Saugus Iron Works National Historic Site

General Management Plan & Environmental Assessment

Saugus, Massachusetts
April 2002

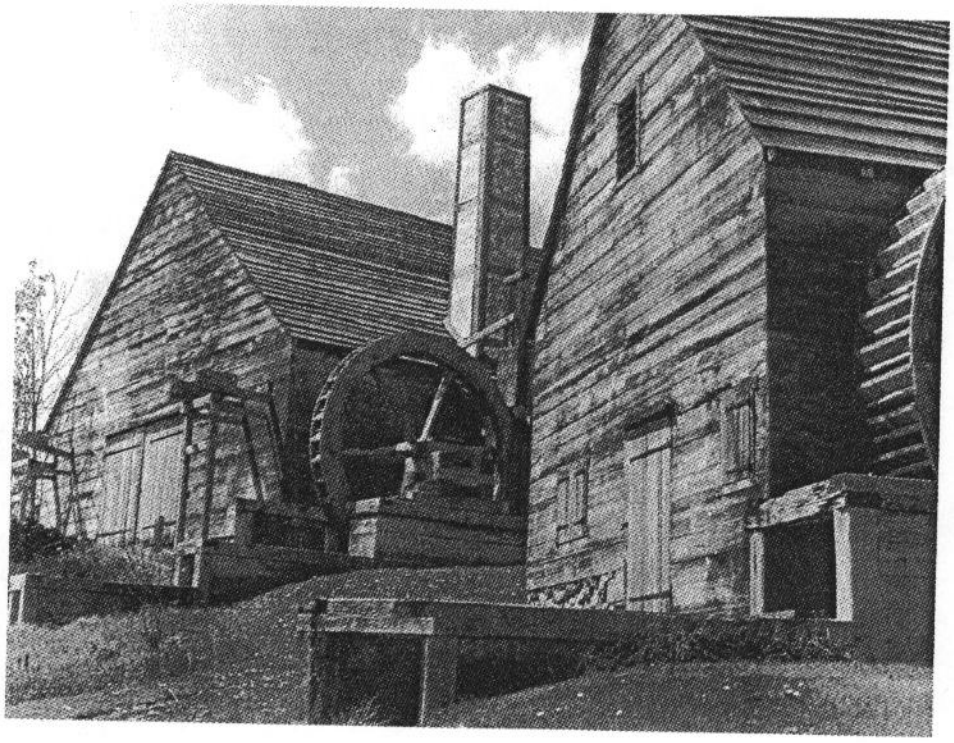


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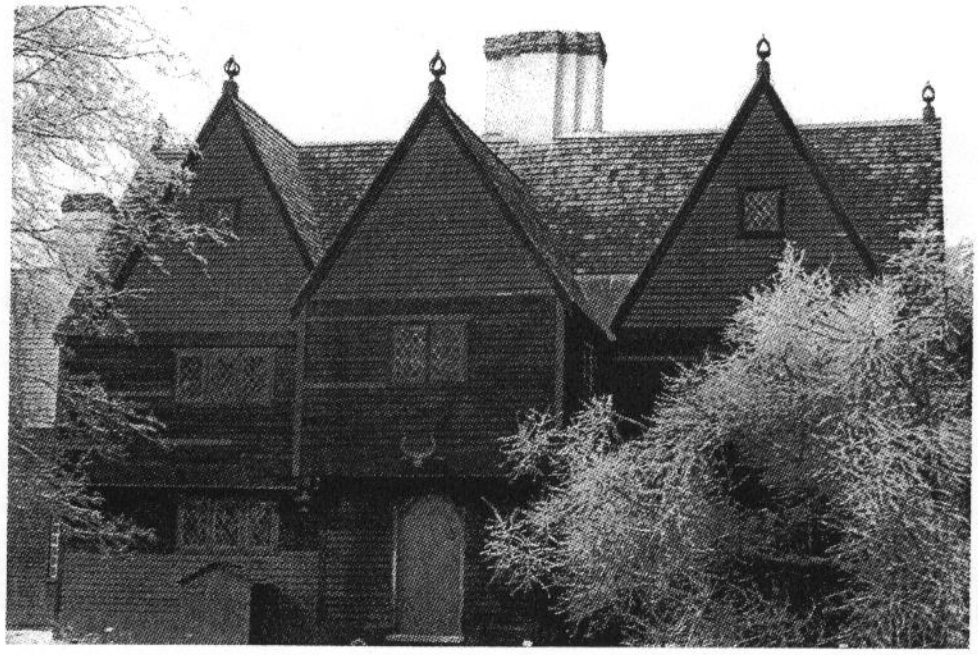
INTRODUCTION

This *General Management Plan/ Environmental Assessment (GMP/EA)* presents and analyzes alternative management options for the National Park Service (NPS) at Saugus Iron Works National Historic Site. The NPS has identified potential consequences and environmental impacts of each of the alternatives. The GMP/EA identifies one of these management options as the course of action preferred by the NPS for Saugus Iron Works.

Public Law 95-625 (Nov. 10, 1978) requires that all parks be managed through an approved General Management Plan (GMP). This is the first General Management Plan for Saugus Iron Works National Historic Site. The National Park Service prepares General Management Plans as conceptual documents. They are intended to establish and articulate a management philosophy and framework for decision-making and problem-solving in parks. A GMP usually provides guidance over a 10-15 year period. NPS policy directs that development be the minimum necessary for park operations and be consistent with cultural and natural resource preservation. Actions called for in a GMP or in subsequent implementation plans are accomplished over time. Budget restrictions, requirements for additional data or legal compliance, and competing park priorities may prevent immediate implementation of many proposed actions. Major or especially costly actions could be implemented ten or more years into the park's future.

The National Park Service takes an interdisciplinary approach to planning. A core team of staff skilled in the fields of history, landscape architecture, architecture, community planning, natural resource management, cultural resource management, historic preservation, interpretation, and museum collections management composed the planning team for this document. The core team worked in consultation with representatives of the Town of Saugus, the Massachusetts Historical Commission (MHC), the Saugus Historical Commission (SHC), the Governor's Office on Disability, the Saugus River Watershed Council (SRWC), and other local groups and organizations.

The planning process and format of this document are in compliance with applicable NPS guidelines, laws, regulations, policies and Executive Orders.



Restored 17th-century Iron Works House.

EXECUTIVE SUMMARY

The *General Management Plan/Environmental Assessment (GMP/EA)* process for Saugus Iron Works National Historic Site sought public comment and professional expertise to analyze the park's existing resource conditions and interpretive effectiveness. Visitor surveys, open-house meetings, thematic workshops, historic resource reports, professional consultation, and inventory and monitoring studies helped planners to define problems and envision optimal visitor experiences and resource conditions for the park.

This planning process identified several issues that hinder the visitor experience or negatively impact cultural and natural resources. These include: infrequent visitor access to the Iron Works House, problematic ADA accessibility to the industrial site, obstruction of primary viewsheds within the site, viewshed protection outside park boundaries, insufficient visitor orientation, confused visitor flow patterns, competing use of limited space by school groups and visitors, improper museum collection storage and exhibit conditions, poor museum building condition, inadequate and fragmented maintenance facilities, and incomplete scholarly research on park natural and cultural resources.

Issues concerning the park's cultural landscape and wetland marsh were also identified. Options to address these issues will result from a Cultural Landscape Inventory Study and Cultural Landscape Report, scheduled for 2002.

The draft General Management Plan/Environmental Assessment outlined three fundamental objectives: to preserve the distinctive character of park resources, to provide for quality visitor experiences, and to ensure organizational effectiveness. Two alternatives and a status quo option were developed as management strategies to meet these objectives. A commitment to keep facility development and potential resource impacts to a minimum guided the planning process.

Projected costs for each alternative are presented in Appendix B.

THE PREFERRED ALTERNATIVE

To immediately introduce the visitor to the seventeenth-century, a path would lead the visitor from a redesigned parking lot to the front of the Iron Works House and around to a new Annex entrance. The Annex, a 1917 Nutting addition to the IWH, would be adaptively reused as a visitor orientation center. The center would include an information area, bookstore, and orientation film area. From the orientation center, the Iron Works House would be continually accessible to the visitor for self-guided tours. The house's c.1790 lean-to would be used as an additional exhibit area. The site's existing restrooms would be easily accessed from the center. Visitors would be encouraged to explore the adjacent museum facility, which provides historic context for the iron works operation. Visitor flow patterns would be clear and include all primary resources. The existing theatre would be used for school programs. The current contact station would be removed, opening views to the industrial site. Visitors using wheelchairs or strollers would take a mechanical means of descent, such as a stair rail rider, to access the industrial area. The existing maintenance garage on the bluff would be removed, providing visitors with an overlook viewing area. The existing carpenter shop and woodsheds would be removed. A new maintenance facility would be constructed on the site's east sector. The building would be screened with appropriate vegetation to merge with the landscape. The museum building and its exhibits would be rehabilitated. Stored museum collections would be housed in a rehabilitated park residence.

ALTERNATIVE 2

To provide the visitor with a visual orientation to the Saugus River and the iron works plant, an "Overlook Visitor Center" would be built at the bluff on the site of the existing maintenance garage. The new visitor center would contain space for the information desk, orientation film, exhibits, bookstore, school programs, and restrooms. The existing garage footprint might need to be expanded. The existing contact station would be removed, opening viewsheds. The Iron Works House would be accessed by scheduled ranger-guided tours. Visitors would access the indus-

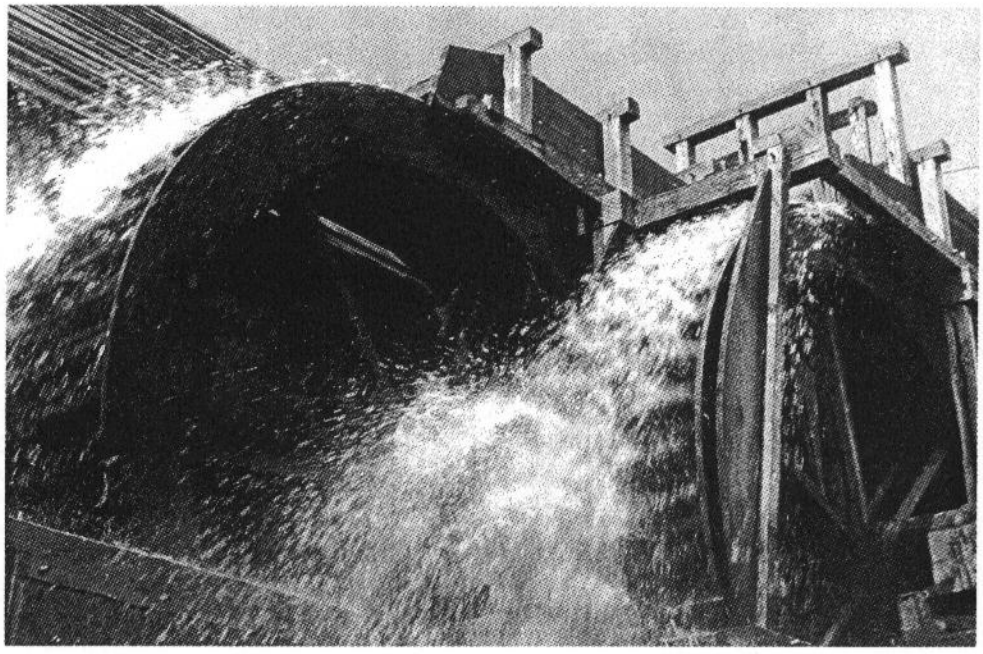
trial site by either a long (305 foot) sloped path or by a switchback trail that meets ADA standards. Visitor flow patterns would be less structured, as the visitor would decide how to proceed through the site. An off-site maintenance facility would be leased and all existing maintenance structures would be removed. The existing museum building would be rehabilitated and an addition would be built onto its north side for use as a museum storage area.

NO ACTION ALTERNATIVE

The visitor would experience the existing interpretive programs, under the existing facility conditions. Visitor access to the Iron Works House would likely remain at the current 8% level. The site would continue to be non-compliant with museum collection condition standards, putting collections at risk of deterioration. Maintenance buildings and equipment would continue to block primary viewsheds and present safety hazards. Visitors and school groups would continue to compete for space. Visitors may miss primary resources due to confusing flow patterns. Accessibility to the industrial plant would be non-compliant with ADA mandates. Maintenance operations would continue to suffer from inadequate and divided facilities.

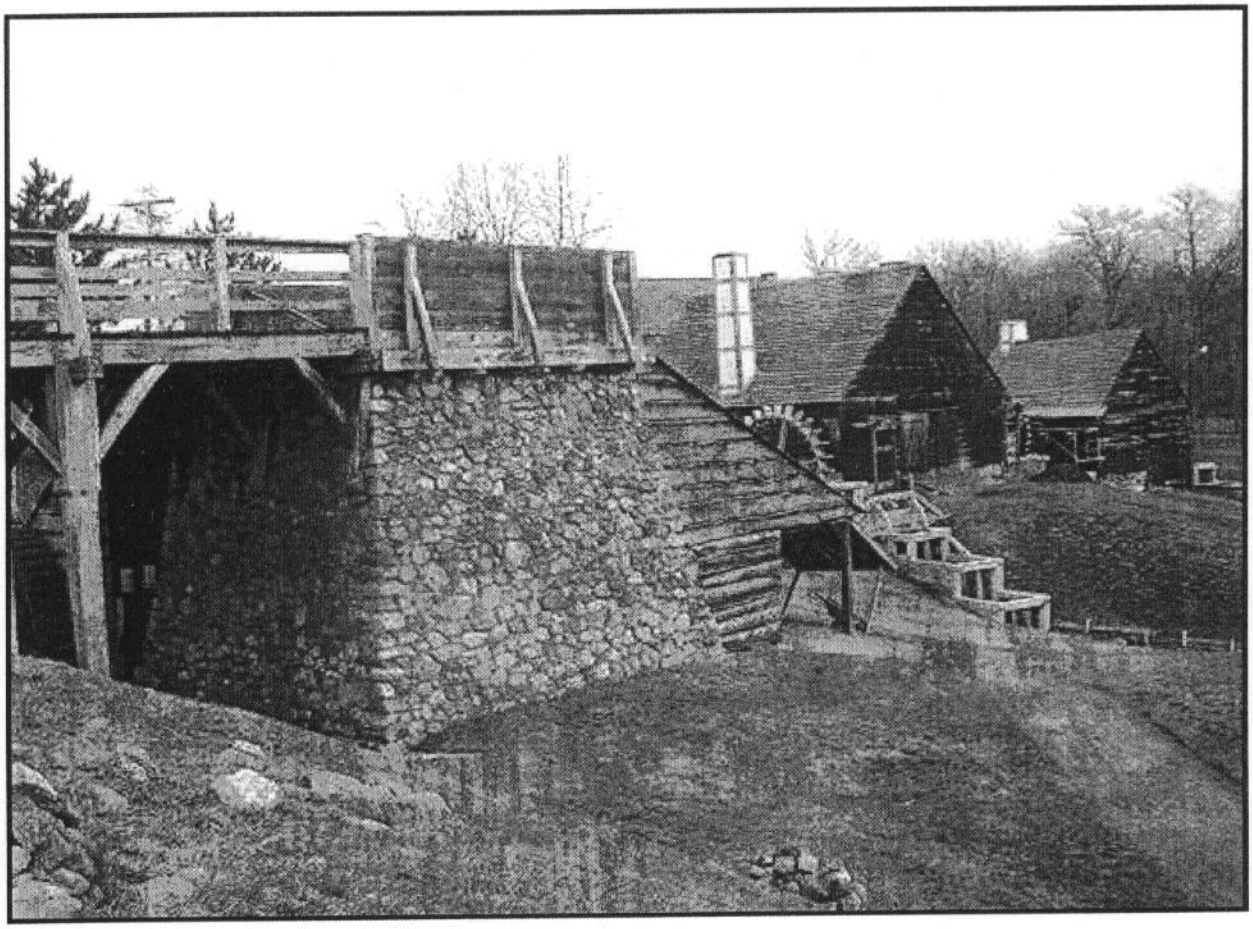
ELEMENTS COMMON TO ALL ALTERNATIVES

The park is committed to building partnerships and collaborations within the Saugus community, the Essex National Heritage Area, and those areas and institutions that bear a thematic relationship to the park. All planning strategies will seek to insure the highest standards for the park's interpretation and education programs through effective communication of park themes, program development, and continuing research. The museum building will be rehabilitated, retaining its character-defining features. Museum exhibits will be redesigned. The park will continue scholarly research on the thematic relationships and complex ecological elements that compose the park's cultural landscape and wetland marsh. The preparation of a Cultural Landscape Inventory and Cultural Landscape Report will begin in 2002. The park will work to insure viewshed protection outside park boundaries. The park will continue striving to provide the best stewardship for the important natural features and significant historic resources that give Saugus Iron Works National Historic Site its special charm.



Waterwheels in operation at Saugus Iron Works National Historical Site.

PART ONE: CONTEXT AND ISSUES



"It is our earnest desire, and we have endeavored all we can to be furnished with better men than some of them are: But notwithstanding all our care we have bin necessitated to send some for whose civilities we cannot undertake [to guarantee,] who yet we hope by the good example, and discipline of your Country, with your good assistance may in time be cured of their distempers."

— A description of ironworkers from a letter to John Winthrop, Jr., from the Iron Works Promoters: March 1648. Winthrop Papers V, 209.

PARK MISSION AND SIGNIFICANCE

MISSION STATEMENT

The mission of Saugus Iron Works National Historic Site is:

To preserve and interpret the archeological sites and features, the historic and reconstructed structures and scene, and the museum collections associated with America's first sustained, integrated, and successful iron works venture, which operated at this site on the Saugus River from 1646 to about 1670.

To assist in the interpretation of the Essex National Heritage Area, especially the theme of early settlement.

PRIMARY AREAS OF NATIONAL SIGNIFICANCE

Saugus Iron Works National Historic Site is the best evidence and demonstration of the earliest development of iron manufacturing in colonial America. The technology used here was dispersed throughout the colonies and was critical to the development of iron manufacturing in America.

The site interprets the early settlement of Massachusetts Bay and, as the southern gateway to the Essex National Heritage Area, it links thousands of historic places in Essex County related to three primary historical themes: early settlement, maritime trade, and early industrialization.

ADDITIONAL AREAS OF SIGNIFICANCE

The site's resources are prominent examples available for public interpretation of the colonial revival and historic preservation movements in the early-to-middle twentieth century. The park is the result of preservation efforts by local citizens and the American Iron and Steel Institute. These groups restored and memorialized the site as an icon to the achievements of the Puritan era.

ESTABLISHMENT OF THE SITE

On April 5, 1968, Congress established Saugus Iron Works National Historic Site as a unit of the National Park System under Public Law 90-282. The site's legislated mission is to preserve in public ownership "the first sustained integrated iron works in the Thirteen Colonies."

The site's acquisition history is an organic development of the American twentieth-century preservation movement. In 1915-17, antiquarian Wallace Nutting, a major exponent of the colonial revival, restored the Iron Works House to its seventeenth-century appearance and used it as part of his enterprise of manufacturing early American reproductions. By 1946, a grass-roots organization, the First Iron Works Association (FIWA), succeeded in acquiring the house and the adjacent iron works plant site, and it opened the house as a public museum. From 1948 to 1953, the American Iron and Steel Institute provided FIWA with the funding required to archeologically investigate and reconstruct the colonial iron-making plant, which opened to the public in 1954. In 1968, facing a funding shortage, FIWA donated to the National Park Service the majority of lands, structures, and objects that today constitute Saugus Iron Works National Historic Site.

In the Omnibus Parks and Public Lands Management Act of 1996 (Pubic Law 104-333), Congress designated the Essex National Heritage Area (NHA) partly to enhance the story told at Saugus Iron Works through partnerships with significant theme-related resources throughout Essex County.



EXISTING CONDITIONS AND MANAGEMENT STRATEGIES

Saugus Iron Works National Historic Site is an 8.51-acre park located about 10 miles north of Boston, within the Sixth Congressional District, in Essex County, Massachusetts. It preserves and interprets the archeological and historic sites, structures, objects, and the reconstructed historic scene associated with the first successful iron works in America, which operated here from 1646 to about 1670. Today, the site's recreated industrial landscape offers a highly sensory museum encounter with our early colonial history and an opportunity to explore the role of iron in the development of the United States.

Visitors to Saugus Iron Works experience a seventeenth-century, water-powered iron-making plant through both original and reconstructed features. (See Map 1, page 16). Extant seventeenth-century site resources include the Iron Works House, slag pile, stone trough, and various exposed archeological foundation ruins, such as the Joseph Jenks site. The reconstruction of the colonial industrial plant includes the blast furnace, forge, slitting mill, pier, and warehouse. The reconstruction is based on a major archeological investigation that was completed in 1954. Seven working waterwheels operate equipment to demonstrate the colonial iron-making process. These original and recreated structures and settings interpret the colonial iron works operation from the harvesting of raw materials to the shipping of finished products.

The restored seventeenth-century Iron Works House contains period furnishings depicting the domestic life of the Puritan gentry, as well as displays on colonial architecture and on the colonial revival of the late nineteenth and early twentieth centuries. Originally thought to be the Iron Master's House, preliminary findings of a dendrochronology study suggest that the House's construction post-dates the iron works operation.

The site's Museum building, erected by Wallace Nutting as a blacksmith shop about 1917, exhibits hundreds of archeologically recovered tools, equipment, and objects from the 1646 iron works. The Museum auditorium presents a slide show on the seventeenth-century iron works and the site's twentieth-century restoration history.

Ancillary park structures include the Iron Works House Annex, added by Wallace Nutting in 1917; the Museum Annex, added by FIWA about 1954; and a small visitor contact station along the park's entrance path, which was originally erected by FIWA and altered by the NPS. The visitor contact station is also identified by signage as a visitor center for the Essex National Heritage Area.

Non-historic park structures include a maintenance garage located on the property's southwest bluff; a carpenter shop and wood storage sheds located on the east bank of the river; and two modern residences on the northwest corner of the property. A public parking lot contains spaces for 28 cars and two buses. Two small grassy parcels on the west side of Central Street also belong to the site.

The entire site is registered as a state archeological site, with the east bank area receiving an additional state archeological designation.

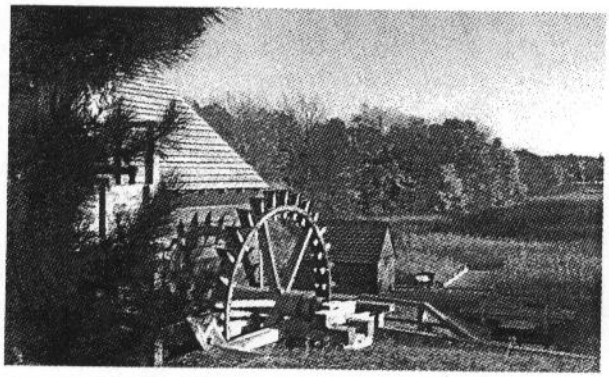
Topographically, the site features a bluff area, a floodplain, and a terrace along the upper estuary of the Saugus River. Cultural and natural resources are defined within these three areas:

- The restored industrial landscape and iron-making buildings lie within the upper area of the flood plain.
- The bluff area contains the Iron Works House and Museum and features groomed lawns, specimen trees, an herb garden, and a picnic site.
- Situated on both banks of the Saugus River, the park's cultural landscape merges with a natural landscape of wetlands at the floodplain and ends with the east terrace's woodland section of the Saugus Iron Works Nature Trail, designated a National Recreational Trail in 1989.

This topography combines to form a charming, picturesque setting. Surrounded by an urban/suburban environment, the park serves as a haven for birds,

waterfowl, and small mammals, as well as a peaceful retreat for visitors.

Major landscape features were severely altered in 1957 (before NPS administration of the site), when a dam breach north of the property caused massive in-fill of silt to the site's restored harbor. A brackish marsh dominated by invasive species has since grown up around the now-channelized river. The marsh obscures the reconstructed harbor and its role in the original iron-making operations. The park manages the river and marsh as a damaged cultural landscape and a protected natural resource area.



Forge paddlewheel, iron warehouse, pier, and marsh.

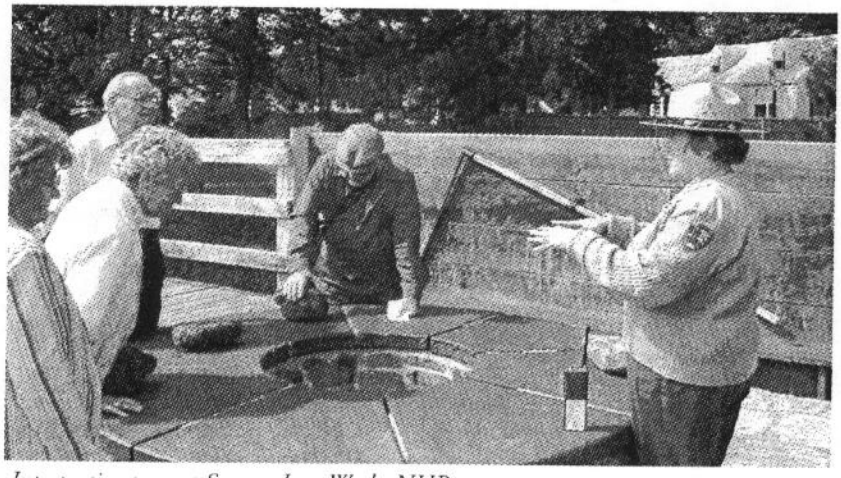
EXISTING MANAGEMENT STRATEGIES

The site was designated a National Historic Landmark on October 15, 1966. The park's original seventeenth-century structures and features are listed on the National Register of Historic Places and are managed as protected cultural resources, receiving full compliance procedures for any proposed action. Later additions and modifications to the Iron Works House and the Museum building, the reconstructed iron works industrial buildings themselves, and other features related to the eras of both Wallace Nutting (1915ff) and the First Iron Works Association (1949ff) have not yet been evaluated for National Register eligibility. The facilities associated with Nutting lack a context study for his importance in the Colonial Revival, and the facilities associated with FIWA need a context study of the 20th-century preservation movement for evaluation regarding their eligibility for the National Register under Criteria Consideration E (for Reconstructed Properties) or Criteria Consideration G (for Properties that Have Achieved Significance within the Past Fifty Years). Until such studies are done, Saugus Iron Works NHS will continue to manage these resources as if they were fully protected cultural resources. Table 1(page 17) is a graphic display of the site's resources and facilities, their periods of significance, and their current use and management.

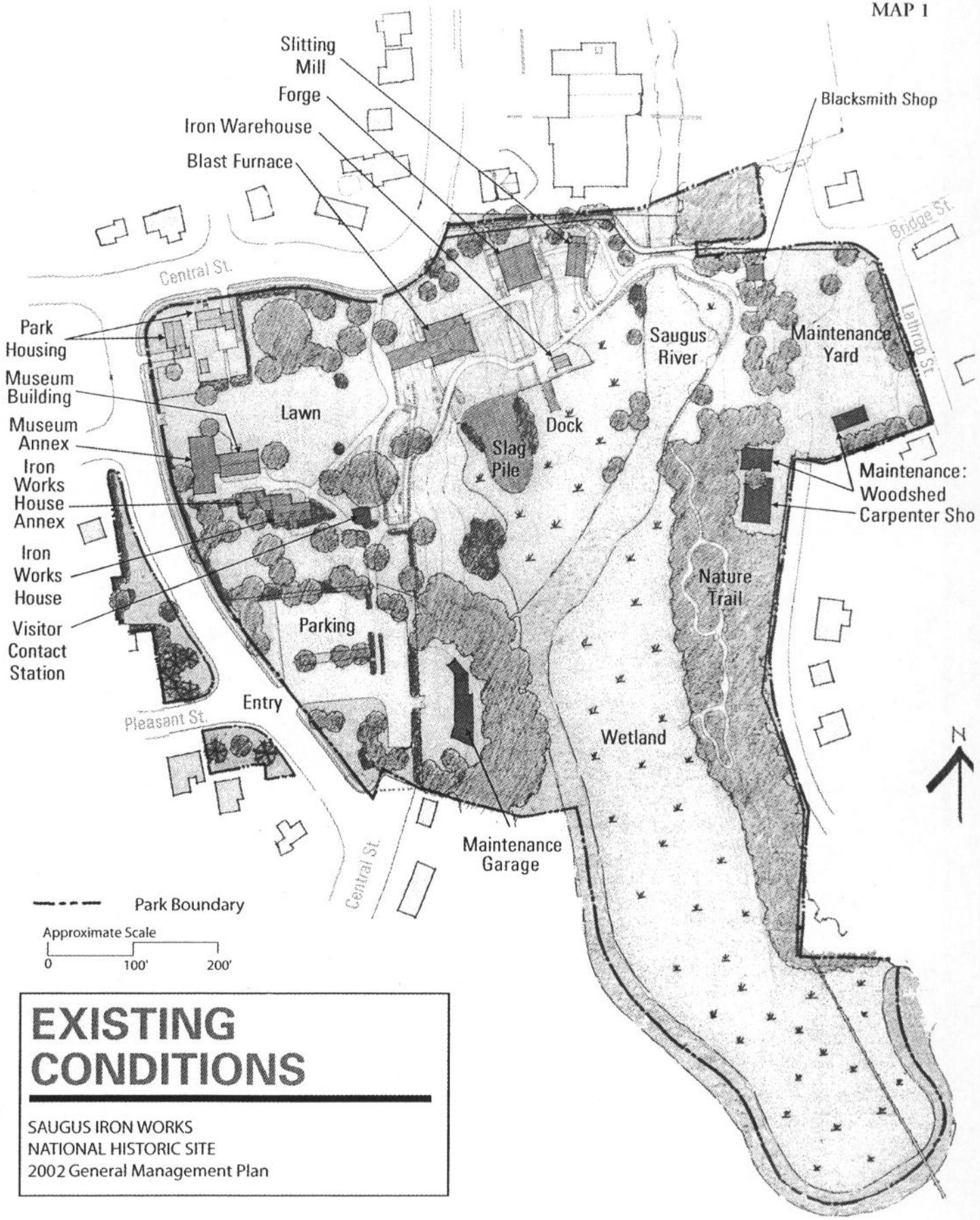
VISITATION

People visit the park from all 50 states and many foreign countries. Recent visitation numbers approximately 23,000 annually. Education programs reach student groups from preschool to post-graduate. Museum collections attract researchers in the fields of industrial archeology, Native American prehistory and plantation period, colonial iron making, colonial settlement and life, genealogy, seventeenth-century architecture, and the twentieth-century preservation movement.

Visitation to the site has run between 18,000 and 23,000 per year, including up to 3,000 children attending educational programs. Heaviest visitation (78%) occurs from May through October. In 1996, the site became the southern gateway to the Essex National Heritage Area, serving as a visitor information center for people approaching the heritage area



Interpretive tour at Saugus Iron Works NHP.



EXISTING CONDITIONS

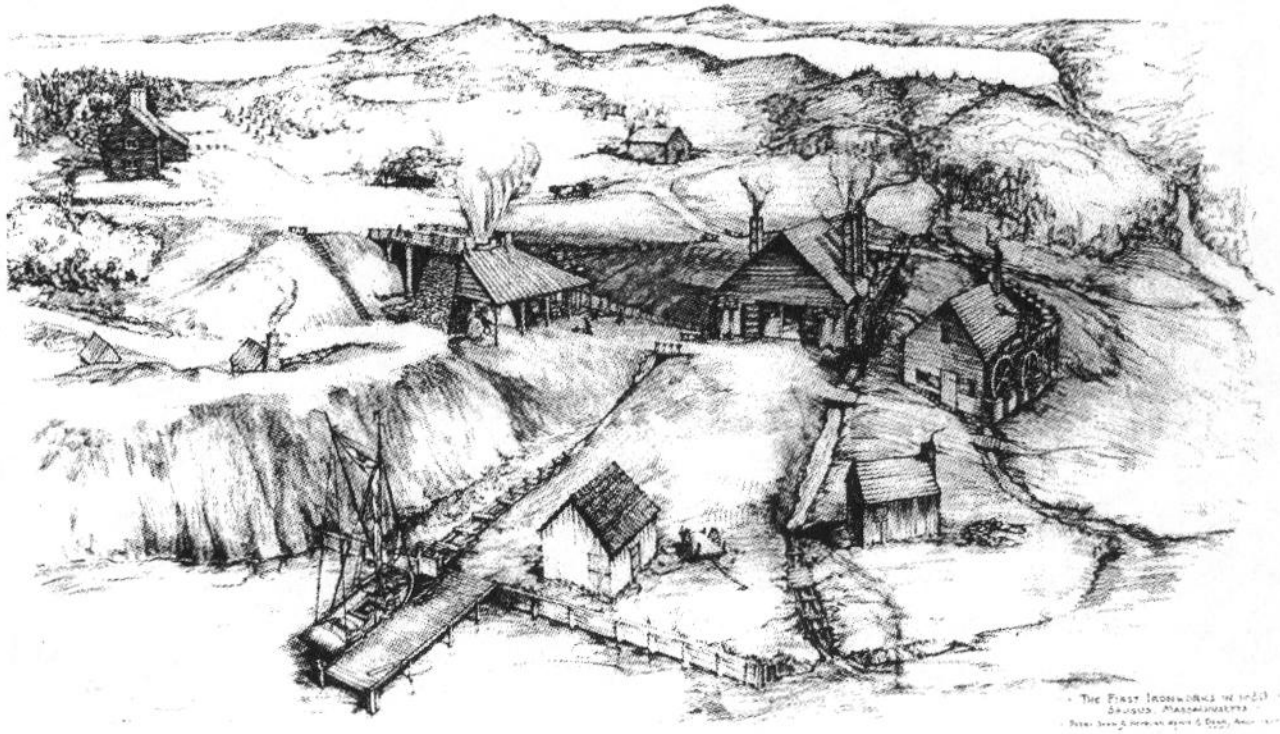
SAUGUS IRON WORKS
NATIONAL HISTORIC SITE
2002 General Management Plan

Resources & Facilities

RCE	PERIODS OF SIGNIFICANCE	PRESENT USE & MANAGEMENT
ical sites 1670. P to 1600.	1646 - C. 1670 iron works & English settlement site. Native American prehistory & contact period site.	Entire site managed as archeological cultural resource. State site status: 19-ES-248 & 19-ES-257. Areas of potential integrity are identified for iron works & Native American sites. Managed as cultural resource.
n Collections C. 1670. American prehistory/contact. al Revival & 20th C. Preservation Movement.	Seventeenth-century archeological objects and history objects, with period reproductions. Wallace Nutting history objects, FIWA history objects. Native American prehistory/contact. C. 1682 English Settlement.	Managed as cultural resource. National Register (NR) status. Structure managed to Nutting Restoration. with interpretation to 1682 & Nutting Restoration.
Works House tructed C. 1682. tored 1915-1917.	Wallace Nutting Restoration 1915-1917.	Managed to evolved NPS use. Currently used as staff offices.
Works House Annex nstructed 1917.	Wallace Nutting.	Managed as cultural resource Used as museum exhibit facility. Eligible for NR status.
seum Building onstructed c.1917.	Wallace Nutting: Colonial Revival. FIWA, use as museum exhibit facility.	Managed as cultural resource. NR status.
ag Pile 1646 - c. 1670.	1646 -C. 1670 iron works.	Managed as cultural resource. NR status.
Exposed Archeological Features 1646-c. 1670.	1646 – C. 1670 iron works.	Managed as cultural resource: archeological protection.
Parcels along west side of Central St.	Buffer zone area.	Managed as cultural resource to 1954 appearance. NR eligibility requires further study.
Blast Furnace Constructed 1952.	1954 FIWA reconstruction interpreted to 1646-1670.	Managed as cultural resource to 1954 appearance. NR eligibility requires further study.
Forge Constructed 1953.	1954 FIWA reconstruction interpreted to 1650.	Managed as cultural resource to 1954 appearance. NR eligibility requires further study.
Slitting Mill Constructed 1954.	1954 FIWA reconstruction interpreted to 1650 .	Managed as cultural resource to 1954 appearance. NR eligibility requires further study.
Iron Warehouse & Pier Constructed 1954.	1954 FIWA reconstruction interpreted to 1650 .	Managed as cultural resource. NR eligibility requires further study.
Industrial Site Landscape Contours established by Robbins. 1953 to reflect 1650's appearance.	1954 FIWA reconstruction. Seventeenth-century iron works.	Managed as damaged cultural landscape & protected natural resource (wetland marsh).
Saugus River Turning Basin Mixed periods. Restored 1954. Dam breach 1957.	1954 FIWA reconstruction. Seventeenth-century iron works.	Managed to evolved NPS use.
Iron Works House Landscape Mixed periods.	Wallace Nutting. FIWA. NPS administration. Non-historic facility	Managed as non-historic facility. Used as theater. Managed as protected natural area.
Museum Annex Constructed 1954-55.	NPS recreational & interpretive trail.	
Nature Trail Created c. 1980. Declared National Recreational Trail 1989.	Non-historic facility.	Managed as non-historic facility.
Maintenance Garage Constructed 1980.	Non-historic facility.	Managed as non-historic facility. Museum collections storage area.
Maintenance Carpenter shop Constructed 1976.	Non-historic facility.	Managed as non-historic facility.
Maintenance Woodshed & Shelter Constructed 1977 & 1988.	Non-historic facility.	Managed as park residences
230 & 232 Central St. Constructed 1940's.	Non-historic facility.	Managed as traffic zone.
Parking lot	Non-historic facility, outside of park boundary.	N/A
Abutting property for sale north of Blacksmith shop	Non-historic structures & facilities outside park boundaries.	N/A
Viewsheds		

from Boston and points south. Through the Essex NHA, the park is connected to other historic resources interpreting early colonial settlement in Essex County. The site will be active in developing formal and informal partnerships and collaborations that will promote the preservation of resources that bear thematic relationships to the Saugus Iron Works. Visitation is expected to increase as these thematic linkages evolve, but not to an extent at which the visitor experience or site resources are challenged. The Essex NHA's promotional activities and highway signage have increased visitation to the various sites in the area by between ten and twenty percent to date. Saugus Iron Works can readily accommodate expected increases on this scale.

Visitor carrying capacity is defined as the type and level of visitor use that can be accommodated while sustaining the desired resource and social conditions that complement and are compatible with the purpose and significance of the park and its management objectives. It is not a question simply of numbers but of a qualitative assessment of visitor expectations and experience in different kinds of areas and of impacts on different kinds of resources. For most historic sites, the National Park Service prefers to offer an atmosphere of quiet contemplation. While a 1968 Master Plan, prepared at the time the site became part of the National Park System, estimated the park's capacity at 1,600 visitors a day, totaling 400,000 visitors per year, that number is far in excess of the numbers the site can actually support or is likely to see. Indeed, it is 16-20 times the visitation the site has ever had. The amount of land available for parking—the current lot holds 28 cars and two buses—puts an upper limit on possible visitation, and each of the site's major resources imposes its own physical limitations. No more than twelve individuals, if touring on their own, or two groups of six, if accompanied by a guide, can be physically accommodated in the 17th-century Iron Works House. No group larger than thirty can be accommodated on a tour of the iron works industrial plant, with a maximum of two tours going at one time. Given these



"...mynes of Iron...require the assistance of manie ingenious heads, hands, and full purces..."

— Petition of John Winthrop, Jr. to the Massachusetts General Court, for the establishment of the iron works, 1644, from The Winthrop Papers, Volume IV, 423.

Illustration: Artist's conception of the colonial Iron Works.

limitations and the seasonality
an outdoor site, the National
lement a Visitor Experience and
(VERP) process to determine
y of Saugus Iron Works compati-
d visitor experience.

VE THEMES

rks NHS is currently working on the
a Comprehensive Interpretive Plan,
de interpretive programming over the
rs. The following themes were devel-
of that process and are in preliminary

Y THEMES:

venteenth-century iron works helped lay the
n for America's modern industry by transfer-
dispersing iron-making technology and skilled
from the Old World to the New.

nufacturing and exporting finished and semi-fin-
goods rather than raw materials, Saugus Iron
s was an early example of the New England eco-
ic self-reliance that challenged the emerging British
erial system.

SECONDARY THEMES:

n contrast with our stereotypes of Puritan society, at
Saugus the iron works brought together a diversity of
ethnicities, religions, and social values, which we think
of as characteristic of America.

Saugus Iron Works is one of the first and most continu-
ous examples of the environmental impact of industrial
activities on the American landscape.

Saugus Iron Works National Historic Site illuminates
the techniques of the early preservation movement and
the role of the National Park Service in the stewardship
of cultural resources.

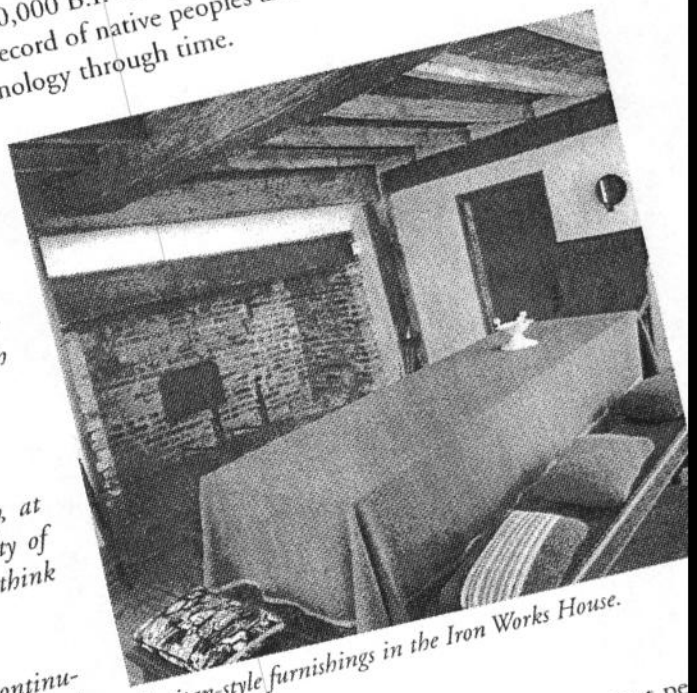
NATIONAL PARK SERVICE THEMATIC FRAMEWORK

In 1996, the National Park Service developed a revi-
sion of its *Thematic Framework* for evaluating the sig-
nificance of cultural resources, drawing upon "the
work of scholars across disciplines to provide a struc-
ture for both capturing the complexity and meaning
of human experience and making that past a coher-
ent, integrated whole." Using the 1996 NPS themat-
ic framework, the interpretive values of Saugus Iron
Works may be elaborated as follows:

Peopling Places

The original iron works was built in an age of
extraordinary cultural change. This plantation-peri-
od site merged the thousands of years of Native
American history with the establishment of a perma-
nent English colony.

