%	.6%
Other	1%	8.5%	2.4%	3%	5%
Per Capita Income	$16,310	$11,750	$16,669	$15,078	$22,168
Unemployment Rate	8.5%	8.6%	7.4%	7.9%	5.8%
Poverty Rate	12%	36.9%	14.3%	16.8%	10.5%
Source: US Census Bureau, 1990 and 2000					

Economic Resources

Tourism on the Keweenaw Peninsula has both a summer and a winter season. Summer and early fall is the main tourist season and lasts from Labor Day through mid-October. Winter activities like ice fishing, snowmobiling, and cross country skiing makes this region popular from November through March.

In 1996, it is estimated that tourism generated $137,459,000 in the Keweenaw Region which includes Baraga, Houghton, Iron, Keweenaw and Ontonagon Counties.[2] Houghton County accounted for approximately 23 percent of the revenue generated or roughly $32,000,000. In 2000, Houghton County accounted for over 46 percent of revenues generated from tourist

[2] Michigan State University, 2007.

expenditures. A break down of visitor expenditures for Keweenaw NHP and the Quincy Unit is given in the Visitor Study Summary.

In 2000, Houghton County had 172 licensed eateries, 946 rooms available in commercial lodging establishments and 332 campsites. During the summer tourist season rooms are available from various sources including national hotel chains, inns and rental cabins located along Lake Superior. During the winter tourist season approximately 900 rooms remain available.

Visitor Expenditures

Keweenaw National Historical Park VSP Visitor Study was conducted between 24 July and 1 August 2004. During the study 332 visitor groups were questioned. Of the visitor groups questioned, the average group expenditure was $365 with an average per capita expenditure of $189 (see Table 3-5). At the Quincy Unit, visitor groups only averaged $36 in expenditures with a $9 per capita average. A summary of visitor expenditures can be seen in the table below. In all categories, visitors to the Quincy Unit spend considerably less money than the average park visitor.

Table 3-5
Visitor Expenditure Summary

Category	Proportion of Total Expenditures ($ value)	
	All Visits ($365 per group)	Visits to Quincy Unit ($36 per group)
Hotel/Motel Cabin	21% ($77)	-
Restaurant/Bar	17% ($62)	-
Gas/Oil	11% ($40)	-
Camping Fees	10% ($36)	-
Groceries/Take-Out Food	10% ($36)	-
Admission/Recreation	9% ($33)	46% ($17)
Other Transportation	4% ($15)	-
Donations	1% ($4)	1% (<$1)
All other Purchases	17% ($62)	53% ($19)
Source: Keweenaw National Historical Park, 2004		

Visitor Experience

The Upper Peninsula of Michigan provides a wide variety of outdoor experiences for visitors. Opportunities for hiking, camping, skiing, hunting, biking, paddling and boating as well as the option to visit numerous cultural sites are attractive to tourists from throughout the country. Because Keweenaw National Historical Park is a "partnership park," partner organizations also contribute resources to the overall experience of visitors.

Keweenaw Heritage Sites that are heavily visited include Porcupine Mountains Wilderness State Park; McLain State Park; Fort Wilkins State Park. The main attractions available at the

Quincy Unit include the Quincy Mine Hoist Association underground mine tours, the cog rail tram, the Quincy Mine Museum in the No.2 Hoist House, the Nordberg Steam Hoist Tour, the No. 2 shaft-rockhouse self-guided tour, the Quincy Mine Gift Shop and the National Park Service visitor information desk at the Supply House. Soon, an added attraction will be the A.E. Seaman Mineral Museum. The Michigan Technological University facility is relocating from Houghton to the Blacksmith Shop and Machine Shop buildings within the Quincy Unit.

Although current visitation to Keweenaw NHP exceeds 500,000, the park, including the Quincy Unit has experienced a decrease in visitors since 2003. Table 3-6 outlines attendance of the Keweenaw cooperating sites and the Quincy Unit since 2003.

Table 3-6
Keweenaw NHP Annual Visits

	2003	2004	2005	2006
Porcupine Mountains Wilderness SP	366,600	470,650	253,461	313,544
Fort McLain SP	183,000	177,300	149,277	
Fort Wilkins SP	165,000	147,800	106,469	108,694
Quincy Unit	**45,000**	**33,600**	**40,000**	**30,800**
Others	64,700	61,301	49,960	64,401
Total	*824,300*	*890,651*	*599,167*	*517,439*
Source: Keweenaw NHP, 2007				

The Division of Interpretation and Education is currently implementing the park's Education Plan. The plan includes recommendations for teacher workshops, history camps and ranger-guided and self-guided tours of the park. Ranger-led tours of the park include a Quincy Ruins Walk that is conducted two times a week during the summer. Park staff also provides interpretive training for cooperating sites.

To better understand visitor preferences and demographic information, a Visitor Study was conducted for the park in the summer of 2004. The visitor study was conducted by the Park Studies Unit at the University of Idaho. A visitor questionnaire was utilized to generate data on visitor experiences and expenditures at Keweenaw National Historical Park and cooperating sites.

According to the survey, the majority of visitors tend to be from Michigan and immediately surrounding states. Michigan accounts for over half of the park visitors and the states of Wisconsin, Illinois, and Minnesota account for another thirty percent. The average group size is five people and the average visitor age is about forty nine.

The primary reason visitors cited for visiting the Keweenaw Peninsula was to enjoy the natural resources and scenic beauty. Another important reason for visiting the region was for outdoor recreation. Other attractions in the region that are often seen on the same trip as visits to Keweenaw NHP include Copper Harbor, Pictured Rocks National Lakeshore, Apostle Islands National Lakeshore, and Isle Royale National Park.

Keweenaw NHP does not have a Visitor Survey Card program. Current data on visitor satisfaction is based solely on results of the 2004 Visitor Study. The NPS has a service wide goal of ninety-five percent visitor satisfaction with park facilities, services, and recreational opportunities. Because Keweenaw National Historical Park is relatively new, it has an overall goal of seventy percent satisfaction by 2008. Over fifty percent of visitors rated their visit to the Quincy Mine & Hoist as being very good. Fifty-three percent of visitors rated the overall quality of visitor services as very good. Keweenaw NHP also has a goal that seventy percent of visitors will understand significance of the Park after their visit.

Since most property within the boundaries of Keweenaw National Historical Park is not owned by the NPS, park staff work collaboratively with the Keweenaw Heritage Sites to mitigate hazards and to educate visitors about safety concerns. Interpretive staff insert safety-related articles in the annual park newspaper, and plan to develop a site bulletin related to visitor safety. Nine percent of visitor groups that participated in the study had a member with a disability. The disabilities included eighty-five percent with mobility impairments, twelve percent with hearing impairments, and nine percent with visibility impairments. Twenty-seven percent of respondents rated Quincy Mine and Hoist disability access as very good. Forty seven percent of visitors with disabilities/impairments reported having access problems at the Quincy Unit. Full accessibility is provided at the gift shop and the cog rail tram.

Park Operations

The park headquarters is located in Calumet, Michigan, which is ten miles north of the Quincy Unit. The *Superintendent's Annual Report, Fiscal Year 2005* listed a total of thirty-three employees at Keweenaw National Park. Fourteen of these employees are permanent. Eleven employees are seasonally involved in maintenance and construction and eight employees are seasonally involved in interpretation and museum curation. Park management, interpretive and maintenance staff are stationed at the Park Headquarters. Keweenaw National Historical Park interpretive staff provides on-site interpretation and visitor contact at the Quincy Unit. In addition, much of the park interpretive and museum staff's time is spent working with cooperating sites and school groups throughout the region to tell the story of the park's history. The preservation services division serves park partners and property owners through technical assistance offered by the historical architect and landscape architect. Park maintenance staff provides routine maintenance for park facilities, and repair and rehabilitation to historic structures in both the Calumet and Quincy Units.

Quincy Unit Landscape Character Types and Associated Landscape Character Areas

To better understand the existing conditions of the Quincy Unit landscape, the Unit was divided into areas with similar physical characteristics, qualities and attributes. These subdivisions, hereafter referred to as landscape character areas, are distinguished by their related cultural landscape resources.[6] Given the variety and number of landscape character areas within the Quincy Unit, three *landscape character type*s have been identified to group the landscape character areas for purposes of inventory and analysis. The landscape character types include 1) character areas related to historic mine/industrial landscapes, 2) character areas that include historic mine housing locations, and 3) character areas that contain non-historic and adjacent land uses (see Figure 3-7). Figure 3-8 illustrates the industrial and mine related sites within the Quincy Unit.

The existing conditions descriptions included herein provide an overview of the primary site features related to each landscape character area, rather than a detailed field inventory at the site level. Figure 3-9 illustrates the locations of existing buildings, remnants of buildings, and major landscape features within the Historic Industrial Core of the Quincy Unit.

[6] Page, Robert R., Cathy A. Gilbert, and Susan A. Dolan, 1998. A Guide to Cultural Landscape Reports: Contents, Process, and Techniques (Washington, DC: U.S. Department of the Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program), 75.

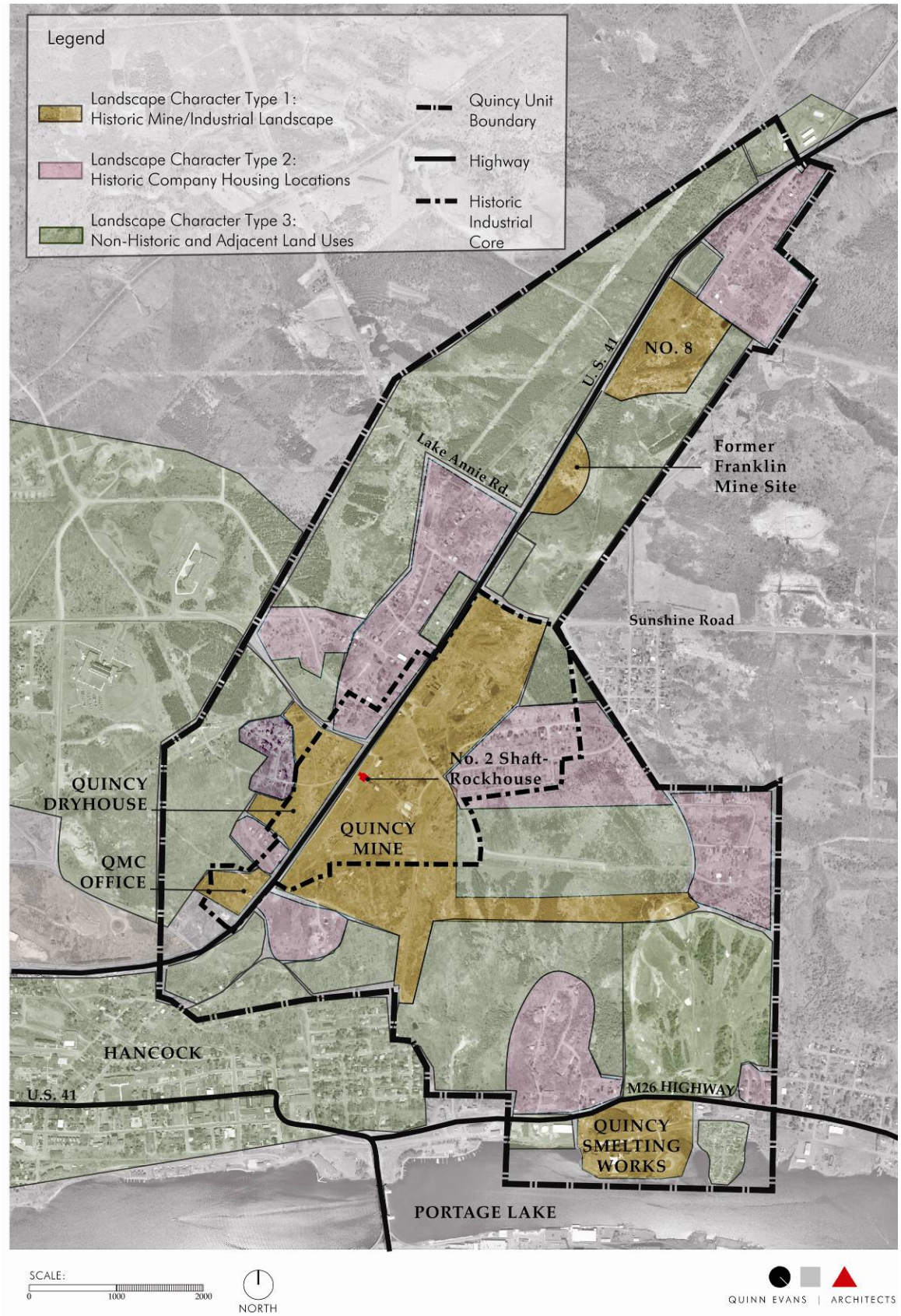


Figure 3- 7: Quincy Unit Landscape Character Types

Landscape Character Type 1 - Historic Mine/Industrial Landscapes

Quincy Mine landscape character area
Quincy Smelter landscape character area
Quincy Mine Office and Superintendent's Residence landscape character area
Quincy Dryhouse landscape character area
No. 8 landscape character area

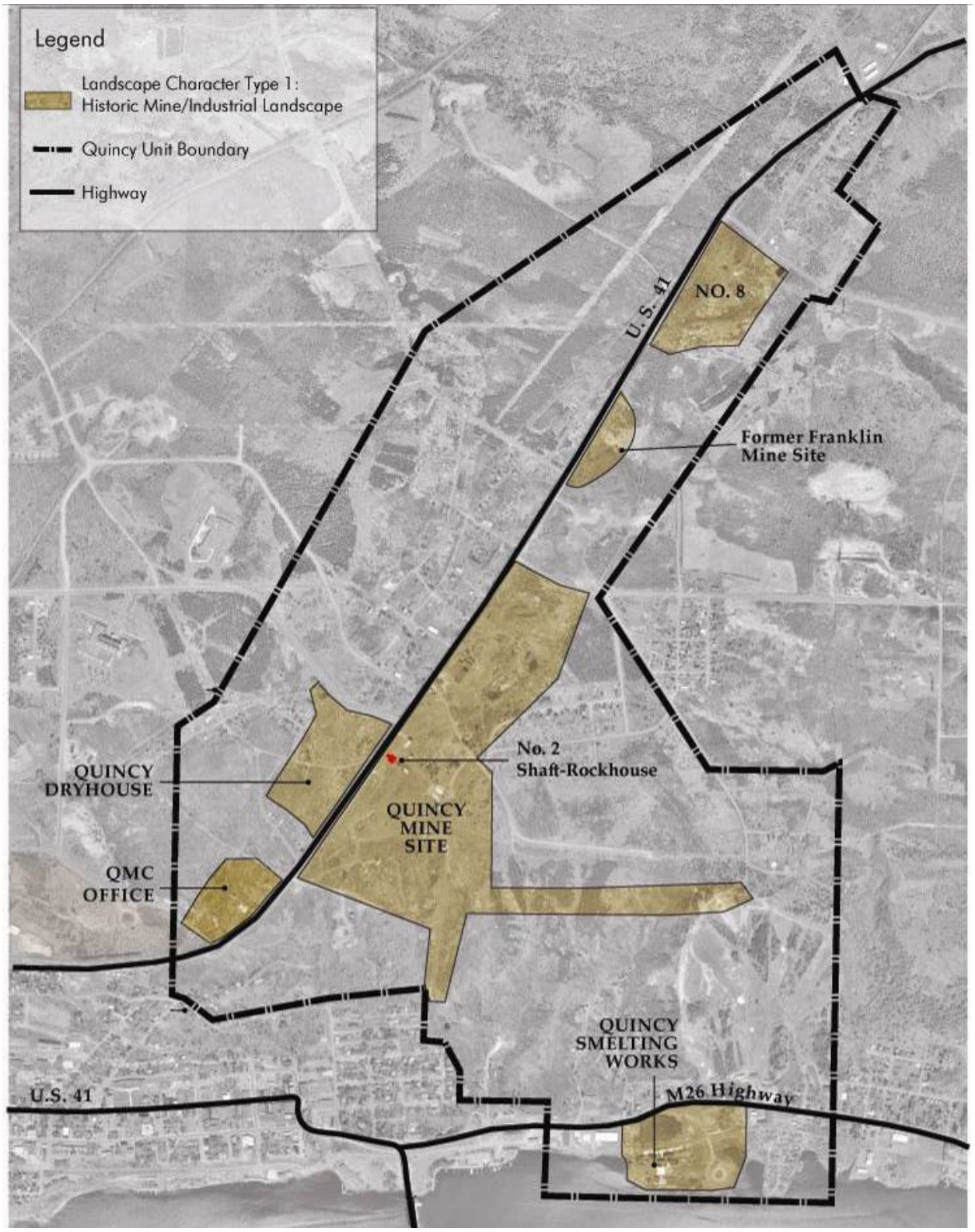


Figure 3- 8: Landscape Character Type 1: Industrial / Mine Related Areas

Landscape Character Type 2 – Historic Company Housing Locations

Limerick landscape character area
Hardscrabble landscape character area
Kowsit Lats landscape character area
Lower Pewabic landscape character area
Sing-Sing landscape character area
Coburntown landscape character area (adjacent to unit boundary)
Frenchtown landscape character area
Ripley landscape character area (adjacent to unit boundary)
Mesnard landscape character area
Newtown landscape character area
South Quincy landscape character area

Landscape Character Type 3 - Non-Historic and Adjacent Land Uses

Hancock landscape character area (adjacent to unit boundary)
Portage Lake Overlook landscape character area
U.S. 41 landscape character area
Community: Campus Drive landscape character area (adjacent to unit boundary)
Houghton County Road Commission Service Facility landscape character area
Julio Contracting landscape character area
Mont Ripley Ski Area landscape character area
Wooded landscape character area

Next Page:
Figure 3- 9: Existing Conditions, Historic Industrial Core



Buildings and Remnants of Buildings

1. Blacksmith's Shop
2. Machine Shop
3. Captains Office
4. Supply House
5. Oil House
6. No. 2 Shaft-Rockhouse
7. No. 2 Hoist House (1882)
8. Martin House and Outbuilding
9. No. 2 Hoist House (1918-20)
10. No. 2 Hoist House (1894-95)
11. No. 5 Boiler Plant (1912)
12. Ruin of Diamond Drill Core House
13. Remnant of Compressor Building
14. Remnant of No. 4 Boiler House (1882)
15. Hancock Township Fire Department
16. Remnant of No.4 Hoist House (1885)
17. Remnant of No. 7 Boiler House (1898)
18. Quincy & Torch Lake R.R. Water Tank
19. Remnant of Engine House (1889)
20. Dryhouse Foundation
21. Mine Captain's Office
22. Assay Office
23. Captain White's Residence
24. Quincy Mine Office
25. Superintendent's Residence

Sources:

1. Aerial photography, prepared for Keweenaw National Historical Park by Ayres Associates, Inc., of Madison, Wisconsin, May 2002.
2. Eric M. Hanson, "Quincy Mining Company Maps," HAER Heritage, Conservation and Recreation Service, 1978.
3. Land ownership information provided by Keweenaw National Historical Park.
4. Larry Mishkar, "Land Use History and Archaeological Survey, Seaman Mineral Museum Project, Quincy Mine National Historic Landmark, Houghton County, Michigan," Industrial Archaeology Laboratory, Michigan Technological University, Houghton, Michigan, 2005.
5. Period of Change Plans, Chapter II, Landscape History, Quincy Unit Cultural Landscape Report.
6. Smithgroup and Hitch, Inc., "A.E. Seaman Mineral Museum Master Plan Report," 20 January 2006.

SCALE: NORTH
0 200 400

QUINN EVANS | ARCHITECTS

EXISTING CONDITIONS

Cultural Landscape Report

HISTORIC INDUSTRIAL CORE

Keweenaw National Historical Park

Landscape Character Type 1 – Historic Mine/Industrial Landscapes

Quincy Mine landscape character area

The Quincy Mine landscape character area is the principle mining attraction in the Quincy Unit of Keweenaw National Historical Park. This area includes the most intact historic mining resources within the unit including the No. 2 shaft-rockhouse and the No. 2 hoist house (see Figures 3-8 and 3-9). The area is managed by the Quincy Mine Hoist Association (QMHA) to provide tours and educational programs about the history of the mine for the public. The QMHA utilizes several of the historic resources as part of their interpretive program. These include:

- **The No. 2 shaft-rockhouse:** The building is a significant component in the interpretive tour of the site. It also provides the region with a major icon of its copper mining past, visible on the horizon for miles (see Figures 3-10, 3-11, 3-12 and 3-17)

- **The Gift Shop:** Once a supply office, the building now functions as the Quincy Mine Hoist Association gift shop and houses a seasonal visitor information desk staffed by the National Park Service (see Figures 3-12 and 3-13).

- **Public Restrooms:** Once an oil house, the building now houses public restrooms on the upper level and a seasonal blacksmith demonstration below (see Figure 3-14).

- **The No. 2 Hoist House (1894-1895):** The building functions as a Quincy Mine Hoist Association museum, comfort station, and interpretive tour staging area (see Figures 3-11 and 3-15). The building is connected to the No. 2 Hoist House (1918-1920).

- **The No. 2 Hoist House (1918-1920):** This building houses a Norberg steam hoist which is the world's largest steam hoist and a National Historic Landmark. The building is connected to the No. 2 Hoist House (1894-1895).

- **The Cog Rail Tramway:** The tramway provides a link between the No. 2 hoist house and the mine adit for visitors experiencing the mine tour (see Figure 3-16).

- **The Adit:** The adit is an entrance to the underground mine tour and links the surface to the seventh level of the mine (see Figure 3-16).

- **The area between the No.2 shaft-rockhouse and No.2 hoist houses:** This is a display area of mine-related artifacts. A complete inventory of the artifacts was prepared by Scott See of Michigan Technological University. The eastern portion of the area is used for parking (see Figure 3-17).

- **The Parking Lot:** This area between the supply house and the No. 2 shaft-rockhouse is utilized for undefined gravel parking (see Figures 3-12 and 3-13).

- **The Quincy Machine and Blacksmith shops:** This property is owned by Michigan Technological University. The machine shop is being rehabilitated to house the A.E. Seaman Mineral Museum. Plans for the blacksmith shop include utilizing it in the future when the museum facility expands (see Figures 3-18 and 3-19).

- **The lawn northeast of the No. 2 hoist houses:** This is a display area for mine-related artifacts (see Figure 3-20). A complete inventory of the artifacts was prepared by Scott See of Michigan Technological University.

- **The railroad track northeast of the No. 2 hoist houses:** The railroad track provides a display of rolling stock on a historic railroad grade (see Figure 3-21).



Figure 3- 10: North elevation of the No. 2 shaft-rockhouse at Quincy Mine, 2006 (source: QEA)



Figure 3- 11: Panoramic view of the south Quincy Mine site from the dryhouse area, 2006 (source: QEA)



Figure 3- 12: Quincy Mine gift shop, oil house, No. 2 hoist house and No.2 shaft-rockhouse, from across U.S. 41, 2006 (source: QEA)



Figure 3- 13: South elevation of gift shop and parking area, 2006 (source: QEA)



Figure 3- 14: South elevation of the restroom and seasonal blacksmith demonstration area, 2006 (source: QEA)



Figure 3- 15: No. 2 Hoist Houses (1918-20 right and 1894-95 left), 2006 (source: QEA)



Figure 3- 16: View looking north toward tram at the adit, 2006 (source: QEA)



Figure 3- 17: The area between the No. 2 hoist house and the shaft-rockhouse is used for parking and as a display area for mining artifacts, 2006 (source: QEA)



Figure 3- 18: The Quincy machine shop is being rehabilitated to be the home of the A.E. Seaman Mineral Museum, 2006 (source: QEA)



Figure 3- 19: The Quincy blacksmith shop is planned to accommodate expansion of the A.E. Seaman Mineral Museum, 2006 (source: QEA)



Figure 3- 20: Lawn northeast of the (1918-1920) No. 2 hoist house, facing southwest, 2006 (source: QEA)



Figure 3- 21: Railroad track and rolling stock northeast of No. 2 hoist houses, 2006 (source: QEA)

Although the Quincy Mine Hoist Association has developed an interpretive program that focuses on the historic mining operation, the majority of the landscape resources are not highlighted in the interpretive efforts. The historic landscape features at the site provide a rich collection of resources that could add another dimension to the existing interpretive program. Extant landscape features (including buildings) that could provide an added perspective to the visitor's experience at the site include:

- **Martin House Site:** The property includes a house, privy and barn (see Figure 3-22). The Quincy Mine Hoist Association would like to use it for interpretation of a miner's domestic life. It has been stabilized by NPS workers but requires further structural repairs.

- **Cooling Ponds:** The cooling ponds are two connected concrete-lined pools that feature pipes and remnants of wooden piers located along the centerlines of the pools (see Figure 3-23). The pools were used as a cooling system for the hot water from the steam engine at the hoist house. Today vegetation growing inside the pools partially obscures the features, but they are still mostly intact and somewhat visible.

- **Area between the Cooling Pools and the Supply Office:** This area contains dense second-growth vegetation and extensive remains of railroad tracks, building foundations and discarded materials, and utility trenches related to the Quincy Mine operations (see Figure 3-24). The ground is extremely uneven and foundations and piles of pipes and bricks are disguised by the vegetative growth. Views in this area are also obscured by vegetation.

- **Area north of Supply Office:** This area contains remnants of historic buildings, railroads, utility trenches, roads, and equipment that are mostly hidden by vegetation that has grown up in the area (see Figure 3-25).

- **Area south of the No. 2 shaft-rockhouse with foundations and ruins:** This area contains remnants and foundations of several substantial mining buildings that are surrounded by a rocky landscape with uneven topography (see Figures 3-26 and 3-27). The area contains remnants of poor rock piles that have been mined recently to provide fill for road projects and gravel in the region. The removal of the rock has left an unusual landscape with rock piles and cut out areas. Vegetation includes herbaceous species among the rock and successional vegetation in clusters, especially inside and adjacent to the building foundations.

- **No. 5 Boiler Plant, trestle remnant, utility trench, and smokestack:** This area includes significant mining related structures that are deteriorating. The No. 5 Boiler Plant lacks a roof, and the partitions, hoppers, and overhead rails are being impacted by weather related the elements. The connection between the trestle remnant and the No. 5 Boiler Plant is still evident, yet its condition is precarious. The smokestack was determined to be structurally unsound and it was demolished in early 2009. The utility trench connecting the No. 2 Shaft-rockhouse to the No. 5 Boiler Plant has been covered with mesh and vegetation is growing over it, so that the connection is no longer visible.

- **No. 6 Site**: This area contains a large poor rock pile surrounded by volunteer vegetation and extensive remnants of buildings and artifacts (see Figures 3-30 and 3-31). This portion of the site has not been actively managed, but it has value in its ability to represent the landscape change over time—after human activities are halted.

- **Area east of the cog tram track:** This area slopes steeply down toward Portage Lake and is covered by dense vegetation (see Figure 3-28). Intermixed with volunteer native species are domestic plants, including apple trees that produce fruit.

- **Rock Piles:** Throughout the region poor rock piles are being mined for road construction, and in some cases they have been disguised by vegetation (see Figure 3-29 through 3-32). Their loss as a visual landscape feature is changing the region's identity to one that is not as easily associated with its historic mining activities.



Figure 3- 22: View of Martin House Property facing northwest, 2008 (source: QEA)



Figure 3- 23: View looking south of northernmost cooling pond, 2006 (source: QEA)



Figure 3- 24: The area between the cooling ponds and the supply house includes a recently added informal trail and sign for blacksmith, 2006 (source: QEA)



Figure 3- 25: View from No. 2 shaft-rockhouse showing area north of supply office, 2006 (source: QEA)



Figure 3- 26: View looking north at the area south of No. 2 shaft-rockhouse with foundations and ruins, 2006 (source: QEA)



Figure 3- 27: View looking northeast at the area south of the No. 2 shaft-rockhouse, 2006 (source: QEA)



Figure 3- 28: Vegetation east of the cog tram track, 2006 (source: QEA)



Figure 3- 29: Used car lot east of U.S. 41 with privately owned poor rock pile in the background, 2006 (source: QEA)



Figure 3- 30: Poor rock pile at No. 6 site, 2008 (source: QEA)



Figure 3- 31: View of No. 6 site, Machine shop and No. 2 Shaftrock house from poor rock pile at No. 6 site, 2008 (source: QEA)

Quincy Smelting Works landscape character area

The Quincy Smelting Works is situated on the north side of Portage Lake, east of Hancock and south of Highway 26 (see figure 3-32 through 3-37). Its location positions it as a focal point along a very visible and dynamic waterfront environment. The site offers expansive views of the adjacent waterway and downtown Houghton. It also features more than thirty historic structures and several site features that represent the smelting process and once supported operations at the site. The conditions of these resources vary greatly but collectively represent how the complex functioned as part of the Quincy Mine Company. It is currently owned by Franklin Township and is an EPA superfund site.

During the 2006 field inventory, the core area of the Quincy Smelting Works site was not accessible. It was completely encircled with chain-link fence and posted with warning signs

regarding hazards – features that remain from U.S. Environmental Protection Agency efforts to remove asbestos and other hazardous materials from the site. The fence remains around the core structural complex, even after a much more complete abatement of asbestos in the buildings was carried out by the EPA in 2008. The fence has reduced, but not eliminated, problems associated with trespassing, looting and vandalism. Similar asbestos abatement was also conducted by EPA at the barn and garage where temporary fencing was removed.

Despite limited access, a review of the 2002 *Quincy Mining Company Smelting Works Historical Land Use Survey* prepared by Dr. Patrick Martin and Gianfranco Archimede and investigation outside the fence identified several character defining landscape features. Below is an examination of these features and their association with the site (see Figure 3-32 for locations of the features).

- **Former Railroad Grades:** The site is bisected from east to west by former Mineral Range and Copper Range Railroad grades now owned by the State of Michigan and used for recreation purposes and to accommodate underground utilities. Since removal of most of the rails contemporary users for the trail include snowmobilers, all terrain vehicle enthusiasts, bicyclists and pedestrians - including walkers and runners. Today two spurs on the south side of the grade remain. One continues to feature a locomotive resting on rails and ties while the other provides a ramped berm (formerly a wood trestle) to the upper level of the sandstone mineral house.

- **Tram Lines & Trestles**
  Transportation of materials on site was handled by a system independent of the railroad. Evidence of this smaller gauge network of rails is found at four steel trestles built to facilitate movement of slag and coal. One can be seen north of the cupola furnace building where it bridges the Mineral Range Railroad grade to access the north slag pile. A second may be found south of the briquetting building where it connects the cupola furnace building with the reverberatory furnace building and facilitates the movement of materials between them. A third is located north and east of the casting shed where it functioned as an elevated charging system for the furnaces. Finally, a fourth trestle exists east of the dockside warehouse loading dock where it was once integrated with the disposal of slag from the reverberatory furnace.

- **Slag Piles**
  Three slag piles exist on the site and contribute to the industrial character of the site. While all are byproducts of copper smelting each pile exhibits varying characteristics.

  North Slag Pile

  The largest (north slag pile) is located directly north of the cupola furnace building. It is a massive pile with steep sides and a relatively flat top. Primarily black in color, its fine glass-like texture is most evident when viewed up close. This pile was formed when slag from the cupola furnace was trammed here while still in a molten state. It was begun in 1905 when construction of the elevated steel trestle connecting it to the cupola furnace building was complete.

East Slag Pile

The second largest (east slag pile) is located at the far eastern edge of the site, immediately adjacent to the Portage Lake. It is lower in height, smaller in area and slopes upward from west to east with the highest point found on the east side of the pile. The shape of the slag pile suggests it has been worked or distributed by a bulldozer(s) at some time. The variable composition of the slag includes large pieces that reflect the use of slag buggies or molds and smaller pieces similar to those found on the north slag pile. Included within the pile is a mixture of debris including brick, fire brick, metal objects and stamp sand. Color exhibits greater variability from the black found in the north slag pile. Historical photos, maps and company records suggest this pile began in the 1920's after the land was acquired from the Franklin Mining Company and an elevated tram system was expanded to reach this area.

East Shoreline Slag Pile

The smallest slag pile (east shoreline slag pile) is located east of the dockside warehouse, at the end of an elevated tram trestle, near the shore of Portage Lake. This slag pile curves and slopes upward as it once functioned to support a tram line between the casting shed and the elevated tram trestle. Although rails are no longer present several wood ties may still be seen today and its former use is still evident. Included within the pile is other industrial debris like fire brick, structural brick, coal ash, and many iron artifacts. Its construction date is unknown but it is presumed this pile began with the expansion of the tram in 1923.

- **Open spaces**

There are four primary open spaces evident at the Quincy Smelting works that require further explanation.

Northern Open Space

North of the railroad grade and south of M-26 lies an open area east of the north slag pile. This area is gently sloped and features stamp sand deposits and vehicle circulation routes. Historic photos or maps do not indicate this area was used for anything except anticipated eastward expansion of the north slag pile.

Central Open Space

Southeast of the elevated trestle approach to the mineral house and east of the casting shed and dockside warehouse lies an open space that was once occupied by a semicircular approach of a tram line to the dockside warehouse. Although evidence of the tram line approach has been altered, foundation remains from two structures no longer present are still visible. The area has been bisected by grading and installation of the previously mentioned fence installed during EPA's remediation efforts.

Salt Storage Area

The southeastern corner of the site contains an open space defined by the shoreline and the east slag pile. Within this area is a circular drive and a concave asphalt pad that is approximately 125 meters in diameter and nestled into the surrounding stamp sand. This area was previously used for barges with conveyors to offload road sand for the Houghton County Highway Commission in the 1980's. From here the material could be loaded, transported and distributed to other areas.

Southwest Open Space

The southwestern corner of the site is an open space positioned between historic buildings and the Portage Lake. This area is flat and was historically associated with the presence of a coal dock, tram lines, a slag shed, scale house and other features no longer present. Evidence of these uses may still be found within the varied soil deposits and artifacts in this area.

- **Soil composition**

  The Quincy Smelting Works was constructed on a site created entirely by fill placed in the Portage Lake. The land is documented as man-made, the result of two previous companies dumping waste stamp sand into the Portage Lake to develop their own stamp mills. Since the site is not part of the original shoreline the composition should be noted as hard packed stamp sand accrued between 1860 and 1898.

  On the surface this site lacks soil typically found in natural environments. Instead, the ground plane is composed of a mixture of stamp sand, finely crushed slag, coal, coal ashes, limestone, iron ore, mould sand, and structural debris like brick, mortar and wood. This mixture provides a gritty industrial feel that further conveys the character of the site's former use and limits the growth of vegetation except where soil has accumulated or become intermixed with the coarser rock and mineral elements.

  Below the surface of the site there is likely to be little or no clay layer or bedrock for considerable depth. Because of the way the site was constructed with deposits of stamp sand it is possible that artifacts from the stamp mill or dock remnants remain buried in the soil.

- **Loading Dock**

  The construction of the concrete loading dock began in 1898 following shoreline dredging and once support piles were driven. The concrete we see today was installed later, in 1909. While the concrete is generally in poor condition, it continues to reflect the area intensively used for loading and unloading of copper and supplies. Numerous wood pilings continue to mark the location of the wooden dock structure that once allowed ships to dock and facilitated the exchange of copper and supplies.

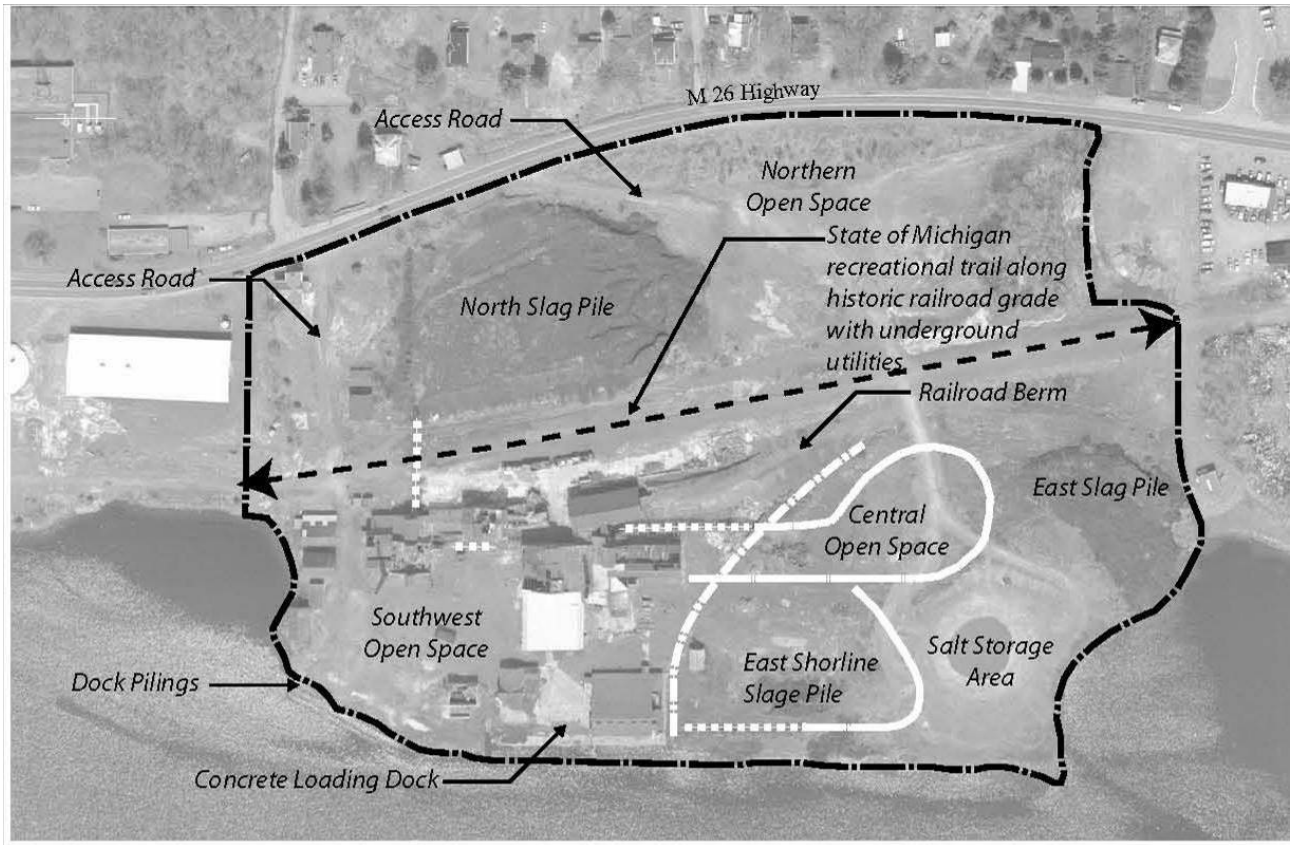
- **Structures and Artifacts**

  The Quincy Smelting Works Site continues to be rich with historic structures and artifacts that communicate its historic use and significance. To better understand the individual structures, and their respective roles on the site, please reference the 2002 *Quincy Mining Company Smelting Works Historical Land Use Survey* prepared by Dr. Patrick Martin and Gianfranco Archimede of Michigan Technological University.

  Artifacts are generally described as widely distributed and greatly varied on this site. They range from small hand tools, mechanical fasteners and personal effects to large industrial carts, molds and fixed machines or equipment. Many are rare or uniquely crafted for this site and its operation. The presence of artifacts in the landscape adds a human scale element to a large gritty, industrial place. Lacking a complete inventory of artifacts leads to the suggestion that photographs may offer the best opportunity to understand these elements and how they enrich the industrial landscape.

- **Shoreline**
  The EPA also conducted a site remediation project that involved placing geotextile fabric and rock rip-rap armoring along the shoreline east of the dockside warehouse. Additional work is presently being considered as part of a site re-use and environmental remediation planning effort conducted by EPA and their consultants.

- **Adjacent Uses and Storm water**
  Adjacent property uses include the Houghton County Road Commission facility, Mont Ripley downhill ski area, a salvage yard, and marina. Storm water from the ski hill previously ran through the smelter site undirected. A recent EPA project installed culverts with large rock aprons below the existing railroad grade to channel and direct the storm water, preventing further negative impacts to the smelter site. Check dams were also installed downstream to slow water movement and trap sediment before entering Portage Lake. This effort is also being re-examined in the course of recent EPA planning efforts related to site re-use and environmental remediation.



Note: See HAER Drawings (1920 Site Plan) for building names and locations.
Ground conditions that contribute to industrial site character are described in the report narrative.

Figure 3- 32: Character Defining Landscape Features – Quincy Smelting Works



Figure 3- 33: View of the Quincy smelter and the north shore of Portage Lake (source: QEA)



Figure 3- 34: Looking northwest toward chain link fence encircling the Quincy smelter core, downhill ski operation in background (source: QEA)



Figure 3- 35: View looking east from the Quincy smelter railroad grade toward slag pile and former salt storage area (source: QEA)



Figure 3- 36: View looking west toward extant buildings at the Quincy smelter (source: QEA)



Figure 3- 37: North elevation of the cupola furnace building at the Quincy smelter (source: QEA)

Quincy Mine Office and Superintendents House landscape character area

The Quincy Mine Office cultural landscape is located in the southwestern portion of the Quincy Unit. The 4.36 acre parcel is owned by the National Park Service and was defined and evaluated in a cultural landscape inventory prepared by the Midwest Regional Office in 2006. The site includes the Quincy Mine Office, a two story building displaying elements of both Richardsonian Romanesque and Classical Revival styles. The building is located beside U. S. 41 (see Figure 3-38). Although U.S. 41 was realigned near the building, a trace of the historic route remains and serves as a parking area. Concrete walks from the historic period connect the old road with the building. Other historic features on the property include an in-ground poor rock utility trench and a stone building foundation. In addition, there are remnants of a short sandstone curb/wall and portions of a historic wood picket fence. The area immediately surrounding the Mine Office consists of lawn and the northwest portion of the property behind the building is wooded. Rows of trees are present running perpendicular to the road as they once separated historic land uses and defined the property boundaries. A portion of the historic Quincy Mining Company surface works is visible from the property. In addition, the property affords long, fenestrated views of Portage Lake and the Huron Mountains to the southeast.

The Quincy Mine Agent's House/Superintendent's Residence is located on the northwest side of U.S. 41, across the highway and north of the Michigan Department of Transportation (MDOT) wayside. It is a private residence, and contains extant landscape features including a concrete walk, wooden fence and vegetation along the former county road trace. Within the property mature shade trees are present along with a gravel drive, garage/outbuilding and remnants of a fence surrounding the property.

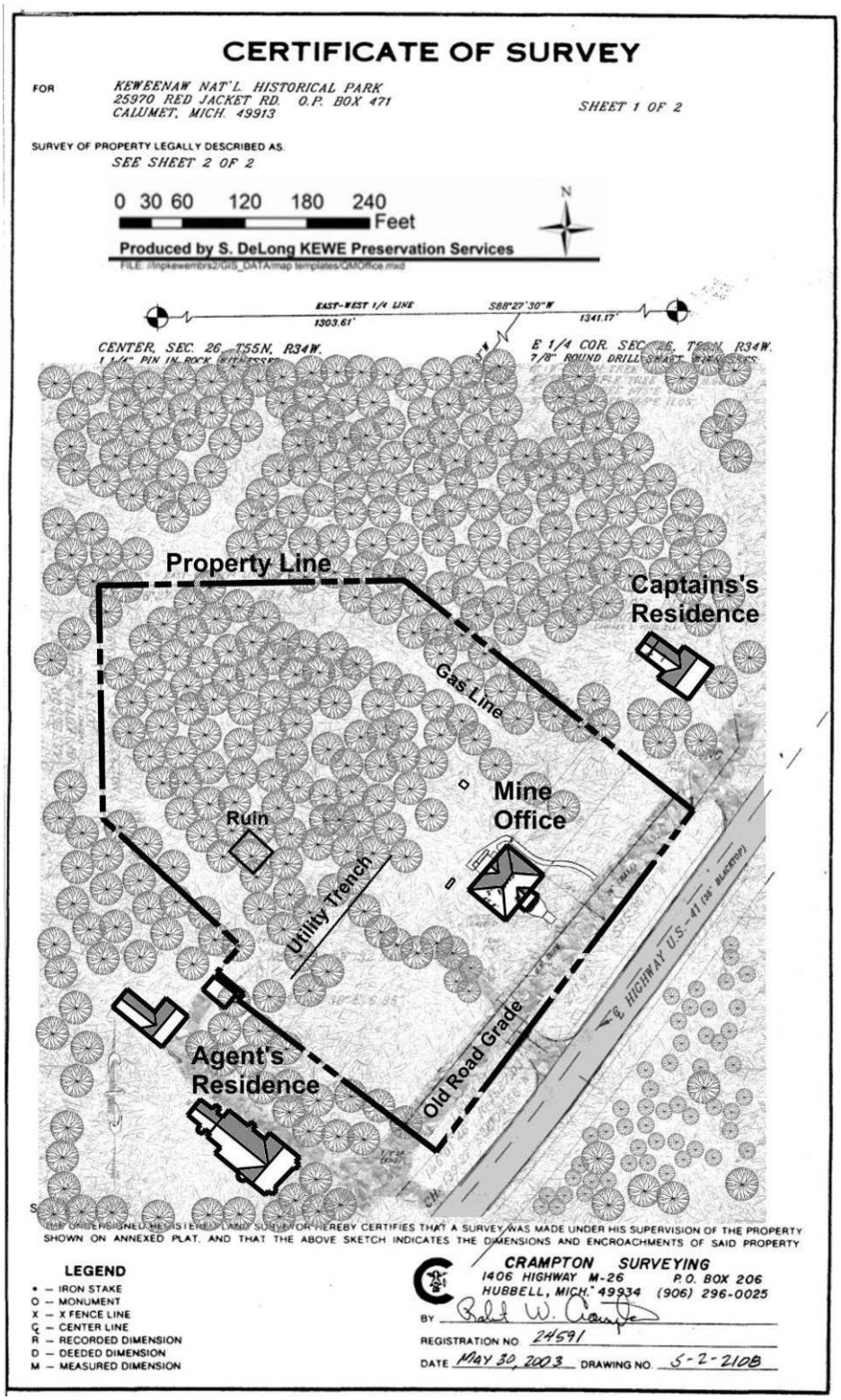


Figure 3- 38: Quincy Mine Office Cultural Landscape, Existing Conditions, 2006 (source: CLI, Quincy Mine Office, MWRO)

Quincy Dryhouse landscape character area

The Quincy dryhouse is located on the northwest side of U.S. 41, directly across the road from the Quincy Mine site (see Figures 3-39 through 3-44). This area is divided by the No.2 Road, which leads from U.S. 41 to Frenchtown Road. The area contains the foundation and partial walls of the dryhouse, as well as foundations of a mine captain's office and several houses . The dryhouse and other foundations were stabilized in 2005. The repair mortar offers greater visual contrast against the basalt stone than unrepaired or unstabilized portions of the structure, however, time and weathering may reduce the contrast in materials. The mortar used for these repairs was carefully selected to ensure that it would not damage historic materials. In order to stabilize the dryhouse ruin, a mortar wash was applied as a cap. Globs of mortar remain inside and outside the structure—left over from the stabilization effort. The area is also home to a few contemporary features. A radio tower and three small service buildings are located to the northwest of the dryhouse (see Figure 3-42). A large, green "Portage Health" sign is located near the intersection of U.S. 41 and Campus Drive (see Figure 3-44) at the former bathhouse site. The sign negatively impacts views of historic resources and their setting on Quincy Hill.

The area between the dryhouse and the former bathhouse site is characterized by uneven, rocky ground with rock outcrops, residential ruins, and archeological deposits (see Figures 3-43 and 3-44). The majority of the locale is covered with herbaceous vegetation including grasses, yarrow, leadplant, goldenrod, aster, rose, raspberry and sweetpea. Woody plants present include successional and mature lilac, maple, ash, and poplar. Although the vegetation obscures views of the historic home foundations and ruins, views to the Quincy shaft-rockhouse and other structures, as well as Portage Lake, are prominent in the vicinity. This area is crossed by several dirt paths and roads that can be linked to circulation routes shown on historic company plans.



Figure 3- 39: Northeast interior view of dryhouse foundation with No. 2 shaft-rockhouse in background, 2006 (source: QEA)

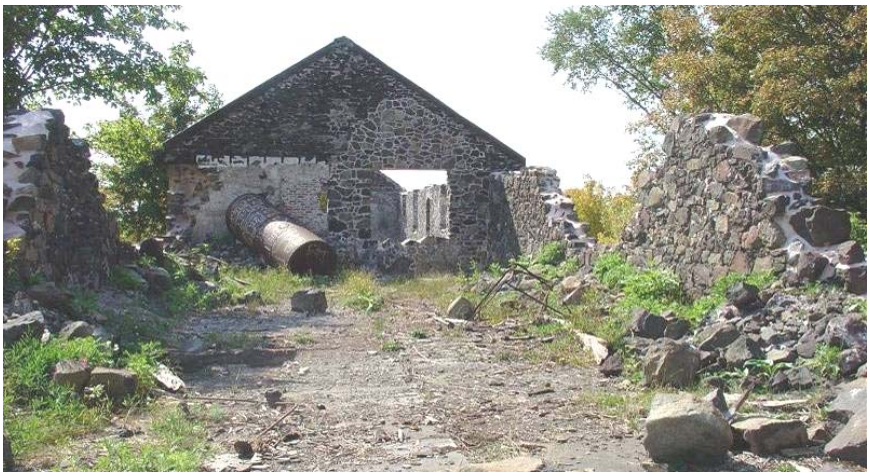


Figure 3- 40: View looking south at interior of dryhouse foundation, 2006 (source: QEA)



Figure 3- 41: View facing south interior of dryhouse foundation after stabilization, 2006 (source: QEA)



Figure 3- 42: View looking west toward radio tower and small service buildings near the Dryhouse Foundation, 2006 (source: QEA)



Figure 3- 43: View looking northeast toward the Quincy Mine Site from across U.S. 41, 2006 (source: QEA)



Figure 3- 44: View looking north toward the Portage Health sign and surrounding landscape at the intersection of Highway 41 and Campus Drive, 2006 (source: QEA)

No. 8 landscape character area

The No. 8 landscape character area is located in the northern portion of the Quincy Unit at the end of Mine Street (see Figure 3-45). Positioned on the east side of U.S. 41, the area is separated from the road by dense successional vegetation. Mine Street is an asphalt road that is in poor condition. Historic resources located in this area include the No. 8 headframe and hoisthouse, as well as a large dryhouse/storage building (see Figures 3-46 through 3-47). Southwest of the headframe are extensive remnants of historic structures, including large drylaid poor rock walls with decaying wood beams and other remnants of the mining operations. A historic streetcar grade is visible in the area. Northeast of the headframe, remnants of the mining activities include a poor rock pile, disturbed ground and scattered refuse piles (including large pieces of concrete and steel). The poor rock pile has evidence of recent extensive digging. There are overhead electric lines and power poles on the east side of Mine Street and a utility substation with three large transformers enclosed in a chainlink fence on the north side of the storage building.

This area was re-used and altered by Homestake during their 1976 mining operation and therefore provides a more recent view of copper mining on the Keweenaw than the No. 2 area. Vegetation growing here is mostly deciduous volunteer species, with some fruit trees.

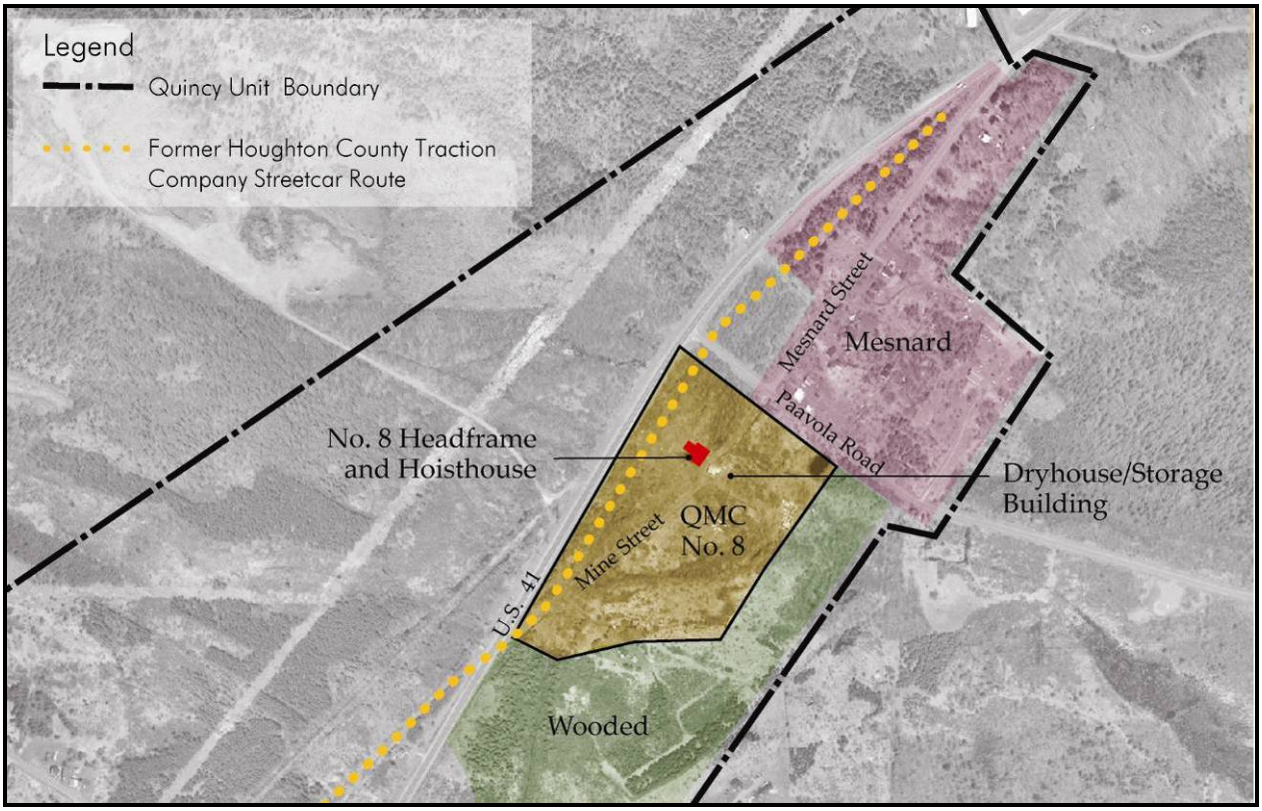


Figure 3- 45: No. 8 Landscape Character Area



Figure 3- 46: No. 8 headframe and hoist house at No. 8 (source: QEA)



Figure 3- 47: Dryhouse/Storage building at No. 8, 2006 (source: QEA)

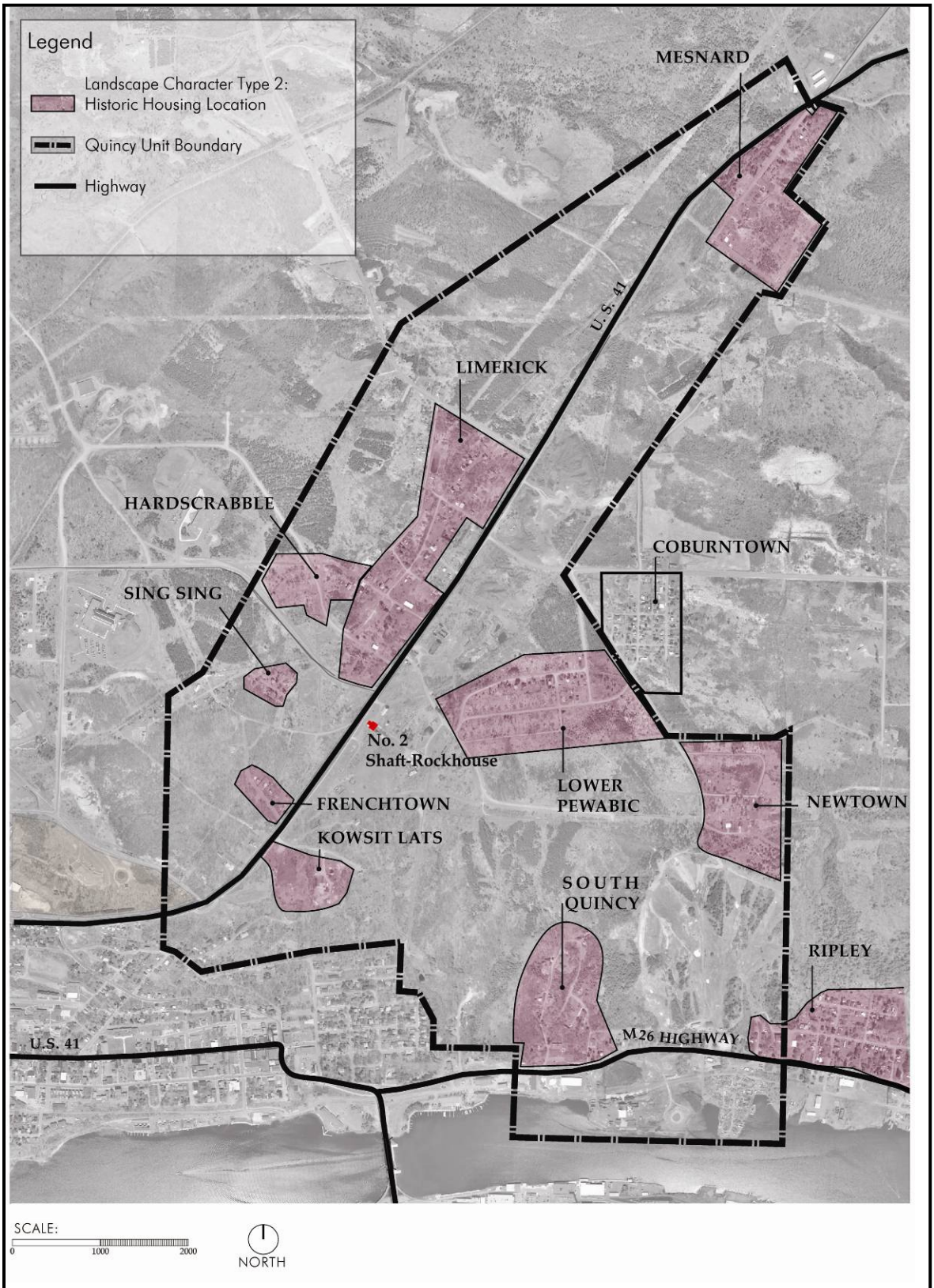


Figure 3- 48: Landscape Character Type 2 – Historic Company Housing Locations

Landscape Character Type 2 – Historic Company Housing Locations

Remnants of several historic company housing locations exist within the Quincy Unit (see Figure 3-48). These active community neighborhoods also represent a significant group of cultural resources. Areas of company housing portray the theme of corporate paternalism and they serve as reminders of day to day conditions of the lives of the people who worked for the company. In addition, they symbolize the discrepancy between treatment of low-level mine workers and managers by the Quincy Mining Company. They also serve as reminders of day to day conditions of the company's employees and their families. Finally, they help to relate the story of immigration and ethnic settlement in the Keweenaw region.

The remnants of company housing locations within the Quincy Unit display a variety of conditions. Some have been updated to improve occupant comfort at the expense of integrity while several are occupied but need improvements. Others are vacant and dilapidated. Overall, the resources related to worker housing provide valuable information about the historic conditions within the Quincy Unit. The historic housing locations present include Limerick, Hardscrabble, Kowsit Lats, Lower Pewabic, Sing Sing, Frenchtown, and Ripley. The locations and characteristics of each of these neighborhoods are described herein. Although not a company housing location, Coburntown is also described herein due to its close proximity to and interrelated use of this historic mining community.

Limerick landscape character area (and adjacent area)

The Limerick location is a rugged residential locality of mixed character connected by a grid of streets (see Figure 3-49). Some properties within the location convey a strong sense of history through their integrity and setting (as seen in Figure 3-50) while others introduce layers of varied land uses, building additions and landscape alterations unrelated to their historic character.

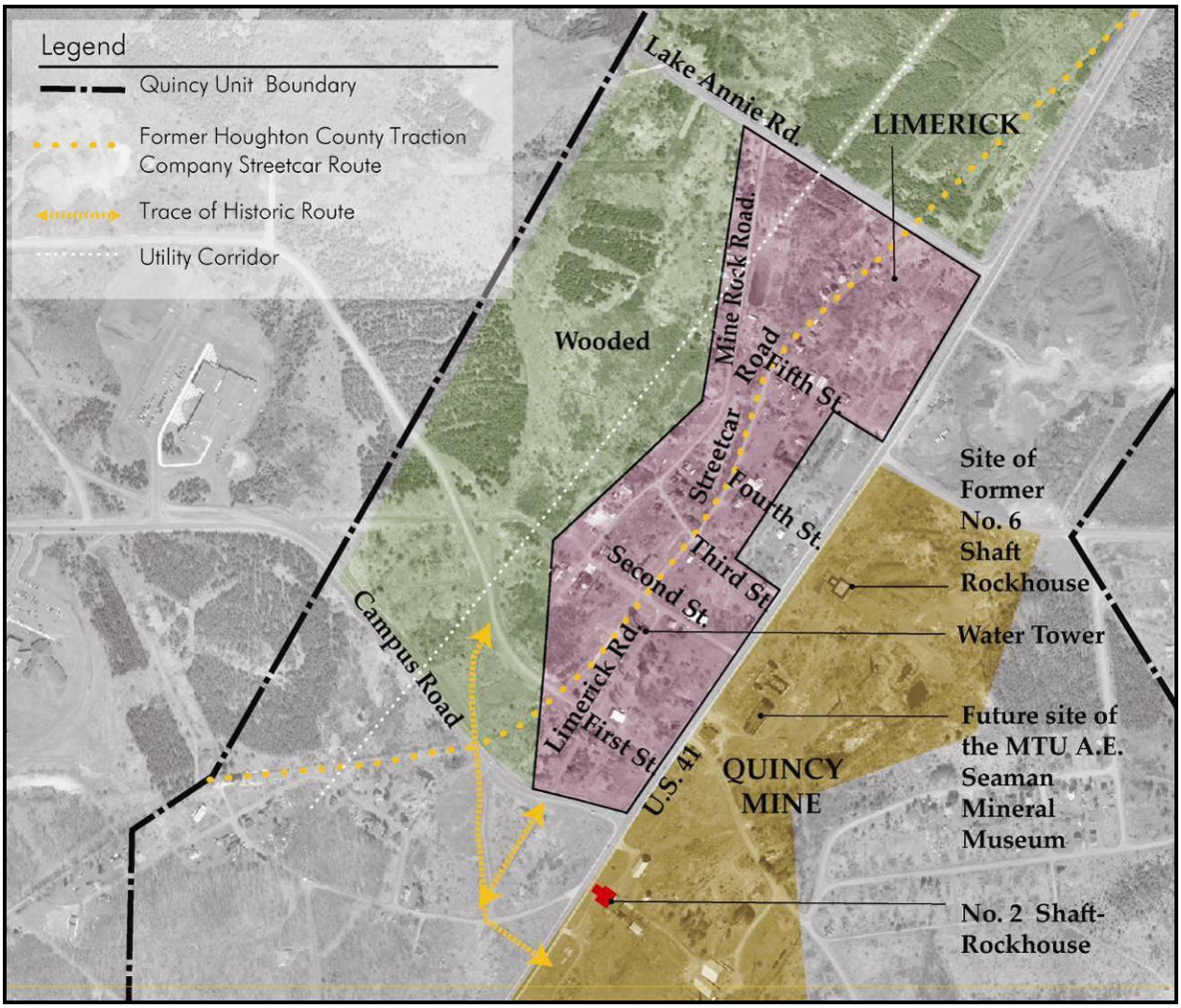


Figure 3- 49: Limerick Landscape Character Area

In some areas vegetation screens new and modernized buildings that appear out of scale and inconsistent with the pattern of historic structures and landscape features. Some properties have large mowed lawns resulting in open views that help to visually link spaces together. However, numerous non-historic landscape features relay a character different from that present historically. Table 3-7 offers general characteristics of the individual streets within the area.

The Limerick area is bordered by Campus Road, Lake Annie Road, U.S. 41, and Mine Rock Road. It includes historic residential structures and landscape features including houses, a

church, roads, and remnants of the former Houghton County Traction Company street car route (see Figures 3-49 through 3-53). The former route of the streetcar has been converted to a road in some areas and abandoned in others. Non-historic elements present include large, metal-clad storage buildings, houses, a water tower compatible in design with its surroundings, and roads that vary in their width and surface material. Vegetation includes Lombardy poplars that form distinct lines along portions of streets in the neighborhood. Also present are apple trees, mature lilac, young lilac, fir, sumac, and maple. The apples are sporadically spaced and do not spatially imply the locations of former orchards. Herbaceous species identified on site include leadplant, yarrow, snowberry, goldenrod, aster, sweet pea, and Virginia creeper.

At ***Streetcar Road*** the majority of the residences are historic, occupied, and in good condition (see Figure 3-51). This is a small, dense, rural residential street with play areas, outbuildings (mostly non-historic) vegetable gardens, flower beds, lawn ornaments, and successional woodland vegetation surrounding mown lawns.

Lake Annie Road is bordered on the north and south by dense wooded areas displaying a rural character (see Figure 3-52). There are two historic houses at the intersection of Lake Annie and Mine Rock roads that are clad in aluminum siding. Both are two story structures with gable roofs and extensive additions.

Mine Rock Road extends southwest from Lake Annie Road (see Figure 3-53). The eastern portion of the road is bordered on both sides by dense vegetation including mature apples trees, white pine, poplar, and buckthorn. The vegetation opens to reveal a small cluster of houses surrounded by open areas of tall herbaceous species and scattered woody plants. A cluster of homes at the southern end of the road includes ornamental side and backyards with camp sites, play areas and gardens.