The park area was an important estuary site for
Native Americans, with evidence of use as early as
10,000 B.P. The park's museum collections provide a
record of native peoples and their evolving tool tech-
nology through time.



Puritan-style furnishings in the Iron Works House.

The site offers a unique study of the contact pe
as iron trade goods produced at the Saugus
were specifically marketed to Native American
adopted iron goods into their material culture

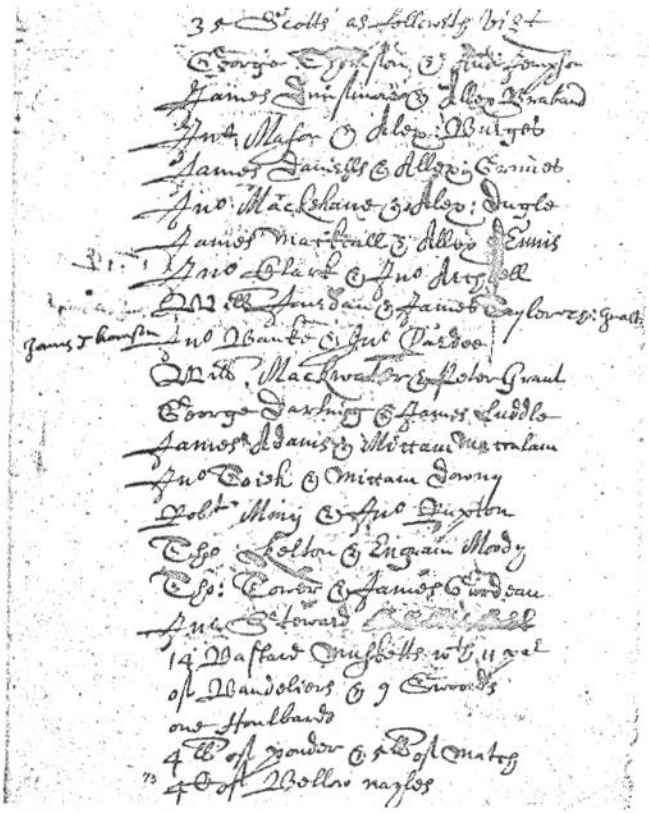
The iron works supplied Massachusetts Bay
with iron products needed to build the ne
ment. The Iron Works House depicts Puri
ment, culture, and life in Essex County, thr
themes as work ethic, domestic life, social

cation, Puritan worldview and religious conviction, and women's roles.

The iron works exemplifies the Puritan vision for a self-reliant and self-determined society. The site interprets how these Puritan values influenced the early history of the country and shaped the character of a people.

Hammersmith, housing the ironworkers and their families, was the colony's first planned workers' community, a precursor of the "factory town."

The non-Puritan ironworkers and Scots prisoners of war, who were considered social outsiders in the Puritan enclave, illuminate the process of cultural assimilation. These people were drawn into the greater society within a few generations.
In 1657, Scots prisoners of war working at the iron works founded the Scots Charitable Society, an early social league and benevolent society founded to promote the needs of an ethnic minority. The society still exists.



1653 Property Inventory listing 35 Scots prisoners-of-war sold into indentured servitude at the iron works.

Expressing Cultural Values

The Iron Works House reflects aesthetic and architectural values from both the Puritan era and the colonial revival of the twentieth century.

The site's seventeenth-century Iron Works House is an important example of First Period architecture.

The site was a part of the colonial revival through Wallace Nutting's furniture and picture business.

Transforming the Environment

Rich in natural resources, this site on the Saugus River has drawn people through the millennia. During the Woodland era, the semi-sedentary Pawtuckets intensively fished the Saugus River from their spring camps. Seventeenth-century iron speculators saw the river as a source of motive power for the iron works operation. Its natural harbor facilitated transportation. The area's 21-foot escarpment was a favorable site for the blast furnace and charging bridge. Human resources, to provide labor for unskilled jobs, were available from the early European settlements of Saugus and Lynn. The area's bog ore and gabbro deposits and hardwood forests, especially oak, supplied the operation's raw materials.

Forests were cut for charcoal, ore was mined, and the river dammed to run waterwheels to power iron-making equipment.

The site's seventeenth-century slag pile reminds us of the lasting impact of manufacturing upon a pristine environment.

The First Iron Works Association's extensive efforts to archeologically recover and reconstruct the colonial plant brought significant changes to the site and reflect the interplay between human activity and the environment.

Developing the American Economy

The iron works' products served as infrastructure, supporting the growth of New England's farming, fishing, timber, and shipbuilding industries, which depended on iron tools. It also supplied small tradesmen and "Goodwives" with needed ironwares.

Puritan leaders envisioned this large-scale manufacturing operation as a significant stride toward building a permanent, self-reliant commonwealth.

Saugus's iron manufacturing and overseas trade was an economic milestone for Massachusetts, helping to transform the settlement from a dependent consumer into a producer of heavy industrial commodities for local and overseas markets.

The evolving nature of capital organization and the changing interplay between public and private enterprises in the early capitalist era are illuminated in the partnership policies and conflicting agendas of Massachusetts Bay's government and the London-based private investors in the forming of the Company of Undertakers of the Iron Works in New England.

The iron works marks the early appearance of large-scale manufacturing in America. The seventeenth-century plant's scale of production, business organization, and complex operation were not achieved again in America until the 1793 Slater Mill in Rhode Island.

The site manifested an "industrial working class" during the early colonial period in America. These were wage earners, working both day and night shifts, living in company housing, and receiving necessities from the "company store."
Challenges to the Puritan plan for social order and political control arose early from the ironworkers and their families. An entrepreneurial class eventually arose from the ranks of skilled ironworkers.

Expanding Science and Technology

The iron works brought about the transfer of advanced technology, equipment, capital, and skilled workers from the Old World to the New.

The site demonstrates seventeenth-century iron-making and waterpower processes, designs, and engineering techniques.

The site interprets seventeenth-century technology, invention, and innovation. Eminent individuals include colonial "engineer," Richard Leader, who designed and built the plant; prominent scientist, John Winthrop, Jr., who secured the charter for the company, recruited the English iron workers, and facilitated the transfer of iron-making technology; and Joseph Jenks, blacksmith, who registered the colony's earliest tool-making patent.

Today's site is one of the few parks in the National Park System to be based primarily on archeological excavations. It is an excellent study in the evolution of historical archeological methods and a valuable opportunity to interpret archeology's contribution to understanding early American history.



One of three forge hearths.

TABLE 2: Resources & Themes

MAJOR RESOURCES	THEMES				
	Peopling Places	Expressing Cultural Values	Transforming the Environment	Developing the American Economy	Expanding Science & Technology
Archeological sites & exposed original features	Native American culture. Industrial plant layout. Hammersmith Village. English colonial culture. Essex National Heritage Area linkage. All themes, especially English settlement. Native American culture & change.	20th-century preservation movement. NPS stewardship.	17th-century iron works impacts. 1948-54 archeology & reconstruction impacts. NPS stewardship.		Transfer of technology & workers from Old World to the New Evolution of archeological methods. Jenks' earliest tool making patent and other technological innovations.
Museum collections (exhibition & research)	Puritan vision for self-sufficient colony. Essex National Heritage Area linkage.	All themes, especially seventeenth-century colonial cultural values. Native American cultural values. Wallace Nutting, FIWA, & 20th Century Preservation Movement. NPS stewardship.	All themes.	All themes, especially iron as essential commodity. Shipping & trade.	All themes, especially seventeenth-century iron works technology & operation.
Iron Works House	English settlement: Puritan gentry. Enduring Puritan cultural legacy. Essex National Heritage Area linkage.	Important example of first period architecture. Major episode in the 20th-century preservation movement. NPS stewardship.			
Slag Pile			Enduring consequences of industry on environment.		
Reconstructed Iron Works: Blast Furnace, Forge, Slitting Mill, Warehouse & Pier, & features	Ethnic & religious diversity of ironworkers & their assimilation into Puritan society. Scots prisoners-of-war as ethnic & religious minority & their assimilation to Puritan society. Establishment of Scots Charitable Society, 1657.	Contrasts between ironworkers and Puritan agricultural settlers.	Seventeenth-century water power, colliering, mining, smelting, etc. 1682 dam breach. 1957 dam breach. NPS stewardship.	Early American "working class". Manufacturing finished products as challenge to British imperial system. Transportation and shipping. Monopoly agreement.	Dispersal of skilled iron workers to generate beginnings of iron & steel industry.
Saugus River & Nature Trail	Natural resources that brought Native Americans and iron works to the site.		Fishing, iron works operation, trade, transport, pollution, population growth & impacts to animal, plant, & water communities.	Continuous use as industrial area from 1646 to 1990.	
Museum Building, 1917 portion		Wallace Nutting & Colonial Revival.	NPS stewardship.		
Interpretive Facilities: Museum & Proposed IWH Annex Visitor Center	All themes.	All themes.	All themes.	All themes.	All themes.
Interpretive Programming: Education Programs, Tours, Waysides, Media, Library, Bookstore, ENHA linkage, etc.	All themes.	All themes.	All themes.	All themes.	All themes.

LINKING RESOURCES AND THEMES

The General Management Plan seeks to improve visitor access to and appreciation of those evocative park settings, structures, and objects that best express each interpretive theme.

The links between the resources and the themes they best interpret are displayed in Table 2 (page 22).

MANAGEMENT OBJECTIVES

As its mission, derived from the Organic Act of 1916 and subsequent legislation, the National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The National Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

The National Park Service Strategic Plan, 2000-2005 summarizes its "total mission" as "to preserve resources and serve the public." These are, therefore, the organizing objectives of this General Management Plan for Saugus Iron Works National Historic Site.

From this mission, three categories of national mission goals are derived that also apply to all parks, including Saugus Iron Works National Historic Site. (A fourth category relates to legislated partnership programs carried out by national and regional offices.)

PRESERVE PARK RESOURCES:

1) Natural and cultural resources and associated values are protected, restored and maintained in good condition and managed within their broader ecosystem and cultural context.

2) The National Park Service contributes to knowledge about natural and cultural resources and associated values; management decisions about resources and visitors are based on adequate scholarly and scientific information.

PROVIDE FOR THE PUBLIC ENJOYMENT AND VISITOR EXPERIENCE OF PARKS:

1) Visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of park facilities, services, and appropriate recreational opportunities.

2) Park visitors and the general public understand and appreciate the preservation of the park and its resources for this and future generations.

ENSURE ORGANIZATIONAL EFFECTIVENESS:

1) The National Park Service uses current management practices, systems, and technologies to accomplish its mission.

2) The National Park Service increases its managerial capabilities through initiatives and support from other agencies, organizations, and individuals.

This General Management Plan and Environmental Assessment describes concrete proposals that address issues identified by the park and the public that need to be resolved in order for the park to meet these long-term objectives. The specific issues associated with their achievement are detailed in the next section.

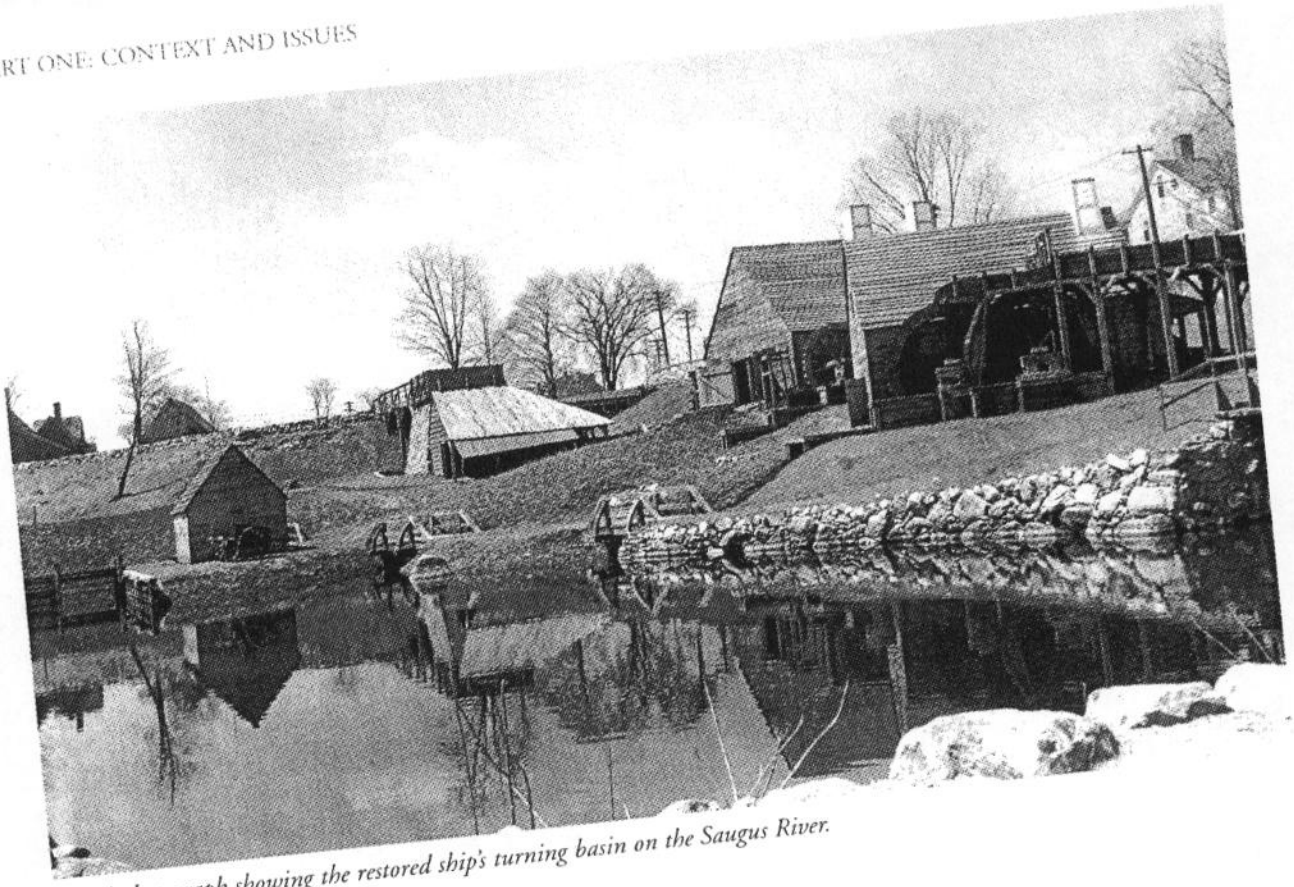
PLANNING ISSUES RELATED TO OBJECTIVES

A set of interrelated issues concerning the park's ability to meet its management objectives has been identified in report findings and public comments. These issues focus on ways to maximize the public's use and enjoyment of the park while preserving its resource integrity.

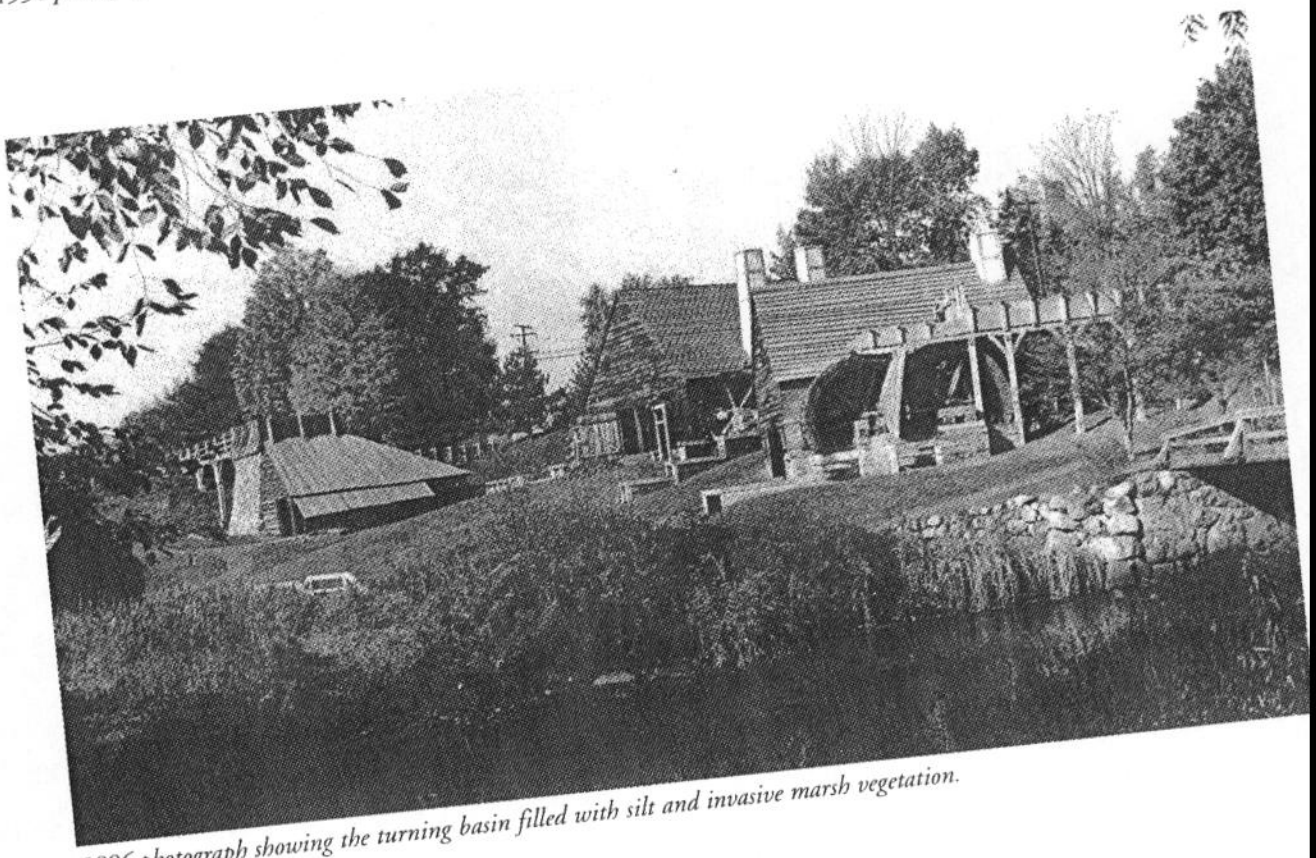
ISSUES RELATED TO PRESERVING RESOURCES

Cultural Landscape

Identification of Periods of Primary Significance and Interpretation: The cultural landscape at the site is composed of three primary layers: the seventeenth century, the Nutting restoration, and the 1954



1954 photograph showing the restored ship's turning basin on the Saugus River.



1996 photograph showing the turning basin filled with silt and invasive marsh vegetation.

struction. Decisions on managing the land- to a particular period will be determined fol- ng a cultural landscape study. Some possible rnatives include:

Maintain the park and the Iron Works House to eir 1954 appearance.

) Maintain the industrial site and grounds to their 954 appearance, but keep the 1917 appearance of he Iron Works House established by Nutting.

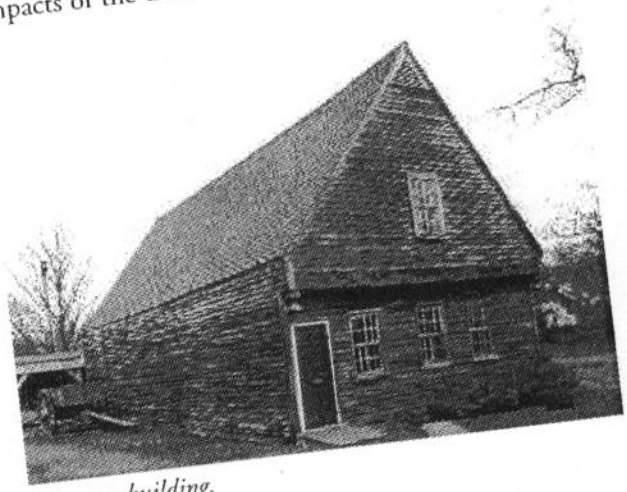
3) Maintain a "best practices" approach for individ- ual structures and cultural landscapes.

Silting of the Saugus River: The site's cultural landscape along the river was severely damaged by a 1957 dam breach. The harbor restored by the First Iron Works Association in 1954, is now choked with marsh plants, and the river has been channelized into a narrow ribbon, running at some distance from the site's pier. This damage to the Saugus River turning basin impedes the interpretation of the iron works as a colonial shipping operation.

During the seventeenth century, the iron works ran a "Great Boat," or shallop, from the site's pier, which brought in raw materials and shipped out finished out products. FIWA planned the construction of a shallop, but the project was not completed. A volunteer group associated with the Essex Shipbuilding Museum is currently constructing a replica seventeenth-century "lighter," or small sailing vessel, for the park, to help visitors understand the historical navigability of the river and its fundamental importance to the colonial iron works. The current silting of the river hinders optimum placement and use of the vessel for educational purposes.

Two bridges (Hamilton Street and Boston Street) currently impede the Saugus River's navigability from the iron works to Lynn Harbor. Other obstructions include sewer and water pipes, a small fieldstone dam at Hamilton Street, and a defunct train trestle. These obstacles to navigation are beyond the park's current legislated boundary, but have a negative impact on the public's ability to use the river as a connection between the park and the region. The park needs to promote the restoration of the river's navigability with those agencies that can effect the change.

Aggressive invasive plants, such as phragmites, narrow-leafed cattail, and purple loosestrife dominate the park's marsh area. Restoration of the open-water condition at the Saugus River turning basin will require planning and compliance for soil contaminant mitigation, invasive plant species mitigation, viewshed restoration, and river and riparian habitat restoration. Elements of this restoration are in the planning and permitting stages (see Appendix A, document 2-6). In addition, the small dam at Hamilton Street, which was built by the First Iron Works Association in 1954 to maintain a watered appearance at the turning basin, may have affected the spread of phragmites by reducing salinity. The NPS is researching the status of FIWA's water rights, their possible transfer to the NPS, and the potential impacts of the dam's removal.



Museum building.

Pier, Bulkhead, River Retaining Walls: These prominent features are deteriorated and need major rehabilitation.

Preservation of Maintenance Facilities

Currently, the maintenance staff operates from facilities at two locations, a converted garage area on the west bluff and a carpenter shop and woodsheds on the east bank. The split location is inefficient, and all of the facilities are grossly inadequate to meet current craft and safety needs. The facility on the bluff also has a negative impact on the visitor experience, as it

is often the first park building the visitor sees, and visitors enter the facility thinking it may be a visitor center.

Museum Exhibit and Collections Storage

Current storage of the museum collections does not comply with NPS museum standards. Museum collections are currently held on the second floor of the Museum building, in the garage at one of the park residences, and beneath the carpenter shop. The museum building requires rehabilitation both for its long term preservation and to meet museum exhibit standards. Museum collections should be consolidated into one climate-controlled space. In addition, the archival collections and library are in two different buildings and in cramped space. There is no comfortable space or facility for use by researchers.

Land Protection

The proximity of adjacent commercial and residential properties necessitates the development of strategies to promote compatible use of land surrounding the park, as well as viewsheds outside the immediate area. Areas of particular concern are the former Henkel Corporation property abutting the site on the north and Vinegar Hill, which overlooks the site from the east.

Two adjacent properties should be considered for acquisition as they become available. A property on the site's northern boundary would connect the existing Saugus Iron Works National Recreational Trail with proposed local and regional trail systems, as well as facilitate park developments on the east bank. A property near the park's southwestern boundary would allow reconfiguration of pubic access to improve safety. These properties are illustrated in the graphics accompanying Alternatives 1 and 2 in Part Two of this plan.

Viewshed protection and mitigation projects need to be developed around the southern vista at the Currier Plaza area. Telephone lines at Bridge Street intrude on the park's colonial setting and mar photographs of the site taken from most spots on site.

Research Needs

The preservation of cultural resources at the park depends upon filling gaps in existing knowledge of the site.

Chronological Connection between the Iron Works House and the Industrial Complex: The interpretation of the Iron Works House and its relationship to the iron works plant is problematical. Local tradition held that the house was built as the residence of the iron works' agent and dated from c.1650. This association led to the archeological investigation and reconstruction of the iron works. However, in 1975, architectural historian, Abbott Lowell Cummings asserted that the house dated to 1682 or 1683, based on architectural evidence. Some documentary evidence also supports a 1682/83 construction date. A recent dendrochronology study developed a dating master for oak timbers in the Boston area. This study placed the Iron Works House's construction 6 years later than Cummings' estimate, to 1688/89. These findings put the house beyond the traditional era for the iron–making operation, which is thought to have ended about 1670. The issue requires further investigation.



Iron Works House, north facade.

Original Site Area: The full extent of the original iron works complex and related resources is unknown. Research involving land titles, historic maps, and other documentary and technical methods, such as GPS plotting, would be useful for understanding the original extent of the property and for interpreting changes in the Saugus River watershed and its landscapes as a result of its industrial use and later development.

Archeological Investigations: No intensive or systematic archeological investigations have occurred on

site in twenty years, despite archeologists' repeated assertion of its great potential for Native American and iron works era evidence. The location of Hammersmith Village is unknown. Title search and archeological studies may provide information on this early "factory town."

In addition, Roland Robbins did not produce a final report for his 1948-53 archeological investigations of the site, on which the reconstruction was based. An analysis of his field notes, photograph and slide collection, and FIWA reports and correspondence, along with triangulation of photographs to establish physical registration points, could help locate additional archeological resources, assist interpretation of the reconstruction, and identify additional features of the historic iron works complex.

Modern Preservation Movement: The historical significance of the twentieth-century preservation movement at the site has not been formally studied. A Historic Resource Study to evaluate the context and significance of the reconstruction is essential to identify and assess park resources, especially to examine the status of those twentieth-century resources that are managed as cultural resources.



View of Saugus River from bluff.

Natural Resource Management

The protection and conservation of the park's lands, water resources, wildlife habitats and vegetation must be compatible with the fulfillment of its objectives in historic preservation and cultural resource protection. To achieve this, there is a need to identify, protect, and interpret the considerable natural resources of the site.

Inventories of flora and fauna are needed, and any species of special concern should be identified, with methods established for their protection. To date, a vascular plant study has been completed for the site, and a herpetology study is underway.

An analysis of water resources is needed. A current partnership with the United States Geological Survey (USGS) and the Saugus River Watershed Council provides water-monitoring data. Interpretive and educational programs are needed to deal with the past role of the river in the siting and development of the iron works and to explore the functions and importance of wetland systems and their components.

ISSUES RELATED TO SERVING THE PUBLIC

Visitor Access and Orientation

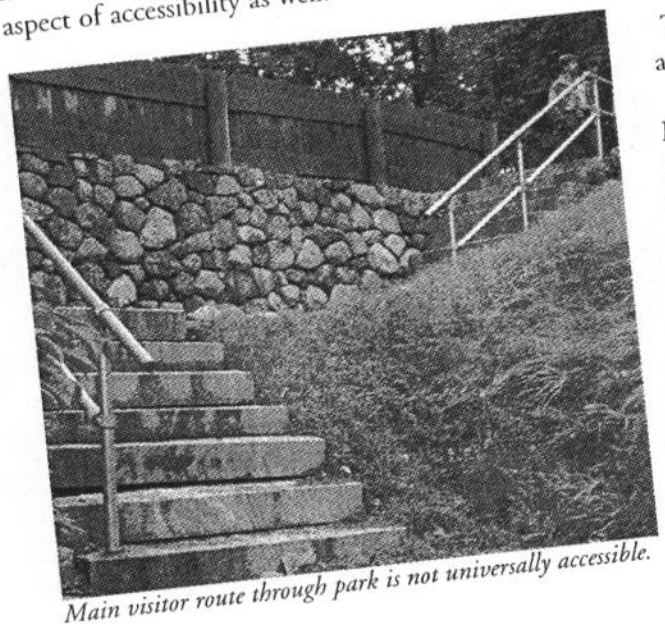
Directing the Visitor from Outside the Park: Although close to major routes, the site's location in a residential neighborhood makes access difficult. Improved signage installed over the past few years has improved visitor access. Plans are needed to enhance the physical connection, such as a pedestrian path, between the park and the town center.

Parking: The parking lot provides space for 28 cars and two buses. Staff also park their vehicles in this lot, so that on occasion the number of spaces has been insufficient.

Orienting the Visitor Inside the Park: The parking lot provides no clear channeling of visitors to the site. Visual intrusions and miscues, such as the maintenance garage and the placement of the visitor contact station, misdirect visitors. The small size and the placement of the visitor contact station inhibit full orientation of visitors to the site and to the Essex National Heritage Area. Existing pathways direct visitors around and away from the Iron Works House, causing visitors to ignore it.

Accessibility: Physical accessibility within the park can be problematic. Two sets of steep stairs link the bluff area to the industrial buildings in the floodplain, 21 feet below. The stairs prevent persons with mobility problems from easily accessing the industrial area. The site's upper lawn, existing visitor contact

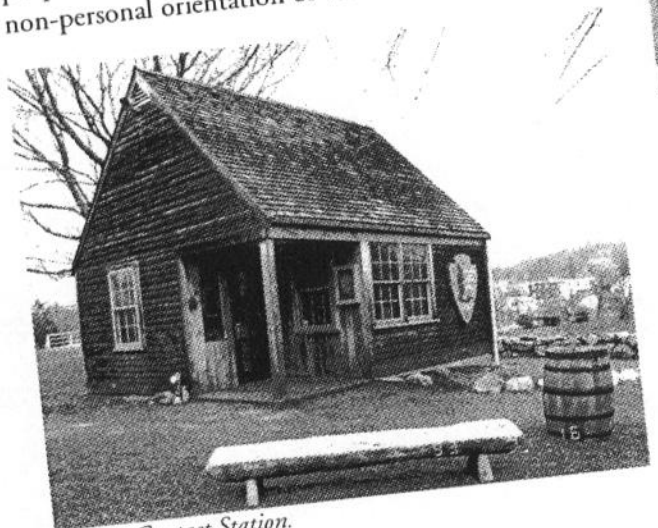
station, and Museum building do accommodate wheelchair access. The Iron Works House does not accommodate wheelchair access. The site offers an especially rich sensory experience for vision-impaired individuals. Planning should be mindful of this aspect of accessibility as well.



Main visitor route through park is not universally accessible.

Interpretation and Educational Programming

Visitor Contact Station: The location of the visitor contact station can be disorienting, as it bisects the park into two areas. Visitors often proceed to the industrial site without being aware of the Museum and orientation slideshow. The contact station is also too small to accommodate more than two or three people comfortably and offers no opportunity for non-personal orientation of visitors.

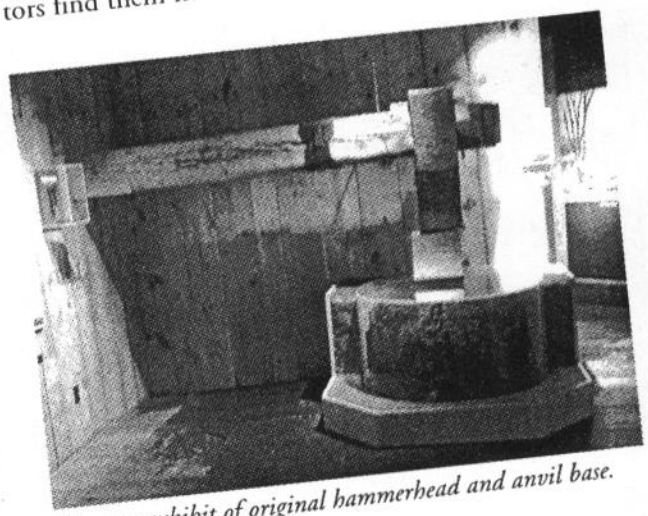


Visitor Contact Station.

Sequence of Visitor Experience: Visitors who tour the iron works before viewing the orientation slide-show in the Museum or viewing the Museum's exhibits may miss parts of the site's colonial or restoration story that help to place its technology in a comprehensive context.

The Slag Pile is not adequately interpreted through a wayside or in museum exhibits.

Museum Exhibits: The sequence of museum exhibits is unclear; some contain inaccuracies; and the major-ity of artifacts are not clearly identified or related to the exhibition story line. A group of reproduction artifacts are not identified as such and may be con-fused with the majority of authentic objects. The exhibits do not explain how scholars know what they know about the iron works. The social, economic, and political context of the iron works story is also under-interpreted, although the slide show addresses these themes in more depth. Exhibit lighting is poor, and many artifacts and labels are placed where visi-tors find them hard to see.



Museum exhibit of original hammerhead and anvil base.

The Iron Works House: The uncertainty surround-ing the house's date of construction complicates the interpretive relationship between the house and the iron works. Currently the house is being interpreted as the home of Samuel Appleton, grandson of the last owner-operator of the iron works. As Appleton's inventory apparently did not survive, the house' period furnishings are representational of Esse County and Boston gentry. While some roon exhibit period furnishings, other rooms display inte

pretive exhibits with track lighting and heavily built surrounds. This gives a disjointed and possibly disorienting quality to the house experience. In addition, a limited number of visitors currently have access to the Iron Works House, which is provided solely by scheduled tours.

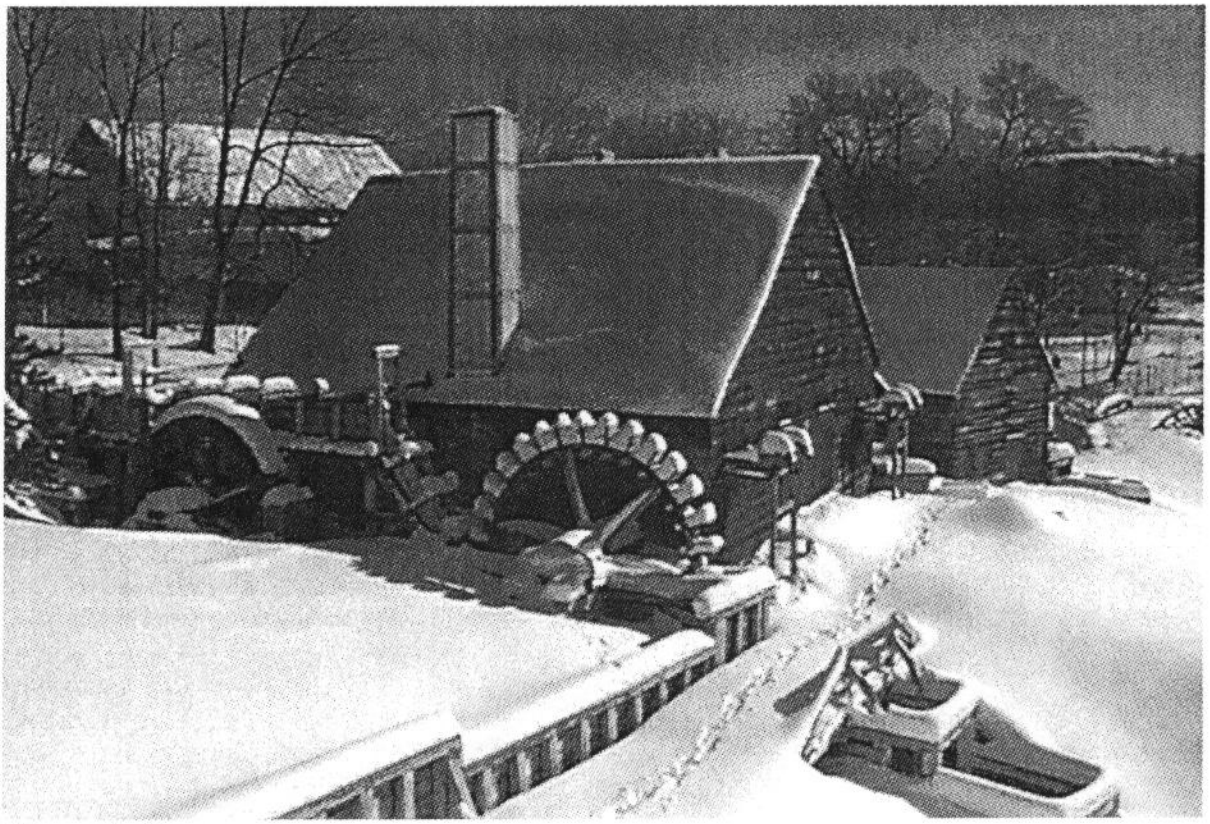
The Iron Works Plant: Methods need to be devised to explain to visitors that the iron works is a twentieth-century reconstruction on seventeenth-century foundation sites in combination with exposed seventeenth-century features. The Iron Works' shipping operation and role in maritime trade needs fuller interpretation.

Media: The site's orientation slideshow, shown in the auditorium in the Museum Annex, is outdated and should be replaced. The site also needs a coherent wayside exhibit plan; notable gaps are the slag pile, the Iron Works House, the site's topography, and the story of the reconstruction.

Education Programs: Although Saugus Iron Works runs a very intensive schedule of education programs, environmental education programs are currently not provided. Natural science programs are often attractive to urban youth. The linkage to the Essex National Heritage Area has also created a need to expand the interpretation of the site's various cultural contexts. Distance learning should be added to the package of educational offerings.

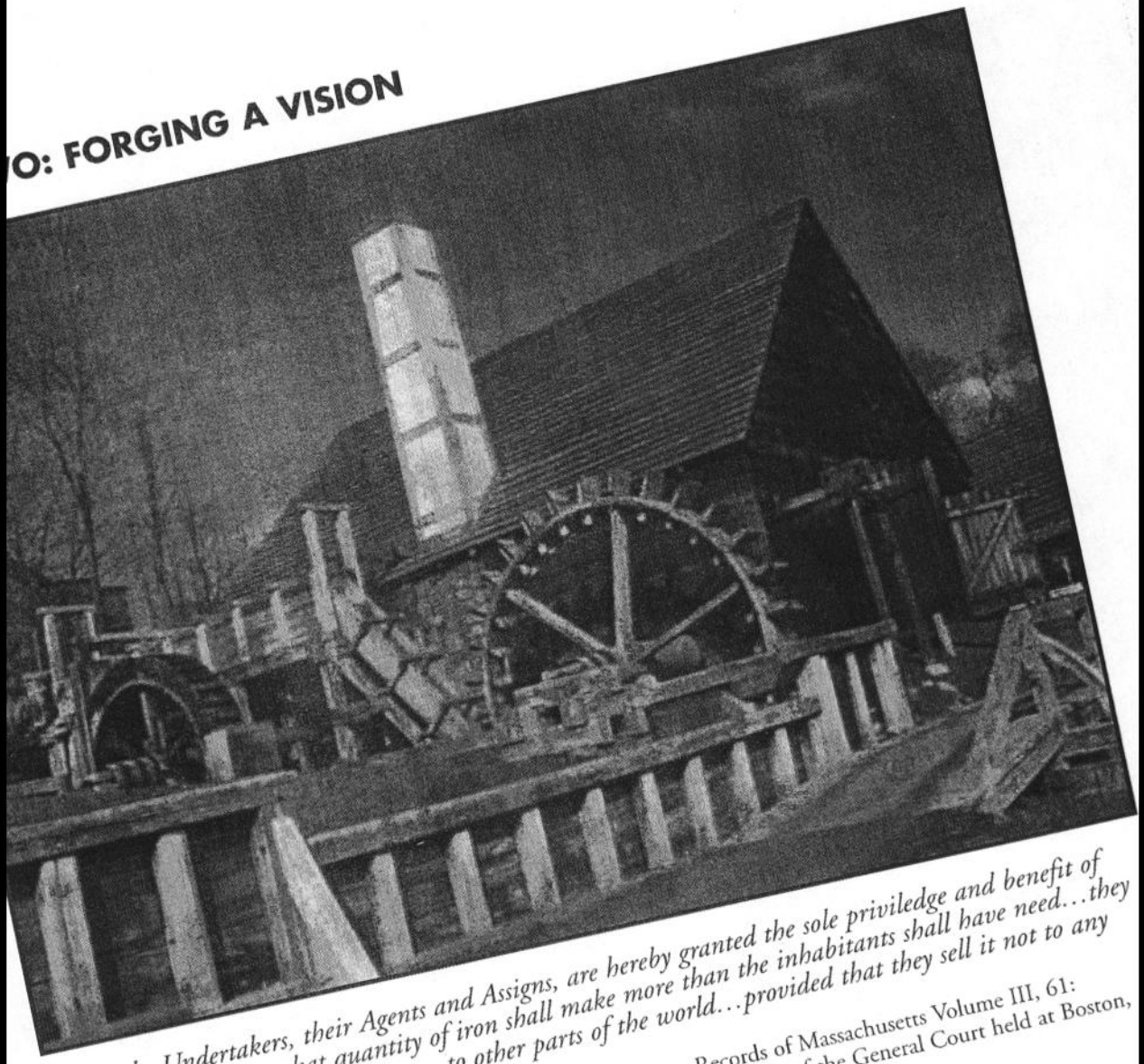
Education Facilities: Saugus Iron Works lacks a dedicated space for school groups. Currently, school groups use the auditorium in the Museum Annex for significant time blocks, preventing other visitors from viewing the slideshow and exhibits. Facilities for the development of distance-learning programs would add significantly to the site's reach.

Staff Work Space: Office space for staff is cramped and inadequate. From five to nine employees use four small spaces in wings of the historic Iron Works House that are not fully accessible, are difficult to heat, and lack restrooms and running water.



Winter at the forge.

O: FORGING A VISION



"That the Undertakers, their Agents and Assigns, are hereby granted the sole priviledge and benefit of making Iron... that what quantity of iron shall make more than the inhabitants shall have need...they shall have free liberty to transport... to other parts of the world...provided that they sell it not to any person or state in actual hostility with us;"

— Records of Massachusetts Volume III, 61: A session of the General Court held at Boston, 1: 8: 1645.

THE PREFERRED ALTERNATIVE

The management goals for Saugus Iron Works can be best achieved and the planning issues best resolved by a number of steps that involve some physical changes, but the minimum development necessary to achieve the site's primary mission. This will allow the site to continue to preserve and interpret its primary resources in the most efficient and effective ways.

PRESERVING RESOURCES

The historic and cultural resources of Saugus Iron Works will be preserved, protected, and maintained to the highest degree of historical integrity. Appropriate treatment of the cultural landscape, including the Saugus River turning basin, will be guided by a Cultural Landscape Report, expected in the near future. A Historic Structure Report, completed in 2000, evaluated the historic integrity and presented rehabilitation strategies for the Museum building. The building's interior will be rehabilitated to museum exhibit standards, and the exhibits will be redesigned. The building's exterior will retain character-defining architectural features from the Wallace Nutting period. The Museum Annex will be retained. A Historic Context Study for the reconstructed iron works mill buildings will define the integrity and historical significance of these structures and serve to update their listing on the National Register of Historic Places. A completion date has not been determined for this study. In the interim, preservation maintenance for structures and landscapes will continue to be guided by the intent and results of the work of Wallace Nutting and the First Iron Works Association.

The park's natural resources—the river and adjacent wetlands—will be managed as part of the cultural landscape to complement the historical significance of the site. These resources are also part of a larger natural system with its own dynamic and regional context, including industrial and developmental impacts. Park natural resources that have been damaged by human activities may need to be corrected. The silting of the river, the invasion of exotic plant species, and the loss of navigability are the major examples. Appropriate inventories, studies, and consultation will precede any restoration program.

The National Park Service will be vigilant about potential encroachments on the historic site and its viewsheds and will cooperate with neighbors, town officials, and local, regional, and national organizations on methods of amelioration. Acquisition of a parcel near the northeast corner of the site could protect the river north of the iron works from incompatible or intrusive development and provide a vital link in a proposed riverwalk nature trail along the length of the Saugus River.

Saugus Iron Works will be active in developing formal and informal partnerships and collaborations that will promote the preservation of resources bearing thematic relationships to the site.

Examples of these collaborations may involve historic properties located in the Essex National Heritage Area that share the three major themes of "Early Settlement," "Maritime Trade" and "Industrialization." Another example would be a collaboration with the Town of Saugus, as the steward of lands at Vinegar Hill, which is a local landmark that exhibits continued human use and impacts on the Saugus River estuary from ancient times to the present.



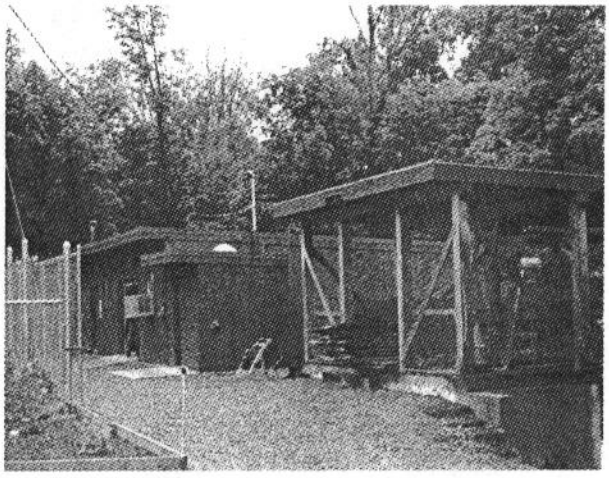
Nature trail.

Museum Collections Storage

The museum collection is a primary historic and archeological resource. The collection must be properly housed to assure its preservation, and it must be made available for research by staff and outside scholars. To accomplish this, storage of the museum collections, including archives, is proposed to be consolidated in the properties at the northwest corner of the site, 230 and 232 Central Street, which currently contain two houses used as employee quarters. Under this proposal, the buildings will be structurally upgraded and provided with climate-control and protective systems appropriate to collections storage and other uses; and park staff offices will be moved out of the first floor of the Iron Works House and into this residential tract. The exact allocation of functions within the two buildings and the potential for replacing them with one or more new structures, compatible in appearance with the residential neighborhood, will be determined by further assessment.

Maintenance Facilities

Critical to resource preservation is an adequate maintenance facility for use by the skilled park staff charged with primary responsibility for buildings and grounds preservation. The current arrangement of maintenance buildings and sheds is unsafe, inadequate, environmentally incompatible, and inefficient. Therefore, the preferred alternative is to construct a new consolidated facility on the east bank of the Saugus River on current NPS property. The maintenance garage and attached sheds adjacent to the public parking lot on the west bank bluff will be removed and that area restored to provide a natural setting for visitors to overlook the river and the Iron Works. The existing buildings and sheds on the east bank will also be removed, and that area, which is close to the river, will be restored to a natural appearance.



Existing maintenance carpenter shop.

SERVING THE PUBLIC

A number of relatively small changes will allow the visitor to be provided with a comprehensive, intelligible, pleasant and thoroughly informative navigation of the multiple resources of the Saugus Iron Works.

Pathways and features throughout the site will be improved through development of additional wayside exhibits and other outdoor interpretive features. All new exhibits and interpretive media will be designed to attract and accommodate the diverse potential audiences of this major metropolitan area.

To enhance interpretation, collaboration and cooperation with research agencies and thematically related groups and resources will be actively pursued. The site will continue to lead in on-site, off-site, and distance learning programs. It will take advantage of its position in the Essex National Heritage Area and the greater Boston metropolitan area to broaden the contexts in which it places the interpretation of its resources.

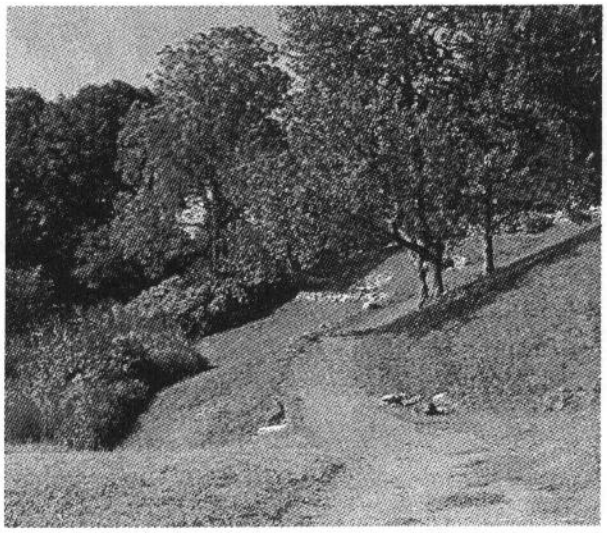
The consolidation of maintenance facilities on the east bank and the removal of the maintenance garage will allow the visitor parking lot to be redesigned and expanded to a small degree, while providing a pleasant and informative overlook of the river and the iron works industrial area. The park will also take advantage of opportunities to acquire parcels of land immediately south of the site to help in the reconfiguration of the vehicular entrance and the pedestrian connection to the center of Saugus. Acquisition of a parcel near the northeast corner of the site could provide for a connection between the park's existing trail along the east bank of the Saugus River and proposed local and regional trails.

Visitor Contact

To provide the visitor with a coherent interpretive

experience at the site, the current contact station will be removed, with consideration given for reuse in another location, and its functions transferred into the rehabilitated Iron Works House Annex and Lean-to. Employees currently using these spaces for offices will be moved to the second floor of the Annex and to the park-owned residential tract on Central Street. Visitors will thus enter the historic area from the redesigned parking lot and come face-to-face with the seventeenth century in the striking façade of the Iron Works House. They will be guided by paths and plantings to enter the house through a new side or rear door into the Annex. This access point and the first floor of the house will be made accessible to persons with disabilities consistent with the integrity of the structure. Inside the house, visitors will be greeted by staff, interpretive exhibits, orientation media, interactive displays, and a small sales area. In addition to being introduced to the site, visitors will be able to tour the original portions of the Iron Works House, with new exhibitry, on their own. They can then proceed to the Museum, which will have new exhibits, or follow the pathway to the Iron Works plant itself.

Since the Museum auditorium will no longer be needed to show an orientation film to visitors, it will be possible to dedicate space for educational programs and other group uses so that they no longer conflict with the needs of the general visitor.



Some pathways throughout site are not compliant with ADA standards.

Visitor Access

The pathway from the House and the Museum to the Iron Works industrial area and the paths between the iron works structures themselves will be improved for accessibility for persons with disabilities while retaining an appearance compatible with the historic scene. A powered stair-rider or other mechanical means at the more southern of the two existing staircases is the preferred means of overcoming access problems between the two primary levels of the site, as it would apparently have small impact on the cultural landscape and archeological resources and involve minimal cost. Within the iron works industrial site, walking paths will be graded to conform with a 1:12 slope ratio and a mechanical chair lift may be installed at the back stair of the slitting mill. A ramp or accessible path will be installed from the rear of the slitting mill to the Saugus River bridge. With these modifications, the industrial complex will be fully accessible.

ADDITIONAL MANAGEMENT ALTERNATIVES

Without changing the proposed operational enhancements to promote resource preservation and visitor services discussed in the preferred alternative, above, additional alternatives have been considered that would involve different degrees of facility development and site alteration or, at the extreme, no change to current facilities at all.

ALTERNATIVE 2: ENHANCED FACILITY DEVELOPMENT

Museum Collections Storage

A new collection storage facility would be constructed adjacent to the Museum building. The building would be designed to conform with museum standards for environmental controls, security, and other needs consistent with NPS standards. The structure would also be designed for compatibility with the adjacent historic structures and minimum possible intrusion on the cultural landscape.

Maintenance Facilities

Existing commercial or industrial space off-site

would be leased or acquired for maintenance operations. Any fee acquisition would require legislative authorization and, depending upon size and location, a boundary adjustment. Non-fee acquisition would require additional operational funding. All existing site maintenance facilities would be removed and the lands restored to a natural appearance.

Visitor Contact

A new visitor center would be constructed on the west bluff, at the site of the existing maintenance garage. This facility would provide visitor contact, bookstore, exhibits, office space, education program space, and restrooms. Building design would feature viewsheds of the river and the iron-making plant.

Visitor Access

Access problems between the two primary levels of the site may be overcome by the construction of a path and supporting structure from the bluff to the industrial site. Two alternatives have been examined: (1) a switchback trail starting near the Blast Furnace bridge; (2) a long straight trail starting at the bluff near the site of the current maintenance garage. If a new visitor center were to be constructed at the site of the maintenance garage, this latter path would be the most appropriate.

ALTERNATIVE 3: THE NO ACTION ALTERNATIVE

Museum Collections Storage

Collections would continue to be maintained in scattered locations lacking museum-standard climate control and security.

Maintenance Facilities

Maintenance would remain in the existing buildings on the bluff and east bank.

Visitor Contact

The existing visitor contact station would continue to serve as the main point of contact and orientation for visitors entering the site.

Visitor Access

The 21-foot descent to the site of the iron works industrial plant would remain traversable only by stairs and would remain non-compliant with accessibility regulations and laws. Access to and between the lower iron works structures would remain difficult or impossible for persons with disabilities and for families using strollers. Visitors with special needs would continue to be transported outside the gates and to the lower area by park staff on an as-needed basis.

MANAGEMENT ZONING

Management zoning, a concept that divides land into sectors depending on its primary uses, management objectives, and the nature of its resources, will guide the use and management of land and waters at Saugus Iron Works NHS in implementing the preferred management proposal.

Saugus Iron Works will be divided into two zones: cultural and development. These zones are consistent for all alternative courses of action. The locations of these zones are identified on the Management Zoning Map (page 39).

CULTURAL ZONE

The resources contributing to Saugus Iron Works' historical significance and thus to its establishment as a National Historic Site are within the cultural zone, which will be managed to preserve, protect, and interpret those resources and their settings. Pending a historic context study, the park's twentieth-century resources will continue to be managed as cultural resources. This zone includes the majority of the site. It is largely composed of those sites, structures, objects, and landscapes integral to or associated with the c.1646-70 industrial operation, with the Iron Works House, with significant twentieth-century layers, and with all areas of archeological potential identified in the *Archeological Overview and Assessment* (1997). Any modifications to structures and landscapes in this zone to provide enhanced visitor access to the site or for other mission-related purposes must meet stringent requirements to retain the historical character of the site.

All uses of historic resources will be subject to preservation and public safety requirements. No administrative or public use will be permitted if it is deter-

mined to threaten the safety of users or the stability, character, or integrity of a cultural landscape, archeological site, historic structure, or museum objects within a structure.

New structures, landscape features, and utilities may be constructed in this zone if other on- or off-site solutions are not feasible and if such construction will not impair the integrity of the historic landscape or structure or other resource managed as a cultural resource. First consideration will be given to reusing existing historic features. New construction located within this subzone will be subject to design considerations for compatibility with the features described in the Cultural Resource Environment section in Part Three of this document.

The Saugus River and its associated wetlands will be considered part of the cultural landscape of the site, though actions related to this area will be subject to additional environmental compliance requirements for rivers and wetlands. These areas have been altered and damaged by past industrial activities and by events such as the dam breach of 1957 and subsequent silting. Issues related to the restoration of the river and its ecosystems will need to be evaluated and subsequent measures enacted to protect ecological values and to minimize future human intrusion. Development in this area will be limited to features, such as boardwalks, trailside displays of information, and directional signs, that have no adverse effect on natural processes, are essential for management, and enhance visitors' appreciation of the site's resources.

DEVELOPMENT ZONE

Three areas where new construction or development may occur have been identified.

AREA A

This area responds to the potential development of a new maintenance facility on the east bank of the Saugus River. Although the actual location and physical elements of such a facility are only in the conceptual stage, this zone reflects the area with the least potential for adverse impacts to historic, cultural, archaeological, and other resources that are managed as cultural resources, and to natural resources. This development zone includes lands located along the east bank of the Saugus River closest to the site's boundary with Lothrop and Bridge Streets and the land adjacent to the area between Lothrop Street and Riverbank Road. This zone encompasses resources that could be directly modified through park development or intensive use. To mitigate the effects of such development on the historic character of the site and on park neighbors, the zone will be restricted to the smallest area necessary. Structures will be sized to be compatible with adjacent dwellings, and the impacts of development and use within the zone will be managed toward the same end.

AREA B

This area includes the two park residences on Central Street. These parcels may be used for administrative functions and museum collections storage, either by adaptively reusing the existing structures or by replacing them with new facilities compatible with the surrounding neighborhood and adjacent historic site.



One of two contemporary park residences on Central Street.

AREA C

This area includes the existing parking lot and adjacent maintenance garage area. These areas will be the focus of traffic, transportation-related, and pedestrian-access-related improvements, and other visitor amenities.

PARTNERSHIPS

The site has significantly expanded its public involvement and visibility in recent years, through programming, events, and community service. Consultation with partners and other segments of the public during the preparation of this document is discussed in

Part III of this plan. Continuing and new partnerships will provide mutual benefits to all parties, enhancing the NPS's ability to fulfill its mission. Certain opportunities offer particular advantages:

Town of Saugus

Saugus Iron Works should enhance its information sharing with the town and make its presence as a community resource more widely known and appreciated. Opportunities for joint action include the renewal of efforts to screen the view to the area of Currier Plaza and to protect the park viewsheds to Vinegar Hill. The park has a special concern for the long-term stewardship of the cultural and natural resources of Vinegar Hill, especially those related to its known and potential prehistoric and historic archeological sites and features that have thematic linkages to Saugus Iron Works and other Essex National Heritage Area sites.

Quincy Historical Society

This society manages the site of the 1644 Braintree Furnace, established by John Winthrop, Jr. As a sister site to Saugus Iron Works, the Braintree Furnace may warrant the development of a formal partnership to assure resource preservation, broadened interpretation, and archeological protection for the Braintree site.

Society for the Preservaation of New England Antiquities

Opportunities include continued cooperation on the dendrochronology study and expanded programming for the society's Boardman House.

Essex National Heritage Area

The site is a visitor center for the heritage area and cooperates with its other member organizations in developing educational and other programs. As a Congressionally designated partner in the Essex Natural Heritage Area, the site's involvement is critical to the success of all the parties.

Plimouth Plantation

This representation of seventeenth-century Plymouth Colony serves to educate visitors on seventeenth-century "Pilgrim" beliefs and customs, Wampanoag culture, and the legacy of the historic settlement. Saugus Iron Works NHS cooperates with the plantation on education programs and other interpretive initiatives.

Essex Historical Society and Shipbuilding Museum

This museum shares the history of Essex shipbuilding and encourages children and adults to participate in hands-on maritime activities. The museum is currently building a replica of a seventeenth-century "lighter" (a small sailboat) which will help interpret the shipping operation at the colonial iron works.

Other NPS Sites

Opportunities exist to develop thematic ties with other units and affiliated units of the National Park System, such as Hopewell Furnace National Historic Site, Lowell National Historical Park, Blackstone River Valley National Heritage Corridor, and others.

Environmental and Conservation Organizations

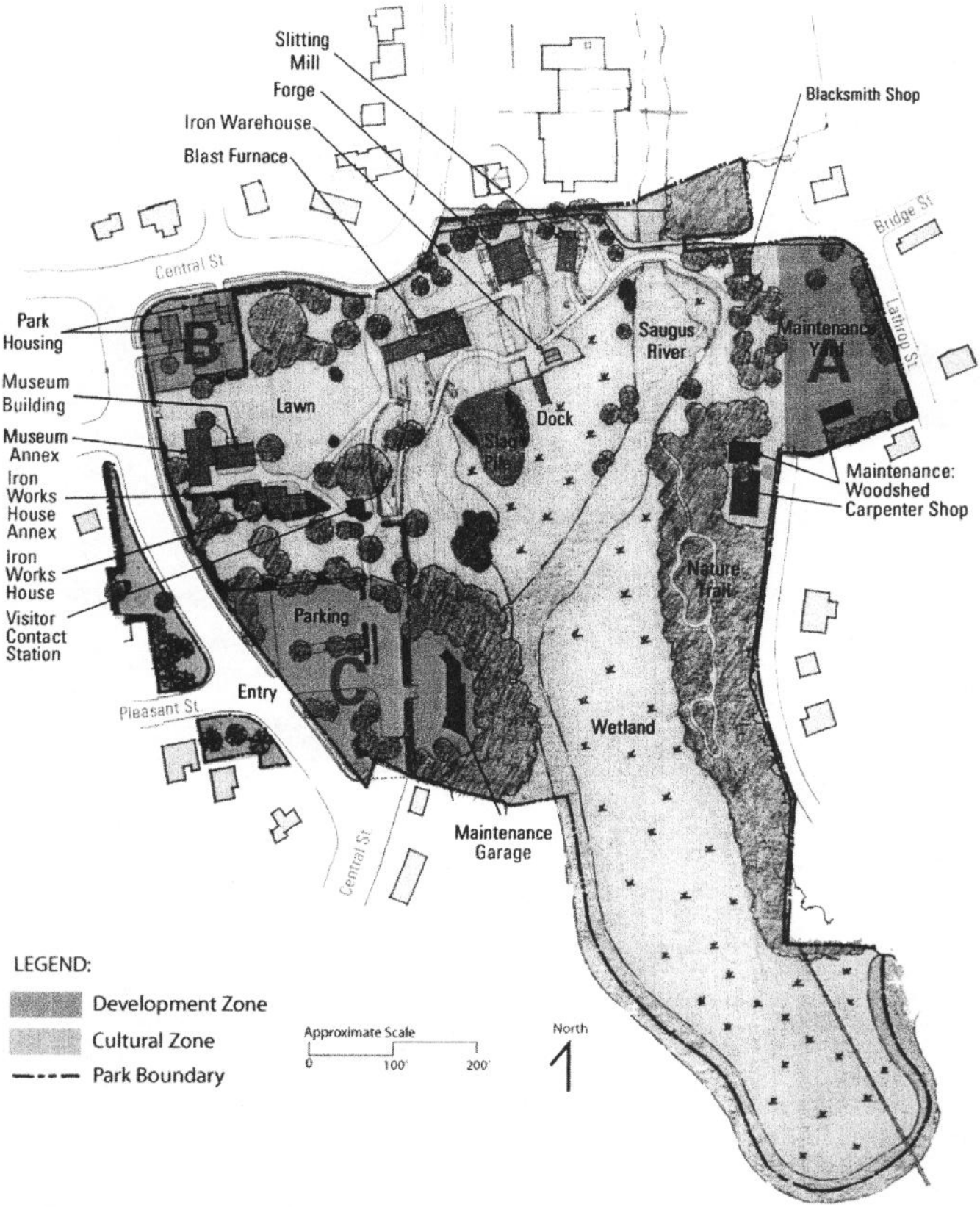
The Saugus River Watershed Council, Saugus Action Volunteers for the Environment, and other conservation groups are natural partners for the site. Groups promoting pedestrian and bicycle trails are also potential partners for the site's National Recreational Trail.

Academic Community

The site's contacts with academically based scholars have provided staff with enhanced knowledge of recent research in fields related to the site's significance and context. The site has also provided scholars an opportunity to use its historic and archeological resources for their own research. Opportunities exist for undergraduate and graduate student internships and research projects and for facilitating contacts between academe and the general public.

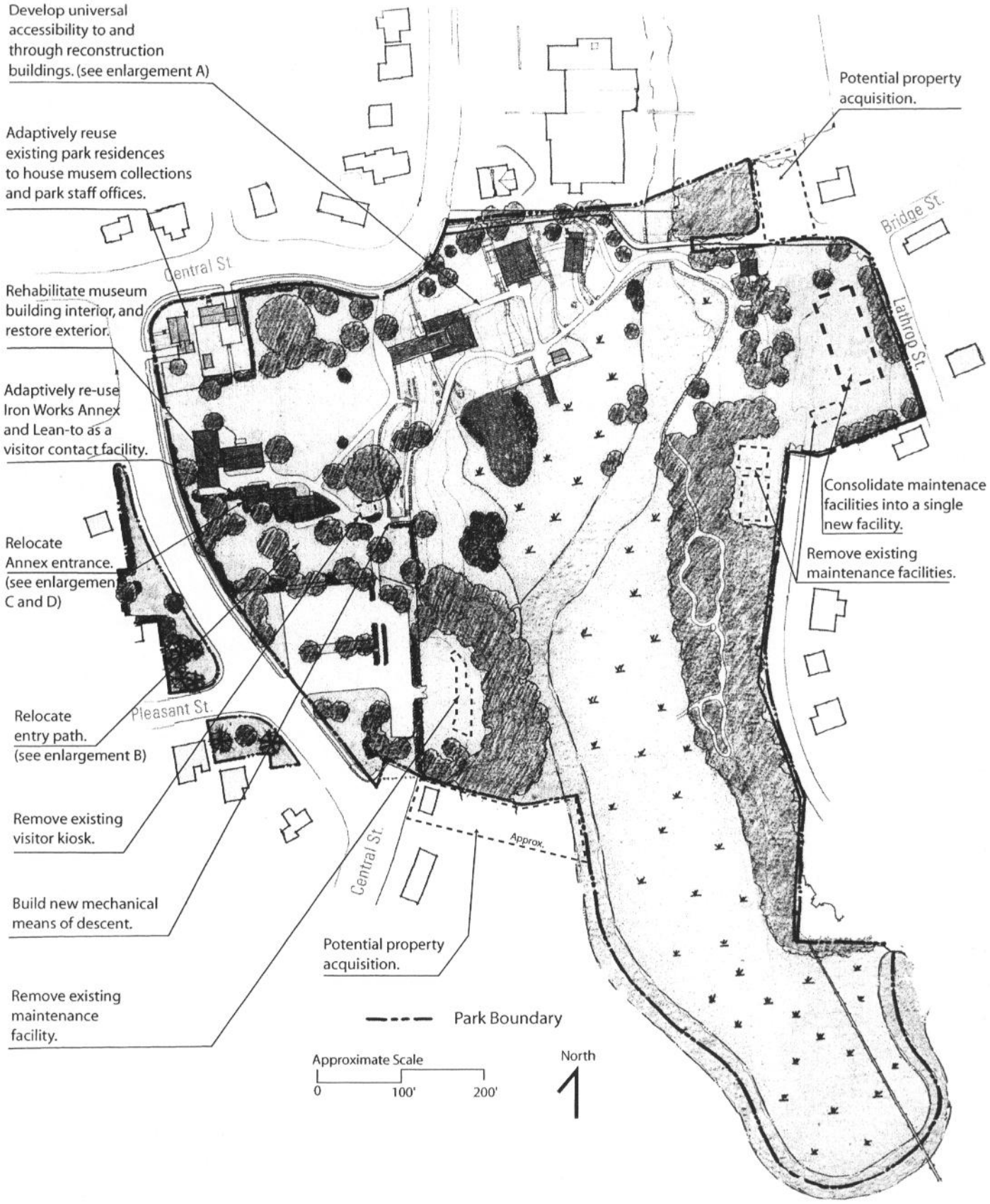
Friends Group

The site will examine the feasibility and desirability of establishing its own friends group to assist the site in obtaining the resources needed to enhance the site's ability to accomplish its mission.



MANAGEMENT ZONING

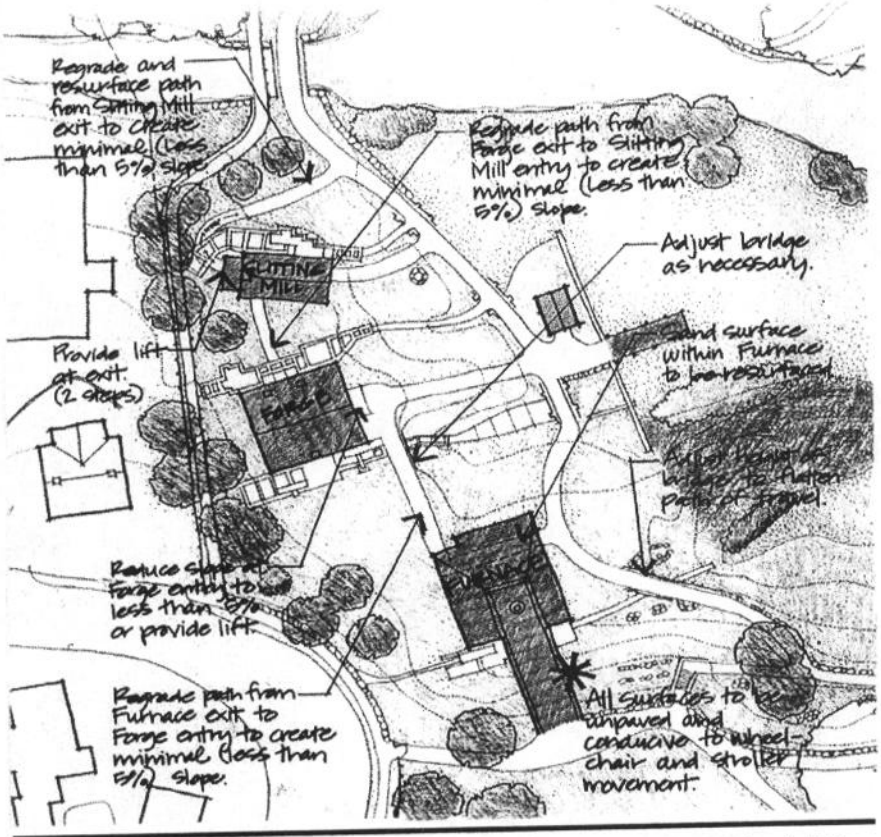
SAUGUS IRON WORKS
NATIONAL HISTORIC SITE
2002 General Management Plan



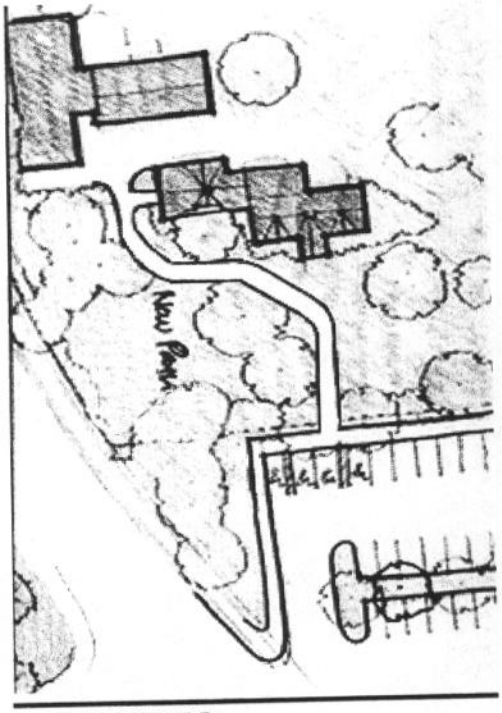
ALTERNATIVE 1: PREFERRED ALTERNATIVE

Site Plan

SAUGUS IRON WORKS
NATIONAL HISTORIC SITE
2002 General Management Plan

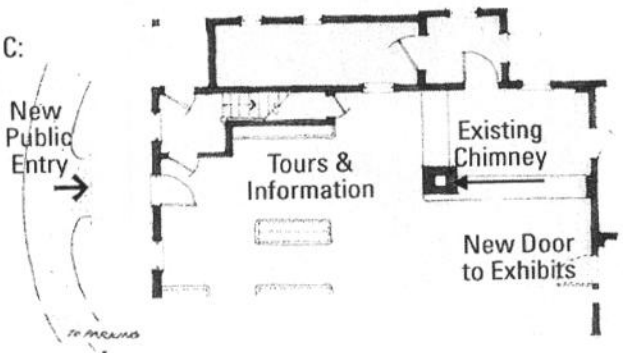


ENLARGEMENT A: Universal accessibility to and through reconstruction buildings.

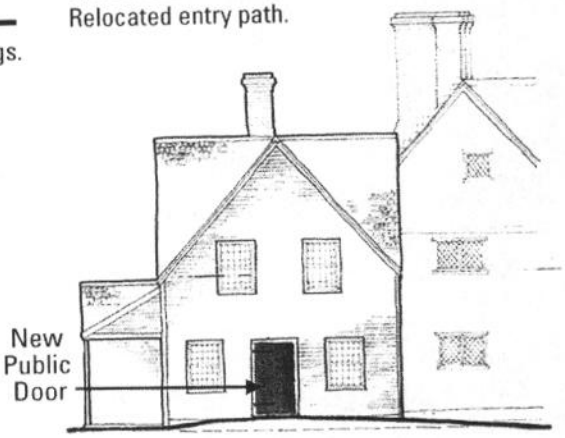


ENLARGEMENT B:
Relocated entry path.

ENLARGEMENT C:
Relocated Annex entrance, option 1.

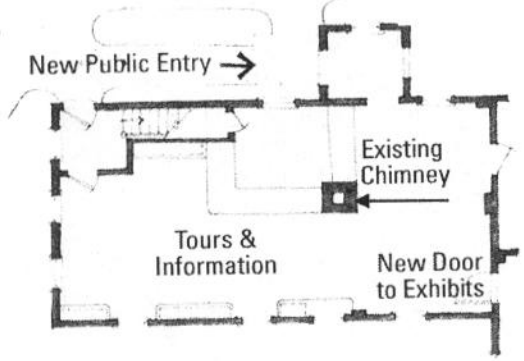


NEW VISITOR CENTER
FLOOR PLAN

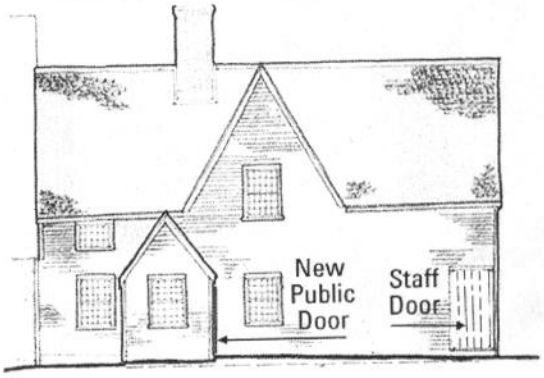


NEW VISITOR CENTER
PARTIAL WEST ELEVATION

ENLARGEMENT D:
Relocated Annex entrance, option 2.



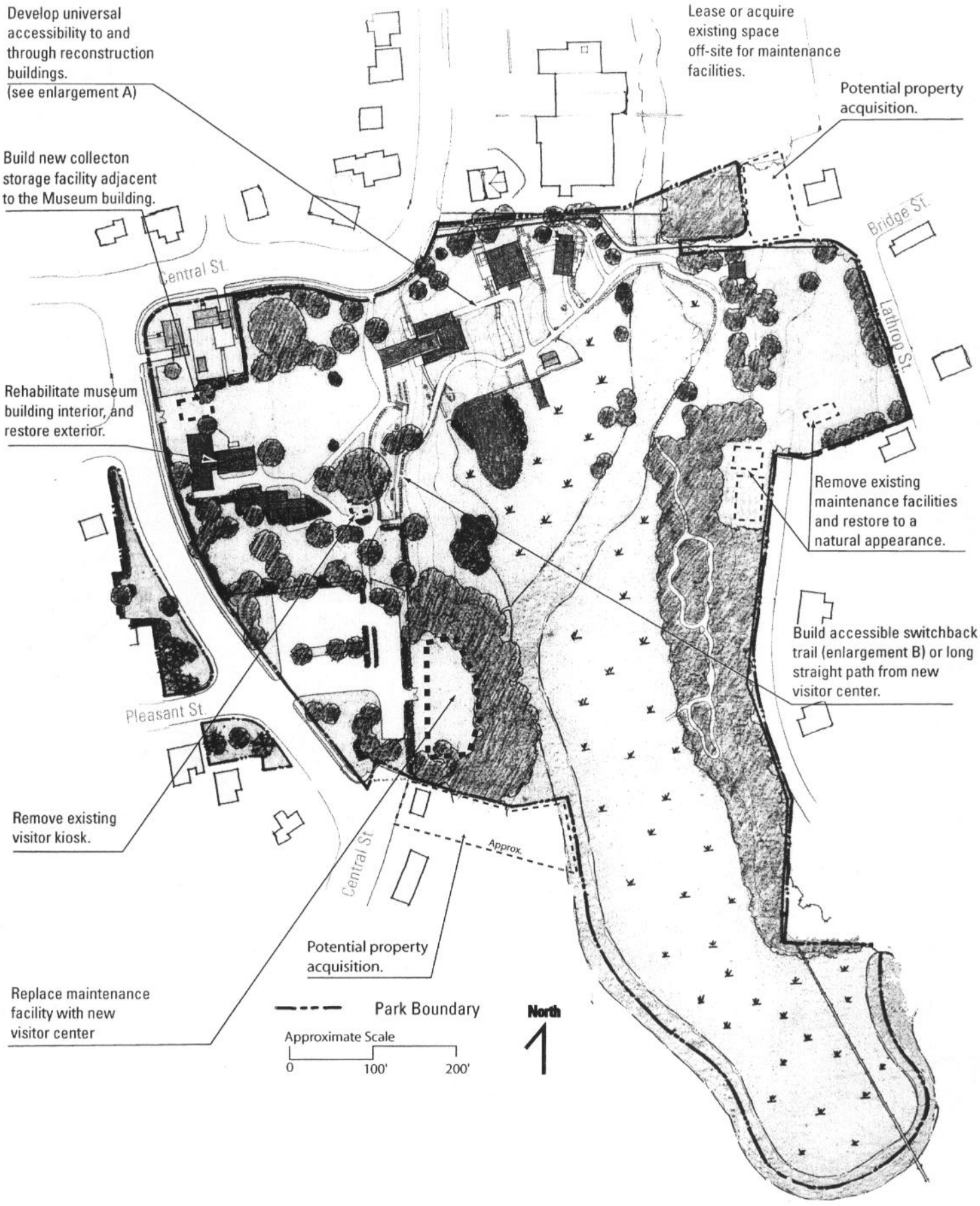
NEW VISITOR CENTER
FLOOR PLAN



NEW VISITOR CENTER
PARTIAL NORTH ELEVATION

ALTERNATIVE 1: PREFERRED ALTERNATIVE

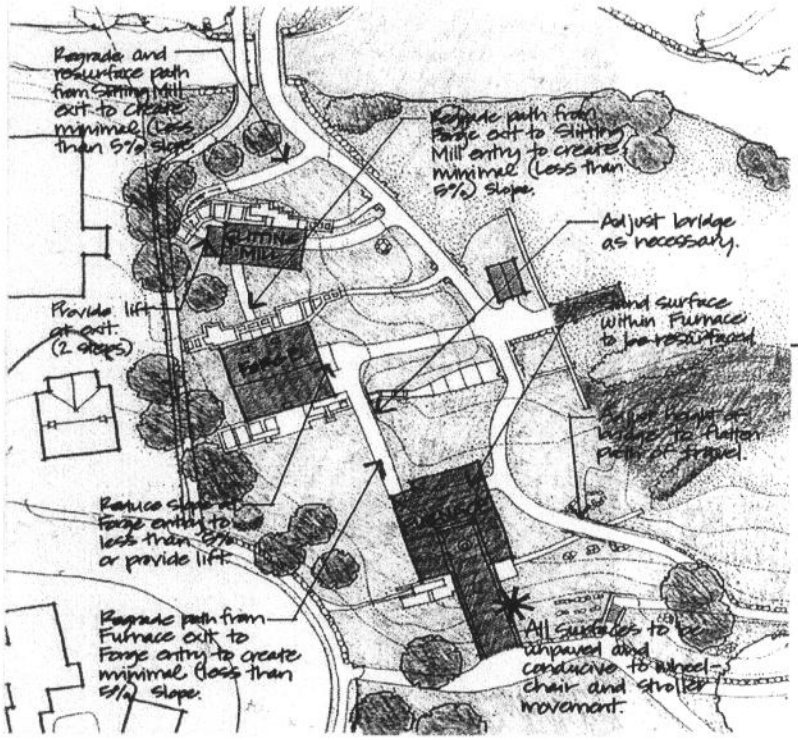
Enlargements



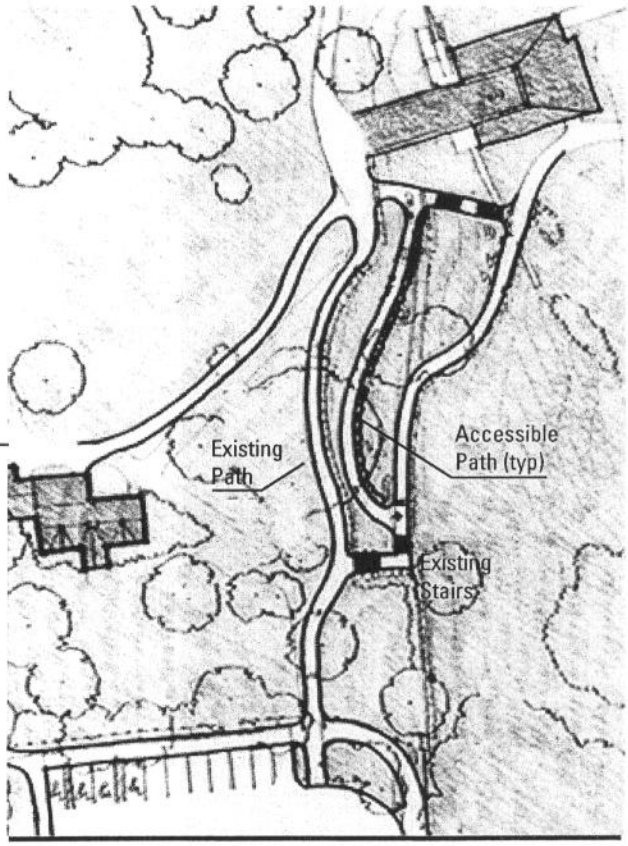
ALTERNATIVE 2: ENHANCED FACILITY DEVELOPMENT

Site Plan

SAUGUS IRON WORKS
NATIONAL HISTORIC SITE
2002 General Management Plan



ENLARGEMENT A:
Universal accessibility to and through reconstruction buildings.



ENLARGEMENT B:
Accessible switchback trail (one of two options).

ALTERNATIVE 2: ENHANCED FACILITY DEVELOPMENT

Enlargements

PART THREE: ENVIRONMENTAL ASSESSMENT



"On the North-side of this Bay is two great Marshes, which are made two by a pleasant River which runnes betweene them. North-ward up this River, goes great store of Alewives... flatts make it unnavigable for shippes, yet at high water great Boates, Loiters, and Pinnaces of 20, and 30 tun, may saile up to the plantation,"

—Description of the Saugus River from
New England's Prospect by William Wood, 1635

AFFECTED ENVIRONMENT

The section is divided into three primary headings: the *cultural resource environment,* the *natural resource environment,* and the *socioeconomic environment.* The cultural resource environment describes the park's historical background, historic structures, archaeological resources, and museum collections. The natural resource environment describes the site's climate, air-quality, topography, geology and soils, water resources (including wetlands, floodplains and coastal resources), vegetation, wildlife (including threatened and endangered species), and coastal zone management. The socioeconomic environment consists primarily of regional demographic information, land ownership and use, adjacent properties, and current and potential visitor use.

CULTURAL RESOURCE ENVIRONMENT

HISTORICAL BACKGROUND

Geologic History

Saugus Iron Works NHS is situated on the northern edge of the Boston Basin, a geological feature created by a shift in the earth's crust millions of years before the glaciers. After glaciation, as ice sheets receded, part of the Boston Basin was submerged, and river valleys, such as the lower 4.5 miles of the thirteen-mile Saugus River, became tidal estuaries. To the north, south, and west, the basin is ringed by hills of granitic rock.

The uplands north and west of Saugus are called the Lynn Volcanics. Northwest of the iron works at Lake Quannapowett in Wakefield, the Saugus River originally rose. As the river flows from the uplands to the sea, it descends rapidly at a fall line near the iron works site. This small rapids influenced the choice of this site for the iron works, as did the terrain, a natural bluff of glacial origin shaped like an amphitheater, and the presence of bog iron. At the iron works, the river originally widened into a basin. It is tidal and was originally navigable.

Before European settlement, the region's soils probably supported a mixed hardwood forest dominated by northern red oak, hickory, chestnut, and sugar maple and by such softwoods as eastern white pine, hemlock, cedar, beech, and birch.

Prehistoric Use

The prehistoric component of Saugus Iron Works NHS has not been systematically examined through archeological investigation to date. However, diagnostic tools held in the site's museum collections indicate that prehistoric people utilized the site from the Middle Archaic, c. 10,000 B.P. Archeologists believe that the park area was a significant prehistoric site and analogous to other important estuary head sites that have been identified in other areas of southern New England.

Native American Use

The Massachusetts Historical Comm-ission has identified the iron works property as a habitation and ceremonial site. Situated at the head of an estuary, the iron works area was probably the site of regular fishing in both late prehistoric and early historic times until the iron works dam obstructed the migration of such anadromous fish as shad, alewife, herring, salmon, and smelt.



Native American ax blade.