Figure 3- 50: Company house at 157 Limerick Road (Emergency Address, 49841), **2006** (source: QEA)

Table 3-7: Characteristics of Streets in Limerick

Street Name	Lane Width	Surface Material	Residential Character	Utilities	Vegetation character	Other features
Limerick Road	Single	Asphalt	Small scale mining homes, closely spaced, historic outbuildings	Water tower	Lombardy poplar and lilac flank the street and yards	Road trace at Limerick and and First streets, views of No 2.
Streetcar Road	Single	Gravel or Paved	Historic homes, grid not strong due to sites where homes are missing and have been replaced with volunteer vegetation	Overhead electric (north block of road only)	West side is woody with maples and box elder. East side is open with lawns, canopy trees and shrubs. Pockets of woody vegetation are present.	Five large painted boulders
Mine Rock Road	Single	Gravel	Mixed historic and non-historic homes with new garage and home structures	Overhead	Mixed – successional woodlands to open fields with garden plots	Large debris piles, open storage – some views to the northern horizon
First Street	Double	Asphalt	Non-historic east of Limerick, historic west of Limerick	Overhead electric (east of Limerick Road)	Herbaceous plants and shrubs with sporadic mixed woody growth including Lombardy poplar, apple, oak, box elder, cedar, pine and lilac	Expansive views to the horizon from the west of Limerick
Second Street	Double	Asphalt	Mixed historic and non-historic homes with new garage and home structures. A church is visible from this area.	Overhead electric crossings.	Mown lawn and taller grasses near water tower, Ornamental vegetation near rectory and mature maples at west end of street	View of Blacksmith shop and water tower, Contemporary street signs in area
Third Street	Double	Asphalt & Gravel	Non historic irregularly spaced residences with multiple non historic out buildings and additions	Overhead	Lombardy poplar, maple and lilac along north ROW, Areas of mown lawn on the south side and a mature spruce on the north	Vacant lot on U.S. 41 and paved drive with ranch-style commercial building, View of smokestack east of U.S. 41
Fourth Street	Single	Unpaved	Non historic residential commercial along U.S. 41	Overhead	Moderately open character defined by successional vegetation and open lawns	Open storage, parking area on U.S. 41, rock pile east of U.S. 41 partially visible
Fifth Street	Double	Paved	Varied historic homes and associated outbuildings	Overhead	Informal plantings, successional woodlands	Topographic relief on hilltop



Figure 3- 51: North portion of Streetcar Road, facing North, 2006 (source: QEA)



Figure 3- 52: View of houses north of Lake Annie Road from the Mine Rock Road intersection, 2006 (source: QEA)



Figure 3- 53: South end of Mine Rock Road neighborhood, 2006 (source: QEA)

Hardscrabble landscape character area

The Hardscrabble housing location is situated immediately north of Campus Drive and west of Limerick (see Figure 3-54). Today this area is void of buildings. The landscape has been disturbed by excavations and regrading. Herbaceous vegetation and successional woody plants obscure former circulation routes and remnants of company housing (see Figure 3-55). A few Lombardy poplar, lilacs, perennials and apple trees may be indicative of the previous domestic activities in this area as they help to delineate residential and circulation patterns. The building foundations of Hardscrabble are only visible within thick pockets of vegetation.

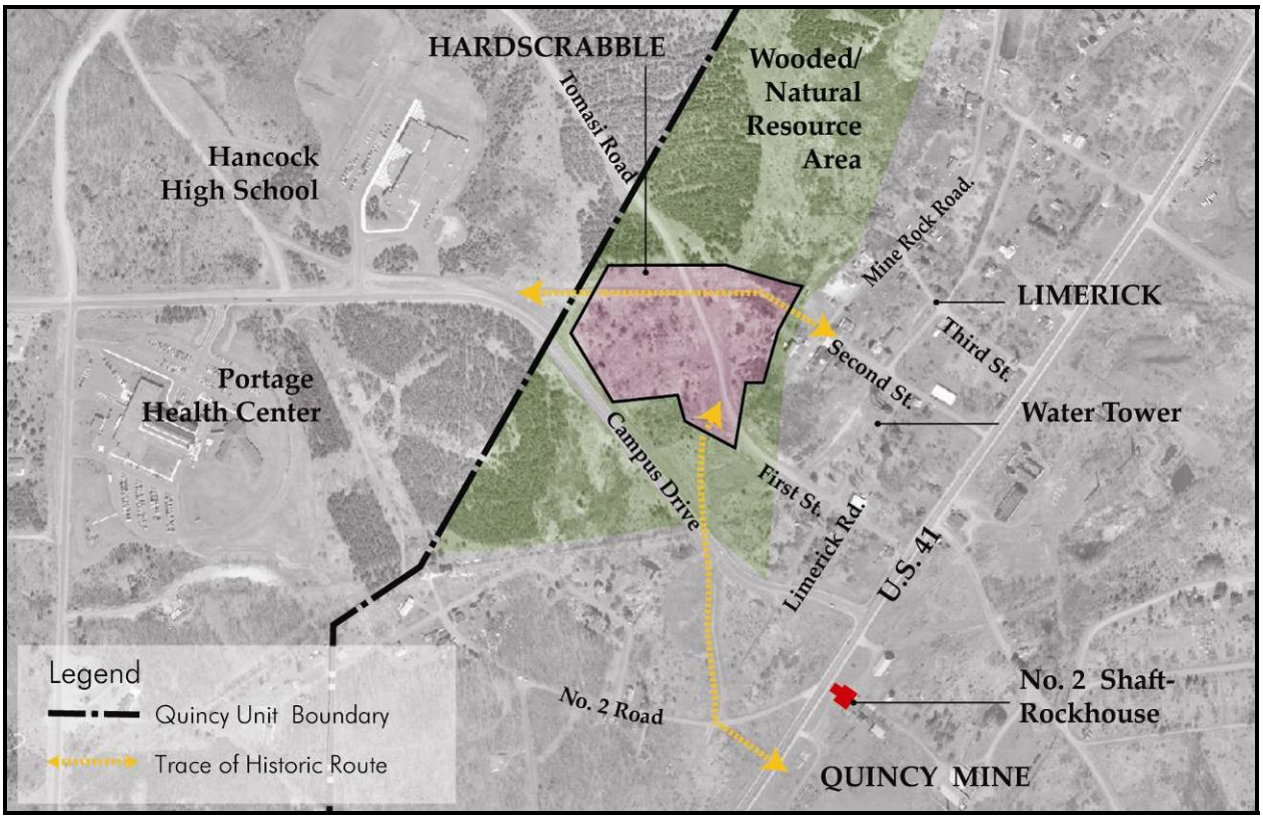


Figure 3- 54: Hardscrabble Landscape Character Area

Much of this area is now owned by the National Park Service. The extensive alterations to the topography diminish the historical integrity of the landscape. As a result the NPS does not currently invite the public to explore the ruins or provide a park experience. Human use and impacts include regular unauthorized use by ATVs and other motorized vehicles. Impromptu ramps and trails have been built for ATV use in areas that may include archaeological resources. The area has also been visited by artifact hunters who have excavated around ruins and former pit toilet sites. Disturbed areas show clear evidence of broken ceramics and glassware, possibly dating to the period of habitation.



Figure 3- 55: Hardscrabble area, 2006 (source: QEA)

Kowsit Lats Landscape Character Area

The Kowsit Lats location is adjacent to Kowsit Lats Road, which extends to the east from U.S 41 directly south of the Quincy Mine site (see Figures 3-56 through 3-61). Today it includes four historic residences, the No. 7 engine house, the wood timber and frame covered water tank structure, and remnants of the rock house. Roundhouse Road is built upon part of the historic alignment of a former railroad grade. To the southeast of these elements is an area including non-historic residences and a house under construction at the time of the site visit. This area includes views of the City of Houghton and Portage Lake. A small gravel parking area near the intersection of Kowsit Lats Road and U.S. 41 is owned by the Michigan Department of Transportation. Directly southeast of the parking area is a large storm drainage detention structure surrounded by mine rock.

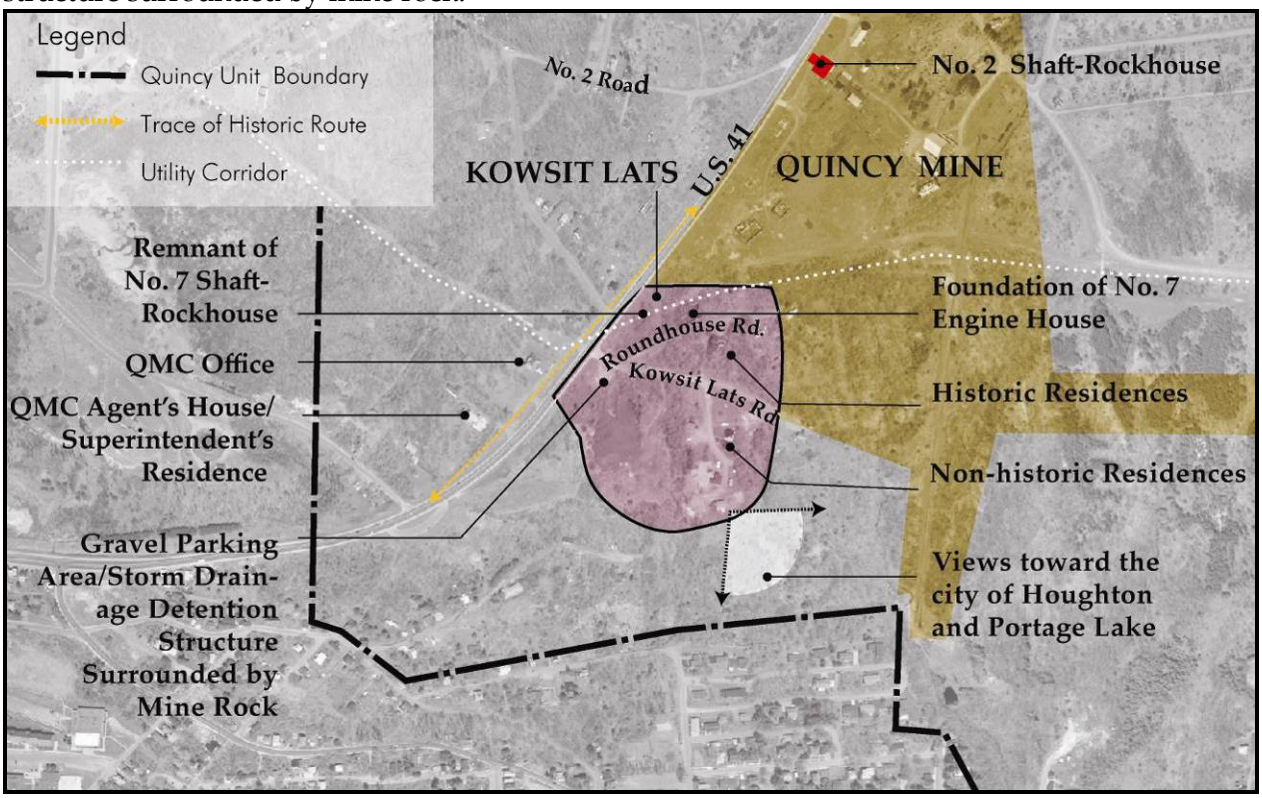


Figure 3- 56: Kowsit Lats Landscape Character Area



Figure 3- 57: Kowsit Lats southern area, 2006 (source: QEA)



Figure 3- 58: Looking west toward engine house on Roundhouse Road, 2006 (source: QEA)



Figure 3- 59: Looking east toward engine house on Roundhouse Road, 2006 (source: QEA)



Figure 3- 60: Historic residence south of Roundhouse Road, 2006 (source: QEA)

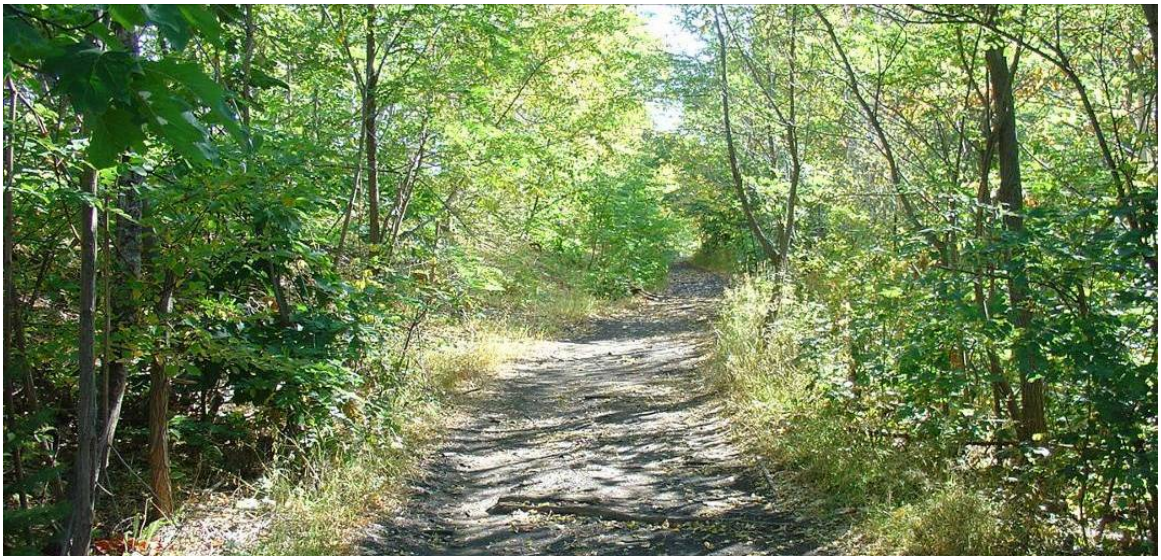


Figure 3- 61: View looking east on former railroad grade used by ATVs, 2006 (source: QEA)

Lower Pewabic Landscape Character Area

As a historic housing location surrounded by woodlands the Lower Pewabic area has a rural/remote character that evokes a sense of history (see Figures 3-62 through 3-65). Beyond the extant buildings are foundations that communicate the evenly spaced historic building patterns. Unlike Hardscrabble, these foundations are very much intact and readily discerned among existing vegetation. Their relatively undisturbed nature conveys a strong presence of the former residential location. Views of the No. 2 shaft-rockhouse from throughout the company housing location convey a strong feeling of association with the mine site.

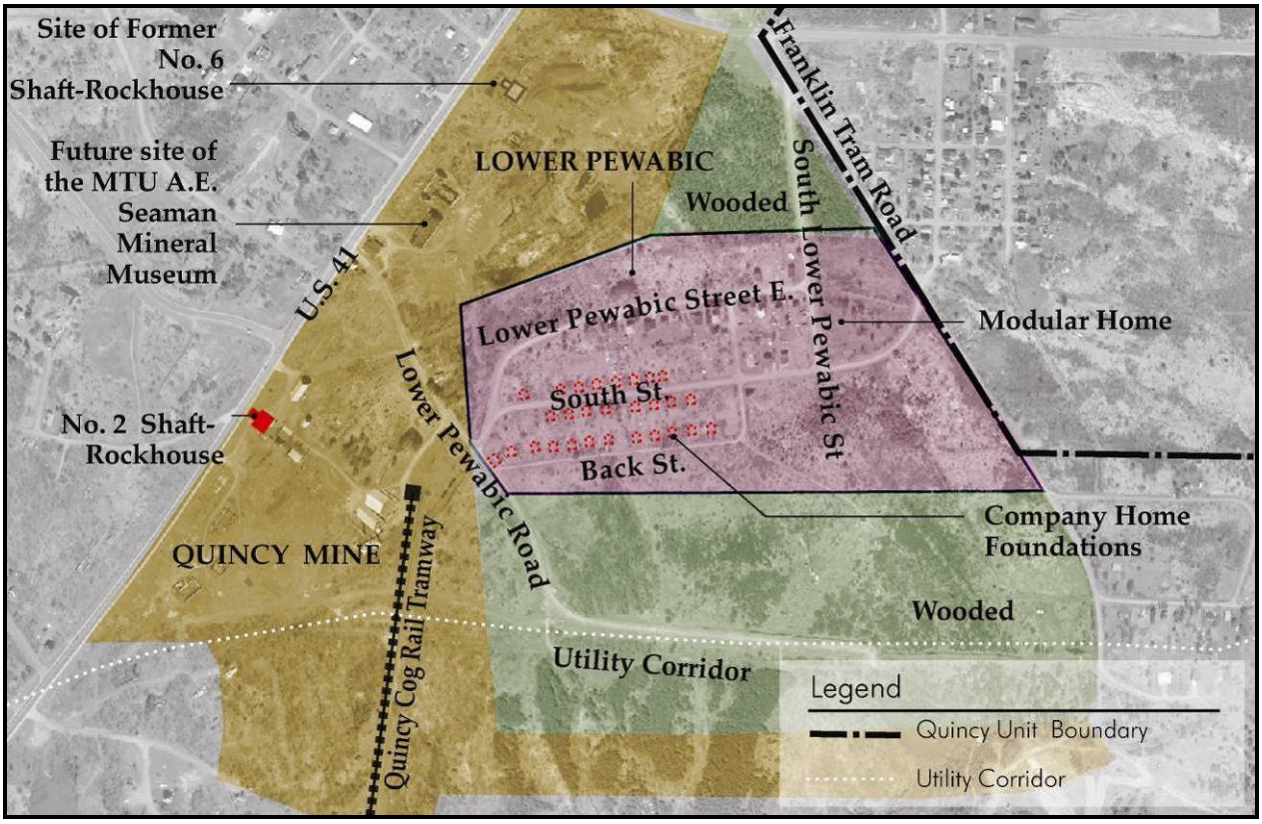


Figure 3- 62: Lower Pewabic Landscape Character Area

This location is east of the No. 2 shaft-rockhouse. It can be reached from U.S. 41 via Lower Pewabic Road. Lower Pewabic includes three parallel streets that are generally oriented east-west, and are connected on each end by shorter streets. The east half of Lower Pewabic Street East is a paved road and it includes a row of evenly spaced two and a half story front end gable residences. The collection of these houses, including their vernacular alterations and associated landscape elements, convey a strong sense of a historic company housing location. Garages, sheds, fences, plantings and mowed areas all help to define property boundaries and communicate ownership in the housing location.

South Street is parallel to Lower Pewabic Street East and located to the south. Like Lower Pewabic Street East, it includes a few evenly spaced two and a half story front end gable residences on the block furthest east. To the west, and bordering First Street to the south, are foundations that mark the evenly spaced pattern of company housing that once existed here. From the foundations one can clearly view the houses along Lower Pewabic East Street, as well as the No. 2 shaft-rockhouse. The remaining stone foundations convey the large size of this housing location. Vegetation located among the foundations includes lilies, lilac, apple trees, Lombardy poplar, small red pines, and a variety of herbaceous species. There are new street signs on some of the streets.



Figure 3- 63: Oblique view of Lower Pewabic, 2005 (source: Rob Wood, Wood Ronsaville Harlin, Inc.)



Figure 3- 64: View west toward No .2 shaft-rockhouse from Lower Pewabic, 2006 (source: QEA)



Figure 3- 65: Lower Pewabic residences, 2006 (source: QEA)

Coburntown Landscape Character Area

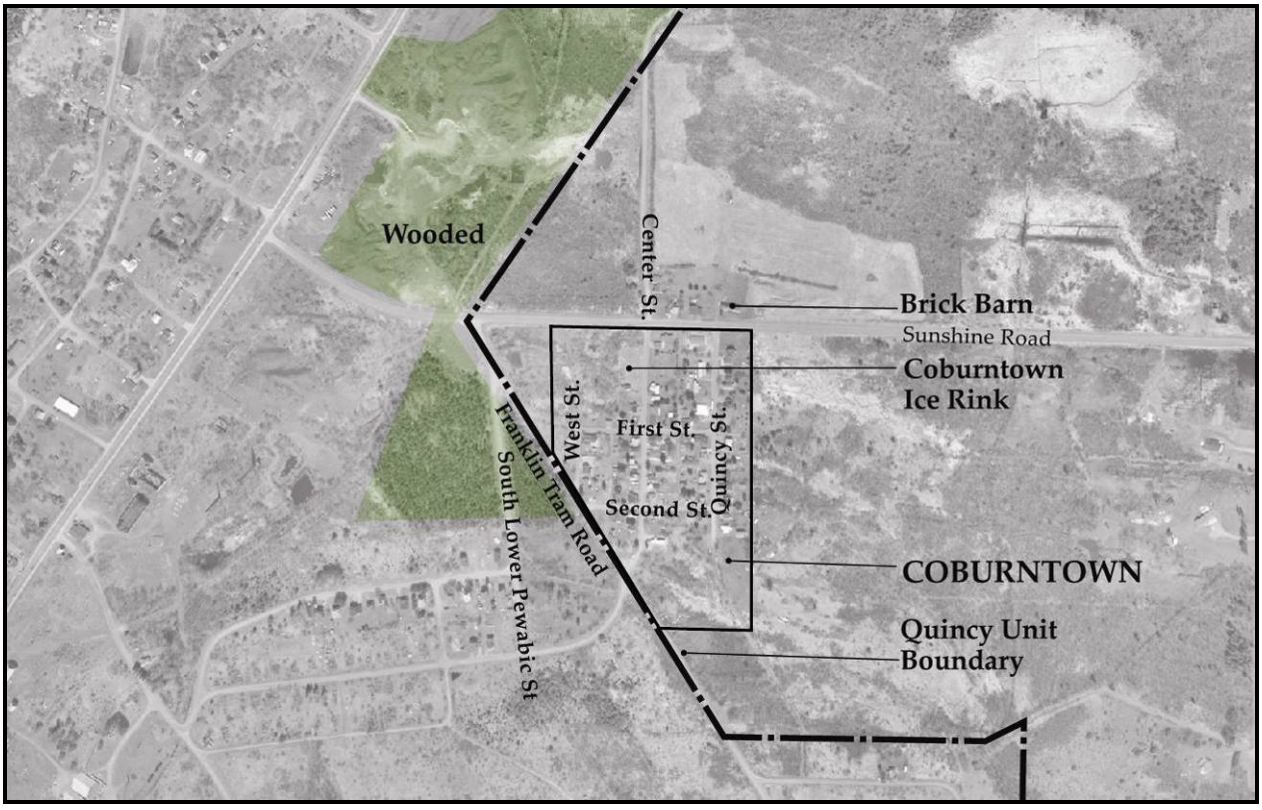


Figure 3- 66: Coburntown Landscape Character Area

Coburntown is located immediately east of and adjacent to the Quincy Unit boundary, Lower Pewabic and Franklin Tram Road (see Figure 3-66). Coburntown is a residential area arranged on a grid pattern of narrow paved streets. It retains a historic feeling, despite the presence of

several intrusions and alterations. As noted earlier, this is a historic location, however it is not a company location.

Quincy Street, in particular, has the feeling of a company town due to the regular rhythm of mining homes facing the street and their compact regular yards defined by hedges, fences, posts and arrangement of woodpiles or stored materials and outbuildings (see Figure 3-67). Foundation plantings of lilies, shrub roses, and other plants are present and often accompanied by lilacs and apple trees as specimens in the landscape. Some of the apple trees are arranged in small orchardlike fashion and this is most visible in a garden between Franklin Tram Road and West Road. Outbuildings are a common rear and side yard occurrence and typically serve as garages, saunas and garden/storage sheds.

Infrastructure is visible in the form of overhead utilities on Quincy and Center Streets, and groups of mailboxes can be seen mounted on posts in some locations. Northwest of First and Center Street is the Coburntown Ice Rink – a flat open grass lot featuring a shed and two poles that suspend lights to support seasonal recreation.

Alterations to this historic setting include the introduction of modern construction materials, building additions, and road signs.



Figure 3- 67: Quincy Street in Coburntown, 2006 (source: QEA)

Sing Sing Landscape Character Area

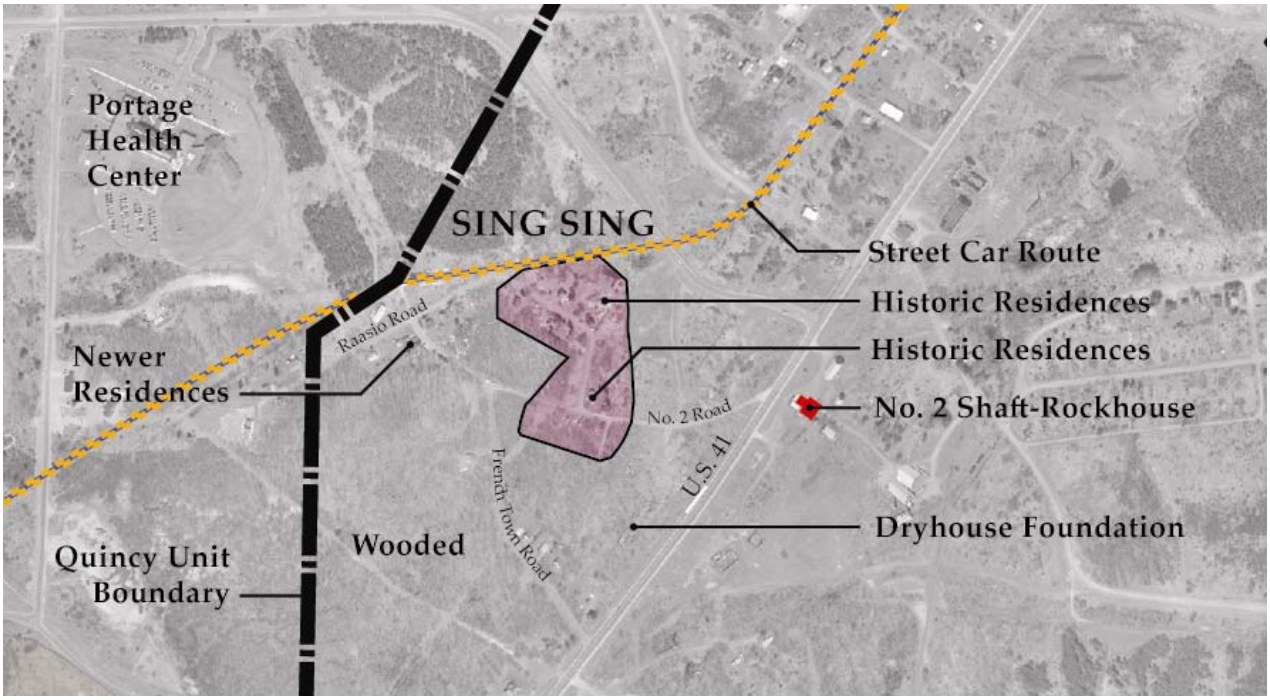


Figure 3- 68: Sing Sing Landscape Character Area

The tiny location of Sing Sing is northwest of the Quincy dryhouse and southwest of Hardscrabble (see Figures 3-68 and 3-69). The historic company housing is settled around an irregular, two lane, asphalt road alignment. This is a contrast to other housing locations that were built upon the traditional street grid settlement pattern. The area includes a small collection of historic homes that are arranged perpendicular and parallel to the roads and feature varied front yard setbacks and lot sizes. The two streets are No. 2 Road and Sing Sing Road. The buildings on No. 2 Road have been altered while the buildings on Sing Sing Road are intact. Spacing is intermittent with obvious gaps between homes (where former houses have been removed) filled by woodlands. Residential lots typically appear as approximately rectangular areas, including a residential structure and associated landscape features, cleared from the surrounding woods. The orderly appearance of the location is supported by regular mowing but lots are less defined by fences and plantings than they are in other historic housing locations.

Landscape features include small outbuildings, wood piles, building foundations and ornamental plantings. Small outbuildings are typically no larger than 200 square feet and primarily used as garages, saunas and sheds. Wood piles for residential heating appear in two forms: neatly stacked and arranged in rows along a property boundary, or piled in mounds, for future stacking or use. Ornamental plantings are sparse but include apple trees or an occasional grouping of lilies. Other vegetation includes mixed successional woodland species of maples, poplars and a few spruce and pines. The historic streetcar route passed through this area, the grade is apparent in some locations.

The nearby Raasio Road includes several newer homes that appear inconsistent with the character of the historic Sing Sing structures. Their spacing, setbacks and angled site arrangement combined with contemporary residential forms, massing, low sloped roofs, and the presence of modern materials, highlight their presence as recent additions to the landscape.



Figure 3- 69: Baakko Residence at 19742 Sing Sing Road, 2006 (source: QEA)

Frenchtown Landscape Character Area

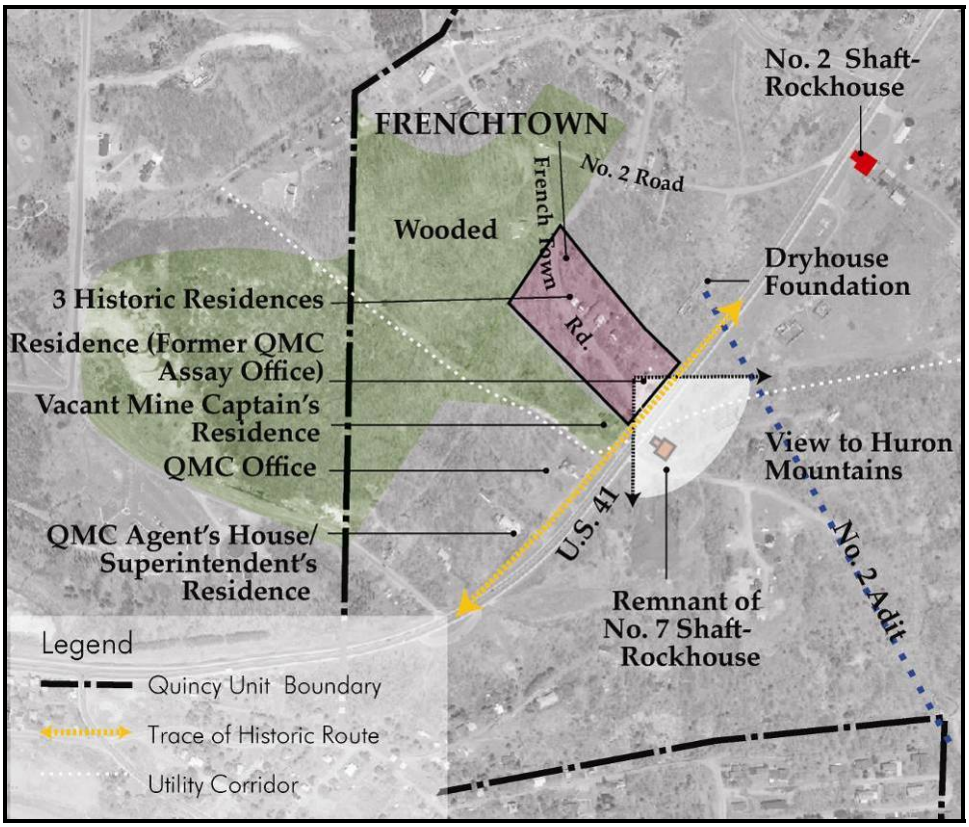


Figure 3- 70: Frenchtown Landscape Character Area

Frenchtown is a small, thickly wooded housing location on Frenchtown Road. The area is located northwest of the intersection of Frenchtown Road and U.S. 41 and northeast of the Superintendent's residence (see Figures 3-70 and 3-71). Frenchtown Road is a two lane asphalt road that connects Sing Sing and Raasio Road to Quincy's mine surface works. Three historic residences, larger than most worker housing built by Quincy, are located on the north side of the road and share similar lot size, orientation and front yard setback. Across the street are small outbuildings used as garages and storage sheds. The homes are surrounded by woodland vegetation including several mature maples, ash, poplar, arborvitae, viburnum and an occasional spruce. Traveling Frenchtown Road toward the mine presents a dramatic view of the Huron Mountains beyond Keweenaw Bay on the horizon. The historic road trace of County Road is evident between U.S. 41 and Frenchtown. South of the intersection of Frenchtown road and U.S. 41 is a vacant mine captain's home that remains with few alterations and displays high integrity, including the mature shade trees presumed to be from the period of occupation (see Figure 3-71).



Figure 3- 71: Mine Captain's home in Frenchtown, south corner U.S. 41 and Frenchtown Road, 2006 (source: QEA)

To the north is a slightly smaller structure that once housed Quincy's assay office but is now a residence. The exterior of this structure has been altered within the last ten years, vinyl siding and a metal roof have been added. Modern windows and doors have replaced the originals and adjusted their openings.

Ripley Landscape Character Area

This housing location is located on the slope north of M-26 (see Figures 3-72 through 3-74). It includes historic homes and some recently constructed residences. Due to the steep topography, many of the properties in this area are built upon cut or fill sections reinforced by retaining walls. These walls are characteristically constructed of poor rock masonry or concrete. Some have thin veneers of mortar applied to them or have been painted to modify their appearance.

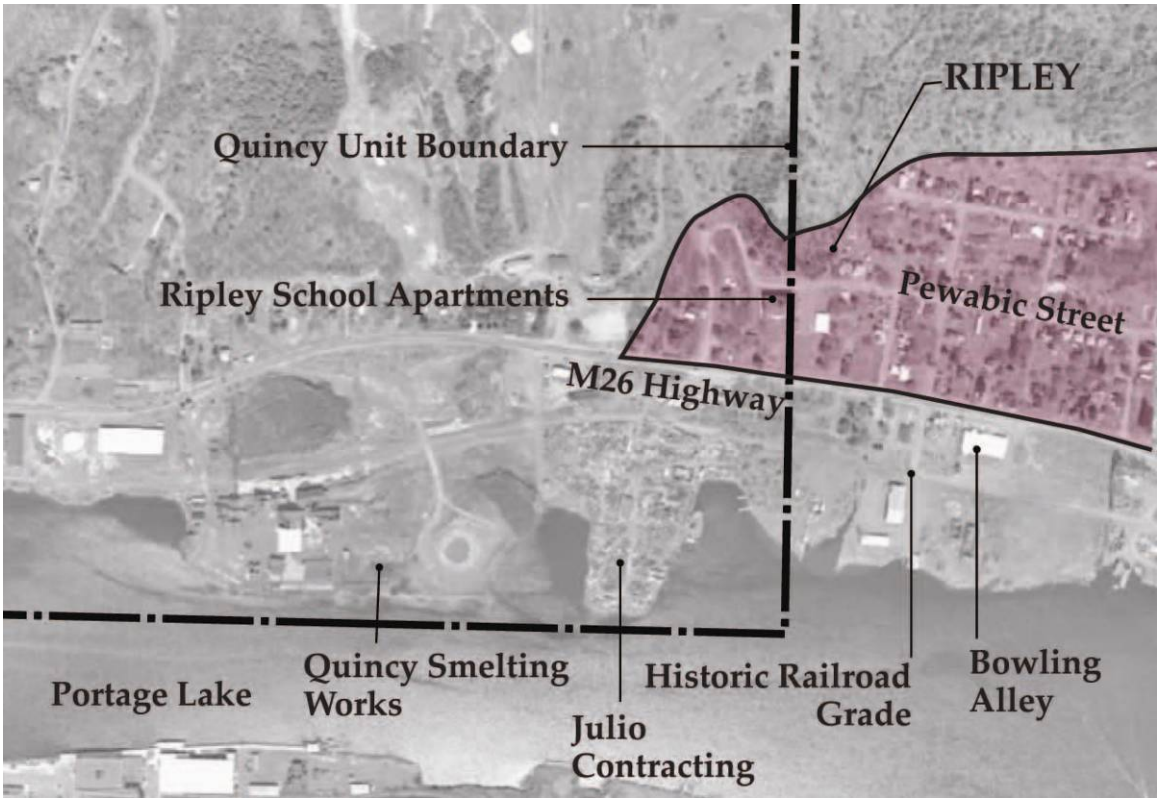


Figure 3- 72: Ripley Landscape Character Area

The historic Ripley school is located at the east unit boundary, west of existing housing. The school has been converted into apartments and reinforces the historic character of the adjacent neighborhood, and provides a strong architectural centerpiece for neighbors.

Ripley is built around a compact grid system of streets oriented north-south and east-west. The homes and lots are compact and establish an urban character with their evenly spaced, uniformly shallow, front yard setbacks flanking narrow asphalt roads. Where garages or outbuildings are present they occupy a small portion of the site and are typically detached. Landscape features include decorative fences, wooden posts, woodpiles, and ornamental plantings including hedges, foundation plantings, vegetable and flower gardens and shade trees.



Figure 3- 73: Looking northwest toward former historic Ripley school, converted to apartments, 2006 (source: QEA)



Figure 3- 74: Ripley historic residence, 2006 (source: QEA DSC06703)

South Quincy Landscape Character Area

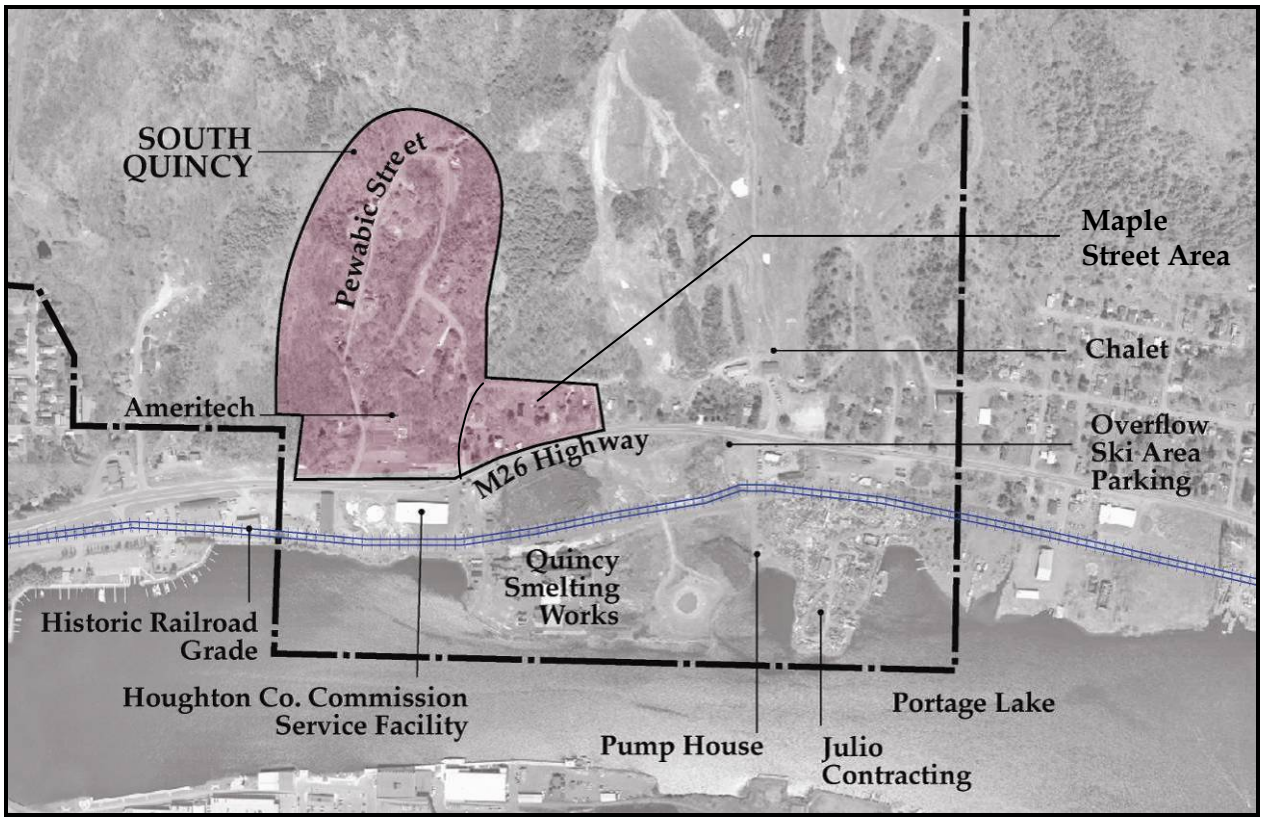


Figure 3- 75: South Quincy Landscape Character Areas

Opposite the Houghton County Road Commission, Quincy Smelting Works and Julio contracting sites, South Quincy is made up of two character types: the Maple Street Area in the southeast corner of the site, and the Pewabic Street area around which the rest of the site is oriented (see Figure 3-75). At Maple Street homes are uniformly spaced and accessed from the rear yard with a consistent setback from the street. The facades face Portage Lake and the smelter site, providing views of Houghton. The buildings are situated on the crest of a steep slope giving the perception of practically sitting on top of the smelter site.

The Pewabic Street area is loosely organized around the loop road in an irregular pattern that responds to the steep topography. The narrow roads in this area are rough, including steep gravel slopes and heavily patched asphalt. Erosion is evident along the sides of the highly crowned travel routes. Varied residential setbacks and orientations to the road, combined with limited sight distance while traveling and steep grades, make first time visitors to this housing location hesitate, especially in winter. A few homes along Pewabic Street feature new additions and garages. Landscape features appear less obvious here as the area is dominated by the surrounding woodland vegetation containing ash and maples with ferns and thimbleberries readily apparent at the roadside. Woodpiles and ornamental plantings, including foundation plantings and the introduction of spruce, balsam and cedar, are also present.

Along M-26 within this landscape character area, a few commercial properties appear out of scale and character with the historic nature of the area primarily due to their building forms, scale, and materials. Michigan Department of Transportation (MDOT) is interested in realigning M-26 in this area, as there have been some accidents.

Mesnard Landscape Character Area

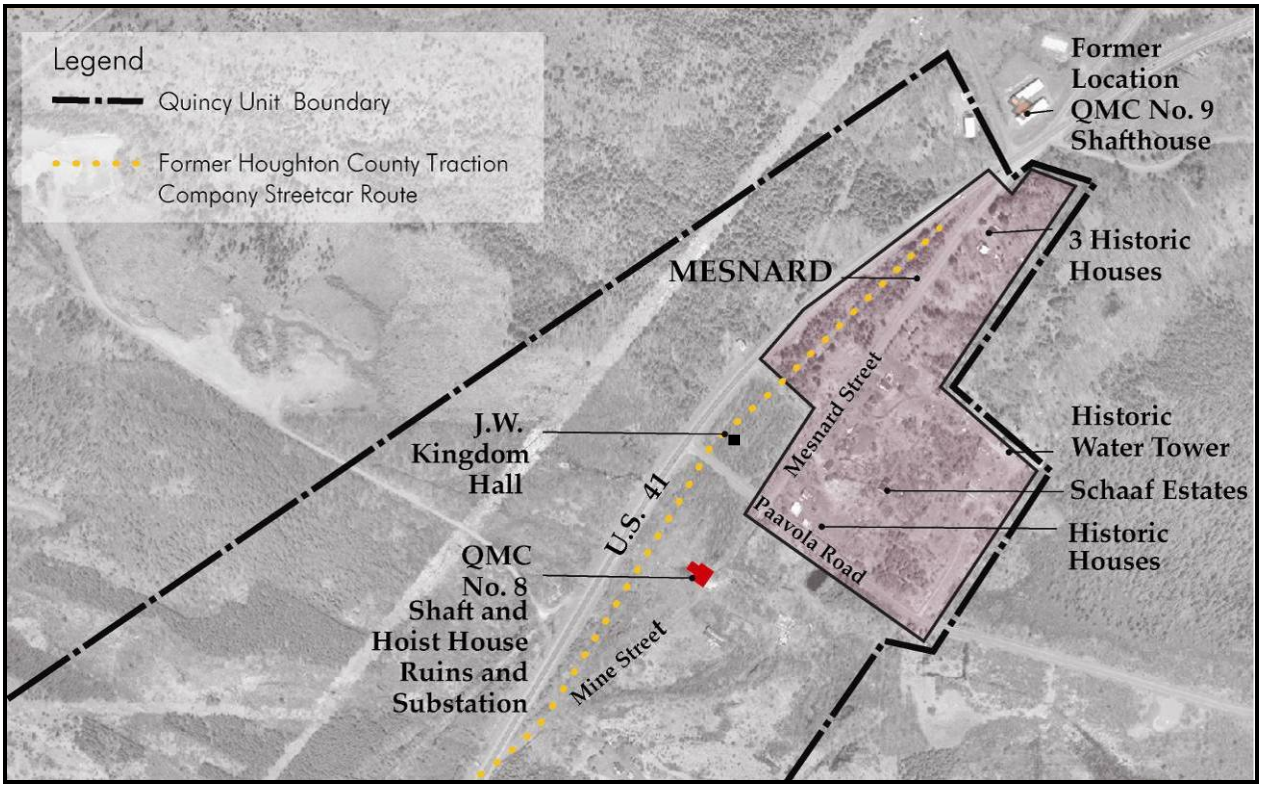


Figure 3- 76: Mesnard Landscape Character Area

Once the northern residential housing location for Quincy, this area is separated from U.S. 41 by dense successional vegetation along Mesnard Street, a two lane paved road (see Figure 3-76). Historically the neighborhood included three rows of housing arranged in a traditional grid pattern. Today all of the residences are located on the east side of Mesnard Street. Three historic company homes at the north end of the road are visible from U.S. 41 during winter months when the deciduous plants have lost their leaves. These have consistent front yard setbacks and outbuildings that serve as garages.

At the south end of the road smaller historic homes and their vernacular additions and alterations still mark the even spacing and arrangement of an earlier time. Some attached garages and additions disguise the otherwise simple gabled roofed company homes that fronted Mesnard Street. Landscape features are modest with occasional ornamental plantings of lilac, evergreens or shade trees and mown lawns surrounding the dwellings.

Between these areas, and to the east, the housing location is heavily altered. Most of the homes in this area have been demolished, including their foundations. Schaaf Estates, mobile homes, and new construction exist on multiple lots, with spacing and arrangement inconsistent with the settlement patterns apparent at either end of the housing location. There are gaps between dwellings that contain mowed lawn or unmaintained volunteer vegetation. A 1916 water tower exists to the east of the housing location. Landscape features include a wooded area to the west, between U.S. 41 and Mesnard Street. Wood piles and a few trees are also present.

Views from Mesnard to the south include the watertower at Limerick, the No. 8 headframe, and the No. 2 Shaftrock house. Overhead utility lines and utility poles are present at the west side of Mesnard Street.

Newtown Landscape Character Area

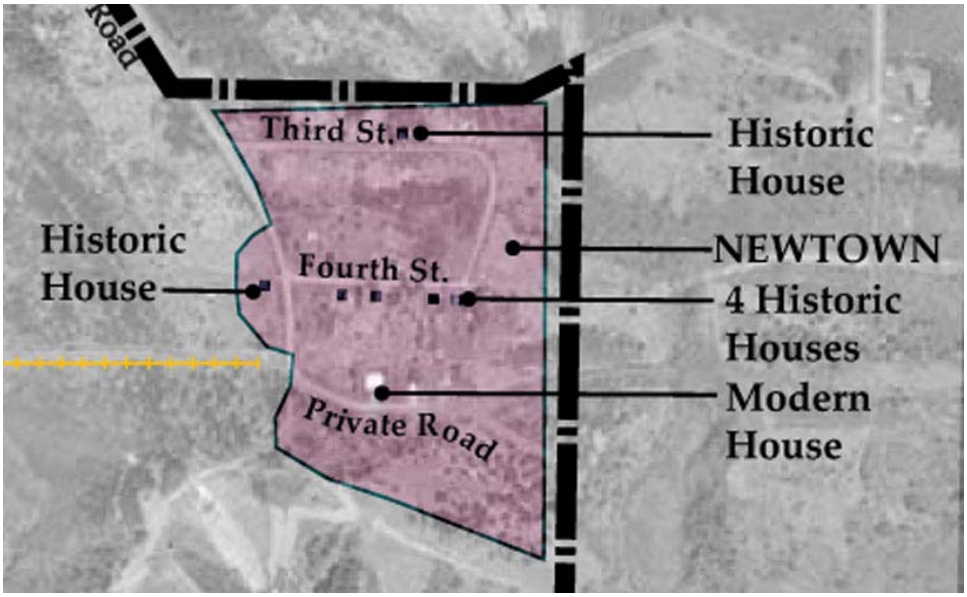


Figure 3- 77: Newtown Landscape Character Area

A small housing location located at the eastern end of Franklin Tram Road, Newtown consists of two gravel roads oriented east-west and connected at each end (see Figure 3-77). Numbered as a continuation of Coburntown, this arrangement of streets forms a loop with historic worker housing. The area is compact, orderly and presents a remote feeling due to its separation from the Quincy mine surface works and contemporary intrusions. Third Street features one historic residence while Fourth Street has five saltbox dwellings interrupted by one modern dwelling. The modern structure is set back well away from the other structures on Fourth Street.

Landscape features include small outbuildings used for garages, sheds and saunas, woodpiles and ornamental and garden plantings. Apple trees are abundant along the side of the road and lilacs are present. Historic Lombardy poplars highlight a gap in housing on the south side of Fourth Street where they frame the view of the previously mentioned large modern dwelling. At the end of the street a garden is visible adjacent to a modern two car garage.

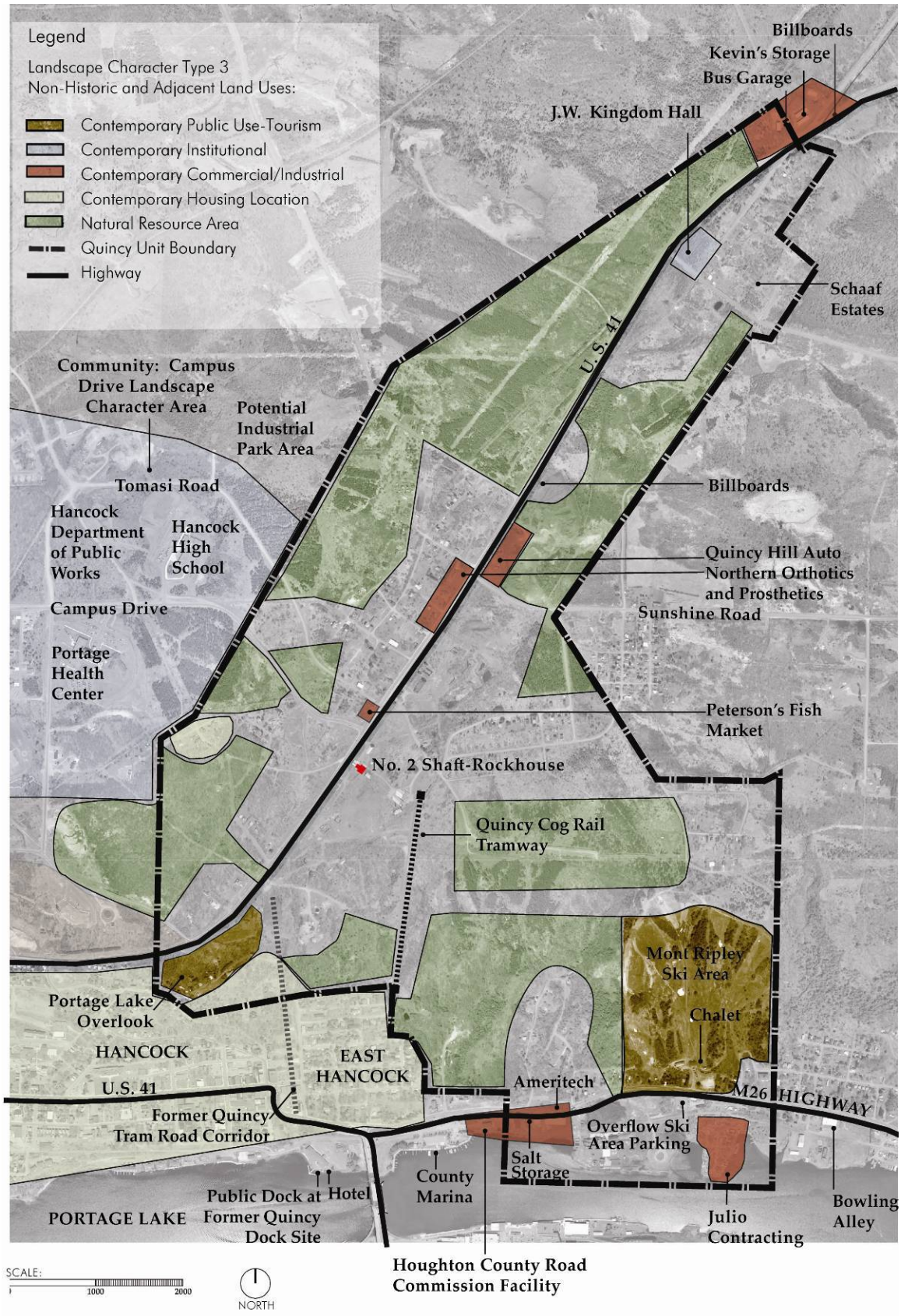


Figure 3- 78: Landscape Character Type 3: Non-Historic and Adjacent Land Uses

Landscape Character Type 3 – Non-Historic Land Uses

Figure 3-78 provides an overview of the character areas discussed in this section.

Hancock landscape character area (adjacent to unit boundary)

Although Hancock grew from the roots of the Quincy Mining Company, the community eventually separated and now stands as a distinct landscape character area with the former historic "Quincy Tram Road" corridor overlaid. Located on the northern shore of Portage Lake, Hancock is situated along the southern slope of Quincy Hill. It has a population of approximately 4500 residents. While historic remnants of the copper mining period are evident, the city has also experienced development and growth in recent decades. As a result, the overall character of Hancock is a mixture of historic and contemporary with numerous retail, business, and educational services. Recent developments include a hotel on the waterfront, rehabilitation of the Scott Hotel, a new city fire hall, high school, hospital and suburban residential developments. New residential neighborhoods are non-historic while some areas, like East Hancock, continue to convey a strong historic character. Currently the waterfront is being developed with various townhouse and condominium projects that do not reinforce the historic community character or mining heritage.

Portage Lake Overlook landscape character area

A parcel of land adjacent to the southeastern side of U.S. 41 at the southwestern corner of the Quincy Unit is owned by MDOT. This property includes a Portage Lake overlook with room for vehicles to pull off the road. Here, motorists encounter signs about the geology and history of the area. The overlook is situated at the brow of the hill and serves as a stopping point for many visitors to the region. Views from this point encompass the Portage Lake Waterway, the lift bridge, Houghton, the Huron Mountains, and a portion of the historic Quincy Mine site, including the No. 2 shaft-rockhouse. The overlook consists of a wide asphalt road edged with wood bollards and a safety rail. There are two features. One is a cut granite slab with engraved text titled "The Keweenaw Waterway" (see Figure 3-79). The text briefly explains the meaning of the word Keweenaw and identifies early European and American explorers to the area. The second feature is an eclectic sign consisting of a carved wood slab on an angled mortared stone base. Two sets of three wood poles of varying heights frame the sign. Also titled "The Keweenaw Waterway," the sign provides visitors with a geographic map and text related to extant copper mining resources (see Figure 3-80). The style, materials, workmanship, and scale of the interpretive signs and other materials at the wayside do not reflect the historic Quincy industrial landscape.

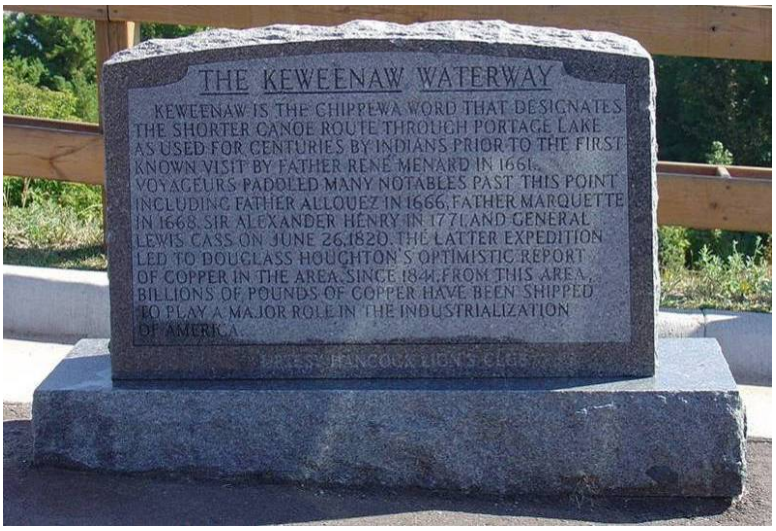


Figure 3- 79: "The Keweenaw Waterway," granite sign at MDOT wayside, 2006 (source: QEA)



Figure 3- 80: MDOT interpretive display at the MDOT wayside, 2006 (source: QEA)

The topography drops off at a very steep slope from the southeastern side of the wayside and climbs at a steep angle to the northeast. For the most part, the hill on the eastern side of the highway is covered with vegetation which hides any remaining traces of the historic mining activities in this area (see Figure 3-81). To the southeast of the wayside, about forty feet below, is a fairly flat terrace that retains a rural character not present near the highway. To the northeast of the wayside a large pile of mine rock has been recently placed by MDOT as part of a stormwater retention system. The view of the rock pile is reflective of the historic character of the hill during more active mining activities (see Figure 3-82).



Figure 3- 81: Panoramic view from MDOT wayside to the southeast, 2006 (source: QEA)

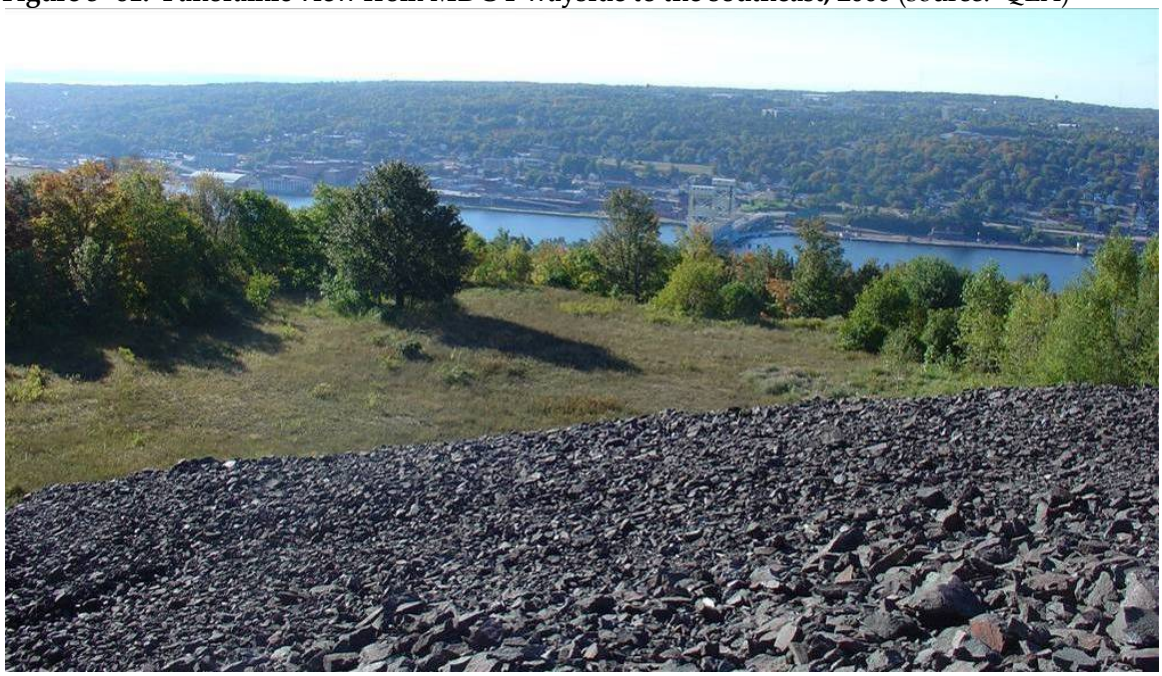


Figure 3- 82: Flat area south of MDOT wayside, view from large pile of mine rocks toward the lift bridge, Portage Lake and the city of Houghton, 2006 (source: QEA)

U.S. 41 Corridor landscape character area

U.S. 41 crosses through the Quincy Unit of Keweenaw National Historical Park roughly bisecting the portion of the unit that runs from Hancock to Mesnard at a northeast/southwest angle paralleling the geology that determined mine locations. The road was preceded by a historic route named Old Calumet Road and later County Road. It provides the major north-south transportation route for the peninsula. Today, the road corridor through the Quincy Unit presents a multitude of characteristics, many of which are not compatible with the historic character of the unit. Historic features along the road include ruins, buildings, industrial artifacts, roads, rail grades, vegetation and scenic views, many related to former mining operations (see Figures 3-83 and 3-84). Much of the road is bordered with second-growth vegetation that partially obscures the views of poor-rock piles and mining related landscapes containing ruins, building and small scale features like fences, posts and artifacts once common in the area (see Figure 3-85). Non-historic features include commercial storage facilities, pine plantations, modern signs, billboards, automobile dealers and repair shops, a church, and a fire department (see Figures 3-86 through 3-88).



Figure 3- 83: View looking west at U.S. 41 at the intersection of Kowsit Lats Road, the Quincy Mine office is on the left, 2006 (source: QEA)



Figure 3- 84: View of U.S. 41 facing northeast toward the Quincy Franklin Township Fire Department building (far right), Quincy Machine Shop (behind Fire Department), Quincy Blacksmith Shop (left of Machine Shop), and a former miner's residence on the left of the road, 2008 (source: QEA)



Figure 3- 85: Poor rock-pile west of U.S. 41, south of the Quincy dry house ruins (source: QEA)



Figure 3- 86: U.S. 41 pine planting, 2006 (source: QEA)



Figure 3- 87: Storage facility and billboards west of U.S. 41 at the northern end of the Quincy Unit along U.S 41 (source: QEA)

Campus Drive landscape character area (adjacent to unit boundary)

Campus Drive is a bi-directional, two lane, asphalt road that bisects the northern portion of the NHL district traveling west from U.S. 41, opposite the Quincy Mine entrance (see Figure 3-88). Flanked by historic and volunteer vegetation, Campus Drive was constructed to provide vehicular access for increased development in the area. A new high school and the Portage Health System facility, as well as residential areas and an elementary school are present along the route. The development of the road altered the topography of the area and also bisects secondary historic circulation network of gravel roads, paths and a streetcar route. Subsequent to its development, Portage Health Care System demolished the former Quincy bathhouse creating a gap in the historic fabric upon the hill. Later they erected a large internally lit sign and MDOT added blinking yellow traffic lights.



Figure 3- 88: The intersection of Campus Drive and U.S. 41 viewed from the southwest, 2006 (source: QEA)

Houghton County Road Commission Service Facility landscape character area

Located directly west of the Quincy Smelting Works, the Houghton Road Commission property includes several large buildings including some historic structures that were previously industrial facilities, a road salt storage area and site circulation along Portage Lake Canal (see Figure 3-89). The property is open and industrial in character. Additions and changes to the site, new structures and open storage of vehicles equipment and supplies convey a non-historic use that appears incompatible with the waterfront.



Figure 3- 89: Houghton County Road Commission storage facility west of Quincy Smelting Works, 2006 (source: QEA)

Julio Contracting landscape character area

Located directly east of the Quincy Smelting Works, the salvage yard borders the Portage Lake Canal. Julio Contracting also provides residential, commercial, and industrial construction services. Like the Houghton County Road Commission property, the Julio property impacts the visual character of the northern shore of Portage Lake. A mixture of scrap metal, debris, roughly graded land and open storage of supplies and equipment present a stark contrast to the environmental conditions people seek in the Keweenaw (see Figure 3-90).



Figure 3- 90: Southeasterly view of part of the Julio Contracting, salvage yard east of Smelter Site (source: QEA)

Mont Ripley Ski Area landscape character area

Mont Ripley is a downhill ski area located northeast of the Quincy Smelting Works and west of the town of Ripley (see Figure 3-91). The 35 acre site is owned by Michigan Technological University. The topography offers skiers a vertical drop of 440 feet, largely reflecting the varied relief present along the entire Portage hillside. Although this is the former location of the Franklin Tram, the route is no longer easily discerned. The absence of woody vegetation on the ski runs makes this topographic relief visible in all seasons. Red pine plantings present near the top of the hill provide a wind buffer with pockets of successional woodland vegetation found between ski runs and to the east and west of the hill. Infrastructure includes the Mont Ripley Ski Chalet at the base of the hill, 24 ski runs, and a t-bar lift that bisects the hill and a chair lift to the west. Large poles are positioned on the hill to support lighting for night skiing. In recent years a pumphouse and waterline were installed east of the smelter to convey water for snowmaking on the ski hill. The underground pipeline extends beneath state highway M-26 into the ski area. Overflow visitor parking is located on a rough graded gravel lot south of M-26, opposite the ski hill. This can present conflicts between pedestrians crossing the road and motorists.



Figure 3- 91: View looking north to the Mont Ripley Ski Area from the Quincy Smelting Works, 2006 (source: QEA)

Chapter IV: Landscape Analysis

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter IV: Landscape Analysis

Introduction

The historic landscape of the Quincy Unit of Keweenaw National Historical Park developed as a result of a world-wide demand for copper in the nineteenth and early twentieth centuries. The dense forests of the region gave way to an industrial landscape that extended along the spine of the Pewabic Lode from the shores of the Portage Lake over the crest of Quincy Hill to just beyond the northern boundary of the Mesnard company housing location. Other company housing locations were also clustered around the mining operations.

Today, the 1,120 acre Quincy Unit contains extensive evidence of Quincy Mining Company activities, including the No. 2 shaft-rockhouse, No. 2 hoist houses and many other significant mining buildings including those associated with the Quincy Smelting Works on Portage Lake, Quincy mine shafts, associated mining and industrial surface works, extant portions of several company housing locations, and remnant administrative and service buildings. This analysis will focus on the historic landscape of the Quincy Unit and evaluate the relationships of the historic resources within the existing landscape character areas and their ability to represent significant historic themes. Although the Quincy Mining Company Historic District is completely surrounded by Keweenaw National Historical Park, the majority of the land is privately owned and not protected. Incompatible development both within and adjacent to the NHL continues to threaten the integrity of the district. The privately owned land, residential properties (former company housing locations) and commercial properties have experienced incompatible alterations, additions, demolition, abandonment, deterioration and development without preservation ordinances, development incentives or local land use controls.