By the time of European settlment, the Native Americans inhabiting the Saugus area were part of a loose confederation known as the Pawtucket or Penacook Indians, whose population was estimated at between 21,000 and 24,000 before 1616. Three major settlement areas in northeastern Massachusetts were headed by sons of the Pawtucket sachem Nanepashemet. Sagamore James, or Monowampate, led the Saugus River settlements at Sagamore Hill and High Rock in Lynn, near the current town centers of Swampscott and Nahant, and on the plain between East Saugus and the Cliftondale hills. Smallpox epidemics, hostility between tribes, and the encroachment of European settlers decimated these communities. A few Native Americans stayed in the region, and two were employed as woodcutters for the Saugus Iron Works in the 1650's. Some Pawtuckets moved inland; many died; and by the

end of King Philip's War (1675-76) most remaining families had moved west.

The Iron Works Period

A series of circumstances occurring in England and New England in the early seventeenth century spurred the creation of the "iron works at Lin." (The area of Saugus was originally part of the town of Lynn.) Some 150 blast furnaces were operating in Great Britain in 1620. The consequential deforestation of England's hinterlands brought a crisis to England's smelting industries. English iron speculators came to see America's vast timber and ore reserves as an excellent business prospect. With the end of the Great Migration in 1641, fewer ships carried iron supplies to New England. As settlers faced iron shortages, Governor Winthrop enacted an ordinance for "encouraging the discovery of mines." John Winthrop, Jr., the governor's son, organized a consortium of English investors to provide the capital needed for an iron works venture. The investors called themselves the Company of Undertakers of the Iron Works in New England. Winthrop, Jr., also recruited skilled ironworkers from England. With English capital and skilled English labor, the development of New England's native manufactures began.

Plants were built, first in Braintree and then in Saugus. The Braintree plant, erected in 1644, lacked sufficient waterpower and was a disappointment to the investors. The Braintree site was used as an ancillary plant after the Saugus plant began operations. The large-scale "iron works at Lin" was built in 1646 and continued operations until about 1670. The original property contained 600 acres, which lay on both sides of the Saugus River, included the site of the modern Saugus Center, and ran south at least as far as East Saugus. The area contained plentiful natural resources to supply the colonial era's most ambitious manufacturing venture.

Waterpower was facilitated through a system of sluiceways and tailraces fed from a 1600-foot canal. The Saugus River was dammed at some point north of the site. The dam measured 100-feet long, 18-feet high and 75-feet thick at its base. Waste material from the furnace was dumped into the Saugus River, creating the slag pile.

The Saugus plant used state-of-the art manufacturing technology, one of only a dozen such plants in the seventeenth-century world. The iron works plant, located at the site's floodplain area, contained a blast furnace, forge, rolling and slitting mill, warehouse, blacksmith shops, a grist mill, and a pier from which company boats carried iron products to Boston. The iron works plant converted raw materials—bog ore, charcoal, and gabbro (a flux)—into cast and wrought iron products. Bog ore was mined from the marshes at the site and as far away as Hingham and Weymouth. Charcoal was made in pits or mounds in wooded areas of the property and surrounding areas and hauled to a storage place on the work site. Gabbro was collected along Nahant's rocky shores and transported by boat to the iron works. Annual blast furnace iron production is estimated at 144 tons of sow and pig iron and 25-35 tons of cast and hollowware products, such as pots, kettles, firebacks, and salt pans. Cast iron bars (sow or pig bars) were converted into wrought iron merchant bars in the plant's forge. The slitting mill flattened every twelfth merchant bar into nail rod and flat stock.

The iron works supplied New England village blacksmiths with wrought iron bars, nail rod, and flat stock. These local blacksmiths hammered the Saugus wrought iron into finished products, such as nails, hammers, hoes, harpoons, and saws. The iron works exported any excess iron bar and cast products primarily to Virginia, Barbados, and London.

Hammersmith village, housing the families of skilled ironworkers, was built in conjunction with the iron-making plant on the east side of the river. Along with advanced iron-making technology, the iron works brought non-Puritan English ironworkers and Scots prisoners-of-war into the staunchly Puritan Massachusetts Bay Colony.

Although production was good, mismanagement and lawsuits brought the iron works to a series of faltering halts. Ironworkers and their descendants, trained at Saugus, took their skills to new iron ventures throughout the northeast, giving rise to what would become the American iron and steel industry.

By 1700, eight iron-making plants had been started in New England. Saugus/Braintree workers staffed seven of these, including the Raynham forge in 1652 and the New Haven Iron Works in 1655.

Iron Works Farm Period (1670-1911)

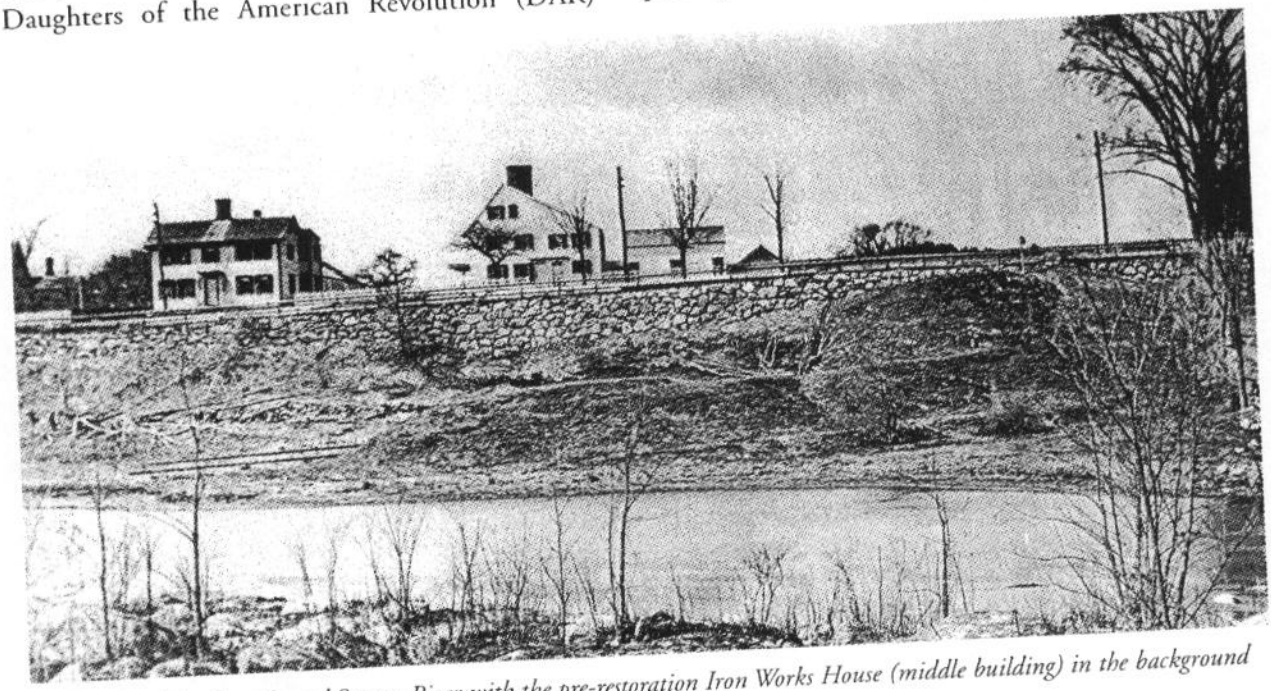
In 1676, Samuel Appleton, Jr., grandson of the last owner-operator of the iron works, inherited the 600-acre property. Appleton discontinued the iron works operation, choosing to farm the property. It is conjectured that Appleton built the Iron Works House about 1682-3.

According to a 1724 probate record, the site of the iron-making plant was required to remain open so that livestock could access the river. This indicates that the iron works site was not built upon after 1724. The plant eventually vanished into the earth to become an archeological cache.

The Twentieth Century Preservation Movement

Wallace Nutting, a leading exponent of the colonial revival movement in America, purchased and restored the Iron Works House to its seventeenth-century appearance, in 1915-17, on the recommendation of William Sumner Appleton, founder of the Society for the Preservation of New England Antiquities. In 1938, the Parson Roby Chapter of the Daughters of the American Revolution (DAR) acquired the property containing the site of the colonial iron works plant. In 1941, a private owner sold the Iron Works House to the Henry Ford Alumni Association, which intended to move the house to Greenfield Village, in Dearborn, Michigan. In response, Saugus residents formed the First Iron Works Association (FIWA) in 1943 to keep the house in Saugus. By 1946, they purchased the house, furnished it, and opened it to the public. That same year, the DAR donated the iron works site to FIWA. Beginning in 1949, the American Iron and Steel Institute began funding the archeological excavations begun in 1948 by Roland Robbins and the reconstruction of the colonial plant, which was designed by the architectural firm of Perry, Shaw, Hepburn, Kehoe, and Dean, who had been designers of Colonial Williamsburg. In 1954, the site was opened to the public. After the Iron & Steel Institute withdrew its funding in 1962, FIWA began a campaign to have the National Park Service take over the property, which was accomplished in 1968.

Under NPS administration, changes have included the removal of private residences (the Mansfield and Rafferty houses) and outbuildings from the southern half of the site; the addition of a maintenance building on the bluff, by conversion and accretion to an existing garage; alterations in the configuration of the parking lot; the addition of restroom facilities to the



1899 view of the slag pile and Saugus River with the pre-restoration Iron Works House (middle building) in the background

Museum building; tree and shrub plantings, mostly in the area near the Iron Works House; acquisition of two private residences at the northwest corner of the site; and the installation of a short nature trail on the east side of the river.

STRUCTURES

The site's principal historic structure is the Iron Works House. The house is among the largest surviving First Period (1620-1725) dwellings in the United States. Its architecture exemplifies the primary characteristics of a classic First Period dwelling, built in the post-medieval style. The house is a two-story, post-and-beam frame with front overhang, gabled dormers, and massive central chimney. The original structure consisted of four rooms, attic, and cellar. Additions include a rear lean-to (late 18th century); a restored entry hall (1915); and the Annex (a small addition from 1884 and the Wallace Nutting expansion of that addition in 1917). The Iron Works House was an impressive and imposing structure in seventeenth-century Massachusetts Bay Colony. Today, the house is distinctive among First Period homes for its interpretation of the domestic life of Puritan gentry. Other interpreted themes are architecture, Nutting and the colonial revival, and the story of the home's likely builder, Samuel Appleton, who apparently ended the iron works operation. Currently the Iron Works House Annex, which has been modified several times, is used as office space.

The Museum building was erected by Nutting and used as a blacksmith shop for Edward Guy from 1917 to about 1950. The building's floors bear the burn marks of that usage. FIWA added an annex to the structure in 1954 and used the building as exhibit space. The NPS has continued this usage.

The NPS considers the reconstructed structures of the iron-making plant to be historic resources, and, as such, they will be managed as cultural resources. The plant's structures are the blast furnace, forge, rolling and slitting mill, iron warehouse, pier and bulkhead, and associated waterwheels, sluiceways, tailraces, footbridges, and other features. The Massachusetts Historical Commission has requested an historic resource study to fully develop an historical context for the 1947-1954 reconstruction to update the site's National Register listing; such a study is included in the park's submittals for project funding.

ARCHEOLOGY

Saugus Iron Works has been the focus of four archeological excavations. The first and most comprehensive was Roland Robbins's five-year excavation, 1948-53, which uncovered the remains of the seventeenth-century iron works, along with thousands of artifacts and many structural features. Subsequent excavations located structural remains and artifacts around the Iron Works House. These activities and the analyses of their methods and findings document the probable existence of relatively undisturbed archaeological resources within park boundaries at the following locations: north of the Iron Works House, on the east bank of the river, and between the slag pile and the iron works. These areas could produce new evidence about the house and its occupants, the workers' village of Hammersmith, and the Jenks complex.



Archeologist Roland Robbins excavating the Jenks site.

There is a high probability that evidence exists on site that would point to Native American use and occupation. Recent excavations sponsored by the Metropolitan District Commission at a site downstream yielded a significant collection of prehistoric artifacts.

MUSEUM COLLECTIONS

A Scope of Collections Statement, revised in 1997, guides the park's acquisition of museum collections. The park's Collection Management Plan, 1995, recommends actions to insure preservation of museum collections.

Archeological Collections

Site archeological collections number approximately 19,000 objects and include such seventeenth-century industrial items as waterwheel parts, shafts, cams, a quarter-ton cast-iron hammer head, tuyeres, crucibles, casting mold parts, and bellows and anvil bases. These objects provide an invaluable record of seventeenth-century iron-making technology, plant design, and waterpower engineering. The collections offer rich opportunities for study to researchers interested in a wide range of topics related to seventeenth-century industry.

Archeological collections also contain an assortment of finished iron products found at the original plant, including farm implements, edge tools, tools for various trades, domestic wares, armaments, standard weights, ship accoutrements, fish hooks, harpoon, and nail rod. These objects reflect the economic and occupational activities of seventeenth-century Massachusetts Bay Colony and hold research value for specialists in weapon parts, tools, and colonial trades.

Other archeologically recovered artifacts document the domestic culture surrounding the site, particularly the lives of those employed at the colonial iron works. Collections of ceramic, glass, leather shoe parts, brass pins, tobacco pipes, flatware, and household wares give insight into the work life, domestic life, sensibilities, and aesthetics of ironworkers and gentry within the iron works site and Puritan society at large.

Stone artifacts, with shell, bone, and pottery specimens, dominate the site's prehistoric archeological collection. These products are a record of the evolving tool technologies of native people living at the site. Significant prehistoric artifacts include hoes, axes, celts, plummets, and drills. The collection contains a large amount of Saugus jasper, offering research possibilities for comparative lithic studies and analysis of native peoples' trade patterns. Problems with provenience may hinder certain types of research. The site's museum collection also holds examples of Indian trade iron objects, such as fishhooks, axes, and mouth harps.



1655 fireback cast at the original blast furnace.

History Collection (Non-Archival Objects)

The history collection holds approximately 1,280 objects. The collection contains seventeenth-century and reproduction period furnishings and domestic objects, along with early to mid-twentieth-century objects produced by Wallace Nutting, Edward Guy, and the First Iron Works Association. These objects are held in museum storage or are placed on exhibit in the Iron Works House. The history collection is of interest to researchers studying colonial settlement and domestic life in Massachusetts Bay. Researchers interested in the twentieth-century preservation movement also value the collection.

History Collection (Archives)

Archival materials number approximately 45,190 items. This collection includes archeological documentation, research, administrative management records, architectural drawings, photographs, and other documents. These reference materials provide information necessary for researchers interested in

archeology and history and for preservation staff caring for park historic structures, landscapes, archeological sites, and stewardship programs. Archival materials are stored in a dedicated room within the Iron Works House Annex.

Natural History Collection

The park holds four natural history specimens, which provide mineral and vegetative representation of the site. Additional park botanical collections are held on deposit at the Brooklyn Botanical Garden, New York.

NATURAL RESOURCE ENVIRONMENT

Vegetation

Saugus Iron Works NHS is composed of three distinct vegetative zones. The upper lawn area includes the Iron Works House and adjacent herb garden, the parking area, and surrounding lawns, which contain ornamental shrubs and trees, as well as indigenous species. The Saugus River floodplain is a tidal marsh, which supports wetland vegetation. The wooded Nature Trail area, located along the east bank of the Saugus River and extending up to the site's boundary, is characterized by a variety of trees and shrubs, as well as woodland and marsh plants.

Invasive plant species, phragmites, Japanese knotweed, and purple loosestrife, continue to overtake the few remaining open water areas of the Saugus River tidal basin. Also abundant is the native species narrow-leaved cattail. According to a 1991 study, *Baseline Assessment of the Saugus River System,* the park is "super-dominated" by Japanese knotweed.

Also found in the park's marsh area are multiflora rose, curly pondweed, and mugwort, introduced species that are considered to be aggressive invaders of disturbed or damaged habitats and tend to replace more valuable species. Woody plants are also becoming established in the marsh area and have begun to visually block the east bank of the Saugus River. The native species poison ivy is abundant in the park and is considered a nuisance species when found in areas frequented by the public. There are some exotic ornamental botanicals, which were introduced to the park since 1969 by the National Park Service.

Botanists completed a vascular plant survey of the park in November 1997 (Steven Clemants, *Vascular Plant Survey 1996-1997,* Brooklyn Botanical Garden, New York). No state listed threatened or endangered species were found within the park's boundary.

Wildlife

Saugus Iron Works NHS is a significant resource for animal species because of its utility as wildlife habitat in a heavily settled area. A systematic wildlife inventory has not been completed for the park, except for amphibians and reptiles inventoried during the summer of 2000. Informal observation indicates that the park provides habitat to resident and transient populations of small mammals, birds, fish, reptiles, amphibians, and insects. During the preparation of the Notice of Intent for the phragmites removal and control project, (See Appendix A, Document 4), no state listed wildlife species were found to be present.

Wetland birds, such as mallards and black ducks, herons, egrets, redwing blackbirds, kingfishers, and Canada geese, can be found within park boundaries. Typical "backyard" birds include cardinals, orioles, finches, robins, hairy woodpeckers, white-breasted nuthatches, bluejays, crows, black-capped chickadees, flickers, catbirds, mocking birds, and wrens. Migrating warblers also stop at the park. Barn swallows nest in the iron works buildings and are highly visible to the public.

Woodchucks, field mice, chipmunks, rabbits, moles, striped skunks, gray squirrels, raccoons, and opossum are also found at the park. Snapping turtles nest on or near park trails around the industrial buildings. Smelt, brown trout, and American eel spawn at the park. In spring 1997, thousands of "elvers," or their immature offspring, were a target of poaching for an illicit market in Asia.

Wetlands, Floodplains, and Coastal Resources

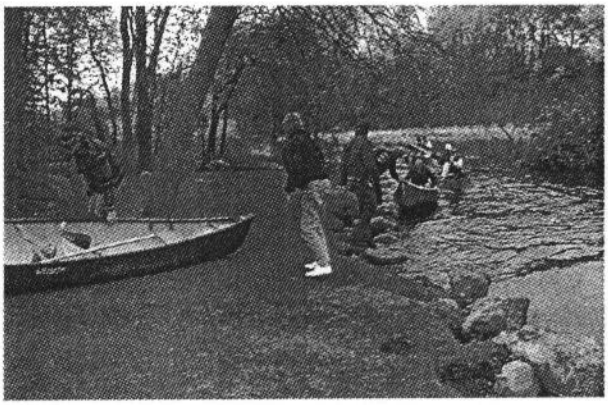
The Saugus River, critical to the operation of the seventeenth-century iron works in its former navigable condition, is the major aquatic resource of the site. Although the Saugus River originates at Lake Quannapowett in Wakefield, Massachusetts, approximately 9 miles northwest of the park, the Lynnfield-

Wakefield marshes and associated wetlands are currently its true source. The hydrologically "sluggish" stream meanders another 4 miles beyond the park to the Atlantic Ocean at Lynn Harbor in Saugus. The Saugus River is tidal for the last 4.5 miles, with the transition from fresh water to salt water occurring between the park and the adjacent property immediately upstream at Bridge Street (former Scott's Mill). This zone of mixing fresh and salt water serves as a highly productive nursery for many marine species. Siltation from the 1957 dam breach has channelized the once-wide river into a narrow band, flanked with marshes dominated by phragmites and narrow-leaved cattail. Increasing residential development upstream of the site, in the eleven communities that encompass the Saugus River watershed, increases the potential for seasonal flooding. Flood insurance maps for Saugus depict the entire historic site outside the hundred-year flood zone. See the Federal Emergency Management Administration (FEMA) map of flood data for Massachusetts, Community Panel # 250104 0003B, Panel 3 of 4.

Water Quality

The Massachusetts Division of Water Pollution Control assessed the water quality of the Saugus River at twelve sampling stations in 1982 and established a water quality rating of B, suitable for fishing and swimming. The Army Corps of Engineers sampled the estuarine reaches (lower 4.7 miles) during the period 1982-84 and again in 1986. Water quality testing was also documented by Sandy Wignot, a seasonal park ranger, in a student report, "Baseline Water Quality Data for the Saugus River," spring 1988. In 1989-90, a study of the Saugus River system analyzed samples from 10 stations along the river, including the Saugus Iron Works. The results, published in *Baseline Assessment of the Saugus River System* (Tashiro, et al., 1991), suggest that the river may be exceeding the limits for a B rating. The Saugus River Watershed Council is currently coordinating a water monitoring effort, and designated park staff join them in a cooperative effort. The Saugus River has comparatively low levels of chemical pollution; however, high levels of coliform bacteria have been found in some areas. Although the town of Saugus installed a new sewage pumping station in 1987, sewage still seems to be the most obvious detriment to Saugus River water quality, probably caused by old septic systems still in use leaching their contents into the river. Fecal coliform may increase to high levels after rainstorms. On March 31, 1995, Massachusetts implemented regulations under the Clean Water Act's Title V to require that all new and existing septic systems meet certain criteria to protect groundwater and surface water quality.

A flood damage control project for the Saugus River and tributaries, Lynn, Malden, Revere and Saugus, Massachusetts, has been underway since 1989. The Army Corps of Engineers (ACOE) installed a gauge to measure river flow on the adjacent Henkel property (now vacant), immediately upstream from the park. The United States Geological Survey (USGS) now monitors this gauge.



Canoe trip up the Saugus River ends at the site's nature trail.

A number of new efforts are underway to improve the quality of the Saugus River, with the Saugus River Watershed Council as the prime advocacy group. The Saugus River is registered with the Massachusetts Adopt-A-Stream Program, through which the group hopes to improve the quality of the river environment for ecological and recreational purposes.

Other water resources at the park include a spring-fed well located in front of the reconstructed Forge, as well as two springs, one near the reconstructed Blast Furnace and another behind the maintenance building on the bluff.

Climate and Air Quality

Saugus is located along the northern portion of Massachusetts Bay at 42 degrees north latitude. The

weather is typical of that for many New England coastal communities. Summers are cooler and winters are warmer than inland communities because of the proximity of the Atlantic Ocean. The area receives approximately 40 inches of annual precipitation, distributed evenly throughout the year. There are approximately 100 clear days, 106 days of partly cloudy weather, and 159 days of cloudy skies.

Air quality is managed regionally and on the state level by the Massachusetts Department of Environmental Protection (DEP), which enforces National Ambient Air Quality Standards (NAAQS) established by the U. S. Environmental Protection Agency under the Clean Air Act (42 USC 7401 et seq.). NAAQS have been established for six pollutants: ozone, inhalable particulate matter (PM-10), sulfur dioxide, nitrogen oxides, carbon monoxide, and lead.

Three air quality categories are established for units of the National Park System: Class I, Class II, and Class III. Saugus Iron Works is in a Class II area. The state may permit a moderate amount of new air pollution (sulfur dioxide, particulate matter, and nitrogen oxides) as long as neither NAAQS nor the maximum allowable increments over established baseline concentrations are exceeded. Air quality in Saugus is affected by power stations in Salem and Charlestown and by remote sources of air pollution that are transported into the region by prevailing winds. The town of Saugus lies within the Metropolitan Boston Intrastate Air Quality Control Region. This is an area of attainment for National Ambient Air Quality Standards, except for the pollutant ozone. However, annual reports indicate that the level of ozone is decreasing and that the air quality is improving in regard to ozone pollution. Chelsea and Lynn are the cities closest to Saugus for which air quality data are available from the *Massachusetts 1998 Air Quality Report* prepared by the DEP. The site closest to Saugus from which the DEP collects air quality data is the Lynn Water Treatment Plant, which monitors for ozone, oxides of nitrogen, and particulate matter.

No major pollutants originate from the park. The only pollutants originating from park-related activities are from the emissions of vehicles used by visitors to reach the park and by routine maintenance activities. None of the alternatives proposed in this GMP will affect the attainment of the NAAQS or result in elevated levels of pollutants.

In 1993, the National Park Service developed a strategy to initiate actions that preserve and protect air resources in park units east of the Mississippi. Known as CLEAR (A Clearer Look at Eastern Air Resources), this program emphasizes cooperative efforts between the NPS, the public, federal, state and local agencies to minimize the impact of air pollution on natural and cultural resources, to protect the health of park visitors and employees, and to enhance visitor enjoyment, while taking a leadership role in reducing or eliminating sources of air pollution within the park. Saugus Iron Works is participating in CLEAR, and the Proposal and Alternatives outlined in this document should, if implemented, result in lower emissions from the park unit.

Soils and Topography

The geologic resources of the area—the general land forms and the abundance of bog iron ore—were critical factors in the choice of this site as an ideal location for the production of iron in the seventeenth century. These general landforms—a bluff, floodplain, and terrace on the upper estuary of a tidal river—also made it a rich setting for prehistoric habitation. A major source of Saugus jasper is located near the park; prehistoric inhabitants used this igneous rhyolite to fashion many of the site's lithic artifacts.

Bank soils of the Saugus River were identified in *Baseline Assessment of the Saugus River System* (1991). The banks along the river in the Saugus iron works area zone are: Hollis-Urban land-rock outcrop complex, Merrimac-Urban land complex, and some Ipswich and Westbrook muck peats. In the freshwater tidal marsh and the estuarine reaches, sediments are more usually dominated by decomposed sapric histosols organic soils or organic-rich mineral soils.

Aesthetics

The park's considerable aesthetic qualities are directly related to its historic, natural and cultural scene; it is valued as one of the few open spaces of high quality in the Saugus area. The seventeenth-century Iron Works House, the reconstructed industrial buildings,

and their settings, combine to form a distinctive cultural landscape and an "open air museum" experience for the visitor.

SOCIOECONOMIC ENVIRONMENT

Saugus Iron Works NHS is located in the southern portion of Essex County, Massachusetts, in the Town of Saugus, approximately ten miles north of Boston. Logan Airport is less than one-half hour by car, and the site is accessible by public transportation from Boston. The park is less than one mile from Route 1 and Interstate 95, the primary north-south highways in eastern Massachusetts. Nearly all visitors to the town and the site arrive by private vehicle.

The 8.51-acre site is bordered by residential neighborhoods and by residences and commercial buildings visible to the south as one looks down the Saugus River. Saugus Town Center, site of Town Hall and other town buildings and a small retail district, is one-third of a mile south of the park. Most of the community is residential, with 78% of the households owner-occupied. The population is about 27,000; the population of Essex County is about 700,000. The population density in Saugus is about 2,400 persons per square mile; about 43 percent of the land is developed. The demand for housing in the Boston metropolitan area and the consequent pressures on undeveloped land in Saugus have increased significantly in recent years. This will affect the viewsheds that provide a context for the site.

Saugus Iron Works may contribute to the economic development of the area because of its singular position as the southern gateway to the Essex National Heritage Area, but its economic impact would be of significance only in the small retail area of Saugus Center. Route 1 in Saugus, a mile away, is the primary focus of economic activity, a major retail, hotel, and light industrial corridor. It is traversed by over 110,000 vehicles per day. The impact on traffic of any changes in visitation to the Saugus Iron Works would be felt only in the immediate area of the park and would not be statistically significant.

While the racial and ethnic makeup of Saugus is traditionally homogeneous, recent influxes of immigrants from Asia and Latin America are very likely to continue to increase the diversity of the visitors the park serves. Other changes in population related to growth, aging and mobility may alter traditional visitor use patterns for Saugus Iron Works and shift impacts on resources and demands for interpretive and recreational services. Studies of these and other demographic issues that may affect park stewardship may be needed to quantify and provide insight to manage their potential impacts.

ALTERNATIVES CONSIDERED

After undertaking significant research on the historic structures, landscapes, and collections of Saugus Iron Works National Historic Site, and after extensive consultation with the general public and the park's interested constituents, the NPS developed several alternative management options for the park. A key question for the NPS was how to balance the need for the public's access to and understanding of all the historic, cultural and natural features of the park with the importance of protecting and preserving those features. The options outlined below share some common elements, but demonstrate different levels and variants of actions and associated impacts.

ALTERNATIVE 1: THE PREFERRED ALTERNATIVE

This alternative contains four distinct elements: Museum Collection Storage, Visitor Contact, Visitor Access, and Maintenance, components of which are found in the other alternatives. This alternative represents the NPS's position on what should be accomplished in the near term in order to provide the highest level of protection of the park's resources while ensuring optimal public access to those resources.

Visitor Contact

The Iron Works House Annex and Lean-to will be adaptively reused as a visitor contact facility. The Annex will be modified to create an open space plan on the first floor, with the entrance being located on either the west or north side of the building. (Appropriate Section 106 and NEPA compliance will be undertaken prior to the actual implementation stage.) The area would provide a visitor information desk, orientation media, exhibits, a sales area, and

access into the Iron Works House for self-guided tours.

Maintenance Facility

Existing maintenance operations will be consolidated into a single new facility to be built on park property on the east bank. This new facility will be located at the site's northeast corner as far from the river as is feasible. The existing maintenance garage on the west bluff will be demolished, and a scenic overlook developed in its place. The existing carpenter shop and woodshed structures, which are currently located near the river on the east bank, will be removed and their functions consolidated into the new structure.

Museum Exhibit and Collections Storage

The interior of the Museum building will be rehabilitated to comply with museum exhibit space standards. The exterior of the original portion of the building will be restored to its appearance when constructed during the Nutting period. The existing park residences at 230 and 232 Main Street will be adaptively reused to house museum collections and park staff offices currently located in the Iron Works House Annex.

Visitor Access

A mechanical means of descent, such as a rail-rider, will be built along the upper portion of the existing staircase located adjacent to the current contact station. Access to and through the reconstructed buildings will also be developed as shown in Enlargement A of the Preferred Alternative, page 43.



Visitors gather at the slope near the blast furnace.

TABLE 3: Use and Treatment of Resources in the Preferred Alternative

Resource	Periods of Significance	Present Use & Management	Proposed Treatment Plan	Proposed Use Under Preferred Alternative
REGISTERED AND LISTED CULTURAL RESOURCES				
Archeological sites 1646 - C. 1670. 10,000 BP to 1600.	1646 - C. 1670 iron works & English settlement site. Native American prehistory & contact period site.	Entire site managed as archeological cultural resource. State site status: 19-ES-248 & 19-ES-257. Areas of potential integrity are identified for iron works & Native American sites.	Conduct archeological investigations before disturbing soils for proposed maintenance facility construction, museum rehabilitation, and accessible paths. Restore footprints of removed buildings to cultural landscape design plan.	Build new consolidated maintenance facility on east bank. Rehabilitate museum building. Remove buildings: contact station, maintenance garage, carpenter shop, & woodshed. Alter existing paths and create new paths to provide handicapped accessibility.
Museum Collections 1646 – C. 1670 Native American. Prehistory/Contact. Colonial Revival & 20th Century Preservation Movement.	Seventeenth-century archeological objects and history objects, with period reproductions. Wallace Nutting history objects. FIWA history objects.	Managed as cultural resource.	Rehabilitate museum exhibits and Iron Works House displays.	Improve interpretation in museum and Iron Works House.
Iron Works House Constructed C. 1682. Restored 1915-1917.	C. 1682 English Settlement. Wallace Nutting Restoration 1915-1917.	Managed as cultural resource. National Register (NR) status. Structure managed to Nutting Restoration with interpretation to 1682 &Nutting restoration.	Improve handicapped accessibility. Rehabilitate exhibits.	Install necessary emergency & security equipment for self-guided tours. Promote increased visitation. Provide handicapped accessibility. Continue to interpret IWH to seventeenth-century Puritan gentry & Wallace Nutting Restoration.
Iron Works House Annex Constructed 1917	Wallace Nutting.	Managed to evolved NPS use. Currently used as staff offices.	Remove partitions & remodel space within Annex to create open space visitor center plan. Install new entrance door at west or north side of Annex.	Adaptively reuse Annex as visitor center. Interpret and promote linkage with Essex NHA.
Museum Building Constructed 1917	Wallace Nutting: Colonial Revival. FIWA, use as museum exhibit facility.	Managed as cultural resource . Used as museum exhibit facility. Eligible for NR status.	Rehabilitate structure & maintain exterior architectural characteristics. Rehabilitate exhibits.	Continue use as museum exhibit facility. Interpret and promote linkage with ENHA.
Slag Pile 1646 - c. 1670	1646 -C. 1670 iron works.	Managed as cultural resource. NR status.	Maintain low vegetative cover to cap hazardous materials.	Improve interpretation.
Exposed Archeological Features 1646-c. 1670.	1646 – C. 1670 iron works.	Managed as cultural resource. NR status.	No change.	No change.
Parcels along west side of Central St.	Buffer zone area.	Managed as cultural resource: archeological protection.	No change.	Continue use as buffer zone.
OTHER RESOURCES MANAGED AS CULTURAL RESOURCES				
Blast Furnace Constructed 1952.	1954 FIWA reconstruction interpreted to 1646-1670.	Managed as cultural resource to 1954 appearance. NR eligibility requires further study.	Create handicapped accessible path over portion of sand casting area.	Provide handicapped accessibility Prepare Historic Context Study for reconstruction
Forge Constructed 1953.	1954 FIWA reconstruction interpreted to 1650.	Managed as cultural resource to 1954 appearance. NR eligibility requires further study.	Alter ramp for handicapped accessibility. Install chair lift at exit stairs.	Provide handicapped accessibility. Prepare Historic Context Study for reconstruction.
Slitting Mill Constructed 1954.	1954 FIWA reconstruction interpreted to 1650.	Managed as cultural resource to 1954 appearance. NR eligibility requires further study.		Provide handicapped accessibility. Prepare Historic Context Study for reconstruction.
Iron Warehouse & Pier Constructed 1954.	1954 FIWA reconstruction interpreted to 1650.	Managed as cultural resource to 1954 appearance. NR eligibility requires further study.	Rehabilitate pier. Address hazardous material, silt, & invasive plant issues.	Improve interpretation of restored pier. Complete Cultural Landscape Report. Prepare Historic Context Study for reconstruction.

TABLE 3 continued

Resource	Periods of Significance	Present Use & Management	Proposed Treatment Plan	Proposed Use Under Preferred Alternative
Industrial Site Landscape Contours established by Robbins 1953 to reflect 1650's appearance.	1954 FIWA reconstruction. Seventeenth-century iron works.	Managed as cultural resource. NR eligibility requires further study.	Alter paths, bridges, building entries, & exits for accessibility. Install rail rider, lifts & other aids. General landscape treatment is not determined,	Provide handicapped accessible paths to & within mill complex. Improve interpretation. Prepare Cultural Landscape Report. Conduct plant & animal inventories.
Saugus River Turning Basin Mixed periods. Restored 1954. Dam breach 1957.	1954 FIWA reconstruction. Seventeenth-century iron works.	Managed as damaged cultural landscape & protected natural resource (wetland marsh).	Address invasive species, silt, & hazardous materials issues to determine restoration strategies.	Conduct restoration feasibility studies. Prepare Cultural Landscape Report.
Iron Works House Landscape Mixed periods.	Wallace Nutting. FIWA. NPS administration.	Managed to evolved NPS use.	Redesign accessible paths to IWH Annex Visitor Center. Landscape appearance is not determined.	Provide handicapped accessible paths to IWH Annex Visitor Center. Prepare Cultural Landscape Report. Conduct plant & animal inventories.
NON-CULTURAL RESOURCES AND FACILITIES				
Museum Annex Constructed 1954-55.	Non-historic facility.	Managed as non-historic facility. Used as theater.	Rehabilitate structure. Rehabilitate exhibits.	Continue use as museum exhibit facility. Use theater area as Education Program space.
Nature Trail Created C. 1980. Declared National Recreational Trail 1989.	NPS recreational & interpretive trail.	Managed as protected natural area. Rivers Protection Act status	Rehabilitate trail to link with the proposed Saugus Riverwalk Trail.	Prepare Cultural Landscape Report. Conduct plant & animal inventories. Link to River Walking Trail. Improve Interpretation.
Maintenance Garage Constructed 1980.	Non-historic facility.	Managed as non-historic facility.	Remove structure and restore to cultural landscape design plan.	Consolidate function into new maintenance facility. Create scenic overlook area at site of former maintenance garage. Prepare Cultural Landscape Report.
Maintenance Carpenter shop Constructed 1976.	Non-historic facility.	Managed as non-historic facility. Museum collections storage area.	Remove structure and restore footprint to cultural landscape design plan.	Consolidate function into new maintenance facility. Prepare Cultural Landscape Report. Consolidate museum collections in renovated residence.
Maintenance Woodshed & Shelter Constructed 1977 & 1988.	Non-historic facility.	Managed as non-historic.	Remove structures and restore footprint to cultural landscape design plan.	Consolidate function into new maintenance facility. Prepare Cultural Landscape Report.
230 & 232 Central St. Constructed 1940's.	Non-historic facility.	Managed as park residences.	Rehabilitate structure & convert into museum quality storage facility. Provide office space.	Use as museum storage facility for consolidated collections. Keep residential exterior.
Parking lot	Non-historic facility.	Managed as traffic zone.	Redesign to accommodate more vehicles and provide accessibility parking. Design to create linkage with Saugus Center. Create new accessible paths to Annex Visitor Center.	Continue use as parking lot, traffic zone. Prepare Cultural Landscape Report.
Abutting property for sale north of Blacksmith shop	Non-historic facility, outside of park boundary.	N/A	Acquire through willing seller.	Use as employee parking lot, outdoor storage.
Viewsheds	Non-historic structures & facilities outside park boundaries .	N/A	Develop cultural landscape plan to provide vegetative screening.	Protect viewsheds. Prepare Cultural Landscape Report. Screen visual intrusions.

ALTERNATIVE 2: ENHANCED FACILITY DEVELOPMENT

This alternative, like the preferred alternative, contains four elements, which are similar to those contained in the Preferred Alternative, but which represent variations of those components.

Visitor Contact

Build a new visitor center on the west bluff, at the site of the existing maintenance garage. This facility would provide visitor contact, bookstore, exhibits, office space, education program space, and restrooms. Building design would feature viewsheds of the river and the iron-making plant. If this facility were built, then the straight path option for Visitor Access would be undertaken.

Maintenance Facility

Lease or acquire existing commercial or industrial space for maintenance operations off-site. Any fee acquisition would require legislative authorization and, depending upon size and location, a boundary adjustment as necessary.

Museum Exhibit and Collections Storage

A new structure for collections storage would be built adjacent to the existing Museum building. The new structure would be designed to conform to collections storage and museum standards for environmental controls, security, and other needs consistent with NPS standards. Under this alternative, only one of the existing residences would be adaptively reused for administrative staff offices.

Visitor Access

In addition to the ramp rider outlined in the Preferred Alternative, the NPS has evaluated two other options for providing access: (1) Construction of a switchback path from the charging bridge, crisscrossing the escarpment, and ending at the blast furnace path; the path would maintain a 1:12 slope ratio. (2) Construction of a straight path, starting from the overlook bluff and ending at the blast furnace path. The path would conform to the desired 1:12 slope ratio standard. The path would total 304 feet, including rest areas.

ALTERNATIVE 3: THE NO-ACTION ALTERNATIVE

Under this Alternative, existing conditions would remain and the park would continue to operate and maintain the facility to the highest standards possible given the state of the current facilities. In the cases of the museum exhibits and collections storage, NPS standards are not being met under current conditions.

Visitor Contact

The existing visitor contact station would continue to serve as the main point of contact and orientation for visitors entering the site.

Maintenance Facility

Maintenance would remain in the existing buildings on the bluff and east bank.

Museum Exhibit and Collections Storage

Collections would continue to be maintained in scattered locations lacking museum-standard climate control and security.

Visitor Access

The 21-foot descent to the site of the iron works industrial plant would remain traversable only by stairs and would remain non-compliant with accessibility regulations and laws. Access to and between the lower iron works structures would remain difficult or impossible for persons with disabilities and for families using strollers. Visitors with special needs would continue to be transported by cart outside the gates and to the lower area by park staff on an as-needed basis.



Re-enactor shows child reproduction 17th century kitchen wares.

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

The four elements of each alternative are evaluated individually for their potential impacts on the visitor experience, cultural resources, natural resources, socioeconomic resources, and park operations.

ALTERNATIVE 1: THE PREFERRED ALTERNATIVE

VISITOR CONTACT: Adaptive Reuse of the Iron Works House Annex as a Visitor Center

Impacts on the Visitor Experience

As visitors entered the park, they would immediately be guided to the imposing presence of the Iron Works House, which evokes a sense of life during early colonial settlement and sets a mood that would carry throughout the visitor experience. A new path to the Annex Visitor Center would eliminate current visitor confusion in locating the park entrance. The Annex visitor center, with either its west or north side entrance, would provide orientation and exhibit space and viewing space for an orientation film. Conflicting use of the Museum auditorium for educational programs or special events would thereby be eliminated. Non-personal orientation would be feasible. Visitors would be able to enter the Iron Works House for a self-guided tour, maximizing access to this important seventeenth-century resource. The first floor of the house would be accessible to persons with disabilities. The Museum would be easily accessed from the Annex visitor center, and most visitors would likely experience this resource. Visitors would exit the Museum and walk to the charging bridge, where views from this vantage would begin the visitor's industrial site encounter. If the maintenance garage on the bluff were removed, that area would become a visitor amenity, providing a dramatic overlook of the river and the iron works industrial site.

With this alternative, circulation patterns would ensure that the majority of visitors would experience the Museum and Iron Works House, providing them with a good introduction to Puritan society in Massachusetts Bay Colony and an understanding of the role of the iron works in early colonial settlement. This historic context will facilitate a thematic cohesion between the upper lawn resources and the industrial plant. Increased efficiency in interpretive operations will improve visitor understanding.

During construction activities, visitors may be temporarily unable to access certain areas within and around the Iron Works House. Modern intrusions, such as construction equipment and sounds of power tools, would affect the historic setting. Due to cost factors, it may not be possible to conduct all construction activities outside of normal visitors hours.

Impacts on Cultural Resources

Proposed interior alterations to the Iron Works House's 1917 Annex would involve the removal of two interior partitions, with associated doorways and closets, to create an open-space plan on the first floor. The Annex, formerly used to house blacksmith Edward Guy and his family, was previously altered by the National Park Service to create offices in this space. The existing walls, doors, and closets have little integrity to the Guy period. A low, six-foot ceiling in the eastern section of the Annex, may make the area uncomfortable for taller visitors.

Consultation with the State Historic Preservation Officer and NPS professionals has recommended that the location of a wheelchair accessible entrance from the exterior into the Annex be on either the north or the west facade to preserve the integrity of the front façade, which faces south. The final location of that entrance and of the interior access between the Annex and the Iron Works House would involve further consultations to determine the least impact to the structure's historic integrity. Additional security and safety systems would be installed in the Iron Works House to accommodate the self-guided tour.

The existing visitor contact station would be removed, which would open views to the industrial plant and the upper lawn cultural landscapes. Archeological resources would not be affected. During the actual dismantling and removal of the kiosk, the cultural landscape would be affected by modern sound and sights associated with construc-

tion activities, but this work is estimated to take only a few days and restoration of the site would be accomplished immediately upon removal of the kiosk.

Impacts on Natural Resources

Soils would be disturbed in the removal of the existing visitor contact station. This site is outside the wetlands and located on a previously disturbed archeological site. Minor temporary alteration to landscaping adjacent to the Iron Works House (landscaping which is not historically accurate) would occur during site work and during construction of new pathways. Removal of certain mature deciduous trees and shrubs between the parking lot and the Iron Works House would improve visitor orientation upon arrival, but would involve loss of shade, habitat and forage for birds and small animals and may be considered a negative impact by some visitors.

Impacts on the Socioeconomic Environment

There would be no significant impact on the socioeconomic environment. Neighbors would not be impacted, as exteriors will remain compatible with their surroundings, and the buildings will continue to look just like residential structures. Although no local permission is required for the NPS to adaptively reuse these buildings for collections storage, the NPS has consulted with park neighbors and town officials, and no objections have been raised.

Impacts on Park Operations

Adaptive reuse of existing resources is cost effective. Interpretive staff would work more efficiently out of one central location. The Iron Works House self-guided tour would maximize visitors' opportunity to experience the house and would also reduce staff costs, since visitor orientation and access to the Iron Works House would be provided by the same staff.

MUSEUM EXHIBIT AND COLLECTIONS STORAGE: Rehabilitate Interior, Restore Exterior and Adaptively Reuse Existing NPS Residences

Impacts on the Visitor Experience

The Museum building lacks structural integrity and has deteriorated. To improve the visitor experience and preserve objects on display, the exterior needs to be restored, the interior needs to be rehabilitated to museum exhibit standards, and the exhibits need to be redesigned. Efficient and proper museum storage in the residences would also improve the visitor experience by increasing the frequency and complexity of changing exhibits. Adequate space for object conservation and study would be provided in the residences, insuring long term preservation of museum collections and maximizing visitor understanding and enjoyment. Security would be maximized. Visitors to the Museum would not be disturbed by curatorial staff passing through on their way to the current storage over the Museum. Curators would no longer be obliged to transport artifacts through groups of museum visitors, increasing the risk of damage or theft to museum objects. Visitors would not have access to the museum while it is being rehabilitated. Visitors to the site would not be disturbed during rehabilitation work on the residences. Relocation of stored objects from the museum attic to the new storage facility would cause a small part of the museum to be closed to visitors for several days, which could be accomplished in the off-season.

Impacts on Cultural Resources

The Museum building would be rehabilitated. Objects on display would be better preserved. There would be no change to other historic structures or existing cultural landscapes. Archeological resources would not be impacted. The exteriors of the residential buildings would keep a residential appearance. Improved storage conditions would insure the long-term preservation of museum collections. Adequate work space and researcher space would be provided, thereby promoting academic study and enhanced knowledge of the collections.

Impacts on Natural Resources

There would be no impacts on natural resources.

Impacts on the Socioeconomic Environment

There would be no significant impact on the socioeconomic environment. Neighbors would not be impacted, as exteriors will remain compatible with their surroundings.

Impacts on Park Operations

Under this alternative, stored museum objects,

archives, and catalog records would be available in one structure, maximizing research opportunities. This scenario would provide adequate researcher space as well as adequate office and work space for curatorial staff, greatly increasing operational efficiency and promoting preservation efforts. The interpretive division would be able to occupy the former curatorial office space on the second floor of the Iron Works House Annex, consolidating interpretive staff. Maintenance and protection operations would be more efficient, as the number of security alarmed spaces would be reduced. Museum collections would receive proper environmental controls, monitoring, and housekeeping regimens. The park would be able to meet compliance requirements under National Park Service policy guidelines and directives, Director's Order 28: Cultural Resource Management, and Director's Order 24: NPS Museum Collections Management. Some climate and security controls are already in place at 230 Central Street, which would likely reduce rehabilitation costs.

MAINTENANCE FACILITY: New Consolidated Facility on the East Bank

Impacts on the Visitor Experience

The relocation of maintenance to a single new facility located at the northeast corner of the east bank would allow the bluff, currently occupied by the maintenance garage, to be utilized by visitors as an observation and interpretation area. This would alleviate the problem in which many visitors mistakenly enter the existing maintenance facility upon arrival at the site. Removal of the existing carpenter shop on the east bank would allow visitors unimpaired access to the Nature Trail. It would also remove an "attractive nuisance" for younger visitors, reducing the potential for safety incidents around the shop's outdoor equipment and vehicles. This element would also improve the aesthetics of the east bank by removing older structures that are visually incompatible with the riverbank and trailhead area. Visitor safety would be improved as maintenance vehicles would no longer enter and exit the visitor parking lot. Increased efficiency in maintenance operations would promote visitor satisfaction with park facilities.

Impacts on Cultural Resources

No historic structures would be impacted. Cultural landscapes and viewsheds would be greatly improved, as existing maintenance buildings would be removed. The new building would be screened with native vegetation to blend with the area. A thorough archeological survey would be needed before beginning construction on the east bank. This study may lead to insights about the iron-making plant or its community.

Impacts on Natural Resources

Removal of the garage and carpenter shop would alleviate pressures on the riparian vegetation along the river and bluff. The new facility would be located in the existing maintenance yard, at a point furthest from the river. This area is currently used as a vehicle parking and storage area. The new facility would be built within 200 feet of the river and would therefore be located within a protected zone under the Massachusetts Rivers Protection Act (MRPA). However, it is likely that this would be permitted, as the new structure would be located in a previously disturbed zone, and the NPS would remove the carpenter shop and foundations and would eliminate storage of materials, all of which are now located within 100 feet of the river. If the adjacent property at 24 Bridge Street were acquired, the pavement would be removed and the area utilized as part of an extension of the existing trail system along the east bank. This reduction in impervious surface area would result in an improvement to wetland resources over current conditions, even though the site is located within a protected zone under the MRPA. The removal of the existing maintenance structures would temporarily disturb some vegetation and to a limited extent disturb the soil around the carpenter shop, which is constructed on pilings. However, there would again be a reduction in impervious surface areas, the site would be restored to its natural conditions and would result in an improved aesthetic appearance when this location reverts to a natural condition.

As described above, these actions are in ccordance with *Director's Order #77-1: Wetland Protection* and *Procedural Manual #77-1: Wetland Protection,* which are the policies and procedures that the NPS uses to

implement Executive Order 11990, Protection of Wetlands. The Director's Order and Procedural Manual require that the NPS planning documents incorporate a sequence of 1): avoiding wetland impacts, where practicable; 2) minimizing impacts that cannot be avoided; and 3) compensating for any remaining wetland impacts through restoration of previously degraded wetlands. Additionally, Section 5.6 of *Procedural Manual #77-1* requires that GMP's and subsequent planning documents include inventories of structures or facilities located in or that have the potential for adverse impacts to wetland which predate May 28, 1980. Again, as stated above, the removal of the existing carpenter shop and woodsheds (both of which predate May28, 1980) will have a positive impact on the wetlands and protected resource areas under the MRPA through restoration of wetlands and by relocating maintenance activity to previously disturbed areas located a much greater distance away from the river bank. See Appendix A, document 13 for a compilation of hisotric buildings and structures on the SAIR LCS that are located within or adjacent to the 100 year flood zone.

Impacts on the Socioeconomic Environment

Safer traffic and pedestrian flow on Central Street would result from the removal of the garage. There would, however, be increased vehicular maintenance traffic through the residential neighborhood adjacent to the east bank area, whether on existing NPS property or on the expanded east bank property with the potential acquisition of land attached to 24 Bridge Street. Acquisition of this property would remove it from the town tax roles.

Impacts on Park Operations

The consolidation of maintenance operations in a facility designed to meet the needs of the crafts involved in the park would enhance efficiency and employee safety.

VISITOR ACCESS:
Install Mechanized Means of Descent

Impacts on the Visitor Experience

This option, with installation at the current south staircase, may separate mobility-impaired visitors from other visitors, who could access the industrial site more directly from the area near the charging bridge. However, these visitors would experience far less separation than they do under current conditions, which require them to be transported off site to access the iron works structures. In addition, the system would be designed to allow the south staircase to be used at the same time that the rail system was being used, so visitors with special needs could remain with their party.

Impacts on Cultural Resources

Archeological investigations would be required before any disturbance of the area, and NPS standards for protection of cultural and historic resources would be followed for any objects uncovered during site investigations and disturbances. The cultural landscape would be minimally affected by this modification, due to the visibility of this mechanical structure from various locations within the park.

Impacts on Natural Resources

If disturbance of soils occurred within the wetland boundary, compliance with applicable laws and regulations would be undertaken.

Impacts on the Socioeconomic Environment

Full accessibility to the industrial site is likely to increase visitation. The remainder of the access trail may, in the future, link to other walking trails, connecting Camp Nihan or Lynn Woods with the site. Increased visitation would benefit local shops and restaurants.

Impacts on Park Operations

Full accessibility would increase park efficiency. Previous methods of accessibility to the industrial site required the involvement of an additional staff person, who would accompany visitors with mobility difficulties or drive them in a golf cart to tour the site. Therefore, this alternative would allow park staff to be utilized for other operations. Maintenance of the chair rail system would involve increased work for maintenance staff.

ALTERNATIVE 2: ENHANCED FACILITY DEVELOPMENT

VISITOR CONTACT:
Build a New Visitor Contact Facility at Existing Maintenance Facility Location

Impacts on the Visitor Experience

An overlook visitor center, with restrooms, orientation film, and exhibits, situated at the current maintenance garage area, may be designed to provide a visual orientation to the river and the iron works industrial plant. This would increase visitor understanding of the site's natural resources and the part they played in the iron works operation. A small restroom facility may be included in this structure. A space for visitors to view an orientation film or a space dedicated to education programs would also be incorporated into the design. The design would provide for full ADA accessibility. However, given the small and irregular shape of the existing structure, it is probable that a new facility would require a larger footprint than the existing facility, resulting in ground disturbing impacts and removal of vegetation. Visitors entering the parking lot would be guided directly to this new feature and would be given the options of going to the Iron Works House, the Museum, or the reconstructed iron works industrial plant. There would be no standard visitation sequence, so some resources, such as the House and Museum, might be missed. This alternative would limit visitor access to the Iron Works House to scheduled tours only. Staffing shortages may sometimes prevent visitor access to the house.

Impacts on Cultural Resources

Changes to site structures and cultural landscapes would include the removal of the existing maintenance garage. The new visitor facility would be erected in the area of the existing maintenance garage. However, even with the footprint being larger than the existing structure, it is unlikely that any archaeological resources would be disturbed, given that the site has been significantly disturbed, both by the earlier presence of Central Street and by the subsequent construction of the existing maintenance facility. Architectural design should be in harmony with the surroundings on the bluff, but the visitor center would be a non-historic intrusion in the cultural and natural environment. The existing visitor contact station would be removed, which would open views to the industrial mill and the upper lawn cultural landscapes. No known archeological resources would be affected. The vantage from the bluff would allow staff to visually monitor resources and activities.

Impacts on Natural Resources

Vegetation on the bluff would be disturbed during the removal and construction process on the bluff. Soils would be disturbed in the removal of the existing visitor contact station. If a view to the river were provided, visitors' conservation awareness would be enhanced; however, removal of a number of mature trees would be necessary to provide the desired views to the river and the Iron Works structures, resulting in loss of habitat and forage for resident species. Portions of the construction envelope may be located within a protected zone under the Massachusetts Rivers Protections Act and would have to satisfy criteria for allowable construction within this zone. Given the project's location well up on the bluff, the NPS is confident those requirements could be satisfied. Construction would require placement of siltation fencing and/or hay bales in order to ensure that no sediment or construction spoils migrate down the steep slope below the construction area. Site disturbance would be necessary for installation of appropriate water and sewer lines, which may in turn involve archaeological resources.

Impacts on the Socioeconomic Environment

The connection between the visitor center and the pedestrian route to Saugus Center would be immediate, benefiting both visitor and town.

Impacts on Park Operations

Costs associated with construction and maintenance are likely to be high. There would be no significant change in the cost of interpretive operations, as the cost of staffing is likely to be similar to that of the existing contact station. Staff would have an increased ability to visually monitor the iron works industrial area if the facility were so designed, but they would be farther removed from the Iron Works House, the Museum, and the existing comfort stations, though monitoring could be done by remote video cameras.

MUSEUM EXHIBIT AND COLLECTIONS STORAGE:
Build a New Facility Adjacent to the Museum Building

Impacts on the Visitor Experience

The Museum building lacks structural integrity and

has deteriorated. To improve the visitor experience and preserve objects on display, the exterior needs to be restored, the interior needs to be rehabilitated to museum exhibit standards, and the exhibits need to be redesigned. Efficient and proper museum collection storage in a new facility would improve the visitor experience by increasing the possibility of more frequent and complex changing exhibits. An addition to the Museum building could allow more exhibit space or viewable storage area. The configuration of the addition could create a courtyard between the Museum and the new storage area, which could be used for interpretive programs. Impacts to the visitor during the rehabilitation of the Museum and the construction of the addition may be substantial, as collections would have to be removed from both museum exhibit and storage areas to avoid damage to objects from vibrations during construction. Some critical, more portable collections may be exhibited in an alternative location, if feasible. In addition, computerized programming may offset the temporary loss of public access to museum collections in their normal locations. Other construction impacts upon visitors would include noise and air pollution nuisance. During construction, the museum deck would not be available for concerts or events.

Impacts on Cultural Resources

The Museum building would be rehabilitated. Objects on display would be better preserved. The addition of a storage area to the Museum would alter the character of the 83-year-old Nutting structure and the existing cultural landscape, and would be constructed in the Cultural Zone (see Management Zoning Map, page 39). Archeological investigations would need to be undertaken before construction, and there is a likelihood that archaeological resources would be uncovered and disturbed during construction. These resources would be protected in accordance with NPS guidelines and policies. A draft Historic Structures Report (HSR) for the Museum Building has been prepared by the NPS. Preservation of museum objects would be more efficient. Objects would never be exposed to weather while in transit to the Museum for changing exhibits. Adequate work space and researcher space could be designed within the new addition.

Impacts on Natural Resources

The construction would extend the building's footprint on the upper lawn area, resulting in a minor increase in impervious surface area, which would have a minor adverse impact. Some trees and other vegetation would be removed.

Impacts on the Socioeconomic Environment

No impact is expected to the socioeconomic environment.

Impacts on Park Operations

Costs of design and construction might be high. Curatorial staff would increase operational efficiency from improved storage conditions and the proximity of storage to museum exhibit areas. Object preservation would be promoted, as artifacts would be less subject to stress from being transported between buildings.

MAINTENANCE FACILITY:
Relocate Maintenance to an Off-Site Location

Impacts on the Visitor Experience

The relocation of maintenance to an off-site location would allow the bluff, currently occupied by the maintenance garage, to be utilized by visitors as an observation and interpretation area. This would alleviate the problem in which many visitors mistakenly enter the existing maintenance facility upon arrival at the site. Removal of the existing carpenter shop on the east bank would allow visitors unimpaired access to the Nature Trail. It would also remove an "attractive nuisance" for younger visitors, reducing the potential for safety incidents around the shop's outdoor equipment and vehicles. This element would also improve the aesthetics of the east bank by removing older structures that are visually incompatible with the riverbank and trailhead area. Visitor safety would be improved as maintenance vehicles would no longer enter and exit the visitor parking lot. The entire east bank area would be used as a cultural landscape for visitor enjoyment. Visual distractions from equipment storage and noise pollution would be reduced. Vehicular traffic may increase as maintenance may need to deliver equipment and move it around the site by truck.

Impacts on Cultural Resources

The landscape would be relieved of all maintenance structures, lending unity to the historic setting. Archeological resources would not be disturbed by new construction.

Impacts on Natural Resources

The east bank and bluff areas would be relieved of pressures from buildings, vehicle use, and equipment storage. The east bank maintenance area would support more vegetation and wildlife communities and improve the area's watershed capabilities.

Impacts on the Socioeconomic Environment

Traffic would increase as heavy equipment and maintenance vehicles traveled to and from the park on Saugus roads.

Impacts on Park Operations

Lease payments would have a negative impact on the park's operating budget. Purchase prices and renovation prices in the Saugus area are at an all-time high. Maintenance efficiency would lag as more time was spent in transit between the park and an offsite facility.

Visitor Access

Two options in addition to the Preferred Alternative have been studied by the NPS, and their relative impacts are evaluated below.

VISITOR ACCESS: Build an Accessible Switchback Trail from the Upper Lawn to the Industrial Plant

Impacts on the Visitor Experience

This alternative presents a universal design concept that would allow all visitors to tour the industrial site as a cohesive group, without special arrangements for persons with disabilities, strollers, or special needs.

Impacts on Cultural Resources

Archeological investigations would be required before any disturbance of the area, and NPS standards for protection of cultural and historic resources would be followed for any objects uncovered during site investigations and disturbances. The cultural landscape as established by the First Iron Works Association would be significantly altered by this modification, and the trail would be visible from the iron works structures. However, under this alternative, certain visually intrusive modern features would be removed, including the metal railings located adjacent to the top of the blast furnace..

Impacts on Natural Resources

If disturbance of soils occurred within the wetland boundary, compliance with applicable laws and regulations would be undertaken.

Impacts on the Socioeconomic Environment

Full accessibility to the industrial site is likely to increase visitation. The trail may, in the future, link to other walking trails, connecting Camp Nihan or Lynn Woods with the site. Increased visitation would benefit local shops and restaurants.

Impacts on Park Operations

Full accessibility would increase park efficiency. Current methods of accessibility to the industrial site require the involvement of an additional staff person, who accompanies visitors with mobility difficulties or drives them in a golf cart to tour the site. Therefore, this alternative would allow park staff to be utilized for other operations.

VISITOR ACCESS: Build a Straight Path from the Overlook Bluff to the Industrial Plant

This option would involve construction of a straight or direct path, starting from the overlook bluff near the north end of the existing maintenance facility and ending at the blast furnace path. The path would conform to the desired 1:12 slope ratio standard. The path would total 304 feet, including rest areas.

Impacts on the Visitor Experience

This path, totaling 304 feet including rest areas, would offer marsh views as it paralleled the river. The length of the trail may discourage some visitors. It might separate out mobility-impaired visitors from other visitors, who could access the industrial site more directly from the area near the charging bridge, though this alternative would give parties the option of remaining together and using the longer trail.

Impacts on Cultural Resources

Archeological investigations would be required before any disturbance of the area, and NPS standards for protection of cultural and historic resources would be followed for any objects uncovered during site investigations and disturbances. The cultural landscape as established by the First Iron Works Association would be significantly altered by this modification, and the trail would be visible from the iron works structures.

Impacts on Natural Resources

If disturbance of soils occurred within the wetland boundary, compliance with applicable laws and regulations would be undertaken. This option would require construction stabilization for the slope, such as siltation fencing, which would cause temporary increases in workload to maintenance staff.

Impacts on the Socioeconomic Environment

Full accessibility to the industrial site is likely to increase visitation. The trail may, in the future, link to other walking trails, connecting Camp Nihan or Lynn Woods with the site. Increased visitation would benefit local shops and restaurants.

Impacts on Park Operations

Full accessibility would increase park efficiency. Current methods of accessibility to the industrial site require the involvement of an additional staff person, who accompanies visitors with mobility difficulties or drives them in a golf cart to tour the site. Therefore, this alternative would allow park staff to be utilized for other operations.

ALTERNATIVE 3: THE NO-ACTION ALTERNATIVE

VISITOR CONTACT: No Action

Impacts on the Visitor Experience

With this alternative, visitation to the Iron Works House would remain at existing levels, with only 8 percent of visitors experiencing a portion of this resource. The Iron Works House would remain inaccessible to individuals with disabilities. Some visitors would experience the industrial plant structures unaware of the museum exhibits and slide show and often missing the Iron Works House. Space for visitor contact within the existing contact station would remain limited to two-to-three individuals at one time. Non-personal contact would remain infeasible. The education program's use of the museum auditorium would continue to prevent day visitors from viewing the orientation slide show and exhibits. Visitors entering the site would continue to be disoriented, with a significant number of them going first to the existing maintenance facility.

Impacts on Cultural Resources

No changes would occur to cultural resources, including historic structures, cultural landscapes, or archeological resources.

Impacts on Natural Resources

No change would occur to existing natural resources.

Impacts on the Socioeconomic Environment

No change is expected to the local area economy.

Impacts on Park Operations

Interpretive operations would continue to split staff, as visitor orientation dedicates a ranger to the existing contact station.

MUSEUM EXHIBIT AND COLLECTIONS STORAGE: No Action

Impacts on the Visitor Experience

Existing conditions violate NPS standards for museum collection spaces. Poor collection conditions subject artifacts to deterioration, impacting the visitor's understanding and appreciation for these important resources.

Impacts on Cultural Resources

Existing conditions violate NPS standards for museum collection spaces. The park would remain noncompliant with Service directives. Museum standards require storage areas to be temperature-, humidity-, and light-controlled. These environments must be free from pests, combustible materials, water pipes, and dust and must be guarded by fire detection, suppression, and intrusion security systems. Under a no-action scenario, collections would continue to deteriorate. The park's stored museum collections are

housed in "make do" settings, rather than in a planned, well designed museum storage facility. Although these settings have been improved wherever possible, many problems are irremediable. Present spaces lack climate stability, are exposed to irremediable dust levels, and are shared with other incompatible functions. Continuation of these conditions would likely result in the eventual deterioration of historic artifacts beyond the point at which they could be restored.

Impacts on Natural Resources
No change would occur to existing natural resources.

Impacts on the Socioeconomic Environment
No change is expected to the local area economy.

Impacts on Park Operations
Curatorial staff would continue to work with substandard operating conditions.

MAINTENANCE FACILITIES: No Action

Impacts on the Visitor Experience
Maintenance vehicles would continue to enter and exit from the visitor parking lot, continuing an existing traffic and visitor hazard. Visitors may continue to enter the maintenance yard by mistake. Visitor satisfaction would continue to be impacted by the maintenance division's lack of suitable workspace and its divided location, which hamper the efficient maintenance of the site.

Impacts on Cultural Resources
Visitors would continue to be unable to appreciate viewsheds from the bluff while the area is used as a maintenance garage. Inefficient maintenance facilities may continue to hamper the preservation of cultural resources.

Impacts on Natural Resources
The existing carpenter shop is situated within 100 feet of the Saugus River. This is too close for a healthy riparian area. Adverse impacts associated with this prior nonconforming use would continue. These impacts include damage to vegetation in the riverbank area, disturbance to wildlife and habitat in this area, and potential for spills from the use and storage of maintenance equipment close to the river.

Impacts on the Socioeconomic Environment
Neighbors of the bluff maintenance area would continue to be disturbed by maintenance operations.

Impacts on Park Operations
The maintenance operation would continue to suffer from the inefficiencies of being divided among small facilities in separate locations.

VISITOR ACCESS: No Action

Impacts on the Visitor Experience
The park would remain non-compliant with the Architectural Barriers Act and other mandates for full accessibility. Visitors with special needs would continue to have to be separated from their parties to have access to the Iron Works structures, which in some cases discourages visitation of those resources.

Impacts on Cultural Resources
No change would occur to existing cultural resources.

Impacts on Natural Resources
No change would occur to existing natural resources.

Impacts on the Socioeconomic Environment
No change is expected to the local area economy.

Impacts on Park Operations
An interpretive staff person would continue to accompany individuals with mobility impairments throughout tours.

TABLE 4: Matrix of Impacts under Each Alternative

Alternatives	Impacts on Visitor Experience	Impacts on Cultural Resources	Impacts on Natural Resources	Impacts on Socioeconomic Environment	Impacts on Park Operations
THE PREFERRED ALTERNATIVE					
Adaptive Reuse of the Iron Works House Annex as a Visitor Center	Eliminates confusion in locating park entrance. Maximizes visitor access to IWH. Allows non-personal orientation. Eliminates space conflict with school groups. Promotes museum visitation through improved visitor circulation patterns. Provides ADA accessibility. Immediately evokes the colonial period & sets mood for visit. Enhances understanding by providing historical context for the iron works. Promotes thematic cohesion between the upper lawn resources and the industrial plant. Enhances understanding by increasing efficiency of interpretive operations. Preserves existing Annex low ceiling, which may be uncomfortable for taller visitors. Entails temporary negative impact on visitor experience during remodeling activities.	Entails limited alterations to the Annex interior, which has little historic integrity. Minimizes impact on archeological sites & cultural landscapes. Opens bluff views to the iron works plant, with removal of contact station & garage. Requires additional security & safety system installations in the IWH. Requires further consultation to determine minimal impact solutions for placement of exterior Annex entrance and IWH ADA entrance.	Entails minimal soil disturbance from garage & contact station removal & for path creation around IWH. Requires removal of mature trees and shrubs between the front of the IWH & parking lot to promote visibility of IWH façade and allow clear entrance to the IWH Annex Visitor Center.	Increases park's visibility to towns people & commuters. Better connects the park to Saugus Center shops.	Promotes cost effective use of limited remodeling as opposed to new construction. Promotes efficiency by consolidating interpretive staff & offices. Reduces staff costs, as visitor orientation & access to IWH is provided by same staff.
Museum Collections Storage in Rehabilitated NPS Residences	Improves visitor satisfaction & understanding by providing collections preservation & facilitating changing exhibits. Enhances understanding by increasing efficiency of curatorial operations. Requires temporary negative impact on visitor experience during remodeling activities.	No impact on historic structures. No impact on archeological sites & cultural landscapes. Minimizes impact on neighborhood, as exteriors will remain compatible with surroundings. Insures museum collection protection & preservation. Encourages collections research by visiting scholars.	No impact on natural resources.	No significant impact on socioeconomic environment.	Improves efficiency of curatorial operations by consolidating collections into climate-controlled & secure space. Facilitates consolidation of interpretive staff as it frees the Annex 2d floor offices. Reduces the number of security alarmed spaces, improving protection & maintenance operations. Promotes cost effective use of limited remodeling as opposed to new construction.
New Consolidated Maintenance Facility on East Bank	Increases visitor areas as garage area becomes visitor observation & interpretation area. Eliminates visitor confusion in locating park entrance. Improves aesthetics & access to the nature trail by removing carpenter shop & sheds. Reduces potential for safety incidences from maintenance vehicles & machines. Increases visitor satisfaction by efficiently consolidating maintenance operation. Entails temporary disturbance from demolition & construction activities.	No impact to historic structures. Improves landscapes & viewsheds by removing carpenter shop, sheds, & garage. Requires archeology before disturbing soils for new construction, which may yield insights on early ironworker housing.	Improves riparian vegetation along river & bluff, as removed structures' lands will revert to natural areas. Promotes reduction in aggregate impervious surface areas. Requires demolition & removal of garage & carpenter shop, which will disturb soils; wet land precautions will be required. Improves aesthetic appearance.	Provides safer vehicle & pedestrian traffic on Central St., yet increases traffic on east bank roadways. Acquisition of property bordering Henkel Corp. & the park would remove the property from the town tax roles.	Enhances efficiency & safety of maintenance operation. Promotes cost effective use of park property as opposed to renting space off-site.
Visitor Access by Mechanized Means of Descent	May briefly separate mobility impaired persons, yet improves on current method, which separates visitors for the entire tour. Enables ADA accessibility to industrial plant.	Minimizes impact on historic structures, cultural landscape, and archeological resources.	Minimizes impact on vegetation and wetlands; soil disturbance will require wetland precautions.	May increase visitation, which may carry over to town shops.	Promotes cost effective solution as opposed to ramp construction. Increases load by maintenance staff. Increases efficiency: no interpretive staff time required to facilitate visitor accessibility.

TABLE 4 continued

Alternatives	Impacts on Visitor Experience	Impacts on Cultural Resources	Impacts on Natural Resources	Impacts on Socioeconomic Environment	Impacts on Park Operations
ALTERNATIVE 2: ENHANCED FACILITY DEVELOPMENT					
Build New Visitor Contact Facility	Eliminates confusion in locating park entrance. Allows non-personal orientation. Eliminates space conflict with school groups. Provides ADA accessibility. Provides visual orientation to river & iron works, which maximizes visi tor understanding of natural resources and their role in the iron works operation. Visitor decides interpretive sequence; some resources, such as IWH or museum may be missed Limits IWH visitor access to scheduled tours only. Staffing shortages may diminish or prevent visitor access to IWH. Entails temporary negative impact on visitor experience during construction.	Opens bluff views to the iron works plant by removing contact station. Enhances resource protection by allowing visual monitoring of hazardous industrial site. Replaces the garage with another non-historic building, which intrudes on the cultural & natural environment. Limits IWH visitor access to scheduled tours only.	Disturbs soils & vegetation with demolition & removal of garage; wetland protection precautions will be required. Minimal soil disturbance for contact station removal. Tree removal to open bluff views will result in reduced habitat and forage. May require enlarging existing garage footprint, which will disturb soils. Provides opportunity for environ mental education programs, enhancing conservation awareness .	Enhances connection between VC and Saugus Center shops.	Requires new construction expenditures. Splits interpretive staff to cover both the IWH & VC.
Build New Exhibit & Collection Storage Facility Adjacent to Museum Building	Improves visitor satisfaction & understanding by providing collections preservation & by facilitating collections use with changing exhibits Provides additional exhibit space or viewable storage area Creates a courtyard space which could be used for interpretive programs Entails considerable construction impacts upon the visitor experience	Alters the appearance & character of the Nutting structure & landscape Requires archeological investigation before construction Increases efficiency in the preservation of museum collections & exhibits Encourages collections research by visiting scholars	Increases impervious surface areas Requires removal of some trees and vegetation	No impact on the socioeconomic environment	Requires new construction expenditures Improves efficiency of curatorial operations & object preservation
Relocate Maintenance to Off-Site Location	Allows bluff & entire east bank to be utilized as visitor observation, cultural landscape, or interpretive areas Eliminates confusion in locating park entrance Improves aesthetics & access to the nature trail by removing carpenter shop & sheds Reduces potential for safety incidents from maintenance vehicles & machines Eliminates visual distractions from equipment storage & reduces noise pollution Increases vehicular traffic to site from off-site maintenance center	Relieves landscape of all maintenance structures & unifies historic setting No impact on archeological resources	Relieves environment of pressures from buildings, vehicle use, & equipment storage Supports more vegetation & wildlife communities Improves watershed capabilities	Increases traffic on Saugus roads as park vehicles travel from off-site maintenance facility to park	Requires expenditures for lease payments, negatively impacting park's operating budget Lessens efficiency of maintenance operation as time is spent commuting between off-site facility & park

TABLE 4 continued

Alternatives	Impacts on Visitor Experience	Impacts on Cultural Resources	Impacts on Natural Resources	Impacts on Socioeconomic Environment	Impacts on Park Operations
Visitor Access by Switchback Trail	Provides ADA accessibility through universal design, allowing all visitors to tour as a group.	Requires archeological investigations. Alters the cultural landscape, trail will be visible from all areas.	Requires soil disturbance within wetland boundaries – necessitates wetland protection precautions.	May increase visitation which may carry over to town shops.	Increases efficiency -no staff time required to facilitate visitor accessibility
Visitor Access by Straight Path from Overlook	Offers ADA accessibility & provides marsh views as it parallels the river Requires 304 ft length. May discourage some visitors. Offers accessibility options. Long trail or stairs at charging bridge, which may separate group.	Requires archeological investigations and salvage. Alters cultural landscape; trail will be visible from most areas.	Requires soil disturbance within wetland boundaries; necessitates wetland protection precautions (slope stabilization).	May increase visitation, which may carry over to town shops.	Increases efficiency - no staff time required to facilitate visitor accessibility.
		ALTERNATIVE 3: NO ACTION			
No Action: Visitor Contact	Maintains current levels of visitation; only 8% experience IWH. Fails to provide ADA accessibility. Visitor decides interpretive sequence; some resources, such as IWH or museum, may be missed. Limits non-personal orientation. Limits number of visitors in visitor center to 2 or 3 at a time. Perpetuates space conflict between education programs and visitor orientation film. Perpetuates visitor confusion in locating park entrance.	No changes to historic structures, cultural landscapes or archeological resources.	No changes to natural resources	No change to local economy	Continue to split interpretive staff, as ranger is dedicated to visitor contact station.
No Action: Museum Exhibit & Collections Storage	Continues poor preservation practices, negatively impacting visitor understanding.	Remains non-compliant with NPS Director's Order #24; over time, museum resources will deteriorate.	No changes to natural resources.	No change to local economy.	Perpetuates inefficient curatorial operations.
No Action: Maintenance Facilities	Continues traffic hazards at parking lot from maintenance trucks & heavy equipment. Continues visitor confusion in locating park entrance. Hampers efficient maintenance operation, impacting visitor satisfaction.	Continues obstruction of significant viewsheds at bluff. Perpetuates inefficient practices by maintenance & curatorial operations for resource protection.	Retains carpenter shop's & sheds' location too close to river, negatively impacting riparian habitat, a non-conforming use under the Rivers Protection Act. Perpetuates threats from spills, as maintenance equipment is stored too close to river.	Continues maintenance operation's impact on neighbors from heavy equipment use.	Continues inefficient operation from inadequate & divided maintenance facilities.
No Action: Visitor Access	Continues non-compliance with the Architectural Barriers Act & other mandates on accessibility. Continues practice of driving person with mobility impairment in golf cart, separating him or her from group. Negatively impacts visitation.	No impact on historic structures, cultural landscapes, or archeological resources.	No impact on natural resources.	May negatively impact visitation, which may carry over to town shops.	Continues to dedicate a staff person to accompany individual with mobility impairment through tour.

COMPLIANCE AND CONSULTATION

COMPLIANCE WITH FEDERAL AND STATE LAW, EXECUTIVE ORDERS AND REGULATIONS

In implementing the Saugus Iron Works NHS General Management Plan (GMP), the NPS will comply with all applicable laws and Executive Orders, including those listed below. Informal consultation with the appropriate federal, state, and local agencies has been conducted during the preparation of this document.

The Draft General Management Plan and Environmental Assessment (DGMP/EA) will be on public review for 60 days. The Final General Management Plan and Environmental Assessment (FGMP/EA) will respond to or incorporate the public comments on the draft document. Following the completion of the comment period, the NPS will determine if any significant issues or concerns have been raised that would necessitate the preparation of an Environmental Impact Statement (EIS). If that has not occurred, the NPS will issue a Finding of No Significant Impact (FONSI), along with the corresponding Wetland Statement of Findings (SOF). Through the issuance of the FONSI, the NPS will document the selected alternative and set forth any stipulations for implementation of the GMP, thus completing the requirements of the National Environmental Policy Act.

This environmental assessment is essentially a programmatic statement, presenting an overview of potential impacts relating to the proposed program for each management option. More detailed plans may be developed for individual actions. These more detailed plans would have to support the program proposed under the preferred management option and would be subject to a more detailed review of environmental impacts, possibly involving project-specific NEPA compliance.

Laws and Regulations Related to Cultural Resources

The NPS is mandated to preserve and protect its resources through the Service's organic act of August 25, 1916 (USC title 16). Cultural resources within the national historic site will be managed in accordance with that act and the Antiquities Act of 1906 (16 USC 431), the National Historic Preservation Act of 1966, as amended (16 USC 470), the National Environmental Policy Act of 1969, as amended (42 USC 4321, 4331, 4332), the Archeological Resources Protection Act of 1979 (16 USC 470), and the Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001). In addition, cultural resource management will be guided by National Park Service *Management Policies*, 2001 Edition, Director's Order 28: Cultural Resource Management, Director's Order 2: Park Planning, and Directors Order 12: Conservation Planning, Environmental Impact Analysis and Decision Making.

DO-12, Section 4.7, Prohibits the NPS from taking or authorizing any action that would, or is likely to, impair park resources or values. NPS Management Policies, 2001 Edition, Sections 1.4.1 through Section 1.4.7, set out the NPS's obligations in regard to preventing impairment, defining what constitutes "Impairment," what is meant by "Park resources and values," and the decision-making requirements on how to avoid impairment.

Section 106 of the National Historic Preservation Act of 1966, as amended, requires that Federal agencies that have direct or indirect jurisdiction take into account the effect of undertakings on National Register properties and allow the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. Toward that end, the NPS will work with the Massachusetts State Historic Preservation Officer (SHPO) and the Advisory Council to meet the requirements of 36 CFR 800 and the September 1995 programmatic agreement among the National Conference of State Historic Preservation Officers, the ACHP, and the NPS. This agreement requires the NPS to work closely with the SHPO and the ACHP in planning for new and existing NPS areas.

The agreement also provides for a number of programmatic exclusions for specific actions that are not likely to have an adverse effect on cultural resources. These actions may be implemented without further

review by the Massachusetts SHPO or the ACHP provided that NPS internal review finds that the actions meet certain conditions. Undertakings, as defined in 36 CFR 800, not specifically excluded in the programmatic agreement must be reviewed by the SHPO and the Advisory Council before implementation.

Laws, Regulations and Policies Related to Natural Resources

The National Environmental Policy Act (NEPA) of 1969, as amended, (42 USC Sections 4321 et seq.) requires that an EIS be prepared for all major federal actions significantly affecting the quality of the human environment. Director's Order 2, the NPS policy and guidance document for Park Planning provides that EIS's are usually prepared with GMP's. However, section 3.3.1.6 of DO-2 provides for an exception in those instances where, after scoping and initial analysis of alternatives and impacts, the NPS concludes that there is no potential for any significant impacts. In that event, the preparation of an Environmental Assessment (EA) is appropriate. Based on the pubic outreach the NPS has undertaken and the public responses to the options presented (as outlined in the consultation section below), the NPS has concluded that preparation of an EA for this GMP is appropriate. The Draft General Management Plan and Environmental Assessment was on public review for 60 days. During the review period, the NPS solicited public and agency comments. The environmental analysis, along with public consultations and comments on this draft, formed the basis upon which the selection of a single plan *(the preferred alternative)* by the Regional Director, Northeast Region, following the recommendation of the Superintendent, Saugus Iron Works National Historic Site. If, after all public review is completed and no significant issues or public controversy have arisen, the General Managment Plan and Final Environmental Assesment will be published. Concurrent with that release, the Regional Director will issue a Finding of No Significant Impact (FONSI), along with the corresponding Wetland Statement of Findings (SOF) which will document compliance with Executive Order 11990 and NPS Special Directive 93-4.

Analysis of Impacts on Prime and Unique Agricultural Lands in Implementing the National Environmental Policy Act (45 FR 59189): A memorandum dated August 11, 1980, from the Council on Environmental Quality requires federal agencies to assess the effects of their actions on soils classified by the U. S. Natural Resources Conservation Service (formerly the U. S. Soil Conservation Service) as prime or unique farmlands. This policy was developed to minimize the effect of federal programs in converting prime, unique, or locally important farmland to nonagricultural uses. There are no farmlands within Saugus Iron Works National Historic Site; therefore prime or unique farmlands will not be examined further.

Clean Air Act, as amended (42 USC 7401 et seq.): Saugus Iron Works National Historic Site is designated a class II clean air area. Maximum allowable increases of sulfur dioxide, particulate matter, and nitrogen oxides beyond baseline concentrations established for class II areas cannot be exceeded. Class II increments allow modest industrial activities in the vicinity of a park. Section 118 of the act requires all federal facilities to comply with existing federal, state, and local air pollution control laws and regulations. Saugus Iron Works National Historic Site would work with the Massachusetts Department of Environmental Protection to ensure that all activities at the site meet the requirements of the state air quality implementation plan. In addition, the Saugus Iron Works NHS is participating in the CLEAR strategy as described in Part Three Section I.B.5, above.

Coastal Zone Management Act (1972) and Coastal Barrier Resources Act (1982) both as amended in 1990: As the Saugus River is tidal, portions of Saugus Iron Works National Historic Site, namely the turning basin, lie within the Massachusetts coastal zone; all federal activities related to marine resources must be consistent with Massachusetts coastal zone management policies. These policies recognize the ecological significance of coastal waters and strive to protect both the water quality and the integrity of significant resource areas. A consistency determination will be completed to more closely analyze plan actions in relation to these policies and to ensure their consistency.

Endangered Species Act of 1973, as amended (16 USC 1531 et seq.): Section 7 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 habitat. Prior to implementation of any of the proposals set out in this GMP, the NPS will consult with the USFWS pursuant to Section 7.

Executive Order 11988, Floodplain Management: All federal agencies are required to avoid construction within the 100-year floodplain unless no other practical alternative exists. Some of the maintenance facility development described in this plan may be at least partially sited in areas that are within the 100-year floodplain. A final determination will be made when site planning and design is accomplished. An environmental assessment that will be prepared in accordance with any final proposal for the maintenance facilities will analyze floodplain issues in more detail. Flood zone maps published by the Federal Emergency Management Administration (FIRM Panel 3 of 4, Community Panel Number 250104 0003B, dated January 19, 1983) indicates that portions of the site at or below elevation 10 lie within Zone A2, where 100 year floods may occur. These areas are primarily located along the immediate banks of the Saugus River, including where the Bridge Street walkway crosses the river. The existing maintenance facilities on the east bank are within this Zone and are proposed to be relocated to a site outside that Zone as described in Part Three, page 60. This relocation will also be in compliance with NPS Special Directive 93-4: Floodplain Management, and will be referenced in the SOF to accompany the FONSI, should it be deemed appropriate.

Executive Order 11990, Protection of Wetlands: This order requires that all federal agencies must avoid, where possible, impacts on wetlands. *Director's Order #77-1: Wetland Protection* and *Procedural Manual #77-1: Wetland Protection* are the policies and procedures that the NPS uses to implement that Executive Order. The Order and Manual require that the NPS planning documents incorporate a sequence of 1): avoiding wetland impacts, where practicable; 2) minimizing impacts that cannot be avoided; and 3) compensating for any remaining wetland impacts through restoration of previously degraded wetlands. An environmental assessment will be prepared in conjunction with any proposal for new maintenance facilities, dock work or dredging. This document will analyze wetland issues in more detail, and the NPS will comply with applicable local and state laws and regulations regarding wetlands protection, as well as the above referenced internal NPS requirements.