Land managed by the National Park Service and the Keweenaw Heritage Sites is also threatened by numerous impacts. The Quincy Mine Hoist Association struggles with deferred maintenance and deterioration of resources. Many of the shafts have been capped to address public safety. Their locations and former functions are now difficult to discern. Volunteer vegetation obscures views and historic spatial relationships between buildings, ruins and places within the unit while also threatening the integrity of historic mine buildings, patterns of circulation, and landscape features. The Quincy Smelting Works, owned by Franklin Township, had an arson fire in the Spring of 2004, as well as break-ins/theft of artifacts, vagrancy, structural collapse, water infiltration and ongoing deterioration.[1]

The project area for this Cultural Landscape Report is defined by the boundary of the Quincy Unit of Keweenaw National Historical Park as described in Chapter I. The Torch Lake area is not included within the boundary of the Quincy Unit. Chapter II: Landscape History, addresses the Torch Lake area to help readers understand the comprehensive landscape development related to the corporate history of the Quincy Mining Company. Because the Torch Lake area is not within the project area, it is not covered by the Existing Conditions, Landscape Analysis, or Recommended Treatment sections of this Cultural Landscape Report.

[1] National Historic Landmarks Program website, Quincy Mining Company Historic District, http://tps.cr.nps.gov/nhl/detail.cfm?ResourceId=2058&ResourceType=District, accessed 12 July 2006.

National Register Status

Statement of Significance

In 1987 a report prepared by Apostle Islands National Lakeshore historian Kathleen Lidfors indicated that the Keweenaw Peninsula contained historic copper mining sites that were potentially eligible as a National Historic Landmark.[2] The subsequent study and nomination listed The Quincy Mining Company Historic District as a National Register Historic District in February 1989. The district was designated a National Historic Landmark (NHL) in March of the same year as an outstanding example of the growth and development of the United States copper industry from its earliest years through 1920.[3] The statement of significance for the NHL follows:

> *Quincy Mining Company is an outstanding example of the growth and development of the United States copper industry from its earliest years through 1920. Between 1862 and 1882, Quincy ranked first nationally in copper production, making a singular contributing to the Northern effort during the Civil War. Quincy, along with the Calumet and Heckla Company, represents the major element of the copper industry: mining and mining technology; immigration and ethnic settlement; corporate paternalism and company towns; and labor organization. The Landmark includes a section of company housing.*

The nomination elaborates:

> *Of the numerous mining ventures spawned by the nation's first copper boom, Quincy alone survived. It was the first company to recognize the limits of fissure mining and shift to amygdaloid beds, which, with the conglomerate lodes, were the low mineral-content upon which the future of the copper range district of the Keweenaw Peninsula depended. The company earned the title "Old Reliable" for a fifty-four year sequence of dividends paid to its stockholders and its ability to continue mining during economically difficult times when all but the giant Calumet and Hecla had shut down.*
>
> *Situated on the Pewabic amygdaloid, the Quincy location stretches northeast to southwest along the brow of a long hill above the city of Hancock and Portage Lake. Although all of the shaft-rockhouses (headframes) except No. 2 have been removed, the shafts are still evident, fenced off for safety. Some associated surface works have been torn down, but many structures stand, while several others remain as significant ruins. Smokestacks from the boilerhouses punctuate the hillside, while abandoned railroad trestles and narrow gravel lanes are expressive of patterns of work and community life at the location. Built in 1898, the smelting works juts out from the shoreline of Portage Lake.*[4]

[2] Lidfors, *Potential National Historic Landmark Eligibility of Historic Copper Mining Sites on the Keweenaw Peninsula, Michigan*, 1987.
[3] Lidfors, *Quincy Mine Historic District, National Register Nomination,* 1988.
[4] Ibid., Item 8, 2.

National Register Boundary and Quincy Unit Boundary

The district boundary includes extant resources directly connected with the Quincy mining operations including locations of mine shafts and buildings. In addition, it includes part of Quincy Hill, which connects the mining area with the Quincy Smelting Works and the administrative and residential structures that represent the support services necessary for the mining operations. The nomination includes both a detailed written description of the boundary and a map illustrating its location (see Figure 4-1). When Keweenaw National Historical Park was established in 1992, the boundaries of the Quincy Unit of the park were defined to closely reflect the National Historic Landmark District boundary. However, the park boundaries have not yet been finalized.

The Quincy Unit and the National Historic Landmark boundary are not inclusive of the entire Quincy Mining Company historic landscape. The boundary currently includes resources related to two parts of the three part story regarding the Quincy Mining Company. Resources exist in the region, at Torch Lake, that are related to the third part of the story. The resources at Torch Lake need to be evaluated to determine their integrity. Also, as the NPS boundary for the Quincy Unit is finalized, the possibility of including these resources should be considered.

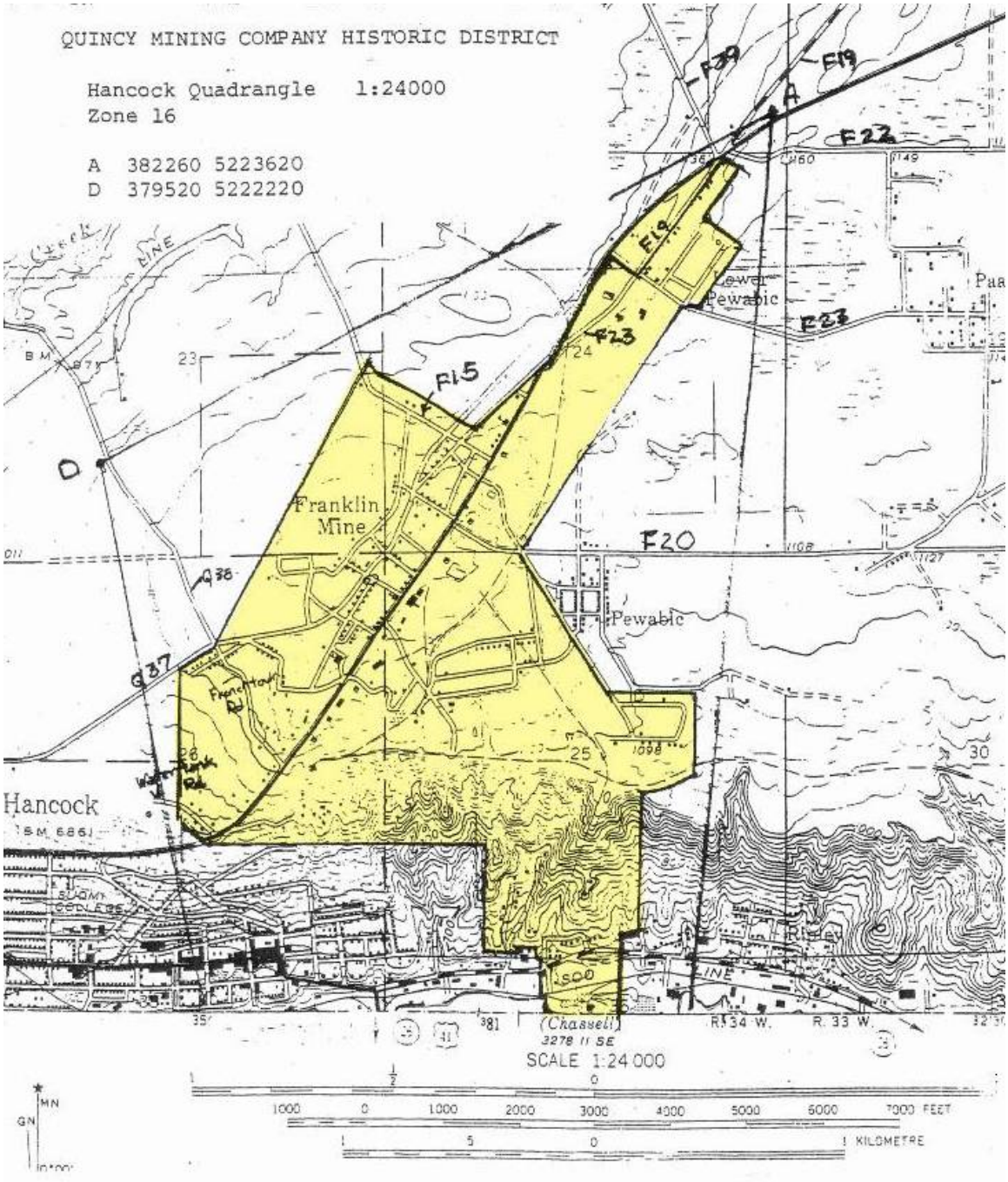


Figure 4- 1: Quincy Mining Company Historic District, NHL boundary (district highlighted in yellow by QEA)

Landscape Analysis

Land Use

During the peak mining period between 1900-1910 for the Quincy Mining Company (QMC), the majority of the Quincy Unit landscape was comprised of two distinct land uses, industrial/mine related and company housing. The industrial/mine land-use areas consisted of numerous shaft-rockhouses, hoist houses, other mine related buildings, a multitude of railroad tracks and trestles, cooling ponds, the Quincy Smelting Works, and expansive poor rock piles. The company housing consisted of several QMC housing locations on Quincy Hill and South Quincy and Ripley near the Quincy Smelting Works. Many of these housing locations were developed with uniform housing and fenced yards. Other housing locations contained less regimented layouts with varying architectural styles, lot sizes and setbacks. From 1900 to 1920 industrial/mine related and company housing land uses dominated the unit and agricultural land use was also present (see Figure 4-2). [5]

With the decline of the copper industry beginning in the late 1920s, the Quincy Mining Company progressively scaled back mining operations and eventually closed in 1945. Today, the landscapes within the Quincy Unit are used for residential, commercial, industrial, institutional and recreational purposes (see Figure 4-3).

[5] Historic agricultural land use areas were determined from an analysis of historic photographs and a 1930s aerial photograph provided by the park.

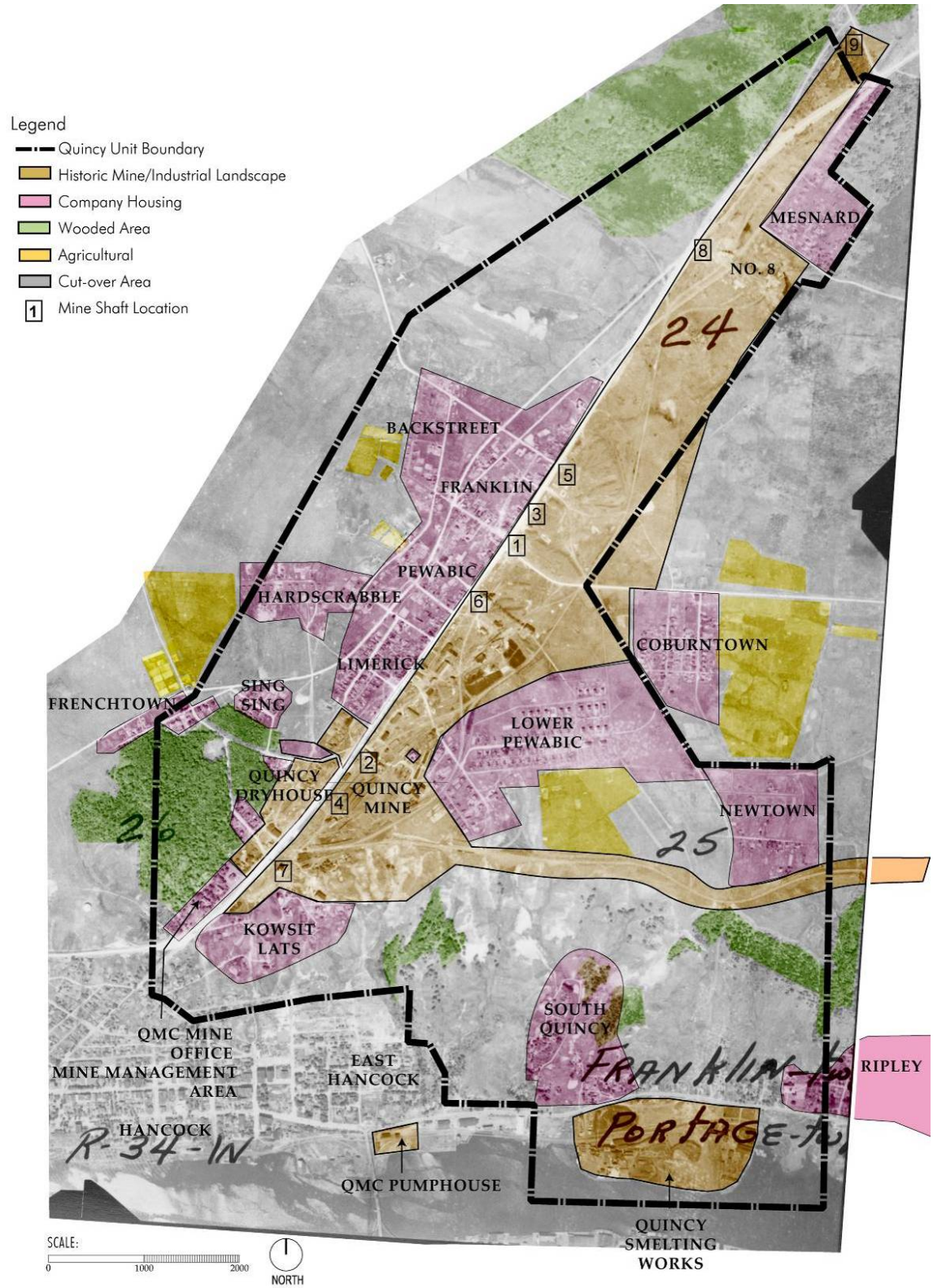


Figure 4- 2: Quincy Unit Land Use, Peak Mining Period 1900-1910

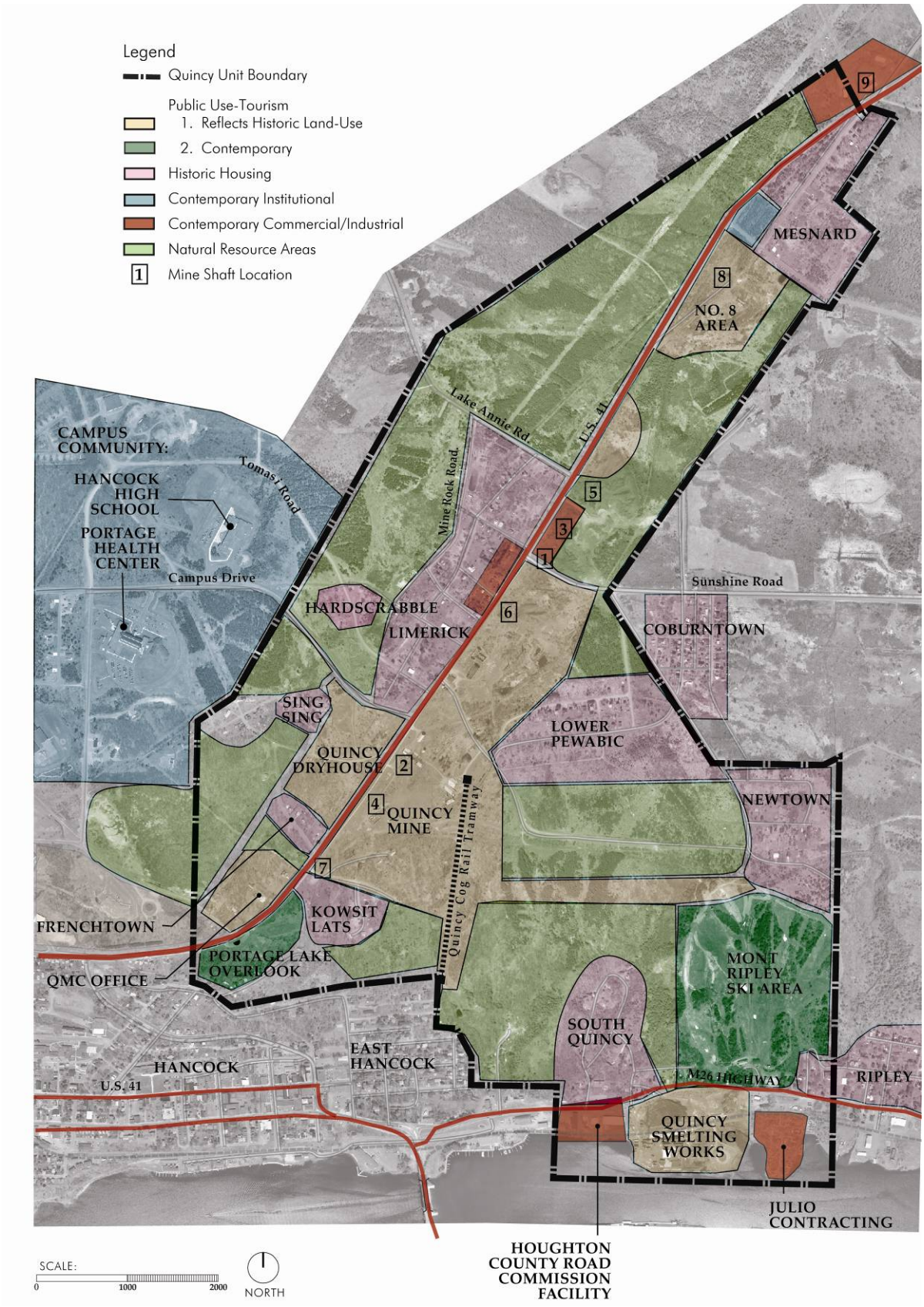


Figure 4- 3: Quincy Unit, Existing Land Use

Tourism is a significant land use that reflects both historic and contemporary experiences. Heritage tourism sites include the Quincy Mine Site owned by the Quincy Mine Hoist Association, the A.E. Seaman Mineral Museum, operated by Michigan Technological University, the Dryhouse Area and the Quincy Mine Office, owned by the National Park Service. Other sites that contribute to the cultural landscape of the Quincy Unit and provide opportunities for tourism in the future include the Quincy Smelting Works at Portage Lake owned by Franklin Township, sporadic privately owned industrial mine remnants along U.S. 41 that include remnant poor rock piles and the No. 8 shaft-rockhouse area in Mesnard, owned by the Quincy Mine Hoist Association.

Other contemporary tourist attractions include the Mont Ripley Ski Area, owned by Michigan Technological University and the Portage Lake Overlook, owned by the Michigan Department of Transportation (MDOT). The ski area is on former cut-over land that was once bisected by tram roads (see Figure 4-4). There is some potential for historic interpretation of site history through comparison of the existing open character of the ski area and the existing linear t-bar and chair lift configuration that bisects the hill, to the cleared hillside and tram road that historically extended from the Franklin mine to the foundry on Portage Lake. The overlook is contemporary in character and does not reflect its former industrial/mine land use despite affording key views toward historic resources that include the No.2 shaft-rockhouse, rock piles, and Portage Lake.

Residential land use maintains a presence in the unit. Remnant company housing locations display a variety of conditions. These include the locations on Quincy Hill: Lower Pewabic, Sing Sing, Coburntown, Ripley, and the historic housing locations of Limerick, Pewabic, Franklin, and Backstreet, herein described as a singular residential area. Some former company housing locations or portions of them have been abandoned and are in varying stages of succession to woodland. These include Frenchtown, Mesnard, a portion of Lower Pewabic (section constructed prior to 1864), and Hardscrabble. The historic land use of these former housing locations is represented by landscape remnants that include building foundations, domestic vegetation, and remnant road traces (see Figures 4-5 through 4-8). Raasio Road, a small enclave of contemporary housing, has supplanted a section of the historic Frenchtown neighborhood. Historic vernacular housing locations are also present. These include Kowsit Lats and the residences on Frenchtown Road. Shantytown, another hillside neighborhood, was absorbed into the city of Hancock by the early 1900s.

Since the decline in mining activities, other institutional, commercial, and industrial activities have gradually become established. These include the institutional Campus Drive complex west of the Quincy Mine that includes the Portage Health Center and Hancock High School. While not entirely within the unit, the scale and functions of Campus Drive have altered historic circulation patterns, bisected the open space in the industrial core of the mining landscape, and introduced modern signage on U.S. 41. These developed areas and associated infrastructure impact the historic character of the industrial mine and the company housing locations.

Contemporary commercial/industrial land uses are interspersed throughout the Quincy Unit. Commercial developments along the portion of U.S. 41 that cuts through the Quincy Unit include several new commercial developments, numerous billboards, a firehouse, and a

religious building. At Portage Lake contemporary industrial land uses border the historic Quincy Smelting Works. To the east, the Julio Contracting salvage yard, is on land once associated with the former Franklin Foundry and to the west, the Houghton County Road Commission Service Facility occupies land formerly used to support industrial/mine related operations that included the Michigan Smelter.

Natural resources within the unit are mainly associated with former cut-over land and sites that were used either by the historic mining operations or served as housing locations. Currently, natural resource areas include a variety of landscapes: wetlands, successional lands that vary from open meadows with shrubs and trees, open wooded areas, areas of a mix of deciduous trees, shrubs, and conifers, and dense wooded areas. Although the plant communities do not represent the historic conditions, they help to buffer views and relationships between contemporary additions and historic character areas. Also, in some cases they reflect the passage of time since the historic period.

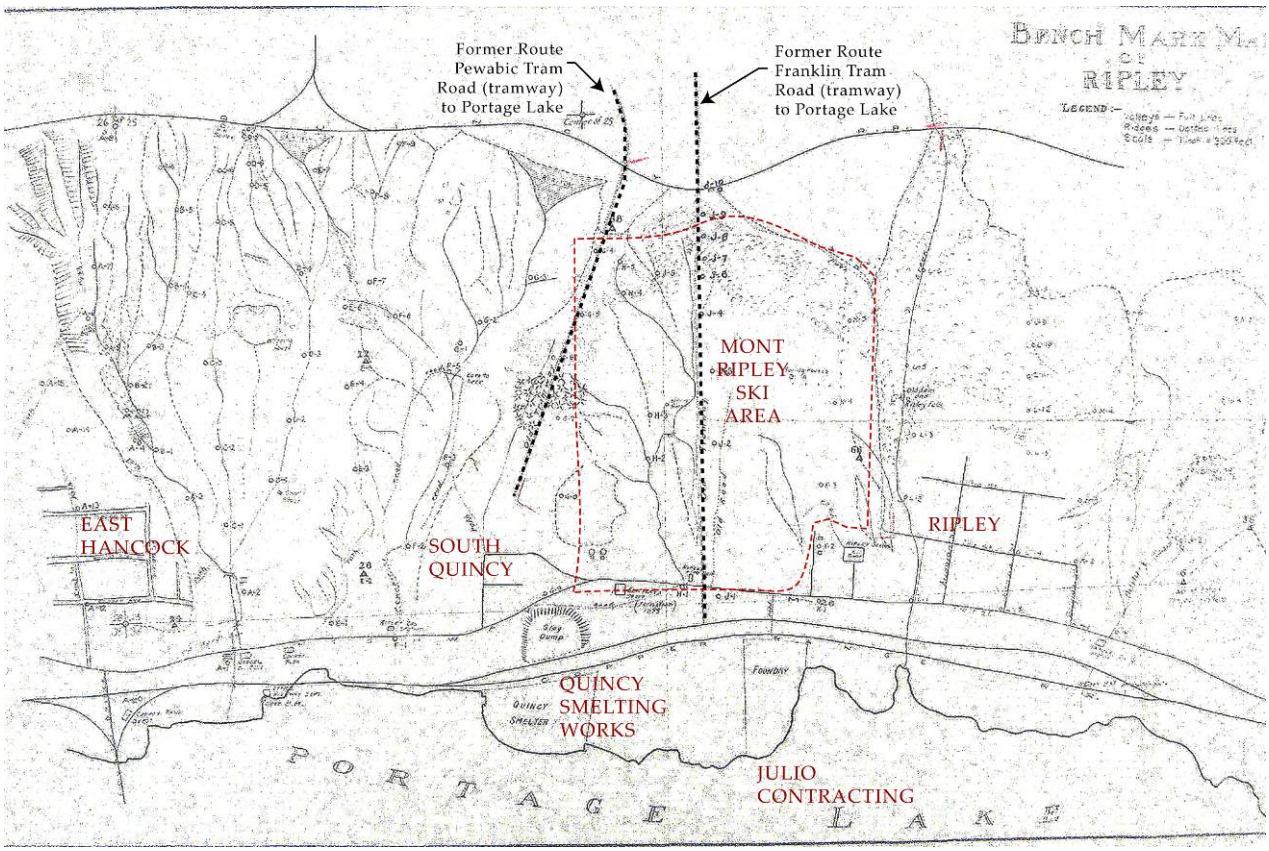


Figure 4- 4: Map titled, "Bench Mark Map of Ripley 1932," with text and graphics added by QEA, 2007. The current location of the Mont Ripley Ski Area is outlined in red (source: KEWE archives)



Figure 4- 5: Historic view north toward Limerick, from No. 2 shaft-rockhouse, ca. 1920s; the Backstreet neighborhood is in the background to the left of the water tower. Possible agricultural land use can be seen on the upper left portion of the photograph (source: KEWE Archives, photo 1-6)



Figure 4- 6: Contemporary oblique view of Coburntown (source: Rob Wood, Wood Ronsaville Harlin, Inc., August 2005)



Figure 4- 7: Historic view of Lower Pewabic from the No.2 shaft-rockhouse, facing east/northeast, ca.1910-1930 (source: Keweenaw National Historical Park archives)



Figure 4- 8: Contemporary oblique view of Lower Pewabic, facing southwest (source: Rob Wood, Wood Ronsaville Harlin, Inc., August 2005)

Spatial Organization

Historically, the underground resources of the Pewabic, Franklin, and Quincy mining companies determined the broad-scale aboveground spatial organization of landscape features related to the mining operations. Belowground the Pewabic Lode extended from shaft-rockhouse No. 7 at the crest of Quincy Hill, northward to shaft-rockhouse No. 9 in Mesnard. Shafts led to drifts that extended a network of horizontal tunnels parallel to U.S. 41 amidst the Pewabic lode and beneath the extensive company housing locations to the west. The intense network of rock crushing shaft-rockhouses, hoist houses, multitude of railroad tracks and trestles, cooling ponds, and expansive poor rock piles were located east of the spine of the Pewabic Lode (see Figure 4-9).

Today, the relationship of the below ground mining operations with the above ground spatial organization has been somewhat obscured, but upon consideration the general relationships remain intact (compare Figures 4-9 and 4-10). U.S. 41 cuts through the Quincy Unit marking the early circulation route and indicating the location of the Pewabic Lode. Institutional land use, including the Campus Community of the Portage Health Center and Hancock High School straddle the underground copper veins historically associated with the Quincy No. 2 and No. 4 mine shafts. However the existing mine related landscape and the remnant company housing locations still maintain their historic spatial relationship with the historic locations of the underground mine. At present, mining tours conducted by the Quincy Mine Hoist Association, take visitors on the Quincy Cog Tramway near the No. 2 hoist house down to the No. 2 (East) adit. The adit provides access to the underground tour through a horizontal tunnel that intersects the 1860-era diggings on the seventh level of the mine under the Dryhouse. The adit also is used for Michigan Technological University to educate students about subjects related to the technical field of mining, the origin of the university. The historic relationship of the belowground mining operation with the spatial organization of surface cultural resources maintains integrity and is a significant narrative worth exploring in any future interpretation of copper mining in the region.

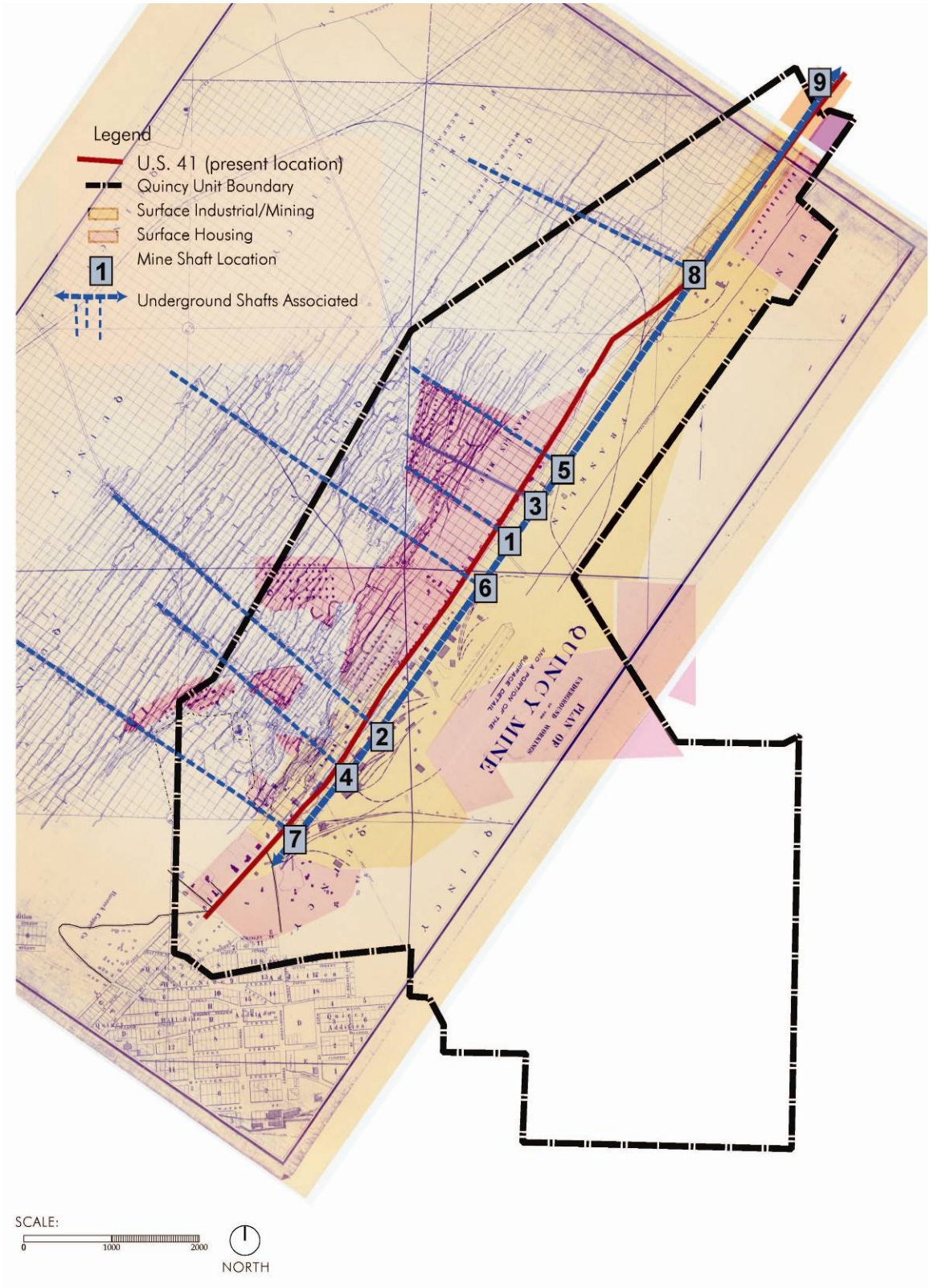


Figure 4- 9: Quincy Unit 1920 land use overlaid on "The Underground Workings of the Quincy Mine and a Portion of the Surface Detail," ca. 1900s (added graphics by QEA 2007).

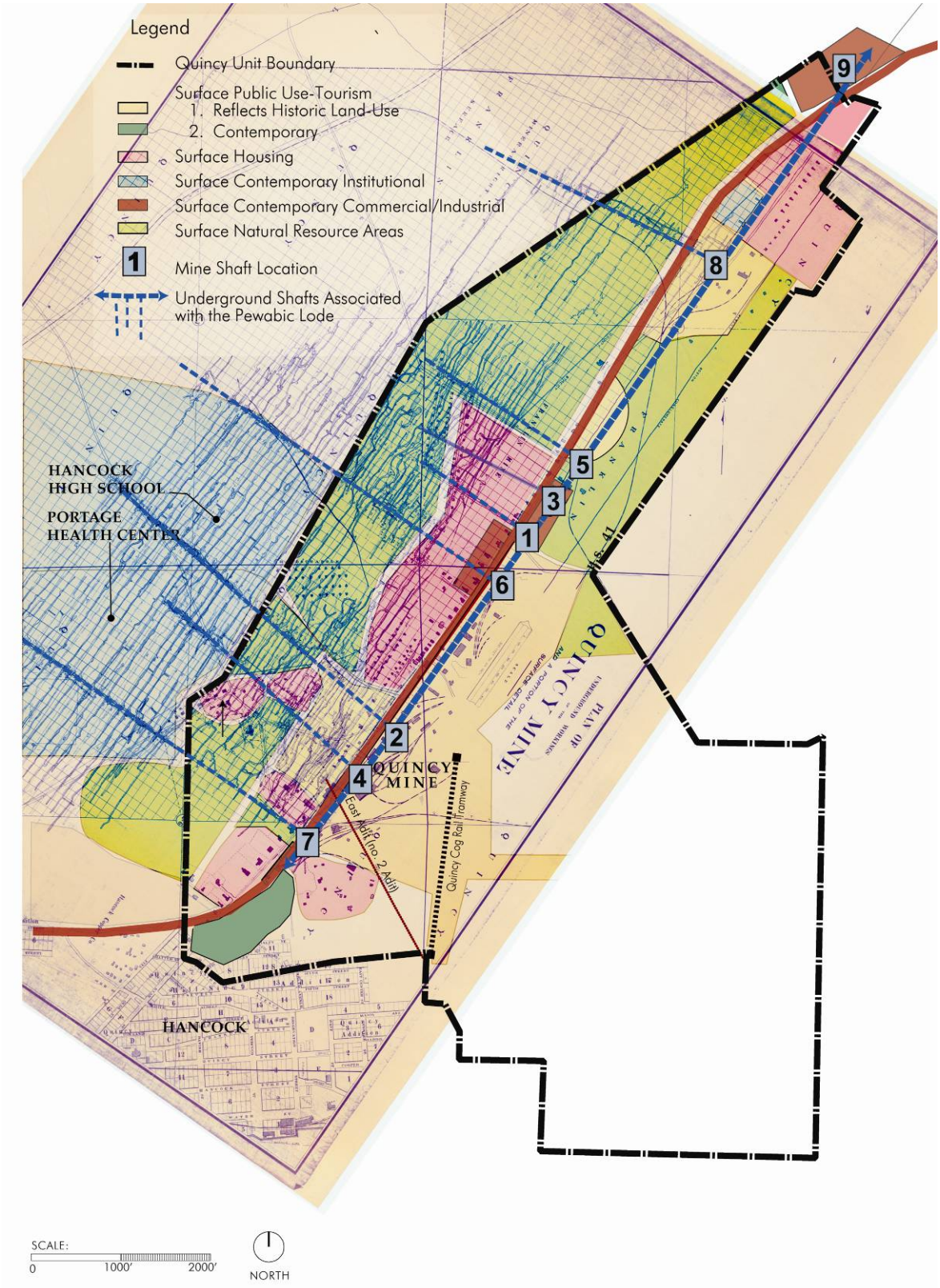


Figure 4- 10: Quincy Unit, Spatial Organization Analysis, Existing Land Use overlaid on "The Underground Workings of the Quincy Mine and a Portion of the Surface Detail," ca. 1900s (additional graphics by QEA 2006)**.**

Vegetation

When Hubbard and Burt surveyed the Keweenaw in 1845, they indicated the presence of an abundant growth of sugar maple, birch, fir, oak and white pine as well as some swamp or marshland. Although their notes regarding vegetation are not detailed, one can gather from the survey drawing notations that the area now within the Quincy Unit included the general vegetative features described (see Figure 4-11).

Large portions of native vegetation were gradually removed with the spread of mining operations and development of housing locations on Quincy Hill. Trees were cut to clear land for development and to provide building materials and fuel.[6] By the peak of the mining period, only small clusters of woodland remained. These were surrounded by an industrial landscape which included practically no vegetation, and residential areas that included small amounts of ornamental plants, fruit trees, and vegetable gardens. Although areas were set aside for agriculture, it is not clear how much of the Quincy farm was located within the current Quincy Unit. Nevertheless, agricultural uses occurred in the close vicinity. These included small orchards, pasture and cultivated fields. Analysis of an aerial photograph taken in ca. 1920s-1930s shows the approximate extent of wooded and agricultural vegetation during that period (see Figure 4-12).

Within the Quincy Unit today vegetation is much more prevalent than it was during the height of mining activities (compare Figure 4-12 to Figure 4-13). Abandoned industrial and company housing sites are overgrown with volunteer herbaceous and woody plants that can obscure cultural patterns on the landscape including ruins of buildings, poor rock piles, views, small scale features, and patterns of circulation. The second-growth woodlands are sometimes read as undeveloped wild areas by those who do not understand the history of the region or do not investigate closely enough to notice the crumbling foundations, crisscrossing abandoned rail lines, broken bottles, and remnants of gardens.

Although the plant growth hides cultural features in some cases, in others it can be used as a guide to identify historic sites. Some of the domestic plants that were introduced to the area by residents have survived and spread, including rhubarb, lilacs, lilies, apple trees, and Lombardy poplar trees. These plants provide hints of former activities and help to identify historic company housing sites.

Agricultural lands have diminished in the area as their functional relationship to the company housing locations was no longer necessary. While not in the unit, historic agricultural lands north and south of Sunshine Road near Coburntown are extant.

[6] Jacob Houghton, Jr., *Reports of William A. Burt and Bela Hubbard, esqs., on the Geography, Topography, and Geology of the U.S. Surveys of the Mineral Region of the South Shore of Lake Superior, for 1845; accompanied by a List of Working and Organized Mining Companies; a List of Mineral Location; and a Correct Map of the Mineral Region, also a Chart of Lake Superior, reduced from the British Admiralty Survey*. Detroit: C. Wilcox, 1846, 29.

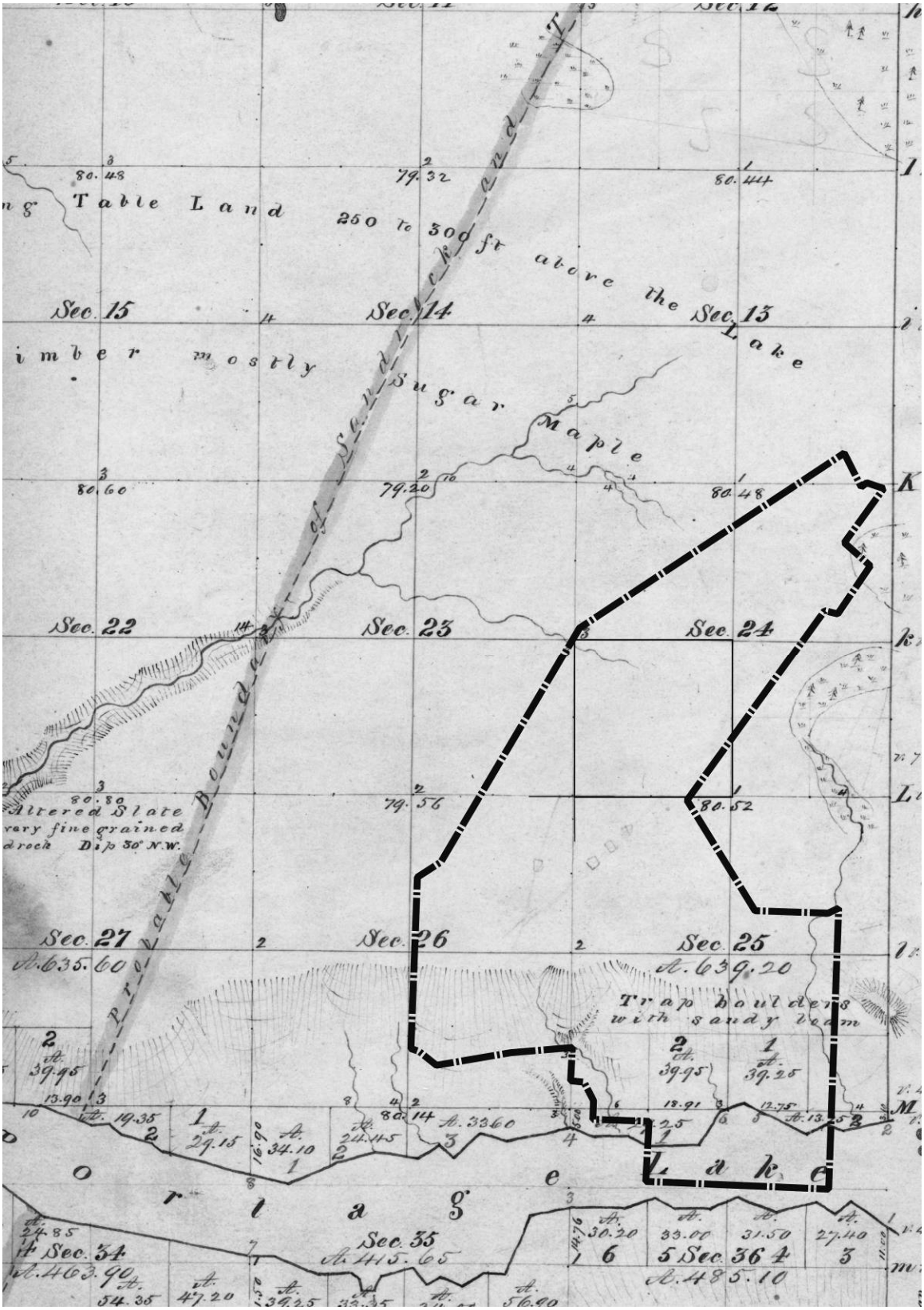


Figure 4- 11: Portion of the William A. Burt and Bela Hubbard survey drawing (1845) with the existing Quincy Unit boundary added by QEA 2007 (source for map: KEWE archives)

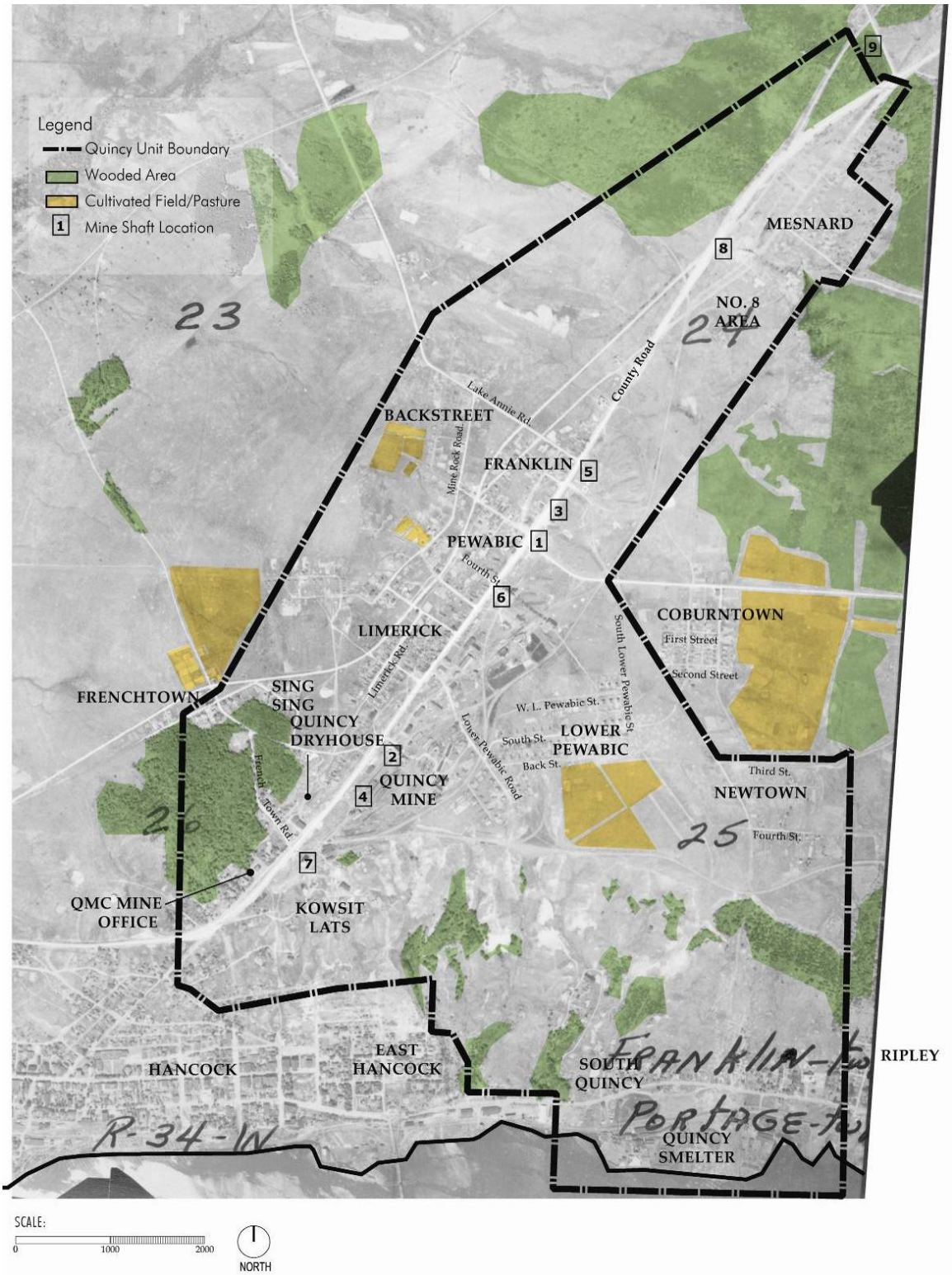


Figure 4- 12: Quincy Unit, Vegetation 1920s-1930s

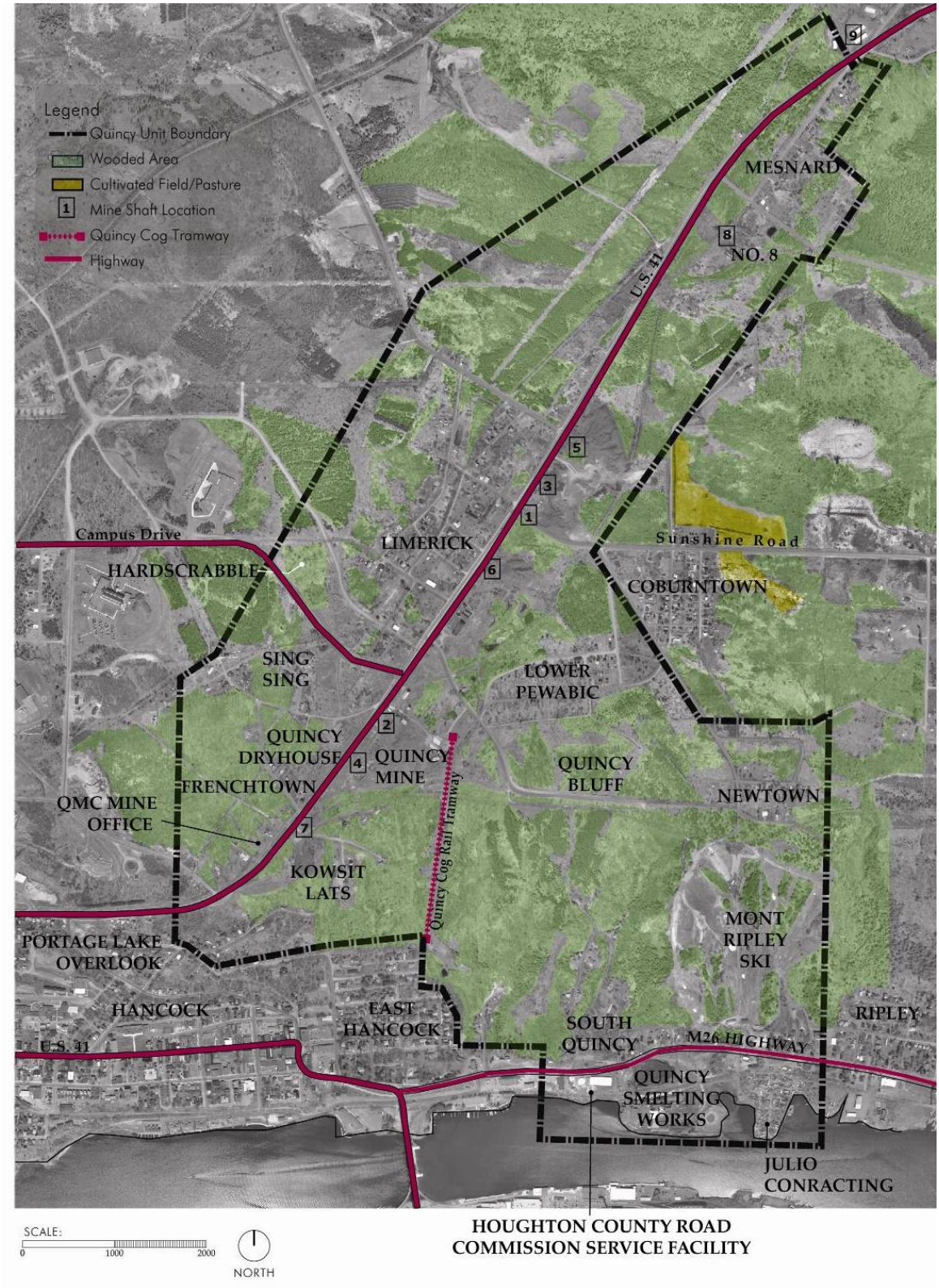


Figure 4- 13: Quincy Unit Current Vegetation

Topography and Views

The topography of the unit, including the dramatic six hundred foot descent from the crest of Quincy Hill to Portage Lake, afforded a commanding visual setting for mining operations. From the late 1860s onward, a progression of photographs captured these views, providing historic documentation of the mining operations, vegetation, housing, and development along Portage Lake. At present, these views offer visitors a broad visual overview of the region and communicate the historic spatial relationships between the lake, the hill, the mining operations, and the mining housing locations. Specifically they include the view north from the city of Houghton toward Quincy Hill and the panoramic views from the Portage Lake Overlook, Kowsit Lats, and Quincy Hill south and east toward Portage Lake and the city of Houghton (see Figure 4-14). During the peak mining era a series of shaft-rockhouses visually dominated mining operations on Quincy Hill. Today the No. 2 shaft-rockhouse is the dominant visual legacy of this previous mining era (see Figures 4-15 and 4-16). In particular, the No.2 shaft-rockhouse provides an identifiable visual landmark from as far away as Chassell when traveling on U.S. 41 and the from the South Range when traveling on M-26.

Views within the Quincy Unit are also significant. They create visual connections between historic landscape character areas within the Historic Industrial Core (see Figure 4-17a). The view west from South Street in Lower Pewabic toward the No. 2 shaft-rockhouse communicates the symbolic visual and physical association of mining operations with company housing locations. The view eastward from the dryhouse landscape character area toward former mining operations east of U.S. 41 and beyond visually connects mining operations on the hill. These views have potential significance as interpretative resources for the park.

Views of the Quincy Smelting Works on Portage Lake from Houghton provide a dramatic overview of the resources present in this character area (see Figure 4-17b). Within the Quincy Smelting Works, significant views include striking vantage points from the top of the north slag pile facing the buildings to the south. Views into the building complex from the southwest open space, east shoreline slag pile, salt storage area, and central open space all provide glimpses of historic features that illustrate aspects of the historic functions of the facility.

While historic views present opportunities for preserving and interpreting the historic character of the industrial landscape, contemporary intrusions and successional woodland detract from historic character and visual impact. On Quincy Hill, the radio tower competes with the No. 2 shaft-rockhouse for visual prominence in the area. At the Portage Lake Overlook, the contemporary signs and overall interpretation of the area detract from the historic character of the panoramic experience. Throughout the unit volunteer and successional vegetation obscure significant views.

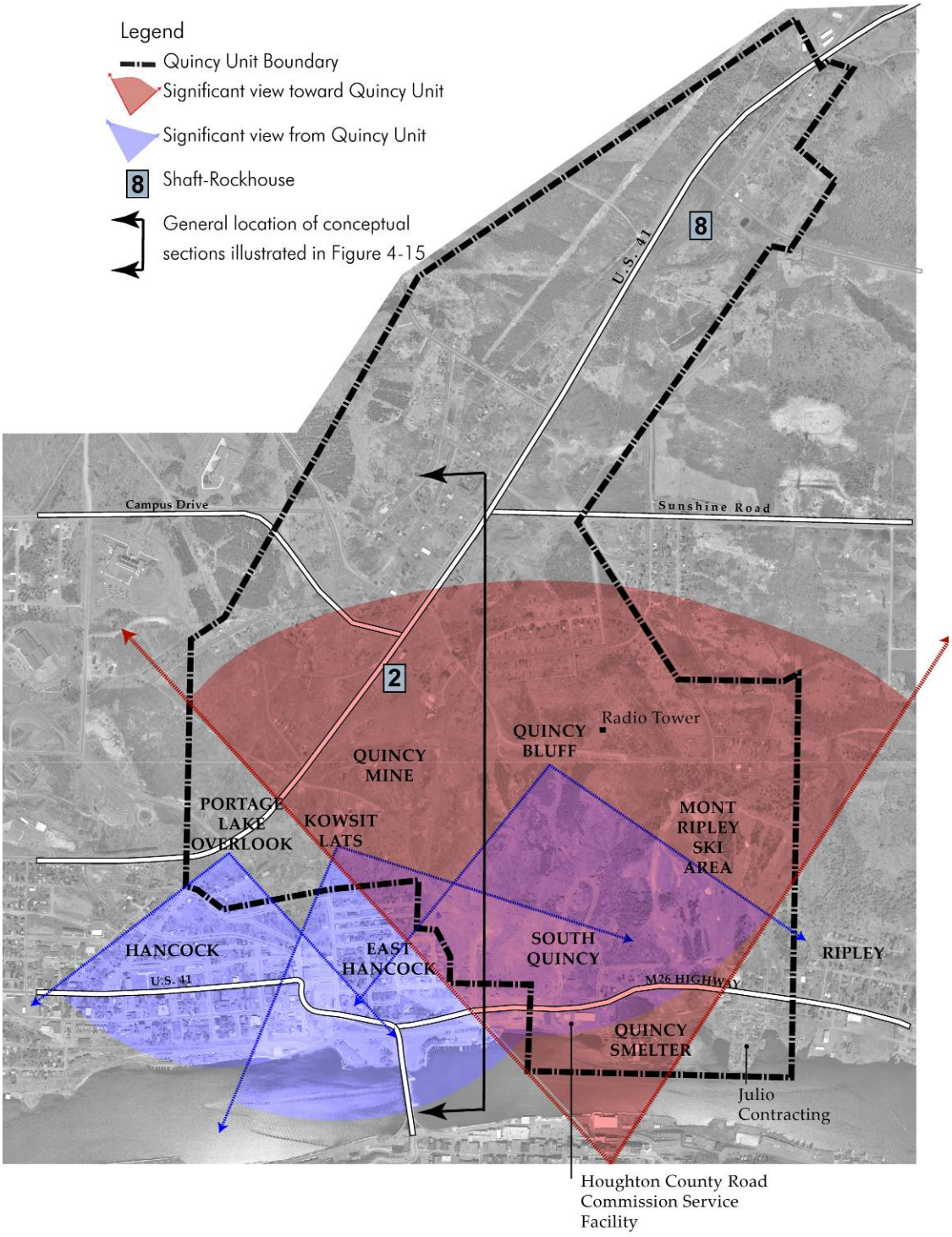


Figure 4- 14: Quincy Unit, Significant Views

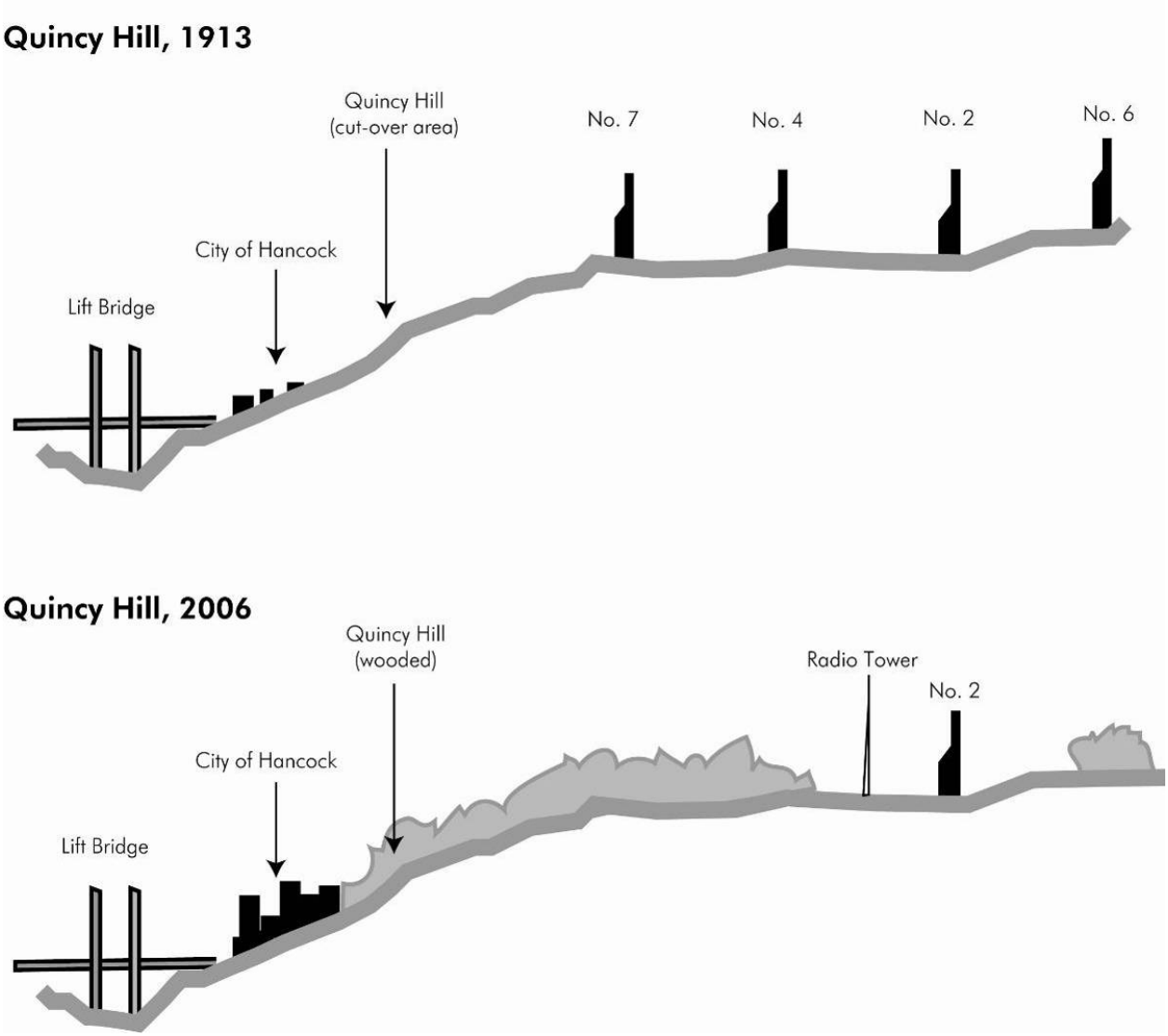


Figure 4- 15: Conceptual Section/Elevation of Quincy Hill, Topography and Views (the general location of the section is illustrated in Figure 4-14)

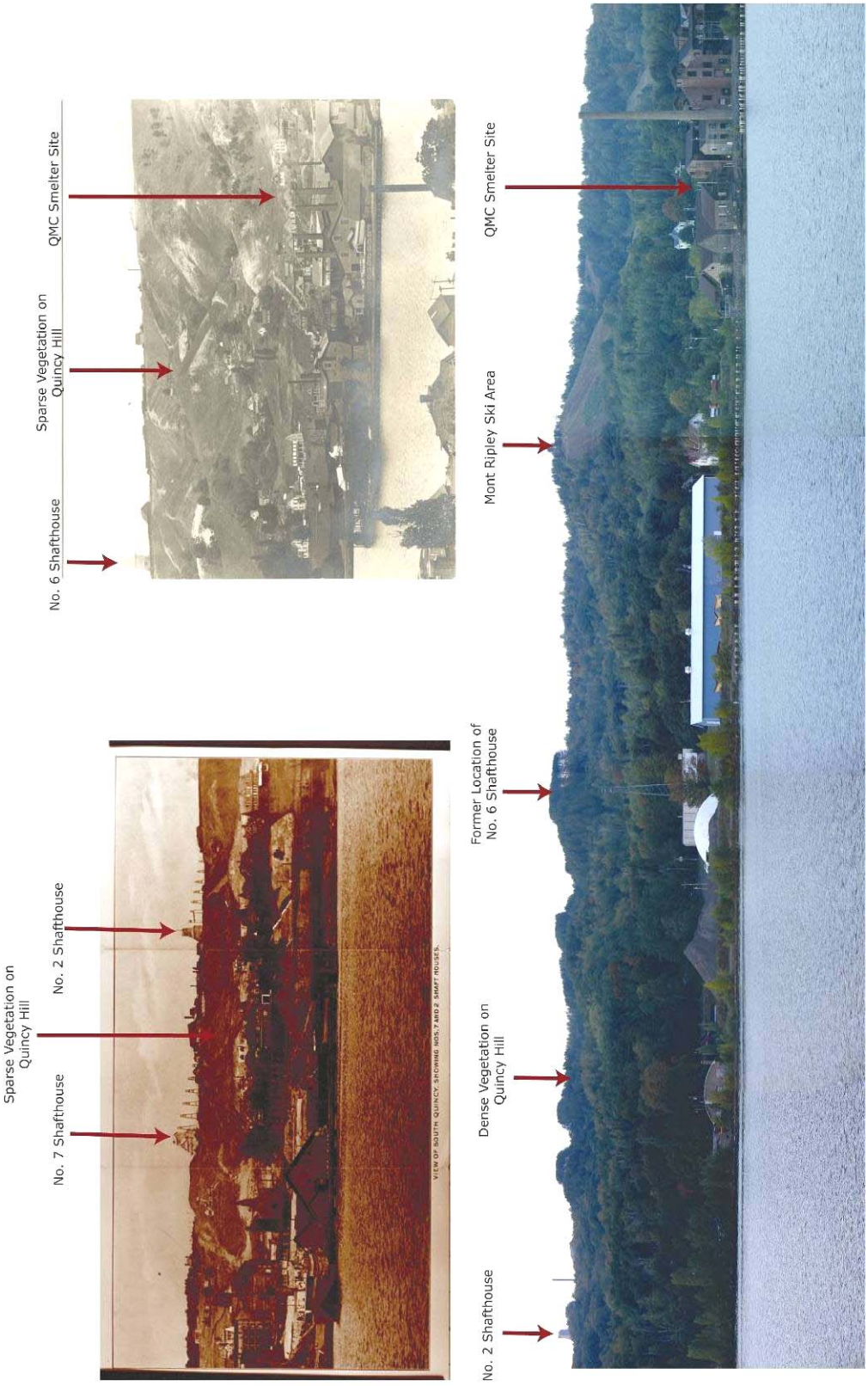


Figure 4- 16: View toward Quincy Hill from Houghton

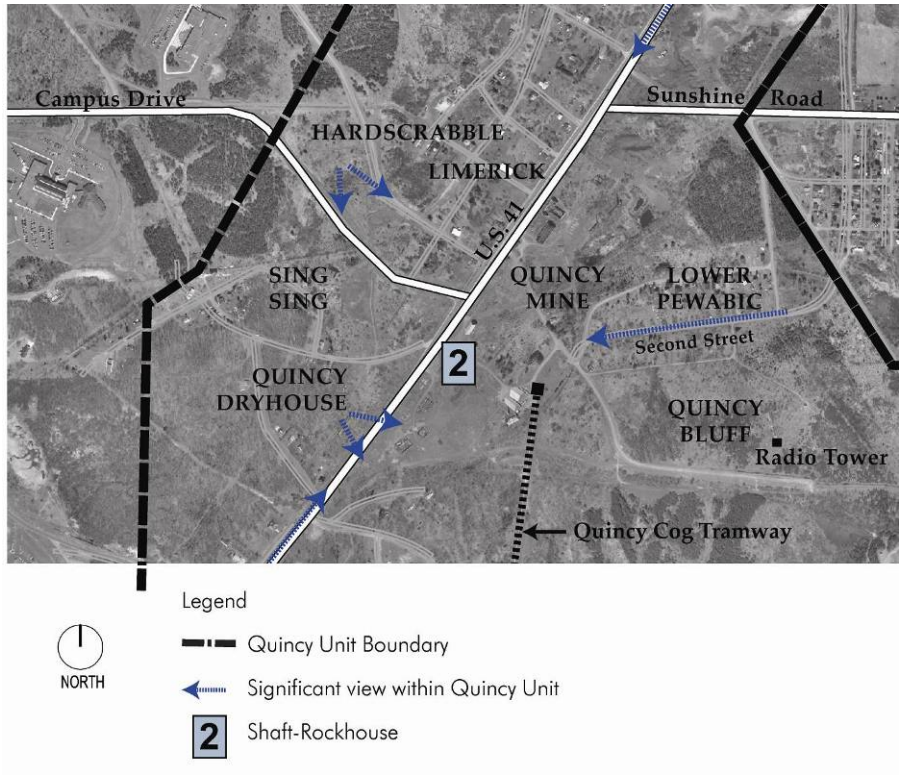


Figure 4- 17a: Significant views within the Historic Industrial Core

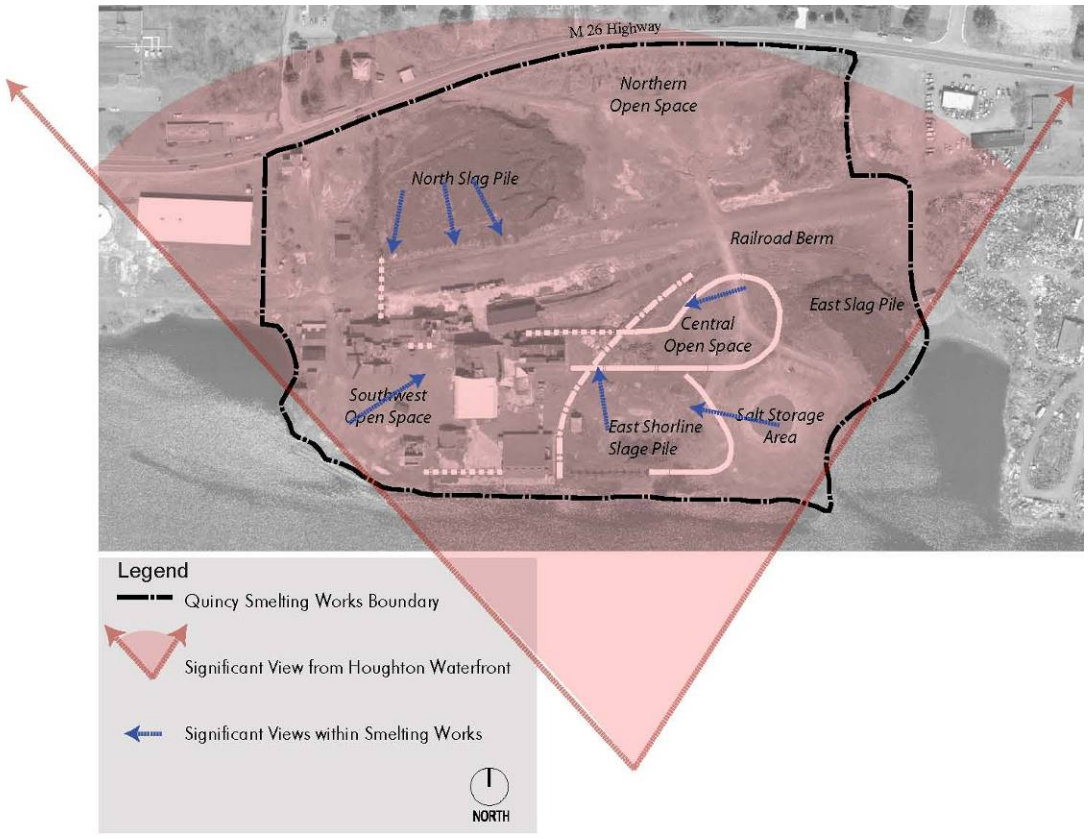


Figure 4- 17b: Significant views associated with the Quincy Smelting Works

Circulation

Over time circulation patterns and functions were altered as changes occurred to the mine operations and advancements were made in mining and transportation technology. The Quincy Mining Company depended upon vehicular and pedestrian circulation routes to transport workers and supplies to the mine site and move materials through the copper production process. Advancements in mining and transportation technology affected circulation routes and modes of transportation between mine operations.