Executive Order 11987, Exotic Organisms: This executive order requires federal agencies to restrict the introduction of exotic species into the natural ecosystems on lands and waters which they own, lease, or hold for purposes of administration and into any natural ecosystem of the United States and to encourage the states, local governments, and private citizens to prevent the introduction of exotics into natural ecosystems of the United States. The proposals in this document conform to the intent of the executive order.

Executive Order 13148, Greening The Government through Leadership in Environmental Management: This executive order requires all federal agencies to integrate environmental accountability into agency day-to-day decision making and long-term planning processes, across all agency missions, activities, and functions. Among the practices contained in follow-up regulations are the use of sustainable landscape practices, including use of native plants where feasible. The regulation, however, recognizes the National Park Service's use of four primary management zones (natural, cultural, park development, and special use). The proposals in this document conform to the intent of this order.

Federal Water Pollution Control Act, as amended (9 USC 1251 et seq., as amended, 33 USC 1251-1376, and 1987 Federal Water Quality Act): Proposed actions would have little if any negative effect on water quality. Any future action relative to possible dredging of the turning basin will comply with the requirements of sections 401 and 404 of the Clean Water Act and other applicable federal, state, and local regulations.

Massachusetts Natural Heritage and Endangered Species Program: The park is composed primarily of disturbed habitats in a suburban environment. As part of the compliance for the phragmites removal

project (See Appendix A, document 4), the Massachusetts Natural Heritage Program was contacted to provide information about the potential occurrence of species that are threatened, endangered, or of special concern in the park area. According to that program's current map, dated October 1, 1999 - December 31, 2001, no such species occur within the park area.

Massachusetts Wetlands Protection Act (Massachusetts General Laws Chapter 131, Section 40A), prohibits the alteration of any wetland resource area or buffer zone to such area without the prior written consent of the local conservation commission through their issuance of an Order of Conditions. In 1996, the Act was amended to add another protected resource, the riverfront area, which prohibits the alteration of any area within 200 feet of each side of the river from the mean annual high water mark. In order to conduct work in this area, the applicant must demonstrate that the proposed project, including mitigation measures, will result in no significant adverse impact on the riverfront area and that there is no practicable and substantially equivalent economic alternative. Any proposed work on the dock, dredging and new maintenance facilities located within protected zones will be done in cooperation with local officials who administer the MWPA.

Massachusetts General Laws Chapter 91 and its implementing regulations recognize the public rights to tidelands and define the constraints under which activities affecting those rights may take place. In general, activities and development in tidelands that are water dependent—as defined by the regulations—are presumed to serve a proper public purpose. Water dependent uses are varied, including marine industry, commercial and recreational boating and waterborne passenger transportation facilities, parks, boardwalks, sanctuaries, aquariums and marine research facilities, and others. Future work on the existing dock comes within this law, and the NPS restoration of historic features associated with interpretation of the site serves a public purpose. Consultation will be conducted with appropriate state and local officials.

Laws and Regulations Related to the Socioeconomic Environment

Pursuant to **Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations**, the National Park Service must consider the impacts of its actions on minority and low-income populations and communities, as well as the equity of the distribution of benefits and risks of those decisions.

According to the standards set in this publication, there may be socially or economically disadvantaged populations existing within the park's region. However, all of the management options proposed in the draft GMP offer the potential to make a positive impact on the region's overall economic health and vitality. Economic impacts from employment, associated earnings, and construction due to the management options proposed are expected to be positive. Further, none of the management options proposed would result in disproportionately high and adverse environmental effects, including human health, economic, and social effects, on minority or low income communities. There are no air or water pollution impacts that would impact human health. There would be no change in types or character of land use in the surrounding area that could affect minority or low-income communities.

For all alternatives in this document, based on the equity of benefit and risk distribution, there are no significant impacts on minority or low-income populations. Therefore, this issue will not be examined further in this analysis.

Federal Guidelines published in accordance with the **Americans with Disabilities Act of 1990** define specific requirements for disabled access to parking facilities, pathways, and buildings. The accessibility requirements apply to government facilities (title II) and to private entities that provide public accommodations (title III). A major focus of this GMP/EA has been to ensure appropriate access for persons with special needs or disabilities. The NPS anticipates going well beyond the specific requirements of this law as outlined in the options contained in this document.

CONSULTATION

The National Park Service consulted with a variety of individuals and groups during the course of preparing this Draft GMP/EA. The consultations began as early as 1991, when the need for a GMP for Saugus Iron Works NHS was sparked by the possibility of acquiring the former Scott's Mill property, then owned by the Henkel Corporation. A six-acre property with a mill dating to the 1840s and a number of late twentieth-century additions, the property abuts the historic site on the north and seemed to offer space for an expansive visitor center, museum storage, administrative offices, maintenance facilities, and other amenities. The planning process was then put on hold because of NPS budgetary constraints and because the Henkel property was faced with the need for extensive hazardous material remediation. In the fall of 1994, the NPS resumed work on the process of developing a GMP for the site, and a number of analyses and consultations were carried out over the next two years.

In late 1996, Congress designated the Essex National Heritage Area, identifying Saugus Iron Works as one of its focal points; and in early 1997, Saugus Iron Works was administratively united with Salem Maritime National Historic Site, the other primary focal point of the heritage area. These changes, combined with staffing changes, as well as changes in NPS and Congressional development emphases away from large investments in new facilities such as visitor centers, and continuing uncertainties regarding the suitability of the Scott's Mill property, created an opportunity to take a new look at options that were more consistent with the nature of the site, its pattern of visitation, and its likely future. Placing emphasis on the core historic resources of the site and their availability to visitors, these options involved adaptive reuse of existing structures and utilization of on-site resources for visitor orientation, museum collections storage, and relocation of maintenance and administrative functions.

Among the options that emerged from this process were: utilizing the Iron Works House Annex as a new visitor contact facility, constructing accessible paths between the bluff and the iron works reconstruction site and within the iron works plant site itself, using existing park-owned residences for museum collections storage and administrative space, and relocating maintenance operations to a new structure or structures located on the east bank of the Saugus River. In order to determine if these options were technically feasible and consistent with state and federal compliance standards, over the next 18 months the NPS conducted formal evaluations of the Iron Works House and Annex structure, utilizing both NPS resources and the services of a historical architect; it hired an outside firm of landscape architects to evaluate options for site accessibility; it used NPS engineering resources to evaluate the structural issues of the residences; and it finalized regulatory actions related to evidence of past pollution on portions of the site and in the Saugus River.

During the course of this process, the public and representatives of a number of entities were consulted regarding the issues and potential alternative actions: the Massachusetts State Historic Preservation Officer (Massachusetts Historical Commission), Massachusetts Office on Disability, Massachusetts Department of Environmental Protection; the Town of Saugus Town Manager, Director of Community Development, Conservation Officer, and Historical Commission; the Saugus Committee on Persons with Disabilities, the Saugus Riverwalk Committee, the Saugus Historical Society; the Saugus River Watershed Council; and the Essex National Heritage Commission. These consultations involved site visits, meetings, conceptual plan and document reviews. Details of those meetings are set out in the Summary of Public Involvement section below.

Response to Comments on the Draft General Managements Plan/Environmental Assessment

The DGMP/EA was mailed to the public and interested agencies at the Federal, State and local level during the first week of July 2001, and a corresponding notice was placed in the *Saugus Advertiser* during that week and the following week. The public and agencies were given 60 days to comment on the document, but due to a problem in the Federal Register notification process, notice was not actually provided in the Federal Register until October 2, 2001. Therefore, the NPS accepted comments

through December 2, 2001.

During this extensive comment period, the NPS received three written comments, one from the Town of Saugus Historical Commission (SHC) (Appendix A, Document 4), one from associates of the Essex Shipbuilding Museum (Appendix A, Document 15), and one from an individual (Appendix A, Document 16). The comments were generally supportive, though raising points that have led the NPS to modify and elaborate certain points and clarify some language in the final GMP. The following are more detailed responses to the points raised in the comments, using the outline format of the SHC's letter. The issues raised in the other comments are addressed at relevant parts of this document..

1. Eligibility of Reconstructed Buildings for the National Register

The NPS concurs with the SHC that the reconstructed buildings are historically significant and expects to support their inclusion in the National Register. As stated at page 15 of the DGMP/EA, the NPS acknowledges the need for a context study to support their inclusion under Criteria Consideration E (Reconstructed Properties) or G (Properties that Have Achieved Significance in the Last Fifty Years) and until such time will continue to manage these resources as if they were fully protected cultural resources.

2. Silting of Saugus River and Preservation of Viewshed

The SHC concurs with the NPS goal for restoration of the Saugus River area within the current NPS boundary, including the turning basin, and proposes a specific configuration that the NPS will consider as planning proceeds.

The SHC and the correspondents from the Essex Shipbuilding Museum urge the NPS to consider the construction of an appropriate vessel to interpret the shipping operation of the iron works. A volunteer group from the museum is planning to build such a boat and make it available to the site. The NPS concurs that a shallop or similar vessel would have interpretive value and will evaluate its ability to sustain such a facility.

The museum group is also urging that the navigability of the Saugus River, which is currently impeded by several obstacles, primarily bridges at Hamilton Street and Boston Street, be restored. The NPS supports these efforts for historical, natural, and recreational values.

3. Iron Works House/Visitor Annex

The SHC proposes that the NPS select the north-entrance option. The NPS will make a decision upon completion of ongoing studies, in accordance with historic preservation principles, and NPS and Advisory Council on Historic Preservation guidelines and regulations.

4. Accessibility

The SHC supports the NPS proposal, but questions the need for a mechanized lift and its long term maintenance and functionality. As stated in the DGMP/EA at pages 67, the NPS acknowledges that the mechanized means of descent will involve increased maintenance, but is considered the best option as it involves the least disturbance to potentially sensitive areas and is the lowest cost option. As suggested by SHC, to expand the path further along the slope to below the existing maintenance facility on the west bank is not as desirable because that option would require the remainder of the path be too close to the wetland areas and would require a much longer traverse for visitors with special needs. All options will be considered as project planning proceeds.

5. Museum and Collections Storage

The SHC believes that utilizing the existing houses for museum collections storage is a good interim measure, but recommends consideration of permanent facility, in conjunction with the proposed maintenance facility on the east bank. Since funding for the latter developments is uncertain, the NPS believes that the best way to accommodate the existing needs is to utilize the residences in a manner that will not impact the character of the neighborhood. While all options will be considered when project planning begins, a serious concern is that use of the east bank as a collections storage area may increase the threat of damage from flooding, due to its relatively low elevation. While it is feasible to separate maintenance functions from curatorial functions,

their close proximity may increase inherent risks of incompatible functions and activities, such as storage of maintenance equipment containing fuels and lubricants. Potentially high levels of noise and vibration from maintenance activities may cause damage to fragile museum collections. The increased size of the building's footprint or increasing the number of buildings on the east bank would increase potential impacts to park resources, including archeological sites, as well as cultural and natural features.

6. Adjacent Property Acquisition
The property acquisitions are at this time proposals to be realized in the event of willing sellers and adequate funding. The reasons for acquisition have been clarified in the text. Since the site is currently at 8.51 acres, these properties, if acquired together, would increase the size of the park by more than 5%, thus necessitating a legislative boundary modification.

We believe the NPS's concern for the viewshed is strongly expressed, with specific comments regarding Vinegar Hill and Currier Plaza. It has been suggested by one correspondent that the NPS explore the possibility of acquiring the historic area of Vinegar Hill. The NPS is highly concerned about the identification and preservation of the resources of Vinegar Hill and will seek ways to promote their preservation and will collaborate with the resource's stewards. Any acquisition would require Congressional action and would be based on a study and evaluation of the area's national significance and its feasibility and suitability for NPS management.

7. Educational Programs and Partnerships
The SHC supports the proposals.

8. Other Issues
Unlike Alternatives 1 and 2, Alternative 3 lacks a specific drawing. That graphic would be the same as the graphic for Existing Conditions.

The document addresses the issue of impairment in the discussion of Issues Relating to Preserving Resources at pages 23-24 and in Table Three. NPS Director's Order DO-12, section 4.7's Prohibition on Impairment has been fully complied with, and the NPS is confident that any future actions undertaken in conformity with the General Management Plan will conserve and protect park resources and values. NPS Management Policies, 2001 Edition, Sections 1.4.1 through 1.4.7, cover Park Management and Impairment. The NPS believes that it has fully complied with these provisions and that none of the actions contained within the Preferred Alternative involve authorization for or implementation of an action that will or is likely to impair park resources or values.

The NPS agrees that the significance of the Iron Works House involves both the associations accepted by the people of Saugus and its role in the historic preservation movement. A firm and accurate dating of its period of construction will bolster the evaluation of its significance on a local, regional and national level.

Summary of Public Involvement: Key Meetings & Contacts

4-20-94 Letter from Judith McDonough, SHPO, recommending NPS development of an historic context for the 1947-54 Saugus Iron Works reconstruction period, addressing National Register Criteria Consideration E for Reconstructed Properties or Criteria Consideration G for Properties that Have Achieved Significance within the Past Fifty Years. See Appendix A, Document 1.

7-1-97 Letter from Bike to the Sea trail to Herb Nolan requesting assistance on planning for the trail, also DEM assistance. See Appendix A, Document 7.

7-21-97 Letter from McDonalds to Superintendent, offering Bridge Street lot to NPS.

9-11-97 Park Staff attended first meeting of Town of Saugus Riverwalk Committee, where goals and larger vision of the organization were outlined. NPS attended for purpose of learning the Committee's interests and determining where they coincided with those of the NPS.

9-17-97 Park Superintendent and planning team members attended second meeting of the Riverwalk Committee where they outlined their proposal for a trail across the River (using the existing sewer line

crossing), which would link to the park's existing recreational trail along the east bank at the northern end and link at the southern end to the Bike to the Sea Trail.

5-98 "Downgradient Property Status Report" issued providing resolution of environmental issues associated with the Slag pile. See Appendix A, Document 8, for "A Chronology of Investigations and Actions for the Marsh and Slag Pile at Saugus Iron Works National Historic Site."

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7-20-98 Park Superintendent spoke with Brona Simon, the Deputy SHPO about meeting with that office to discuss issues related to accessibility and adaptive reuse of the Iron Works House (IWH). List of issues for discussion, site map and copy of the Archaeological Overview forwarded to her office.

7-22-98 MHC representatives and NPS staff met at the park for a site visit. See Appendix A, Document 9, for 7-24-98 letter from MHC (Hickey) to Superintendent (Kesselman).

8-27-98 Park Superintendent and BSO planning team staff (Pendery, Crisson, Salmons-Perez, Mendik) met at MHC with Karen Parker and Eric Johnson to discuss ramp from upper to lower level and physical issues associated with adaptive reuse of the IWH. MHC staff stated that they thought there would be less disturbance to the historic fabric by utilizing a new entrance on the west side of the House. They were in support of NPS concepts for getting visitors to and through the reconstructed Iron Works structures.

9-10-98 MHC representatives and NPS staff met at the site again to refine issues of concern. See Appendix A, Document 10, for 9-21-98 letter from Simon to Kesselman.

11-5-98 NPS representatives and Massachusetts Office on Disability staff (Hickey) met at the site with Kathy Forbes (Chairperson for the Saugus Committee on Persons with Disabilities) to review site specific options for providing accessibility to and through the Iron Works structures. See Appendix A, Document 11, for 11-12-98 letter from Mendik to Hickey.

2-24-99 The NPS held a Public Open House in which members of the public, organizations, local, state and federal officials were invited to view and comment on options under consideration for improving visitor services, access for persons with disabilities and special needs, maintenance facilities, and collections display and storage. The options were graphically displayed in a series of presentation boards. NPS staff were available from 3 p.m. until 9 p.m. to answer questions. Public Notice was placed in the *Saugus Advertiser* on February 4 and 18; and invitations were mailed to over 250 abutters, local residents, town officials, federal and state officials, and members of organizations that have interests associated with the site. Twenty-five people attended the open house, and all comments were positive

regarding the preferred alternatives. Following the open house, formal and informal contacts continued to be made with interested individuals and groups as the Draft GMP/EA was developed. Details of these meetings are found in Appendix A, Document 12, which includes the attendance list and letters from the Open House.

3-22-99 The Superintendent met with the Saugus Town Manager and the Saugus Director of Community Development to discuss proposals outlined at the 2-24-99 public Open House. They were favorable towards the preferred alternatives.

9-29-99 The Superintendent met with the Saugus Conservation Officer regarding the proposals outlined at the public open house and impacts related to designated floodplains.

6-14-00 The Superintendent presented the alternatives to a meeting of the officers of the Essex National Heritage Area. Comments were favorable to the preferred alternative; one concern related to giving consideration to providing accessibility between the bluff and the industrial area for people with strollers.

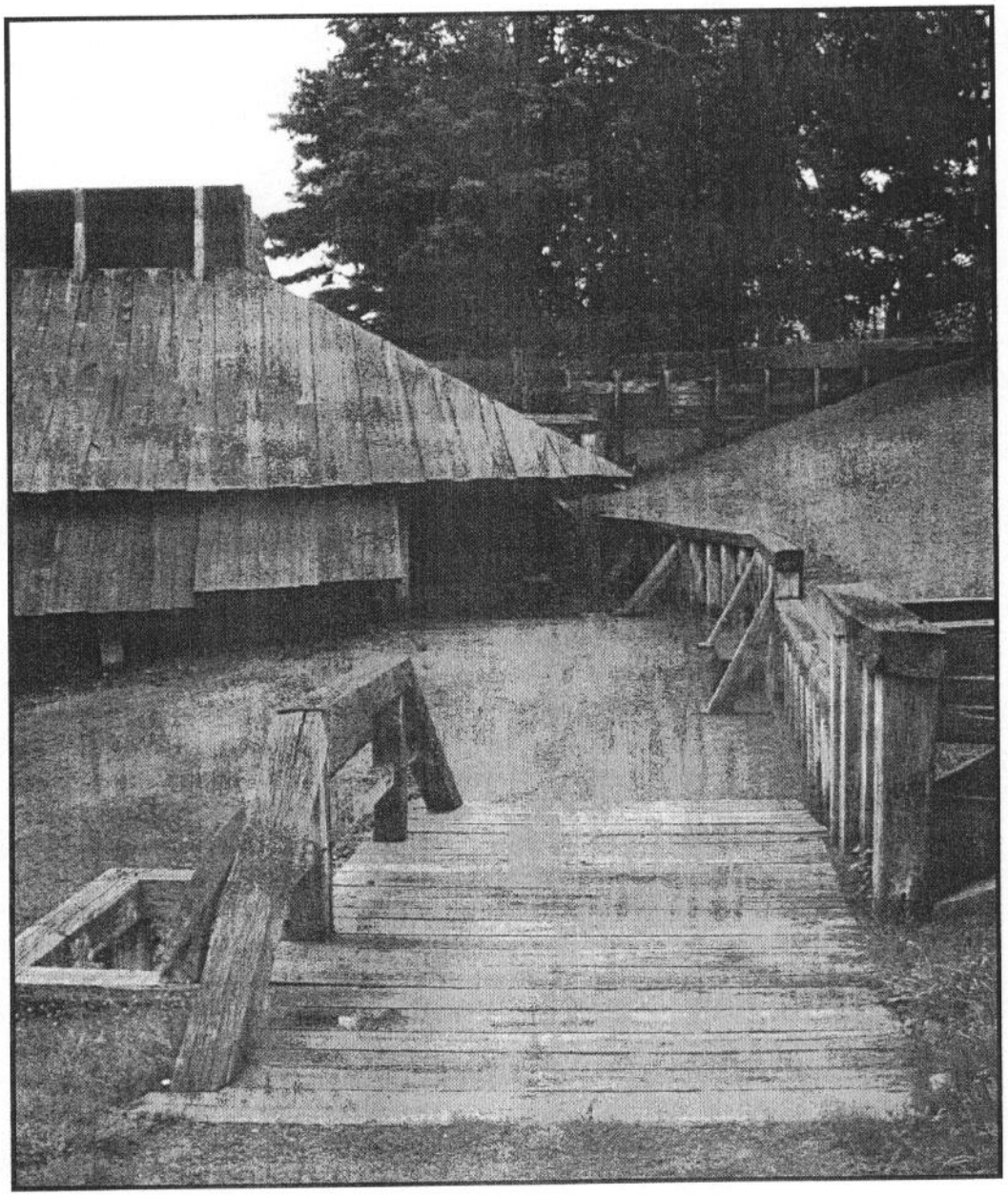
5-10-00 For discussion purposes, NPS presented to the Town of Saugus Conservation Commission (SCC) a phragmites mitigation plan proposing a combination of mechanical and chemical treatments. The Chair advised that the SCC would welcome this project. On September 8, 2000, the NPS filed a Notice of Intent with the Town of Saugus Conservation Commission to remove and control phragmites within an area of bordering vegetative wetlands along the Saugus River. The stated purpose of the action is to restore a portion of the cultural landscape through removing invasive non-indigenous vegetation. All abutters and adjacent residents were notified, and a public hearing was held on September 27, 2000. Abutters raised concerns about the method and duration of the application. The herbicide to be used is non-toxic and breaks down in a matter of hours. It will not be sprayed and will therefore not be airborne. On October 11, 2000, the Conservation Commission issued an Order of Conditions allowing the project. No appeal was filed. The town and abutters will be notified 48 hours prior to the work, the NPS will retain a wetlands consultant to oversee the work. See Appendix A, documents 2-6 for all related information.

In August of 2001, the NPS completed the environmental compliance and public outreach for a minor maintenance project that included path stabilization work near the banks of the Saugus River. The Scope of this work, compliance and documentation is included in Appendix A, document 17.



A crucible, which held molten iron from the blast furnace.

APPENDICES



"...the endeavors might be to gett workemen Under those we have to learne their trade or else we shall alwayes be to seeke for workmen..."

— from a letter to agent John Gifford from the Iron Works Promoters, 1652, The Iron Works Papers, 36.

APPENDIX A: DOCUMENTS

Document 1: 4-20-94 Letter from the MHC (McDonough) to NPS (Rust)

Document 2: Legal Notice for Public Hearing on Phragmites removal project

Document 3: Text of Notification to Abutters for Phragmites Removal Project

Document 4: Notice of Intent for Phragmites Removal Project

Document 5: 9-27-2000 Minutes of Saugus Conservation Commission meeting regarding Phragmites Removal Project

Document 6: Order of Conditions for Phragmites Removal Project

Document 7: 7-1-97 Letter from Bike to the Sea Trail to Herb Nolan, NPS

Document 8: 2-99 A Chronology of Investigations and Actions for the Marsh and Slag Pile at Saugus Iron Works National Historic Site

Document 9: 7-24-98 Letter from MOD (Hickey) to NPS (Kesselman)

Document 10: 9-21-98 Letter from MHC (Simon) to NPS (Kesselman)

Document 11: 11-12-98 Letter from NPS (Mendik) to MHC (Hickey)

Document 12: Attendance List and Letters from 2-24-99 Open House

Document 13: Compilation of Historic Structures and Buildings on the SAIR LCS located within or near the 100 year flood zone.

Document 14: Draft GMP/EA comment letter from the Saugus Historical Commission, dated 9-10-01

Document 15: Draft GMP/EA comment letter from the Essex Shipbuilding Museum, dated 9-13-01

Document 16: Draft GMP/EA comment letter from Saugus Town Meeting member Timothy Hawkes, dated 9-26-01

Document 17: Categorial Exclusion form and related documents, dated 8-20-01

Document 18: 5-30-01 letter from NPS (Kesselman) to USCG

April 20, 1994

Ms. Marie Rust
Regional Director
National Park Service
North Atlantic Region
15 State Street
Boston, Massachusetts 02109-3572

Dear Ms. Rust:

I am writing in response to your letter seeking Massachusetts Historical Commission concurrence with National Park Service determinations of eligibility for potential List of Classified Structures (LCS) resources located within the Saugus Iron Works National Historic Site, listed as a National Historic Landmark in 1966. MHC staff met with NARO staff on April 12th to discuss the ongoing LCS update process, and MHC's role in responding to NPS requests for MHC's concurrence on eligibility determinations made as part of the LCS update process, pursuant to Section 110(a)(2) of the National Historic Preservation Act.

MHC staff concurs with the NPS opinion that the following nine modern structures within the Saugus Iron Works National Historic Site do not appear to be eligible for listing on the National Register of Historic Places, and would be considered non-contributing resources:

Y.C.C. Stone Wall
Blacksmith Forge
Carpenter Shop
Maintenance Garage/Rest Room
Toolshed at 230 Central Street
230 Central Street
232 Central Street
Wood Storage Shed
Picnic Shelter

In addition, MHC staff concurs that an additional structure not mentioned in the available National Register nomination form, the Museum, appears to be eligible as a contributing structure.

Massachusetts Historical Commission, Judith B. McDonough, *Executive Director, State Historic Preservation Officer*
80 Boylston Street, Boston, Massachusetts 02116-4802 (617) 727-8470 Fax: (617) 727-5128 TDD: 1-800-392-6090

Office of the Secretary of State, Michael J. Connolly, *Secretary*

The MHC staff cannot at this time concur as to the eligibility of structures on this site that date to the 1947-1954 period. Neither the available National Register documentation, nor the LCS documentation demonstrates that these properties meet National Register Criteria Consideration E for Reconstructed Properties or Criteria Consideration G for Properties that Have Achieved Significance within the Past Fifty Years. While it is quite possible that the 1947-1954 reconstruction may meet the Criteria Considerations, without a fully developed context for this period, MHC is unable to assess the eligibility of the following:

Contact Station
Museum Annex
Corduroy Road
Saugus River Stone Bulkhead
Stone Wall at West Bluff
Well
Bridges Over Saugus River
Furnace Sluiceway and Tailrace
Retaining Wall
Slitting Mill Sluiceway and Tailrace
Small Bridge over Tailrace
Wood Retaining Wall
Wharf

Although the following structures are noted on the available National Register documentation, insufficient context is provided on this nomination for MHC to assess whether or not these structures are considered eligible and contributing:

Blast Furnace
Forge
Rolling and Slitting Mill
Warehouse

MHC staff concurs that the following structures are contributing structures:

Iron Works House
Slag Pile

MHC staff strongly recommends that NPS develop an historic context for the 1947-54 reconstruction period at the Saugus Iron Works, and that the context address Criteria Considerations E and G. Since the LCS survey forms note that modern repair, replacement, and alteration have been undertaken on several structures from the 1947-54 period, an amendment to the existing National Register nomination to add a context for this period should also assess the integrity of the structures included.

Given the known high density of both prehistoric and historic archaeological components within the Saugus Iron Works site, MHC staff also has concerns that actions relating to any structures may impact archaeological site components in proximity to these above ground structures. Numerous archaeological field investigations have been conducted throughout the Ironworks restoration area. The area has a high potential for prehistoric artifact recovery. The Blacksmith Forge may actually lie near a fall line in the Saugus River, a particularly sensitive locale. Even though the Ironworks area has been disturbed historically, the recovery of over 2000 prehistoric artifacts from the area indicates that all standing structure sites should be evaluated for their prehistoric potential.

Archaeological studies conducted in this area also indicate a high potential for historic archaeological resources. For example, Marley Brown's 1975 evaluation of Roland Robbins' work notes that the Park property on the east bank of the Saugus River was the site of Hammersmith, the 17th century ironworkers' community. Little archaeological work has been done in this area, but much of the locale was heavily landscaped and covered with several feet of fill. This process may have preserved archaeological resources in the area, or may have impacted them if grading preceded filling. In any event, the Blacksmith Forge, Wood Storage Shed, Picnic Shelter, and Carpenter Shop all may lie in the vicinity of the Hammersmith sites. High archaeological potential may also exist in the vicinity of the YCC Stone Wall. This area corresponds to Brown areas 2b and 2c where at least two structures, a canal trench feature and possible components of the Jenks mill complex are reported. Even the area of the buildings at 230 and 232 Central Street may have archaeological potential. Apparently no testing has been conducted around these structures. Any amendment to the existing National Register nomination should include a summary of previous archaeological studies at or near this location. The information can be used to evaluate the potential for known or expected archaeological resources in the area, as well as the area's integrity. While certain areas may not be significant for their standing structures, they may be significant or potentially significant for their archaeological resources.

We look forward to working with NPS staff in assessing additional LCS update information on Massachusetts properties as you move forward with this planning effort. Our understanding, following discussions with NPS staff on April 12, is that future submissions to MHC will include a cover letter, a summary of eligibility issues and existing documentation, a sketch map of the site under consideration, and LCS forms with original photographs. These comments are offered pursuant to section 110(a)(2) of the National Historic Preservation Act. Please feel free to contact Betsy Friedberg, National Register Director, MHC, should you have any questions regarding these comments.

Sincerely,

Judith B. McDonough

Judith B. McDonough
Executive Director
State Historic Preservation Officer
Massachusetts Historical Commission

TO: Saugus Advertiser
FOR PUBLICATION: September 21, 2000

LEGAL NOTICE
TOWN OF SAUGUS
CONSERVATION COMMISSION
NOTICE OF PUBLIC HEARING

The Saugus Conservation Commission will hold a Public Hearing on Wednesday, September 27, 2000 at 7:30 PM, in the Town Hall Annex, 25 Main Street under G L. Chapter 131, Section 40 and Article 508 of the Town Bylaws on the application of Saugus Iron Works National Historic Site for removal/control of Phragmites along the Saugus River inside the Saugus Iron Works under the Wetland Laws and Bylaws of the Town of Saugus.

Ray Martin, Jr., Chairman
Judith E. Riley, Clerk

Bill to:
Saugus Iron Works
244 Central Street
Saugus, MA 01906
781.231.7350

TO: ALL ABUTTERS AND ADJACENT RESIDENTS

FROM: SAUGUS IRON WORKS NATIONAL HISTORIC SITE

SUBJECT: NOTIFICATION

THE SAUGUS IRON WORKS NATIONAL HISTORIC SITE, 244 CENTRAL STREET, SAUGUS, MASSACHUSETTS, HAS PROPOSED THE APPLICATION OF THE HERBICIDE, RODEO, IN THE MARSHLAND TO MITIGATE AND CONTROL PHRAGMITES AUSTRALIS. PHRAGMITES AUSTRALIS, OR COMMON REED, HAS INVADED MARSHLAND AREAS PREVIOUSLY INHABITED BY NARROW-LEAFED CATTAIL AND OTHER MARSH SPECIES; THEREBY LIMITING SPECIES DIVERSITY WITHIN THE PARK. RODEO IS A TRADEMARK PRODUCT MANUFACTURED BY THE MONSANTO CORPORATION. IT IS A NON-SELECTIVE DEGRADABLE HERBICIDE CONSIDERED NON-TOXIC TO MOST AQUATIC SPECIES. THE SAUGUS RIVER IS A MAJOR NATURAL RESOURCE AND A PRIMARY COMPONENT OF THE HISTORIC AND CULTURAL LANDSCAPE OF PARK. INVASIVE PHRAGMITES AUSTRALIS HAS DAMAGED THE PARK'S CULTURAL LANDSCAPE BY OBSCURING IMPORTANT VIEW AREAS FROM VISITORS, ESPECIALLY ALONG THE NATURE TRAIL.

THE SAUGUS IRON WORKS NATIONAL HISTORIC SITE HAS SUBMITTED A NOTICE OF INTENT TO THE SAUGUS CONSERVATION COMMISSION. IN ACCORDANCE WITH M.G.L.C.131, SEC 40 AND M.G.L.C.39, SEC 23B, INTERESTED PERSONS MAY ATTEND A PUBLIC HEARING SCHEDULED FOR SEPTEMBER 27, 2000 AT 7:30 PM IN THE TOWN HALL ANNEX, 25 MAIN STREET. COPIES OF THE NOTICE OF INTENT MAY BE EXAMINED AND OBTAINED AT THE SAUGUS CONSERVATION COMMISSION'S OFFICE, 25 MAIN STREET, SAUGUS MASSACHUSETTS.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

Saugus
Town

A. General Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.





Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

1. Applicant:

Saugus Iron Works National Historic Site	carl_salmons-perez@nps.gov	
Name	E-Mail Address (if applicable)	
244 Central Street		
Mailing Address		
Saugus	MA	01906
City/Town	State	Zip Code
781-231-7350	781-231-7345	
Phone Number	Fax Number (if applicable)	

2. Representative (if any):

Goff-Chem, Inc.		
Firm		
Ben F. Goff	goff-chem@juno.com	
Contact Name	E-Mail Address (if applicable)	
100 Hano Street, Suite 19		
Mailing Address		
Boston	MA	02134
City/Town	State	Zip Code
617-254-7005	617-254-2390	
Phone Number	Fax Number (if applicable)	

3. Property Owner (if different from applicant):

Name		
Mailing Address		
City/Town	State	Zip Code

4. Total Fee:

Not Applicable - Federal Government: Department of the Interior, National Park Service
(from Appendix B: Wetland Fee Transmittal Form)

5. Project Location:

244 Central Street	Saugus
Street Address	City/Town
F9	Parcel 1
Assessors Map/Plat Number	Parcel /Lot Number

6. Registry of Deeds:

Essex	5693	519
County	Book	Page

Certificate (if Registered Land)

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

Saugus
Town

A. General Information (cont.)

7. Summary of Project Impacts:

a. Is any work being proposed in the Buffer Zone?

☒ Yes If yes, how many square feet?

150,000 sq ft

☐ No

b. List the impacts of proposed activities on each wetland resource areas (temporary and permanent impacts, prior to restoration and mitigation):

Resource Area	Size of Impact (e.g., sq. ft.)
Bordering Vegetated Wetlands - Mitigation of Phragmites Australis allowing the resurgence and restoration of native species.	150,000 sq. ft.

B. Project Description

1. General Project Description:

Phragmites Australis removal and control within the Bordering Vegetated Wetlands along the Saugus River inside the Saugus Iron Works National Historic Site.

2. Plan and/or Map References:

Saugus Iron Works National Historic Site Existing Conditions
Title Date

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

Saugus
Town

C. Activities Subject to Regulation

1. a. Check the applicable resource areas if work is to be conducted in an associated Buffer Zone:

Inland Resource Areas

☐ Inland Bank

☒ Bordering Vegetated Wetland (BVW)

Coastal Resource Areas

☐ Coastal Beach ☐ Barrier Beach

☐ Rocky Intertidal Shore ☐ Coastal Dune

☐ Salt Marsh ☐ Coastal Bank

b. Complete for all proposed activities located, in whole or in part, in Wetland Resource Area(s).

Inland Resource Areas:

Bordering Vegetated Wetlands:

150,000 sq. ft.
Square Feet altered

Square Feet replaced

Land Under Water Bodies:

Square Feet altered

Cubic Yards dredged

Bank:

Linear Feet altered

Bordering Land Subject to Flooding:

Volume of Flood Storage Lost (cubic feet)

Volume of Flood Storage Compensation (cubic feet)

Isolated Land Subject to Flooding:

Volume of Flood Storage Lost (cubic feet)

Volume of Flood Storage Compensation (cubic feet)

Coastal Resource Areas:

Coastal Dune:

Square Feet altered

Cubic Yards/Volume removed

Salt Marsh:

Square Feet altered

Coastal Bank:

Linear Feet altered

Land Under Salt Pond:

Square Feet altered

Cubic Yards dredged

Rocky Intertidal Zone:

Square Feet altered

Designated Port Area:

Square Feet altered

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

Saugus
Town

C. Activities Subject to Regulations (cont.)

Fish Run:

Linear Feet altered

Land Containing Shellfish:

Square Feet altered

Land Subject to Coastal Storm Flowage:

Square Feet altered

Beach:

Square Feet altered

Land Under Ocean:

Square Feet altered

Cubic Yards dredged

Riverfront Area:

a. Name of Waterway (if available):

b. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

c. Describe how the Mean Annual High-Water Line was determined:

d. Distance of proposed activity closest to the Mean Annual High-Water line:

Feet

e. Total area of Riverfront Area on the site of the proposed project:

Square Feet

f. Proposed alteration of the Riverfront Area:

Total Square Feet | Square Feet within 100 ft. | Square Feet between 100 ft. and 200 ft.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

Saugus
Town

C. Activities Subject to Regulation (cont.)

2. Check all methods used to delineate the Bordering Vegetated Wetland (BVW) boundary:

- ☐ Final Order of Resource Area Delineation issued by Conservation Commission or DEP (attached)
- ☒ DEP BVW Field Data Form (attached)
- ☐ Final Determination of Applicability issued by Conservation Commission (attached)
- ☒ Other Methods for Determining the BVW boundary (attach documentation):
  - ☒ 50% or more wetland indicator plants
  - ☐ Saturated/inundated conditions exist
  - ☐ Groundwater indicators
  - ☐ Direct observation
  - ☐ Hydric soil indicators
  - ☐ Credible evidence of conditions prior to disturbance.

3. a. Is any portion of the proposed project located in estimated habitat as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program?

☐ Yes If yes, include proof of mailing or hand delivery of NOI to :

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
Route 135, North Drive
Westborough, MA 01581

☒ No

October 1, 1999 - December 31, 2001
Date of Map

b. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

☐ Yes If yes, provide name of ACEC (see Appendix D for ACEC locations):

☒ No

c. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

☐ Yes

☒ No

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

Saugus
Town

D. Performance Standards

1. Is any portion of the proposed activity eligible to be treated as a limited project subject to 310 CMR 10.24 or 310 CMR 10.53?

☒ Yes — If yes, describe which limited project applies to this project:

310 CMR 10.53(4). The removal of aquatic nuisance vegetation and/or thinning of vegetation to improve habitat value.

☐ No

2. Is any activity within any Resource Area or Buffer Zone exempt from performance standards of the wetlands regulations, 310 CMR 10.00.

☐ Yes — If yes, describe which exemption applies to this project:

☒ No

3 a. Is the project located in the Riverfront Area?

☐ Yes — If yes, indicate the proposed project purpose:

☐ Single Family House ☐ Industrial Development

☐ Residential Subdivision ☐ Commercial Development

☐ Transportation ☐ Other (describe)

b. Was the lot where the activity is proposed created prior to August 1, 1996?

☐ Yes

☐ No

4. a. Describe how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location. Attach narrative and supporting documentation.

b. Is this project exempt from the DEP Stormwater Policy?

☒ Yes — If yes, explain why the project is exempt:

Project is confined to mitigation and restoration within Bordering Vegetated Wetlands.

☐ No — If no, stormwater management measures are required. Applicants are encouraged to complete Appendix C: Stormwater Management Form and submit it with this form.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

Saugus
Town

E. Additional Information

Applicants must include the following with this Notice of Intent (NOI):

- USGS or other map of the area (along with a narrative description, if necessary), containing sufficient information for the Conservation Commission and the Department to locate the site.
- Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland (BVW) replication area or other mitigating measure) relative to the boundaries of each affected resource area.
- Other material identifying and explaining the determination of resource area boundaries shown on plans (e.g., a DEP BVW Field Data Form).
- List the titles and final revision dates for all plans and other materials submitted with this NOI.

F. Fees

The fees for work proposed under each Notice of Intent must be calculated and submitted to the Conservation Commission and the Department (see Instructions and Appendix B. Wetland Fee Transmittal Form).

No fee shall be assessed for projects of the federal government, the Department, or cities and towns of the Commonwealth.

Applicants must submit the following information (in addition to pages 1 and 2 of Appendix B) to confirm fee payment:

Check Number

Check date

Payor name on check

Applicant name (if different from payor)

G. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

Steve Crowell, Superintendent — 9-8-00

Signature of Applicant — Date

Signature of Property Owner (if different) — Date

Benjamin F. Hoff, Goff-Chem, Inc. — 8 Sept 00

Signature of Representative (if any) — Date

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

Saugus
Town

G. Signatures and Submittal Requirements (cont.)

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents; two copies of pages 1 and 2 of Appendix B; and the city/town fee payment must be sent to the Conservation Commission by certified mail or hand delivery.

For DEP:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents; two copies of pages 1 and 2 of Appendix B; and a copy of the state fee payment must be sent to the DEP Regional Office (see Appendix A) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

SAUGUS CONSERVATION COMMISSION
Minutes of Meeting - September 27, 2000

Present:
Ray Martin, Jr., Chair
David Jackson
William Snowdon
Timothy Dame
Francis McKinnon

APPROVAL OF MINUTES:
MOTION by Mr. Dame, seconded by the Chair and passed 4-0 to accept the minutes of the September 13, 2000 meeting as submitted. Mr. McKinnon abstained.

CONSERVATION OFFICER'S REPORT:
Refer to Conservation Officer's Log.
The Conservation Officer reported on: Target Store; Brentwood Estates; North East Mosquito Control; Saugus River Maintenance Project; Home Depot Enforcement Order (letter sent requesting appearance at meeting); Xpress Lube; Piedmont Avenue; Longwood Estates (letter sent requesting appearance at next meeting); Saugus Avenue (Rivers Project); Hewlett Street (A1 Tree Service); 399 Lynn Fells Parkway; $100 fine paid by 401 Lynn Fells Parkway.

CORRESPONDENCE:
Correspondence was distributed and discussed by the Commission.

CONTINUED PUBLIC HEARING - 24 Hammersmith Drive, File #67-749
Jon Tilton, Hayes Engineering, Inc.

Mr. Tilton explained the project. Following a site visit by the Chair and Mr. Snowdon, it was concluded by the SCC that work described for this project is necessary.

MOTION by Mr. McKinnon, seconded by the Chair and passed 5-0 to close the Public Hearing. An Order of Conditions was read.

PUBLIC HEARING - Saugus Iron Works, File #67-750
Superintendent of the Ironworks
Ben Goff, Goff Chemical

Mr. Goff explained the plan for removal and control of fragmites using herbicides. The Chair asked how applied. Mr. Goff explained. Is this a permanent kill? Yes, after 2 season application. Mr. McKinnon asked about time frame. July - September. Mr. Goff explained he is involved only for N.O.I. at this time. Chair asked if all 3 acres to be done at one time. Yes.

Questions:
Michelle Galvin - 21 Greystone: Research on side effects of herbicide? Concern with drifting and drinking water. Mr. Goff: No aerial spraying. Used and tested. Essentially non-toxic. Pesticide boards state this product should be used. Mr. Dame stated explanation material extensive. Available to public.