Initially, a tram road carried counter-weighted tram cars filled with copper rock from the Quincy Mine down to the Stamp Mill at Portage Lake. The Pewabic and Franklin mining companies also had tram roads that descended from their mines on Quincy Hill to mining operations bordering Portage Lake. By 1890 the new Quincy stamp mill was constructed on Torch Lake. The Quincy and Torch Lake Railroad was built to link the Quincy Mine operations with the stamp mill. The tram roads that crossed Quincy Hill were made obsolete by developments at Torch Lake and the use of rail routes to move copper rock in the area (compare Figures 4-18 and 4-19). Although the former location of the Quincy tram road was once a visual dividing line between the city of Hancock and East Hancock, currently the route has been absorbed into the city of Hancock and is no longer a significant resource for the unit. The former Franklin and Pewabic tram roads further east, are also no longer present. The northern portion of the Franklin Tram Road is now an angled road between Coburntown and Lower Pewabic. The southern portion once bisected Quincy Hill along a ridge line that extended down toward Portage Lake, in an area now occupied by the Mont Ripley Ski Area. The Pewabic Tram Road also extended down a ridge line on Quincy Hill. Today, subtle traces of the tram road are visible as it traverses the eastern edge of Lower Pewabic down through the Mont Ripley Ski Resort. However, no significant remnant of either route is present today. The existing Cog Tramway, operated by the Quincy Mine Hoist Association, does not follow any of the historic former tram routes. It is a compatible feature because it connects two significant historic resources, the No. 2 Hoist House complex and the No. 2 adit.

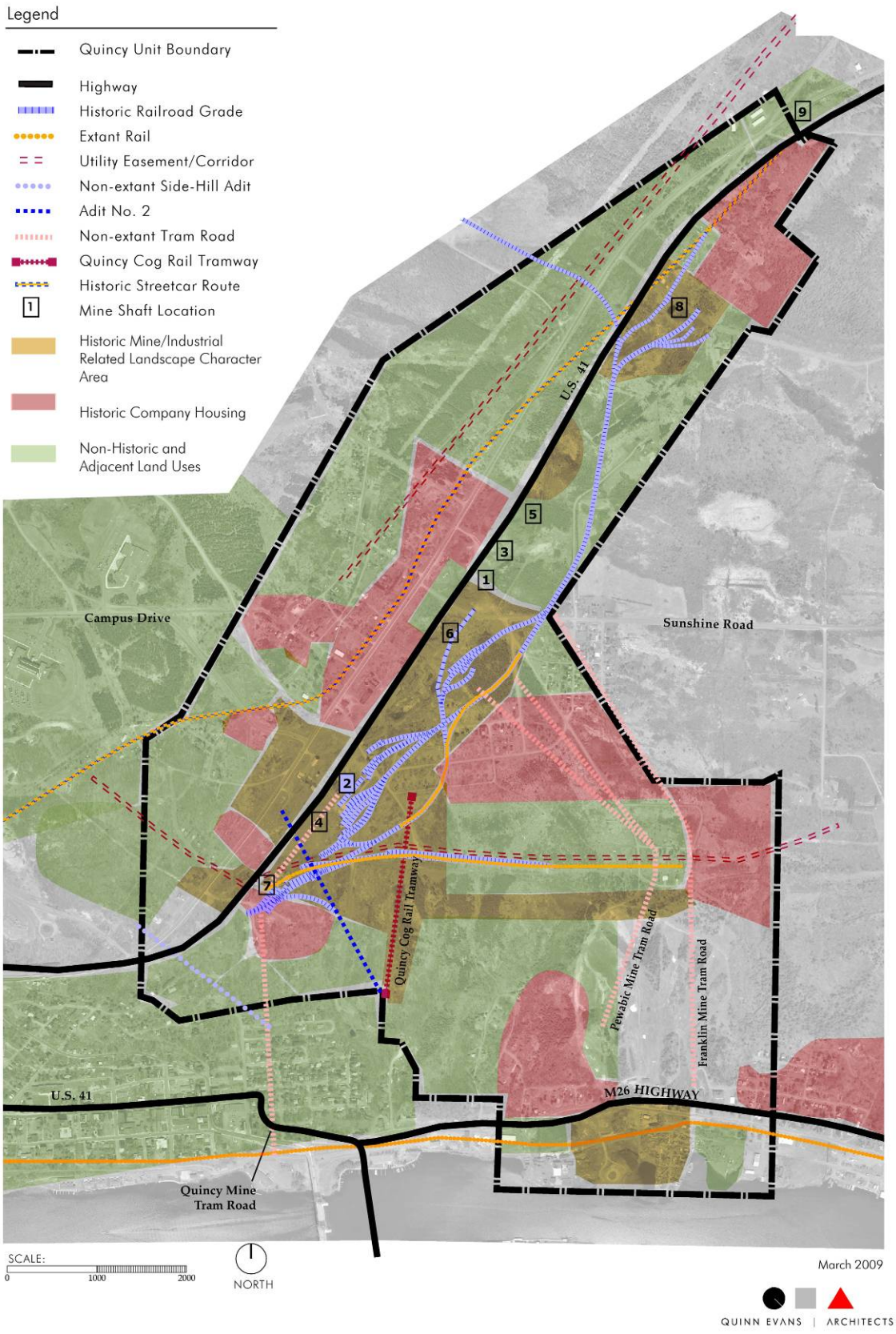


Figure 4- 18: Quincy Unit, Railway, Tram, and Streetcar Routes Analysis

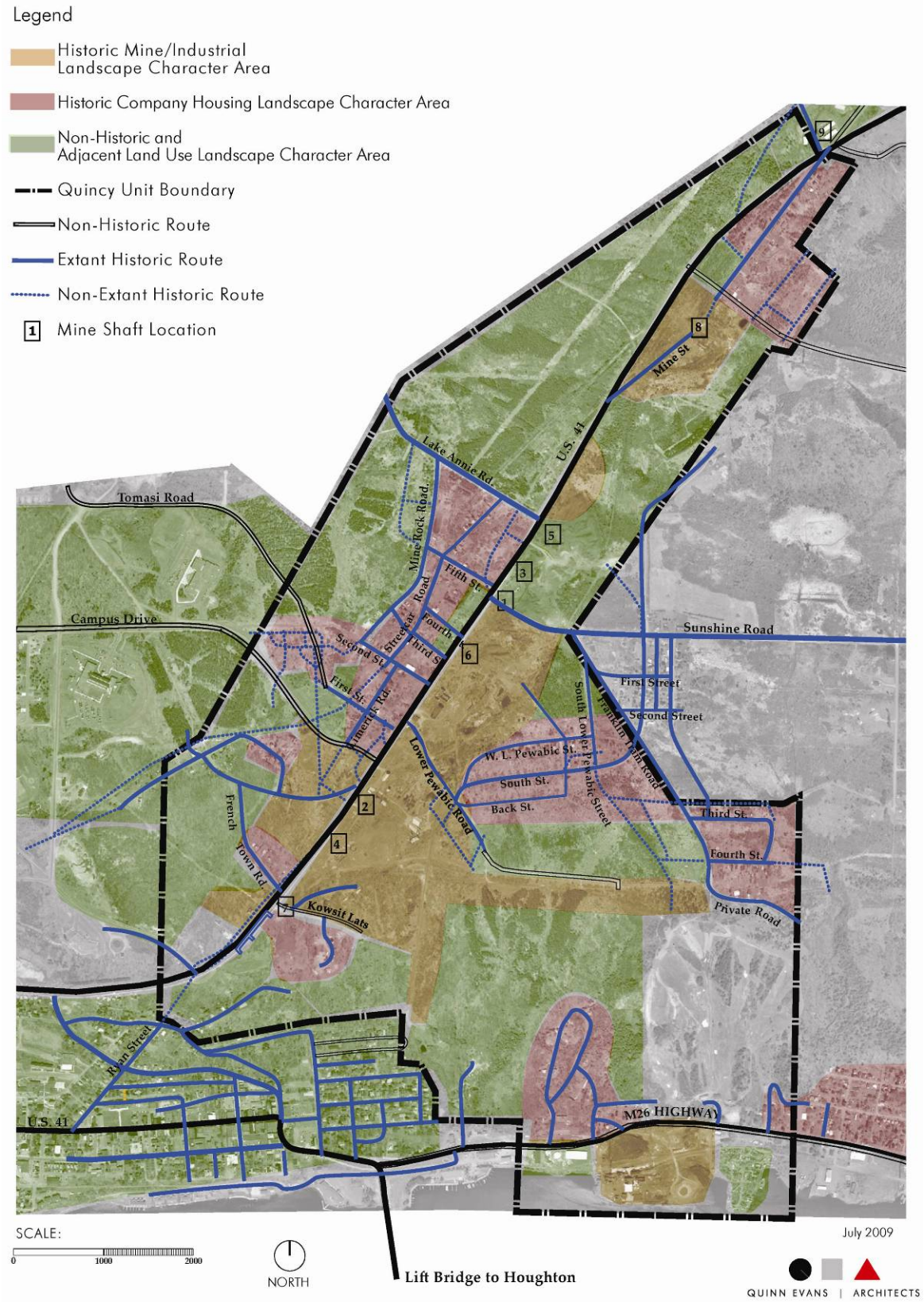


Figure 4- 19: Quincy Unit, Road Analysis

The 1880s brought the railroad to the Keweenaw Peninsula. In 1886 the Mineral Range Railroad constructed a branch line to Quincy (see 1886-1888 Period of Change Plan in Chapter II). By the 1890s a complex network of rail routes bisected the Quincy Mine, linking the various functions of the mine operations (see Figure 4-20).[7] Today only a few remnants of this network are extant. These include traces of railroad grades, the few remaining rail lines, remnants of trestles, and some rolling stock (see Figure 4-21).

In the early stages of mine development, crude wagon roads linked the city of Hancock with the mine operations on the hill. Calumet Road (U.S. 41), the major north/south vehicular connection for the Keewenaw Peninsula paralleled the Pewabic Lode. Over time roads were established to and within the company housing locations. Topography influenced road development. After the mining operations closed in 1945 several company housing locations were abandoned. Today, traces of roads in sections of Lower Pewabic, Backstreet, Hardscrabble, Frenchtown, and Mesnard orient visitors to the development pattern and sites of these housing locations. Other housing locations, including Limerick, Pewabic, and Franklin, retain many of their historic routes. Although the streetcar route that once extended from Hancock northeast to Mesnard is no longer extant, a small section is now a road within the Limerick/Pewabic housing locations. It is appropriately named Streetcar Road. The influence of the contemporary institutional land-use is apparent within the western half of the unit. New roads including Campus Drive dominate the area.

[7] Mine rock moved by the Quincy Torch Lake Railroad to the Quincy Stamp Mill, than the extracted copper was transported by the Mineral Range Railroad to the Quincy Smelter, constructed in 1898.



Figure 4- 20: View north from No. 2 shaft-rockhouse toward No. 6; the Blacksmith Shop and Machine Shed are on the left, railroad routes bisect the site, ca 1915 (source: KEWE archives**)**



Figure 4- 21: View north from No. 2 shaft-rockhouse toward the former location of No. 6, subtle railroad grades are the only remnants of a concentrated network of railroad routes that historically was present, 2006 (source: QEA)

Buildings and Landscape Features

Landscape Character Type 1 - Historic Mine/Industrial Landscapes

Quincy Mine / Historic Industrial Core landscape character area

The Quincy Mine landscape character area contains a rich assortment of historic and non-historic buildings and landscape features. Table 4-1 includes a list of the contributing and non-contributing buildings and features within the character area, and an explanation of their status.

Table 4-1: Buildings and Landscape Features in the Historic Industrial Core

Buildings and Landscape Features	Contributing or Non-Contributing	Rationale
1. Quincy blacksmith shop	contributing	Part of the historic mining operations.
2. Quincy machine shop	contributing	Part of the historic mining operations.
3. Captain's office		
4. Gift shop /supply house	contributing	Part of the historic mining operations.
5. Public Restrooms / oil house	contributing	Part of the historic mining operations.
6. No.2 shaft-rockhouse	contributing	Part of the historic mining operations.
7. No.2 hoist house (1882)	contributing	Part of the historic mining operations.
8. Martin House Site	contributing	The house and outbuildings were used as a residence during the historic mining operations.
9. No.2 hoist house (1918-20)	contributing	Part of the historic mining operations.
10. No.2 hoist house (1894-95)	contributing	Part of the historic mining operations
11. No.5 boiler plant (1912)	contributing	Part of the historic mining operations.
12. Ruin of Diamond drill core house	contributing	Part of the historic mining operations.
13. Remnant of compressor building	contributing	Part of the historic mining operations.
14. Remnant of No.4 boiler house (1882)	contributing	Part of the historic mining operations.
15. No.4 shaft-rockhouse	contributing	Part of the historic mining operations.
16. Remnant of No.4 hoist house (1885)	contributing	Part of the historic mining operations.
17. Remnant of No.7 boiler house (1898)	contributing	Part of the historic mining operations.
18. Covered water tank	contributing	Part of the historic mining operations. Quincy and Torch Lake railroad covered water tank.
19. Remnant of engine house (1889)	contributing	Part of the historic mining operations.
20. Superintendent's residence	contributing	Part of the historic mining operations.
21. Pay office/ mine office	contributing	Part of the historic mining operations.
22. Assay office	contributing	Part of the historic mining operations.
23. Dryhouse foundation	contributing	Part of the historic mining operations.
24. Remnant of Mine captain's office	contributing	Part of the historic mining operations.
25. Cog rail tramway	non-contributing compatible	Added as part of the interpretive program for the site. Although not a historic feature or route, the tram and track are compatible with the historic setting and visual environment.
26. No. 2 Adit	contributing	Part of the historic mining operations.
27. Parking area at No. 2 hoist house	non-contributing compatible	Although the parking lot does not reflect the historic land use, the gravel/dirt surface is representative of the historic surface. Also, this area served as a circulation area historically.

Buildings and Landscape Features	Contributing or Non-Contributing	Rationale
28. Large artifact display	non-contributing compatible	Although the display does not reflect the historic land use, the artifacts were part of the historic mining operations inventoried by Scott See of Michigan Technological University.
29. Parking area at gift shop / supply office	non-contributing compatible	Although the parking lot does not reflect the historic land use, the gravel/dirt surface is representative of the historic surface. Also, this area served as a circulation area historically.
30. Lawn northeast of No.2 hoist house	non-contributing	Although the mown lawn is a refreshing break from the gravel and dust around most of the site, it does not reflect the historic surface or land use.
31. Railroad track and rolling stock	Track is contributing, rolling stock is compatible	The historic railroad track was part of the historic mining operations. The rolling stock is from another region, but represents a type of train car that might have been used as part of the historic mining operations.
32. Cooling ponds	contributing	Part of the historic mining operations.
33. Area between cooling ponds and supply office	contributing	Although encroaching vegetation disguises the uneven ground surface and remnants of buildings and tracks, these elements are extant parts of the historic mining operations.
34. Area north of supply office	contributing	Although encroaching vegetation disguises the uneven ground surface and remnants of buildings and tracks, these elements are extant parts of the historic mining operations.
35. Area south of No.2 shaft-rockhouse	contributing	Although the poor rock has been mined and the buildings are ruins, their presence represents the large scale and extent of the historic mining operations on the landscape.
36. No. 5 Boiler Plant, trestle remnant, and smokestack	contributing	Part of the historic mining operations.
37. No. 6 Site: Poor rock pile north and east of A.E. Seaman Mineral Museum	contributing	Part of the historic mining operations.

Buildings and Landscape Features	Contributing or Non-Contributing	Rationale
38. Topography and vegetation east of cog tramway	non-contributing	The dense vegetation does not reflect the land use and impacts views between the No.2 location and Quincy Hill and Portage Lake.
39. Poor rock piles	contributing	Part of the historic mining operations. Many of these piles are obscured by vegetation and others are being mined for gravel.
40. Quincy Fire Hall	contributing	Constructed by Quincy Mining Company. Represents late period of operation and continuity of use over time.

Quincy Smelting Works landscape character area

Buildings and landscape features that contribute to this character area include former railroad grades, tram lines and trestles, slag piles, the loading dock, and numerous historic buildings. Locations of the features are identified in Figure 3-33: Character Defining Features – Quincy Smelting Works.

Table 4-2: Quincy Smelting Works – Landscape Features and Building Feature Analysis

Landscape Features[8]	Contributing or Non-Contributing	Rationale
1. Rail Grades & berm	contributing	Part of the historic smelting operations
2. Access Roads	contributing	Part of the historic smelting operations
3. East Slag Pile	contributing	Part of the historic smelting operations
4. East Shoreline Slag Pile	contributing	Part of the historic smelting operations
5. North Slag Pile	contributing	Part of the historic smelting operations
6. East Slag Pile	contributing	Part of the historic smelting operations
7. Northern Open Space	contributing	Part of the historic smelting operations
8. Southwest Open Space	contributing	Part of the historic smelting operations
9. Central Open Space	contributing	Part of the historic smelting operations
10. Salt Storage Open Space	contributing	Part of the historic smelting operations
11. Soil Composition	contributing	Part of the historic smelting operations
12. Coal Dock	contributing	Part of the historic smelting operations
13. Loading Dock	contributing	Part of the historic smelting operations
14. Reverberatory Slag Trestle	contributing	Part of the historic smelting operations
15. Broad view of the site from Hougton	contributing	The site remains highly visible today from Portage Lake and the Houghton shoreline, as it did historically.
16. Small scale views within the site	Not evaluated	Views between various features within the site need to be evaluated.

[8] Patrick Martin and Gianfranco Archimede, *The Quincy Mining Company Smelting Works, 1898: Historical Land Use Survey Project*, 2002. Landscape features enumerated for the Quincy Smelter correspond to those described in the report by Martin and Archimede.

17. Stormwater drain improvements	non-contributing	Compatible, modern site improvements that do not represent historic site conditions.
18. Shoreline stabilization	non-contributing	Compatible, modern site improvements that do not represent historic site conditions.
19. Chain-link Fence and Warning Signs	non-contributing	Temporary security fence erected by the EPA and kept to discourage vandalism.

Building Features	**Contributing or Non-Contributing**	**Rationale**
1. Reverberatory Furnace Building, No. 3 Furnace & 300 h.p. Boiler, No. 5 Furnace Building & the By-Pass Smoke Stack	contributing	Part of the historic smelting operations
2. Cupola Furnace Building	contributing	Part of the historic smelting operations
3. Engine Room	contributing	Part of the historic smelting operations
4. Blacksmith Shop	contributing	Part of the historic smelting operations
5. Dockside Warehouse	contributing	Part of the historic smelting operations
6. Assay Office	contributing	Part of the historic smelting operations
7. Charcoal House	contributing	Part of the historic smelting operations
8. Carpenter Shop	contributing	Part of the historic smelting operations
9. Parts & Supplies Storage Barn	contributing	Part of the historic smelting operations
10. Barn & Garage	contributing	Part of the historic smelting operations
11. Office Building	contributing	Part of the historic smelting operations
12. Iron House & Time Office	contributing	Part of the historic smelting operations
13. Oil House	contributing	Part of the historic smelting operations
14. Ice house	contributing	Part of the historic smelting operations
15. Railroad Storage Shed	contributing	Part of the historic smelting operations
16. Mineral Building	contributing	Part of the historic smelting operations
17. Cook Boiler House	contributing	Part of the historic smelting operations
18. Briquetting Building & Crushing Plant	contributing	Part of the historic smelting operations
19. Limestone Bins	contributing	Part of the historic smelting operations
20. Pump Room	contributing	Part of the historic smelting operations
21. Machine Shop	contributing	Part of the historic smelting operations
22. Scale Houses	contributing	Part of the historic smelting operations
23. Lumber Shed	contributing	Part of the historic smelting operations
24. Casting Shed	contributing	Part of the historic smelting operations
25. Badenhausen Boiler House	contributing	Part of the historic smelting operations
26. Pump House	contributing	Part of the historic smelting operations

Quincy Mine Office and Superintendent's Residence landscape character area

Buildings and landscape features that contribute to this character area include the Quincy Mine Office, Quincy mine agent's house/superintendent's residence, historic road trace, concrete walks, in-ground poor rock utility trench, stone building foundation, sandstone curbwall, portions of wood fencing, lawn, woods, views and a row of trees.

Quincy Dryhouse landscape character area

Buildings and features that contribute to this character area include the foundation and remaining walls of the dryhouse, the foundation of the mine captain's office, other building foundations, the No.2 road, dirt paths and roads that reflect historic circulation patterns, and remnants of domestic vegetation. Surface archeology may also be contributing. Non-contributing elements include a radio tower, three small service buildings, and the Portage Health sign.

No.8 landscape character area

Buildings and landscape features that contribute to this character area include Mine Street, the No.8 headframe, the No.8 hoisthouse, a dryhouse/storage building and fruit trees.

Cultural Traditions

The significance of Keweenaw National Historical Park lies in the story of copper and its relation to the development of an industrialized society in the United States. The cultural traditions related to this theme are rich, especially associated to immigration, ethnic settlement, paternalism, company towns and labor organizations.

Summary of Integrity

Table 4-3 Summary of Integrity for

Landscape Character Type 1 - Historic Mine/Industrial Landscapes(continued on next page)

Landscape Character Area	Summary of Integrity
Quincy Mine landscape character area (Historic Industrial Core)	Retains integrity of location, materials and workmanship due to the extensive extant resources that continue to represent the historic mining activities. Contributing features include spatial organization, selected views, topography, buildings and small scale features. The aspects of design, setting, feeling, and association have been altered due to the removal of significant features including buildings, equipment, patterns of circulation, selected views, and the day to day working of the mine.
Quincy Smelter landscape character area	Retains integrity of location and setting as the complex is sited prominently where originally built, adjacent to the Portage Lake and in proximity to the Quincy Mine at the crest of the adjacent hill. The relationship between these entities remains clear today due to the preservation and interpretation of the large scale industrial structures that mark locations in the landscape and on the horizon. The site continues to be situated among historic company housing locations and neighboring communities that played an important role in the development of the parent mining company and the site. Retains integrity of design and materials due to the extensive extant resources that continue to represent the historic functions, activities, technology and aesthetics of the complex. This is communicated through the site layout and spatial relationships of buildings and site features that once supported the processing of mineral into copper ingots. Contributing features include the topography, circulation patterns related to the movement of materials, several primary and support buildings and small scale landscape features. All of these elements contributed to the operation of this site during its long period of use. The variety of construction materials used, including locally quarried sandstone and mine rock, and the way they were assembled, continues to provide an architectural expression unique to copper smelting in the Great Lakes region. Retains integrity of workmanship, feeling and association despite deterioration evident throughout the complex due to years of exposure to natural elements and forces. Industrial scale buildings and landscape features remain that were crafted using sandstone, poor rock, molten slag, wood, steel and concrete. Evidence of tool marks, hand rivets, historic finishes and assembly methods are all present. Artifacts found across the site provide evidence of tools and technology unique to the copper smelting practice in this region. The dense collection of historic buildings, landscape features and artifacts result in a visually rich experience that conveys the magnitude and complexity of the former copper smelting operation. The inward focus of the site, despite the presence of significant outward views, continues to provide a strong sense of a historic industrial landscape and communicate its association with the copper mining history found in this region.

Landscape Character Area	Summary of Integrity
Quincy Mine Office and Superintendent's Residence landscape character area	This area retains integrity of location, association and setting as the structures continue to occupy their respective sites on a prominent hillside overlooking the Portage Lake and adjacent to the Quincy Mine. The relationship between these entities remains clear today due to the preservation and interpretation of the large scale structures that mark locations in the landscape, the connecting link provided by U.S. 41, and the integrity of the district as a whole. Retains integrity of design, materials and workmanship due to the extant resources that represent the form, space, structure and style of the property. This is communicated through the construction materials used, including locally quarried sandstone, as well as the site layout and spatial relationships of buildings and open spaces maintained as field or lawn. These features collectively represent an architectural expression unique to the Quincy Mine management area. Integrity of feeling has been compromised due to the increased presence of road noise and traffic generated by a wide, modern U.S. 41 directly in front of the site. Contributing features include the historic buildings, circulation patterns related to the movement of people and goods, historic vegetation, small scale landscape features, significant views and archeological sites.
Quincy Dryhouse landscape character area	As a ruin, this site retains integrity of location, materials, and workmanship due to the presence of the Dryhouse foundation and portions of the walls in their historic location. Contributing features include selected views and ruins. Loss of associated landscape features and activities have resulted in the loss of integrity of design, setting, feeling, and association.
No.8 landscape character area	This site retains integrity of location, materials, and workmanship due to the presence of several structures related to the mining activites. Contributing features include buildings, selected views and ruins. Loss of associated landscape features and activities have resulted in the loss of integrity of design, setting, feeling, and association.

Table 4-4: Summary of Integrity for
Landscape Character Type 2 - Historic Company Housing Locations
(continued on following pages)

Landscape Character Area	Summary of Integrity
Limerick landscape character area	A portion of this area (mainly Limerick Road and Streetcar Road) retains integrity of location, materials and workmanship due to the extant residences, outbuildings and streets that continue to represent the historic activities. The aspects of design, setting, feeling, and association have been impacted by the removal of historic features and activities, as well as additions of new buildings and features that do not reflect the historic character of the landscape. Contributing features include land use, spatial organization, selected views, topography, patterns of circulation, buildings and small scale features. The loss of historic buildings, fences, vegetation, and views, in portions of the area have changed the character of the landscape. Impacts include incompatible alterations, additions, demolition, abandonment, deterioration and development without sensitivity to historic context.
Hardscrabble landscape character area	This area does not retain integrity as a historic company housing location. All but the most discrete traces of the residential use of this area are no longer readily apparent, resulting in a loss of integrity of design, setting, feeling, association, materials and workmanship. Nevertheless, the area retains an important visual relationship to the Quincy Mine landscape character area—in the form of views of the No. 2 shaft-rockhouse. Also, archeological resources are undoubtedly present and may be significant. The site retains integrity of location as a potential archeological site. The site can contribute as a discovery site and provide an interpretive example of the changes to the landscape that have occurred due to the passage of time. Impacts include regular use by all terrain vehicles and vandalism by artifact seekers.
Kowsit Lats landscape character area	A portion of this area retains integrity of location, materials and workmanship due to the four extant residences, the foundation of the No.7 engine house, remnants of the rock house, and Roundhouse Road that continue to represent the historic activities. Contributing features include land use, buildings, patterns of circulation and small scale features. Changes to historic buildings, fences, vegetation, and views, in the southeast portion of the area have changed the character of that portion of the landscape resulting in a loss of integrity of design, setting, feeling, and association. Impacts also include the addition of a parking lot and large storm drainage detention structure near U.S. 41.

Landscape Character Area	Summary of Integrity
Lower Pewabic landscape character area	Overall, Lower Pewabic retains integrity of design, location, materials and workmanship due to the extant residences, outbuildings, building foundations and streets that continue to represent the historic activities. In addition, the area retains an association with the Quincy Mine landscape character area due to the strong visual relationship between it and the No. 2 shaft-rockhouse. Finally, the aspects of setting and feeling are intact due to the isolated nature of this neighborhood and minimal intrusions by non-contributing elements. Contributing features include land use, spatial organization, selected views, topography, selected vegetation, buildings and small scale features. Impacts include incompatible alterations, additions, demolition, abandonment, deterioration and development without sensitivity to historic context.
Sing-Sing landscape character area	The small Sing-Sing area retains integrity of location, materials, and workmanship, due to the houses, outbuildings, ornamental plantings, road, and spatial organization that reflect historic patterns. The aspects of design, feeling and setting are somewhat impacted by intermittent woodlots that have grown up on former house sites. The loss of other nearby historic mine housing locations and lack of views of the Quincy Mine landscape character area impacts the aspect of association. Other impacts to integrity at Sing-Sing include major renovations and additions to the residences at the intersection of No. 2 and Sing Sing roads. The nearby development at Raasio Road impacts the setting of the historic neighborhood with new construction that utilizes spacing, setbacks and alignments that are not consistent with historic patterns, as well as contemporary residential forms, massing, low sloped roofs, and modern materials.
Coburntown landscape character area (adjacent to unit boundary)	Retains integrity of design, location, and feeling due to the continued residential use, arrangement of narrow paved streets in a grid, and presence of outbuildings, vegetation, and small scale features including fences that reflect the historic residential character of the neighborhood. Impacts are in the form of incompatible alterations, additions, demolition, abandonment, deterioration and development without sensitivity to historic context. These are most visible where modern construction materials and building massing join with an altered building setback disrupting the traditional development pattern. Also, modern signage impacts the historic scene.

Landscape Character Area	Summary of Integrity
Frenchtown landscape character area	Frenchtown retains integrity of location, materials, and workmanship due to the large historic residences and their associated outbuildings of similar scale, style, and setback arranged along the historic road alignment. In addition, views of the Huron Mountains beyond the Keweenaw Bay enhance the setting of the site. Finally the historic road trace of County Road is evident and massive historic deciduous trees are present in some of the yards. The aspects of design, setting and feeling are impacted by intermittent woodlots that have grown up on former house sites. The loss of other nearby historic mine housing locations and lack of views of the Quincy Mine landscape character area impacts the aspect of association. The area includes a row of three historic houses that retain high integrity with only minor impacts caused by alterations to outbuildings. At U.S. 41, impacts are in the form of incompatible alterations, additions and development without sensitivity to historic context. In particular, a building that once housed Quincy's assay office is now a residence. The exterior of this structure has been extensively altered recently.
Ripley landscape character area (adjacent to unit boundary)	Retains integrity of location, design, association, feeling, setting, materials, and workmanship, due to the intact historic street alignments, building setbacks, historic residences and school, topography, views, and small scale features including retaining walls, decorative fences, ornamental plantings, shade trees, and vegetable gardens. While the presence of some recently constructed residences and a few commercial buildings impact the feeling and setting of the housing location, the overall area is intact. Impacts are in the form of incompatible alterations, additions, demolition, abandonment, deterioration and development without sensitivity to historic context.
Mesnard landscape character area	Portions of this area retain integrity of design, location, materials, and workmanship due to the continued residential use, arrangement of streets, yards, building setbacks, and presence of outbuildings, vegetation, and small scale features including fences that reflect the historic residential character of the neighborhood. Also, a 1916 water tower is located to the east of the character area. Impacts are in the form of incompatible alterations, additions, demolition, abandonment, deterioration and development without sensitivity to historic context. The majority of the area has been heavily altered with the removal of historic structures and addition of new construction that utilizes multiple lots, breaking the spacing and arrangement displayed within the historic portions of the character area.

Landscape Character Area	Summary of Integrity
Newtown landscape character area	The south side of Fourth Street in Newtown retains integrity of design, setting, feeling, association, location, materials, and workmanship due to the presence of four historic saltbox residences, continued residential use, arrangement of streets, yards, building setbacks, and presence of outbuildings, apple trees, lilacs, Lombardy poplars, vegetable and flower gardens, and small scale features that reflect the historic residential character of the neighborhood. Impacts are in the form of one new residence that is not compatible with the scale of the historic character of the area, a garage at the end of the road, and the loss of other historic structures.
South Quincy landscape character area	The Maple Street Area retains integrity of location, design and association. The historic massing, scale, spacing and materials of buildings are extant, and the association with the smelter site is very strong. The aspect of feeling has been altered at the backs of the houses where changes have occurred to meet the needs of today's residents. The setting is quiet and orderly now, whereas historically the nearby smelter operations would have been noisy and industrial materials would have been prevalent in the view. The historic workmanship of the individual structures is no longer apparent. At the Pewabic Street Area intermittent historic residences appear to retain historic integrity, but the overall area does not retain integrity as a historic housing location. Dense vegetation, missing historic structures, and altered residences all result in a lack of representation of the previously dense historic housing location.

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter V: Landscape Management Philosophy & Management Issues

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter V: Landscape Management Philosophy & Management Issues

Landscape Management Philosophy

The publication *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* provides professional standards and guidance for treatments to cultural landscapes listed in or eligible for the National Register of Historic Places. The document defines four types of treatment for historic landscapes including preservation, restoration, reconstruction, and rehabilitation.[1] Each of the philosophies is described herein and discussed in relation to the historic landscapes at the Quincy Unit of Keweenaw National Historical Park.

Preservation

Preservation involves applying measures to sustain the *existing* form, integrity, and materials of (the contributing features of) a historic property. This approach focuses upon stabilizing and protecting extant historic resources, rather than replacing missing elements. It is appropriate when a historic property is essentially intact and does not require extensive repair or replacement; when depiction at one particular period of time is not appropriate; and when continuing or new use does not require additions or alterations.[2]

Although a preservation management approach is appropriate for portions of the Quincy Unit historic landscapes, it is not the most suitable overall philosophy. An overall preservation philosophy would preclude the introduction of new elements that could reduce impacts on cultural and natural resources.

Restoration

Restoration is the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period in time. This includes reconstruction of missing features from the restoration period, and removal of features from all other periods. The approach can be considered only when the property's significance during a particular period of time outweighs the loss of extant elements from other historical periods; and when there is substantial physical and documentary evidence for the work; and when contemporary alterations and additions are not planned.[3]

Although a restoration approach can be suitably applied to select historic landscape elements within the Quincy Unit, it is not the most fitting overall philosophy. The significant extant features relate to more than one historic period, adequate documentary evidence does not exist to restore the property to one period, and contemporary needs require some alterations.

[1] Birnbaum, Charles A. and Christine Capella Peters, 1996. The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes. Washington DC: Department of the Interior, National Park Service, 3-5.
[2] Ibid., 17-18.
[3] Ibid., 89-90.

Reconstruction

Reconstruction is the act or process of using new construction to depict a non-surviving site, landscape, building, structure, or object as it appeared at a specific period of time in its historic location. The approach is appropriate only when the property's significance during a particular period of time outweighs the potential loss of extant features that characterize other historical periods. In addition, there must be substantial physical and documentary evidence for the work, and the work must be clearly identified as a contemporary re-creation.[4]

As a whole, the Quincy Unit historic landscapes are not eligible for reconstruction because significant extant features relate to more than one historic period, adequate documentary evidence does not exist to reconstruct the property to one period, and contemporary needs require some alterations. A reconstruction approach may be suitably applied to select elements within the historic landscapes at the Quincy Unit.

Rehabilitation

The act or process of rehabilitation allows repairs, alterations, and additions necessary to enable a compatible use for a property as long as the portions or features which convey the historical, cultural, or architectural values are preserved. This approach is appropriate when depiction at one particular period of time is not appropriate; repair or replacement of deteriorated features is necessary; and alterations or additions are needed for a new use.[5]

Rehabilitation has been selected as the most appropriate overall management philosophy for the historic landscapes at the Quincy Unit of Keweenaw National Historical Park. This philosophy has been selected because of the existence of features that relate to more than one type and period of significance, the need for alterations to accommodate visitor services, and the need to protect the historic resources. This philosophy will allow for preservation, restoration, and reconstruction of selected features as appropriate. Three alternative rehabilitation treatment approaches have been developed. They are presented in Chapter VI.

Landscape Management Overview

A general management philosophy of rehabilitation has been identified as the most appropriate for the Quincy Unit historic landscape. Rehabilitation allows repairs, alterations, and additions necessary for compatible use of a property as long as the characteristics or features which convey the historical, cultural, or architectural values are preserved. This philosophy has been selected to enable preservation of contributing resources and to allow specific alterations necessary to accommodate use and interpretation of the historic landscape.

Landscape management issues related to the historic landscapes within the Quincy Unit are addressed herein at two scales. At a broad scale, landscape management issues are defined for the overall Quincy Unit, addressing eleven unit-wide categories; boundary, visitor center, historic industrial structures and landscape features, views, new development, vegetation, interpretation, historic housing locations, U.S. 41 corridor, archeological resources, and poor rock piles. A section also addresses management issues related to the Quincy Smelting Works. All of the unit-wide issues also apply to the Historic Industrial Core. At a more detailed scale,

[4] Ibid., 127-129.
[5] Ibid., 47-48.

management issues are described for the Historic Industrial Core of the Quincy Unit pertaining to vegetation, archeological resources, mine shafts, views, and the No. 2 adit.

Definition of the Quincy Unit

The Quincy Unit discussed throughout this report encompasses the entire area within the boundary of the Quincy Unit of Keweenaw National Historical Park, as defined by the park's General Management Plan.[6] This boundary is based on the boundary of the Quincy Mining Company National Historic Landmark District.[7]

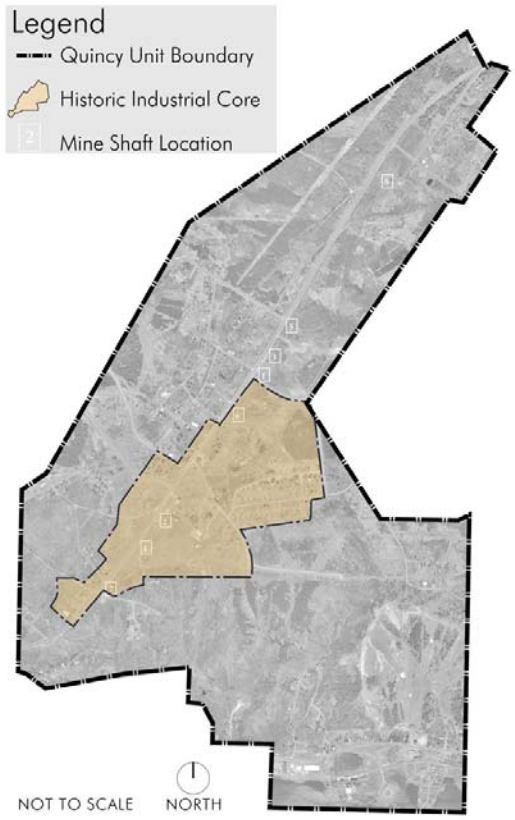


Figure 5 - 1: Quincy Unit Boundary and Historic Industrial Core Boundary

Upon completion of the landscape analysis (presented in Chapter IV herein), a Historic Industrial Core was defined as the focus for schematic design development. The core boundary represents the area encompassing the highest concentration of resources related to the historic industrial activities on Quincy Hill (see Figure 5-1). The majority of property within the Historic Industrial Core is owned by park partners and private citizens, although the NPS owns significant parcels along the U.S.-41 corridor. Figure 5-2 illustrates ownership within the Historic Industrial Core.

[6] For more information about the establishment of the Quincy Unit boundary, see Chapter I.
[7] For more information regarding the National Register status of the property and the National Historic Landmark district boundary, see Chapter IV.

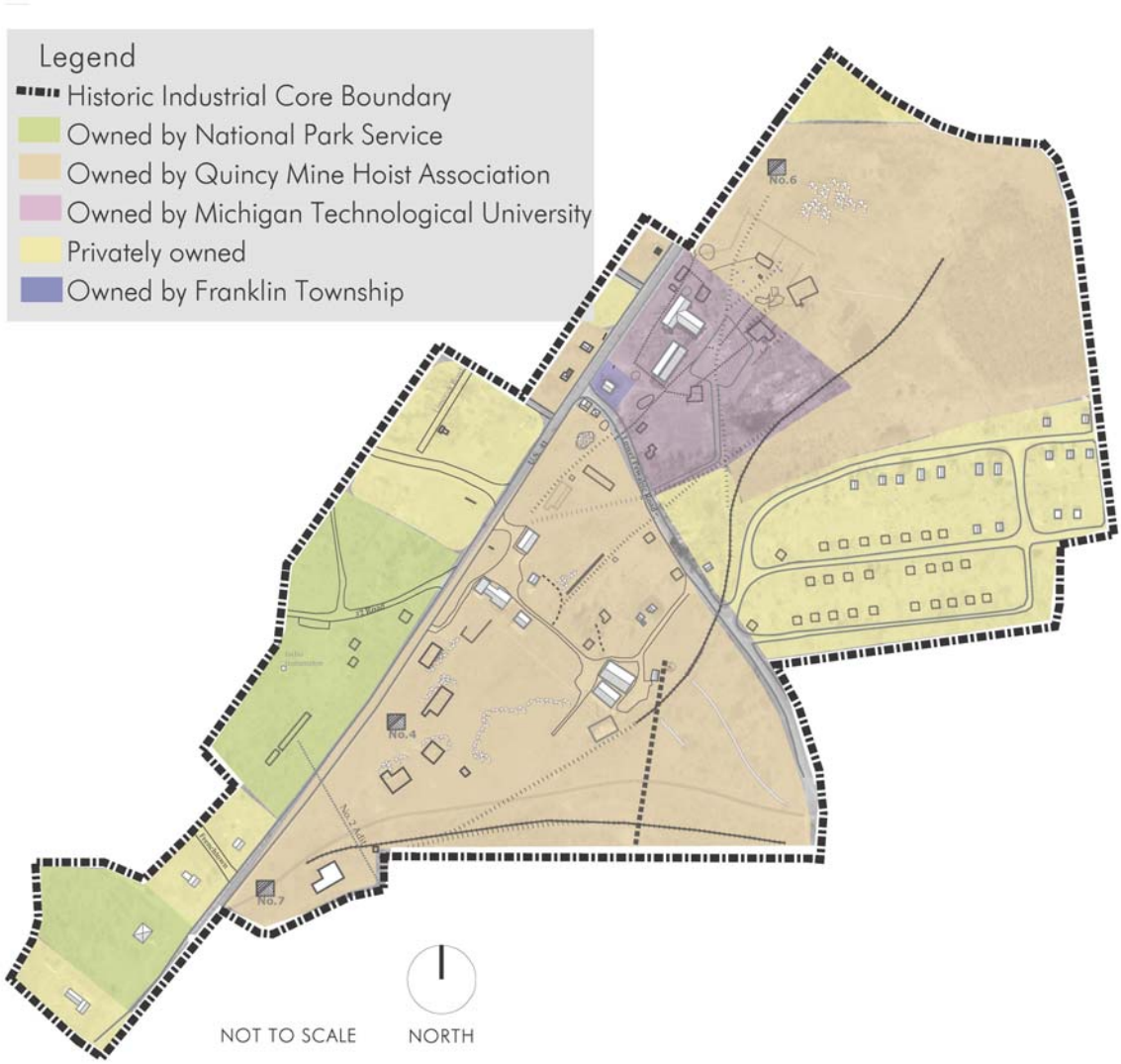


Figure 5 - 2: Property Ownership within the Historic Industrial Core

Design and management alternatives for the areas that are owned by the National Park Service, Quincy Mine Hoist Association and Michigan Technological University are more detailed and substantive than those related to privately owned land. It is recommended that the National Park Service and their partners work with the other land owners to achieve the design and management goals.

Management Issues

Management concerns for the historic landscapes at the Quincy Unit of Keweenaw National Historical Park are summarized in this chapter. At a broad scale, focusing on the entire Quincy Unit, management issues have been organized into themes (views, new development, vegetation management and interpretation) and types of resources (historic housing locations, the U.S. 41 corridor, and archaeological resources). At a more detailed scale, management issues are presented for the overall Historic Industrial Core as they relate to vegetation, archaeological resources, mine shafts, the No. 2 Adit, poor rock piles, views and circulation (vehicular, pedestrian, and alternatives).

Quincy Unit Management Issues

Quincy Unit Boundary (Management Issues)

- The boundaries of the park have not been finalized. When the park was established in 1992, the enabling legislation stated that a detailed description and map of the boundaries would be established within 180 days of the enactment of the Act. The boundary of the Quincy Unit needs to be finalized.

- The Quincy Unit and the National Historic Landmark boundary are not inclusive of the entire Quincy Mining Company historic landscape. The boundary currently includes resources related to two parts of the three part story regarding the Quincy Mining Company. Resources exist in the region, at Torch Lake, that are related to the third part of the story. The resources at Torch Lake need to be evaluated to determine their integrity. Also, as the NPS boundary of the Quincy Unit is finalized, the possibility of including these resources should be considered.

Quincy Unit Visitor Center (Management Issues)

- The General Management Plan indicates that a visitor orientation facility will be established in the Quincy Unit to "provide most visitors approaching from the Houghton/Hancock area a first destination point."[8] The facility will be the first point of contact for most visitors and needs to provide a general orientation to and overview interpretation of the Keweenaw Peninsula and Keweenaw National Historical Park to help visitors plan their activities. A location and program need to be determined for a visitor orientation facility in the Quincy Unit.
    - KEWE management staff conducted an in-house planning process to determine the best possibilities for a visitor orientation facility in the Quincy Unit. The options identified include:
        - The site of the A.E. Seaman Mineral Museum
            - This would involve a partnership with the museum.

[8] United States Department of the Interior, National Park Service, *Final General Management Plan and Environmental Impact Statement, Keweenaw National Historical Park*, 50.

        - One of the buildings at the A.E. Seaman Mineral Museum, owned by Michigan Technological University, would be used.
    - A partnership with the QMHA
        - Utilize one of the buildings on QMHA property.
    - Quincy Mine Office
        - The park owns this building.
    - One of the buildings at the Quincy Smelting Works.
        - The National Park Service does not own the Quincy Smelting Works site.

Quincy Unit Historic Industrial Structures and Landscape Features (Management Issues)

- Appropriate management approaches need to be determined for the significant industrial structures and landscape features within the Quincy Unit.

Quincy Unit Views (Management Issues)

- Significant and threatened views need to be identified.
- Recommendations for maintaining or restoring important views are needed.

Quincy Unit New Development (Management Issues)

- Locations likely to be impacted by new or inappropriate development need to be identified.
- Recommendations for preserving the historic character of the Unit need to address concerns related to privately owned land that is likely to be developed in ways that could impact the historic character of the Unit. Provide recommendations to prevent loss of historic landscape character or features in these locations.
- Ownership within the Quincy Unit includes many different entities with concerns and priorities that do not necessarily include preservation of the historic resources. There is a high potential for non-compatible development to occur within the Quincy Unit.
- Existing and potential illuminated signs pose a threat to the character of the landscape, in particular during dark hours, which are substantial in the winter.
- Conventional lighting for the Mt. Ripley ski hill, parking lots, and other businesses, trespasses at adjacent properties and compromises the historic setting. Additional lighting of this type could further impact the historic character of the unit.

Quincy Unit Vegetation (Management Issues)

- Existing vegetation impacts historic resources in some locations and, if not managed, vegetation will continue to encroach on the historic landscape and compromise the historic setting.
- The park needs guidance regarding managing, maintaining and/or replacing historic vegetation and, where it is appropriate, to remove vegetation that impacts the integrity of the historic landscape, including invasive non-native vegetation.
- Invasive species that are impacting historic resources need to be identified.
- Domestic plants that are contributing or compatible with the historic landscape need to be identified.

Quincy Unit Interpretation (Management Issues)

- A Long Range Interpretation Plan (LRIP) is being prepared for Keweenaw National Historical Park. Recommendations in the CLR should be coordinated with the LRIP.
- A cohesive, Unit-wide visitor experience needs to be identified and endorsed by the park, the Quincy Mine Hoist Association, and the A.E. Seaman Mineral Museum.
- Interpretive opportunities to convey landscape significance and the park purpose need to be identified.
- A stronger approach, arrival and entry sequence needs to be defined to help visitors experience the Unit and the park as a whole.
- There is a need for a Visitor Center within the Quincy Unit to tell the story of the Keweenaw region and orient visitors to the resources available.

Quincy Unit Historic Housing Locations (Management Issues)

- Eleven historic company housing locations are identified and described in the report, however they have not been studied in detail.
    - There is a need to develop a more in-depth understanding of the historic resources present at each company housing location.
    - The significance and integrity of the resources associated with the company housing locations needs to be determined.
    - The extant resources associated with historic housing locations within the Unit need to be more clearly identified.
- The park desires recommendations to help preserve the character and integrity of historic housing locations.
- Any future plans for the historic housing locations need to take into account the issues related to private ownership and the needs of the occupants.

Quincy Unit U.S. 41 Corridor (Management Issues)

- U.S. 41 is the main access route into and through the Quincy Unit and a large portion of the land adjoining the highway has a high potential for development that could impact the historic character of the Unit.
- There are portions of the highway corridor that do not reflect the historic character of the Unit.
- As the main access route into the Unit, the arrival and entry experience should be strong. Currently it is unclear when a person has entered the National Park.
- Key views, vegetation, signs and types of development within the corridor need to be defined and addressed to help develop a stronger visitor experience.
- The highway cuts through the Historic Industrial Core, making it difficult to develop the core as a single visitor experience, as it is difficult for visitors to transition across the highway.
- The Portage Lake Overlook, owned by the Michigan Department of Transportation (MDOT), is located at a primary site for visitors entering the park from the south. The design and interpretive messages at the site need to be considered as they relate to the Quincy Unit.

Quincy Unit Archeological Resources (Management Issues)

- There is no comprehensive Archeological Inventory of the Park. The Unit has a high potential to yield new information regarding the historic industrial activities that occurred during the period of significance as well as pre-industrial/pre-contact mining activities. More information regarding the archaeological resources is needed.

Quincy Unit Poor Rock Piles (Management Issues)

- Poor rock piles were historically dominant features on the industrial landscape, but today they are being depleted by mining and obscured by vegetation. The park needs recommendations for preserving the poor rock piles and strengthening visual connections between the extant poor rock piles and major visitor destinations.

Quincy Smelting Works (Management Issues)

- During the majority of the time that this Cultural Landscape Report was being developed, the Quincy Smelting Works was the focus of a United States Environmental Protection Agency (EPA) remediation project. Due to hazardous conditions, the site was fenced and access limited. The NPS was obliged to negotiate participation with the EPA before addressing any planning efforts regarding this site. As a result, the Cultural Landscape Report addresses the property in very general terms. As soon as possible, an in-depth inventory, evaluation, and planning project should be applied to this property.

- The Quincy Smelting Works site includes extensive historic resources that are deteriorating. Efforts to preserve the significant resources at this site should be made as soon as possible.

- A plan for the future ownership, preservation and use of the Smelting Works needs to be developed.

Management Issues Related to the Historic Industrial Core[9]

Historic Industrial Core Vegetation (Management Issues)

- Vegetation is impacting historic resources throughout the Historic Industrial Core.
- Vegetation impacts will increase if they are not addressed.
- In particular, the poor rock piles and ruins of buildings and other landscape features are slowly disappearing under vegetation.

Historic Industrial Core Archaeological Resources (Management Issues)

- There are potential opportunities within the Historic Industrial Core to conduct archaeological investigations that can provide information about the historic landscape and interpretive opportunities.

Historic Industrial Core Mine Shafts (Management Issues)

- Within the Historic Industrial Core there are four extant Quincy Mining Company mine shafts, however they are not easily identifiable to visitors.
- The mine shafts provide habitat for bats.

[9] Issues identified for the overall Unit also apply to the Historic Industrial Core and are not repeated in this section.

- The park needs recommendations regarding the identification, interpretation and management of the mine shafts.

Historic Industrial Core No. 2 Adit (Management Issues)

- The No. 2 Adit plays a primary role in the underground mine tour and could also help visitors to more clearly understand relationships between the aboveground and underground resources. Methods to help visitors visualize the location of the No. 2 Adit are needed.

Historic Industrial Core Views (Management Issues)

- Views between Houghton and the crest of Quincy Hill are of primary significance to the Quincy Unit and should be taken into consideration during any land planning activities. Since there are no zoning regulations, recommendations for how to help influence landscape change on the hill are needed.

Chapter VI: Treatment Alternatives

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter VI: Treatment Alternatives

Overview

Recommendations for the treatment of the historic landscapes within the Quincy Unit are provided in this chapter. At a broad scale, general management recommendations are provided for the overall Quincy Unit. At a more detailed scale, conceptual design treatment alternatives are presented for the Historic Industrial Core of the Quincy Unit. These adhere to the boundaries of the Quincy Unit and the Historic Industrial Core, which are described in Chapter V. Features shown on the plans are conceptual, providing general locations and layouts. Specific locations and layouts for proposed features need to be developed at schematic and detailed levels before implementation of the recommendations.

Four alternative landscape treatments are presented for the Historic Industrial Core of the Quincy Unit. The treatment alternative descriptions include the current management (no action alternative) and three "action" alternatives providing proposals for changes to the management of the landscapes. The action alternatives are titled Treatment Alternative A, Treatment Alternative B, and Treatment Alternative C. The current management /no action alternative reflects the current use of the landscape and provides a baseline for evaluation of potential impacts from each action alternative.

The current management / no action alternative is presented first, followed by an overview of the action alternatives including a vision statement, goals and objectives that are shared by all of the recommendations. Next, treatment guidelines for the Quincy Unit (common to all alternatives) are presented. These are followed by treatments common to all of the Historic Industrial Core alternatives and descriptions of the three treatment alternatives for the Historic Industrial Core. Design and management alternatives for the areas that are owned by the National Park Service, Quincy Mine Hoist Association and Michigan Technological University are more detailed and substantive than those related to privately owned land. It is recommended that the National Park Service and their partners work with the other land owners to achieve the design and management goals.

Following the descriptions of the treatment alternatives, a quantified summary of the extent to which each alternative meets the project objectives is provided in Table 6-2. Next, a summation of the environmental impacts associated with each alternative is presented in Table 6-3 and the section titled "Environmentally Preferred Alternative." Table 6-3 is a condensed presentation of the detailed analysis and conclusions of potential impacts provided in **Chapter VII: Treatment Impacts/Environmental Consequences**. Using the Council on Environmental Quality's (CEQ's) interpretations and the treatment alternatives impact analysis provided in Chapter VII of this Cultural Landscape Report, it was determined that the combination of **Treatments Common to all Alternatives** and **Historic Industrial Core Alternative C is the environmentally preferred alternative.** The combination of Treatments Common to all Alternatives and Historic Industrial Core Alternative C would implement the highest level of rehabilitation, restoration and preservation of all the alternatives.

After the summary of the environmentally preferred alternative, a list of mitigation measures that have been developed to minimize adverse effects with the implementation of Alternative C, the Preferred Alternative, is provided. Finally, descriptions of treatment alternatives that were considered and dismissed are supplied at the end of the chapter.

Quincy Historic Industrial Core Current Management Approach

(No Action Treatment Alternative):

The historic landscapes at the Historic Industrial Core of the Quincy Unit would continue to be managed as they are currently and no new policies would be implemented. The no-action alternative provides a baseline for evaluating changes and impacts associated with the three action treatment alternatives (see Figure 6-1: Current Management (No Action Alternative).

With this treatment alternative, the primary historic landscape resources, including the major in-tact buildings, large building ruins, and limited landscape features, would be preserved and interpreted. The remainder of the resources, including an extensive collection of landscape features, would be left to molder. This would eventually result in the loss of significant resources. Successional vegetation would fill in where not impeded, decreasing historic integrity while increasing wildlife habitat and creating a more naturalistic environment in the Historic Industrial Core. The emphasis of this treatment alternative is on maintaining existing features.

Historic Industrial Core of the Quincy Unit, Current Management (No Action Alternative)

- **Vegetation:** Remove vegetation that is impacting structures in the No. 2 Area, the No.4 Area, and the Dryhouse Area. Hands-off management for vegetation in other areas.
- **Archeological Resources:** Preserve and allow visitors to explore as discovery sites throughout Historic Industrial Core. Address protection of resources and mitigation of impacts from visitors traversing the surface at archeological sites through interpretive and archeological plans for the Dry House area.
- **Mine Shafts:** Maintain existing bat structures at shaft entrances.
- **No. 2 Adit:** Continue to utilize the adit for underground tours.
- **Poor Rock Piles:** Hands-off management.
- **Views:** Hands-off management.
- **Circulation:**
    - **Vehicular:** Provide access road and parking lot at Supply House (NPS Visitor Center), A.E. Seaman Mineral Museum, and No. 2 Hoist Houses (QMHA Visitor Center).
    - **Pedestrian:** Allow pedestrians to explore the site and discover resources present.

- **Buildings and Structures:**
  - **A.E. Seaman Mineral Museum Area:**
    - Utilize the Blacksmith's Shop and Machine Shop for the A.E. Seaman Mineral Museum.
  - **Former Miner Residences:**
    - Stabilize the three residences on the northwest side of U.S. 41.
  - **Campus Drive Area:**
    - Maintain this area with the existing sign and scattered vegetation.
  - **No. 2 and No. 4 Area:**
    - Stabilize and preserve the Captain's Office.
    - Maintain the Quincy/Franklin Fire Hall.
    - Maintain the residence on Lower Pewabic Road near the Martin House as a private residential property.
    - Maintain the Supply House as the Quincy Mine Hoist Association gift shop, ticket sales, and National Park Service contact station.
    - Maintain Oil House and use for restrooms (above) and blacksmith demonstrations (below).
    - Preserve the No. 2 Shaft-Rockhouse and interpret its historic use.
    - Use the Old No. 2 Hoist House (1860) for storage and interpret.
    - Preserve the Martin House and interpret miner's housing.
    - Preserve the No. 2 Hoist House (1918-1920) interpret with tours.
    - Preserve No. 2 Hoist House (1894-1895) and use for Quincy Mine Hoist Association exhibits focused on the Quincy Mine, offices, theater, restrooms, and tour staging.
    - Preserve the ruin of the No. 5 Boiler Plant (1912).
  - **No. 7 and RR Corridor Area:**
    - Stabilize and preserve the Covered Water Tank.
    - Rehabilitate the Engine House (1889), house rolling stock and exhibits within it and interpret its historic use.
  - **Mine Management Area:**
    - Utilize the Superintendent's Residence for multi-unit rental housing.
    - Preserve the Quincy Mine Office and utilize for professional offices.
    - Stabilize the Assay Office.
    - Stabilize Captain White's Residence (South of Frenchtown Road).

Next page:

Figure 6 - 1: Historic Industrial Core Current Management (No Action Treatment Alternative)

No.6 Area:

1. Hands-off management for cultural resources;
2. Hands-off management for vegetation;
3. Discovery site.

A.E. Seaman Mineral Museum Area:

1. Utilize Blacksmith Shop and Machine Shop for the A.E. Seaman Mineral Museum;
2. Provide parking for the A.E. Seaman Mineral Museum.

Former Miner's Residences Area:

1. Preserve exterior of historic buildings.

Campus Drive Area:

1. Stabilize and Preserve historic resources, including building ruins and small scale features.

Dryhouse Area:

1. Stabilize and Preserve historic resources including building ruins and small scale features;
2. Remove vegetation impacting historic resources.

Mine Management Area:

1. Restore exterior of Mine Office and rehabilitate interior for office space;
2. Preserve landscape features associated with the Mine Office;
3. Stabilize and Preserve historic resources including small scale features, domestic vegetation and views;
4. Provide picnic table at Mine Office.

Overall Historic Core:

1. Selectively remove woody vegetation that impacts key historic resources;
2. Preserve historic shafts.

Legend

- Historic Industrial Core Boundary
- Extant Historic Building
- Remnant of Historic Building
- Comtemporary/Modified Building
- Landscape Management Zone
- Artifact pile
- Conceptual Pedestrian Route
- Historic Railroad Grade
- Extant Railroad Track
- Vegetation
- Rock Piles
- Cog Rail Tramway
- No.6 Mine Shaft Location



Lower Pewabic Area:

1. Private residential neighborhood.

No. 2 and No. 4 Area:

1. Preserve historic resources;
2. Remove non-contributing woody vegetation around extant buildings and foundations;
3. Utilize Supply House for QMHA gift shop, ticket sales, and small NPS contact station;
4. Utilize Hoist Houses for QMHA tours, underground mine tour staging, office, restrooms, and museum;
5. Provide interpretation of No. 2 Shaft-rockhouse;
6. Preserve and interpret the Martin House;
7. Retain Quincy Fire Hall.

No. 7 & Railroad Corridor Area:

1. Restore exterior of Roundhouse and install rolling stock exhibits.

Buildings and Remnants:

1. Blacksmith's Shop
2. Machine Shop
3. Captains Office
4. Supply House
5. Oil House
6. No. 2 Shaft-Rockhouse
7. Old No. 2 Hoist House (1882)
8. Martin House and Outbuilding
9. No. 2 Hoist House (1918-20)
10. No. 2 Hoist House (1894-95)
11. No. 5 Boiler Plant (1912)
12. Ruin of Diamond Drill Core House
13. Remnant of Compressor Building
14. Remnant of No. 4 Boiler House (1882)
16. Remnant of No.4 Hoist House (1885)
17. Remnant of No. 7 Boiler House (1898)
18. Quincy & Torch Lake R.R. Water Tank
19. Remnant of Engine House (1889)
20. Dryhouse Foundation
21. Mine Captain's Office
22. Assay Office
23. Captain White's Residence
24. Pay Office/Mine Office
25. Superintendent's Residence
26. Quincy Fire Hall

SCALE: NORTH
0 200 400

QUINN EVANS | ARCHITECTS

Base Sources:

1. Aerial photography, prepared for Keweenaw National Historical Park by Ayres Associates, Inc., of Madison, Wisconsin, May 2002.
2. Eric M. Hanson, "Quincy Mining Company Maps," HAER Heritage, Conservation and Recreation Service, 1978.
3. Land ownership information provided by Keweenaw National Historical Park.
4. Larry Mishkar, "Land Use History and Archaeological Survey, Seaman Mineral Museum Project, Quincy Mine National Historic Landmark, Houghton County, Michigan," Industrial Archaeology Laboratory, Michigan Technological University, Houghton, Michigan, 2005.
5. Period of Change Plans, Chapter II, Landscape History, Quincy Unit Cultural Landscape Report.
6. Smithgroup and Hitch, Inc., "A.E. Seaman Mineral Museum Master Plan Report," 20 January 2006.

CURRENT MANAGEMENT (No Action Alternative)

Cultural Landscape Report May 2010

HISTORIC INDUSTRIAL CORE
Keweenaw National Historical Park

Treatment Recommendations and Alternatives for the Quincy Unit and the Historic Industrial Core

The Current Management /No Action Treatment Alternative described in the previous section reflects the current use of the landscape and provides a baseline for evaluating potential impacts related to each action treatment alternative. The treatment guidelines for the Quincy Unit and treatment alternatives for the Historic Industrial Core described in the next section provide proposals for changes to the current management of the landscapes. The three action treatment alternatives all respond to a common vision statement, goals, and objectives.

Vision Statement for all Action Treatment Alternatives

Rehabilitate the landscape of the Historic Industrial Core so that it may serve as the foundation for a cohesive visitor experience that includes interpretation of mining operations and how they changed over time, mine management, housing locations and the day to day life of the mining community.

Goals Common to all Action Treatment Alternatives

1) Improve the ability of the landscape to convey and represent its historic significance.
2) Improve the connectedness of all of the park historic landscapes.
3) Improve the understanding and elevate the importance of the cultural landscapes within the Quincy Unit for visitors and park staff.
4) Provide expanded opportunities for visitors to experience the park's cultural landscapes in context with their historical significance.
5) Enhance visual and physical connections within the Quincy Unit.

Objectives Common to all Action Treatment Alternatives

1) Preserve contributing cultural landscape features within the boundaries of the Quincy Unit.
2) Restore and stabilize selected significant cultural landscape features.
3) Rehabilitate selected historic landscape elements.
4) Restore historic physical and visual connections.
5) Preserve known and potential archeological resources.
6) Provide sustainable solutions that include energy conservation measures.

Quincy Unit Landscape Treatment Guidelines (common to all alternatives)

At a broad scale, general management recommendations are provided for the overall Quincy Unit, addressing unit-wide themes including overall issues, views and new development, vegetation, and interpretation. In addition, general management recommendations are provided for the historic housing locations, the U.S. 41 corridor, the MDOT/Portage Lake Overlook, archeological resources, and the Quincy Smelting Works. All of the planning and implementation efforts related to the resources within the Quincy Unit need to be coordinated with the property owners and regulatory agencies.

Quincy Unit Overall Issues (Treatment Guidelines)

- Preserve contributing historic resources through stabilization, preservation, rehabilitation and restoration. In particular, preserve the scale and form of the contributing landscape features.
- Conduct thorough analysis of historic structures by preparing Historic Structures Reports before undertaking treatment actions.
- Allow specific additions or alterations that are compatible with the historic character of the landscape and that meet contemporary needs.
- Evaluate the extant resources associated with Torch Lake to ascertain their significance and to determine if they contribute to the Quincy Mining Company National Historic Landmark district.
- Finalize the boundary of the Quincy Unit of Keweenaw National Historic Park.

Quincy Unit Views and New Development (Treatment Guidelines)

- Preserve significant historic views to and from the Quincy Unit (see Figure 6-2 and Chapter VIII, Project B).
    - Develop visual connections to downtown Houghton by maintaining selected views through pruning vegetation and/or planting vegetation that will not interfere with views from the road and trails.
    - The most important views in the Unit that are not within the Historic Industrial Core are those between Houghton and Quincy Hill; work with property owners to preserve views.
    - Work with state agencies, local governments, local stakeholder groups and property owners to establish a non-motorized trail that connects resources in the Quincy unit with a developing regional recreational trail network.
- The Quincy Unit includes substantial private property holdings. In particular, the land at the crest of Quincy Hill has a high potential for development that would likely impact these views. Since much of the hill was developed for housing and industrial uses during the historic period, new development that is undertaken with careful consideration of historic character and visual impacts could enhance the ability of the landscape to reflect the historic period (Chapter VIII, Project B).
    - Work closely with local governments to enact historic preservation or zoning ordinances to avoid incompatible development. Consider preparing sample ordinances for local governments.

  - Consider establishing management areas based on views and the potential for new development.
  - While adhering to 16 U.S.C. §410yy-3(c) of the park's enabling legislation, consider purchasing scenic easements for land that is within primary views.[1]
  - While adhering to 16 U.S.C. §410yy-3(c) of the park's enabling legislation, consider purchasing land that is within primary views.[2]
  - Consider developing partnerships with landowners to help guide development within primary views to ensure it is compatible with the historic character of the Unit.
  - Strengthen the technical assistance outreach program. Consider publicizing the opportunities available by creating a brochure or catalogue of technical assistance that is available for landowners.
  - Provide one-on-one technical assistance to individuals to help with specific issues.
  - Consider conducting workshops and presentations focused on issues that will help landowners meet their needs while preserving the historic landscapes.
  - Encourage people who approach the NPS staff with questions about structures to consider the historic landscape as well.
  - Provide assistance and guidance to landowners to encourage compatible development.
  - Develop design guidelines for the Historic Housing Locations within the Quincy Unit. Provide examples of compatible and non-compatible new development to help owners.
  - Provide education about tax credits or other financial incentives for adhering to guidelines.
- Work to ensure that the number of billboards within the Quincy Unit does not increase.
- Remove billboards within the Quincy Unit, when opportunities arise.
- Where billboards exist currently, work with owners to ensure that any impacts from their presence are minimized. Work with owners to ensure that the size and materials of the billboards do not change.

[1]16 U.S.C. §410yy-3(c). Section 4(c) of the park's enabling legislation states: "CONSENT- No lands or interests therein within the boundaries of the park may be acquired without the consent of the owner, unless the Secretary determines that the land is being developed, or is proposed to be developed in a manner which is detrimental to the natural, scenic, historic, and other values for which the park is established.

[2] Ibid.

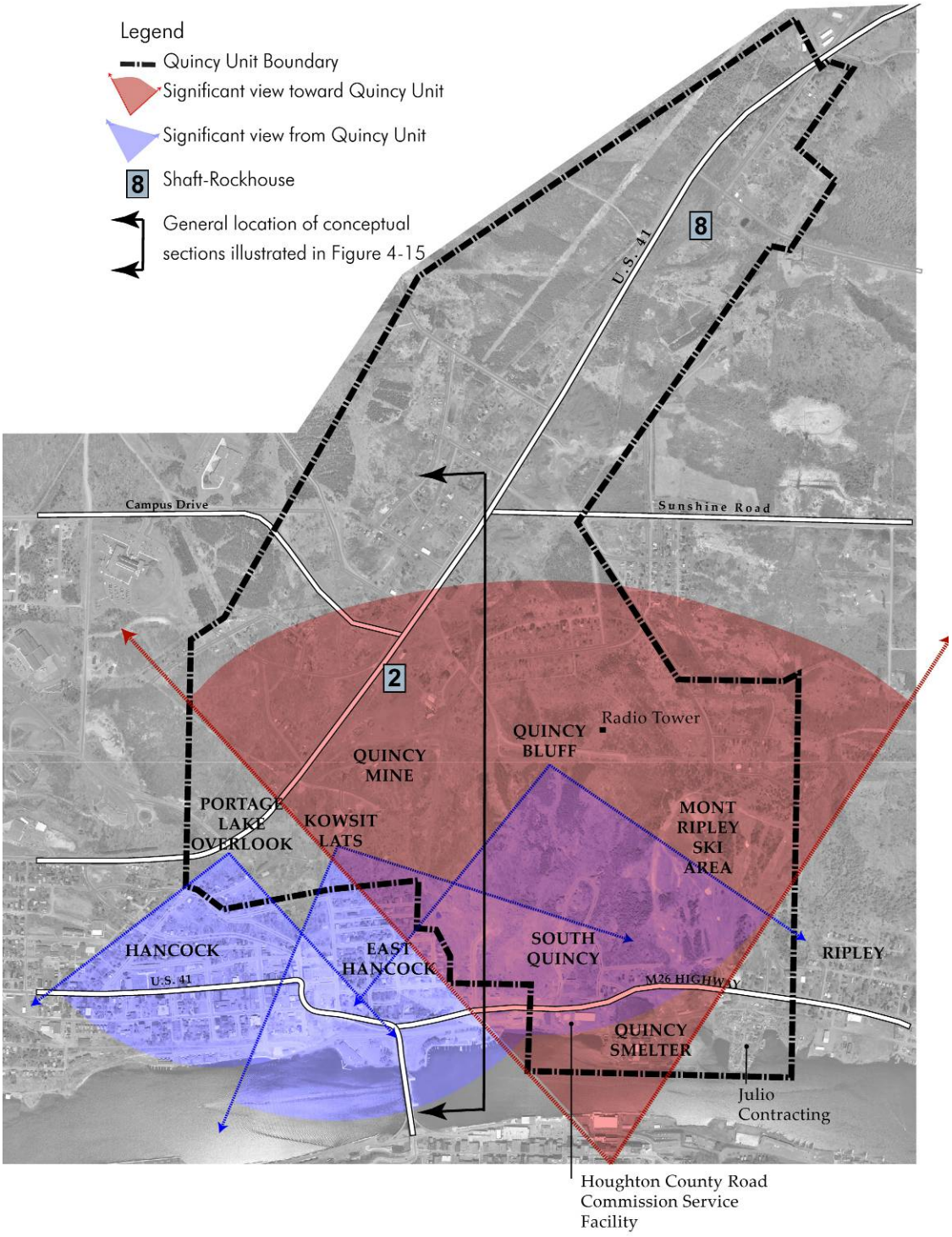


Figure 6 - 2: Quincy Unit Significant Views

Quincy Unit Vegetation (Treatment Guidelines)

- Remove woody vegetation that impact historic resources, including views. See Views and New Development for more details regarding this recommendation (see Chapter VIII, Projects C-1, C-2, D, E, F, G, H, I and W).
- Preserve historic domestic species including:
    - Apple trees
    - Lilac
    - Daylily
    - Asparagus
    - Lilly of the Valley
- Discourage the spread of invasive or noxious species within the Quincy Unit. An invasive species is a plant whose presence is likely to cause economic or environmental harm or harm to human health.
- Table 6-1 provides a list of federal noxious weeds and indicates if they have been identified in Houghton or Keweenaw County. Although some of the plants have not been identified in the area, the entire list is included since the nature of these plants is to spread quickly. All of the plants on the list should be removed when possible. These plants should not be planted in the landscape.

Table 6-1: Federal Noxious Weeds (indicates the plant is also a Michigan Noxious Weed)*

Scientific Name	Common Name	Present in Houghton County	Present in Keweenaw County
Abutilon theophrasti	Velvetleaf		
Allium vineale	Field Garlic		
Avena fatua	Wild Oats	Y	
*Barbarea vulgaris**	Yellow Rocket	Y	Y
*Berteroa incana**	Hoary Alyssum		
Brassica juncea	Indian Mustard		Y
*Brassica nigra**	Black Mustard		Y
Cardaria draba	Hoary Cress		
Cardaria pubescens	White-Top		
*Carduus acanthoides**	Plumeless Thistle		
*Carduus nutans**	Musk Thistle		
*Centaurea maculosa**	Spotted Bluet	Y	Y
Centaurea repens	Russian Knapweed		
*Cirsium arvense**	Canadian-Thistle	Y	Y
*Cirsium vulgare**	Bull-Thistle	Y	Y
*Convolvulus arvensis**	Field Bindweed	Y	Y
Cuscuta epilinum	Flax Dodder		
Cuscuta epithymum	Clover Dodder		
Datura stramonium	Jimson-Weed		
*Daucus carota**	Queen-Anne's-Lace	Y	Y
Scientific Name	**Common Name**	**Present in Houghton County**	**Present in Keweenaw County**
*Euphorbia esula**	Leafy Spurge	Y	
Galega officinalis	Professor-Weed		
Heracleum mantegazzianum	Giant Hogweed		
Ipomoea hederacea	Ivy-Leaved Morning Glory		
Iipomoea purpurea	Common Morning Glory		
Ipomoea xmultifida	Cardinal Climber		
Ipomopsis rubra	Standing-Cypress		
Lythrum hyssopifolia	Hyssop Loosestrife		
*Lythrum salicaria**	Purple Loosestrife	Y	Y
Plantago lanceolata	English Plantain	Y	

Raphanus raphanistrum	Wild Radish		
*Rumex crispus**	Curly Dock	Y	Y
*Solanum carolinense**	Horse Nettle	Y	
*Solanum dulcamara**	Bittersweet Nightshade	Y	Y
*Solanum physalifolium (s. sarachoides)**	Hairy Nightshade		
Sonchus arvensis (s. uliginosus)	Perennial Sow Thistle	Y	
*Sorghum halepense**	Johnson Grass		
Thlaspi arvense	Penny Cress	Y	Y
Tribulus terrestris	Caltrop		
Xanthium strumarium	Common Cocklebur		

Sources: Michigan Invasive Plants Council (http://invasiveplantsmi.org) and the Michigan State University Extension lists of plants in Keweenaw and Houghton Counties (http://michigansaf.org/ForestInfo/MSUElibrary/CountyPlantLists).

Quincy Unit Interpretation (Treatment Guidelines)

Throughout the Quincy Unit, landscape resources that provide interpretive opportunities to convey the significance of the region and the purpose of the park include the Historic Housing Locations, transportation corridors including U.S. 41, the historic railroad corridor that runs along the crest of Quincy Hill, traces of the Streetcar Route that extend from Sing Sing through the Historic Industrial Core and north to Mesnard, poor rock piles and other industrial remnants. Many of these resources are owned by entities other than the National Park Service. All of the treatment guidelines require close consultation and approval by the property owners.

- Interpretation throughout the Quincy Unit
  - Develop a unit-wide wayside exhibit plan incorporating collaboration among all partners (NPS, QMHA, A.E. Seaman Mineral Museum, Michigan Department of Transportation, and Franklin Township). See Chapter VIII, Project J.
- Interpretation of Historic Housing Locations
  - Consider developing a self-guided brochure that describes the housing locations, a route to follow to visit them, protocol necessary when visiting these privately owned resources, and information about their historic significance (see Chapter VIII, Project K).
  - Consider providing small site identifier signs indicating the locations of the Historic Housing Locations. The signs should be simple and compatible with the historic character of the area (see Chapter VIII, Project L).
  - Consider utilizing alternative media formats for interpretation of the historic housing locations throughout the Quincy Unit.
  - Consider providing interpreter-led tours of the Historic Housing Locations.
- Interpretation along the U.S. 41 Corridor
  - Develop sign guidelines for visitor orientation and interpretation within the Unit that include a hierarchy of sign sizes and a standard design that reflects the historic character of the Unit as well as National Park Service sign standards.
  - Implement signs along the U.S. 41 corridor indicating key visitor opportunities and directional information after developing sign guidelines for the Unit.
  - Provide information that describes the importance of the U.S. 41 corridor as a historic transportation route and as an indicator of the underground location of the Pewabic Lode and the historic mining operations. This information should be provided at the visitor orientation facility that informs visitors about the region (see Chapter VIII, Project K).
  - Consider providing vertical visual cues at each of the historic shaft locations within the Quincy Unit to help visitors visualize the historic scale of the mining operations on the landscape (see Chapter VIII, Project BB).

        - Remove vegetation throughout the U.S. 41 corridor that interrupts views of historic poor rock piles and other remnants of the mining activities (see Chapter VIII, Projects D and W).
    - Interpretation of the Streetcar Route
        - Provide a pedestrian trail that links the Mine Management Area, Dryhouse Area, Campus Drive Area, and Former Miner's Residences Area. Consider developing a brochure to inform visitors about the resources in this area. Include a section that addresses the Streetcar Route and indicates its location. See Chapter VIII, Projects O and K.
        - Provide information at a wayside or visitor center that describes the historic use of the Streetcar Route as a transportation route for the community (see Chapter VIII, Project J).
        - Consider marking the Streetcar Route on the pavement in locations where it is now a street (see Chapter VIII, Project O).
        - Consider providing small, simple markers that indicate locations where traces of the Streetcar Route are extant (see Chapter VIII, Project O).
        - Consider selectively pruning vegetation along the streetcar route to open views and help visitors visualize and understand the historic route (see Chapter VIII, Project O).
    - Interpretation of the Poor Rock Piles
        - Provide information at the visitor center and a wayside that describes the historic extent of poor rock piles, their relationship to the mining industry and their visual impact on the regional landscape. Possible locations for the wayside are the Portage Lake Overlook and on U.S. 41 near the Quincy No. 6 location (see Chapter VIII, Projects J and K).
        - Consider providing interpreter-led tours that visit the poor rock pile at the No. 6 Area.
        - Encourage visitors to explore the poor rock pile at the No. 6 Area.
        - Wherever possible, reveal Poor Rock Piles throughout the Unit by removing vegetation and opening views from transportation corridors and other visitor areas (see Chapter VIII, Project W).
    - Interpretation of other Industrial Remnants
        - Provide information at a wayside or visitor center that describes the historic extent of industrial remnants in the landscape, their relationship to the mining industry and their visual impact on the regional landscape (see Chapter VIII, Projects J and K).
        - Continue to conduct ranger-guided interpretive tours of the industrial remnants within the Quincy Unit.
        - Consider expanding interpretive programs of the industrial remnants with partner cooperation.
        - Encourage visitors to explore the industrial remnants that are located on land owned by the NPS or its partners throughout the Unit.
        - Wherever possible, reveal industrial remnants throughout the Unit by removing vegetation and opening views from transportation corridors and other visitor areas (see Chapter VIII, Projects C-1, C-2, D, E, F, G, H, I and W).

- Consider developing a guidebook for visitors to the Quincy Unit that includes information about the industrial remnants (see Chapter VIII, Project K).

Quincy Unit Historic Housing Locations (Treatment Guidelines)

Many of the Historic Housing Location resources are owned by entities other than the National Park Service. All of the treatment guidelines require close consultation and approval by the property owners.

- Historic Housing Locations associated with the Quincy Unit are identified in Figure 6-3. Descriptions of each area are provided in Chapter III.
- For recommendations related to the interpretation of the Historic Housing Locations, refer to the "Quincy Unit Interpretation" section.
- Conduct research to fill gaps in knowledge about the historic landscape conditions at the Historic Housing Locations, specifically addressing their chronology of development and physical changes (see Chapter VIII, Projects A-1, A-2, and A-4).
- Evaluate the Historic Housing Locations to determine their significance (see Chapter VIII, Projects A-1, A-2 and A-4).
- Where research indicates the Historic Housing Locations are historically significant, consider amending the National Historic Landmark nomination to include these resources, or preparing a separate multiple property nomination for the Historic Housing Locations in the region.
- Consider developing partnerships with landowners to help guide development within the Historic Housing Locations to ensure that it is compatible with the historic character of the Unit (see Chapter VIII, Project B).
- Provide assistance and guidance to landowners to encourage compatible development.
    - Develop design guidelines for the Historic Housing Locations within the Quincy Unit to help communicate goals and provide tools for preservation. Provide examples of compatible and non-compatible new development to help owners. Include general treatment guidelines for specific topics including vegetation, buildings, small scale features, and appropriate approaches for infill (see Chapter VIII, Project CC).
    - Provide education about tax credits or other financial incentives for adhering to guidelines.
    - Strengthen the technical assistance outreach program. Consider publicizing the opportunities available by creating a brochure or catalogue of technical assistance that is available for landowners.
    - Provide one-on-one technical assistance to individuals to help with specific issues.
    - Consider conducting workshops and presentations focused on issues that will help landowners meet their needs while preserving the historic landscapes.
    - Encourage people who approach the NPS staff with questions about structures to consider the historic landscape as well.
- Work closely with local governments to enact historic preservation or zoning ordinances to avoid incompatible development (see Chapter VIII, Project B).

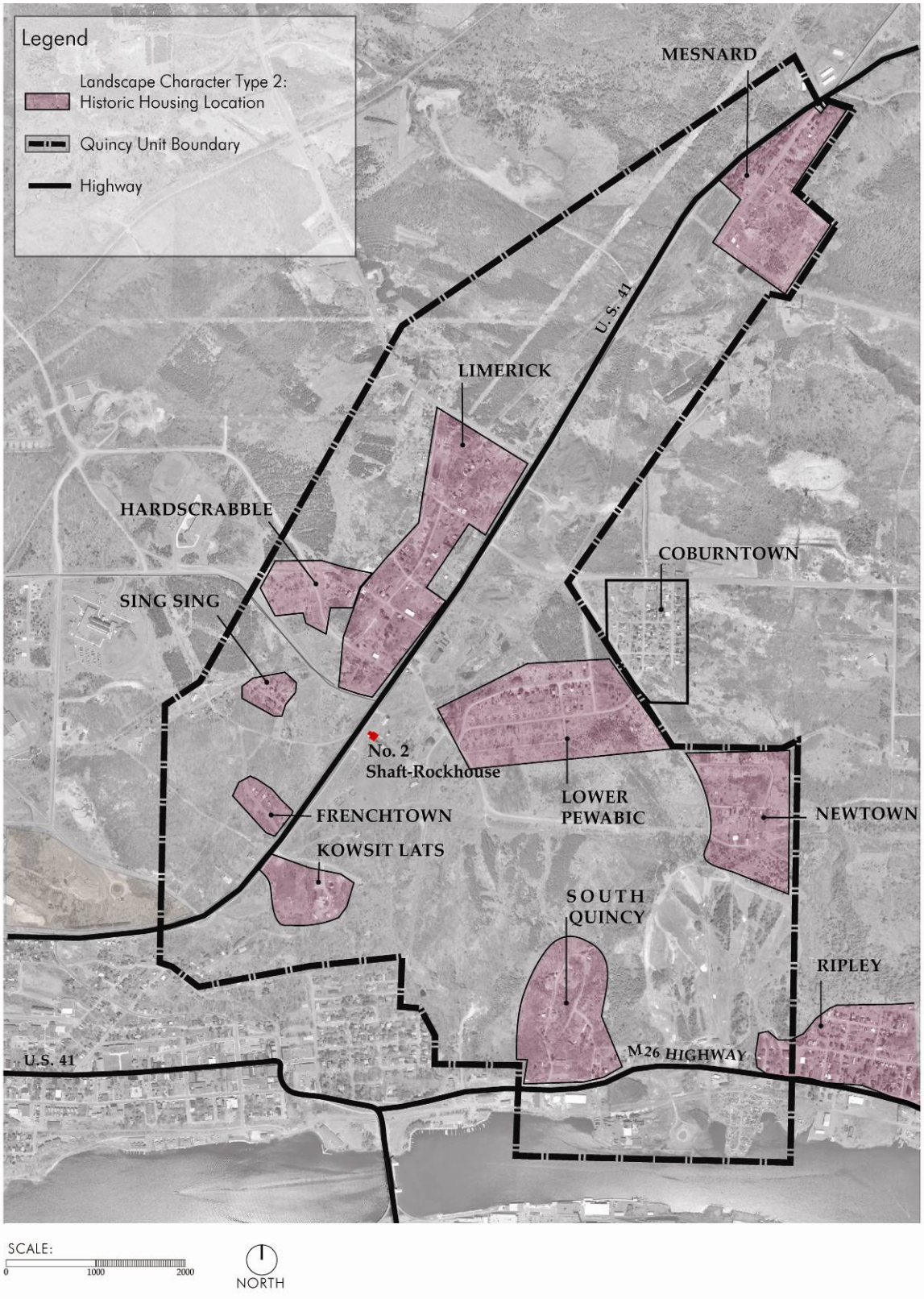


Figure 6 - 3: Quincy Unit Historic Housing Locations

Quincy Unit U.S. 41 Corridor (Treatment Guidelines)

Many of these resources within the U.S. 41 Corridor are owned by entities other than the National Park Service. All of the treatment guidelines require close consultation and approval by the property owners and MDOT.

- Recommendations related to the interpretation of the Quincy Unit U.S. 41 Corridor are provided in the "Quincy Unit Interpretation" section.
- This area includes substantial private property holdings. In particular, the land at the crest of Quincy Hill has a high potential for development that would be likely to impact these views. Since much of the hill was developed for housing and industrial uses during the historic period, new development that is undertaken with careful consideration of historic character could enhance the ability of the landscape to reflect the historic period (see Chapter VIII, Project B).
    - Work closely with local governments to enact historic preservation or zoning ordinances to deter incompatible development.
    - Consider establishing management areas based on views and potential for new development.
    - While adhering to 16 U.S.C. §410yy-3(c) of the park's enabling legislation, consider purchasing scenic easements for land that is within primary views.[3]
    - While adhering to 16 U.S.C. §410yy-3(c) of the park's enabling legislation, consider purchasing land that is within primary views.[4]
    - Consider developing partnerships with landowners to help guide development within primary views to ensure that it is compatible with the historic character of the Unit.
    - Provide assistance and guidance to landowners to encourage compatible development.
    - Provide education about tax credits or other financial incentives for adhering to guidelines.
- Work with MDOT to minimize non-compatible new development within the U.S. 41 corridor (see Chapter VIII, Project B).

[3] 16 U.S.C. §410yy-3(c). Section 4(c) of the park's enabling legislation states: "CONSENT- No lands or interests therein within the boundaries of the park may be acquired without the consent of the owner, unless the Secretary determines that the land is being developed, or is proposed to be developed in a manner which is detrimental to the natural, scenic, historic, and other values for which the park is established.

[4] Ibid.

MDOT / Portage Lake Overlook (Treatment Guidelines)

Located near the Quincy Unit entrance, the Portage Lake overlook is a popular stop for passing motorists. It provides a valuable opportunity to introduce visitors to the region and the park. Owned by the Michigan Department of Transportation (MDOT), this overlook also provides a potential partnership opportunity to make improvements beneficial to its users. Any proposed treatment action by the National Park Service (NPS) requires close consultation and approval from MDOT. Site planning and design is proposed to address landscape treatment at this site and is common to all action treatment alternatives considered. The NPS proposes to work with MDOT to improve the existing site. This effort can begin with a thoughtful evaluation of the existing site and identification of user needs and desired improvements. The intended outcome of this effort will be a site master plan that both agencies can work to cooperatively implement. Within this partnership effort the agencies will consider input from the Copper Country Trail National Byway Committee and the public about the following site features and characteristics.[5] See Chapter VIII, Project DD.

- MDOT / Portage Lake Overlook Signage
    - The agencies will work to design and install three types of updated signs to assist visitors.
        - Motorist guidance signs to help motorists find the overlook safely and to replace the existing signs.
        - A park entrance sign to inform motorists they are entering the park and to provide a photographic opportunity for visitors.
        - Interpretation signs to effectively communicate important regional information and to introduce park resources to visitors.
- MDOT / Portage Lake Overlook Access
    - The agencies will provide safe ingress and egress from the site for motorists and non-motorists. They will improve site circulation to safely accommodate a variety of motor vehicles. Accessibility will be improved throughout the site to accommodate visitors with varied interests and needs.
- MDOT / Portage Lake Overlook Vegetation and Views
    - The agencies will work to selectively remove vegetation to retain important views to local points of interest. These may include the Huron Mountains, Portage Lake, Houghton, Hancock and Portage Lake Lift Bridge.
- MDOT / Portage Lake Overlook Site features and furnishings
    - The agencies will remove or replace non-historic site features that do not enhance the visitor experience by reinforcing visitor understanding of the overlook and the surrounding regional landscape. This may include developing alternative designs for site features like bollards, guardrails, signage and sidewalks. It may also include the installation of benches, picnic tables, trash receptacles and site lighting.
- MDOT / Portage Lake Overlook Restrooms
    - Restrooms would benefit motorists in this location. The agencies will evaluate the need for public restrooms and determine the feasibility of providing this service at the overlook.

[5] The Copper Country Trail is a national byway along U.S. 41 from the Portage Lake lift bridge to Copper Harbor. Additional information about the trail may be found at www.coppercountrytrail.com.

Quincy Unit Archeological Resources (Treatment Guidelines)

- Prepare an Archeological Inventory for Keweenaw National Historical Park. The current five-year plan indicates that the Archeological Inventory is scheduled for 2013-2014. Determine sites within the Quincy Unit that have the greatest potential to yield new information of value and are likely to inform the management of the landscapes (see Chapter VIII, Project A-2).
- Based on the Archeological Inventory, develop a list of projects that will help to address gaps in knowledge regarding the historic industrial resources, pre-industrial resources, and pre-contact resources.
- Where surface archeological deposits are present, work to preserve them on site and consider interpreting them.
- Consider developing a research permit program to allow qualified archeologists to conduct field work within the Quincy Unit. Ensure that the projects have oversight from the NPS to coordinate and monitor the work. Provide an educational / interpretive component for projects to share the process with the public (see Chapter VIII, Project EE).
- Consider working with Michigan Technological University to enhance opportunities for fieldwork and research by industrial archeology faculty and students.

Quincy Smelting Works (Treatment Guidelines)

The Quincy Smelting Works is located on the northern shore of Portage Lake east of Hancock, Michigan and owned by Franklin Township. The site offers excellent views of the adjacent waterway and downtown Houghton. It also features more than thirty historic structures and site features that represent the smelting process that once operated on the site. The site provides a potential partnership opportunity to provide access for visitors. Any proposed treatment action by the National Park Service for this site requires close consultation and approval from Franklin Township. Site recommendations for this site are common to all action treatment alternatives considered. The NPS proposes to work with Franklin Township to provide visitor access to the site.

- Complete an inventory documenting the conditions of the historic landscape features, structures, and industrial artifacts at the site (see Chapter VIII, Projects A-1, A-2, A-5).
- Evaluate the integrity of the extant industrial features at the site.
- Conduct thorough analysis of historic structures by preparing Historic Structures Reports before undertaking treatment actions.
- Stabilize and preserve the significant historic resources at the site (see Chapter VIII, Project A-6).
- As soon as possible, prepare treatment guidelines for the Quincy Smelting Works. Utilize previous planning efforts to guide the process, including the plans prepared by the Environmental Protection Agency and the Quincy Smelting Works Stabilization and Re-Use Study that was prepared in 2003.
- Create a safe environment for the public to use.
- Educate visitors about the history and significance of the site (see Chapter VIII, Project K).

- Preserve significant views associated with the Quincy Smelting Works (see Figure 6-4).
- Facilitate public engagement and work with site owners and potential users related to site planning activities.

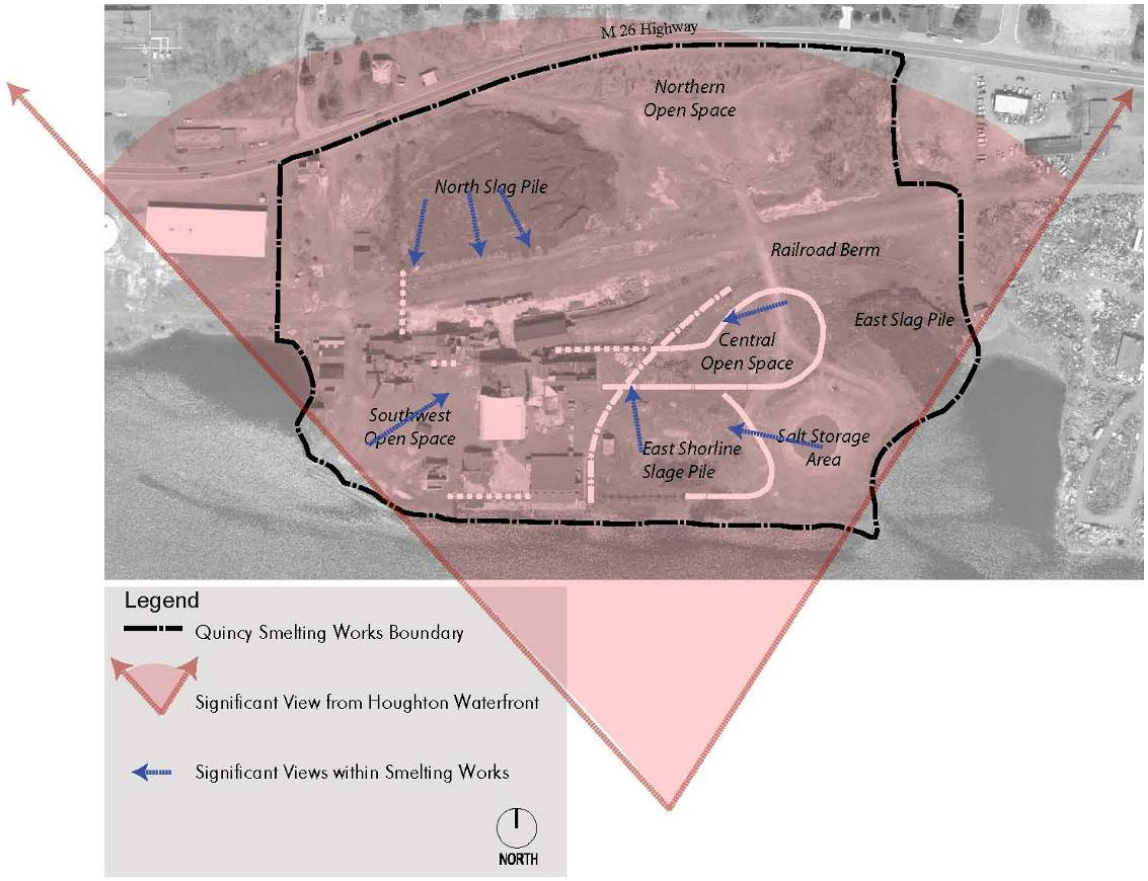


Figure 6 - 4: Quincy Smelting Works Significant Views

Treatments Common to all Historic Industrial Core Action Alternatives:

Treatments common to all action alternatives are listed here and repeated in the descriptions of treatment alternatives A, B and C. When presented with treatment alternatives A, B, and C, the common treatments include a (*) to indicate the directive is the same for all of the action treatment alternatives. Many of these resources are owned by entities other than the National Park Service. All of the treatment guidelines require close consultation and approval by the property owners.

Overall Historic Industrial Core (Common to all Action Treatment Alternatives)

- **Archeological Resources:** Conduct professional archeological research and investigations to address gaps in knowledge, preserve known archeological deposits, and provide interpretation of these activities (see Chapter VIII, Project A-2).
- **Poor Rock Piles:** Preserve and interpret as historic landscape features (see Chapter VIII, Projects K and W).
- **Mine Shafts:** Maintain existing bat structures at shaft entrances.
- **Circulation:**
    - **Alternative:** In the long term, implement a universally accessible multi-use trail and alternative transportation system linking the site elements, in the short term, develop hubs and primary connections that will be part of the system (see Chapter VIII, Projects M and N).
    - **Pedestrian:** Provide interpretive pedestrian routes (using brochures or small signs on site) between Supply House, No. 2 Shaft-Rockhouse, Cooling Ponds, Martin House and No. 2 Hoist Houses. Utilize the multi-use trail for pedestrians, providing links throughout the Historic Industrial Core. Encourage visitors to explore all areas within the Historic Industrial Core (see Chapter VIII, Projects J, K, M and N).

No. 6 Area (Common to all Action Treatment Alternatives)

Coordinate all planning and implementation efforts related to this area with the A.E. Seaman Mineral Museum, Quincy Mine Hoist Association, and Franklin Township.

- Stabilize and preserve ruins of industrial activities.
- Remove woody vegetation to provide views of rock piles and other historic landscape features (see Chapter VIII, Project W).
- Provide multi-use trail into the area (see Chapter VIII, Projects M and N).
- Encourage exploration and provide occasional tours.

A.E. Seaman Mineral Museum Area (Common to all Action Treatment Alternatives)

Coordinate all planning and implementation efforts related to this area with the A.E. Seaman Mineral Museum.

- Utilize the Blacksmith Shop and Machine Shop for the A.E. Seaman Mineral Museum.
- Provide a strong visual connection between this area and the No. 2 and No. 4 area (see Chapter VIII, Projects G, H, and I).

- Preserve remnants of historic industrial activities.
- Provide a picnic area for visitor use (see Chapter VIII, Project Z).

Former Miner's Residences Area (Common to all Action Treatment Alternatives)

Coordinate all planning and implementation efforts related to this area with property owners.

- Conduct thorough analysis of historic structures by preparing Historic Structures Report before undertaking treatment actions (see Chapter VIII, Project A-3).
- If the Historic Structures Report indicates it is appropriate, restore the exterior of the historic buildings
- Provide access and parking on side streets.

Campus Drive Area (Common to all Action Treatment Alternatives)

Coordinate all planning and implementation efforts related to this area with property owners (see Chapter VIII, Project B).

- Remove non-contributing elements that are impacting the historic character of the Historic Industrial Core or improve their compatibility.
    - Work with private property owners to restore or maintain landscape elements compatible with the historic core.
    - Work with private property owners to negotiate the relocation or redevelopment of incompatible infill to restore or maintain landscape elements compatible with the historic core.
- Stabilize and preserve historic resources including building ruins, small scale features, domestic vegetation and views toward the No. 2 and No. 4 area (see Chapter VIII, Project A-6).
- Restore and interpret the miner's residence on Limerick Road that is owned by the Quincy Mine Hoist Association.
- Link this area to the Former Miner's Residences Area and the Dryhouse Area with a self-guided walking trail route (see Chapter VIII, Projects K, L and O).

Dryhouse Area (Common to all Action Treatment Alternatives)

Coordinate all planning and implementation efforts related to this area with property owners.

- Stabilize and preserve historic resources including building ruins, small scale features, domestic vegetation, archeological surface scatters and views toward the No. 2 and No. 4 area (see Chapter VIII, Projects A-6, C and H).
- Provide a pedestrian trail linking this area to the Mine Management Area, Campus Drive Area, and Former Miner's Residence Area (see Chapter VIII, Project O).
- Provide small parking lot along No. 2 Road (see Chapter VIII, Project P).
- Provide a wayside at the trailhead near the parking area. Include information about the historic relationships between this site and the rest of the Historic Industrial Core as well as logistical information (see Chapter VIII, Project J).
- Relocate the radio tower so that it is not within the view of the Historic Industrial Core.
- Encourage visitors to explore the area around the dryhouse.
- Provide a picnic table for visitor use (see Chapter VIII, Project P).

No. 7 & Railroad Corridor Area (Common to all Action Treatment Alternatives)

Coordinate all planning efforts in this area with the Quincy Mine Hoist Association (QMHA). The QMHA has begun the planning process related to the Roundhouse/Enginehouse and their efforts should serve to guide future plans for this site.

- Conduct thorough analysis of the Roundhouse by preparing a Historic Structures Report before undertaking treatment actions.
- If the Historic Structures Report indicates it is appropriate, restore the exterior of the Roundhouse and install rolling stock exhibits.
- Extend the restoration out from the building to the landscape with railroad tracks, and connections to other tracks and the water tank. Reveal the historic grades and connections to the No. 2 and No. 4 Area.
- Rehabilitate the water tank and interpret its historic use.
- Provide a pedestrian route along the railroad corridor along the crest of the hill.
- Provide picnic tables near the Roundhouse and along the crest of the hill.

Mine Management Area (Common to all Action Treatment Alternatives)

Coordinate all planning and implementation efforts related to this area with property owners. See Chapter VIII, Project Q.

- **Archeological investigation –** Systematically investigate the entire property including the shallow depression, and adjacent pile of unknown origin and scattered debris, to determine the significance of these features and to reveal new information about the historic use of this site.
- Restore the landscape features associated with the Quincy Mine Office.
- Stabilize and preserve historic resources including small scale features, domestic vegetation and views.
- Provide a pedestrian trail linking this area to the Dryhouse Area, Campus Drive Area, and Former Miner's Residence Area.
- Provide a picnic table at the Mine Office.
- Improve the conditions at the Quincy Mine Office and increase visitor understanding and appreciation for the resources found in this area of the park (see Figure 6-5).
- **Remove non-historic features**: Remove items that do not contribute to the historic integrity of the mine office landscape. These include a freestanding sign fixture located in the north yard and a piece of concrete in the northwest corner of the rear yard.
- **Improve foundation drainage –** The basement and foundation of the mine office building is currently affected by seasonal wetness. Install new foundation drain tile to move water away from the foundation and allow the historic roof gutter drains to be restored.
- **Restore lawn –** The lawn surrounding the mine office is rutted, in poor condition and contains many weeds. Grade, place additional topsoil and seed the area to improve its condition and appearance.
- **Provide barrier free access –** A preferred method to provide barrier free access has yet to be determined but several preliminary alternatives have been discussed. At this time it is believed the access route that least impacts the historic building and setting will use the sidewalk to the north and the rear entrance. While further study is required to evaluate a complete range of alternatives, it is assumed that any preferred solution will

require integration with the surrounding landscape through minor changes in sidewalks or installation of a ramp.

- **Reconstruct front fence** – A prominent feature through much of the building's history was a distinctive wood fence and gates separating the front yard from the road. Reconstruct the wood fence and gates based on historic documentation.
- **Restore stone curb/wall** – Another prominent landscape element adjacent to the front fence was a stone curb/retaining wall made of locally quarried Jacobsville sandstone. The low curb defined the lawn edge and separated it from the adjacent sidewalk. At its south end the curb transitioned to a low retaining wall where the grade changed. The feature is in poor condition, and parts of it are missing. Restore the stone curb/wall.
- **Reconstruct front walk –** The concrete sidewalk once present in front of the mine office is now missing. Reconstruct the concrete sidewalk to provide a safe walking surface outside of the vehicular traffic area for visitors and employees.
- **Resurface historic road trace** – The historic road trace currently serves as an access road and parking area for visitors to the mine office. Resurface the road trace to preserve its position in the landscape while accommodating current vehicle access and circulation.
- **Vegetation management** –Replace mature historic trees along the alley and in the rear yard when suffering from poor health. Replacements are to be large specimens of the same genus and species as practicable. Selectively thin trees and vegetation along side yard fencerows and at the rear yard of the mine office and the adjacent lot.
- **Reconstruct side yard fences** – Fences once existed along the side yards of the property. Reconstruct the side yard fences to aid visitors with understanding this historic mine management property.
- **Preserve masonry ruins –** Preserve the small masonry foundation and utility trench to help visitors understand this property and its historic functions.

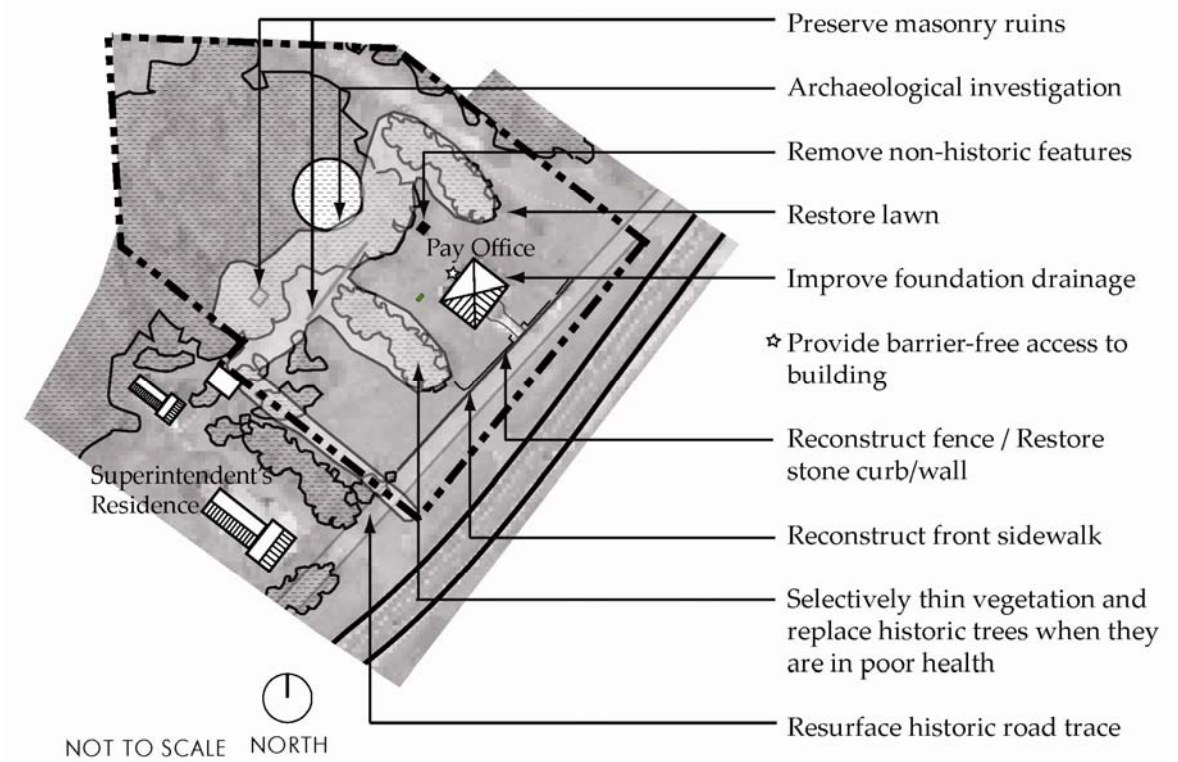


Figure 6 - 5: Treatment Recommendations, Mine Management Area

No. 2 and No. 4 Area (Common to all Action Treatment Alternatives)

Coordinate all planning and implementation efforts related to this area with the Quincy Mine Hoist Association.

- Conduct thorough analysis of historic structures by preparing Historic Structures Reports before undertaking treatment actions (see Chapter VIII, Project A-3).
- Preserve historic resources and interpret the historic landscape (see Chapter VIII, Projects A-6, J and K).
- Establish pedestrian links throughout the area (see Chapter VIII, Projects M and N).
- In the short term, develop hubs for pedestrian / non-motorized transportation and a way to transition to a long term alternative transportation system for the Historic Industrial Core (see Chapter VIII, Projects M and N).
- If the Historic Structures Report indicates it is appropriate, preserve and interpret the No. 2 Hoist House (1918-20), and establish it as a principal destination in the Historic Industrial Core.
- If the Historic Structures Report indicates it is appropriate, preserve and interpret the ruins of buildings with a self-guided walking tour and occasional interpretive programs (see Chapter VIII, Project K).
- Provide picnic areas in the vicinity of the building ruins in the No. 4 area and to the east of the parking lot near the No. 2 Hoist Houses (see Chapter VIII, Project S).

Lower Pewabic Area (Common to all Action Treatment Alternatives)

Coordinate all planning and implementation efforts related to this area with property owners.

- Advocate for the restoration of historic building exteriors and preservation of extant historic landscape features including domestic plants, building foundations, roads, traces of former roads, views, and small scale features (see Chapter VIII, Projects A-1 and A-6).
- Interpret the housing location at a landscape scale focusing on the overall patterns of the roads, and placement of the buildings, gardens, outhouses, etc (see Chapter VIII, Project K).
- Provide a picnic area east of the No. 2 Hoist Houses (see Chapter VIII, Project S).

Historic Industrial Core Treatment Alternative A:

Rehabilitation with an emphasis on Landscape Preservation and a National Park Service Visitor Center at the Supply House. Figure 6-6 illustrates Treatment Alternative A.

Overall Historic Industrial Core (Treatment Alternative A)

- **Vegetation:** Selectively remove woody vegetation to open significant views.
- ***Archeological Resources:** Conduct professional archeological research and investigations to address gaps in knowledge, preserve known archeological deposits, and provide interpretation of these activities.[6]
- **Mine Shafts:** Preserve, monitor and interpret historic shafts as landscape features, erect simple vertical elements to help visitors to visualize the historic resources and the broad landscape patterns that were present historically. Maintain and interpret bat structures at shaft entrances.
- **No. 2 Adit:** Continue to utilize the adit for underground tours. Provide above ground vertical markers identifying the alignment of the adit.
- ***Poor Rock Piles:** Preserve and interpret as historic landscape features.
- **Views:** Preserve historic views by discouraging inappropriate development within significant view areas. Manage vegetation to preserve and restore selected historic views.
- **Circulation:**
    - **Vehicular:** Provide access road and parking lot at Supply House (NPS Visitor Center), A.E. Seaman Mineral Museum, and No. 2 Hoist Houses (QMHA Visitor Center).
    - ***Alternative transportation system:** In the long term, implement a multi-use trail with a motorized alternative transportation system linking the site elements, in the short term, develop hubs and key links that will be part of the system.
    - ***Pedestrian:** Provide self-guided interpretive routes (using brochures or small signs on site) between Supply House, No. 2 Shaft-Rockhouse, Cooling Ponds, Martin House and No. 2 Hoist Houses. Utilize the multi-use trail for pedestrians, providing links throughout the Historic Industrial Core. Encourage visitors to explore all areas within the Historic Industrial Core.

[6] When presented with alternatives A, B and C, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

No. 6 Area (Treatment Alternative A)

- *Stabilize and preserve ruins of industrial activities.[7]
- *Remove woody vegetation to provide views of rock piles and other historic landscape features.
- *Provide multi-use trail into the area.
- *Encourage exploration and provide occasional tours.
- *Encourage visitors to use the area for casual picnicking.

A.E. Seaman Mineral Museum Area (Treatment Alternative A)

- Utilize the Blacksmith Shop and Machine Shop for the A.E. Seaman Mineral Museum.
- Provide parking for the A.E. Seaman Mineral Museum.
- *Provide a strong visual connection between this area and the No. 2 and No. 4 area.
- *Preserve remnants of historic industrial activities.
- *Provide picnic area for visitor use.

Former Miner's Residences Area (Treatment Alternative A)

- * Conduct thorough analysis of historic structures by preparing Historic Structures Reports before undertaking treatment actions.
- *If the Historic Structures Report indicates it is appropriate, restore the exterior of the historic buildings
- If the Historic Structures Report indicates it is appropriate, restore the interior of one of the historic buildings and interpret the domestic life of the mining community.
- If the Historic Structures Report indicates it is appropriate, rehabilitate the interior of two historic buildings for adaptive reuse.
- *Provide access and parking on side streets.
- *Provide a pedestrian route linking this are to Limerick Road, the Campus Drive Area, Dryhouse Area, and Mine Management Area.

Campus Drive Area (Treatment Alternative A)

- *Remove non-contributing elements that are impacting the historic character of the Historic Industrial Core or improve their compatibility.
    - Work with private property owners to restore or maintain landscape elements compatible with the historic core.
    - Work with private property owners to negotiate the relocation or redevelopment of incompatible infill to restore or maintain landscape elements compatible with the historic core.
- *Stabilize and preserve historic resources including building ruins, small scale features, domestic vegetation and views toward the No. 2 and No. 4 area;

[7] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

- * Conduct thorough analysis of the miner's residence on Limerick Road that is owned by the Quincy Mine Hoist Association by preparing a Historic Structures Report.[8]
- *If the Historic Structures Report indicates it is appropriate, restore and interpret the miner's residence on Limerick Road that is owned by the Quincy Mine Hoist Association;
- *Link this area to the Former Miner's Residences Area and the Dryhouse Area with a self-guided walking trail.

Dryhouse Area (Treatment Alternative A)

- *Stabilize and preserve historic resources including building ruins, small scale features, domestic vegetation, archeological surface scatters and views toward the No. 2 and No. 4 area.
- Remove vegetation impacting historic resources and thin non-historic vegetation to strengthen views.
- *Provide a pedestrian trail linking this area to the Mine Management Area, Campus Drive Area, and Former Miner's Residence Area.
- *Provide small parking lot along No. 2 Road.
- *Provide a wayside at the trailhead near the parking area. Include interpretive information about the historic relationships between this site and the rest of the Historic Industrial Core as well as orientation information.
- Interpret the No. 2 Adit location from this site. Provide aboveground visual cues to help orient visitors to the underground resources.
- *Relocate the radio tower when it is technologically feasible so that it is not within the view of the Historic Industrial Core.
- *Encourage visitors to explore the area around the dryhouse.
- Provide a picnic table for visitor use near the dryhouse foundation.

No. 7 & Railroad Corridor Area (Treatment Alternative A)

- * Conduct thorough analysis of the Roundhouse by preparing a Historic Structures Report before undertaking treatment actions.
- *If the Historic Structures Report indicates it is appropriate, restore the exterior of the Roundhouse and the service pits, track, and wood floor and install rolling stock exhibits.
- *Extend the restoration out from the building to the landscape with railroad tracks, and connections to other tracks and the water tank. Reveal the historic grades and connections to the No. 2 and No. 4 Area.
- *Rehabilitate the water tank and interpret its historic use.
- *Provide a pedestrian route along the railroad corridor along the crest of the hill.
- Manage vegetation to enhance views of the broader landscape.
- *Provide an interpretive wayside near the Roundhouse and another one along the crest of the hill near the cog tram route.

[8] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

Mine Management Area (Treatment Alternative A)

- *Preserve the Quincy Mine Office and continue its use as offices and a meeting room.
- *Conduct thorough analysis of historic structures by preparing Historic Structures Reports before undertaking treatment actions.[9]
- *If the Historic Structures Report indicates it is appropriate, work with property owners to restore the exterior of the historic buildings.
- *If the Historic Structures Report indicates it is appropriate, restore the interior of selected spaces in selected buildings and interpret their historic functions.
- *If the Historic Structures Report indicates it is appropriate, rehabilitate the interior of other buildings and use adaptively.
- *Work with property owners to provide a pedestrian trail linking this area to the Dryhouse Area, Campus Drive Area, and Former Miner's Residence Area.
- *Improve the conditions at the Quincy Mine Office and increase visitor understanding and appreciation for the resources by implementing the following treatment recommendations for the Mine Management Area.
    - *Restore the landscape features associated with the Quincy Mine Office.
    - *Stabilize and preserve historic resources including small scale features, domestic vegetation and views.
    - *Provide a picnic table at the Mine Office.
    - *Improve the conditions at the Quincy Mine Office and increase visitor understanding and appreciation for the resources found in this area of the park (see Figure 6-5).
    - ***Remove non-historic features**: Remove items that do not contribute to the historic integrity of the mine office landscape. These include a freestanding sign fixture located in the north yard and a piece of concrete in the northwest corner of the rear yard.
    - ***Improve foundation drainage –** The basement and foundation of the mine office building is currently affected by seasonal wetness. Install new foundation drain tile to move water away from the foundation and allow the historic roof gutter drains to be restored.
    - ***Restore lawn –** The lawn surrounding the mine office is rutted, in poor condition and contains many weeds. Grade, place additional topsoil and seed the area to improve its condition and appearance.
    - ***Provide barrier free access –** A preferred method to provide barrier free access has yet to be determined but several preliminary alternatives have been discussed. At this time it is believed the access route that least impacts the historic building and setting will use the sidewalk to the north and the rear entrance. While further study is required to evaluate a complete range of alternatives, it is assumed that any preferred solution will require integration with the surrounding landscape through minor changes in sidewalks or installation of a ramp.

[9] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

- ***Reconstruct front fence –** A prominent feature through much of the building's history was a distinctive wood fence and gates separating the front yard from the road. Reconstruct the wood fence and gates based on historic documentation.
- ***Restore stone curb/wall –** Another prominent landscape element adjacent to the front fence was a stone curb/retaining wall made of locally quarried Jacobsville sandstone. The low curb defined the lawn edge and separated it from the adjacent sidewalk. At its south end the curb transitioned to a low retaining wall where the grade changed. The feature is in poor condition, and parts of it are missing. Restore the stone curb/wall. [10]
- ***Reconstruct front walk –** The concrete sidewalk once present in front of the mine office is now missing. Reconstruct the concrete sidewalk to provide a safe walking surface outside of the vehicular traffic area for visitors and employees.
- ***Resurface historic road trace –** The historic road trace currently serves as an access road and parking area for visitors to the mine office. Resurface the road trace to preserve its position in the landscape while accommodating current vehicle access and circulation.
- ***Vegetation management –**Replace mature historic trees along the alley and in the rear yard when suffering from poor health. Replacements are to be large specimens of the same genus and species as practicable. Selectively thin trees and vegetation along side yard fencerows and at the rear yard of the mine office and the adjacent lot.
- ***Reconstruct side yard fences –** Fences once existed along the side yards of the property. Reconstruct the side yard fences to aid visitors with understanding this historic mine management property.
- ***Preserve masonry ruins –** Preserve the small masonry foundation and utility trench to help visitors understand this property and its historic functions.
- ***Archeological investigation –** Systematically investigate the entire property including the shallow depression, and adjacent pile of unknown origin and scattered debris, to determine the significance of these features and to reveal new information about the historic use of this site.

No. 2 and No. 4 Area (Treatment Alternative A)

- *Preserve historic resources and interpret the historic landscape.
- * Conduct thorough analysis of historic structures by preparing Historic Structures Reports before undertaking treatment actions.
- Reveal traces of industrial activities by selectively removing non-contributing woody vegetation.
- *Establish pedestrian links throughout the area.
- *In the short term, develop hubs for pedestrian / non-motorized transportation and a way to transition to a long term alternative transportation system for the Historic Industrial Core.

[10] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

- *If the Historic Structures report indicates it is appropriate, preserve and interpret the No. 2 Hoist House (1918-20).
- If the Historic Structures report indicates it is appropriate, rehabilitate the Supply House for a National Park Service Visitor Center. Include an initial visitor contact station, regional exhibits, theater, and restrooms.
- If the Historic Structures report indicates it is appropriate, rehabilitate the No. 2 Hoist House (1894-95) to serve as a Visitor Center for the Quincy Mine Hoist Association. Include exhibits related to the Quincy Mine Company, an office, tour staging area, restrooms, and ticket sales area.
- If the Historic Structures report indicates it is appropriate, preserve and interpret the No. 2 Shaft-rockhouse and provide visitor access to upper levels with exhibits, interpretation, and opportunities for views of the surrounding area.
- *Preserve and interpret the ruins of buildings with a self-guided walking tour and interpretive programs.
- If the Historic Structures report indicates it is appropriate, preserve and interpret the No. 5 Boiler Plant.
- If the Historic Structures report indicates it is appropriate, preserve and interpret the Captain's Office, Martin House, Oil House, Old No. 2 Hoist House (1860) and residence.
- If the Historic Structures report indicates it is appropriate, acquire and rehabilitate the Quincy Fire Hall and use it for a community room, interpretive programs, or as a commercial space. This would be undertaken by either the NPS or a partner.
- *Provide picnic areas in the vicinity of the building ruins in the No. 4 area, near the cooling ponds, and to the east of the parking lot near the No. 2 Hoist Houses.[11]

Lower Pewabic Area (Treatment Alternative A)

- *Advocate for the restoration of historic building exteriors and preservation of extant historic landscape features including domestic plants, building foundations, roads, traces of former roads, views, and small scale features.
- *Interpret the housing location at a landscape scale focusing on the overall patterns of the roads, and placement of the buildings, gardens, outhouses, etc.
- *Provide a picnic area east of the No. 2 Hoist Houses.

Next page:

Figure 6 - 6: Treatment Alternative "A"

[11] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

No.6 Area:

1. Stabilize and preserve ruins of industrial activities;
2. Remove woody vegetation to provide views of rock piles and other historic landscape features;
3. Provide multi-use trail into the area;
4. Encourage exploration and provide occasional tours.

A.E. Seaman Mineral Museum Area:

1. Utilize Blacksmith Shop and Machine Shop for the A.E. Seaman Mineral Museum;
2. Provide parking for A.E. Seaman Mineral Museum;
3. Provide a strong visual connection between this area and the No. 2 & No. 4 Area;
4. Preserve remnants of historic industrial activities.

Former Miner's Residences Area:

1. Restore exterior of historic buildings;
2. Restore interior of one historic building and interpret;
3. Rehabilitate interior of two historic buildings for adaptive reuse;
3. Provide access and parking on side streets.

Campus Drive Area:

1. Stabilize and preserve historic resources, including building ruins, small scale features, domestic vegetation and views toward the No. 2 & No. 4 Area;
2. Restore and interpret a miner's residence on Limerick Road;
3. Link this area to the Former Miner's Residences Area and the Dryhouse Area with a self-guided walking trail.

Dryhouse Area:

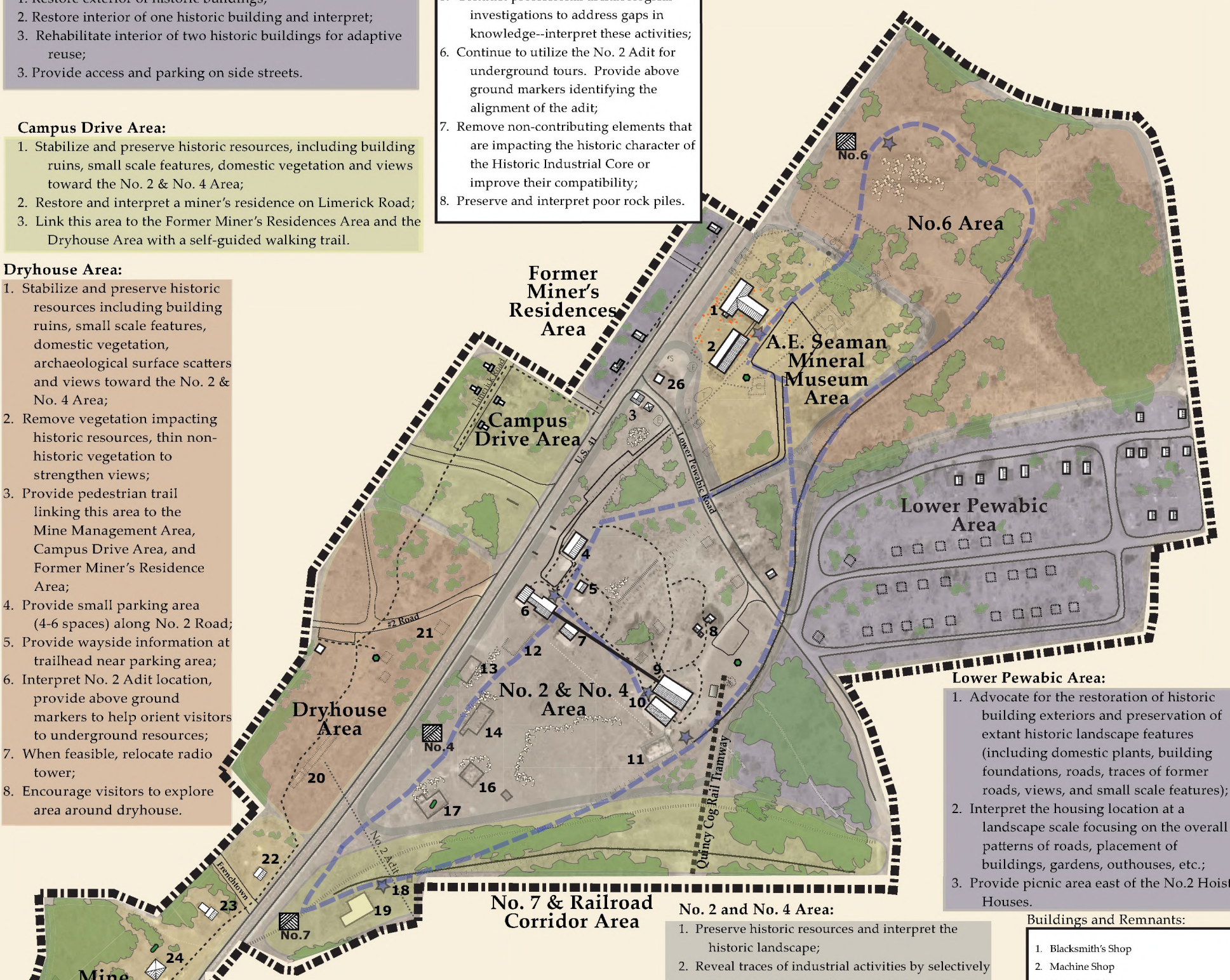
1. Stabilize and preserve historic resources including building ruins, small scale features, domestic vegetation, archaeological surface scatters and views toward the No. 2 & No. 4 Area;
2. Remove vegetation impacting historic resources, thin non-historic vegetation to strengthen views;
3. Provide pedestrian trail linking this area to the Mine Management Area, Campus Drive Area, and Former Miner's Residence Area;
4. Provide small parking area (4-6 spaces) along No. 2 Road;
5. Provide wayside information at trailhead near parking area;
6. Interpret No. 2 Adit location, provide above ground markers to help orient visitors to underground resources;
7. When feasible, relocate radio tower;
8. Encourage visitors to explore area around dryhouse.

Overall Historic Core:

1. In the long term, implement a multi-use trail with a motorized alternative transportation system linking the site elements, in the short term, develop hubs and key links that will be part of the system;
2. Selectively remove woody vegetation to open significant views;
3. Preserve, monitor and interpret historic shafts as landscape features, erect simple vertical elements to help visitors visualize the historic resources;
4. Encourage visitors to explore areas within the Historic Core;
5. Conduct professional archaeological investigations to address gaps in knowledge--interpret these activities;
6. Continue to utilize the No. 2 Adit for underground tours. Provide above ground markers identifying the alignment of the adit;
7. Remove non-contributing elements that are impacting the historic character of the Historic Industrial Core or improve their compatibility;
8. Preserve and interpret poor rock piles.

Legend

- Historic Industrial Core Boundary
- Extant Historic Building
- Remnant of Historic Building
- Comtemporary/Modified Building
- Landscape Management Zone
- Conceptual Route for Visitor Tram and Stops
- Artifact pile
- Conceptual Pedestrian Route
- Historic Railroad Grade
- Extant Railroad Track
- Vegetation
- Rock Piles
- Cog Rail Tramway
- No.6 Mine Shaft Location
- Proposed Picnic Table
- Proposed Picnic Area



Lower Pewabic Area:

1. Advocate for the restoration of historic building exteriors and preservation of extant historic landscape features (including domestic plants, building foundations, roads, traces of former roads, views, and small scale features);
2. Interpret the housing location at a landscape scale focusing on the overall patterns of roads, placement of buildings, gardens, outhouses, etc.;
3. Provide picnic area east of the No.2 Hoist Houses.

No. 2 and No. 4 Area:

1. Preserve historic resources and interpret the historic landscape;
2. Reveal traces of industrial activities by selectively removing non-contributing woody vegetation;
3. Provide self-guided interpretive routes between the Supply House, No. 2 Shaft-Rockhouse, cooling ponds, Martin House, and the No. 2 Hoist Houses;
4. Short-term: develop a hub for pedestrian/ non-motorized transportation and transition to a long term alternative transportation system;
5. Preserve & interpret No. 2 Hoist House (1918-20);
6. Rehabilitate Supply House for NPS Visitor Center (including initial contact point, regional exhibits, theater, and restrooms);
7. Rehabilitate No. 2 Hoist House (1894-95) for QMHA Visitor Center, exhibits about Quincy, office, tour staging area, restrooms and ticket sales area;
8. Rehabilitate No. 2 Shaft-rockhouse and provide visitor access to upper levels, exhibits, interpretation, and views of surrounding area;
9. Preserve and interpret building ruins with self-guided walking tour and interpretive programs;
10. Rehabilitate and partially restore the No. 5 Boiler Plant, use for exhibits, office & interpret;
11. Restore and interpret Captain's Office, Martin House, Oil House, Old No. 2 Hoist House (1860), and residence;
12. NPS or partner to acquire and rehabilitate the Quincy Fire Hall and use for a community room, interpretive programs, or as commercial space;
13. Provide picnic area.

No. 7 & Railroad Corridor Area:

1. Restore exterior of Roundhouse, service pits, track, and wood floor and install rolling stock exhibits;
2. Extend restoration out from building into landscape with RR tracks, connection to other tracks and water tank, reveal historic grades and connections to the No. 2 and No. 4 Area;
3. Rehabilitate water tank and interpret;
4. Provide pedestrian route along the RR corridor at the crest of the hill;
5. Manage vegetation to enhance views of the broader landscape.

Mine Management Area:

1. Preserve Quincy Mine Office & continue to use as offices & a meeting room;
2. Work with property owners to restore and interpret Superintendent's Residence, Assay Office, and Captain's Residence;
3. Restore landscape features associated with the Quincy Mine Office;
4. Stabilize and preserve historic resources including small scale features, domestic vegetation and views;
5. Work with property owners provide a pedestrian trail linking this area to the Dryhouse Area, Campus Drive Area, & Former Miner's Residence Area;
6. Provide a picnic table at the Mine Office;
7. Improve barrier free access to the Mine Office.