John Belleveau - 23 Greystone Road: Is this already determined? Chair: No, here to hear concerns. Advised appeal process. This is very permitable project. Mr. Dame stated many projects like this around country. Want assurances of quality of application. Mr. Belleveau: concerns with river, airborne. Want town observer. Many small children in area. The Chair advised Conservation Officer to be notified. Order can state no spraying and also require notification of abutters. Mr. Dame suggested notification of area to be done. Mr. Jackson asked if park could be closed at time of work as a precaution. The supervisor said yes. The Chair asked if access from Bridge Street. No.

Ms. Galvin expressed concern if concerts going on. Was advised area can be closed off. Breakdown of Rodeo (herbicide) only takes hours to become non-toxic. The Chair asked if there could perhaps be notice in newspaper. Yes. Mr. Jackson asked for assurance cuttings would not end up at Saugus Landfill.

Diane Sullivan - 11 Pleasant Street: How long a contract? Chair advised permitting two seasons. All permit will allow. Would have to re-permit.

Bill Garten - 21 Greystone: Would qualified supervisor be on site? The Chair advised it is up to Iron Works to provide Supervisor. Not a town project. Will not be town employee or SCC. Licensed applicator responsible. Conservation Officer there to monitor as time allows. This will need a very tight Order of Conditions if it passes. Should also notify Board of Health. Mr. Goff stated the SCC should recommend monitoring protocol. Perimeter monitoring of some sort to be set up to allay concerns of abutting residents. The Chair asked distance from area to nearest property line. About 100' (at least).

In favor - none. Opposed - none.
The Chair request a demo/test application to show SCC and Bd. Of Health, as well as any interested abutters how it will be done. Mr. McKinnon: bid should be very specific as to method of application. Chair: Order of Conditions should be part of contract.

MOTION by Mr. McKinnon, seconded by Mr. Jackson and passed 5-0 close the Public Hearing. An Order of Conditions to be presented at October 11 meeting.

CERTIFICATE OF COMPLIANCE - DiCenzo, 26 Forest Av., File #67-589
David Dwyer, Otte & Dwyer

MOTION by Mr. McKinnon, seconded by Mr. Snowdon and passed 5-0 to issue a Certificate of Compliance to Mr. & Mrs. DiCenzo, 26 Forest Avenue, File #67-589.

CERTIFICATE OF COMPLIANCE - New Palace Trust, Vogue, File # 67-728
David Dwyer, Otte & Dwyer

The Chair presented copies of photos showing trash, etc. Mr. Dwyer to forward them to Mr. Robart. The Chair read from the Order of Conditions, #50 and #53. Advised Mr. Dwyer need to continue to October 11 meeting.

CONTINUED PUBLIC HEARING - 24 Hammersmith Drive, File #67-749
Jon Tilton, Hayes Engineering, Inc.

MOTION by Mr. McKinnon, seconded by the Chair and passed 5-0 to close the Public Hearing and issue an Order of Conditions to 24 Hammersmith Drive, File #67-749.

MOTION by Mr. McKinnon, seconded by Mr. Dame and passed 5-0 that the project is significant under the Wetlands Protection Act and the Town of Saugus Wetlands Bylaw as follows: (see file)

MOTION by Mr. McKinnon, seconded by Mr. Jackson and passed 5-0 to write a Standard Order of Conditions to 24 Hammersmith Drive, File #67-749 with the following Special Conditions: (refer to file)

ORDER OF CONDITIONS - Vinegar Hill, Phase II, File #67-741
Brad McKenzie, McKenzie Engineering Group, Inc.

MOTION by Mr. Dame, seconded by the Chair and passed 5-0 to find the project significant under the Wetlands Protection Act and the Town of Saugus Wetlands Bylaw as follow: (refer to file)

MOTION by Mr. Dame, seconded by Mr. McKinnon and passed 5-0 to write a Standard Order of Conditions to Vinegar Hill, Phase II, File #67-741 with the following Special Conditions: (refer to file)

DISCUSSION - Home Depot, File #67-619
Manager (Mr. Woodman) did not appear as requested.
MOTION by the Chair, seconded by Mr. Jackson and passed 5-0 to issue an Enforcement Order with a $100 fine for continued violation of specific Conditions and failure to comply with Order of Conditions.

DISCUSSION - 401 Lynn Fells Parkway
Owner did not appear as requested.
MOTION by Mr. McKinnon, seconded by Mr. Dame and passed 5-0 to issue an Enforcement Order with a $100 fine to 401 Lynn Fells Parkway.

DISUCSSION - Longwood Estates
Mr. McKinnon read the letter sent to Gregholl Realty Trust. Refer to file.

ELECTION OF OFFICERS

MOTION by Mr. Dame, seconded by Mr. Snowdon, passed 5-0 to re-elect Mr. Martin as Chair.
MOTION by Mr. McKinnon, seconded by Mr. Jackson, passed 5-0 to re-elect Mr. Dame as Vice Chair and Chairman of Open Space.
MOTION by the Chair, seconded by Mr. Snowdon and passed 5-0 to re-elect Mr. McKinnon as Conservation Officer.

Meeting adjourned.
Respectfully submitted, Judith E. Riley, Clerk

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number: 67-750
Provided by DEP

A. General Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

From:

Saugus
Conservation Commission

This issuance if for (check one):

☒ Order of Conditions

☐ Amended Order of Conditions

To: Applicant:

Saugus Iron Works Nat'l. Hist. Site
Name

244 Central St.
Mailing Address

Saugus MA 01906
City/Town State Zip Code

Property Owner (if different from applicant):

Name

Mailing Address

City/Town State Zip Code

1. Project Location:

244 Central St. Saugus
Street Address City/Town

F9 Parcel 1
Assessors Map/Plat Number Parcel/Lot Number

2. Property recorded at the Registry of Deeds for:

Essex 5693 519
County Book Page

Certificate (if registered land)

3. Dates:

9/13/00 9/27/00
Date Notice of Intent Filed Date Public Hearing Closed Date of Issuance

4. Final Approved Plans and Other Documents (attach additional plan references as needed):

MASS Wetlands Inventory Map April, 95
Title Date

5. Final Plans and Documents Signed and Stamped by

Name

6. Total Fee:

N/A
(from Appendix B Wetland Fee Transmittal Form)

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

B. Findings

Wildlife, Recreation & Erosion Control under Town Bylaw.
Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act. Check all that apply:

☐ Public Water Supply	☐ Land Containing Shellfish	☒ Prevention of Pollution
☐ Private Water Supply	☐ Fisheries	☐ Protection of Wildlife Habitat
☒ Groundwater Supply	☒ Storm Damage Prevention	☒ Flood Control

Furthermore, this Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

☒ the following conditions which are necessary, in accordance with the performance standards set forth in the wetlands regulations, to protect those interests checked above. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

Denied because:

☐ the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations to protect those interests checked above. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect these interests, and a final Order of Conditions is issued.

☐ the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).

General Conditions (only applicable to approved projects)

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 -- Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

B. Findings (cont.)

4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
   a. the work is a maintenance dredging project as provided for in the Act; or
   b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.

5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.

6. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.

7. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.

8. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to this Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.

9 A sign shall be displayed at the site not less then two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MA DEP"]

"File Number 67-750"

10 Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before DEP.

11. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.

12. The work shall conform to the plans and special conditions referenced in this order

13. Any change to the plans identified in Condition #12 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent

14. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

B. Findings (cont.)

15. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.

16. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.

17. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

Special Conditions (use additional paper, if necessary):

See Attached

Findings as to municipal bylaw or ordinance

Furthermore, the Saugus Conservation Commission hereby finds (check one that applies):

☐ that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw specifically:

Name — Municipal Ordinance or Bylaw

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

☐ that the following additional conditions are necessary to comply with a municipal ordinance or bylaw, specifically:

Saugus — Wetlands Bylaw 508

Name — Municipal Ordinance or Bylaw

The Commission orders that all work shall be performed in accordance with the said additional conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent the conditions shall control

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

B. Findings (cont.)

Additional conditions relating to municipal ordinance or bylaw:

See Attached

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

10-17-00
Date

This Order must be signed by a majority of the Conservation Commission. The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office (see Appendix A) and the property owner (if different from applicant)

Signatures:

William O. Snowdon Jr

On 11th Day Of October, 2000 Month and Year

before me personally appeared

These Commission Members

to me known to be the person described in and who executed the foregoing instrument and acknowledged that he/she executed the same as his/her free act and deed

Judith L. Riley
Notary Public

12/22/06
My Commission Expires

This Order is issued to the applicant as follows

☐ by hand delivery on Date

☒ by certified mail return receipt requested on 10-17-00 Date

ORDER OF CONDITIONS - Saugus Iron Works, File #67-750

18) This Order also constitutes a Special Wetlands Permit issued under Article 508 of the Bylaws of the Town of Saugus, and appeal to the Department of Environmental Protection pursuant to the G.L. Chapter 131, Section 40 shall not operate to terminate or effect any of the provisions of said Special Wetlands Permit.

19) Pursuant to Condition 8, the Order of Conditions must be recorded at the Registry of Deeds, Essex County, within four (4) weeks prior to commencement of work and prior to obtaining a building permit, if necessary, whichever comes first. The recording information shall be submitted to the Saugus Conservation Commission (SCC) on the form at the end of this Order. No work shall commence on-site until all appeal periods have elapsed. Failure to comply shall be deemed cause to revoke this Order of Conditions.

20) The applicant has met the two (2) proposed performance standards under the Massachusetts Rivers Protection Act.

21) All work shall conform to the Notice of Intent and above-referenced plans and supporting documentation unless otherwise specified in this Order. In case of a conflict, the conditions of this Order shall prevail.

22) In advance of any work on this project, the applicant shall notify the SCC, and at the request of the SCC, shall arrange an on-site conference among the SCC, the contractor, the engineer and the applicant to ensure that all of the Conditions of this Order are understood. This Order shall be included in all construction contracts and shall supersede any conflicting contract requirements.

23) The SCC shall be notified at least forty-eight (48) hours in advance of the date upon which construction activities on the site are to proceed. All site mitigation measures must be in place prior to initiation of construction.

24) Prior to construction, the applicant shall inform the SCC in writing of the name(s), address(es), and business and home phone numbers of the project supervisor(s) who will be responsible for insuring performance of all sedimentation and erosion control measures, wetland alteration and replication aspects of the project.

25) A copy of this Order of Conditions, including all referenced documents and plans, and all other subsequent approvals and directives issued by the SCC, shall be available on-site for inspection or reference while activities regulated by this Order are being performed. Copies of said documents shall be provided to all contractors and subcontractors who shall also be held responsible for compliance with this Order.

26) The applicant assumes all liability arising from his construction activities and project performance.

ORDER OF CONDITIONS - Saugus Iron Works, File #67-750

27) A continuous limit of construction barrier shall be established between all construction areas, including proposed replication areas and wetland resource areas. Said barrier shall consist of a staked hay bale dike, siltation fence and/or orange construction fence.

28) Prior to the start of work, filter fabric fencing (or a double row of staked hay bales) shall be installed up-gradient of all resource areas along the limit of activity between areas to be disturbed and down-gradient streams and wetlands. The location of this barrier shall be shown on the approved plan. This barrier shall define the limit of disturbance and shall be maintained in good repair until all disturbed areas have been stabilized with vegetation or other means. This barrier shall be inspected and approved by the SCC or its agent prior to start of work and be maintained until the SCC or its agent determines that control measures are no longer necessary.

29) Stripping of vegetation, clearing and grubbing of trees, grading or other soil disturbance shall be done in a manner that will minimize soil erosion. To the extent practical, limited portions of the area should be cleared at one time to allow construction to proceed and the area to stabilize.

30) All debris or excavated material shall be disposed of in a legal manner. No fill, construction materials or brush shall be stockpiled on-site once construction is completed.

31) The applicant, owner, successor, or assignee(s) shall be responsible for maintaining all on-site drainage structures and outfalls, assuring the lasting integrity of vegetative cover on the site and site activities so as to prevent erosion, siltation, sedimentation, chemical contamination or other detrimental impact to the on-site wetland and/or off-site resource areas.

32) Used petroleum products from the maintenance of construction equipment and construction debris shall be collected and disposed off-site. No on-site disposal of these items is allowed.

33) During and after work on this project, there shall be no discharge or spillage of fuel, oil or other pollutant into any area of statutory interest.

34) Any changes in the submitted plans, Notice of Intent or resulting from the aforementioned Conditions must be submitted to the SCC for approval prior to implementation. If, by majority vote, the SCC finds said changes to be significant and/or deviate from the original plans, Notice of Intent or this Order of Conditions to such an extent that the interests of the Wetlands Protection Act and Bylaw cannot be protected by this Order and would best be served by the issuance of additional Conditions, then the SCC will call for another Public Hearing within twenty-one (21) days – at the expense of the applicant – in order to take testimony from all interested parties. Within twenty-one (21) days of the close of said Public Hearing, the SCC will issue an amended or new Order of Conditions.

35) Any errors found in the plans or information submitted by the applicant shall be considered as changes, and procedures outlined above for changes shall be followed.

ORDER OF CONDITIONS - Saugus Iron Works, File #67-750

36) In conjunction with the sale of any lot with a resource area, the applicant shall submit to the SCC a signed statement by the buyer that he is aware of an outstanding Order of Conditions on the development and has received Notice under Conditions below.

38) The SCC shall be notified in writing of any lot line or lot number changes with a copy of a plan showing these changes prior to work on these lots.

39) Members and agents of the SCC shall have the right to enter and inspect the premises to evaluate compliance with the Order of Conditions and SCC may require the submittal of any data deemed necessary by the SCC for that evaluation.

40) Prior to issuance of a Certificate of Compliance, the applicant shall submit a letter to the SCC from a registered professional engineer certifying that the work is in compliance with the plans referenced and all of the Conditions herein. Said letter will certify, but not be limited to the following:

A. "As-Built" elevations of all drainage ways constructed within one hundred (100) feet of any wetland resource area.

B. "As-Built" elevations and grades of all filled or altered wetland resource areas.

C. Distances to all structures and alterations within one hundred (100) feet of any wetland resource areas.

Eight "As-Built" topographic plans of all areas within jurisdiction of the Wetlands Protection Act and Bylaw shall be submitted when a Certificate of Compliance is requested.

41) The provisions of this Order shall apply to and be binding upon the applicant, its employees and all successors and assigns in interest or control.

42) The Rodeo application will be conducted by a licensed (by State of Massachusetts) pesticide applicator.

43) All work will be conducted according to the Notice of Intent dated 9/8/00 and the plan from Goff Chemical.

44) All abutters will be notified two (2) days in advance of application, in writing or by public notice.

45) The applicant shall retain a wetlands consultant to oversee the application and provide a letter report to the SCC upon completion.

46) The applicant shall use the wicking technique for application (such as Walk-a-Wick product).

ORDER OF CONDITIONS - Saugus Iron Works, File #67-750

CONDITIONS IN PERPETUITY

#31

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

C. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate DEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Appendix E: Request of Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act, (M.G.L. c. 131, § 40) and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

D. Recording Information

This Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on Page 7 of Form 5 shall be submitted to the Conservation Commission listed below.

Saugus

Conservation Commission

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

D. Recording Information (cont.)

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Saugus
Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Project Location DEP File Number

Has been recorded at the Registry of Deeds of:

County Book Page

for:

Property Owner

and has been noted in the chain of title of the affected property in

Book Page

In accordance with the Order of Conditions issued on

Date

If recorded land, the instrument number identifying this transaction is

Instrument Number

If registered land, the document number identifying this transaction is

Document Number

Signature of Applicant

Bike to the Sea, Inc.

July 1, 1997

Herb Nolan
National Park Service
15 State St
Boston, MA 02109-3572

Re: Bike to the Sea Application for
Recreational Trail Grant

Dear Mr. Nolan:

The Bike to the Sea organization requests your assistance in our efforts to obtain a Recreational Trail Grant through the Department of Environmental Management.

A cost estimate must be prepared in order to allow the Cities of Malden, Revere and Lynn and the Town of Saugus to apply for money to design and construct the Bike to the Sea path. Bike to the Sea members with expertise in planning projects have volunteered to assist with the development of the cost estimate. A grant from the DEM will allow those volunteers to hire a professional cost estimator and a landscape architect to prepare and review the cost estimate.

We specifically request that you write a letter expressing your support for the grant to Peter Brandenburg of DEM/Forests & Parks, 100 Cambridge St, 19th Floor, Boston MA 02202. Please send a copy to Bike to the Sea c/o 83 Jacob St., Malden MA 02148.

Contact me at 397-6893 if you have any further questions.

Sincerely,

Stephen P. Winslow, President

A CHRONOLOGY OF
INVESTIGATIONS AND ACTIONS
FOR THE MARSH AND SLAG PILE
AT
SAUGUS IRON WORKS NATIONAL HISTORIC SITE

1. November 8, 1993
Soil Testing:
Saugus Iron Works NHS undertook an investigation of marsh soils prior to conducting an historic landscape restoration project.

2. March/April 1994
Report:
Soil Core Sampling & Analysis for Hazardous Substances
(P.O. #1443PX2000-93-210)
Saugus Iron Works National Historic Site
244 Central St.
Saugus, MA 01906
Prepared by: Goff-Chem, Inc.
100 Hano Street
Boston, Massachusetts 02134

The soil core sampling determined the presence of Priority Pollutant Metals (PP13) and Poly Aromatic Hydrocarbons (PAH's) in marshland sediments. These results were reported to Massachusetts Department of Environmental Protection.

3. August 30, 1994
Letter:
The Massachusetts Department of Environmental Protection recommended the use of a Licensed Site Professional (LSP) to oversee the regulatory reporting requirements for Saugus Iron Works NHS.

4. January 26, 1995
Report:
Licensed Site Professional (LSP) Review for Saugus Iron Works NHS
Prepared by Woodward & Curran
Environmental Services
41 Hutchins Drive
Portland, Maine 04102

This report recommended filing a *Release Notification Form* with the Massachusetts Department of Environmental Protection and advised further site characterization to determine the vertical and horizontal distribution and potential source of contamination.

5. June 13, 1995
Notification:
The Massachusetts Department of Environmental Protection issued a *Notice of Responsibility* letter to Saugus Iron Works NHS seeking additional testing and analysis.

6. December, 1995
Report:
Phase I Initial Site Investigation Report
Release Tracking Number 3-12551
Saugus Iron Works National Historic Site
244 Central St.
Saugus, MA 01906
Prepared by: Goff- Chem, Inc.
100 Hano Street
Boston, Massachusetts 02134

Goff-Chem installed 3 permanent and 1 temporary ground water monitoring wells.
5 soil boring samples were collected from well sites and potential well sites.
7 soil borings were collected from the slag pile.
2 sediment samples were collected from the marshland
4 surface water samples were collected from the Saugus River.
1 soil boring was collected from east bank of Henkle property.

7. April 19, 1996
Submission:
Saugus Iron Works NHS submitted a *Tier IC Response Action Permit* application to the Massachusetts Department of Environmental Protection. This permit was published in the local newspapers. It summarized environmental testing activities at Saugus Iron Works NHS and invited public comment.

8. December, 1996
Report:
Imminent Hazard Evaluation
Saugus Iron Works National Historic Site
244 Central St.
Saugus, MA 01906
Prepared by: Goff- Chem, Inc.
100 Hano Street
Boston, Massachusetts 02134

This report determined that a condition of "No Significant Risk" of harm to human health, safety, public welfare, or the environment exists from metals located in the Slag Pile and sediments at the Saugus Iron Works disposal site.

9. March 31, 1997
Report:
Final Saugus Iron Works National Historic Site Baseline PRP (Potentially Responsible Parties) Search Report
Hazardous Waste Management and Pollution Prevention Team, National Park Service, Department of the Interior
Contract No. 1443CX2000-96-0001
Submitted by Hazardous and Medical Waste Services, Inc.

This document identified off-site manufacturing activities as likely responsible parties for PAH contamination of the Saugus Iron Works NHS marshland.

10. May, 1998
Report:
Site Specific Risk Characterization
Release Tracking Numbers: 3-12551/3-13248
Saugus Iron Works National Historic Site
244 Central St.
Saugus, MA 01906
Prepared by: Goff- Chem, Inc.
100 Hano Street
Boston, Massachusetts 02134

This report provided a site-specific characterization of the risk of harm to health, safety, public welfare, and the environment at the Saugus Iron Works NHS. A determination of "No Significant Risk" was reiterated for Saugus Iron Works NHS.

11. May, 1998
Report:
Downgradient Property Status Opinion
Polycyclic Aromatic Hydrocarbons
Release Tracking Number 3-12551
Saugus Iron Works National Historic Site
244 Central St.
Saugus, MA 01906
Prepared by: Goff- Chem, Inc.
100 Hano Street
Boston, Massachusetts 02134

This report provided State confirmation that the PAH contamination at Saugus Iron Works NHS originated from an off-site source.

(upper base of slag pile, south base of furnace, and south of Forge near marshland and adjacent to the Iron House) and 1 temporary well (easterly base of slag pile).

The site presents no significant risk of harm to human health, safety, public welfare or the environment regarding the contaminants of concern located in the soils at the Saugus Iron Works NHS disposal site.

It documents the likelihood that the PAH contaminants present in the marsh at Saugus Iron Works NHS originated from an up-gradient source and the contaminants migrated along the river to be deposited at Saugus Iron Works NHS.

Notice of Activity and Use Limitation

Tier I Classification Submittal
Response Action Outcome
Downgradient Property Status: This documents presents a characterization of the disposal site, extent of release, and characterization of the hazardous material. Additionally, the evaluation of receptors, site activities and uses, exposure point concentrations was accomplished in a manner that provided a conservative estimate of the representative concentrations of hazardous material which a receptor may contact within the contaminated area over a period of time.

Massachusetts Office on Disability
One Ashburton Place, Room 1305
Boston, MA 02108

Argeo Paul Cellucci, Governor
[617] 727-7440 V/TTY
Lorraine Greiff, Acting Director
[800] 322-3020 V/TTY

[617] 727-0965 FAX

24 July 1998

Director
Saugus Iron Works
Saugus , MA 01906

Ms. Vicky Earl,

On Wednesday, 22 July 1998 we did an accessibility study of the Saugus Iron Works. The purpose of this survey was to improve accessibility while maintaining the historical nature of the site.

The following observations were made:

1. The two handicapped parking spaces were in compliance as far as the ground being level within 2%, both front to back and sideways. There were no handicapped signs although they are in the maintenance shop waiting installation. The space between the two cars is too narrow. This space should be 8' – 0" wide with an 8' 0" wide space crossed hatched beside it, the signs should be permanently installed in the ground with the top between 5' – 0" and 8' – 0" above the ground. One sign should have a small sign under it and it should read "VAN". In the path of travel from the parking lot to the main entrance there is a storm drain, the cover has holes measuring 2" square, gratings should have holes no larger than ½ inch wide and the holes should be parallel with the path of travel.
2. The entrance to the Visitors Center had a step about 4 inches. This is in my opinion readily achievable and the grade elevation should be raised now, to give access to people with disabilities.
3. The main entrance has two steps, but if the exterior grade were to be raised at a gradual slope, then a walkway would solve this problem without any significant

change to the historic look of the building. (a walk is a 1:20, for every inch of rise there must be a run of 20").

4. The counter height in the Visitors center was too high. The counter measured 38" and the allowable height is 36".
5. Inside the Historic building where renovations are proposed, there are high thresholds, even though this is historic property. If the bottom were to be cut off, this would maintain the historic flavor of the building, the only difference being the threshold would be almost flush with the floor and not impede the path of travel. Thresholds are not allowed inside the building.
6. The rear exit door will have to be widened, but this will give a free flow of traffic through the building, and direct people to the next exhibit.

7. We talked about building a ramp or walkway from the parking lot to the bottom of the hill. The height of the bridge is approximately 21 feet above the ground. If my figures are correct the overall length of the ramp including resting areas and handrails on both sides will be about 3034 feet. This is once again in my opinion an undue burden for the disabled community. An alternative solution, could be a one- stop elevator. This could go from the ground to the bridge, and possible be on the far side of the bridge.

   21 feet times 12 inches (the 1:12 run) equals 252 inches.
   252 inches times 12 feet (height of bridge) equals 3024 feet, length of ramp.
   3024 divided by 30 feet (the number of resting areas) equals 101.
   100 resting areas times 5 (length of resting area) equals 500 feet.
   One resting area at top and one at the bottom equals 10 feet.
   The total length of the ramp will then be 3524 feet.
   Because this ramp is 1:12 it will need handrails top and bottom on both sides.

I hope that this information will be helpful for the upcoming meeting. If you have any questions in the meantime please feel free to call. 1-727-7440, ext. 307.

Sincerely,

Ralph B. Hickey

Ralph B. Hickey
Access Specialist



The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

September 21, 1998

Stephen Kesselman
Superintendent
National Park Service
Salem Maritime National Historic Site
Saugus Iron Works National Historic Site
174 Derby Street
Salem, MA 01970

RE: Planning Issues/Programmatic Changes, Saugus Iron Works, Saugus, MA; MHC #8246

Dear Mr. Kesselman:

Thank you for supplying the Massachusetts with information, received August 17, 1998, regarding the proposed planning and programmatic changes to the Saugus Iron Works complex. As you are aware the Saugus Iron Works National Historic Site in listed in the National Register of Historic Places as well as being a National Historic Landmark.

This information was further clarified by a meeting at the MHC office on August 27, 1998, between representatives of the National Park Service and the MHC; and a meeting on site at the Saugus Iron Works on September 10, 1998, which was also attended by representatives of the NPS and the MHC.

It is the understanding of MHC staff that as a result of the General Management Plan for the Saugus Iron Works, several changes in the facility are identified. These changes have to do primarily with visitor circulation throughout the site and handicapped accessibility improvements and include installation of an accessible entrance on the Iron Works House, conversion of the interior of the 20th century Wallace Nutting additions from staff office space to a visitor greeting area, relocation/redesign of the parking lot and paths, removal of the existing visitor's center, consolidation of existing maintenance buildings, reduction of the existing grade of the slope that lies between the Iron Works and the House, and reconstruction of one of the existing stairways on that slope.

After review of MHC files, materials submitted, and information gained at meetings, MHC staff have the following recommendations concerning alterations to the Saugus Iron Works site.

- The west-facing portion of the rear lean-to appears to be the most suitable location for the construction of a handicapped accessible entrance. The earlier proposal of introducing a doorway into the front of the Nutting addition is not sympathetic to the

220 Morrissey Boulevard, Boston, Massachusetts 02125 · (617) 727-8470
Fax: (617) 727-5128 TDD: 1-800-392-6090
Website: www.magnet.state.ma.us/sec/mhc

historic property and would result in changes that could be detrimental to the interpretation of the Nutting renovation.

- One of the existing doors on the rear of the house should be maintained as an alternate exit for the proposed visitor's greeting area.
- The existing interior walls of the lean-to area and rear addition appear to be non-historic and their removal for a visitor's area would be appropriate.
- Within the rear addition area, the chimney should be maintained and the Nutting window (no longer in use) should be maintained (not necessarily in situ) and used as an interpretative tool.
- Study of re-introducing the doorway from the Nutting addition into the original structure should be investigated and the benefits of that opening carefully examined prior to removing any historic fabric. If it proves that it is possible to gain a handicapped accessible entrance from the visitor's greeting area into the main house, as little existing fabric should be removed and the entire process should be documented.
- The path from the parking lot should not lead the visitor directly to the front door of the Iron Works House, but lead to the new entrance at the rear of the west elevation.
- Identification of this new entrance can be further enhanced by attractive landscaping and seating that will invite the visitor.
- The use of a portable ramp for the front entrance (no longer considered the primary entrance with the introduction of the accessible side entrance) of the Iron Works House should be investigated, to enable access to the hallway and possibly the two first floor rooms of the main house.
- The slope between the Iron Works House and the Industrial Complex is archaeologically sensitive. An archaeological survey should be conducted for this area to locate and identify any significant archaeological resources that may exist here before any modifications are undertaken to make it more accessible.

The MHC looks forward to reviewing project plans and elevation drawings for these alterations to the Saugus Iron Works site as the design process moves forward. Please feel free to contact myself or Eric Johnson if we can be of further assistance.

These comments are provided to assist in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800).

Sincerely,

Brona Simon

Brona Simon
State Archaeologist
Deputy State Historic Preservation Officer
Massachusetts Historical Commission

xc: Saugus Historical Commission
Richard Crisson, NPS, Cultural Resources Center
Steven Pendery, Archaeologist, NPS, Cultural Resources Center
Carl Salmons-Perez, NPS, Saugus Iron Works

United States Department of the Interior

NATIONAL PARK SERVICE
Boston Support Office
15 State Street
Boston, Massachusetts 02109-3572

IN REPLY REFER TO:

November 12, 1998

Mr. Ralph B. Hickey
Access Specialist
Commonwealth of Massachusetts
Executive Department Office On Disability
One Ashburton Place, Room 1305
Boston, MA 02108

Dear Mr. Hickey:

This letter is a follow up to your site visit on November 5th to the Saugus Iron Works National Historic Site. Also present were park staff, our consultant from Browne & Rowe and Kathy Forbes, the Chairperson for the Saugus Committee On Persons With Disabilities. The primary purposes of the site visit were to address your letter to Vicky Earll of the National Park Service (NPS), dated July 24, 1998, specifically item #7, outline the other ramp option we have been working on and walk you through the Iron Works structures to develop and review our collective ideas for making all the structures accessible to persons with disabilities.

Regarding item #7, based on our observations in the field, it appears that either ramp option would run roughly 350 to 400 feet and not 3524 feet. There had been some question as to the conversion rates used earlier. As for the elevator solution, based on input from park staff and cultural resource specialists, the NPS believes such a structure would detract from the cultural landscape we have worked hard to develop and maintain, and would present significant concerns from a maintenance perspective. Based on the actual lengths of the ramps being considered, you seemed more comfortable with the NPS pursuing the ramp concepts instead of the elevator.

As for the switchback ramp, that would begin roughly at the same point as the existing stairs located adjacent to the top of the furnace, follow the slope contours in a southerly direction down towards the existing ramp , and then turn north/northeast back along the existing path and run along that path to the south entrance at the base of the furnace. We would be able to eliminate or significantly reduce much of the grade changes in the ramp by raising existing grades through the use of bridges or above ground structures. This will also reduce any potential for impacts to known or suspected archaeological resources.

The concepts we discussed for providing access into and through the furnace, forge and slitting mill are as follows:

Once down at the south entrance to the base of the furnace, persons could travel through the furnace and out the east exit by developing a hardened pathway inside the furnace. This would not be a paved surface, but would be conducive to wheeled travel, such as wheelchairs or strollers. The grade along the path from the furnace to the front of the forge would be reworked to reduce the slope. Once at the forge, one side of that entrance ramp could be reworked into a manageable slope or a small lift installed. Once inside the forge, the east side exit would be redone in combination with the west side entrance to the slitting mill so as to provide a modest slope between the two structures. The two stair exit from the rear of the slitting mill would be fitted with a lift. Once outside the slitting mill, the pathway that winds around back and turns south to link with the main path between the bridges would be regraded and resurfaced (again using a hardened but not paved surface) to allow for wheeled access.

As we discussed, our intention is to hold a public informational meeting at the Town of Saugus to provide town residents, administrators and other interested persons with the opportunity to review and comment on the options we are considering, not only regarding improved access to and between the Iron Works sites, but also into and through portions of the Iron Works House, as well as with paths of travel to and from the parking lot and the site's historic resources.

Once we have your input on the information set out above, the NPS will schedule the public informational meeting. Our hope is to be able to set up that meeting some time in early December.

Again, thank you for your time at the site and valuable input.

Sincerely,

Kevin R. Mendik
Project Manager

cc:
Steve Kesselmen Supt. SAIR
Kathy Forbes

bcc:
Crisson
Pendary
Earll, Regan, Salmons-Perez
Peskin
Browne, Roth

Visitor Registry Saugus Iron Works N.H.S.

name	date	Comments & Suggestions
Betsy Goeke city state country	2/23/99	a good display
ROBERTA PRESAGLE city SAUGUS state MA country	2/23	good IDEAS + PLANNING
[illegible] city Peabody state MA country	2/23	Looks Great!
HAROLD HASHEM city SAUGUS, state MA country	2/23	Looks good.
RICHARD PROVENZANO city PEABODY, state MASS country U.S.A.	2-23-99	
LIECH BUDNY city state country	2/23/	WONDERFUL HISTORICAL PLACE & INTERESTING PROJECTS
Marilyn Carlson city Saugus state MA country	2-23-99	Educator, Historical Commission, & Historic Society, (Will support you in any way possible)
EARL G. HILLS city state country	2330486	Right On

Visitor Registry Saugus Iron Works N.H.S.

name	date	Comments & Suggestions
Stephen P Carlson		Saugus Historical Commission Pres. Spec, BOST
city Saugus state		
country		

name	date	Comments & Suggestions
RICHARD GRAF	2/24/99	GOOD PLAN
city SOMERVILLE state MA		
country		

name	date	Comments & Suggestions
Sarah Peskin	2/24	Excellent plan. Good work.
city 68 Ferdinand state		
country Melrose MA		

name	date	Comments & Suggestions
Rochelle Einhorn	2/24	GOOD Plans, Well presented & Easy to understand
city 8 Hood ST. Saugus, MA state		
country		

name	date	Comments & Suggestions
Nora Shaughnessy	2/24/99	BETTER TO COME, EVEN!
city 8 Hood St. Saugus state Mass		
country 01906		

name	date	Comments & Suggestions
Tim Hawkes	2/24/99	Good Ideas
city 225 Walnut ST. Saugus state MA		
country		

name	date	Comments & Suggestions
KATHY FORBES	2/24/99	
city SAUGUS state MA		
country USA		

name	date	Comments & Suggestions
[illegible]	2/24/99	I LIKE THE SWITCHBACK!
city Lynn state MA		
country		

Visitor Registry Saugus Iron Works N.H.S.

name	date	Comments & Suggestions
R. ATKINSON	2/21/99	
city: Saugus state: MA		
country:		

name	date	Comments & Suggestions
BARBARA P. Reardon	2/24/99	
city: 12 LAWSON RD state:		
country: WILMINGTON, MA 01887-1442		

name	date	Comments & Suggestions
Ralph Hickey		good work
city: Mass Office on Disability state:		
country: Boston		

name	date	Comments & Suggestions
RAE EMERSON	2/24/99	
city: SAUGUS state: MA		
country:		

name	date	Comments & Suggestions
FRANK STUDINSKI	2/24/99	
city: BILLERICA state: MA 01821		
country:		

name	date	Comments & Suggestions
Cindy Dolfeyes	24 Feb 1999	
city: Saugus state: MA		
country:		

name	date	Comments & Suggestions
DICK SPICER	2/24/99	
city: Peabody state: MA		
country:		

name	date	Comments & Suggestions
Robert G. Atkinson	2/24/99	Very Good Plan. Hope it happens. I really hope they can dredge the river.
city: Saugus state: MA		
country: USA		

United States Department of the Interior

NATIONAL PARK SERVICE
Salem Maritime National Historic Site
Saugus Iron Works National Historic Site
174 Derby Street
Salem, MA 01970

COPY FOR YOUR INFORMATION
FILE COPY

IN REPLY REFER TO:

March 12, 1999

Marjorie and George Robie
250 Central Street
Saugus, MA 01906-2146

Dear Mr. and Mrs. Robie:

Thank you for your letter regarding issues at Saugus Iron Works. You were on our mailing list for the open house, and I am sorry that your invitation apparently went astray.

Your comments will be seriously considered during the planning process, and your current concerns will be seriously looked at. We thank you for your interest.

Sincerely,

Steven Kesselman
Superintendent

COPY FOR YOUR INFORMATION

250 Central Street
Saugus, MA 01906-2176
March 4, 1999

Dear Sir,

Recently a neighbor told me of a meeting held at the Ironworks regarding some new goals and objectives for the park. She wondered why my husband and I hadn't come to the meeting. I told her we didn't know about it, and she said letters had been sent out. We did not receive one, but wish we had as our home is next to the garage maintenance area and we are interested.

On this past Saturday morning, my husband and I went over to the park & spoke with Curtis White, who was very helpful and informative.

We would like to express our thoughts about the garage maintenance area. While we would be glad to see this area moved, we are concerned about the future use of it.

Were it to become a picnic area, we are concerned about the proximity to our home, and especially what might take place in the evenings, after the park closes, such as teen youths using it for a "hang out". In the summer there is some problem in that area on the other side of the mound, as well as

cars that pull in there for "bathroom" stops so it is out of our sight. Perhaps if that area were used for a visitors center and secure at night that would work.

The mound itself, though attractive has been a problem for us since it was put there. The neighbors and their company feel free to park there daily blocking our driveway on occasion & making getting in & out of the driveway awkward & sometimes dangerous, as we end up out in the curve to maneuver. Cars frequently don't make the curve & go up over the sidewalk.

The mound also causes problems because the snow plows and street sweepers can't go straight thru as they used to, they just go on around the curve without doing in front of our house, and we have to keep calling the D.P.W. & wait it out. Sometimes, the park employees do some with the Bob-Cat which we appreciate. Unfortunately the mound is also used as a doggy "bathroom" even though Saugus has a pooper scooper law.

We hope when you plan your [illegible] and [illegible] like these [illegible]

into consideration, as well as the tour buses that keep their engines running, which I believe is against the law, as well as being annoying to us, your neighbor

We would like you to know we enjoy living next to the park and love the history of it

Your employees, especially Mr Cormier, and Mr. White, are very very co-operative and helpful

We like to see families, school groups, scouts and tourists enjoying the park and hope you can continue to encourage their coming and also accomplish your goals in harmony with the neighborhood.

Yours truly
Marjorie & George Kobie

P.S. Would you please add us to your mailing list.

Please forward your comments regarding the Saugus Iron Works General Management Plan before March 24, 1999.

Concerning the grading of the industrial site: It would appear that some goals will be impossible to meet until the appearance of the site is greatly changed. Example: I don't see how a 5% grade in front of the forge can be made with quite a bit of change and a lift would be a scar on the 17 th Century site. Will the corderoy road have to be removed? It is there because of what was found there during orginal excavation as far as I know.
I feel strongly that the redesigning of the Iron Works House as a visitor center is a serious mistake for two reasons: Cutting a doorway in the 18th Century section of the house seems to violate the Park Services goal of historic preservation and secondly, increasing the visitor traffic in the house adds a serious wear-and-tear factor to an extremely valuable structure.

Richard G. Provenzano, Past President, Saugus Historical Society.

4/3/2001

SAUGUS IRON WORKS NATIONAL HISTORIC SITE
LISTED CLASSIFIED STRUCTURES BUILT BEFORE 1980
IN FLOOD ZONE

LCS 05427 Composed of original materials dating to 1647-1670, the **Slag Pile** was the only surface evidence remaining from the original ironworks. Its existence was a critical motivation for the ironworks restoration project in the 1940s, and has been deemed nationally significant in its listing on the National Register. It consists of a 15'- to 18'-high waste pile of iron that juts into the Saugus River bed now covered with cropped vegetation. The Slag Pile was altered during the 1950s overall reconstruction. This feature may have good documentation, but the information is not collected in any standard NPS planning document.

LCS 40302 The extant reconstructed **Wharf** replaced archeological remains during the 1950s reconstruction campaign. Although it no longer reaches open water, it supports the interpretive program in showing that iron goods were shipped to other settlements and possibly overseas. Although the LCS notes that the level of documentation is good, the Massachusetts SHPO requires more information to assess its NR eligibility.

LCS 40303 The **Well/Cistern** structure, approximately six-feet in diameter, surrounds a spring-fed pool. The structure is composed of boulders, some of which are granite. It was part of the 1950s reconstruction campaign. An outlet pipe originally fed into the Saugus River, but was reconstructed to recirculate water into the slitting mill tailrace. Although the LCS notes that the level of documentation is good, the Massachusetts SHPO requires more information to assess its NR eligibility.

LCS 40305 The **Corduroy Road** was installed 1953-54 as part of a conjectural reconstruction, on the site of an earlier corduroy road that was less than 20 feet long. The original road, which was discovered in the 1940s, had provided a firm surface in a wet area. The road consists of round timbers imbedded in the ground, with gravel and stone dust infill. The road has been reconstructed several times by NPS since 1974.

LCS 40306 The **Furnace Sluiceway and Tailrace** were erected in the 1950s as part of the conjectural restoration. The wooden sluiceway fed water to power a waterwheel, and the wooden tailrace directed the water to the Jenks' site and the Saugus River once it powered the wheels. (This water is now recirculated.) The LCS record charges that the Massachusetts SHPO requires more information to assess the structure's eligibility (4/20/94), but contradicts itself when it notes that the National Register lists this structure as nationally significant. The LCS notes that the documentation level for this structure is good, but the information is not collected in any standard planning document.

LCS 40307 The **Forge Sluiceways and Tailraces** were erected in the 1950s as part of the conjectural restoration. The wooden sluiceways fed water to power four waterwheels, and the cobblestone/timber and stone/slag tailraces directed the water to the Saugus River

once it powered the wheels. (This water is now recirculated.) The cobblestone/timber tailrace was reconstructed 1982. The National Register lists this structure as nationally significant. The LCS notes that the documentation level for this structure is good, but the information is not collected in any standard planning document.

LCS 40308 The **Slitting Mill Sluiceway and Tailrace** were erected in the 1950s as part of the conjectural restoration. The wooden sluiceways fed water to power two waterwheels, and the wooded tailrace directed the water to the Saugus River once it powered the wheels. (This water is now recirculated). The LCS record charges that the Massachusetts SHPO requires more information to assess the structure's eligibility (4/20/94), but contradicts itself when it notes that the National Register lists this structure as nationally significant. The LCS notes that the documentation level for this structure is good, but the information is not collected in any standard planning document.

LCS 40312 The **Saugus River Stone Bulkhead**, a pair of dry-laid stone retaining walls east and west of two bridges, is a landscape feature installed during the 1953-54 conjectural reconstruction. A 1994 memorandum from the Massachusetts SHPO records that more research is need to assess NR eligibility.

LCS 40313 The **Wood Retaining Wall/Bulkhead** was constructed during the 1950s reconstruction campaign as a grade retaining wall. It connects the Blast Furnace and Forge buildings. Although the LCS notes that the level of documentation is good, the Massachusetts SHPO requires more information to assess its NR eligibility.

LCS 40315 The **Jenks Area Foundations and Rock-lined Pit** are associated with Joseph Jenks, who powered his waterwheel-driven machinery with tailrace water from the Blast Furnace in a cooperative venture with the iron works. Jenks, a toolmaker, inventor, and entrepreneur received the first industrial patent issued in America. The stone foundations and ruins, which are in various configurations, were stabilized in 1985.