Buildings and Remnants:

1. Blacksmith's Shop
2. Machine Shop
3. Captains Office
4. Supply House
5. Oil House
6. No. 2 Shaft-Rockhouse
7. Old No. 2 Hoist House (1882)
8. Martin House and Outbuilding
9. No. 2 Hoist House (1918-20)
10. No. 2 Hoist House (1894-95)
11. No. 5 Boiler Plant (1912)
12. Ruin of Diamond Drill Core House
13. Remnant of Compressor Building
14. Remnant of No. 4 Boiler House (1882)
16. Remnant of No.4 Hoist House (1885)
17. Remnant of No. 7 Boiler House (1898)
18. Quincy & Torch Lake R.R. Water Tank
19. Remnant of Engine House (1889)
20. Dryhouse Foundation
21. Mine Captain's Office
22. Assay Office
23. Captain White's Residence
24. Pay Office/Mine Office
25. Superintendent's Residence
26. Quincy Fire Hall

SCALE: NORTH
0 200 400

QUINN EVANS | ARCHITECTS

Base Sources:

1. Aerial photography, prepared for Keweenaw National Historical Park by Ayres Associates, Inc., of Madison, Wisconsin, May 2002.
2. Eric M. Hanson, "Quincy Mining Company Maps," HAER Heritage, Conservation and Recreation Service, 1978.
3. Land ownership information provided by Keweenaw National Historical Park.
4. Larry Mishkar, "Land Use History and Archaeological Survey, Seaman Mineral Museum Project, Quincy Mine National Historic Landmark, Houghton County, Michigan," Industrial Archaeology Laboratory, Michigan Technological University, Houghton, Michigan, 2005.
5. Period of Change Plans, Chapter II, Landscape History, Quincy Unit Cultural Landscape Report.
6. Smithgroup and Hitch, Inc., "A.E. Seaman Mineral Museum Master Plan Report," 20 January 2006.

TREATMENT ALTERNATIVE "A": *Rehabilitation with an emphasis on landscape preservation & a NPS visitor center at the Supply House.*

Historic Industrial Core Treatment Alternative B:

Rehabilitation with an emphasis on Landscape Restoration and a National Park Service Visitor Center outside the Historic Industrial Core. Figure 6-7 illustrates treatment alternative B.

Overall Historic Industrial Core (Treatment Alternative B)

- **Vegetation:** Remove all woody vegetation to provide an open landscape character similar to the earliest mining periods of significance.
- ***Archeological Resources:** Conduct professional archeological research and investigations to address gaps in knowledge, preserve known archeological deposits, and provide interpretation of these activities.[12]
- **Mine Shafts:** Preserve, monitor and interpret historic shafts as landscape features. Maintain and interpret bat structures at shaft entrances.
- **No. 2 Adit:** Continue to utilize the adit for underground tours. Above ground provide vertical markers identifying the alignment of the adit.
- ***Poor Rock Piles:** Preserve and interpret as historic landscape features.
- **Views:** Preserve historic views by discouraging inappropriate development within significant view areas. Remove woody vegetation to partially restore historic views.
- **Circulation:**
    - **Vehicular:** Provide access road and parking lot at Supply House, A.E. Seaman Mineral Museum, and No. 2 Hoist Houses (QMHA Visitor Center).
    - ***Alternative:** In the long term, implement multi-use trail and alternative transportation system linking the site elements, in the short term, develop hubs that will be part of the system.
    - ***Pedestrian:** Provide self-guided interpretive routes (using brochures or small signs on site) between Supply House, No. 2 Shaft-Rockhouse, Cooling Ponds, Martin House and No. 2 Hoist Houses. Utilize the multi-use trail for pedestrians, providing links throughout the Historic Industrial Core. Encourage visitors to explore all areas within the Historic Industrial Core.

[12] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

No. 6 Area (Treatment Alternative B)

- *Stabilize and preserve ruins of industrial activities.[13]
- *Remove woody vegetation to provide views of rock piles and other historic landscape features.
- *Provide multi-use trail into the area.
- *Encourage exploration and provide occasional tours.
- *Provide a picnic table for visitor use.

A.E. Seaman Mineral Museum Area (Treatment Alternative B)

- Utilize the Blacksmith Shop and Machine Shop for the A.E. Seaman Mineral Museum.
- *Provide parking for the A.E. Seaman Mineral Museum.
- *Provide a strong visual connection between this area and the No. 2 and No. 4 area.
- *Preserve remnants of historic industrial activities.
- *Provide picnic areas for visitor use.

Former Miner's Residences Area (Treatment Alternative B)

- *Conduct thorough analysis of historic structures by preparing Historic Structures Reports before undertaking treatment actions.
- *If the Historic Structures Report indicates it is appropriate, restore the exterior of the historic buildings.
- If the Historic Structures Report indicates it is appropriate, restore the interior of the historic buildings and interpret their role in providing housing for miner's and their families.
- *Provide access and parking on side streets.
- *Provide a pedestrian route linking this area to Limerick Road, the Campus Drive Area, Dryhouse Area, and Mine Management Area.

Campus Drive Area (Treatment Alternative B)

- *Remove non-contributing elements that are impacting the historic character of the Historic Industrial Core or improve their compatibility.
    - Work with private property owners to negotiate the relocation or redevelopment of incompatible infill and to restore or maintain landscape elements compatible with the historic core.
- *Stabilize and preserve historic resources including building ruins, small scale features, domestic vegetation and views toward the No. 2 and No. 4 area;
- *Restore and interpret the miner's residence on Limerick Road that is owned by the Quincy Mine Hoist Association;[14]

[13] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

- *Link this area to the Former Miner's Residences Area and the Dryhouse Area with a self-guided walking trail.

Dryhouse Area (Treatment Alternative B)

- *Stabilize and preserve historic resources including building ruins, small scale features, domestic vegetation and views toward the No. 2 and No. 4 area.
- Remove woody vegetation.
- *Provide multi-use trail linking this area to the Mine Management Area, Campus Drive Area, and Former Miner's Residence Area.
- *Provide a small parking lot along No. 2 Road.
- *Provide a wayside at the trailhead near the parking area. Include information about the historic relationships between this site and the rest of the Historic Industrial Core as well as logistical information.
- Interpret the No. 2 Adit location from this site. Provide above ground visual cues to help orient visitors to the underground resources.
- *When feasible, relocate the radio tower so that it is not within the view of the Historic Core.
- *Encourage visitors to explore the area around the dryhouse.
- *Provide a picnic table for visitor use near the dryhouse foundation.

No. 7 & Railroad Corridor Area (Treatment Alternative B)

- *Conduct thorough analysis of the Roundhouse by preparing a Historic Structures Report before undertaking treatment actions.
- *If the Historic Structures Report indicates it is appropriate, restore the exterior of the Roundhouse and install rolling stock exhibits.
- *Extend the restoration out from the building to the landscape with railroad tracks, and connections to other tracks and the water tank. Reveal the historic grades and connections to the No. 2 and No. 4 Area.
- *Rehabilitate the water tank and interpret its historic use.
- *Provide a pedestrian route along the railroad corridor along the crest of the hill.
- Remove woody vegetation.
- Provide a picnic table near the Roundhouse and one along the crest of the hill.

[14] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

Mine Management Area (Treatment Alternative B)

- *Preserve the Quincy Mine Office and continue its use as offices and a meeting room.[15]
- *Conduct thorough analysis of historic structures by preparing Historic Structures Reports before undertaking treatment actions.
- *If the Historic Structures Report indicates it is appropriate, work with property owners to restore the exterior of the historic buildings.
- *If the Historic Structures Report indicates it is appropriate, restore the interior of selected spaces in selected buildings and interpret their historic functions.
- *If the Historic Structures Report indicates it is appropriate, rehabilitate the interior of other buildings and use adaptively.
- *Work with property owners to provide a pedestrian trail linking this area to the Dryhouse Area, Campus Drive Area, and Former Miner's Residence Area.
- *Improve the conditions at the Quincy Mine Office and increase visitor understanding and appreciation for the resources by implementing the following treatment recommendations for the Mine Management Area.
    - *Restore the landscape features associated with the Quincy Mine Office.
    - *Stabilize and preserve historic resources including small scale features, domestic vegetation and views.
    - *Provide a picnic table at the Mine Office.
    - *Improve the conditions at the Quincy Mine Office and increase visitor understanding and appreciation for the resources found in this area of the park (see Figure 6-5).
    - ***Remove non-historic features**: Remove items that do not contribute to the historic integrity of the mine office landscape. These include a freestanding sign fixture located in the north yard and a piece of concrete in the northwest corner of the rear yard.
    - ***Improve foundation drainage –** The basement and foundation of the mine office building is currently affected by seasonal wetness. Install new foundation drain tile to move water away from the foundation and allow the historic roof gutter drains to be restored.
    - ***Restore lawn –** The lawn surrounding the mine office is rutted, in poor condition and contains many weeds. Grade, place additional topsoil and seed the area to improve its condition and appearance.
    - ***Provide barrier free access –** A preferred method to provide barrier free access has yet to be determined but several preliminary alternatives have been discussed. At this time it is believed the access route that least impacts the historic building and setting will use the sidewalk to the north and the rear entrance. While further study is required to evaluate a complete range of alternatives, it is assumed that any preferred solution will require integration with the surrounding landscape through minor changes in sidewalks or installation of a ramp.

[15] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

- ***Reconstruct front fence** – A prominent feature through much of the building's history was a distinctive wood fence and gates separating the front yard from the road. Reconstruct the wood fence and gates based on historic documentation.[16]
- ***Restore stone curb/wall** – Another prominent landscape element adjacent to the front fence was a stone curb/retaining wall made of locally quarried Jacobsville sandstone. The low curb defined the lawn edge and separated it from the adjacent sidewalk. At its south end the curb transitioned to a low retaining wall where the grade changed. The feature is in poor condition, and parts of it are missing. Restore the stone curb/wall.
- ***Reconstruct front walk –** The concrete sidewalk once present in front of the mine office is now missing. Reconstruct the concrete sidewalk to provide a safe walking surface outside of the vehicular traffic area for visitors and employees.
- ***Resurface historic road trace** – The historic road trace currently serves as an access road and parking area for visitors to the mine office. Resurface the road trace to preserve its position in the landscape while accommodating current vehicle access and circulation.
- ***Vegetation management** –Replace mature historic trees along the alley and in the rear yard when suffering from poor health. Replacements are to be large specimens of the same genus and species as practicable. Selectively thin trees and vegetation along side yard fencerows and at the rear yard of the mine office and the adjacent lot.
- ***Reconstruct side yard fences** – Fences once existed along the side yards of the property. Reconstruct the side yard fences to aid visitors with understanding this historic mine management property.
- ***Preserve masonry ruins –** Preserve the small masonry foundation and utility trench to help visitors understand this property and its historic functions.
- ***Archeological investigation –** Systematically investigate the entire property including the shallow depression, and adjacent pile of unknown origin and scattered debris, to determine the significance of these features and to reveal new information about the historic use of this site.

[16] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

No. 2 and No. 4 Area (Treatment Alternative B)

- *Conduct thorough analysis of historic structures by preparing Historic Structures Reports before undertaking treatment actions.[17]
- *Preserve historic resources and interpret the historic landscape.
- Remove woody vegetation.
- Provide self-guided interpretive routes between the Supply House, No. 2 Shaft-Rockhouse, cooling ponds, Martin House, and the No. 2 Hoist Houses.
- *Establish pedestrian links throughout the area.
- *In the short term, develop hubs for pedestrian / non-motorized transportation and a way to transition to a long term alternative transportation system for the Historic Industrial Core.
- *If the Historic Structures Report indicates it is appropriate, preserve and interpret the No. 2 Hoist House (1918-20).
- If the Historic Structures Report indicates it is appropriate, rehabilitate the Supply House and interpret its historic use. Use the building for the Quincy Mine Hoist Association gift shop, ticket sales, and as a National Park Service contact station.
- If the Historic Structures Report indicates it is appropriate, rehabilitate the No. 2 Hoist House (1894-95) to serve as a Visitor Center for the Quincy Mine Hoist Association. Include exhibits related to the Quincy Mine Company, an office, tour staging area, theater and restrooms.
- Restore the pulley stands between the No. 2 Shaft-rockhouse and the Hoist House.
- If the Historic Structures Report indicates it is appropriate, rehabilitate the No. 2 Shaft-rockhouse and provide visitor access to upper levels with exhibits, interpretation, and opportunities for views of the surrounding area.
- *Preserve and interpret the ruins of buildings with a self-guided walking tour and occasional interpretive programs.
- Preserve the ruins of buildings #11, 12, 13, 14, 16, and 17 and use them for programmed activities, including outdoor classrooms or picnic areas.
- If the Historic Structures Report indicates it is appropriate, rehabilitate and partially restore the No. 5 Boiler Plant and interpret its historic use.
- If the Historic Structures Report indicates it is appropriate, restore and interpret the Captain's Office, Martin House, Oil House, Old No. 2 Hoist House (1860) and residence. Consider using these buildings for interpretive or educational programs.
- If the Historic Structures Report indicates it is appropriate, work with owner to restore and interpret the historic use of the Quincy Fire Hall.
- *Provide picnic areas in the vicinity of the building ruins in the No. 4 area, near the cooling ponds, and to the east of the parking lot near the No. 2 Hoist Houses.

[17] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

Lower Pewabic Area (Treatment Alternative B)

- *Advocate for the restoration of historic building exteriors and preservation of extant historic landscape features including domestic plants, building foundations, roads, traces of former roads, views, and small scale features.[18]
- Consider acquisition of vacant property in Lower Pewabic by NPS or partners to help achieve the preservation of extant landscape features.
- *Interpret the housing location at a landscape scale focusing on the overall patterns of the roads, and placement of the buildings, gardens, outhouses, etc.
- *Provide a picnic area east of the No. 2 Hoist Houses.

[18] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

Next page:

Figure 6 - 7: Treatment Alternative "B"

No.6 Area:

1. Stabilize and preserve ruins of industrial activities;
2. Remove woody vegetation to provide views of rock piles and other historic landscape features;
3. Provide multi-use trail into the area;
4. Encourage exploration and provide occasional tours.

A.E. Seaman Mineral Museum Area:

1. Utilize Blacksmith Shop and Machine Shop for the A.E. Seaman Mineral Museum;
2. Provide parking for the A.E. Seaman Mineral Museum;
3. Develop a hub for pedestrian/non-motorized transportation that can transition to a long term alternative transportation system;
4. Provide a strong visual connection between this area and the No. 2 & No. 4 Area;
5. Preserve remnants of historic industrial activities;
6. Provide a picnic area for visitor use.

Former Miner's Residences Area:

1. Restore exterior of historic buildings;
2. Restore interior of historic buildings and interpret;
3. Provide access and parking on side streets.

Campus Drive Area:

1. Work with property owners to relocate or redevelop incompatible infill and restore/maintain compatible landscape features;
2. Stabilize and preserve historic resources, including building ruins, small scale features, domestic vegetation and views. toward the No. 2 & No. 4 Area;
3. Restore and interpret a miner's residence on Limerick Road;
4. Link this area to the Former Miner's Residences Area and the Dryhouse Area with a self-guided walking trail.

Dryhouse Area:

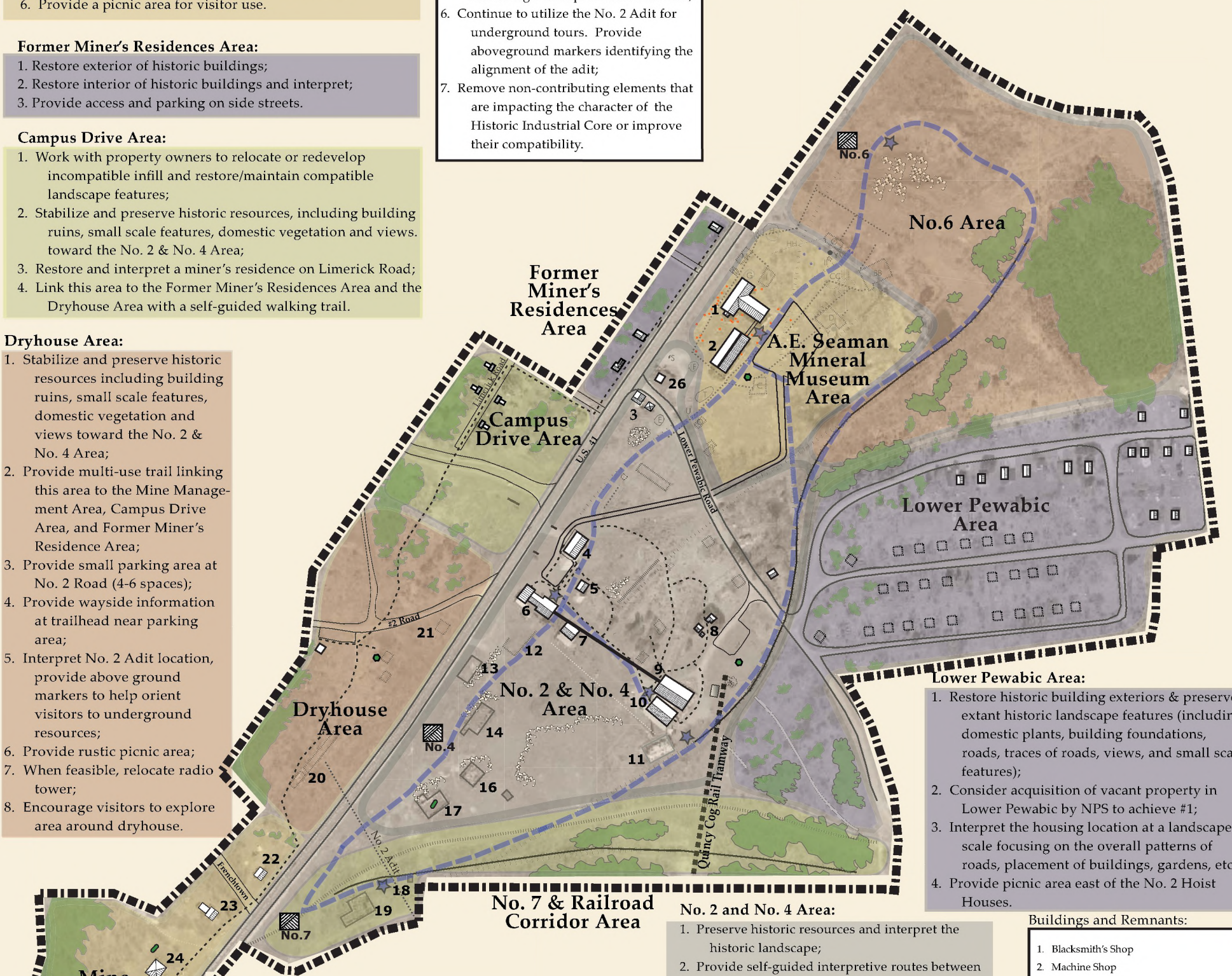
1. Stabilize and preserve historic resources including building ruins, small scale features, domestic vegetation and views toward the No. 2 & No. 4 Area;
2. Provide multi-use trail linking this area to the Mine Management Area, Campus Drive Area, and Former Miner's Residence Area;
3. Provide small parking area at No. 2 Road (4-6 spaces);
4. Provide wayside information at trailhead near parking area;
5. Interpret No. 2 Adit location, provide above ground markers to help orient visitors to underground resources;
6. Provide rustic picnic area;
7. When feasible, relocate radio tower;
8. Encourage visitors to explore area around dryhouse.

Overall Historic Core:

1. In the long term, implement multi-use trail with a motorized alternative transportation system linking the site elements, in the short term, develop hubs and key links that will be part of the system;
2. Remove all woody vegetation to restore industrial character to the landscape;
3. Preserve, monitor and interpret historic shafts and maintain and interpret bat structures at shaft entrances;
4. Encourage visitors to explore all areas within the Historic Industrial Core;
5. Conduct professional archaeological investigations to address gaps in knowledge--interpret these activities;
6. Continue to utilize the No. 2 Adit for underground tours. Provide aboveground markers identifying the alignment of the adit;
7. Remove non-contributing elements that are impacting the character of the Historic Industrial Core or improve their compatibility.

Legend

- Historic Industrial Core Boundary
- Extant Historic Building
- Remnant of Historic Building
- Comtemporary/Modified Building
- Landscape Management Zone
- Conceptual Route for Visitor Tram and Stops
- Artifact pile
- Conceptual Pedestrian Route
- Historic Railroad Grade
- Extant Railroad Track
- Vegetation
- Rock Piles
- Cog Rail Tramway
- No.6 Mine Shaft Location
- Proposed Picnic Table
- Proposed Picnic Area



Lower Pewabic Area:

1. Restore historic building exteriors & preserve extant historic landscape features (including domestic plants, building foundations, roads, traces of roads, views, and small scale features);
2. Consider acquisition of vacant property in Lower Pewabic by NPS to achieve #1;
3. Interpret the housing location at a landscape scale focusing on the overall patterns of roads, placement of buildings, gardens, etc.;
4. Provide picnic area east of the No. 2 Hoist Houses.

No. 2 and No. 4 Area:

1. Preserve historic resources and interpret the historic landscape;
2. Provide self-guided interpretive routes between the Supply House, No. 2 Shaft-Rockhouse, cooling ponds, Martin House, and the No. 2 Hoist Houses;
3. Short term: develop a hub for pedestrian/non-motorized transportation and transition to a long term alternative transportation system;
4. Preserve & interpret No. 2 Hoist House (1918-20);
5. Rehabilitate Supply House, interpret historic use, use for QMHA gift shop, tickets and NPS contact station;
6. Rehabilitate No.2 Hoist House (1894-95) for QMHA Visitor Center, exhibits about Quincy, office, tour staging area, theater and restrooms;
7. Restore pulley stands between No. 2 Shaft-rockhouse and Hoist House;
8. Rehabilitate No. 2 Shaft-rockhouse and provide visitor access to upper levels, exhibits, interpretation, & views of surrounding area;
9. Preserve and interpret building ruins with self-guided walking tour and occassional programs;
10. Preserve ruins of buildings #11, 12, 13, 14, 16, and 17 and use for programed activities, as outdoor classrooms or picnic areas;
11. Rehabilitate and partially restore the No. 5 Boiler Plant, interpret its historic use;
12. Restore and interpret Captain's Office, Martin House, Oil House, Old No. 2 Hoist House (1860), and residence, consider use for interpretive or educational programs;
13. Work with owners to restore and interpret the historic use of the Quincy Fire Hall.

No. 7 & Railroad Corridor Area:

1. Restore exterior of Roundhouse/Engine House, service pits, track, and wood floor and install rolling stock exhibits;
2. Extend restoration out from building into landscape with RR tracks, connection to other tracks and water tank, reveal historic grades and connections to the No. 2 and No. 4 Area;
3. Rehabilitate water tank and interpret;
4. Provide pedestrian route along the RR corridor at the crest of the hill.

Mine Management Area:

1. Work with property owners to restore and interpret the Quincy Mine Office, Superintendent's Residence, and Captain's Residcence;
2. Work with property owner to rehabilitate the Assay Office, use for residence or office;
3. Restore landscape features associated with the Quincy Mine Office;
4. Stabilize & preserve historic resources like small scale features and views;
5. Work with property owners to provide a pedestrian trail linking this area to the Dryhouse Area, Campus Drive Area, & Former Miner's Residence Area;
6. Provide a picnic table at the Mine Office;
8. Provide barrier free access to the Mine Office.

Buildings and Remnants:

1. Blacksmith's Shop
2. Machine Shop
3. Captains Office
4. Supply House
5. Oil House
6. No. 2 Shaft-Rockhouse
7. Old No. 2 Hoist House (1882)
8. Martin House and Outbuilding
9. No. 2 Hoist House (1918-20)
10. No. 2 Hoist House (1894-95)
11. No. 5 Boiler Plant (1912)
12. Ruin of Diamond Drill Core House
13. Remnant of Compressor Building
14. Remnant of No. 4 Boiler House (1882)
16. Remnant of No.4 Hoist House (1885)
17. Remnant of No. 7 Boiler House (1898)
18. Quincy & Torch Lake R.R. Water Tank
19. Remnant of Engine House (1889)
20. Dryhouse Foundation
21. Mine Captain's Office
22. Assay Office
23. Captain's Residence
24. Pay Office/Mine Office
25. Superintendent's Residence
26. Quincy Fire Hall

SCALE: NORTH
0 200 400

QUINN EVANS | ARCHITECTS

Base Sources:

1. Aerial photography, prepared for Keweenaw National Historical Park by Ayres Associates, Inc., of Madison, Wisconsin, May 2002.
2. Eric M. Hanson, "Quincy Mining Company Maps," HAER Heritage, Conservation and Recreation Service, 1978.
3. Land ownership information provided by Keweenaw National Historical Park.
4. Larry Mishkar, "Land Use History and Archaeological Survey, Seaman Mineral Museum Project, Quincy Mine National Historic Landmark, Houghton County, Michigan," Industrial Archaeology Laboratory, Michigan Technological University, Houghton, Michigan, 2005.
5. Period of Change Plans, Chapter II, Landscape History, Quincy Unit Cultural Landscape Report.
6. Smithgroup and Hitch, Inc., "A.E. Seaman Mineral Museum Master Plan Report," 20 January 2006.

TREATMENT ALTERNATIVE "B": *Rehabilitation with an emphasis on landscape restoration & NPS visitor center outside the Historic Core.*

Historic Industrial Core Treatment Alternative C, Preferred Alternative:

Rehabilitation with an emphasis on Landscape Restoration and a combined Visitor Center for the A.E. Seaman Mineral Museum, National Park Service, and Quincy Mine Hoist Association. Figure 6 – 8 illustrates Treatment Alternative C, Preferred Alternative.

Overall Historic Industrial Core (Treatment Alternative C, Preferred Alternative)

- **Vegetation:** Remove woody vegetation that impacts historic resources within the Historic Industrial Core (including views). Selectively thin some areas to create a gradual transition from open spaces to wooded areas (see Chapter VIII, Projects C-1, D, E, F, G, H, and I).
- ***Archeological Resources:** Conduct professional archeological research and investigations to address gaps in knowledge, preserve known archeological deposits, and provide interpretation of these activities.[19] See Chapter VIII, Project A-2.
- **Mine Shafts:** Preserve, monitor and interpret historic shafts as landscape features. Maintain and interpret bat structures at shaft entrances.
- **No. 2 Adit:** Continue to utilize the adit for underground tours. Interpret its location on the surface from the Dryhouse Area, Roundhouse, and Adit entrance (see Chapter VIII, Projects C-1, C-2, J, and K).
- **Underground Features:** Consider interpreting the underground network of drifts and stopes on the surface. A brochure, wayside, or small sign with the drift number and depth is one possible approach (see Chapter VIII, Projects J, K, and II).
- ***Poor Rock Piles:** Preserve and interpret as historic landscape features (see Chapter VIII, Projects A-1, A-6, J, K, and W).
- **Industrial Landscape Features and Artifacts:**
    - Utilize detailed information provided in the Industrial Artifact Inventory prepared by Scott See to guide placement and use of industrial artifacts in the landscape.[20] Consider placing artifacts near areas or elements related to their historic use and utilizing them as interpretive waysides.
    - Consider restoration of portions of railroad grades, tracks and trestles as extensions from selected structures when appropriate documentation exists.
    - Reveal extant grades and remnants of railroad tracks, and industrial features through removal of vegetation.
    - Refer visitors to the Quincy Smelting Works to view a more extensive extant network of trestles associated with other features.

[19] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.
[20] See, Keweenaw National Historical Park, Cultural Landscape Report, Quincy Unit – Industrial Artifact Inventory. 2006.

- **Views:**
  - Preserve historic views by discouraging inappropriate development within significant view areas (see Chapter VIII, Project B).
  - Selectively remove woody vegetation to partially restore historic views (see Chapter VIII, Projects C-1, D, E, F, G, H, I, and W).
  - Interpret views of Quincy Hill from the Houghton waterfront (see Chapter VIII, Project II).
- **Site Amenities:** Develop a palette for site furnishings, signs, waysides, and other features in the Historic Industrial Core that is compatible with the character of the historic landscape (see Chapter VIII, Project JJ).
- **Circulation:**
  - **Vehicular:** In the short term, provide access road and parking lot at Supply House, A.E. Seaman Mineral Museum, and No. 2 Hoist Houses (QMHA Visitor Center). In the long term, minimize the parking at the Hoist Houses and Supply House to necessary universal accessible spaces. Provide parking for all others at the Blacksmith Shop/Machine Shop (see Chapter VIII, Projects T, V, and Z).
  - ***Alternative transportation route:** Develop a route that reflects locations of historic railroad tracks and locations within the Historic Industrial Core. Along the route, when appropriate evidence exists, expose portions of extant railroad resources and interpret. In the long term, implement multi-use trail and alternative transportation system linking the site elements, in the short term, develop hubs that will be part of the system.[21] See Chapter VIII, Projects M and N.
  - ***Pedestrian:** Provide self-guided interpretive pedestrian routes (using brochures or small signs on site) between Supply House, No. 2 Shaft-Rockhouse, Cooling Ponds, Martin House and No. 2 Hoist Houses. Utilize the multi-use trail for pedestrians, providing links throughout the Historic Industrial Core. Encourage visitors to explore all areas within the Historic Industrial Core (see Chapter VIII, Projects K, M and N).

No. 6 Area (Treatment Alternative C, Preferred Alternative)

- *Coordinate all planning and implementation efforts related to this area with the A.E. Seaman Mineral Museum, Quincy Mine Hoist Association, and Franklin Township.
- *Stabilize and preserve ruins of industrial activities.
- *Remove woody vegetation to provide views of rock piles and other historic landscape features (see Chapter VIII, Project W).
- *Provide multi-use trail into the area (see Chapter VIII, Projects M and N).
- *Encourage exploration and provide occasional tours.
- Provide interpretive waysides at the poor rock pile, No. 6 shaft site, and No. 6 building ruins (see Chapter VIII, Project J).

[21] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

A.E. Seaman Mineral Museum Area (Treatment Alternative C, Preferred Alternative)

- *Coordinate all planning and implementation efforts related to this area with the A.E. Seaman Mineral Museum.
- Utilize Blacksmith Shop and Machine Shop for the
    - A.E. Seaman Mineral Museum
    - National Park Service Visitor Center
    - Initial combined contact point for the A.E. Seaman Mineral Museum, Quincy Mine Hoist Association and National Park Service.
    - Provide regional exhibits, a theater, restrooms, tram and mine tour tickets.
- Provide parking for the majority of the Historic Core visitors.
- Provide a hub for pedestrian / non-motorized transportation that can transition to a long-term alternative transportation system.
- *Provide a strong visual connection between this area and the No. 2 and No. 4 area.[22] See Chapter VIII, Projects G, H, and I).
- *Preserve remnants of historic industrial activities.
- *Provide a picnic area for visitor use (see Chapter VIII, Project Z).

Former Miner's Residences Area (Treatment Alternative C, Preferred Alternative)

- *Coordinate all planning and implementation efforts related to this area with property owners (see Chapter VIII, Project B).
- *Conduct thorough analysis of historic structures by preparing Historic Structures Reports before undertaking treatment actions (see Chapter VIII, Project A-3).
- *If the Historic Structures Report indicates it is appropriate, restore the exterior of the historic buildings.
- If the Historic Structures Report indicates it is appropriate, restore or rehabilitate the interiors of the historic buildings and utilize for interpretation or adaptive re-use.
- *Provide access and parking on side streets.
- *Work with property owners to provide a pedestrian link to Limerick Road, the Campus Drive Area, Dryhouse Area, and Mine Management Area.

Campus Drive Area (Treatment Alternative C, Preferred Alternative)

- *Coordinate all planning and implementation efforts related to this area with property owners (see Chapter VIII, Project B).
- *Remove or revise non-contributing elements that are impacting the historic character of the Historic Industrial Core or improve their compatibility.
    - Work with private property owners to negotiate the relocation or redevelopment of incompatible infill and to restore or maintain landscape elements compatible with the historic core.

[22] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

- *Stabilize and preserve historic resources including building ruins, small scale features, domestic vegetation and views toward the No. 2 and No. 4 area (see Chapter VIII, Project A-6).
- *Restore and interpret the miner's residence on Limerick Road that is owned by the Quincy Mine Hoist Association.
- Provide interpretive wayside on Limerick Road focused on early mining community domestic life (see Chapter VIII, Project J).
- *Link this area to the Former Miner's Residences Area and the Dryhouse Area with a self-guided walking trail route (see Chapter VIII, Projects K, L and O).

Dryhouse Area (Treatment Alternative C, Preferred Alternative)

- *Coordinate all planning and implementation efforts related to this area with property owners.
- *Stabilize and preserve historic resources including building ruins, small scale features, domestic vegetation and views toward the No. 2 and No. 4 area (see Chapter VIII, Projects A-6, C, and H).
- Remove woody vegetation that impacts historic resources, thin other vegetation to strengthen views (see Chapter VIII, Project H).
- *Provide pedestrian trail linking this area to the Mine Management Area, Campus Drive Area, and Former Miner's Residence Area (see Chapter VIII, Project O).
- *Provide small parking lot along No. 2 Road (6-8 spaces). See Chapter VIII, Project P.
- Provide a vault toilet near the parking area (see Chapter VIII, Project P).
- Provide a small picnic area at the rock outcrop near the No. 2 Road (see Chapter VIII, Project P).
- *Provide a wayside at the trailhead near the parking area. Include information about the historic relationships between this site and the rest of the Historic Industrial Core as well as logistical information (see Chapter VIII, Project J).
- Provide an interpretive wayside near the Dryhouse foundation with information about the historic activities related to the Dryhouse and the No. 2 Adit location (see Chapter VIII, Project J).
- *When feasible, relocate the radio tower so that it is not within the view of the Historic Industrial Core.
- *Encourage visitors to explore the area around the dryhouse.

No. 7 & Railroad Corridor Area (Treatment Alternative C, Preferred Alternative)

- *Coordinate all planning and implementation efforts related to this area with the Quincy Mine Hoist Association (see Project GG).
- *Conduct thorough analysis of historic structures by preparing Historic Structures Reports before undertaking treatment actions.
- *If the Historic Structures Report indicates it is appropriate, restore the exterior of the Roundhouse, service pits, track, wood floor, and install rolling stock exhibits.
- *Extend the restoration out from the building to the landscape with railroad tracks, and connections to other tracks and the water tank. Reveal the historic grades and connections to the No. 2 and No. 4 Area.

- *Rehabilitate the water tank and interpret its historic use.
- *Provide a pedestrian route along the railroad corridor at the crest of the hill.
- Remove selected woody vegetation to open historic view between the No. 7 area and Quincy Hill along the alignment of the No. 2 Adit.
- Provide an interpretive wayside near the Roundhouse focused on the Roundhouse and No. 2 Adit.
- Provide an interpretive wayside at the No. 7 Shaft location with information about the Pewabic Lode, shafts and historic views.

Mine Management Area (Treatment Alternative C, Preferred Alternative)

- *Preserve the Quincy Mine Office and continue its use as offices and a meeting room.
- *Conduct thorough analysis of historic structures by preparing Historic Structures Reports before undertaking treatment actions.[23]
- *If the Historic Structures Report indicates it is appropriate, work with property owners to restore the exterior of the historic buildings.
- *If the Historic Structures Report indicates it is appropriate, restore the interior of selected spaces in selected buildings and interpret their historic functions.
- *If the Historic Structures Report indicates it is appropriate, rehabilitate the interior of other buildings and use adaptively.
- *Work with property owners to provide a pedestrian trail linking this area to the Dryhouse Area, Campus Drive Area, and Former Miner's Residence Area.
- *Improve the conditions at the Quincy Mine Office and increase visitor understanding and appreciation for the resources by implementing the following treatment recommendations for the Mine Management Area.
    - *Restore the landscape features associated with the Quincy Mine Office.
    - *Stabilize and preserve historic resources including small scale features, domestic vegetation and views.
    - *Provide a picnic table at the Mine Office.
    - *Improve the conditions at the Quincy Mine Office and increase visitor understanding and appreciation for the resources found in this area of the park (see Figure 6-5).
    - ***Remove non-historic features**: Remove items that do not contribute to the historic integrity of the mine office landscape. These include a freestanding sign fixture located in the north yard and a piece of concrete in the northwest corner of the rear yard.
    - ***Improve foundation drainage –** The basement and foundation of the mine office building is currently affected by seasonal wetness. Install new foundation drain tile to move water away from the foundation and allow the historic roof gutter drains to be restored.
    - ***Restore lawn –** The lawn surrounding the mine office is rutted, in poor condition and contains many weeds. Grade, place additional topsoil and seed the area to improve its condition and appearance.

[23] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

- ***Provide barrier free access** – A preferred method to provide barrier free access has yet to be determined but several preliminary alternatives have been discussed. At this time it is believed the access route that least impacts the historic building and setting will use the sidewalk to the north and the rear entrance. While further study is required to evaluate a complete range of alternatives, it is assumed that any preferred solution will require integration with the surrounding landscape through minor changes in sidewalks or installation of a ramp.
- ***Reconstruct front fence** – A prominent feature through much of the building's history was a distinctive wood fence and gates separating the front yard from the road. Reconstruct the wood fence and gates based on historic documentation.
- ***Restore stone curb/wall** – Another prominent landscape element adjacent to the front fence was a stone curb/retaining wall made of locally quarried Jacobsville sandstone. The low curb defined the lawn edge and separated it from the adjacent sidewalk. At its south end the curb transitioned to a low retaining wall where the grade changed. The feature is in poor condition, and parts of it are missing. Restore the stone curb/wall. [24]
- ***Reconstruct front walk –** The concrete sidewalk once present in front of the mine office is now missing. Reconstruct the concrete sidewalk to provide a safe walking surface outside of the vehicular traffic area for visitors and employees.
- ***Resurface historic road trace** – The historic road trace currently serves as an access road and parking area for visitors to the mine office. Resurface the road trace to preserve its position in the landscape while accommodating current vehicle access and circulation.
- ***Vegetation management** –Replace mature historic trees along the alley and in the rear yard when suffering from poor health. Replacements are to be large specimens of the same genus and species as practicable. Selectively thin trees and vegetation along side yard fencerows and at the rear yard of the mine office and the adjacent lot.
- ***Reconstruct side yard fences** – Fences once existed along the side yards of the property. Reconstruct the side yard fences to aid visitors with understanding this historic mine management property.
- ***Preserve masonry ruins –** Preserve the small masonry foundation and utility trench to help visitors understand this property and its historic functions.
- ***Archeological investigation –** Systematically investigate the entire property including the shallow depression, and adjacent pile of unknown origin and scattered debris, to determine the significance of these features and to reveal new information about the historic use of this site.

[24] When presented with alternatives two, three and four, the common treatments include a * to indicate the directive is the same for all of the action alternatives.

No. 2 and No. 4 Area (Treatment Alternative C, Preferred Alternative)

- *Conduct thorough analysis of historic structures by preparing Historic Structures Reports before undertaking treatment actions (see Chapter VIII, Project A-3).
- *Preserve historic resources including landscape features, artifacts, buildings and building ruins and interpret with self-guided walking tours and hands-on activities (see Chapter VIII, Projects A-6, J and K).
- Reveal traces of industrial activities by removing non-contributing woody vegetation.
- *Establish pedestrian links throughout the area (see Chapter VIII, Projects M and N).
- *In the short term, develop hubs for pedestrian / non-motorized transportation and a way to transition to a long term alternative transportation system for the Historic Industrial Core (see Chapter VIII, Projects M and N).
- *If the Historic Structures Report indicates it is appropriate, preserve and interpret the No. 2 Hoist House (1918-20).
- *If the Historic Structures Report indicates it is appropriate, utilize the No. 2 Hoist House (1894-1895) for the Quincy Mine Hoist Association Visitor Center, office, tour staging area, restrooms, museum, and artifact display area.
- Restore the missing pulley stands between the No. 2 Shaft-rockhouse and the No. 2 Hoist Houses.
- When adequate documentation exists, restore portions of railroad grades, tracks, and trestles adjacent to the No. 2 Shaft-rockhouse and other significant structures and interpret them as reconstructed parts of the historic mining operations (see Chapter VIII, Project X).
- *If the Historic Structures Report indicates it is appropriate, rehabilitate, partially restore, and interpret the No. 2 Shaft-rockhouse and provide visitor access to the upper levels. Interpret the historic operations of the historic building and views of the surrounding landscape.
- If the Historic Structures Report indicates it is appropriate, rehabilitate and partially restore the No. 5 Boiler Plant and adjacent trestle remnant. Interpret the building and use for exhibits and office space.
- *Preserve and interpret the ruins of buildings with a self-guided walking tour and occasional interpreter-led programs (see Chapter VIII, Project K).
- Preserve the ruins of buildings #11, 12, 13, 14, 16, and 17 and use them for programmed activities, including outdoor classrooms or picnic areas.
- If the Historic Structures Report indicates it is appropriate, restore and interpret the Captain's Office and Martin House.
- If the Historic Structures Report indicates it is appropriate, restore the exterior and adaptively use the Oil House and residence.
- If the Historic Structures Report indicates it is appropriate, rehabilitate the Supply House for adaptive use.
- If the Historic Structures Report indicates it is appropriate, Quincy Fire Hall to be acquired by NPS or partner for rehabilitation and adaptive reuse as part of the proposed visitor center complex, as a community room, for interpretive programs or as a commercial space.
- *Provide a picnic table near the building ruins in the No. 4 area, and a picnic area to the east of the parking lot near the No. 2 Hoist Houses (see Chapter VIII, Project S).

- Provide interpretive waysides at the following locations:
    - Near the ruins north of the Supply House.
    - On the south side of the No. 2 Shaft-rockhouse.
    - At the No. 4 shaft location.
    - Near the No. 2 Hoist Houses.
    - Near the cooling ponds.
    - At the Martin House.
    - In the area between the Supply House and the Martin House.

Lower Pewabic Area (Treatment Alternative C, Preferred Alternative)

- *Advocate for the restoration of historic building exteriors and preservation of extant historic landscape features including domestic plants, building foundations, roads, traces of former roads, views, and small scale features (see Chapter VIII, Projects A-1 and A-6).
- Work with residents and property owners to determine an appropriate approach for managing vegetation.
- *Interpret the housing location at a landscape scale focusing on the overall patterns of the roads, and placement of the buildings, gardens, outhouses, etc. See Chapter VIII, Project K.
- *Provide interpretive waysides at key locations (see Chapter VIII, Project J).

Next page:

Figure 6 - 8: Treatment Alternative "C" (Preferred Alternative)

No.6 Area:

1. Stabilize and preserve ruins of industrial activities;
2. Remove woody vegetation to provide views of rock piles and other historic landscape features as desired;
3. Provide multi-use trail into the area;
4. Encourage exploration and provide occasional tours.

A.E. Seaman Mineral Museum Area:

1. Utilize Blacksmith Shop and Machine Shop for the
   *A.E. Seaman Mineral Museum
   *NPS Visitor Center
   *QMHA, NPS & A.E. Seaman Mineral Museum combined initial visitor contact point offering, for example, regional exhibits, theater, restrooms, tram and mine tour tickets;
2. Provide parking for majority of Historic Core visitors;
3. Develop a hub for pedestrian/non-motorized transportation that can transition to a long term alternative transportation system;
4. Provide a strong visual and pedestrian connection between this area and the No. 2 & No. 4 Area;
5. Provide picnic area for visitor use.

Former Miner's Residences Area:

1. Restore exterior of historic buildings;
2. Restore or rehabilitate interior of historic buildings for interpretation or adaptive re-use;
3. Provide access and parking from side streets.

Campus Drive Area:

1. Remove or revise non-contributing impacting elements;
2. Stabilize and preserve historic resources, including building ruins, small scale features, domestic vegetation and views. toward the No. 2 & No. 4 Area;
3. Restore and interpret a miner's residence on Limerick Road.

Dryhouse Area:

1. Stabilize and preserve historic resources including building ruins, small scale features, domestic vegetation and views toward the No. 2 & No. 4 Area;
2. Remove or thin woody vegetation impacting historic resources and views;
3. Provide pedestrian trail linking this area to the Mine Management Area, Campus Drive Area, and Former Miner's Residence Area;
4. Provide small parking area at No. 2 Road (6-8 spaces);
5. Provide wayside information at trailhead near parking area;
6. Provide small picnic area;
7. Provide vault toilet;
8. Interpret No. 2 Adit location;
9. When feasible, relocate radio tower;
10. Encourage visitors to explore area around dryhouse.

No. 7 & Railroad Corridor Area:

1. Restore exterior of Roundhouse, service pits, track, and wood floor and install rolling stock exhibits;
2. Extend restoration out from building into landscape with RR tracks, connection to other tracks and water tank, reveal historic grades and connections to the No. 2 and No. 4 Area;
3. Rehabilitate water tank and interpret;
4. Provide pedestrian route along the RR corridor at the crest of the hill;
5. Develop a wayside at No.7.

Mine Management Area:

1. Work with owners to restore exterior of historic buildings;
2. Work with owners to restore interior of selected spaces in selected buildings and interpret;
3. Work with owners to rehabilitate interior of buildings & adaptively use;
4. Restore landscape features associated with the Quincy Mine Office;
5. Work with owners to stabilize and preserve historic resources including small scale features, domestic vegetation and views;
6. Work with owners to provide a pedestrian trail linking this area to the Dryhouse Area, Campus Drive Area, & Former Miner's Residence Area;
7. Provide picnic table at Mine Office;
8. Provide barrier free access to the Mine Office.

Overall Historic Core:

1. Remove non-contributing woody vegetation that impacts historic resources (including views);
2. Conduct professional archaeological investigations to address gaps in knowledge--interpret these activities;
3. Preserve, monitor and interpret historic shafts and maintain and interpret bat structures at shaft entrances;
4. Continue to utilize the No. 2 Adit for underground tours and interpret the location on the surface;
5. Preverve and interpret poor rock piles;
6. Preserve historic views by discouraging inappropriate development within key areas and removal of vegetation;
7. In short term, provide vehicular access road and parking at Supply House and No. 2 Hoist Houses. In long term, minimize parking at these locations to handicap accessible spaces and provide all other parking at the joint arrival facility at the Blacksmith Shop;
8. In the long term, implement a multi-use trail with a motorized alternative transportation system linking the site elements, in the short term, develop hubs and key links that will be part of the system.

Legend

- Historic Industrial Core Boundary
- Extant Historic Building
- Remnant of Historic Building
- Comtemporary/Modified Building
- Landscape Management Zone
- Conceptual Route for Visitor Tram and Stops
- Artifact pile
- Conceptual location for overlook or interpretive wayside
- Conceptual Pedestrian Route
- Historic Railroad Grade
- Extant Railroad Track
- Vegetation
- Rock Piles
- Cog Rail Tramway
- No.6 Mine Shaft Location
- Proposed Picnic Table
- Proposed Picnic Area



Lower Pewabic Area:

1. Advocate for the restoration of historic building exteriors and preservation of extant historic landscape features (including domestic plants, building foundations, roads, traces of former roads, views, and small scale features);
2. Interpret the housing location at a landscape scale focusing on the overall patterns of roads, placement of buildings, gardens, outhouses, etc.;
3. Provide interpretive waysides at key locations.

No. 2 and No. 4 Area:

1. Preserve historic resources including landscape features, artifacts, buildings and building ruins with self-guided walking tour and hands-on activities;
2. Remove non-contributing woody vegetation to reveal traces of industrial activities;
3. Establish pedestrian links throughout the area;
5. Utilize Hoist Houses for QMHA Visitor Center, office, tour staging, restrooms, museum, and artifact display;
6. Restore pulley stands between No. 2 Shaft-Rockhouse and No. 2 Hoist Houses];
7. Consider restoration of portions of railroad grades, tracks, & trestles adjacent to the No. 2 Shaft-Rockhouse and other significant structures & interpret as part of the mining operations;
8. Preserve ruins of buildings #11, 12, 13, 14, 16, and 17 and use for programed activities, as outdoor classrooms or picnic areas;
9. Rehabilitate, partially restore, and interpret the No. 2 Shaft-rockhouse, provide visitor access to upper levels;
10. Rehabilitate and partially restore the No. 5 Boiler Plant & adjacent trestle remnant, use for exhibits, office & interpret;
11. Restore and interpret Captain's Office and Martin House, restore exterior and adaptively use Oil House and residence;
12. Rehabilitate Supply House for adaptive use;
13. Rehabilitate the Quincy Fire Hall and use as a part of the proposed visitor center complex, as a community room, for interpretive programs, or as a commercial space.

Buildings and Remnants:

1. Blacksmith's Shop
2. Machine Shop
3. Captains Office
4. Supply House
5. Oil House
6. No. 2 Shaft-Rockhouse
7. Old No. 2 Hoist House (1882)
8. Martin House and Outbuilding
9. No. 2 Hoist House (1918-20)
10. No. 2 Hoist House (1894-95)
11. No. 5 Boiler Plant (1912)
12. Ruin of Diamond Drill Core House
13. Remnant of Compressor Building
14. Remnant of No. 4 Boiler House (1882)
16. Remnant of No.4 Hoist House (1885)
17. Remnant of No. 7 Boiler House (1898)
18. Quincy & Torch Lake R.R. Water Tank
19. Remnant of Engine House (1889)
20. Dryhouse Foundation
21. Mine Captain's Office
22. Assay Office
23. Captain White's Residence
24. Pay Office/Mine Office
25. Superintendent's Residence
26. Quincy Fire Hall

SCALE: NORTH
0 200 400

QUINN EVANS | ARCHITECTS

Base Sources:

1. Aerial photography, prepared for Keweenaw National Historical Park by Ayres Associates, Inc., of Madison, Wisconsin, May 2002.
2. Eric M. Hanson, "Quincy Mining Company Maps," HAER Heritage, Conservation and Recreation Service, 1978.
3. Land ownership information provided by Keweenaw National Historical Park.
4. Larry Mishkar, "Land Use History and Archaeological Survey, Seaman Mineral Museum Project, Quincy Mine National Historic Landmark, Houghton County, Michigan," Industrial Archaeology Laboratory, Michigan Technological University, Houghton, Michigan, 2005.
5. Period of Change Plans, Chapter II, Landscape History, Quincy Unit Cultural Landscape Report.
6. Smithgroup and Hitch, Inc., "A.E. Seaman Mineral Museum Master Plan Report," 20 January 2006.

TREATMENT ALTERNATIVE "C": *Rehabilitation with an emphasis on landscape restoration & a combined visitor center for NPS, A.E. Seaman Mineral Museum, and QMHA.*

Summary of Treatment Alternatives

Table 6-2 summarizes the major elements of each of the treatment alternatives and tests these elements against the proposal objectives which were stated in Chapter I. Table 6-2 reveals that Treatment Alternative C meets the project objectives more completely than other treatment alternatives considered.

The comparative analysis of potential impacts from each treatment alternative is summarized in Table 6-3. Resource topics carried forward for analysis in this CLR / EA are included in the table. More detailed analysis and conclusions of potential impacts is provided in **Chapter VII: Treatment Impacts/Environmental Consequences.**

1 = Partially Meets Project Objective

2 = Meets Basic Level of Objective

3 = Meets Highest Level of Objective

Table 6-2
Alternatives Summary and Extent to Which Each Alternative Meets Project Objectives

Project Objectives	Current Management (No Action Alternative)	Alternative A	Alternative B	Alternative C (Preferred Alternative)
Document the development of the historic landscapes within the Quincy Unit of Keweenaw National Historical Park.	1	2	2	2
Document the existing conditions of the historic landscapes within the Quincy Unit of Keweenaw National Historical Park.	1	2	2	3
Evaluate the significance and integrity of the historic landscapes within the Quincy Unit of Keweenaw National Historical Park.	1	2	2	3
Provide treatment recommendations for managing the historic landscape resources within the Quincy Unit of the park.	1	3	2	3
Recommend landscape treatments to address management needs identified by the NPS and park partners in the Quincy Unit, including locating a park visitor center based on landscape characteristics.	1	3	2	3
Provide management recommendations and schematic designs for specific historic landscapes within the park that accommodate current and future needs while preserving the historic character and significant features present.	1	3	2	3
Streamline planning and compliance processes for the historic landscapes within the Quincy Unit of Keweenaw National Historical Park.	1	2	2	2
Enhance visitor experience through providing information about the history of the development of the park, to interpreters and site managers.	1	3	2	3
Provide recommendations for efficiently managing the historic landscapes within the Quincy Unit of the park while taking into consideration budget constraints.	1	2	2	3
TOTALS	**9**	**22**	**18**	**23**

Table 6-3
Environmental Impact Summary for Each Treatment Alternative

Resource Topic	Current Management (No Action Treatment Alternative)	Treatment Alternative A:	Treatment Alternative B:	Treatment Alternative C (Preferred Alternative):
Cultural Resources	Direct long-term, moderate adverse impacts to cultural resources **Section 106:** Cultural Landscape – **Adverse Effect** Archeological Resources – **Unknown, further Sec. 106 consultation required**	Direct, long-term minor to moderate beneficial impacts to cultural resources **Section 106:** Cultural Landscape – **No adverse effect** Archeological Resources – **No adverse effect**	Direct, long-term minor to moderate beneficial impacts to cultural resources **Section 106:** Cultural Landscape – **No adverse effect** Archeological Resources – **No adverse effect**	Direct, long-term minor to moderate beneficial impacts to cultural resources **Section 106:** Cultural Landscape – **No adverse effect** Archeological Resources – **No Adverse effect**
Socioeconomics	Direct, long-term, minor beneficial impact	Direct, long-term, minor to moderate beneficial impact	Direct, long-term, minor to moderate beneficial impact	Direct, long-term, moderate beneficial impact
Visitor Experience	Long-term, minor beneficial impact	Long-term, minor to moderate beneficial impact	Long-term, minor to moderate beneficial impact	Long-term, moderate beneficial impact
Park Operations	Short and long-term, negligible to minor adverse impacts	Short and long-term, minor to moderate beneficial impacts	Short and long-term, minor beneficial impacts	Short and long-term, minor to moderate beneficial impacts

Environmentally Preferred Treatment Alternative

The environmentally preferred treatment alternative is determined by applying the criteria suggested in NEPA, which is guided by the Council on Environmental Quality (CEQ). The CEQ provides direction that "…the environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101." Using the six criteria from Section 101 detailed below.

- Criterion 1**:** Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.

- Criterion 2**:** Assure for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings.

- Criterion 3**:** Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.

- Criterion 4**:** Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.

- Criterion 5**:** Achieve a balance between population and resource use that will permit high standards of living and wide sharing of life's amenities.

- Criterion 6**:** Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Using the CEQ's interpretations of the Section 101 criteria and the alternatives impact analysis in this document, it was determined that the combination of Treatments Common to all Treatment Alternatives and Historic Industrial Core **Treatment Alternative C is the environmentally preferred alternative.**

The combination of Treatments Common to all Alternatives and Historic Industrial Core Treatment Alternative C would implement the highest level of rehabilitation, restoration and preservation of all the alternatives. This alternative, as well as Treatment Alternative A strike a balance between resources available and the desire to reestablish the landscape to its period of significance, while minimizing impacts to the natural communities at the Quincy Unit.

No new information came forward during public scoping or consultation with regulatory agencies or Native American tribes to necessitate the development of any new alternatives, other than those described and evaluated in this document. Because it meets the Purpose and Need for the project and is the environmentally preferred Treatment Alternative for the Historic Industrial Core, **Treatment Alternative C is also recommended to be the Preferred Treatment Alternative for this proposal.**

Mitigation Measures

The following mitigation measures have been developed to minimize the degree and/or severity of adverse impacts, and would be implemented, as needed, during implementation of the Preferred Treatment Alternative (Alternative C).

Cultural Resources

- Proposed projects that would affect historic features of the cultural landscape (structures, vegetation, landscape character, etc) must comply with the requirements of *The Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* and *Cultural Resource Management Guideline*.

- Until the Keweenaw National Historical Park Archeological Inventory is completed, conduct site/project specific archeological assessments to determine if NRHP-eligible resources are evident. If NRHP-eligible resources are identified, project redesign or other appropriate mitigation measures would be determined through consultation with the SHPO or other appropriate parties.

- Park operations, management and administrative functions would result in numerous low-impact or repetitive activities that could potentially affect historic properties at Keweenaw National Historical Park. These activities should be mitigated through the use of the *2008 Programmatic Agreement Among the National Park Service (U.S. Department of Interior), The Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers for Compliance With Section 106 of the National Historic Preservation Act*, or consult with the Michigan SHPO to develop a park-specific programmatic agreement to simplify and streamline the Section 106 process.

- Any contractors and subcontractors, utilized for construction projects would be instructed on procedures to follow in case previously unknown archeological resources are uncovered during construction. If previously unknown and significant archeological resources are unearthed during construction, work would be stopped in the area of discovery and the NPS would consult with the SHPO and appropriate parties, the Advisory Council on Historic Preservation. If impacts to significant resources could not be avoided by redesign, mitigating measures would be developed in consultation with the SHPO to help ensure that the informational significance of the sites would be preserved. If appropriate, provisions of the Native American Graves Protection and Repatriation Act of 1990 would be implemented.

- The NPS would ensure that any contractors and subcontractors utilized for construction are informed of the penalties for illegally collecting artifacts or intentionally damaging archeological sites, or historic properties.

- To minimize the amount of ground disturbance, staging and stockpiling areas would be located in previously disturbed sites, away from visitor use areas and circulation to the extent possible. All staging and stockpiling areas would be returned to pre-construction conditions following construction.

Visitor Experience

- To minimize the potential impact to park visitors, variation on construction timing may be considered, such as conducting a majority of the work in shoulder seasons.
- Construction zones would be identified and fenced with construction tape, snow fencing, or some other material prior to any construction activity. All protection measures would be clearly stated in the construction specifications and workers would be instructed to avoid conducting activities beyond the construction zone.
- Temporary interpretive panels would be provided during the construction period to inform and educate visitors regarding the project and its importance to the overall historic landscape of the Quincy Unit.

Park Operations

- Because soils are susceptible to erosion until revegetation takes place, standard erosion control measures such as silt fences and/or sand bags would be used to minimize any potential erosion. Other NPS Best Management Practices (BMPs) would by used as necessary and could include sediment traps and erosion checks.

- Fugitive dust generated by construction would be controlled by spraying water on the construction site, as needed. Water needed for dust control would come from park approved sources or would be provided by contractors from sources outside the park.

- To reduce noise and emissions, construction equipment would not be permitted to idle for long periods of time.

- To minimize potential petrochemical leaks from construction equipment, the equipment would be regularly monitored to identify and/or repair any leaks.

Treatment Alternatives Considered and Dismissed

Combined Visitor Center at QMHA No. 2 Hoist House

In attempting to find an appropriate location for the National Park Service Visitor Center within the Historic Industrial Core, the No. 2 Hoist Houses were considered. In this concept, the NPS visitor center would be closely related to the heart of the NHL and the existing QMHA tour activities and vehicular circulation at the No. 2 and No. 4 site could be simplified.

The significant No. 2 Hoist Houses do not contain enough interior space to fulfill the combined needs of the QMHA and NPS visitor center. Consideration was given to rehabilitating the No. 5 Boiler Plant to increase the space available however the building contains significant historic fabric that should be preserved and would need to be altered to accommodate the building needs. Further consideration was given to constructing an addition between the buildings. After careful consideration, this option was eliminated because the exterior of the Hoist Houses would no longer be fully visible, resulting in impacts to historic integrity that outweigh the benefits of having the visitor center in this location.

Complete Removal of Parking at the Supply House

Efforts were made to minimize modern intrusions, including access roads and parking lots, within the historic core. One effort focused on reducing places where cars can drive through the site as well as compressing parking into selected areas. Although an attempt was made to completely remove vehicular access and parking at the Supply House, all of the use alternatives for this structure indicate that general parking will be needed in the short term. Treatment Alternative C accommodates a long term shift to providing only service access and handicap parking at this location.

Underground Tunnel Providing a Connection from the No. 2 Area to the Campus Drive Area

Consideration was given to addressing the difficulty of providing access for visitors to the resources located on either side of U.S. 41 by constructing a tunnel under the highway. The tunnel could be used for pedestrian circulation between the two sides of the highway, and designed in a way to provide interpretive exhibits of the mining operations in an underground environment. Being a newly constructed element, the tunnel would need to meet design requirements for universal accessibility. In order to limit impacts to the historic landscape features and archeological features, a determination was made that the entrance and exit to the tunnel should be at an existing grade near the No. 2 Shaft-rockhouse. Examination of existing topography on both sides of the highway indicated that the tunnel would need to be approximately three-hundred feet long to meet the design criteria. The length of the tunnel and associated impacts to historic resources was determined to outweigh the benefits associated with its construction.

Reconstruction of Topography and Railroad Trestles at No. 4 Area

In order to more vividly represent the historic character of the industrial landscape, consideration was given to reconstructing the topography and railroad trestles in the No. 4 Area. According to the Secretary of Interior Standards for the treatment of historic properties, reconstruction is appropriate only when the resource is at the highest level of significance, and when documentation exists that provides detailed information about the historic features. Although historic photographs illustrate historic conditions in this area, they are not extensive enough to adequately provide the information needed for reconstruction. In addition, the period of significance for the historic landscape encompasses several periods of landscape change. The resources related to all of these periods of change are significant. The wholesale reconstruction of elements associated with one point in time would impact resources related to other periods and limit the ability of the landscape to reflect the multiple periods of change associated with the mining industry. Treatment Alternative C provides a compromise to this approach by restoring select portions of topography and trestles associated with the No. 2 Shaft-rockhouse, the Roundhouse, and the No. 5 Boiler Plant.

Development of Parking Lot and Visitor Center at Campus Drive Area

Development of a visitor center and parking lot at the Campus Drive Area was contemplated. This concept would allow for the development of a new visitor orientation facility on the west

side of the highway, limiting impacts on the resources on the east side of the highway. All parking for the site would be provided adjacent to the visitor center, and an alternative transportation system would convey visitors from there to the east side of the highway. This concept would involve impacting the significant resources in the Campus Drive Area and greatly limit opportunities for visitors to casually explore the site. In addition, the construction of a new building would reduce prospects for adaptive re-use of significant historic structures, thereby decreasing opportunities for protecting them.

Removal of all woody and herbaceous vegetation within the Historic Industrial Core

In order to more extensively represent the historic industrial character of the landscape in the Historic Industrial Core, consideration was given to removal of all vegetation (woody and herbaceous). Once the initial removal was conducted, this approach would require intensive on-going maintenance efforts to keep vegetative growth from re-establishing. Some existing vegetation does not impact historic resources, and herbaceous vegetation may provide assistance in minimizing erosion problems. Treatment Alternatives A, B, and C provide solutions that address the woody plants, which are most likely to impact historic resources physically and visually, while allowing the herbaceous and historic domestic plants to remain.

Removal of woody vegetation on Quincy Hill

Multiple historic photographs of Quincy Hill show an expansive landscape denuded of vegetation. The possibility of restoring this type of landscape character was deliberated. The vegetation and wildlife associated with Quincy Hill today has value in its own right and full-scale removal of these resources is not a viable solution. Alternatives to this approach were developed that provide for removal of vegetation along specific view corridors to provide glimpses of historic character within the landscape.

Rehabilitation of the Roundhouse for a National Park Service Visitor Center

In attempting to find an appropriate location for the National Park Service Visitor Center within the Historic Industrial Core, consideration was given to rehabilitating the Roundhouse for this purpose. The location of this building at the southern end of the Historic Industrial Core is ideal for providing an overview of the region and introduction to the Quincy Unit. Two major concerns eliminated this concept from inclusion in the developed treatment alternatives. First, the building footprint does not contain adequate space for the building needs. Second, the Quincy Mine Hoist Association has plans to restore the structure to house rolling stock exhibits and provide interpretation. These two concerns outweighed the benefits of considering the concept further.

Chapter VII: Impacts from Treatment Alternatives/ Environmental Consequences

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter VII: Impacts from Treatment Alternatives / Environmental Consequences

Environmental Consequences

This Chapter of the *CLR / EA* forms the scientific and analytic basis for the comparisons of treatment alternatives as required by 40 CFR 1502.14. The discussion of impacts /effects is organized in parallel with Chapter III: Existing Conditions / Affected Environment and is organized by resource topic areas. The current management / no action alternative and each action treatment alternative are discussed within each resource topic area. Resource topics analyzed are Cultural Resources including Cultural Landscapes and Archeological Resources, Socioeconomics, Visitor Experience and Park Operations. The analysis of alternatives in this CLR / EA is at a programmatic level. Each of the action alternatives includes a large number of proposed treatments. A number of these treatments are common to all action alternatives and would result in redundant analysis if addressed for each alternative. Common treatments for all action alternatives are highlighted in Chapter VI: Treatment Alternatives. To minimize redundant discussion, the elements common to the action alternatives will only be discussed at the beginning of each resource topic. The balance of the discussion for each resource topic will focus on treatments that are distinct to that treatment alternative.

Potential impacts for this proposal are described in terms of type, context, duration, and intensity. The definition of impact intensity is specific to each resource topic and is provided at the beginning of each resource topic discussion.

Type of impact refers to the consequences of implementing a given alternative as beneficial or adverse, direct or indirect:

- Beneficial — A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
- Adverse — A change that moves the resource away from a desired condition or detracts from its appearance or condition.
- Direct — An effect that is caused by an action and occurs in the same time and place.
- Indirect — An effect that is caused by an action but is later in time or farther removed in distance, but is still reasonably foreseeable.

Context describes the area or location in which the impact will occur.

Duration describes the length of time an effect will occur, either short-term or long-term:

- Short-term — Impacts generally last only during construction, and the resources resume their preconstruction conditions following construction.
- Long-term — Impacts last beyond the construction period, and the resources may not resume their preconstruction conditions for a longer period of time following construction.

Professional judgment is used to reach reasonable conclusions as to the type, intensity, context and duration of potential impacts for each resource topic.

The comparison of impacts for each treatment alternative is summarized in Table 6-3, which is at the end of Chapter VI: *Treatment Alternatives.* The impact analysis presented in this chapter results in a determination of an Environmentally Preferred Alternative, which is also described in Chapter VI: *Treatment Alternatives*.

Cumulative Impacts

The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act (NEPA), require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions."[1] Cumulative impacts are considered for the no-action and proposed action alternatives.

Cumulative impacts were determined by combining the impacts of the no-action and action alternatives with other past, present, and reasonably foreseeable future actions. Projects at Keweenaw National Historical Park and within the surrounding area were identified for the purpose of conducting the cumulative effects analysis. The following section includes a summary of related projects.

U.S. Highway 41 Road Improvements and Directional Signage

Recent development in the vicinity of the Quincy Unit has included large institutional facilities such as Hancock High School and Portage Health Center. Because a primary access route to these facilities is from U.S. 41, traffic is anticipated to increase and there are recently constructed signs directing motorists to turn at Campus Drive, which extends into the unit. If this campus area west of the Quincy Unit continues to develop, or other facilities that require highway signage are developed, there is potential for construction of additional highway signs that could affect the viewsheds from U.S. 41. Improvements to the stretch of U.S. 41 in the vicinity of the Quincy Unit could include upgrades to the scenic overlook just south of the unit and possible safety improvements such as dedicated turn-lanes at the intersection with Campus Drive.

Keweenaw NHP Sign Guidelines

The Park is preparing a park sign plan with recommendations for signs to improve the presentation of directional information and wayfinding for visitors.

Keweenaw NHP Long Range Interpretive Plan

The Park is preparing a Long Range Interpretive Plan (LRIP) that would identify the appropriate methods for interpreting the Park's resources. The CLR recommendations have been coordinated with the current draft of the LRIP (August 2008) to ensure that recommendations in both reports are compatible. The LRIP addresses the entire park and includes recommendations for increasing the profile of the park as well as educational/interpretive opportunities throughout the region. These include proposals for enhancing unstaffed partner or neighboring sites, creating gateway experiences to orient visitors to the NPS sites, improving wayfinding and orientation for visitors, improving exhibits, developing a park film and publications focused on park themes, and developing wayside

[1] 40 CFR 1508.7

exhibit plans. All of these efforts will help to improve visitor's understanding of the history of the region and significance of the cultural resources present at the Quincy Unit. Ultimately, this will have a positive effect on the preservation of the historic resources.

Regional Trail Development and Use

Recreational trails are a very popular outdoor resource in the Keweenaw Peninsula. Regional trails are intended to be used throughout the year and would provide visitors and local residents with multi-use outdoor recreation ranging from walking, running or biking in warmer months to snowmobiling in the winter. To ensure trail development maximizes recreation opportunities without harming natural of cultural resources in the region, the Michigan Department of Natural Resources, county and local governments and local interest groups provide oversight and participation in the trail planning process. One trail may eventually link to the Quincy Unit and provide increased access. The NPS has been contacted about the possibility of providing technical assistance in trail development in resource sensitive areas including Keweenaw NHP. Trails in these resource sensitive areas would be limited to pedestrian access. Establishment of trails would benefit local residents and visitors by providing additional recreation opportunities and would increase opportunities for interpretation of the region's history.

Keweenaw NHP Partner Projects

Because Keweenaw NHP is a partnership park, there are numerous park partners that are directly associated with the Quincy Unit. Park partners work with the NPS in developing programs and interpreting the historic site. A current construction project undertaken by partners includes the rehabilitation of the Quincy machine shop into the A. E. Seaman Mineral Museum.

Utility Construction and Easements

Utility easements through the Quincy Unit result in visual intrusions into the landscape as well as affect vegetation management and introduce additional non-managed access into the unit. Past NPS decisions have allowed electrical transmission line upgrades through Keweenaw NHP units as part of the utility company's routine maintenance program. Further upgrades or changes to the transmission system should be reviewed and permitted by the NPS to mitigate any future impacts to the cultural landscape.

Impairment Analysis

The NPS *Management Policies 2006* requires analysis of potential effects to determine whether or not actions would impair park resources or values.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid or minimize to the greatest degree practicable, actions that would adversely affect park resources and values that are related to the legislative establishment of the park, National Historic Landmarks, or other nationally significant resource.

These laws give NPS the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, so long as the impact does not constitute impairment of the affected resources and values. Although Congress has given NPS the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement that NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact to any park resource or value may constitute impairment. Impairment may result from NPS activities in managing the park, from visitor activities, or from activities undertaken by concessionaires, contractors, and others operating in the park. Impairment of park resources can also occur from activities occurring outside park boundaries. An impact would be more likely to constitute impairment to the extent that it has a major or severe adverse impact upon a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park.
- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park.
- Identified as a goal in the park's GMP or other relevant NPS planning documents.

An impairment determination is included in the environmental consequences analysis section for all resource topics relating to park resources and values.

Impacts to Cultural Resources

Basis of Analysis (Impacts to Cultural Resources)

In this CLR / EA, impacts to historic properties are described in terms of type, context, duration, and intensity, as described above, which are consistent with the regulations of the CEQ, which implement NEPA. This CLR / EA is intended; however to comply with the requirements of both NEPA and Section 106 of the National Historic Preservation Act (NHPA). To achieve this, a Section 106 summary is included under the Preferred Alternative for each of the cultural resource topics carried forward for analysis. The Section 106 summary is intended to meet the requirements of Section 106 and is an assessment of effect of the implementation of the preferred treatment alternative on cultural resources, base upon the criterion of effect and criteria of adverse effect found in the Advisory Council's regulations.

Under the Advisory Council's regulations, a determination of either adverse effect or no adverse effect must be made for affected historic properties that are eligible for, or listed in the National Register of Historic Places (NRHP). An adverse effect occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualify it for inclusion in the National Register (e.g., diminishing the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association). *Adverse effects* also include reasonably foreseeable effects caused by the Preferred Alternative that would occur later in time; be farther

removed by distance; or be cumulative.[2] A determination of *no adverse effect* means there is an effect, but the effect would not diminish in any way the characteristics of the cultural resource that qualify it for inclusion in the NRHP.

In accordance with the Advisory Council's regulations implementing Section 106, impacts to historic properties for this project were identified and evaluated by (1) determining the area of potential effect; (2) identifying cultural resources present in the area of potential effect that were listed in or eligible to be listed in the NRHP; (3) applying the criteria of adverse effect to affected cultural resources either listed in or eligible to be listed in the NRHP; and (4) considering ways to avoid, minimize, or mitigate adverse effects. The area of potential effect was established in Chapter IV: Landscape Analysis and further refined in Chapter VI: Treatment Alternatives.

CEQ regulations and the National Park Service's DO-12 also call for a discussion of the appropriateness of mitigation, as well as analysis of how effective the mitigation would be in reducing the intensity of a potential impact. Any reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under NEPA only. It does not suggest that the level of effect as defined in Section 106 is similarly reduced. Although adverse effects under Section 106 may be mitigated, the effect remains adverse.

In order for a historic property to be listed in the NRHP, it must meet one or more of the following criteria of significance: A) associated with events that have made a significant contribution to the broad patterns of our history; B) associated with the lives of persons significant in our past; C) embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value, or represent a significant and distinguishable entity whose components may lack individual distinction; D) have yielded, or may be likely to yield, information important in prehistory or history. In addition, the historic property must possess integrity of location, design, setting, materials, workmanship, feeling, association.[3]

As noted in Chapter I, there are no established Ethnographic Resources at Keweenaw National Historical Park so this topic is not addressed in this Chapter.

Cultural Landscapes (Impacts to Cultural Resources)

Intensity levels:

- Negligible: Impact(s) would be at the lowest level of detection, or barely perceptible and not measurable. For the purposes of Section 106, the determination of effect would be — **no effect**.

- Minor — Adverse impact: Impacts would not affect the overall cultural landscape, or the significant landscape characteristics. For purposes of Section 106, the determination would be — **no adverse effect**.

[2] 36 CFR Part 800.5, Assessment of Adverse Effects.
[3] U.S. Department of the Interior, National Park Service. "National Register Bulletin: How to Apply the National Register Criteria for Evaluation. 1997.

- Minor -- Beneficial impact: Preservation of the overall cultural landscape and significant landscape characteristics in accordance with the *Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. For purposes of Section 106, the determination of effect would be — **no adverse effect**.

- Moderate — Adverse impact: Impacts would alter the cultural landscape or one or more of the significant landscape characteristics, but would not diminish the integrity of the landscape to the extent that its NRHP status or eligibility is jeopardized. For purposes of Section 106, the determination would be — **adverse effect**.

- Moderate -- Beneficial impact: Rehabilitation of the cultural landscape or one or more of the significant landscape characteristics in accordance with the *Secretary of Interior's Standards for the Treatment of Historic Properties With Guidelines for the Treatment of Cultural Landscapes*. For purposes of Section 106, the determination of effect would be — **no adverse effect**.

- Major — Adverse impact: Impacts would alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. For purposes of Section 106, the determination would be — **adverse effect**.

- Major -- Beneficial impact: Restoration of the cultural landscape and landscape features in accordance with the *Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. For purposes of Section 106, the determination of effect would be — **no adverse effect**.

Archeological Resources (Impacts to Cultural Resources)

Intensity levels:

- Negligible**:** Impact(s) would be at the lowest level of detection, or barely perceptible and not measurable, either adverse or beneficial. For the purposes of Section 106, the determination of effect would be — **no effect**.

- Minor — Adverse impact: Disturbance of a site(s) results in little, if any loss of integrity. For purposes of Section 106, the determination would be — **no adverse effect**.

- Minor -- Beneficial impact: Maintenance and preservation of a site(s). For purposes of Section 106, the determination of effect would be — **no adverse effect**.

- Moderate — Adverse impact: Disturbance of a site(s) may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. For purposes of Section 106, the determination would be — **adverse effect**. A memorandum of agreement (MOA) is executed among the NPS and applicable state or tribal historic

preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the MOA to minimize or mitigate adverse impacts reduce the intensity of impact.

- Moderate -- Beneficial impact: Stabilization of a site(s). For purposes of Section 106, the determination of effect would be **— no adverse effect**.

- Major — Adverse impact: Disturbance of a site(s) may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. For purposes of Section 106, the determination would be **— adverse effect**. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the NPS and applicable state or tribal historic preservation officer and/or Advisory Council are unable to negotiate and execute a MOA in accordance with 36 CFR 800.6(b).

- Major -- Beneficial impact: Active intervention to preserve site(s). For purposes of Section 106, the determination of effect would be **— no adverse effect**.

Current Management, No-Action Alternative (Impacts to Cultural Resources)

Analysis:

Cultural Landscape (Current Management, Impacts to Cultural Resources)

Continuation of current management actions within the Quincy Unit could result in incompatible development patterns as growth occurs in this area. This potential direct, long-term, minor to moderate adverse impact is partially the result of a lack of land use regulations for development in Houghton County, not by NPS or NPS partner management actions. Without a coherent guidance document other potentially negative results could be haphazard management of vegetation by non-NPS landowners, which could have a direct, long-term, adverse impact to viewsheds to and within the Quincy Unit and Historic Industrial Core. Although there is potential for adverse impacts, continuation of current management would offer numerous beneficial impacts to elements of the cultural landscape. Historic resources would be stabilized or preserved and some landscapes would receive a more detailed level of management, which would result in direct, long-term, minor beneficial impacts to the cultural landscape.

Archeological Resources (Current Management, Impacts to Cultural Resources)

Although comprehensive archeological inventories have not been conducted in the Quincy Unit, numerous focused investigations have been conducted. These investigations revealed a high potential for historic archeological resources as well as potential for prehistoric resources. Because the no-action alternative would result in continuation of current landscape management actions, there would likely be ground disturbing actions within the Historic Industrial Core and the Quincy Unit as a whole. This would create the potential for adverse impacts to archeological resources. The precise nature of those impacts is not able to be determined at this time; however the implementation of the park's Archeological Inventory, appropriate mitigation measures (described in Chapter VI) and coordination with SHPO and

other appropriate parties to establish a Programmatic Agreement, it is anticipated that the potential for adverse effects would be mitigated.

Cumulative Impacts (Current Management, Impacts to Cultural Resources)

Growth has been occurring in the area immediately west of the unit in recent years and is likely to continue. This growth area has resulted in the placement of incompatible directional signage, most notably, signage that is internally lit. This signage introduced an extremely bright light source into the Historic Industrial Core that is not compatible with the cultural resource. Another light source incompatible with the cultural resource is night lighting at the Mont Ripley Ski area. These sources of light result in direct, long-term minor adverse impact to the lightscape associated with the cultural resource as well as an indirect, long-term minor adverse impact to the night sky. Additional construction of back-lighted, directional signage along U.S. 41, in addition to the Ripley Ski area, would result in direct long-term moderate adverse impacts to the cultural resource and the night sky.

Previous development including residential, institutional, commercial or recreational expansion has likely resulted in a cumulative loss and adverse impacts to archeological resources. Future development by private landowners, utility companies and recreation providers that may occur on private property within the Quincy Unit and outside the NPS property poses a risk to archeological resources. Although this alternative would provide the least beneficial effects to cultural resources of all alternatives, implementation of the no action alternative would still require thorough adherence to Federal and NPS laws, regulations and guidance. On-going or future actions by the NPS or partners on NPS and partner-owned properties within the Quincy Unit should result in only direct, short-term negligible to minor adverse impacts to cultural resources.

Conclusion (Current Management, Impacts to Cultural Resources)

There would continue to be short-term, negligible to minor, direct adverse impacts during periods of construction related to on-going management from NPS or partner actions, in addition the no-action alternative could result in a direct, long-term, minor adverse impact to cultural resources due to ground disturbing activities and potential introduction of inappropriate materials, features and vegetation. Without guidance from a CLR, actions by private landowners within the Quincy Unit would continue to result in direct long-term, moderate adverse impacts to cultural resources. The no action alternative does not meet project objectives as well as any of the action treatment alternatives.

Impairment (Current Management, Impacts to Cultural Resources)

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Keweenaw National Historical Park; (2) key to the cultural integrity of the National Historical Park; or (3) identified as a goal in the National Historical Park's general management plan or other relevant National Park Service planning documents, there would be no foreseen impairment of the National Historical Park's resources or values.

Section 106 Summary (Current Management, Impacts to Cultural Resources)

The potential effects of the no-action alternative have been evaluated at a programmatic level and after applying the Advisory Council's criteria of adverse effects (36 CFR Part 800.5), the National Park Service concludes that the no-action alternative provides the least beneficial impacts to Keweenaw National Historical Park's cultural landscape of all alternatives and implementation of the no-action alternative could result in an adverse effect to the cultural landscape at the Quincy Unit of Keweenaw National Historical Park.

After applying the same Advisory Council's regulations, the NPS concludes that, although NRHP-eligible archeological resources have not been identified in the area of potential effect, there is high potential for the presence of these resources in the Quincy Unit. Therefore, there is the potential for an adverse effect to archeological resources. Because this analysis is programmatic and does not include site-specific analysis of cultural landscape or archeological resources, Section 106 compliance will continue to be required at the time specific projects are proposed. Also, it is important to note that while the NPS will continue to follow Section 106 and NEPA requirements, the majority of the land within the Quincy Unit is not owned by the National Park Service and ground disturbing activities may continue to occur as the result of non-NPS actions.

Treatment Guidelines Common to Alternatives A, B and C for Quincy Unit and Historic Industrial Core (Impacts to Cultural Resources)

Analysis:

Cultural Landscape (Treatment Guidelines Common to all Action Alternatives, Impacts to Cultural Resources)

The proposed treatment guidelines common to all action alternatives would provide a much greater ability to manage the cultural landscape within the Quincy Unit and Historic Industrial Core than the no action alternative. The initial step in encouraging compatible development on private lands within the Quincy Unit would be to conduct appropriate research to fill in any gaps on historic housing and development. The results from this research would form the framework for design guidelines to provide direction for property owners. Also, the research would provide information on the availability of programs providing financial incentives to encourage private landowners and NPS partners to maintain or develop properties in a compatible manner. These programs could result in long-term, moderate beneficial effects to the landscape. Treatment guidelines related to development would also be flexible to allow for compatible development that still meets contemporary needs of families and businesses.

Features of the historic circulation pattern would be restored or preserved in a manner that educates the visitor and provide access to and within the Quincy Unit and Historic Industrial Core resulting in direct, long-term moderate beneficial impacts. The prominence of the U.S. 41 corridor is addressed through treatments including preparation of design guidelines for private property owners to manage development so that it is compatible with the cultural landscape.

In a similar fashion to the no action alternative, historic structures, ruins and small scale features would still be restored, reconstructed, rehabilitated or stabilized, which would result in long-term, moderate beneficial effects to those resources. Incompatible features would be removed or relocated to the extent possible.

Vegetation management would be orchestrated through removal of vegetation that is adversely affecting the landscape, as it relates to viewsheds and adverse affects to native species from introduced or volunteer invasive species. Vegetation management would be a much stronger management focus in the treatment guidelines common to all action alternatives than what is proposed in the no action alternative resulting in direct, long-term, minor beneficial impacts to the landscape.

Although the Quincy Smelter Site is not included in the treatment alternatives in this CLR / EA, there is a strong long-term desire by the local community to redevelop the site. Reuse of this site would result in direct, long-term, moderate beneficial impacts.

Archeological Resources (Treatment Guidelines Common to all Action Alternatives, Impacts to Cultural Resources)

As mentioned in the no action alternative, there is no comprehensive knowledge of archeological resources at the Quincy Unit. Implementation of the proposed Archeological Inventory for Keweenaw National Historical Park would provide a strong basis for follow-up resource investigations and develop priorities for investigations to be completed prior to ground disturbing actions. Follow-up investigations could also reveal additional information on the historic industrial practices at Keweenaw National Historical Park. Specific recommendations for an archeological investigation are presented for the Mine Management Area.

The precise nature of potential impacts from ground disturbing activities is not able to be determined at this time; however the implementation of the park's Archeological Inventory, and follow-up investigations, appropriate mitigation measures (described in Chapter VI) and coordination with SHPO and other appropriate parties, it is anticipated that the potential for adverse effects would be mitigated.

Historic Industrial Core Treatment Alternative A (Impacts to Cultural Resources)

Analysis

Cultural Landscape (Treatment Alternative A, Impacts to Cultural Resources)

In addition to the Treatments Common to All Alternatives, Alternative A proposes to preserve the historic mine shafts, restore interiors of historic buildings and rehabilitate industrial structures in the Historic Industrial Core area. This alternative recommends that the NPS partner with property owners to revise incompatible features along U.S. 41. Recommendations for the Mine Management Area in Alternative A expand on the preservation and restoration recommendations in Treatments Common to All Alternatives. In this alternative the National Park Service would work with property owners to restore and interpret the Superintendent's Residence, Assay Office, and Captain's Residence. This alternative differs from the other action alternatives by proposing the reuse of the Supply House as the NPS Visitor Center. This action would be part of a strong rehabilitation effort in the historic buildings in the No. 2 and No. 4 area, including rehabilitation of the No. 2 Hoist House as a Visitor Center for the Quincy Mine Hoist Association.

In this alternative, vegetation management includes selectively removing vegetation to reveal historic industrial activities. This alternative, combined with the unit-wide treatments would result in direct, long-term, minor to moderate beneficial impacts to the cultural landscape.

Archeological Resources (Treatment Alternative A, Impacts to Cultural Resources)

The analysis of archeological resources under Alternative A is similar to those described under the Treatments Common to All Alternatives.

Cumulative Effects (Treatment Alternative A, Impacts to Cultural Resources)

The no action alternative and Treatments Common to All Alternatives described how past development and reasonable foreseeable development patterns have resulted in long-term, adverse impacts to cultural resources within the Quincy Unit. Implementation of the treatment recommendations in Alternative A, in addition to the Treatment Guidelines Common to all Action Alternatives would also reduce or prevent potential adverse impacts to cultural resources from entities within the Quincy Unit in the future. Through adherence to Federal and NPS laws, regulations and guidance, on-going or future actions by the NPS or partners on NPS and partner-owned properties within the Quincy Unit should not contribute to adverse effects to cultural resources.

Conclusion (Treatment Alternative A, Impacts to Cultural Resources)

The impacts from implementation of Alternative A would generally be direct, long-term minor to moderate beneficial impacts. The exception could be possible direct, long-term, minor adverse impacts during vegetation removal activities or other ground disturbing activities. However, these potential adverse impacts would be mitigated through resource investigations prior to ground disturbance and Section 106 consultation. When compared to the no-action alternative, Alternative A in conjunction with Treatments Common to All Alternatives would meet more project objectives and result in direct long-term, minor to moderate beneficial impacts to cultural resources at the Quincy Unit.

Impairment (Treatment Alternative A, Impacts to Cultural Resources)

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Keweenaw National Historical Park; (2) key to the cultural integrity of the National Historical Park; or (3) identified as a goal in the National Historical Park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the National Historical Park's resources or values.

Section 106 Summary (Treatment Alternative A, Impacts to Cultural Resources)

The potential effects of Alternative A have been evaluated at a programmatic level and after applying the Advisory Council's criteria of adverse effects (36 CFR Part 800.5), the National Park Service concludes that implementation of Alternative A would result in no adverse effect to the cultural landscape at Keweenaw National Historical Park.

After applying the same Advisory Council's regulations, the National Park Service concludes that, although NRHP-eligible archeological resources have not been identified in the area of potential effect, there is high potential for the presence of these resources in the area. Implementation of the proposed Archeological Inventory for Keweenaw National Historical

Park and any subsequent follow-up resource investigations would be conducted to determine if any NRHP-eligible resources exist. Applying the Advisory Council's criteria of adverse effects (36 CFR Part 800.5), the National Park Service concludes that implementation of Alternative A would not result in an adverse effect to archeological resources that are NRHP-eligible.

Historic Industrial Core Treatment Alternative B (Impacts to Cultural Resources)

Analysis:

Cultural Landscape (Treatment Alternative B, Impacts to Cultural Resources)

Notable differences between this alternative and all other action alternatives is the proposed NPS Visitor Center would be located at a site outside of the Historic Industrial Core and a much stronger approach to vegetation management. Although the Supply House is not considered for the NPS Visitor Center in this alternative, the historic building would be rehabilitated for interpretation. This alternative would result in more preservation and restoration of historic buildings in the No. 2 and No. 4 area than the no action alternative and Alternative A, which would result in direct, long-term moderate beneficial impacts.

Vegetation management in this alternative is more focused on removal than the no action alternative or Alternative A. All vegetation would be removed in the Historic Industrial Core, the No. 7 and Railroad Corridor area as well as the No. 2 and No. 4 area. Vegetation removal would return the Historic Industrial Core area to the landscape that was experienced during mining operations, which from a cultural landscape perspective would be a direct, long-term minor beneficial impact; however there is potential for some level of adverse impacts from this activity. The potential adverse impacts are discussed in the Archeological Resources section.

Archeological Resources (Treatment Alternative B, Impacts to Cultural Resources)

The analysis of archeological resources under Alternative B is similar to those described under the Treatments Common to All Alternatives, with the exception of potential adverse impacts due to selective vegetation removal. This alternative recommends a stronger vegetation management strategy than the no action alternative or Alternative A. Complete removal of vegetation in certain areas described in the previous section might result in damage to archeological resources near the surface, which could result in a direct, long-term moderate adverse impact if subsurface resources were located in areas of vegetation removal. Development of a mitigation program related to vegetation management would reduce potential adverse impacts.

Cumulative Impacts (Treatment Alternative B, Impacts to Cultural Resources)

Cumulative impacts would be similar to those described in Alternative A.

Conclusion (Treatment Alternative B, Impacts to Cultural Resources)

The impacts from implementation of Alternative B, in addition to the Treatments Common to All Alternatives would generally be direct, long-term minor to moderate beneficial impacts. The exception for this alternative is that there could be potential direct, long-term, moderate adverse impacts during vegetation removal activities. However, these potential adverse impacts could be mitigated through resource investigations, Section 106 consultation and preparation of vegetation management mitigation program. When compared to the no-action alternative,

Alternative B in conjunction with Treatments Common to All Alternatives would meet more project objectives and result in direct long-term, minor to moderate beneficial impacts to cultural resources at the Quincy Unit.

Impairment (Treatment Alternative B, Impacts to Cultural Resources)

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Keweenaw National Historical Park; (2) key to the cultural integrity of the National Historical Park; or (3) identified as a goal in the National Historical Park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the National Historical Park's resources or values.

Section 106 Summary (Treatment Alternative B, Impacts to Cultural Resources)

The potential effects of Alternative B have been evaluated at a programmatic level and after applying the Advisory Council's criteria of adverse effects (36 CFR Part 800.5), the National Park Service concludes that implementation of Treatment Alternative B would result in no adverse effect to the cultural landscape at Keweenaw National Historical Park.

After applying the same Advisory Council's regulations, the National Park Service concludes that, although NRHP-eligible archeological resources have not been identified in the area of potential effect, there is high potential for the presence of these resources in the area. Implementation of the proposed Archeological Inventory for Keweenaw National Historical Park and any subsequent follow-up resource investigations would be conducted to determine if any NRHP-eligible resources exist. Applying the Advisory Council's criteria of adverse effects (36 CFR Part 800.5), the National Park Service concludes that implementation of Alternative A would not result in an adverse effect to archeological resources that are NRHP-eligible.

Historic Industrial Core Alternative C, Preferred Alternative (Impacts to Cultural Resources)

Analysis

Cultural Landscape (Treatment Alternative C, Preferred Alternative, Impacts to Cultural Resources)

A primary difference between this alternative and all other alternatives is that the NPS Visitor Center is proposed for the A.E. Seaman Mineral Museum. The proposed visitor center in this alternative would include the Quincy Mine Hoist Association into the combined visitor contact center. The combined visitor center would be housed in the Blacksmith Shop and Machine Shop. The treatment recommendations for the cultural landscape would result in direct, long-term moderate beneficial impacts to the historic resource.

Archeological Resources (Treatment Alternative C, Preferred Alternative, Impacts to Cultural Resources)

The analysis of archeological resources under Alternative A is similar to those described under the Treatments Common to All Alternatives.

Cumulative Impacts (Treatment Alternative C, Preferred Alternative, Impacts to Cultural Resources)

Cumulative impacts would be similar to those described for Treatment Alternative A.

Conclusion (Treatment Alternative C, Preferred Alternative, Impacts to Cultural Resources)

The impacts from implementation of Alternative C in addition to the Treatments Common to All Alternatives would generally be direct, long-term minor to moderate beneficial impacts. However, the potential for any adverse impacts would be mitigated through resource investigations prior to ground disturbance and Section 106 consultation. When compared to the no-action alternative and Alternatives A and B (in conjunction with Treatments Common to All Alternatives) this alternative would meet the most project objectives and result in direct long-term, minor to moderate beneficial impacts to cultural resources at the Quincy Unit.

Impairment (Treatment Alternative C, Preferred Alternative, Impacts to Cultural Resources)

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Keweenaw National Historical Park; (2) key to the cultural integrity of the National Historical Park; or (3) identified as a goal in the National Historical Park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the National Historical Park's resources or values.

Section 106 Summary (Treatment Alternative C, Preferred Alternative, Impacts to Cultural Resources)

The potential effects of Alternative C have been evaluated at a programmatic level and after applying the Advisory Council's criteria of adverse effects (36 CFR Part 800.5), the National Park Service concludes that implementation of Treatment Alternative C would result in no adverse effect to the cultural landscape at Keweenaw National Historical Park.

After applying the same Advisory Council's regulations, the National Park Service concludes that, although NRHP-eligible archeological resources have not been identified in the area of potential effect, there is high potential for the presence of these resources in the area. Implementation of the proposed Archeological Inventory for Keweenaw National Historical Park and any subsequent follow-up resource investigations would be conducted to determine if any NRHP-eligible resources exist. Applying the Advisory Council's criteria of adverse effects (36 CFR Part 800.5), the National Park Service concludes that implementation of Alternative A would result in no adverse effect to archeological resources that are NRHP-eligible.

Socioeconomics

Basis for Analysis (Socioeconomics)

The NPS Management Policies, Section 8.11 includes provisions for the study of social sciences, which encompasses the resource topic Socioeconomics. As it relates to the proposed action of implementing proposed Treatment Alternatives in this CLR, the discussion of socioeconomics includes the potential effects to the local economy and park partnerships.

Intensity Levels:

- Negligible: Economic and socioeconomic conditions would not be affected, or effects would not be measurable.

- Minor: The effect on economic and socioeconomic conditions would be small but measurable, and would affect a small portion of the population. Few effects could be discerned outside of the local area.

- Moderate: The effect on economic and socioeconomic conditions would be readily apparent and widespread in the vicinity of Hancock and Houghton, with effects being evident at the local level.

- Major: The effect on economic and socioeconomic conditions would be readily apparent and would substantially change the economy or social services within Houghton County.

Current Management, No Action Alternative (Socioeconomics)

Analysis (Current Management, No Action Alternative, Socioeconomics)

Continuation of current management actions includes ongoing partnerships with organizations such as the Quincy Mine Hoist Association and A.E. Seaman Mineral Museum. The general intent of these partnerships is to share in maintaining and managing the Keweenaw National Park resources and tell the story of mining operations and the cultural heritage of the Keweenaw Peninsula. There is not a large number of staff employed at Keweenaw National Historical Park and some are seasonal hires. Park partners do not have many paid staff, particularly during the winter months. The no action alternative would result in continued preservation of some historic structures and ruins within the Quincy Unit. It would also continue to provide visitor experience and interpretation opportunities. Implementation of current management actions may, over time require the NPS to add some seasonal staff to assist in preservation of structures and interpretation of the site. Although this may be a direct, short-term, negligible beneficial impact to the local economy, it is still a beneficial impact. Revenues for partner organizations could potentially increase with enhanced visitor contact opportunities. Expanding opportunities for visitor contact encourages visitors to stay longer at the Quincy Unit, which could have a direct, long-term minor beneficial impact to the local economy. Longer stays at the Quincy Unit could result in visitor's spending money at local restaurants and stay at local hotels.

Cumulative Impact (Current Management, No Action Alternative, Socioeconomics)

Although the Keweenaw National Historical Park is relatively new within the NPS system, local partner organizations have been promoting the story of the Quincy Mine operations and regional cultural heritage for decades. These organizations have helped build tourism in the region, which has been a direct, long-term, moderate benefit to the local economy. Implementation of current management actions would continue to build on those earlier successes and beneficially impact the local economy.

Conclusion (Current Management, No Action Alternative, Socioeconomics)

Implementation of the no action alternative could result in a direct, long-term, minor beneficial impact to the local economy through improvements to visitor contact opportunities and continued maintenance of the cultural landscape at the Quincy Unit.

Treatment Guidelines Common to Alternatives A, B and C for Quincy Unit and Historic Industrial Core (Socioeconomics)

Analysis (Treatment Guidelines Common to All Action Alternatives, Socioeconomics)

Treatment Guidelines Common to all Action Alternatives would result in much greater opportunities for visitor contact for the NPS and its partners. There is a greater emphasis on restoration of cultural landscape features and rehabilitation of historic landscape elements. With a greater emphasis placed on restoration, rehabilitation and stabilization of structures and other landscape features, there is potential for future increases in seasonal employment by the NPS and potentially by its partners. Visitor contact and experiences should be improved with enhanced interpretation of the landscape by both the NPS and its partners, which could potentially result in an increase in seasonal and permanent employment at the Quincy Unit. Keeping the visitors at the Quincy Unit for longer stays could also be improved through the proposed enhancement of visitor amenities. The combination of increased management of the cultural landscape at the Quincy Unit could result in a direct, long-term minor to moderate beneficial impact to the local economy.

Historic Industrial Core Treatment Alternative A (Socioeconomics)

Analysis (Treatment Alternative A, Socioeconomics)

Implementation of Alternative A, in addition to the Treatments Common to All Alternatives would result in a cultural landscape with an extensive story to tell to visitors. This alternative would result in adaptive reuse of the Supply House as the NPS Visitor Center, which in addition to the A.E. Seaman Mineral Museum and the Quincy Mine Hoist Museum and Gift Shop provides visitors more opportunities for revenue generation for those organizations. Longer stays by visitors would be very likely with increased visitor "attractions" as historic landscape features are rehabilitated, restored and interpreted. Longer stays at the Quincy Unit could result in increased sales at local businesses, which would result in direct, long-term, minor to moderate beneficial impact to the local economy. Because this alternative could result in more seasonal and permanent work for craftsmen, maintenance and interpretive staff for the NPS and partners, it would also benefit the local economy.

Cumulative Impact (Treatment Alternative A, Socioeconomics)

Implementation of this alternative would continue to build on past actions by local cultural heritage organizations and the NPS in establishing an expanding tourism component to the local economy. The actions in this alternative, when combined with past actions and any foreseeable actions should benefit the local economy to a greater extent than the no action alternative, but still fall within the moderate intensity level.

Conclusion (Treatment Alternative A, Socioeconomics)

Because there could be an increased level of seasonal and permanent staff needed to implement Alternative A, this alternative could result in a direct, long-term, minor to moderate beneficial impact to the local economy. The potential increase in seasonal and permanent staff may be necessary due to a greater amount of improvements to visitor contact opportunities and enhanced maintenance and rehabilitation of the cultural landscape at the Quincy Unit.

Historic Industrial Core Alternative B (Socioeconomics)

Analysis (Treatment Alternative B, Socioeconomics)

This alternative, in addition to the Treatments Common to All Alternatives would have some similarities to Alternatives A and C, but there would be a noticeable difference in location of visitor contact facilities. This location would result in the NPS Visitor Center being constructed at a location outside of the Historic Industrial Core and the Quincy Mine Hoist Association would use the rehabilitated No. 2 Hoist House for its visitor center. Although different structures would be used for visitor contact facilities in this alternative there would still be craftsmen work to be done at the other facilities. Additional visitor contact facilities would lead to an increase in interpretive opportunities and employment, which should result in direct, short, and long-term, minor to moderate beneficial impacts to the local economy. In this alternative the Franklin Township Fire Hall would be restored and interpreted, which differs from Alternative A. Because the fire hall would not be used for community purposes as in Alternative A, there may not be opportunities for social gatherings and other type of small commercial space, a negligible, but noticeable difference.

Cumulative Impact (Treatment Alternative B, Socioeconomics)

Cumulative socioeconomic impacts under Alternative B would be similar to those described in Alternative A.

Conclusion (Treatment Alternative B, Socioeconomics)

There could be an increased level of seasonal and permanent staff needed to implement Alternative B. This alternative, in addition to the Treatments Common to All Alternatives could result in a direct, long-term, minor to moderate beneficial impact to the local economy. The potential increase in seasonal staff may be necessary due to a greater amount of improvements to visitor contact opportunities and enhanced maintenance and rehabilitation of the cultural landscape at the Quincy Unit.

Historic Industrial Core Treatment Alternative C, Preferred Alternative (Socioeconomics)

Analysis (Treatment Alternative C, Preferred Alternative, Socioeconomics)

In addition to the Treatments Common to All Alternatives, Alternative C proposes that the Blacksmith Shop and the Machine Shop be utilized for a combined visitor contact center that is shared by the NPS and its partners. The additional visitor contact facilities could result in an increase in seasonal and permanent staff, which would result in direct, short, and long-term, moderate beneficial impacts to the local economy. This combined visitor contact center, in conjunction with enhanced centralized parking could provide increased opportunities for social events for the community, which in itself would be a direct, long-term, minor benefit to the local community. This opportunity, in addition to reuse of the fire hall, would be a strong benefit to the community, as well as the NPS partners.

Cumulative Impact (Treatment Alternative C, Preferred Alternative, Socioeconomics)

In addition to the Treatments Common to All Alternatives, this alternative would continue to build on past actions by local cultural heritage organizations and the NPS in establishing an expanding tourism component to the local economy. The actions in this alternative, when

combined with past actions and any foreseeable actions should benefit the local economy to a greater extent than all other alternatives, but still fall within the moderate intensity level.

Conclusion (Treatment Alternative C, Preferred Alternative, Socioeconomics)

As noted in Alternatives A and B, there could be an increased level of seasonal and permanent staff needed to implement Alternative C. This alternative, in addition to the Treatments Common to All Alternatives could result in a direct, long-term, moderate beneficial impact to the local economy because it offers more opportunities for community social events that benefit local residents and the NPS partners than any other alternative.

Visitor Experience

Basis of Analysis (Visitor Experience)

The history of the Quincy Unit has been interpreted by the NPS and organizations like the Quincy Mine Hoist Association for years; however there is a vast amount of story yet to be told at the Quincy Unit. *NPS Management Policies* state that enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks and that the NPS is committed to providing appropriate, high-quality opportunities for visitor to enjoy the parks. The analysis focuses on the potential affects from the overall guidance provided in the Treatment Alternative and whether those affects would benefit the visiting public.

Intensity levels:

- Negligible**:** A negligible effect would be a change that would not be perceptible or would be barely perceptible by most visitors.

- Minor: A slight change in a few visitor's experiences, which would be noticeable but which would result in little detraction or improvement in the quality of the experience.

- Moderate**:** A moderate effect would be a change in a large number of visitor's experiences that would result in a noticeable decrease or improvement in the quality of the experience. This would be indicated by a change in frustration level or inconvenience for a period of time.

- Major**:** A substantial improvement in many visitors' experience or a severe decrease in the quality of many visitors' experiences.

Current Management, No Action Alternative (Visitor Experience)

Analysis (Current Management, No Action Alternative, Visitor Experience)

The no action alternative would continue to offer visitors the ability to experience the Quincy Unit. Many historic structures and ruins would be preserved and some would be interpreted; however this alternative would result in fewer opportunities for interpretation than all action alternatives, which would be a direct, long-term, minor beneficial impact to visitor experience. In addition, visitors would not have opportunities to see larger viewsheds because vegetation management would be at minimal levels.

Cumulative Impacts (Current Management, No Action Alternative, Visitor Experience)

As mentioned in the Socioeconomic section, the NPS and local organizations have been offering visitor interpretation and experiences at the Quincy Unit for years. Continuation of current management actions would improve the visitor experience.

Conclusion (Current Management, No Action Alternative, Visitor Experience)

Implementation of the No-Action Alternative would have long-term, minor beneficial impact to visitor's experiences at Keweenaw National Historical Park.

Treatment Guidelines Common to Alternatives A, B and C for Quincy Unit and Historic Industrial Core (Visitor Experience)

Analysis (Treatment Guidelines Common to All Action Alternatives, Visitor Experience)

The proposed Treatment Guidelines Common to all Action Alternatives would result in much greater opportunities for visitor experiences at the Quincy Unit. These common treatment guidelines provide a greater emphasis on restoration of cultural landscape features and rehabilitation of historic landscape elements which allows the NPS and its partners to expand the interpretation and teaching of the history of mining operations at this site. Visitor experiences should be improved with enhanced interpretation of landscape features following any archeological investigations that reveal artifacts from the historic or prehistoric periods. Improved wayfinding, self-guided brochures and interpretive signage would provide long-term, moderate beneficial impacts to the experience of casual visitors that want to explore the site on their own. Self-exploration of the site would be enhanced with pedestrian paths that direct the visitor to appropriate locations for viewing ruins, structures and the landscape. Self-guided tours of the Historic Industrial Core and the Quincy Unit would be enhanced by development of the transportation hub that would be centrally located in the No. 2 and No. 4 area. Hopefully, over time and with funding, an alternative transportation system would originate from this location and link all site elements. This one site improvement would provide long-term, moderate beneficial effects to visitor experiences by improving accessibility throughout the Quincy Unit and Historic Industrial Core.

Historic Industrial Core Treatment Alternative A (Visitor Experience)

Analysis (Treatment Alternative A, Visitor Experience)

In addition to the Treatment Guidelines Common to all Action Alternatives a notable difference between Alternative A and the other treatment alternatives is the development of a NPS Visitor Center at the Supply House. This would provide even more opportunities for interpretation, teaching and general visitor contact. The NPS contact center would add to the visitor educational experiences at the proposed Quincy Mine Hoist Association Visitor Center and the A.E. Seaman Mineral Museum. Visitor would receive long-term, beneficial effects from numerous restoration, rehabilitation and preservation projects that would occur. These projects would be available for active interpretation and for self-guided tours. Visitors staying longer at the site would have the opportunity to picnic at certain locations in the Historic Industrial Core, which provides moderate beneficial impacts to the visitor experience.

Vegetation management from this alternative would open more views of the landscape for visitors and with the removal of vegetation; they would gain greater knowledge of the scale of the Quincy Unit and the Historic Industrial Core.

Cumulative Impacts (Treatment Alternative A, Visitor Experience)

The years of interpretation and provision of some visitor experiences at the Quincy Unit would be enhanced by implementation of Alternative A. In addition to interpretation that has been ongoing for years, there would be a long-term minor to moderate beneficial impact provided to visitors by implementation of Alternative A.

Conclusion (Treatment Alternative A, Visitor Experience)

Implementation of Treatment Alternative A would have a long-term, minor to moderate beneficial impact to visitor's experiences at Keweenaw National Historical Park.

Historic Industrial Core Treatment Alternative B (Visitor Experience)

Analysis (Treatment Alternative B, Visitor Experience)

This alternative, in addition to Treatment Guidelines Common to all Action Alternatives will also provide visitors with long-term, minor to moderate beneficial experiences. There are few differences to visitor experience between this alternative and Alternative A; however this alternative would probably fall at the lower range of minor to moderate beneficial experiences because the proposed NPS Visitor Center would not be located in the Historic Industrial Core. It is possible that a casual visitor might go to either the NPS Visitor Center or the Quincy Mine Hoist Association Visitor Center at the No. 2 Hoist House, or the A.E. Seaman Mineral Museum if they are at separate locations. This could result in a less beneficial visitor experience.

Cumulative Effects (Treatment Alternative B, Visitor Experience)

Cumulative visitor experience impacts under Alternative B would be similar to those described in Alternative A. The difference would be the less beneficial effect from separated visitor contact facilities.

Conclusion (Treatment Alternative B, Visitor Experience)

Implementation of Alternative B would have long-term, minor to moderate beneficial impact to visitor's experiences at Keweenaw National Historical Park.

Historic Industrial Core Treatment Alternative C, Preferred Alternative (Visitor Experience)

Analysis (Treatment Alternative C, Visitor Experience)

This alternative, in addition to Treatment Guidelines Common to all Action Alternatives would provide visitors with long-term, minor to moderate beneficial experiences. This alternative would probably be at the higher range of minor to moderate because of the potential for developing a combined NPS Visitor Center, Quincy Mine Hoist Association Visitor Contact station along with the A.E. Seaman Mineral Museum. A combined Visitor Center "campus" environment will provide the greatest amount of visitor contact with the least effort. Visitors could be oriented to the Quincy Unit and Historic Industrial Core, including the Quincy Mine Hoist Association Visitor Center at the No. 2 Hoist House. Because of this concept visitors would likely receive a much more comprehensive knowledge of the site.

Cumulative Effects (Treatment Alternative C, Visitor Experience)

Cumulative visitor experience impacts under Alternative C would be similar to those described in Alternative A; however a notable difference would be the development of visitor contact facilities in proximity to each other. This alternative would provide moderate beneficial impacts to visitor experience in addition to the previous efforts at the Quincy Unit.

Conclusion (Treatment Alternative C, Visitor Experience)

Implementation of Alternative C would have long-term, moderate beneficial impact to visitor's experiences at Keweenaw National Historical Park.

Park Operations

Basis of Analysis (Park Operations)

Implementation of any alternative would affect the operations of Keweenaw National Historical Park. This includes the number of staff required to accomplish recommendations for any alternative; when these actions would occur; and how these actions were to occur. Park operations related to maintenance of park structures and grounds and interpretation of the cultural and natural heritage of Keweenaw National Historical Park, particularly the Quincy Unit and the Historic Industrial Core are the focus of this analysis.

Intensity levels:

- Negligible: Park operations would not be affected or the effect would be at low levels of detection.
- Minor: The effect would be detectable, but would be of a magnitude that it would not have an appreciable adverse or beneficial effect on park operations.
- Moderate: The effect would be readily apparent and would result in a substantial adverse or beneficial change in park operations in a manner noticeable to staff and the public.
- Major: The effect would be readily apparent and would result in a substantial adverse or beneficial change in park operations in a manner noticeable by staff and the public, and would be markedly different from existing operations.

Current Management, No-Action Alternative (Park Operations)

Analysis (Current Management, No-Action Alternative, Park Operations)

The continuation of current management actions at Keweenaw National Historical Park would result in ongoing maintenance, protecting and preserving the historic features within the cultural landscape at the Quincy Unit. On-going maintenance and interpretive park operations would continue to be based out of the facilities at the Calumet Unit. This would typically require a daily drive of approximately 30 minutes in each direction for maintenance staff and interpretive staff as needed/required. On-going maintenance actions would be conducted

without the benefit of additional guidance on maintenance, rehabilitation or restoration of historic features within the landscape, which would result in direct, short and long-term, negligible to minor adverse impacts to the historic landscape. Interpretation of the Quincy Unit and Historic Industrial Core would continue with NPS staff providing ranger-led tours and manning the visitor contact station at the Quincy Mine Hoist Association Visitor Center. These limitations for visitor contact facilities result in direct, long-term, minor adverse impacts to operations of the interpretive staff at Keweenaw National Historical Park.

Cumulative Impacts (Current Management, No-Action Alternative, Park Operations)

Maintenance activities have been conducted for years; however the no action alternative does not provide any additional assistance in providing guidance on the restoration, rehabilitation of all historic landscape features and structures; nor does it provide additional interpretive facilities to assist Keweenaw National Historical Park interpretive staff in telling the story of the rich cultural heritage of the site and region. This alternative, in addition to previous actions could result in short and long-term, negligible to minor adverse impacts to maintenance operations.

Conclusion (Current Management, No-Action Alternative, Park Operations)

Implementation of no action alternative would result in direct, short and long-term, negligible to minor adverse impacts to maintenance, restoration and rehabilitation of the historic landscape as well as interpretation of the Quincy Unit and Historic Industrial Core.

Treatment Guidelines Common to Alternatives A, B and C for Quincy Unit and Historic Industrial Core (Park Operations)

Analysis (Treatment Guidelines Common to All Action Alternatives, Park Operations)

Treatment Guidelines Common to all action alternatives would result in a bigger workload for the Keweenaw National Historic Park maintenance and interpretive staff. There would be much greater amount of rehabilitation, restoration and preservation projects, most of which would result in more opportunities for interpretation. The advantage that Keweenaw National Historical Park enjoys is that it is a partnership park, so some of the burden would be shared with park partners, which should result in a short and long-term, minor beneficial impact to park operations.

Historic Industrial Core Treatment Alternative A (Park Operations)

Analysis (Treatment Alternative A, Park Operations)

Due to current staff levels, the larger workload resulting from this alternative could potentially be a negative impact to the current staff at Keweenaw National Historical Park. However, as a partnership park some or much of the increased workload could be shared, which would result in short and long-term, minor benefits to park operations. Most notably, the establishment of the NPS Visitor Center at the Supply House would provide an on-site "base of operations" for interpretive staff. The interpretive staff would have adequate facilities for visitor contact and interpretation, which would result in a long-term, minor to moderate beneficial impact on operations.

Cumulative Effects (Treatment Alternative A, Park Operations)

Implementation of Alternative A and in addition to Treatment Guidelines Common to all Action Alternatives would result in a positive affect to ongoing park operations for both the NPS and NPS partners.

Conclusion (Treatment Alternative A, Park Operations)

Treatment Guidelines Common to all Action Alternatives and the implementation of Alternative A would result in short and long-term, minor to moderate beneficial impacts to park operations.

Historic Industrial Core Treatment Alternative B (Park Operations)

Analysis (Treatment Alternative B, Park Operations)

The proposed actions from Alternative B, in addition to Treatment Guidelines Common to all Action Alternatives would result in similar positive impacts to park operations as does Alternative A. One notable exception in this alternative in this alternative is the NPS Visitor Center would be located in a facility outside the Historic Industrial Core. This proposed siting would reduce interpretive opportunities shared between the NPS and NPS partners, which could result in long-term, minor beneficial impacts to park operations.

Cumulative Effects (Treatment Alternative B, Park Operations)

Cumulative impacts would be similar to those described in Alternative A.

Conclusion (Treatment Alternative B, Park Operations)

Implementation of Treatment Alternative B would result in short and long-term, minor beneficial impacts to park operations.

Historic Industrial Core Treatment Alternative C, Preferred Alternative (Park Operations)

Analysis (Treatment Alternative C, Preferred Alternative, Park Operations)

The proposed actions from Alternative C, in addition to Treatment Guidelines Common to all Action Alternatives would result in similar positive impacts to park operations as does Alternative A. However, as with Alternative B, there is a one notable exception. In Alternative C, the NPS Visitor Center would be located in the same area as the Quincy Mine Hoist Association visitor contact center and the A.E. Seaman Mineral Museum. This proposed visitor contact "campus" would maximize shared interpretive opportunities between the NPS and NPS partners, which could result in long-term, moderate beneficial impacts to park operations.

Cumulative Effects (Treatment Alternative C, Preferred Alternative, Park Operations)

Cumulative impacts would be similar to those described in Alternative A.

Conclusion (Treatment Alternative C, Preferred Alternative, Park Operations)

Implementation of Alternative C would result in short and long-term, minor to moderate beneficial impacts to park operations.

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter VIII: Implementation

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter VIII: Implementation

Overview

This chapter provides project statements to accomplish the Recommended Treatment Alternative for the cultural landscapes within the Quincy Unit of Keweenaw National Historical Park. The order of the projects as they are presented does not imply a level of importance or suggest a sequence for implementation, unless noted in the project statements. Locations of selected implementation projects are illustrated in Figure 8-1. Locations of management recommendations related to vegetation are illustrated in Figure 8-2.

Project A: Preserve Historic Structures in the Quincy Unit

- ***Project A-1:*** Consider completing the List of Classified Structures and Cultural Landscapes Inventory for the Quincy Unit. Although most of these resources are not owned by the National Park Service, their conditions need to be assessed and understood to ensure that primary resources are not lost due to neglect. Entering these resources into the database, even the shadow database, will help resource managers keep track of their conditions on a regular basis. This project would include having a contractor conduct fieldwork, research, and analysis and prepare the Cultural Landscapes Inventory and List of Classified Structures for historic resources within the Quincy Unit in three categories: resources within the Historic Industrial Core, historic industrial resources outside the Historic Industrial Core, and resources related to Historic Housing Locations.

- ***Project A-2:*** Complete an archeological inventory of select resources for the Quincy Unit.

- ***Project A-3***: Prepare Historic Structures Reports for significant structures within the Historic Industrial Core owned by the NPS or partners including: Captain's Office, Supply House, Oil House, No.2 Shaft-Rockhouse, Old No.2 Hoist House, Martin House and Outbuilding, No. 2 Hoist Houses, No. 5 Boiler Plant, Ruin of Diamond Drill core House, Remnant of Compressor Building, Remnant of No. 4 Boiler House, Remnant of No.4 Hoist House, Remnant of No.7 Boiler House, Quincy & Torch Lake R.R. Water Tank, Remnant of Engine House, Dryhouse Foundation, the Mine Captain's Office, buildings at the Former Miner's Residences Area, and former miner's residence in Limerick that is owned by the Quincy Mine Hoist Association.

- ***Project A-4:*** Prepare Historic Structures Reports for significant structures within Historic Housing Locations as determined through investigations of these areas related to preparing the List of Classified Structures (LCS) and Cultural Landscapes Inventory (CLI) for the Historic Housing Locations. This project should be undertaken only after Project A-1 has been completed.

- ***Project A-5:*** Prepare a combined Historic Structures Report and Cultural Landscape Report for the Quincy Smelting Works.

Next Page:

Figure 8- 1: Locations of Selected Implementation Projects

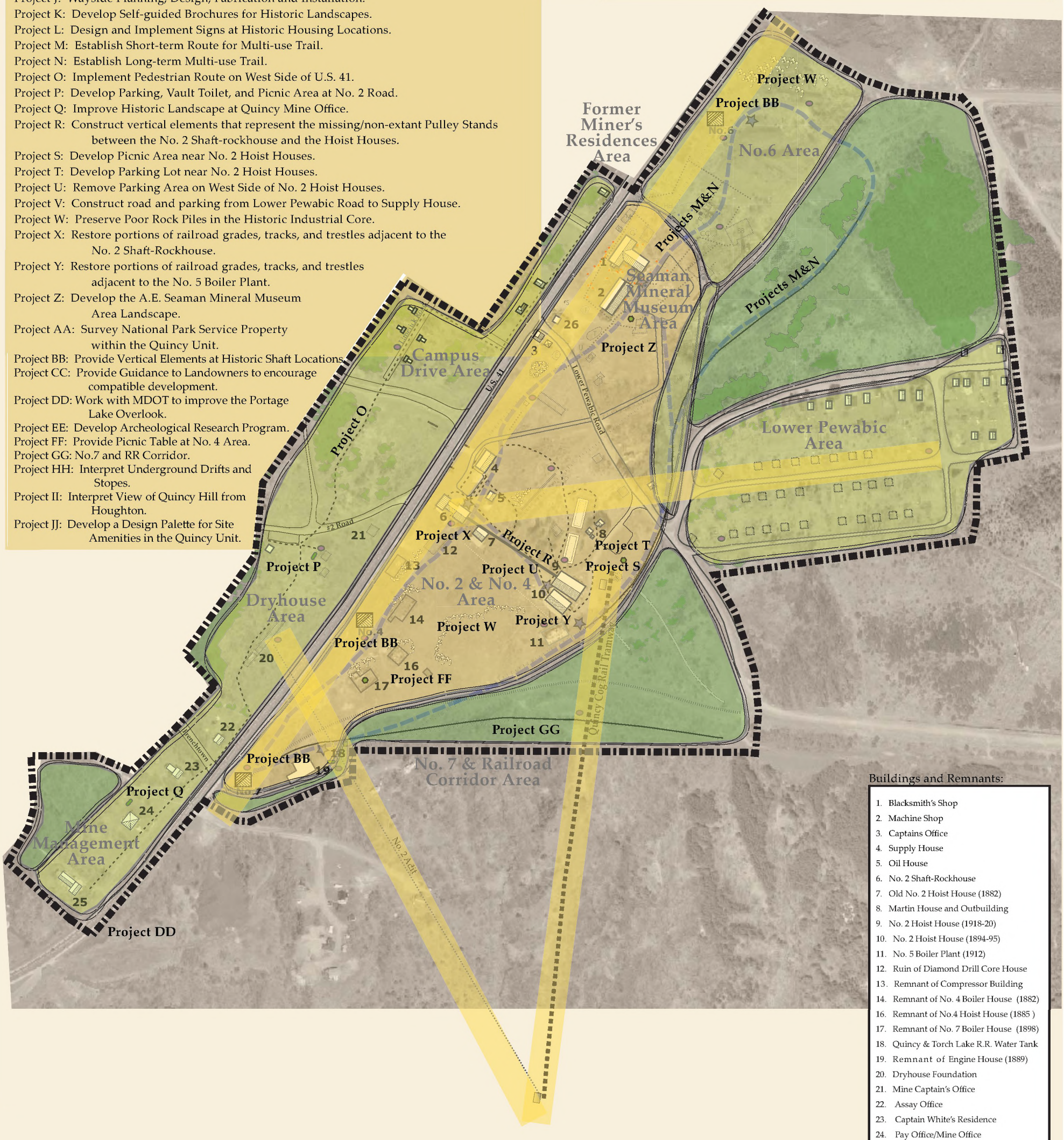
IMPLEMENTATION PROJECT TITLES:

Project A: Preserve Historic Structures in the Quincy Unit.
- Project A-1: Complete LCS and CLI for the Quincy Unit.
- Project A-2: Complete an archaeological inventory and evaluation for the Quincy Unit.
- Project A-3: Prepare Historic Structures Reports for buildings in the Historic Industrial Core.
- Project A-4: Prepare Historic Structures Reports for buildings in Historic Housing Locations.
- Project A-5: Prepare combined Historic Structures and Cultural Landscape Report for the Quincy Smelting Works.
- Project A-6: In short-term stabilize and preserve significant historic structures within the Historic Industrial Core.

Project B: Planning to Preserve Existing Significant Views by Influencing New Development.
Project C: Establish View Corridor to Interpret the No. 2 Adit Location.
Project D: Establish and Maintain View along the Pewabic Lode.
Project E: Establish and Maintain View from Lower Pewabic to the No. 2 Area.
Project F: Widen and Maintain View Corridor at Cog Tram Route.
Project G: Removal of Woody Vegetation in the Foreground Vegetation Management Zone.
Project H: Removal of Woody Vegetation in the Middleground Vegetation Management Zone.
Project I: Quincy Mine Historic Landscape Blitz.
Project J: Wayside Planning, Design, Fabrication and Installation.
Project K: Develop Self-guided Brochures for Historic Landscapes.
Project L: Design and Implement Signs at Historic Housing Locations.
Project M: Establish Short-term Route for Multi-use Trail.
Project N: Establish Long-term Multi-use Trail.
Project O: Implement Pedestrian Route on West Side of U.S. 41.
Project P: Develop Parking, Vault Toilet, and Picnic Area at No. 2 Road.
Project Q: Improve Historic Landscape at Quincy Mine Office.
Project R: Construct vertical elements that represent the missing/non-extant Pulley Stands between the No. 2 Shaft-rockhouse and the Hoist Houses.
Project S: Develop Picnic Area near No. 2 Hoist Houses.
Project T: Develop Parking Lot near No. 2 Hoist Houses.
Project U: Remove Parking Area on West Side of No. 2 Hoist Houses.
Project V: Construct road and parking from Lower Pewabic Road to Supply House.
Project W: Preserve Poor Rock Piles in the Historic Industrial Core.
Project X: Restore portions of railroad grades, tracks, and trestles adjacent to the No. 2 Shaft-Rockhouse.
Project Y: Restore portions of railroad grades, tracks, and trestles adjacent to the No. 5 Boiler Plant.
Project Z: Develop the A.E. Seaman Mineral Museum Area Landscape.
Project AA: Survey National Park Service Property within the Quincy Unit.
Project BB: Provide Vertical Elements at Historic Shaft Locations.
Project CC: Provide Guidance to Landowners to encourage compatible development.
Project DD: Work with MDOT to improve the Portage Lake Overlook.
Project EE: Develop Archeological Research Program.
Project FF: Provide Picnic Table at No. 4 Area.
Project GG: No.7 and RR Corridor.
Project HH: Interpret Underground Drifts and Stopes.
Project II: Interpret View of Quincy Hill from Houghton.
Project JJ: Develop a Design Palette for Site Amenities in the Quincy Unit.

Legend

- Historic Industrial Core Boundary
- Extant Historic Building
- Remnant of Historic Building
- Comtemporary/Modified Building
- Foreground Vegetation Management Zone
- Middleground Vegetation Management Zone
- Background Vegetation Management Zone
- Selected View Vegetation Management Zone
- Conceptual Route for Visitor Tram and Stops
- Conceptual Pedestrian Route
- Historic Railroad Grade
- Extant Railroad Track
- Vegetation
- Rock Piles
- Cog Rail Tramway
- No.6 Mine Shaft Location
- Artifact pile
- Conceptual location for overlook or interpretive wayside



Buildings and Remnants:

1. Blacksmith's Shop
2. Machine Shop
3. Captains Office
4. Supply House
5. Oil House
6. No. 2 Shaft-Rockhouse
7. Old No. 2 Hoist House (1882)
8. Martin House and Outbuilding
9. No. 2 Hoist House (1918-20)
10. No. 2 Hoist House (1894-95)
11. No. 5 Boiler Plant (1912)
12. Ruin of Diamond Drill Core House
13. Remnant of Compressor Building
14. Remnant of No. 4 Boiler House (1882)
16. Remnant of No.4 Hoist House (1885)
17. Remnant of No. 7 Boiler House (1898)
18. Quincy & Torch Lake R.R. Water Tank
19. Remnant of Engine House (1889)
20. Dryhouse Foundation
21. Mine Captain's Office
22. Assay Office
23. Captain White's Residence
24. Pay Office/Mine Office
25. Superintendent's Residence
26. Quincy Fire Hall

SCALE: NORTH
0 200 400

QUINN EVANS | ARCHITECTS

Base Sources:

1. Aerial photography, prepared for Keweenaw National Historical Park by Ayres Associates, Inc., of Madison, Wisconsin, May 2002.
2. Eric M. Hanson, "Quincy Mining Company Maps," HAER Heritage, Conservation and Recreation Service, 1978.
3. Land ownership information provided by Keweenaw National Historical Park.
4. Larry Mishkar, "Land Use History and Archaeological Survey, Seaman Mineral Museum Project, Quincy Mine National Historic Landmark, Houghton County, Michigan," Industrial Archaeology Laboratory, Michigan Technological University, Houghton, Michigan, 2005.
5. Period of Change Plans, Chapter II, Landscape History, Quincy Unit Cultural Landscape Report.
6. Smithgroup and Hitch, Inc., "A.E. Seaman Mineral Museum Master Plan Report," 20 January 2006.

LOCATIONS OF SELECTED IMPLEMENTATION PROJECTS

Cultural Landscape Report May 2010 **Historic Industrial Core, Keweenaw National Historical Park**

Project A-6: Until the Historic Structures Reports can be completed and their recommended treatment implemented, stabilize and preserve significant historic structures within the Historic Industrial Core. This includes a seasonal work crew with one skilled mason and four laborers, materials and equipment for six months. This project would need to recur each year until the end treatments recommended in the Historic Structures Reports are completed.

Project B: Planning to Preserve Existing Significant Views by Influencing New Development

- Work with property owners and local municipalities as indicated in Chapter VI to preserve the views indicated in Figure 6-2. This is a planning project that includes working with property owners and local municipalities to develop practical design and implementation guidelines to help preserve significant views. The project would involve meetings with local representatives, field inventory, development of preliminary recommendations, a project workshop to refine the recommendations and ensure that they are feasible, and preparation of the final guidelines in a narrative report format with supporting graphics.

Projects Related to Vegetation Management

Locations of management recommendations related to vegetation are illustrated in Figure 8-2.

Project C: Establish View Corridor to Interpret No. 2 Adit Location

- ***Project C-1:*** Within the Historic Industrial Core remove woody vegetation to establish view corridor to interpret the location of the No. 2 Adit.

- ***Project C-2:*** Beyond the Historic Industrial Core work with property owners to establish and maintain the view corridor to interpret the location of the No. 2 Adit.

- Establish view corridor.
    - Prior to start of project, conduct compliance addressing archeological resources within the project area.
    - Photograph the site before and after removal of vegetation to inform/guide future maintenance activities.
    - Individual(s) with in-depth understanding of the historic views and the current conditions of the site to walk the view corridor and identify woody plants to be removed or pruned by flagging or otherwise marking these elements. Avoid removing plants in areas that may be subject to erosion.
    - Vegetation removal crew to remove marked vegetation.
    - Apply approved herbicide to cut stumps to discourage continued growth. Follow guidelines for herbicide application provided in the Weed Control Methods Handbook.
    - Remove cut vegetation.
        - If equipment and an acceptable location are available, consider shredding and composting the materials for use by the local community.
        - Alternately, if an acceptable burn pile location is nearby, stockpile materials and burn as soon as possible. If no acceptable burn pile location is nearby, remove the materials from the site to avoid creating a fire hazard.
    - Return to cut vegetation once a year.
    - If volunteer crews are used provide a training session to ensure that crew members understand approved removal techniques, safety procedures, and the importance of avoiding impacts to historic resources.

Next Page:

Figure 8- 2: Treatment Alternative C: Vegetation Management Recommendations

Project G: Foreground Vegetation Management Zone:

Remove all woody vegetation throughout this zone to reveal historic landscape features, increase representation of historic landscape character, open views, and preserve historic buildings and artifacts.

Project H: Middleground Vegetation Management Zone:

Remove selected woody vegetation throughout this zone to reveal selected historic landscape features, open views, and preserve historic buildings and artifacts. Work with residents and property owners to determine an appropriate approach.

Background Vegetation Management Zone:

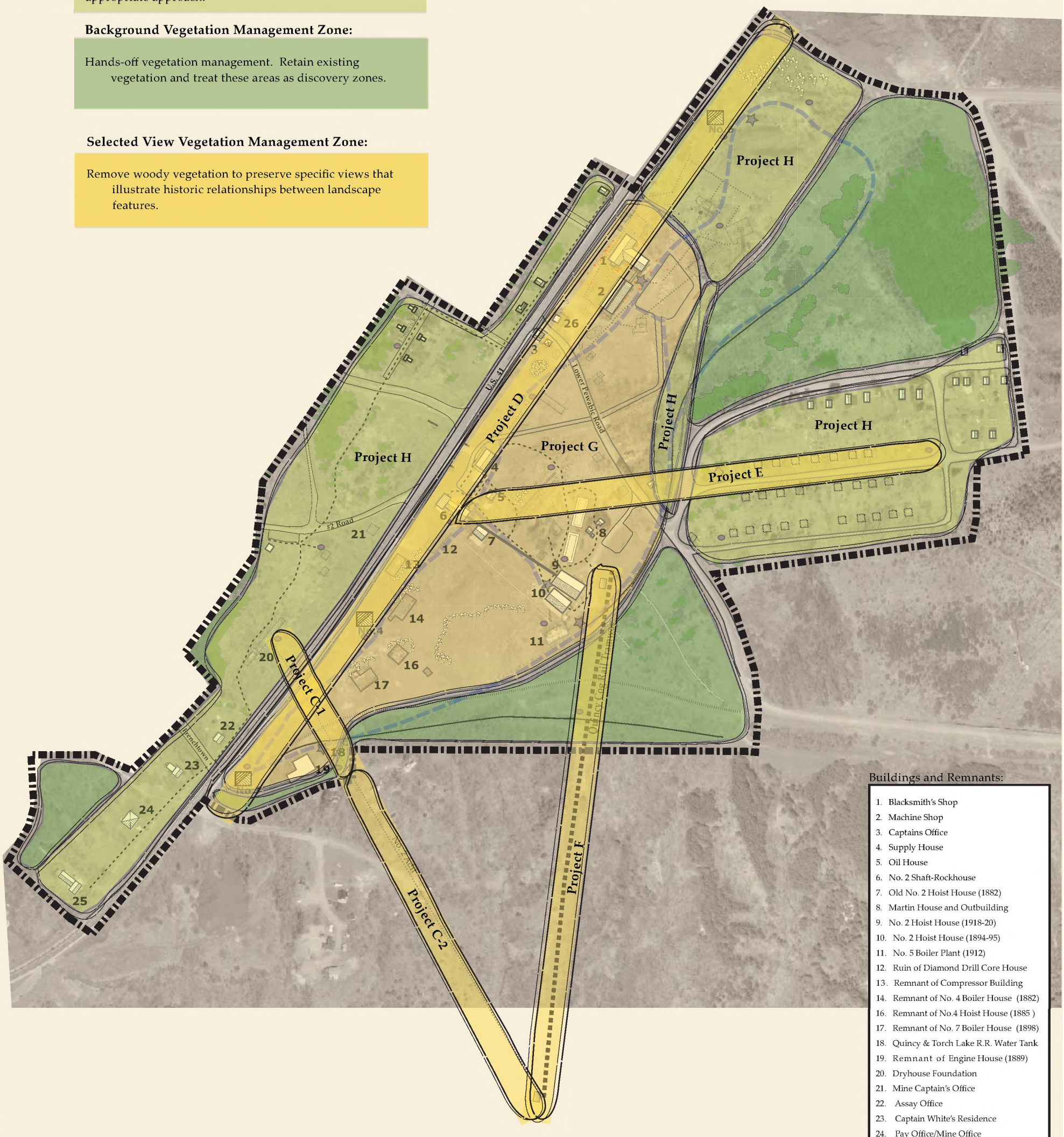
Hands-off vegetation management. Retain existing vegetation and treat these areas as discovery zones.

Selected View Vegetation Management Zone:

Remove woody vegetation to preserve specific views that illustrate historic relationships between landscape features.

Legend

- Historic Industrial Core Boundary
- Extant Historic Building
- Remnant of Historic Building
- Comtemporary/Modified Building
- Foreground Vegetation Management Zone
- Middleground Vegetation Management Zone
- Background Vegetation Management Zone
- Selected View Vegetation Management Zone
- Conceptual Route for Visitor Tram and Stops
- Conceptual Pedestrian Route
- Historic Railroad Grade
- Extant Railroad Track
- Vegetation
- Rock Piles
- Cog Rail Tramway
- No.6 Mine Shaft Location
- Artifact pile
- Conceptual location for overlook or interpretive wayside



Buildings and Remnants:

1. Blacksmith's Shop
2. Machine Shop
3. Captains Office
4. Supply House
5. Oil House
6. No. 2 Shaft-Rockhouse
7. Old No. 2 Hoist House (1882)
8. Martin House and Outbuilding
9. No. 2 Hoist House (1918-20)
10. No. 2 Hoist House (1894-95)
11. No. 5 Boiler Plant (1912)
12. Ruin of Diamond Drill Core House
13. Remnant of Compressor Building
14. Remnant of No. 4 Boiler House (1882)
16. Remnant of No.4 Hoist House (1885)
17. Remnant of No. 7 Boiler House (1898)
18. Quincy & Torch Lake R.R. Water Tank
19. Remnant of Engine House (1889)
20. Dryhouse Foundation
21. Mine Captain's Office
22. Assay Office
23. Captain White's Residence
24. Pay Office/Mine Office
25. Superintendent's Residence
26. Quincy Fire Hall

SCALE: NORTH
0 200 400

QUINN EVANS | ARCHITECTS

Base Sources:

1. Aerial photography, prepared for Keweenaw National Historical Park by Ayres Associates, Inc., of Madison, Wisconsin, May 2002.
2. Eric M. Hanson, "Quincy Mining Company Maps," HAER Heritage, Conservation and Recreation Service, 1978.
3. Land ownership information provided by Keweenaw National Historical Park.
4. Larry Mishkar, "Land Use History and Archaeological Survey, Seaman Mineral Museum Project, Quincy Mine National Historic Landmark, Houghton County, Michigan," Industrial Archaeology Laboratory, Michigan Technological University, Houghton, Michigan, 2005.
5. Period of Change Plans, Chapter II, Landscape History, Quincy Unit Cultural Landscape Report.
6. Smithgroup and Hitch, Inc., "A.E. Seaman Mineral Museum Master Plan Report," 20 January 2006.

TREATMENT ALTERNATIVE "C", PREFERRED ALTERNATIVE: *Vegetation Management Recommendations*

Project D: Establish and Maintain View along the Pewabic Lode

- Establish view corridor.
    - Prior to start of project, conduct compliance addressing archeological resources within the project area.
    - Photograph the site before and after removal of vegetation to inform/guide future maintenance activities.
    - Individual(s) with in-depth understanding of the historic views and the current conditions of the site to walk the view corridor and identify woody plants to be removed or pruned by flagging or otherwise marking these elements. Avoid removing plants in areas that may be subject to erosion.
    - Vegetation removal crew to remove marked vegetation.
    - Apply approved herbicide to cut stumps to discourage continued growth. Follow guidelines for herbicide application provided in the Weed Control Methods Handbook.
    - Remove cut vegetation.
        - If equipment and an acceptable location are available, consider shredding and composting the materials for use by the local community.
        - Alternately, if an acceptable burn pile location is nearby, stockpile materials and burn as soon as possible. If no acceptable burn pile location is nearby, remove the materials from the site to avoid creating a fire hazard.
    - Return to cut vegetation once a year.
    - If volunteer crews are used provide a training session to ensure that crew members understand approved removal techniques, safety procedures, and the importance of avoiding impacts to historic resources.

Project E: Establish and Maintain View from Lower Pewabic to the No. 2 Area

- Establish view corridor.
    - Prior to start of project, conduct compliance addressing archeological resources within the project area.
    - Photograph the site before and after removal of vegetation to inform/guide future maintenance activities.
    - Individual(s) with in-depth understanding of the historic views and the current conditions of the site to walk the view corridor and identify woody plants to be removed or pruned by flagging or otherwise marking these elements. Avoid removing plants in areas that may be subject to erosion.
    - Vegetation removal crew to remove marked vegetation.
    - Apply approved herbicide to cut stumps to discourage continued growth. Follow guidelines for herbicide application provided in the Weed Control Methods Handbook.[1]
    - Remove cut vegetation.
        - If equipment and an acceptable location are available, consider shredding and composting the materials for use by the local community.
        - Alternately, if an acceptable burn pile location is nearby, stockpile materials and burn as soon as possible. If no acceptable burn pile location is nearby, remove the materials from the site to avoid creating a fire hazard.
    - Return to cut vegetation once a year.
    - If volunteer crews are used provide a training session to ensure that crew members understand approved removal techniques, safety procedures, and the importance of avoiding impacts to historic resources.

[1] Tu, et. al., "Weed Control Methods Handbook," The Nature Conservancy, 2001.

Project F: Widen and maintain view corridor at cog tram route

- This corridor is already maintained for the cog tram route. Work with the QMHA to widen the cleared corridor to expand views for pedestrians within the Historic Industrial Core.
    - Prior to start of project, conduct compliance addressing archeological resources within the project area.
    - If volunteer crews are used provide a training session to ensure that crew members understand approved removal techniques, safety procedures, and the importance of avoiding impacts to historic resources.

Project G: Removal of Woody Vegetation in the Foreground Vegetation Management Zone of the Historic Industrial Core

- Prior to start of project, conduct compliance addressing archeological resources within the project area.
- Photograph the site before and after removal of vegetation to inform/guide future maintenance activities.
- Individual(s) with in-depth understanding of the historic views and the current conditions of the site to walk the Foreground Vegetation Management Zone and identify woody plants to be removed or pruned by flagging or otherwise marking these elements. Avoid removing plants in areas that may be subject to erosion.
- Vegetation removal crew to remove marked vegetation.
- Apply approved herbicide to cut stumps to discourage continued growth. Follow guidelines for herbicide application provided the Weed Control Methods Handbook.[2]
- Remove cut vegetation.
    - If equipment and an acceptable location are available, consider shredding and composting the materials for use by the local community.
    - Alternately, if an acceptable burn pile location is nearby, stockpile materials and burn as soon as possible. If no acceptable burn pile location is nearby, remove the materials from the site to avoid creating a fire hazard.
- Return to cut vegetation once a year.
- If volunteer crews are used provide a training session to ensure that crew members understand approved removal techniques, safety procedures, and the importance of avoiding impacts to historic resources.

[2] Ibid.

Project H: Removal of Woody Vegetation in the Middleground Vegetation Management Zone of the Historic Industrial Core

- Prior to start of project, conduct compliance addressing archeological resources within the project area.
- Photograph the site before and after removal of vegetation to inform/guide future maintenance activities.
- Individual(s) with in-depth understanding of the historic views and the current conditions of the site to walk the Middleground Vegetation Management Zone and identify woody plants to be removed or pruned by flagging or otherwise marking these elements. Avoid removing plants in areas that may be subject to erosion.
- Vegetation removal crew to remove marked vegetation.
- Apply approved herbicide to cut stumps to discourage continued growth. Follow guidelines for herbicide application provided the Weed Control Methods Handbook.[3]
- Remove cut vegetation.
    - If equipment and an acceptable location are available, consider shredding and composting the materials for use by the local community.
    - Alternately, if an acceptable burn pile location is nearby, stockpile materials and burn as soon as possible. If no acceptable burn pile location is nearby, remove the materials from the site to avoid creating a fire hazard.
- Return to cut vegetation once a year.
- If volunteer crews are used provide a training session to ensure that crew members understand approved removal techniques, safety procedures, and the importance of avoiding impacts to historic resources.

[3] Ibid.

Project I: Quincy Mine Historic Landscape Blitz

- Prepare a program and plan based on the Ellsworth Rock Gardens Blitz model to engage professional volunteers in hands-on landscape preservation activities on an annual basis. The Ellsworth Rock Gardens are located within the boundaries of Voyageurs National Park in Northern Minnesota. The project model requires one individual to plan and organize the session and a group of professional volunteers to accomplish the hands-on work. This includes identifying projects to be accomplished, identifying people with skills to accomplish the tasks, ensuring that necessary site preparations are made before the crew arrives, arranging for necessary equipment, tools, and supplies, and coordinating schedules so that projects can be accomplished in a condensed time period.
- The Quincy Unit is in a location that is much easier to access than Ellsworth Rock Garden, and there are many people in the local community that might be tapped to participate in this type of activity. In addition to addressing historic landscape projects, this approach could help to build a strong constituency in the area for advocating for the historic resources. This approach could help to establish long-term volunteer crews at a minimum cost.
- Hire a professional to organize and set up the program for the first season, with ten volunteers for one week.
- If volunteer crews are used, provide a training session to ensure that crew members understand approved removal techniques, safety procedures, and the importance of avoiding impacts to historic resources.

Projects Related to Interpretation of the Historic Landscape

Project J: Wayside Planning, Design, Fabrication and Installation

- The Preferred treatment includes locations and suggestions for content for seventeen wayside exhibits within the Historic Industrial Core. Eight additional waysides will be designed and located based on the wayside plan. A total of twenty-five waysides are included in this estimate.
- Park Chief of Interpretation and Education to work with Harpers Ferry Design Center and park landscape architect to develop a system of waysides to be installed along the proposed accessible trail.
- Fabricate the waysides.
- Install the waysides.

Project K: Develop Self-guided Brochures for Historic Landscapes

- Park Interpretation and Education staff to work with consultants to develop self-guided brochures for historic landscapes with the following possible topics:
    - Historic Housing Locations
    - West side of U.S. 41
    - No. 2 and No. 4 Area
    - Overall Historic Industrial Core
    - Geology of Quincy Mining Company Property
    - Overview of Quincy Mining Company Cultural Landscape
    - Poor Rock Piles
    - Quincy Smelting Works

  These topics may be combined into one or more brochures, as determined appropriate by the park's Interpretation and Education staff.

Project L: Design and Implement signs at Historic Housing Locations

- Design professional, simple, small scale signs to identify the mine locations (see Figure 8-3) and to identify the Historic Housing Locations (one sign at each of the eleven locations).
- Coordinate with residents and land owners regarding the signs.
- Fabricate the signs.
- Install the signs.



Figure 8- 3: Example of simple sign design—the signs at historic housing locations should be improved versions of this example.

Projects Related to the Historic Industrial Core

Project M: Establish short-term route for multi-use trail

- Establish trail route on site.
    - Prior to start of project, conduct compliance addressing archeological resources within the project area.
    - Photograph the site before and after removal of vegetation to inform/guide future maintenance activities.
    - Individual(s) with in-depth understanding of the historic landscape to walk the trail route and flag the route, locations of hubs and key links, areas that require grading or alterations to surface material to provide a rough walking trail in the short-term, and vegetation to be pruned or removed.
    - Vegetation removal crew to remove marked vegetation.
    - Apply approved herbicide to cut stumps to discourage continued growth. Follow guidelines for herbicide application provided the Weed Control Methods Handbook.
    - Remove cut vegetation.
        - If equipment and an acceptable location are available, consider shredding and composting the materials for use by the local community.
        - Alternately, if an acceptable burn pile location is nearby, stockpile materials and burn as soon as possible. If no acceptable burn pile location is nearby, remove the materials from the site to avoid creating a fire hazard.
    - Construct short-term pedestrian route (the trail route is approximately 4,400′ long and 8′ wide)
        - Clear and grade trail route.
        - Install 3″ gravel base course along trail route.
        - Install 4″ crushed fines of stone along trail route.
        - Reinforce trail edge in areas where terrain slopes (maximum 800 linear feet)

Project N: Establish long-term multi-use trail over short-term base

- Establish universally accessible multi-use route on site (the trail route is approximately 4,400′ long and 8′ wide).
- Harden the route surface utilizing concrete with exposed aggregate surface. Utilize aggregate that matches the site rock material in color. Apply a retardant to the surface of the aggregate and finish concrete to emulate a gravel appearance.

Project O: Implement pedestrian route on west side of U.S. 41

- Prior to start of project, conduct compliance addressing archeological resources within the project area.
- Consultant to work with local authorities and property owners to obtain necessary permission and/or permits for project.
- The majority of the route will be identified as a route along the existing grade.
- Flag the route for the trail (approximately 2,200 linear feet).
- Alter grades where necessary to avoid erosion problems.
- Develop interpretive brochure for self-guided exploration of the area on the west side of U.S. 41 (part of Project K).
- Work with MDOT to develop an acceptable method to mark the former streetcar route.
- Selectively prune vegetation along the alignment of the former streetcar route.

Project P: Develop Parking, Vault Toilet, and Picnic Area at No. 2 Road

- Establish accessible parking, vault toilet, picnic area and trail on site.
    - Prior to start of project, conduct compliance addressing archeological resources within the project area.
    - Individual(s) with in-depth understanding of the historic landscape to flag the locations of site elements and areas that require grading to provide an accessible route.
    - Vegetation removal crew to remove marked vegetation.
    - Apply approved herbicide to cut stumps to discourage continued growth. Follow guidelines for herbicide application provided the Weed Control Methods Handbook.
    - Remove cut vegetation.
        - If equipment and an acceptable location are available, consider shredding and composting the materials for use by the local community.
        - Alternately, if an acceptable burn pile location is nearby, stockpile materials and burn as soon as possible. If no acceptable burn pile location is nearby, remove the materials from the site to avoid creating a fire hazard.
    - Grade and pave a universally accessible trail from the parking area to the vault toilet, picnic area and Dryhouse foundation using exposed aggregate concrete (approximately 200′ x 5′ = 1,000s.f.).
        - Clear and grade trail route.
        - Apply 6″ gravel base course along trail route.
        - Install concrete with exposed aggregate surface. Utilize aggregate that matches the site rock material in color. Apply a retardant to the surface of the aggregate and finish concrete to emulate a gravel appearance.
    - Implement asphalt parking area for eight cars (approximately 1,280 square feet)
    - Construct a vault toilet building that is compatible with the historic character of the area. See Figure 8.4.
    - Develop a small picnic area including:
        - 3 picnic tables

- 1 Trash receptacle
- Views of No.2 and No.4 Area (included in projects C, D, G, and H)
- Wayside with interpretive and directional information (included in wayside Project J)



Figure 8- 4: Example of building style for Vault Toilet building.

Project Q: Improve Historic Landscape at Quincy Mine Office

- Prior to start of project, conduct compliance addressing archeological resources within the project area.
- Provide barrier free access in consultation with the HSR being developed.
- Improve foundation drainage.
- Remove non-historic features, restore lawn, reconstruct front fence and side yard fences, restore stone curb/wall, reconstruct front walk, resurface historic road trace, and manage vegetation.

Project R: Construct vertical elements that represent the missing/non-extant Pulley Stands between the No. 2 Shaft-rockhouse and the Hoist Houses

- Prior to start of project, conduct compliance addressing archeological resources within the project area.
- Individual(s) with in-depth understanding of the historic landscape to flag the locations of site elements and areas that require grading to provide an accessible route.
- Prepare site including miscellaneous demolition.
- Construct reinforced concrete footings.
- Construct five towers of structural steel.
- Paint steel towers.

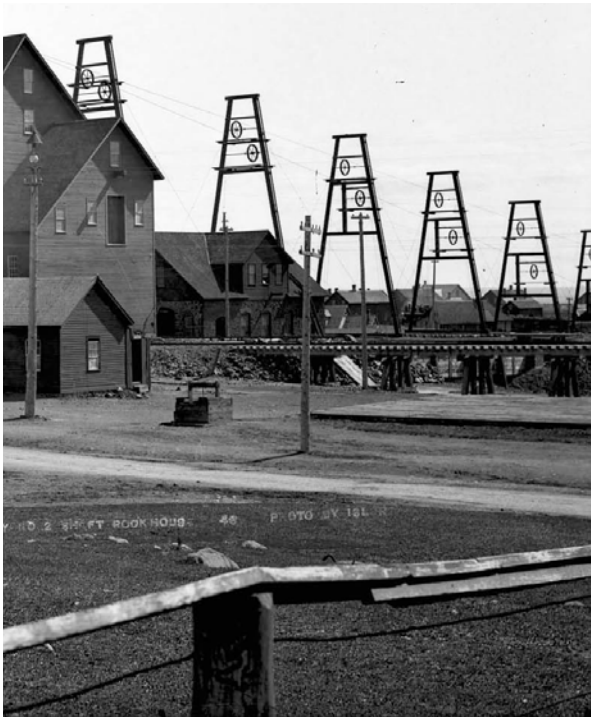


Figure 8- 5: Example of an in-tact line of pulley stands—restoration of the pulley stands at the No. 2 site would help visitors visualize the scale of the historic operations. Image is of the Quincy No. 2 rockhouse in 1894. (source: photo courtesy of the MTU Archives)

Project S: Develop Picnic Area near No. 2 Hoist Houses

- Establish a picnic area near the No. 2 Hoist Houses.
    - Prior to start of project, conduct compliance addressing archeological resources within the project area.
    - Individual(s) with in-depth understanding of the historic landscape to flag the locations of site elements and areas that require grading to provide an accessible route.
    - Vegetation removal crew to remove marked vegetation.
    - Apply approved herbicide to cut stumps to discourage continued growth. Follow guidelines for herbicide application provided the Weed Control Methods Handbook.
    - Remove cut vegetation.
        - If equipment and an acceptable location are available, consider shredding and composting the materials for use by the local community.
        - Alternately, if an acceptable burn pile location is nearby, stockpile materials and burn as soon as possible. If no acceptable burn pile location is nearby, remove the materials from the site to avoid creating a fire hazard.
- Grade and pave a universally accessible trail from the parking area to the picnic area using exposed aggregate concrete (approximately 25′ x 5′ =125 s.f.). Also grade and pave an accessible portion of the picnic area (approximately 25′ x 25′ = 625 s.f.)
        - Clear and grade trail route and accessible picnic area.
        - Apply 6″ gravel base course along trail route and accessible picnic area.
        - Install concrete with exposed aggregate surface. Utilize aggregate that matches the site rock material in color. Apply a retardant to the surface of the aggregate to emulate a gravel appearance.
    - Develop a small picnic area including:
        - 6 picnic tables
        - 2 Trash receptacle
        - Views of No.2 and No.4 Area (included in projects C, D, G, and H)

Project T: Develop Parking Lot near No. 2 Hoist Houses

- Prior to start of project, conduct compliance addressing archeological resources within the project area.
- Individual(s) with in-depth understanding of the historic landscape to flag the approximate locations of the edges of the parking lot and vegetation to be removed.
- Vegetation removal crew to remove marked vegetation.
- Apply approved herbicide to cut stumps to discourage continued growth. Follow guidelines for herbicide application provided the Weed Control Methods Handbook.
- Remove cut vegetation.
    - If equipment and an acceptable location are available, consider shredding and composting the materials for use by the local community.
    - Alternately, if an acceptable burn pile location is nearby, stockpile materials and burn as soon as possible. If no acceptable burn pile location is nearby, remove the materials from the site to avoid creating a fire hazard.

- Grade and pave the parking lot.
    - Clear and grade trail route and accessible picnic area.
    - Apply gravel base course along trail route and accessible picnic area.
    - Install concrete with exposed aggregate surface. Utilize aggregate that matches the site rock material in color. Apply a retardant to the surface of the aggregate to emulate a gravel appearance.

Project U: Remove parking area on west side of No. 2 Hoist Houses

- Adjust grades to discourage vehicles from using this route.

Project V: Construct road and parking from Lower Pewabic Road to Supply House

- Prior to start of project, conduct compliance addressing archeological resources within the project area.
- Individual(s) with in-depth understanding of the historic landscape to flag the approximate locations of the edges of the parking lot and vegetation to be removed.
- Remove existing gravel road connecting to U.S. 41 by grading area to discourage vehicles from using this route. Remove curb cut (add curb, approximately 50 linear feet) and paved access drive (remove approximately 400 s.f. pavement).
- Vegetation removal crew to remove marked vegetation.
- Apply approved herbicide to cut stumps to discourage continued growth. Follow guidelines for herbicide application provided the Weed Control Methods Handbook.
- Remove cut vegetation.
    - If equipment and an acceptable location are available, consider shredding and composting the materials for use by the local community.
    - Alternately, if an acceptable burn pile location is nearby, stockpile materials and burn as soon as possible. If no acceptable burn pile location is nearby, remove the materials from the site to avoid creating a fire hazard.
- Grade and pave road with gravel matching that present on the site. Approximately 300' x 16' = 4,800 s.f. surface, 6" base and 4" surface course.
- No extra pavement needed at parking lot.

Project W: Preserve Poor Rock Piles in the Historic Industrial Core

- Prior to start of project, conduct compliance addressing archeological resources within the project area.
- Remove woody vegetation to open views to poor rock piles (included in vegetation management project).
- Patrol rock piles to discourage mining.
- Post signs to discourage collection of artifacts and specimens.
- Design professional, simple, small scale signs to identify the mine locations (see Figure 8-3).
- Coordinate with residents and land owners regarding the signs.
- Fabricate the signs.
- Install the signs.



Figure 8- 6: Poor Rock Piles viewed in a Keweenaw County Postcard (source: photo courtesy of the MTU Archives, acquired from Scott See, 187).

Project X: Restore portions of railroad grades, tracks, and trestles adjacent to the No. 2 Shaft-Rockhouse

- Conduct research to determine details of historic features in this area.
- Develop design documents to ensure appropriate installation.
- Conduct review with SHPO and MWAC.
- Implement the design.

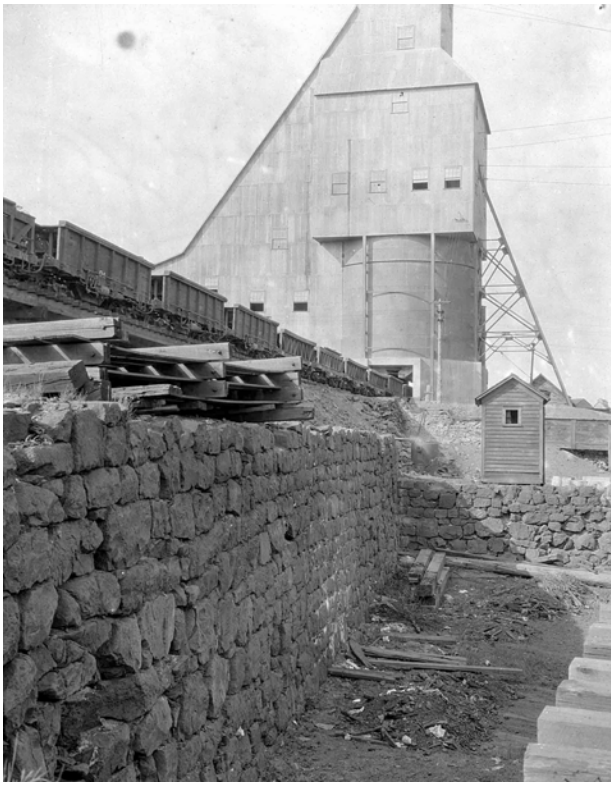


Figure 8- 7: Example of location where a portion of the railroad and associated structures could be partially restored to interpret the movement of materials through the landscape. (source: photo courtesy of the MTU Archives)

Project Y: Restore portions of railroad grades, tracks, and trestles adjacent to the No. 5 Boiler Plant

- Conduct research to determine details of historic features in this area.
- Develop design documents to ensure appropriate installation.
- Conduct review with SHPO and MWAC.
- Implement the design.



Figure 8- 8: Remnants of railroad trestle at No. 5 Boiler Plant, 2008 (source: QE | A)

Project Z: Develop the A.E. Seaman Mineral Museum Area Landscape

- A.E. Seaman Mineral Museum to develop a parking area based on their Master Plan for the site.
- Picnic Area:
    - Grade and pave a universally accessible trail from the parking area to the picnic area (approximately 25′ x 5′ =125 s.f.).
    - Develop a group picnic area including:
        - 6 picnic tables
        - 2 Trash receptacles

Project AA: Survey National Park Service Property within the Quincy Unit

- Survey to include land parcels in the Quincy Unit consisting of approximately 370 acres. The boundary survey will include deed research for the Quincy land parcels and the adjoining parcels and right of way research for U.S. 41 and the County Roads that establish parcel boundaries.
- Field Survey will locate and tie in reference section corners and establish existing roadway alignments.
- Parcel corners will be calculated based on section corner and reference monuments, roads and road rights of way and the existing Quincy parcel and adjoining parcel deeds.
- Eighty capped rebar monuments will be set to mark the corners of the Quincy land parcels.
- CADD files will be prepared for the boundary surveys of the Quincy Unit land parcels. The CADD drawings will range in scale from 1″=50′ to 1″ = 200′ depending on the size of the parcels and the detail needed. One set of electronic survey files and four hard bound copies of the surveys will be provided.

Project BB: Provide Vertical Elements at Historic Shaft Locations

- Erect poles at each shaft location to provide vertical cues to help visitors visualize the historic scale of the mining operations on the landscape.

Project CC: Provide Assistance and Guidance to Landowners to encourage compatible development

- Work with property owners and local municipalities to discourage development that would be incompatible with the historic character of the Quincy Unit. Encourage compatible development where appropriate. This is a planning project that includes working with property owners and local municipalities to develop practical design and implementation guidelines to help preserve historic landscape characteristics. The project would involve meetings with local representatives, field inventory, development of preliminary recommendations, a project workshop to refine the recommendations and ensure that they are feasible, and preparation of the final guidelines in a narrative report format with supporting graphics.

Project DD: Work with MDOT to improve the Portage Lake Overlook

- Work with MDOT to improve the Portage Lake Overlook by collaborating on a design that improves signage, circulation, views, and site features.
- Evaluate the need for public restrooms and determine the feasibility of providing this service at the overlook.

Project EE: Develop an Archeological Research and Education Program

- Park staff to work with the Midwest Archeological Research Center to develop a program focused on archeological research and education. This is a planning project.

Project FF: Provide a Picnic Table at the No.4 Area for Visitor Use

- Determine an appropriate location for an individual picnic table in the No. 4 Area.
- Prepare the surface under and around the location where the picnic table will be located.
- Purchase or fabricate and install the table.

Project GG: No.7 and RR Corridor

- Quincy Mine Hoist Association plans to restore the exterior of the Roundhouse/Enginehouse, service pits, track, wood floor, and install rolling stock exhibits.
- Coordinate planning at this site with the Quincy Mine Hoist Association.
- Prior to start of project, conduct compliance addressing archeological resources within the project area.
- Individual(s) with in-depth understanding of the historic landscape to flag the locations for extending railroad tracks from the building and connecting to other tracks and the water tank. Also indicate areas where historic grades may be revealed and connections may be restored to the No. 2 and No. 4 area. Also indicate areas for vegetation removal to improve views between the No. 7 area and Quincy Hill along the alignment of the No. 2 Adit (included in Projects C-1 and C-2).
- Vegetation removal crew to remove marked vegetation.
- Apply approved herbicide to cut stumps to discourage continued growth. Follow guidelines for herbicide application provided the Weed Control Methods Handbook.
- Remove cut vegetation.
    - If equipment and an acceptable location are available, consider shredding and composting the materials for use by the local community.
    - Alternately, if an acceptable burn pile location is nearby, stockpile materials and burn as soon as possible. If no acceptable burn pile location is nearby, remove the materials from the site to avoid creating a fire hazard.
- Conduct light grading to prepare for implementation.
- Install tracks.
- Rehabilitate the water tank.
- Provide interpretive waysides at the Roundhouse/Enginehouse and at the No. 7 Shaft location (included in Project J).
- Develop interpretive brochures about this area (included in Project K).

Project HH: Interpret Underground Network of Drifts and Stopes

- Individual(s) with in-depth understanding of the historic landscape and the underground network to determine an appropriate approach to determine surface locations of underground features.
- Design, construct, and install small signs with key to underground features (consider including drift number and depth).
- Develop interpretive information about this area (included in Project K).

Project II: Interpret the View of Quincy Hill from the Waterfront in Houghton

- Work with Houghton representatives to determine an appropriate location for an interpretive wayside.
- Wayside design and construction included in Project J.

Project JJ: Develop a design palette for site amenities in the Quincy Unit.

- Park staff to work with consultants to develop a palette of site amenities including signs, picnic tables, trash receptacles, and other features that are compatible with the historic industrial character of the Quincy Unit.

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter IX: Consultation and Coordination

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter IX: Consultation and Coordination

Internal Scoping

Internal scoping was conducted by an interdisciplinary team of professionals from Keweenaw National Historical Park, the NPS Midwest Regional Office and members of the consultant team. Interdisciplinary team members met in October 2007 and June 2008 to discuss the purpose and need for the project; various alternatives; potential environmental impacts: past, present, and reasonably foreseeable projects that may have cumulative effects; and possible mitigation measures. The team also gathered background information during the course of their visit. Over the course of the project, NPS and consultant team members have conducted individual site visits to view and evaluate the proposed treatment alternatives.

External Scoping

External public scoping was conducted to inform various stakeholders and the public about the proposal to establish treatments for historic landscapes at Keweenaw National Historical Park and to gather comments about input on the preparation of this CLR / EA. An early meeting with stakeholders was conducted on June 17, 2008 at the Franklin Township Fire Hall at the Quincy Unit. Stakeholders identified issues that should be considered and/or addressed in the CLR / EA including; prioritization of viewsheds and land uses, vegetation management, vehicle and pedestrian access, visitor safety and active interpretation of site features. A public scoping meeting was conducted at the Franklin Township Fire Hall on June 18, 2008. The public offered limited input on issues or direction the CLR / EA should take; however there were several questions related to different landscape elements of the Quincy Unit, the CLR / EA process and project schedule. Following the public scoping meeting, NPS partners and NPS staff led a walking tour of the Historic Industrial Core area.

To publicize the stakeholder and public scoping meetings, a press release was forwarded to local media outlets and a public notice was forwarded to NPS partners and placed in public locations throughout Hancock and Houghton, MI for the public scoping meeting. Individual letters were also sent to NPS partners and other stakeholders inviting them to the stakeholder meeting.

A press release was forwarded to local media outlets to publicize a subsequent public information meeting. The press release resulted in an article in the Daily Mining Gazette and an interview on the local public radio station. Public meeting notices were provided to NPS partners and displayed in public locations throughout Hancock and Houghton, MI. The public information meeting was held in the City of Hancock Council Chambers during the evening of Wednesday March 4, 2009. Thirty-three people attended the public information meeting. To generate discussion, meeting participants viewed pre-decisional landscape treatment concepts. Public discussion ranged from making zoning recommendations in advance of local government to ensuring a quality visitor experience and amenities.

Agency Consultation

In addition to the internal and external scoping, the project team contacted state and federal agencies for information and comments relevant to the proposed action. Agencies contacted included:

Federal

- U.S. Department of Interior – U.S. Fish and Wildlife Service. The Section 7 coordination letter forwarded to USFWS was dated June 29, 2007. The USFWS responded to the NPS in a letter dated July 17, 2007.

State

- Michigan Natural Features Inventory. The information request letter to MNFI was forwarded in July 2007. The MNFI responded to the NPS on July 11, 2007.
- Michigan Department of Natural Resources. An email request was forwarded to MDNR August 11, 2008. The Michigan DNR responded via email on September 23, 2008.
- Michigan Department of History, Arts and Libraries. Early contact with the State Historic Preservation Officer was initiated in 2009. The SHPO received the internal NPS draft of the CLR / EA, which included Chapters 1-6. The SHPO responded with general support for the project in a letter dated February 5, 2009; however the SHPO stated that they will not able to fully respond until the public review CLR / EA is provided.

Federal and State response letters are provided at the end of this chapter.

Cultural Landscape Report / Environmental Assessment Review

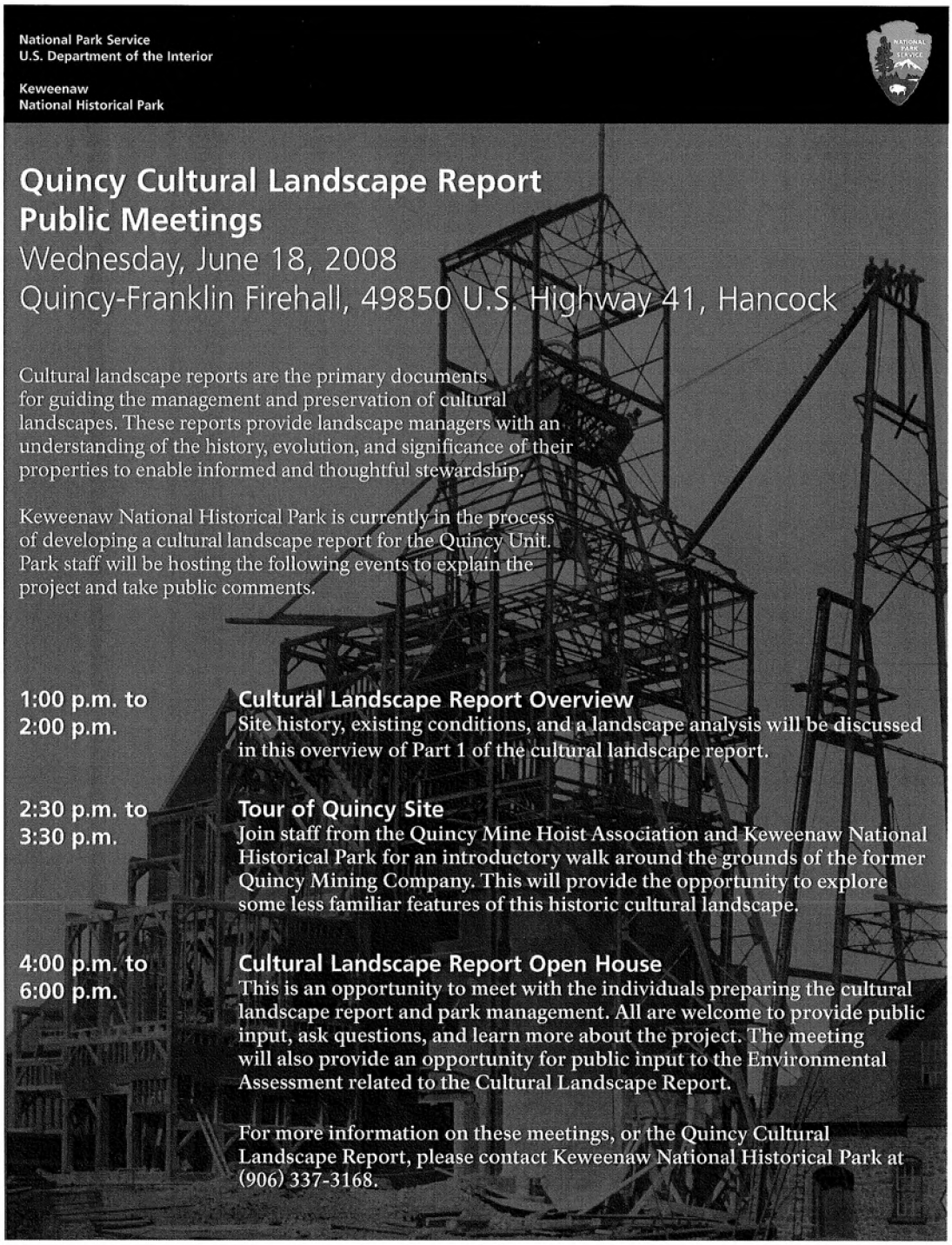
To inform the public of the availability for the CLR / EA, the NPS published and distributed a press release to various agencies and members of the public on the park's mailing list, as well as place an ad in the local newspaper. Copies of the CLR / EA will be provided to interested individuals, upon request. Copies of the document are available for review at the CLK Public Library in Calumet, MTU Van Pelt Library and Portage Lake District Library in Houghton, and the Hancock School Public Library in Hancock, Michigan. Other copies are available at Franklin Township, Quincy Township, the City of Hancock, and the NPS website.

The CLR / EA is subject to a 30-day public review and comment period. During this time, the public is encouraged to submit their written comments to the NPS address provided below:

CLR / EA Comments
ATTN: Tom Baker, Management Assistant
Keweenaw National Historical Park
25970 Red Jacket Road
Calumet, MI 49913

Another option for public comment is to access the NPS website for Planning, Environment and Public Comment (PEPC) at parkplanning.nps.gov and choose Keweenaw National Historical Park to provide comments on the CLR/EA. Following the close of the comment period, all

public comments will be reviewed and analyzed, prior to the release of a decision document. In response to internal NPS and public review, the NPS will make appropriate changes to the CLR / EA as needed.



Thomas M Baker
06/16/2008 08:21 AM
EDT

To: gazette@mininggazette.com, khauglie@mininggazette.com, sentinel@up.net, maureen@ontonagonherald.com, tv6news@wluctv6.com, jjewell@wluctv6.com, tv13@nmu.edu,
cc: Anita Wuoti/Partner/NPS@NPS, Betsy Rossini/ISRO/NPS@NPS, Brian Hoduski/KEWE/NPS@NPS, Charles Masten/KEWE/NPS@NPS, Dan Johnson/KEWE/NPS@NPS, Daniel A Brown/KEWE/NPS@NPS, Ellen
Subject: Keweenaw NHP Press Release

For IMMEDIATE and Tuesday, June 17, 2008 Release
Digital files are attached for your convenience.

Contact: Tom Baker, Management Assistant
Phone: (906) 337-1104 ext. 131

Or Contact: Steve DeLong, Landscape Architect
Phone: (906) 337-1104 ext. 122

Park Invites Public - Seeks Input on CLR

(Calumet, MI) Keweenaw National Historical Park (NHP) invites the public to a presentation of Part One of the "Quincy Cultural Landscape Report and Environmental Assessment" (CLR/EA) at the Quincy-Franklin Firehall on Quincy Hill (US-41) on Wednesday, June 18 from 1:00-2:00 P.M. The informational meeting will be followed by a tour of the Quincy site, hosted by the Quincy Mine Hoist Association from 2:30-3:30 P.M., and a CLR Open House back at the Quincy-Franklin Firehall from 4:00-6:00 P.M.

The presentation will provide an overview of the CLR, which contains historic research and documentation of the Quincy landscape over time; inventory and mapping of existing conditions; and an analysis of landscape character and integrity. This report is the result of a collaborative effort by park staff and a consulting team from Quinn Evans | Architects and Woolpert, LLC.

The public is invited to join staff from the park and the Quincy Mine Hoist Association for a tour of the Quincy site, which will provide an opportunity to explore some less familiar features of this historic cultural landscape.

The Open House will provide an opportunity for public input. Environmental assessment, in accordance with the National Environmental Policy Act of 1969, is an important component of this project, and one where public input is of high value to the process. Environmental assessment considers the effect and impact of any action on the overall human environment, including the natural, built, tribal, economic, and social environments. The careful consideration of treatment alternatives will lead the way to a recommended treatment plan, which will guide National Park Service efforts in the Quincy area well into the future. Public involvement is important to the success of this project.

The project team welcomes discussion and comments from all interested parties. Please contact Keweenaw NHP Landscape Architect Steve DeLong, ASLA at 337-1104 x 122 if you wish to know more about the CLR/EA effort, or if you have information to share regarding the history or management of the Quincy Unit. The park looks forward to public participation at the meetings.

* * *


CLR-061608.doc

CLR-061608.pdf

Thanks for helping to spread the word!


National Park Service
U.S. Department of the Interior
Keweenaw National Historical Park
Quincy Cultural Landscape Report
Public Meeting
Wednesday, March 4, 2009
City of Hancock Council Chambers
399 Quincy Street, Hancock
Cultural landscape reports provide park managers with an understanding of the history, evolution, and historical significance of historic landscapes. They foster informed and thoughtful management and preservation of these properties. And they recommend future treatment of a historic landscape.
Keweenaw National Historical Park is developing a cultural landscape report for the Quincy Unit, including Quincy Hill, and to a lesser degree, the Quincy Smelter. Park staff will be hosting a public meeting to discuss the project with the public.
7:00 p.m. to 8:30 p.m.
Public Meeting
This meeting will present an overview of preliminary landscape treatment alternatives and provide an opportunity to discuss suggestions, preferences, and concerns. All are welcome to attend, ask questions, provide comments, and learn about the project. The meeting will also be an opportunity to comment on the forthcoming Environmental Assessment of the treatment alternatives.
For more information on this meeting, or the Quincy Cultural Landscape Report, please contact Keweenaw National Historical Park at (906) 337-3168 or visit us on the web at www.nps.gov/kewe.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
East Lansing Field Office (ES)
2651 Coolidge Road, Suite 101
East Lansing, Michigan 48823-6316

IN REPLY REFER TO:

July 17, 2007

Mr. David Dister
Woolpert, Inc.
1910 Pine Street, Ste. 420
St. Louis, MO 63130-2254

Re: Endangered Species List Request, Proposed Keweenaw National Historic Park-Quincy Unit Project, Calumet, Houghton County, Michigan

Dear Mr. Dister:

Thank you for your June 29, 2007 request for information regarding federally listed and proposed threatened and endangered species, candidate species, or critical habitat near the proposed project. Your request and this response are made pursuant to section 7 of Endangered Species Act of 1973, as amended (Act). You are conducting an ecological assessment for the park. .

Your photo of the project location indicates this is a partially undeveloped, forested site. However, most of it is developed. You should determine whether the undeveloped portions of the site may be suitable for Canada lynx, and/or whether lynx may be affected. If you determine the site is not suitable, or that lynx are not present at the site, or that lynx would not be affected by this proposed project, you may conclude section 7 consultation without further contact with this office. If Canada lynx may be affected, further contact with us would be warranted.

Please refer to the Michigan Department of Natural Resources Endangered Species Assessment website, *www.mcgi.state.mi.us/esa* and contact Ms. Lori Sargent at *sargen12@michigan.gov* for information regarding the protection of threatened and endangered species under State law. State law may require a permit in advance of any work that could potentially damage, destroy or displace state-listed species.

For future endangered and threatened species list requests and consultations with the U.S. Fish and Wildlife Service, refer to our new endangered species, section 7 consultation and technical assistance website, located at *http://www.fws.gov/midwest/endangered/section7/s7process/index.htm*. Information about the website is attached.

We appreciate your concern for endangered and threatened species. Any questions can be directed to Tameka Dandridge of this office at Tameka_Dandridge@fws.gov or 517/351-8315.

cc: MDNR-Wildlife Division, Lansing, MI (Attn: Lori Sargent)

MICHIGAN STATE
UNIVERSITY
EXTENSION

Enclosed is the data requested from Michigan Natural Features Inventory (MNFI). This information is a list of Element Occurrences (EO) at the section level. The sections contain the centroid of the EO. In some cases, the extent of an animal's range or a community type may extend past the section containing the centroid.

This information is the best available regarding elements tracked by MNFI. This list, however, is not a definitive statement on the presence, absence, or condition of the natural features in any given locality. Plant and animal populations and natural communities change with time. Also, not every site has been specifically surveyed. Therefore, the information provided should not be regarded as a complete statement on the occurrence of special natural features of the area in question.

The recipient(s) of the information services understand that state endangered and threatened species are protected under state law (Act 451 of 1994, the Natural Resources and Environmental Protection Act, Part 365, Endangered Species Protection). Any questions, observations, new findings, violations or clearance of project activities should be conducted with the Michigan Department of Natural Resources, Wildlife Division. Contact Lori Sargent or Todd Hogrefe at (517) 373-1263. The recipient(s) of the information services understand that federally endangered and threatened species are protected under federal law (Endangered Species Act of 1973). Any questions, observations, new findings, violations or clearance of project activities should be conducted with the U.S. Fish and Wildlife Service in East Lansing. Their phone number is (517) 351-2555. Recipients of the information are responsible for ensuring the protection of protected species and obtaining proper clearance before project activities begin.

This information is used to guide conservation and land management activities. Some of the element records are historical. While this information may not be important for regulatory purposes, it is important for management and restoration purposes and for scientific use.

The following codes are used for the Federal and State status:

Federal Status:

C = Candidate - species being considered for federal status
LE = Listed endangered
LT = Listed threatened
LELT = Listed endangered in part of the range, threatened in a different part.
PE = Proposed endangered
PT = Proposed threatened
PS = Partial status - status in only a portion of the range

State status:

E = Endangered (Legally protected)
T = Threatened (Legally protected)
SC = Special Concern (Rare or status uncertain; not legally protected)
X = Presumed extirpated (Legally threatened if rediscovered)

For questions about MNFI and the data, contact Ed Schools, MNFI, (517) 373-0798, or schoolse@michigan.gov



Michigan Natural
Features Inventory

P.O. Box 30444
Lansing, MI
48909-7944

(517) 373-1552
FAX: (517) 373-9566

Michigan State University Extension programs and materials are open to all without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, marital status, or family status.

MSU is an affirmative-action, equal-opportunity institution.

Hancock Quadrangle - 4708825

Scientific Name	Common Name	Last Observed	Federal Status	State Status	Element Category	TOWN	RANGE	SECTION
Crataegus douglasii	Douglas's Hawthorn	2001-06-08		SC	Plant	55N	34W	26
Haliaeetus leucocephalus	Bald Eagle	1996	LT,PDL	T	Animal	55N	34W	12

Chassell Quadrangle - 4708815

Scientific Name	Common Name	Last Observed	Federal Status	State Status	Element Category	TOWN	RANGE	SECTION
Crataegus douglasii	Douglas's Hawthorn	1950-06-13		SC	Plant	54N	34W	1
Crataegus douglasii	Douglas's Hawthorn	1959-06-30		SC	Plant	55N	34W	35

From: Lori Sargent [mailto:sargentl@michigan.gov]
Sent: Tue 9/23/2008 1:55 PM
To: DiMisa, Joe
Subject: T&E Species Review

Dear Mr. Di Misa:

RE: Threatened/endangered species review for Keewenah National Historical Park, Quincy Unit

The location of the proposed project was checked against known localities for rare species and unique natural features, which are recorded in a statewide database. This continuously updated database is a comprehensive source of information on Michigan's endangered, threatened and special concern species, exemplary natural communities and other unique natural features. Records in the database indicate that a qualified observer has documented the presence of special natural features at a site. The absence of records may mean that a site has not been surveyed. The only way to obtain a definitive statement on the presence of rare species is to have a competent biologist perform a field survey.

Under Act 451 of 1994, the Natural Resources and Environmental Protection Act, Part 365, Endangered Species Protection, "a person shall not take, possess, transport, ... fish, plants, and wildlife indigenous to the state and determined to be endangered or threatened," unless first receiving an Endangered Species Permit from the Department of Natural Resources, Wildlife Division. Responsibility to protect endangered and threatened species is not limited to the list below. Other species may be present that have not been recorded in the database.

The presence of threatened or endangered species does not preclude activities or development, but may require alterations in the project plan. Special concern species are not protected under endangered species legislation, but recommendations regarding their protection may be provided. Protection of special concern species will help prevent them from declining to the point of being listed as threatened or endangered in the future.

The following is a summary of the results for the project in Houghton County.

The following list includes unique features that are known to occur on or near the site(s) and may be impacted by the project.

common name	status	scientific name
Douglas' hawthorn	special concern	Crataegus douglasii

Douglas's hawthorn inhabits borders of woods, often in rocky woodlands and on rock summits, also in thickets on sand dunes and shores. This is a tall shrub, Michigan's only Crataegus with dark blue-black fruit, easy to recognize when mature. Flowering occurs in May, fruiting in August and September. Special concern species are not protected under endangered species legislation, but they are considered to be rare in Michigan.

In summary, the project site may include suitable habitat for the above listed species. Potential impacts might include direct destruction of species and disturbance of critical habitat.

NOTE: An e-mail will get a quicker response from me than voicemail in most cases

Lori Sargent
Nongame Wildlife Biologist
Wildlife Division
Michigan Dept. of Natural Resources
PO Box 30180
Lansing, MI 48909
SargentL@michigan.gov (mailto:SargentL@michigan.gov)
517-373-9418

COPY

STATE OF MICHIGAN
DEPARTMENT OF HISTORY, ARTS AND LIBRARIES
LANSING

JOHN ENGLER
GOVERNOR

DR. WILLIAM ANDERSON
DIRECTOR

February 5, 2009

JAMES CORLESS
KEWEENAW NATIONAL HISTORICAL PARK
P O BOX 471
25970 RED JACKET ROAD
CALUMET MI 49913

RE: ER-930564 Keweenaw National Historical Park draft Cultural Landscape Report & Environmental Assessment (CLR/EA), Hancock, Houghton County (NPS)

Dear Mr. Corless:

We have reviewed the draft *Quincy Mine Historic Landscape Cultural Landscape Report/Environmental Assessment.* We concur in the report's general Quincy Unit landscape treatment guidelines. We are not in a position to fully evaluate the several alternative treatment plans for the historic industrial core but support the general concepts that buildings and ruins be stabilized, waste rock piles be left intact, historic views be preserved, and new development – particularly along US-41 and atop the Quincy Hill – be controlled to the degree possible through all the methodologies proposed in the report.

We support the Keweenaw National Historical Park's plans to investigate, document, and protect archaeological resources. We agree that the intent to conduct an archaeological survey of the Quincy Unit and prepare an Archaeological Overview for the park are important steps in that process.

The State Historic Preservation Office (SHPO) is not the office of record for this **undertaking**. You are therefore asked to maintain a copy of this letter with your environmental review record for this undertaking. If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.

If you have any questions, please contact Brian Grennell, Environmental Review Specialist, at (517) 335-2721 or by email at ER@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Brian D. Conway
State Historic Preservation Officer

BDC: DLA:ROC:bgg

STATE HISTORIC PRESERVATION OFFICE, MICHIGAN HISTORICAL CENTER
717 WEST ALLEGAN STREET • P.O. BOX 30740 • LANSING, MICHIGAN 48909-8240
(517) 373-1630
www.michigan.gov/hal

STATE OF MICHIGAN
JENNIFER GRANHOLM
GOVERNOR
MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY
LANSING
KEITH MOLIN
EXECUTIVE DIRECTOR

April 28, 2010

STEVE DELONG
KEWEENAW NATIONAL HISTORICAL PARK
P O BOX 471
25970 RED JACKET ROAD
CALUMET MI 49913

RE: ER-930564 Keweenaw National Historical Park Cultural Landscape Report & Environmental Assessment (CLR/EA), Hancock, Houghton County (NPS)

Dear Mr. DeLong:

We have reviewed the amended *Quincy Mine Historic Landscape Cultural Landscape Report/Environmental Assessment* final report, and we concur in the report's general Quincy Unit landscape treatment guidelines. Based on the information provided for our review, it is the opinion of the State Historic Preservation Officer (SHPO) that the effects of the proposed undertaking do not meet the criteria of adverse effect [36 CFR § 800.5(a)(1)]. Therefore, we concur with the determination of the National Park Service (NPS) that the landscape treatments proposed in the report will **no adverse effect** [36 CFR § 800.5(b)] on the Quincy Mining Company Historic District, which is a National Historic Landmark.

The views of the public are essential to informed decision making in the Section 106 process. Federal Agency Officials or their delegated authorities must plan to involve the public in a manner that reflects the nature and complexity of the undertaking, its effects on historic properties and other provisions per 36 CFR § 800.2(d). We remind you that Federal Agency Officials or their delegated authorities are required to consult with the appropriate Indian tribe and/or Tribal Historic Preservation Officer (THPO) when the undertaking may occur on or affect any historic properties on tribal lands. **In all cases**, whether the project occurs on tribal lands or not, Federal Agency Officials or their delegated authorities are also organizations that might attach religious and cultural significance to historic properties in the area of potential effects and invite them to be consulting parties per 36 CFR § 800.2(c).

This letter evidences the NPS's compliance with 36 CFR § 800.4 "Identification of historic properties" and 36 CFR § 800.5 "Assessment of adverse effects", and the fulfillment of the NPS's responsibility to notify the SHPO, as a consulting party in the Section 106 process, under 36 CFR § 800.5(c) "Consulting party review".

The State Historic Preservation Office (SHPO) is not the office of record for this **undertaking**. You are therefore asked to maintain a copy of this letter with your environmental review record for this undertaking. If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.

If you have any questions, please contact Brian Grennell, Environmental Review Specialist, at (517) 335-2721 or by email at ER@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Brian D. Conway
State Historic Preservation Officer

BDC: DLA:ROC:bgg

Equal Housing Lender

STATE HISTORIC PRESERVATION OFFICE
702 WEST KALAMAZOO STREET • P.O. BOX 30740 • LANSING, MICHIGAN 48909-8240
www.michigan.gov/shpo (517) 373-1630 FAX (517) 335 0348

Printed by members of: SEIU

THIS PAGE LEFT BLANK INTENTIONALLY

Bibliography

THIS PAGE LEFT BLANK INTENTIONALLY

Bibliography

Books

Halsey, John R. ed. *Retrieving Michigan's Buried Past: Archaeology of the Great Lakes State.* Bloomfield Hills, Michigan: Cranbrook Institute of Science. 1999

Houghton, Jacob Jr. *Reports of William A. Burt and Bela Hubbard, esqs., on the Geography, Topography, and Geology of the U.S. Surveys of the Mineral Region of the South Shore of Lake Superior, for 1845*. Detroit: C. Wilcox, 1846.

Krause, David J. *The Making of a Mining District: Keweenaw Native Copper 1500-1870*. Detroit: Wayne State University Press. 1992.

Kurta, Allen. *Mammals of the Great Lakes Region*. Ann Arbor: The University of Michigan Press. 1995.

Lankton, Larry. *Cradle to Grave: Life, Work, and Death and the Lake Superior Copper Mines.* New York: Oxford University Press. 1992.

Lankton, Larry D. and Charles K. Hyde. *Old Reliable: An Illustrated History of the Quincy Mining Company*. Hancock, MI: Quincy Mine Hoist Association. 1982.

Lankton, Larry D. *Beyond the Boundaries: Life and Landscape at the Lake Superior Copper Mines, 1840-1875.* New York: Oxford University Press. 1999.

Magnaghi, Russell M. *A Guide to the Indians of Michigan's Upper Peninsula.* Marquette, MI: Belle Fontaine Press. 1984.

Martin, Susan. *Wonderful Power: The Story of Ancient Copper Working in the Lake Superior Basin*. Detroit: Wayne State University Press. 1999.

Morton Ron and Carl Gawboy. *Talking Rocks: Geology and 10,000 Years of Native American Tradition in the Lake Superior Region.* Minneapolis: University of Minnesota Press. 2000.

Sauer, Carl. O. *Seventeenth Century North America.* Berkeley: Turtle Island Foundation. 1980.

Tanner, Helen Hornbeck ed. *The Settling of North America: the Atlas of the Great Migrations into North America from the Ice Age to the Present.* New York: Macmillan. 1995.

Thurner Arthur. *Strangers and Sojourners: A History of Michigan's Keweenaw Peninsula* Detroit: Wayne State Press. 1994.

Whittlesey, Charles *Ancient Mining on the Shores of Lake Superior*. Washington City: Smithsonian Institution. 1863.

Zedeño, M. Nieves. et al., *Final Report: Traditional Ojibway Resources in the Western Great Lakes: An Ethnographic Inventory in the States of Michigan, Minnesota, and Wisconsin*. Tucson, Arizona: University of Arizona in Tucson, Bureau of Applied Research in Anthropology. 2001.

Periodicals

Johnson, F. Jr., "The Upper Peninsula of Michigan," in *Harper's New Monthly Magazine*, 64 no. 384 (May 1882): 892-893.

Yardborough, Edward T. "Quincy Mining Company Landscape in Keweenaw National Historical Park," *CRM: The Journal of Heritage Stewardship* No 7—1998 9.

Whittlesey, Charles W. "Ancient Mining on the Shores of Lake Superior," *Smithsonian Contributions to Knowledge*, Vol. 13, Contribution no. 155, pages 1-29. Washington, D.C. 1863.

Government Reports

Council on Environmental Quality Regulations, 40 CFR 1508.7

Fiala, Frank. *Keweenaw National Historical Park Superintendent's Annual Report Fiscal Year 2005*. U.S. Department of the Interior, National Park Service, 2005.

Great Lakes Indian Fish and Wildlife Commission. *Treaty Rights*, 2004 Edition. Odanah, Wisconsin: Great Lakes Indian Fish and Wildlife Commission, 2003.

Houghton County Michigan. *Land Use Plan (County Development Plan)*. 2004.

Keweenaw National Historical Park. *Government Performance and Results Act Strategic Plan for Keweenaw National Historical Park, Fiscal Years 2005-2008 (October 1, 2005-September 30, 2008)*. Calumet, Michigan, 2006.

Lankton, Larry D. *Keweenaw National Historical Park: Historic Resource Study*. 2003. National Park Service.

Lidfors, Kathleen. *Potential National Historic Landmark Eligibility of Historic Copper Mining Sites on the Keweenaw Peninsula, Michigan*. 1987.

Lidfors, Kathleen. *Quincy Mine Historic District, National Register Nomination,* 1988.

Page, Robert R., Cathy A. Gilbert, and Susan A. Dolan. *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques*. Washington, DC: U.S. Department of the

Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program. 1998.

Public Law 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Public Law 94-52, July 3, 1975, Public Law 94-83, August 9, 1975, and Public Law 97-258, § 4(b), Sept. 13, 1982. *National Environmental Policy Act.*

U.S. Department of the Interior, National Park Service. *Environmental Assessment and Finding of No Significant Impact for Fire Management Plan for Keweenaw National Historic Park*. February 3, 2005. Keweenaw National Historic Park. 2005b.

U. S. Department of the Interior, National Park Service. *Final General Management Plan and Environmental Impact Statement, Keweenaw National Historical Park*. Washington D.C.: Government Printing Office. April 1998.

U.S. Department of the Interior, National Park Service. *Fire Management Plan for Keweenaw National Historic Park*. February 3, 2005. Keweenaw National Historical Park.

U.S. Department of the Interior, National Park Service. *National Register Bulletin: How to Apply the National Register Criteria for Evaluation.* 1997.

U. S. Department of the Interior, National Park Service. *Management Policies*. Washington D.C.: Government Printing Office. 2006.

U.S. Department of the Interior, National Park Service. *Quincy Mining Company Historic District and Calumet Historic District National Historic Landmarks Integrity and Impact Assessment Report*. National Park Service Midwest Support Office, Cultural Resource Management, Midwest Archaeological Center, 13 September 1999.

University of Idaho, Park Studies Unit. *Keweenaw National Historical Park Visitor Study*. Social Sciences Program, National Park Service, U.S. Department of the Interior. 2004.

Wilson, S.E. *Bedrock Geology of Michigan*. Michigan Department of Environmental Quality. Geological Survey Division. 1987.

Web Sources

Copper Country. Com, website, www.coppercountry.com/KBIC.php, accessed 2007.

Michigan Technological University website, http://www.geo.mtu.edu/ accessed 20 July 2007.

Travel, Tourism, and Recreation Resource Center, Michigan State University, website, http://www.tourismcenter.msu.edu/ accessed 2007. T

Milwaukee Public Museum Azatlan Collection, website http://www.mpm.edu/collections/artifacts/index.php, accessed 2007.

National Historic Landmarks Program website, Quincy Mining Company Historic District, http://tps.cr.nps.gov/nhl/detail.cfm?ResourceId=2058&ResourceType=District, accessed 12 July 2006.

National Park Service (NPS) website, http://www.nps.gov/kewe/index.htm, accessed 23 July 2007.

United States Census Bureau, Census data for the State of Michigan and local government, http://www.census.gov/main/www/cen2000.html, accessed 2007.

United States Geological Survey (USGS), Breeding Bird Survey data accessed on website http://www.mbr-pwrc.usgs.gov/bbs/, accessed 2007.

United States Fish and Wildlife Service, National Wetlands Inventory website, http://www.fws.gov/nwi/, accessed 19 July 2007.

United States Department of the Interior, National Park Service, Keweenaw National Historical Park website, http://www.nps.gov/kewe/index.htm, accessed 23 July 2007.

United States Department of Agriculture (USDA) website. http://websoilsurvey.nrcs.usda.gov/app/, accessed on 20 July 2007.

United States Environmental Protection Agency (USEPA), website. http://www.epa.gov/air/data/nonat.html?st~MI~Michigan, accessed on 23 July 2007.

United States Environmental Protection Agency (USEPA), Great Lakes, website. www.epa.gov/glnpo/aoc/trchlke.htrml , accessed April 16, 2007.

United States Fish and Wildlife Service (USFWS), website http://www.fws.gov/nwi/, accessed the National Wetlands Inventory on 19 July 2007.

University of Virginia Historical Census Browser, website, http://fisher.lib.virginia.edu/collections/stats/histcensus/php/newlong3.php, accessed 2007.

Unpublished Reports

Biscombe, Jason, et al. "*Quincy Mine Office Cultural Landscapes Inventory*." 2006. Keweenaw National Historical Park, National Park Service.

Franklin Township and Keweenaw National Historical Park, "*Critical Safety and Preservation Needs Assessment*." 2003. The site was not accessible for inventory due to EPA restraints.

Herzberg, Rachael. "*National Register of Historic Places Registration Form: East Quincy*." 2004.

Hyde, Charles K. *"An Economic and Business History of the Quincy Mining Company,"* in HAER No. MI-2, an unpublished report for the National Park Service, Historic American Engineering Record, Washington, DC: 1978.

Lankton, Larry D. "*Technological Change at the Quincy Mine, c. 1846-1931*," in HAER No. MI-2, an unpublished report for the National Park Service, Historic American Engineering Record (Washington, DC: 1978), 273-274.

Martin, Patrick and Gianfranco Archimede. *"The Quincy Mining Company Smelting Works, 1898: Histoircal Land Use Survey Project."* 2002. Industrial Archaeology Program, Michigan Technological University for Keweenaw National Historical Park.

Mishkar, Larry. "*Land Use History and Archaelogical Survey Seaman Mineral Museum Project Quincy Mine National Historic Landmark, Houghton County, Michigan*." Industrial Arahaeology Laboratory Michigan Technological University, Houghton Michigan, Janurary 2005.

McNear, Sarah. "*Quincy Mining Company: Housing and Community Services, c. 1860-1931*," in HAER No. MI-2, an unpublished report for the National Park Service, Historic American Engineering Record (Washington, DC: 1978), 516.

O'Connell, Charles F., Jr. "*Quincy Mining Company: Stamp Mills and Milling Technology, c. 1860-1931*," in *HAER No. MI-2*, an unpublished report for the National Park Service, Historic American Engineering Record (Washington, DC: 1978), 579.

O'Connell, Charles F., Jr. "*A History of the Quincy and Torch Lake Rail Road Company*," in *HAER No. MI-2*, an unpublished report for the National Park Service, Historic American Engineering Record. Washington, DC: 1978. 663.

See, Scott Fisher. "*Keweenaw National Historical Park, Cultural Landscape Report Quincy Unit – Industrial Artifact Inventory*," unpublished report for the National Park Service, Keweenaw National Historical Park. 17 August, 2006.

See, Scott Fisher. *"Industrial Landmarks: Shaft-Rockhouses of the Keweenaw Copper Mines."* Masters thesis, Master of Science in Industrial Archaeology, Michigan Technological University. 2006

U.S. Department of the Interior, National Park Service. *Draft Long Range Interpretive Plan for Keweenaw National Historical Park*. 2008.

U. S. Department of the Interior, National Park Service. *Management Policies*. Washington D.C.: Government Printing Office. 2006.

Correspondence

Dandridge, Tameka. Memorandum to David Dister, Woolpert, Inc., 17 July 2007. United States Fish and Wildlife Service.

Remlinger, Kathryn. Personal communication 26 June 2007. Grand Valley State University.

See, Scott. Ongoing personal communication and formal presentation at MTU Archival Speaker Series, January 23, 2006.

Smith, Tracy. Personal communication by email 25 July 2007. Houghton County Building Department (building@hougtoncounty.net).

Yarbrough, Ed. Personal communication 28 June 2007. Quincy Mine Hoist Association.

National Park Service
U.S. Department of the Interior

Keweenaw National Historical Park
Calumet, Michigan

EXPERIENCE YOUR AMERICA™