Town of Saugus
Historical Commission

Town Hall
298 Central Street
Saugus, Massachusetts 01906

September 10, 2001

Steven Kesselman, Superintendent
Saugus Iron Works National Historic Site
174 Derby Street
Salem, Massachusetts 01970-5136

Dear Mr. Kesselman:

The Saugus Historical Commission has reviewed the Draft General Management Plan and Environmental Assessment for Saugus Iron Works National Historic Site dated May 2001. In general, the Commission concurs that Alternative 1, the NPS Preferred Alternative, is the alternative that best balances the needs for resource protection, park operations, and visitor experience.

The Commission has the following comments regarding the Preferred Alternative as shown in this plan and other issues raised in this document:

1. Eligibility of Reconstructed Buildings for the National Register

The Commission feels that the principal reconstructed buildings of the Iron Works (Blast Furnace, Forge, Slitting Mill, and Iron Warehouse & Pier), together with the cultural landscape surrounding them, are historically significant as a major example of the historic preservation movement in the United States. While the philosophy that the reconstruction represents is not that of current preservation thought, it is part of a trend in the movement exemplified by such locations as Colonial Williamsburg and, at almost the same time as the Saugus reconstruction, Fort William Henry in New York State. We also feel that the reconstruction is eligible for its association with one of the leading firms in the field, Perry Shaw & Hepburn. We do not believe that the current Visitor Contact Station, although a part of the original reconstruction, is a contributing resource to the site.

2. Silting of Saugus River and Preservation of Viewshed

The Commission strongly endorses elements of the plan that call for the restoration of the Saugus River basin in the vicinity of the pier and bulkhead. The creation of the feel of open water is essential not only to enhance the cultural landscape of the restored site but also to assist in interpretation of the importance of the river for power and for the transportation of both raw materials to the site and finished products to local markets. We would suggest that to avoid the need for continuous maintenance of a cleared basin, a solution involving the re-channelization of the river along the bulkhead and slag pile rather than the current east bank be considered. We would also urge the National Park Service to consider the construction of a shallop or other appropriate boat, such as was designed as a part of the overall restoration effort but never built.

3. Iron Works House Annex/Visitor Center

The Commission concurs with the comments of the Massachusetts Deputy State Historic Preservation Officer in her letter of September 28, 1998. However, we strongly feel that the Wallace Nutting Annex to the Iron Works House is a significant element of the house as defined by the Secretary of the Interior's Standards for Historic Preservation as an addition that has acquired significance in its own right and urge that the entry option shown in Enlargement D (north side) be selected so as to maintain the integrity of the west façade of the Nutting Annex.

4. Accessibility

The Commission strongly supports making the entire site fully accessible to persons with disabilities. We have some reservations about the sustainability of mechanical lifts in the exposed outdoor environment. We urge that alternatives to provide access without a mechanical lift be considered. For that reason, we strongly urge that, prior to the implementation of any accessibility improvements to the industrial site area, a Cultural Landscape Report and further archeological testing of the slopes be done to determine the original contours of the land and to develop non-mechanical solutions that both provide universal access (although perhaps not at the ideal slope limits) and preserve in situ archeological resources. One possible option to avoid switchbacks as shown in Alternative 2 that would impact archeological resources would be an expansion of the existing path along the slope to emerge in the area of the current maintenance garage proposed for removal under the Preferred Alternative.

5. Museum and Collections Storage

The Commission supports efforts to restore the Museum Building and to upgrade the storage of the site's museum collections. The original portion of the Museum is a contributing resource for its association with the Wallace Nutting restoration of the Iron Works House. Care should be taken in the restoration to follow the Secretary of the Interior's Standards for Historic Preservation in making the addition sympathetic to the original while avoiding the creation of the impression that the addition was part of the original structure.

While the current houses within the park boundary may be the best interim location for museum collections storage while the Museum Building undergoes restoration and new facilities are built, we would urge that the National Park Service consider incorporating a new collections storage facility into the proposed consolidated maintenance facility on the east side of the park. We would also urge the NPS to enter into discussions with the Town of Saugus regarding the possible demolition of the existing houses and the rerouting of Central Street to eliminate the hazardous curves that date from the original restoration when the owners of those properties refused to sell to the First Iron Works Association and it thus could not complete the original arc concept for the relocated Central Street.

6. Adjacent Property Acquisition

The Preferred Alternative does not address land protection and acquisition issues. The drawing for the Preferred Alternative shows two parcels of land for acquisition. This acquisition is not addressed within the text of the alternative (although briefly mentioned under Land Protection issues on pages 25-26). For what reason would these parcels be acquired, and by what method? Would a Congressional boundary modification be needed, or would it come within the scope of the existing NPS General Authorities Act relative to minor boundary amendments? What

specific actions, if any, might be taken to protect the park from adjacent developments or incursions into the viewshed beyond the parcels proposed for acquisition?

7. Educational Programs and Partnerships

The Commission strongly supports proposed improvements to the park's educational and partnership programs. In that regard, the following comments from Commission member Marilyn Carlson are most appropriate:

> As an educator, I value the importance of this facility as a teaching tool. Every spring, the Waybright School's third grade classes visit the Iron Works. The Park Rangers at the site do an extraordinary job maximizing the field trip experience within the limitations of the existing facility. The potential is there and the time is long overdue to make improvements to this site. I am particularly impressed with the idea of expanded space to exhibit the Museum's collection. Many items and objects are in storage and cannot be viewed by the public. The proper environmental controls and space will ensure the value and longevity of these remarkable items. The expanded research space will enable educators and townsfolk to access the available information. The use of a Museum auditorium for educational programs would increase the value of the Iron Works experience for both students and adults.

8. Other Issues

A. The document does not provide a drawing showing Alternative 3 other than the Existing Conditions drawing. That drawing should be so labeled, or an additional drawing added.

B. The Environmental Assessment does not address the standard of impairment as required by NPS Director's Order 12.

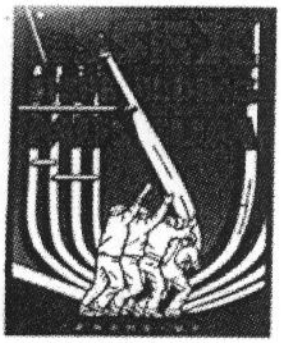
C. While the Commission commends the efforts of the National Park Service to more precisely date the Iron Works House, it wishes to remind the NPS that the National Register significance of the structure is not whether it was in fact the house built for the agent of the Iron Works but its long association with the site in the minds of the people of Saugus and its place in the history of the historic preservation movement in the United States.

The foregoing comments are provided in our capacity under Massachusetts General Laws as the principal advisor to the Town of Saugus on matters relating to historical and cultural resources in the Town and to assist in compliance with Section 106 of the National Historic Preservation Act, as amended, and Section 102 of the National Environmental Policy Act, as amended.

Sincerely,

Stephen P. Carlson
Chairman

cc: Massachusetts Historical Commission



ESSEX HISTORICAL SOCIETY
AND SHIPBUILDING MUSEUM, INC.
POST OFFICE BOX 277, 66 MAIN STREET
ESSEX, MASSACHUSETTS 01929
978-768-7541

ADMINISTRATIVE OFFICES
66 MAIN STREET
FAX: 978-768-2541

RESEARCH
28 MAIN STREET
978-768-3866

WATERLINE EDUCATION CENTER
66 MAIN STREET
978-768-6441

September 13, 2001

Mr. Steven Kesselman, Superintendent
Salem Maritime National Historic Site
174 Derby Street
Salem, MA 01970

Dear Mr. Kesselman:

Re: Comments on the Master Plan for the Saugus Iron Works National Historic Site.

Enclosed is a paper we plan to bring to the Mass Historical Preservation Conference on September 28, 2001.

The paper summarizes the work that we have done in Saugus. We feel that there is now a chance to preserve options that will benefit the Iron Works and the Town of Saugus.

We hope that you will find it useful in preparing the Master Plan.

Yours truly,

Charles A Burnham

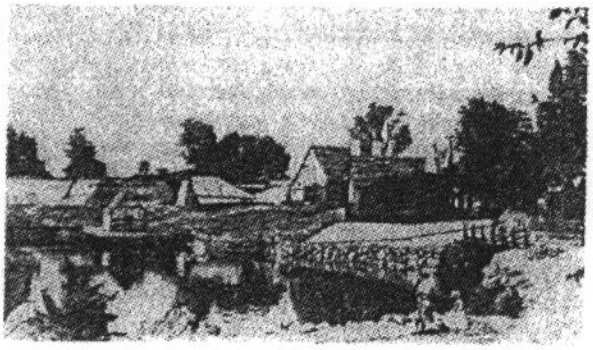
Charles Burnham and Robert Cameron
Essex Shipbuilding Museum

The Upper Saugus River, Boston Street to The Iron Works

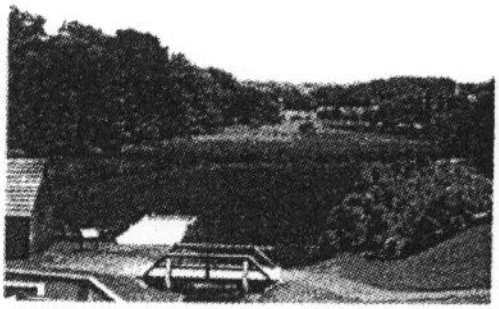
Charles Burnham and Robert Cameron.
Essex Historical Society and Shipbuilding Museum
66 Main Street Essex, MA

I Abstract: A plan to sail a boat to the Iron Works dock on the Saugus River started with an examination of the river's navigational obstacles. Discrepancies between past and present tidal measurements revealed two forgotten tidal dams that provided an explanation to the navigational and environmental issues reported here.

II Introduction: In the early 1620's water from the hills of Lynn (Saugus River) was put to work. From 1646 to the 1670s it was used at the Iron Works. The river also provided a means to transport materials although currently this use is not apparent. For the next three centuries tidal dams on the River harnessed its power. In 1953 the Iron Works were restored and in 1969 accepted as a National Historic Site. This insures continued conservation of the site and scenery. Since 1953 the view from the Iron Works has changed. A silted-in stream and a 12-foot high wall of phragmite are now in the view. Presently the river and natural scenery are poised to make a come back.



The Iron works 1953, shown are the dredged and restored turning basin and dock. The navigable river ends at the footbridge on the right.



The Iron Works 2000, the basin has silted in, filled with cattails, and the salt marsh has been replaced with phragmite. Hamilton Street is seen in the distance.

III Some findings and opportunities: The Iron Works to the Boston Street Bridge (Views relating to the findings are included on page 4.).

- The turning basin. In 1957 the Commonwealth of Massachusetts permitted the breaching of the Prankers Pond dam just above the then recently dredged and restored Iron Works turning basin. The resultant silt continues to limit use of the basin. In 1975 the Coast Guard determined that the Saugus River is a navigable waterway up to the footbridge at the Iron Works. This establishes fundamental rights to navigate, preserving the opportunity to sail up the river.

- Saugus sewerage system issues. Toilet paper is now found in the brush along the river after every heavy rainstorm. A 24-inch sewerage pipe crosses over the marsh three hundred yards below the Iron Works. This sagging pipe sits hidden on wooden bents in a field of phragmites. Corrections to this failing system are indicated. The eventual repositioning of the pipe will improve navigability and provide an opportunity to place it so that visitors to the park need not see it.

The increased tide has initiated planning of new bridges by MA/Highway and the removal of dam remnants. The Coast Guard's navigability determination should influence the design of replacement structures over the river. In particular, utilities which are now placed under bridges, and repairs to the sewerage system could be moved. With increased flow, silt in the turning basin may shift to more favorable locations.

Many of our States agencies are working to coordinate programs within their departments. There is a need to extend this approach to cooperate and coordinate with other departments. For good reasons, MA/Highway is exempt from our environmental and navigational laws. Joint sponsorship, MA/Highway and DEM, of a design contest among MA Engineering Schools for new bridge designs in Saugus might help build a needed spirit of cooperation between these two departments.

V **Conclusions:** In Saugus, natural river ecology and representative scenery can be restored. A navigational link can be reestablished between the Iron Works and other historic maritime sites. Boats can be used to illustrate the river's role in transportation before roads. This can promote protection of the upper Saugus River and establish a focal point for water and youth-related activities.

VI **Acknowledgments:** This work was done with the considerable help from:

1. Interested residents of Saugus and Lynn.
2. Saugus Town officials, and DPW.
3. Saugus Public Library.
4. Saugus River Water Shed Council.
5. Superintendent and Staff of the SIW
6. MA/ Highway, MBTA
7. U.S. Coast Guard
8. Corps of Engineers
9. DEM-River ways Program, CZM
10. Essex Ship Building Museum

A measure of local interest was indicated by the response to the sail of the **Lewis H. Story**, up the Saugus River to Boston Street. Rain did not dampen the enthusiasm nor deter the crowd that gathered to greet, visit and view the 1790's Chebacco Boat.



The Essex Shipbuilding Museum's flagship sailed with dignitaries on board, including the Town of Saugus Town Manager, Chairman of the Saugus Selectmen, Chairman and members of the Saugus River Council and Saugus River Committee. The Superintendent of the Saugus Iron Works NHS, the Vice Commodore of the Lynn Yacht Club who acted as our pilot, a Lynn Item reporter, and representatives from the Essex Historical Society and Shipbuilding Museum.

- Hamilton Street Dam and Bridge. A town road was constructed across the marsh and river at Hamilton Street in 1928. Later, in 1953 the First Iron Works Association placed a tidal dam there to maintain high-water levels in the turning basin. Fresh water trapped by the dam encouraged the growth of cattails and other species in the basin and the replacement of salt marsh by phragmite. Further, the proximity of the dam to the bridge blocks navigation. It now appears that the Corps of Engineers will treat the removal of the dam as an exempt activity presenting an opportunity to remove it.

- Marsh. The development of the salt marsh along the upriver side of Hamilton Street was, in the view of the Saugus Con-Com, forced on the Town by actions of the Department of Environmental Management. This action disregarded local knowledge and hence, the development (a parking lot and stores) and phragmite have degraded the appearance of the area. There is opportunity here for a State agency to purchase the remaining phragmites infested marsh and donate it to the National Park System.

- Marsh. The down river side of Hamilton Street is the former site of the Saugus DPW. This Town- owned marsh was used as a dumping ground for many years. Despite some drainage work supported by the DEP, the area is infested with phragmite that now blocks a once magnificent view of the salt marsh and river. There is opportunity here for some salt marsh restoration and river access.

- Railroad Trestle. There is a railroad trestle near Rhodes Street, part of the unused Saugus Branch. The natural flow of the river is unimpeded here. However, the close spacing of the support piers restricts navigation. A discussion with Mr. Prince (MBTA) indicates that this obstruction could be removed without interfering with a planned walkway (*Tracks for Trails*).

- Tidal dam. The Consolidated Tidal Electric Company, which was located on the river below the railroad trestle, placed tidal dams in the River in 1923. Today the wooden obstructions have decayed away and salt-water flows up to the Hamilton Street Bridge. The tidal variation there has changed from two feet in 1928 to exceed eight feet now. High tide is higher and the low is lower.

- Cooperation/Coordination. A single pier, double span bridge at Boston Street was replaced in 1926 by what today amounts to a culvert. The replacement design was based on flow measurements in a dammed river. This early bridge site was a fording place in the early 1600's and is of great historical importance. In spite of the ACEC designation, the area has been the site of considerable work by the MWRA, MA/Highway and MDC. All this activity seems to have little concern for the environmental, historical, navigational and cultural significance of the area. There is opportunity for coordination between State agencies.

IV Discussion: Discovery of the Consolidated Tidal Electric dam explained why a small aperture was used for the Boston Street Bridge in 1926, and why the tide was limited at Hamilton Street in 1928 (two feet). In 1952, when the Hamilton Street Dam was built, three feet of tidal change was measured. Locally, the dam is known as "the rocks" and was not recognized as a dam.

The decay of the wooden tidal obstructions has allowed the return of salt water almost to the Iron Works. Only the fieldstone tidal dam remains. Removing it would return the natural flow of salt water to the Iron Works National Historic Site. This return of tidal flow will start a positive environmental succession inhibiting eutrophication and promoting the restoration of salt marsh.

The increased tide has initiated planning of new bridges by MA/Highway and the removal of dam remnants. The Coast Guard's navigability determination should influence the design of replacement structures over the river. In particular, utilities which are now placed under bridges, and repairs to the sewerage system could be moved. With increased flow, silt in the turning basin may shift to more favorable locations.

Many of our States agencies are working to coordinate programs within their departments. There is a need to extend this approach to cooperate and coordinate with other departments. For good reasons, MA/Highway is exempt from our environmental and navigational laws. Joint sponsorship, MA/Highway and DEM, of a design contest among MA Engineering Schools for new bridge designs in Saugus might help build a needed spirit of cooperation between these two departments.

V **Conclusions:** In Saugus, natural river ecology and representative scenery can be restored. A navigational link can be reestablished between the Iron Works and other historic maritime sites. Boats can be used to illustrate the river's role in transportation before roads. This can promote protection of the upper Saugus River and establish a focal point for water and youth-related activities.

VI **Acknowledgments:** This work was done with the considerable help from:

1. Interested residents of Saugus and Lynn.
2. Saugus Town officials, and DPW.
3. Saugus Public Library.
4. Saugus River Water Shed Council.
5. Superintendent and Staff of the SIW
6. MA/ Highway, MBTA
7. U.S. Coast Guard
8. Corps of Engineers
9. DEM-River ways Program, CZM
10. Essex Ship Building Museum

A measure of local interest was indicated by the response to the sail of the **Lewis H. Story**, up the Saugus River to Boston Street. Rain did not dampen the enthusiasm nor deter the crowd that gathered to greet, visit and view the 1790's Chebacco Boat.



The Essex Shipbuilding Museum's flagship sailed with dignitaries on board, including the Town of Saugus Town Manager, Chairman of the Saugus Selectmen, Chairman and members of the Saugus River Council and Saugus River Committee. The Superintendent of the Saugus Iron Works NHS, the Vice Commodore of the Lynn Yacht Club who acted as our pilot, a Lynn Item reporter, and representatives from the Essex Historical Society and Shipbuilding Museum.

Steven Kesselmen , Superintendent
Saugus Iron Works National Historic Site
174 Durby Street
Salem , MA 01970 - 5136

Timothy Hawkes
225 Walnut Street
Saugus , MA 01906
(Tel. 781-233-6428)

September 26 , 2001

Re : Comments on General Management Plan

Dear Superintendent Kesselmen :

I am very interested in the future of the Saugus Iron Works and the area surrounding this National Historic Site. As a participant of the planning team for the Management Plan and as a Saugus Town Meeting Member , I offer the following comments.

After reviewing the General Management Plan , I wholeheartedly endorse " The Proposal , A Preferred Alternative " which clearly represents the best plan and wisely considers the future use and wellbeing of the Saugus Iron Works.

I strongly recommend that the National Park Service explore the possibility to procure the historic area known as Vinegar Hill (approximately 47 acres) as an asset to the Iron Works Site for the following reasons. The Vinegar Hill summit is a prominent feature in the viewshed of the Iron Works , being a natural setting as it would have looked in the colonial period.The Iron Works is clearly visible from the summit as well. A colonial garrison was built for the early settlers in the Vinegar Hill area in the 1640s, the same historic period as the Iron Works. Vinegar Hill is the location of a legend where pirates visited and utilized a cave and glen as a hideout and reputedly traded silver coins for metal articles crafted at the Iron Works in the 1650s. There are 9 archaeological sites in the Vinegar Hill area that are listed with the Massachusetts Historical Commission's Inventory of the Historical and Archaeological Assets of the Commonwealth (Pirate's Cave Vinegar Hill Site; Indian Springs Vinegar Hill Site; Anvil Rock Vinegar Hill Site; Fairmont Site; Dog Day Site; Rhyolite Ledge Site; Lady Slipper Site; Swamp Hollow Site; Treehouse Terrace Site).Of these , 6 have been investigated by professional archaeologists and 5 were identified as being significant archaeological resource by MHC and may be eligible for listing in the National and State Registers of Historic Places. These findings verify Native American settlements and lend to the story of prehistoric and historic land use of these first Americans. From the contact period through the duration of the Iron Works as a productive industry, there is an important involvement of the Native American culture which should be a part of the Iron Works' Historical Interpretive Plan.

Superintendent Kesselmen
September 26 , 2001
Page 2

Vinegar Hill's proximity to the Iron Works, its historic and prehistoric cultural story and its unique geological and archaeological content make it an excellent candidate to become an integral part of the Saugus Iron Works National Historic Site. The present owners of the Vinegar Hill area are the Town of Saugus and Procopio Construction Company Inc.. Although there is a large development proposed for this area there is still time to act and negotiate a purchase but it must happen soon. I urge you to consider expanding the Interpretive Mission to include Vinegar Hill as a boundary change of the Saugus Iron Works National Historic Site.

Thank you for your consideration of this important matter.

Sincerely yours

Timothy Hawkes

cc : Honorable Senator Edward M. Kennedy
Honorable Senator John F. Kerry
Honorable Congressman John Tierney

The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

October 17, 2001

Kevin Procopio
Procopio Construction Corporation
20 Main Street
Saugus, MA 01906

RE: Archaeological Investigations, Vinegar Hill Estates Subdivision, Saugus, MHC #RC.22669, EOEA #12446

Dear Mr. Procopio:

Staff of the Massachusetts Historical Commission have reviewed the completion memorandum for the archaeological site examinations of four Native American archaeological sites within the Vinegar Hill Estates Subdivision project area in Saugus, prepared by University of Massachusetts Archaeological Services, and received at this office September 17, 2001, and additional information prepared by UMAS and received at this office October 10, 2001. The following comments address the findings of the archaeological site examinations and the recommendations in the completion memorandum.

MHC has previously commented on completion memoranda for intensive archaeological surveys within the Vinegar Hill Estates project area in letters dated July 23, 2001 and August 24, 2001. In those letters, MHC requested that archaeological site examinations be conducted for five archaeological sites (the Treehouse Terrace Site, the Swamp Hollow Site, the Rhyolite Ledge Site, the Lady Slipper Site, and the Dog Day Site) in order to gather sufficient information to determine whether the sites are eligible for listing in the National and State Registers of Historic Places, as well as to determine the exact horizontal and vertical boundaries of the sites. Site examinations were conducted for four of the five sites. The fifth site, the Dog Day Site, was not tested because it may be possible to avoid this site.

Site examination of the Treehouse Terrace Site and Swamp Hollow Site revealed that these two sites are part of a single large site, which encompasses an area of approximately 4,066 square meters, measuring approximately 107 meters (320 feet) east-west by 38 meters (125 feet) north-south. Within the Treehouse Terrace portion of the site, two activity areas were identified. In the eastern part of the site a habitation area contained a storage/refuse pit and a fire hearth feature. High densities of stone flakes (the byproduct of the manufacture and/or maintenance of stone tools) were recovered as well as ceramic sherds and stone tools. A bowl-shaped pit feature contained thousands of shell fragments, pieces of bone, stone flakes, and ceramic sherds. To the west of the habitation area quarry/workshop area was identified, which contained a high-density deposit of stone (rhyolite) flakes over which other material was deposited. More than 4,600 flakes were recovered from the quarry/workshop area, representing all stages of tool manufacture from procurement of quarry blanks (large pieces of stone from which one or more tools could be made) from nearby rhyolite outcrops, to final shaping of stone tools. In addition, hundreds of ceramic sherds were recovered from this area. Diagnostic artifacts from the Treehouse Terrace Site included the ceramics and a large triangular projectile point of the variety known as Levanna, which date the site to the

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.state.ma.us/sec/mhc

Woodland period (approximately 3,000 to 400 years ago). The Swamp Hollow Site represents a quarry/workshop area where rhyolite pieces were worked into smaller preforms and finished tools. Soils at the Treehouse Terrace Site and the Swamp Hollow Site were undisturbed by plowing or other recent activity

In summary, a high density and wide range of materials were recovered from the Treehouse Terrace-Swamp Hollow Site, including locally procured rhyolites encompassing the entire stone tool manufacturing sequence from quarry to finished tools, a large assemblage of ceramics, preserved animal bone, shell, and datable organic materials from undisturbed contexts, as well as a variety of intact features. These finds and their undisturbed contexts indicate that the Treehouse Terrace-Swamp Hollow Site retains sufficient integrity to contain additional features and artifacts that could provide significant new information about the Native American history of the Saugus area, ancient stone quarrying, tool manufacturing, and other aspects of stone technology, and upland land use and settlement during the Woodland Period. Because the site is likely to yield important information, the MHC has determined that the Treehouse Terrace-Swamp Hollow Site is eligible for listing in the National Register of Historic Places under criterion D of the National Register (36 CFR 60). It is also eligible under criterion A for its association with Woodland-Period occupation of the Saugus River drainage.

MHC recommends that the project proponent consider alternatives that would avoid adverse effects to the Treehouse Terrace-Swamp Hollow Site, and that if avoidance is not prudent or feasible, that the adverse effects to the site be mitigated through the completion of an archaeological treatment plan that would include, but not be limited to, an archaeological data recovery program. The MHC looks forward to further consultation with the project proponent to explore alternatives to avoid, minimize, and/or mitigate adverse effects to the Treehouse Terrace-Swamp Hollow Site.

If construction work is proceeding within other areas of the proposed subdivision, MHC has determined that such construction will not affect the significant archaeological resources of the Treehouse Terrace-Swamp Hollow Site, providing protective measures are taken so that the site is not inadvertently damaged during construction. These protective measures have been specified in MHC's letter to you dated August 3, 2001, and include the marking of a no-access no-traffic zone including the Treehouse Terrace-Swamp Hollow Site and a surrounding buffer area in the field with highly visible material such as snow fencing.

The Rhyolite Ledge Site yielded a low-density, discontinuous deposit of rhyolite flakes as well as a single fragment of a quartz projectile point of the variety known as Small Triangle, which dates to approximately 5,000-3,000 years ago. No ceramics, organic materials, or intact features were encountered. The Lady Slipper Site yielded a moderate-density deposit of rhyolite flakes as well as a small, discrete deposit of ceramics and several stone tools. No temporally diagnostic artifacts, organic materials or features were identified. This site appears to represent a small lithic workshop.

Because of their limited range and low densities of archaeological materials, the Rhyolite Ledge Site and the Lady Slipper Site are not likely to produce additional information, beyond what has already been recovered from the intensive survey and site examinations, if they were subject to additional archaeological testing. Therefore, MHC has determined that the Rhyolite Ledge Site and the Lady Slipper Site are not significant archaeological resources, and are not eligible for listing in the National Register of Historic Places (36 CFR 60). Since no significant archaeological resources were identified, MHC concurs with the recommendation in the completion memorandum/draft report that no further archaeological investigation is warranted for the Rhyolite Ledge Site and the Lady Slipper Site.

These comments are offered to assist project proponents in compliance with MEPA. If you have any questions, please feel free to contact Eric Johnson at this office.

Sincerely,

Brona Simon

Brona Simon
State Archaeologist
Deputy State Historic Preservation Officer
Massachusetts Historical Commission

xc: Secretary Bob Durand, EOEA, Attention Laura Rome, MEPA Office
Bradley C. McKenzie, McKenzie Engineering Group, Inc.
Attorney James Senior
Kenneth L. Kimmell, Bernstein, Cushner, & Kimmell
Timothy Hawkes
Heidi Zisch, DEP
Saugus Historical Commission
Mitchell Mulholland, UMAS

COPY FOR YOUR INFORMATION

Categorical Exclusion Form

Project Stabilize Industrial Area Paths **Date** August 20, 2001

Describe project, including location (reference the attached Environmental Screening Form (ESF), if appropriate):

Replace existing deteriorated 2x6 planks along edges of paths from the bluff to Saugus Iron Works industrial area structures, adding gravel to these eroded pathways located on the West Bank of the Saugus River, with additional path stabilization work required in the vicinity of the Blacksmith Shop, bordered by Bridge Street, on the East Bank of the Saugus River.

Describe the category used to exclude action from further NEPA analysis and indicate the number of the category (see section 3-4 of DO-12):

DO-12 Section 3-4 (A) (3)

Describe any public or agency involvement effort conducted (reference the attached ESF):

National Park Service site and regional staff met with Saugus Conservation Officer on August 16, 2001 (see 8-16-01 memorandum from Mendik to Kesselman). See also 8-16-01 Scope of Work, SAIR PATH PROJECT. See also letter from Kesselman to Saugus Conservation Commission Chairperson dated 8-20-01.

On the basis of the environmental impact information in the statutory compliance file, with which I am familiar, I am categorically excluding the described project from further NEPA analysis. No exceptional circumstances (i.e., all boxes in the ESF are marked "no") or conditions in section 3-6 apply, and the action is fully described in section 3-4 of DO-12.

Steve Kesselman — 8-30-01

Park Superintendent or Designee — **Date**

Superintendent

Title

NPS Contact Person — **Title**

244 Central St, Saugus, MA — 978-740-1680

Address — **Phone Number**

Environmental Screening Form

Project Description/Location:
Resurface and Stabilize Industrial Area Walking Paths---see attached 8-16-01 Scope of Work.

	Yes	No	Data Needed to Determine
Mandatory Criteria (A-M): **Would the proposal, if implemented...**			
A. Have material adverse effects on public health or safety?		X	
B. Have adverse effects on such unique characteristics as historic or cultural resources, park, recreation or refuge lands, wilderness areas, wild or scenic rivers, national natural landmarks, sole or principal drinking water aquifers, prime farmlands, wetlands, floodplains, or ecological significant or critical areas, including those listed in the National Register of Natural Landmarks?		X	
C. Have highly controversial environmental effects?		X	
D. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?		X	
E. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?		X	
F. Be directly related to other actions with individually insignificant, but cumulatively significant, environmental effects?		X	
G. Have adverse effects on properties listed or eligible for listing on the National Register of Historic Places?		X	
H. Have adverse effects on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have adverse effects on designated Critical Habitat for these species?		X	
I. Require compliance with E. O. 11988 (Floodplain Management), E. O. 11900 (Protection of Wetlands), or the Fish and Wildlife Coordination Act?		X	
J. Threaten to violate a federal, state, local, or tribal law or requirement imposed for the protection of the environment?		X	
K. Involve unresolved conflicts concerning alternative uses of available resources?		X	
L. Have a disproportionate, significant adverse effect on low-income or minority populations?		X	
M. Restrict access to and ceremonial use of Indian sacred sites by Indian religious practitioners or adversely affect the physical integrity of such sacred sites?		X	
N. Contribute to the introduction, continued existence, or spread of federally listed noxious weeds?		X	
O. Contribute to the introduction, continued existence, or spread of non-native invasive species or actions that may promote the introduction, growth or expansion of the range of non-native invasive species?		X	
P. Require a permit from a federal, state, or local agency to proceed, unless the agency from which the permit is required agrees that a CE is appropriate?		X	
Q. Have the potential for significant impact as indicated by a federal, state, or local agency or Indian Tribe?		X	
R. Have the potential to be controversial because of disagreement over possible environmental effects?		X	
S. Have the potential to violate the NPS Organic Act by impairing park resources or values?		X	
Tailor the following to meet individual park/unit project needs. Are any measurable impacts possible in the following categories relating to physical, natural or cultural resources?			
A. Geological resources – soils, bedrock, streambeds etc.		X	
B. From geohazards?		X	
C. Air quality, traffic, or from noise		X	
D. Water quality or quantity		X	
E. Streamflow characteristics		X	
F. Marine or estuarine resources		X	
G. Floodplains or wetlands		X	
H. Land use, including occupancy, income, values, ownership, type of use		X	
I. Rare or unusual vegetation – old growth timber, riparian, alpine, etc.		X	
J. Species of special concern (plant or animal, state or federal listed or proposed for listing) or their habitat		X	

K. Unique ecosystems, biosphere reserves, World Heritage sites		X	
L. Unique or important wildlife or wildlife habitat		X	
M. Unique or important fish or fish habitat		X	
N. Introduce or promote non-native species (plant or animal)		X	
O. Recreation resources, including supply, demand, visitation, activities, etc.		X	
P. Visitor experience, aesthetic resources		X	
Q. Cultural resources including cultural landscapes, ethnographic resources, sacred sites		X	
R. Socioeconomics, including employment, occupation, income changes, tax base, infrastructure, etc.		X	
S. Minority and low income populations, ethnography, size, migration patterns, etc.		X	
T. Energy resources		X	
U. Other agency or tribal land use plans or policies		X	
V. Resource, including energy, conservation potential		X	
W.Urban quality, gateway communities, etc.		X	
X. Long-term management of resources or land/resource productivity		X	
Y. Other important environment resources (e.g. geothermal, paleontological resources)?		X	

SCOPE OF WORK
SAIR PATH PROJECT

8/16/2001

Project Title: *Stabilize and Resurface Walking Paths in Industrial Area.*

Over fifteen years ago, the National Park Service surfaced walking paths along SAIR's industrial with *scale*, a waste product of local commercial forging operations. Scale provided a walking surface that would seem "in-keeping" with the park's historic iron making setting. However, the original intent of the loose, dense silvery material is now lost, as the material has been packed into the underlying soil and eroded by years of visitor traffic and weather. The irregular paths are generally inaccessible for wheelchair use, and have drainage and erosion problems, with large puddles forming after rainstorms. The drainage and erosion problems have caused a significant loss of path material, a condition that threatens human safety and damage to irreplaceable archeological resources.

Resurfacing the walking paths with contained crushed stone and stone dust would correct accessibility and drainage issues.

This project will include 5 steps:

1). Redefine path contours to an average width of 60 inches.
   a) Outline path contours with stakes and string to an average of 60 inches.
   b) Line new path perimeters with pressure treated 1 x 4" wood boards, or polyethylene planks made of recycled material.

2). Escavate to an average depth of 4 inches.

Lay an average of 3 inches or less of 3/4" - crushed stone on path, over existing scale, and between wood boards or recycled polyethylene planks. Grade according to accessibility guidelines.

Add 1 inch of crushed stone for surface or "top-dress".

3). Pack crushed and stone dust fill with vibration roller.

4]. Restore function of blocked drains at two stairways.

5.) Loam and seed with grass all perimeter areas of previous path (those areas exceeding an average of 60 inches in width).

EQUIPMENT TO BE USED:
Bobcat (to transport stone dust and loam).

Hand tools and shovels (will contour and lay crushed stone and stone dust path and loam for grass areas).

August 16, 2001

D18 (NER-BOS-P&L)

Memorandum

To: Superintendent, Saugus Iron Works National Historic Site

From: Project Manager, SAIR GMP

Subject: Field Notes from site visit with Saugus Conservation Officer

Today the following people met on site to review the proposal to stabilize the paths from the bluff to the lower level and the paths on the lower levels.

Tim Thornhill, Chief, Facility Manager, SAIR
Carl Salmons-Perez, Cultural Resource Program Manager
Steve Kesselmen, Superintendent
Kevin Mendik, Project Manager, BSO
Frank McKinnon, Conservation Officer, Town of Saugus

The NPS personnel explained to the Town Conservation Officer (Frank McKinnon) that the work would involve replacement in kind of existing, but largely rotted wood railings (2 x 6) along the edges of the existing pathways, along with adding mixed size gravel to correct erosion problems and stabilize the paths. Mr. McKinnon agreed that the work would not be a problem, and suggested that the NPS send a letter to the Chairperson of the Saugus Conservation Commission explaining our work and site meeting today. The NPS also stated that if the SCC so requests, we will install a line of staked hay bales at their direction. The NPS explained that installing a siltation barrier would be problematic given the high likelihood of disturbing archaeological resources. Mr. Mckinnon agreed and he stated that he didn't believe the work we discussed would require an NOI, but at most a Request for Determination of Applicability under the MWPA.

A record is needed for this type of Categorical Exclusion because it fits within DO-12 Section 3.4(C)(3): routine maintenance to an existing trail. Therefore, a Categorical Exclusion Form (CEF) along with the accompanying Environmental Screening Form (ESF) must be filled out. I will put those together for your signature. Note that in the ESF, Mandatory Criteria P asks whether a federal, state or local permit is required to proceed. Technically, we do not need local permits and are involving the SCC as a courtesy and to continue our open process for all projects associated with the ongoing GMP/EA

Kevin Mendik, BSO

United States Department of the Interior

NATIONAL PARK SERVICE
Salem Maritime National Historic Site
Saugus Iron Works National Historic Site
174 Derby Street
Salem, MA 01970

IN REPLY REFER TO

May 30, 2001

Mr. Gary Kassof, Bridge Administrator
First Coast Guard District
United States Coast Guard
408 Atlantic Avenue
Boston, MA 02110-3350

Dear Mr. Kassof:

Thank you for sending me a copy of your letter of May 15 to the Chief Engineer of the Massachusetts Highway Department.

We support the Coast Guard's position that bridge replacement on the Saugus River not be given automatic exemption from the requirement for a permit. Any design that is proposed should be subject to careful review for its impact on the navigability of the Saugus River and the interpretive mission of the National Park Service at the Saugus Iron Works.

Saugus Iron Works National Historic Site is federal property administered by the National Park Service. It preserves and interprets the first successful integrated iron works in the American colonies, which operated at this location from 1646 to about 1670. The iron works at Saugus, by introducing and then spreading iron-making technology throughout the colonies, was critical to the development of the American iron and steel industry. The site today illuminates this significant phenomenon, while at also helps visitors understand the nature of American society in its founding days. Currently, visitors to the site fail to experience a crucial element of this operation, the transportation of raw materials in and the transportation of finished goods out, which in that period could take place only on the river. We look forward to the opportunity to have on site a replica of the kinds of vessels that performed this operation 350 years ago and to allow visitors to appreciate the evolution of the whole Saugus River Watershed by traveling on the river aboard such a boat.

The requirement for consultation and appropriate design to facilitate navigability on the river should not be burdensome if conducted early in any process for proposed new or replacement bridges.

We would appreciate it if our interests in this matter would continue to be considered and if we could be kept informed of any proposed actions. I may be reached at the above address or at (978) 740-1680.

Sincerely,

Steven Kesselman
Superintendent

Copy: Chief Engineer, Massachusetts Highway Department
Department of Public Works, Town of Saugus
Department of Public Works, City of Lynn
Mr. Charles Burnham, Essex Shipbuilding Museum

APPENDIX B: COST ESTIMATES

ALTERNATIVE 1: PREFERRED ALTERNATIVE	Gross Construction	Predesign & Supplemental Services	Design	ANTICIPATED COSTS
Adaptive rehabilitation of Iron Works House Annex for visitor contact, including media and exhibits.	767,000	45,500	65,000	877,500
Museum collections storage in rehabilitated existing park structures.	182,900	10,850	15,500	209,250
Visitor access to iron works industrial site by mechanized means of descent.	403,560	23,940	34,200	461,700
New consolidated maintenance facility on east bank.	2,454,400	145,600	208,000	2,808,000
Rehabilitated museum building, including new exhibits.	2,478,000	147,000	210,000	2,835,000
Accessibility within iron works industrial area.	171,100	10,150	14,500	195,750
Wayside exhibits.	50,000			50,000
TOTAL INFRASTRUCTURE: ALT 1				7,437,200

ALTERNATIVE 2: ENHANCED FACILITY DEVELOPMENT	Gross Construction	Predesign & Supplemental Services	Design	ANTICIPATED COSTS
New visitor center, including media and exhibits.	2,950,000	175,000	250,000	3,375,000
New museum collections facility.	2,006,000	119,000	170,000	2,295,000
Visitor access to iron works industrial site by straight ramp from overlook or switchback ramp.	837,800	49,700	71,000	958,500
Rehabilitated museum building, including new exhibits.	2,478,000	147,000	210,000	2,835,000
Accessibility within iron work industrial area.	171,100	10,150	14,500	195,750
Wayside exhibits.	50,000			50,000
TOTAL INFRASTRUCTURE: ALT 2				9,709,250

APPENDIX C: RESOURCES CONSULTED

Carlson, Stephen P.

1991 *First Iron Works, A History of the First Iron Works Association.* Saugus, MA: Saugus Historical Society.

Commonwealth of Massachusetts, Division of Air Quality

Air Quality Report. Lane, John; Song, Yan; Quevillon, Robert. Boston, MA: Executive Office of Environmental Affairs, Department of Environmental Protection.

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Hartley, E.N.

1957 *Iron Works on the Saugus,* Norman, OK, and London, England: University of Oklahoma Press.

Hosmer, James Kendall

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The Massachusetts Historical Society

1944 Winthrop Papers, Volume IV, 1638-1644. The Merrymount Press, Boston.

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National Park Service, U.S. Department of the Interior

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"Master Plan for Saugus Iron Works National Historic Site." Division of National Park Service System Studies, Northeast Region.

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1975 "An Evaluation of Roland Wells Robbins Archeology at Saugus Iron Works National Historic Site". Prepared by Marley Roberts Brown.

1977 *Historic Structures Report - Ironmaster's House.* Denver Service Center, Historic Preservation Center. Prepared by John Albright; Orville W. Carroll; Abbot Lowell Cummings.

1978 Public Law 95-625. (General Management Plan Requirement for National Parks.)

1982 *Historic Furnishings Report, Saugus Iron Works National Historic Site.* Prepared by Robert F. Trent.

1987 *History and Prehistory in the National Park System and the National Historic Landmarks Program.* History Division, Washington, D.C.

"Nature Trail at Saugus Iron Works: Trail Guide." Eastern National Parks and Monument Association. Prepared by Jean Young.

1988 *Archeological Collections Management at The Saugus Iron Works National Historic Site.* Division of Cultural Resources, North Atlantic Region, Boston, MA. Prepared by Darcie A. MacMahon.

1991 *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation.* Washington, D. C. Interagency Resource Division.

1992 "Statement for Management, Saugus Iron Works National Historic Site." New England System Support Office. Boston MA. Prepared by Lisa Skorupta.

1993 *Saugus Iron Works National Historic Site List of Classified Structures.* New England System Support Office, Boston MA. Prepared by Jack Glassman and Patrick Guthrie.

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APPENDIX D:
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Northeast Cultural Resources Center
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Steve Pendary, Archaeologist

Northeast Museum Services Center
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COMMUNITY CONSULTANTS

Saugus Historical Commission
Saugus Historical Society
Saugus Committee on Individuals With Disabilities
Commonwealth of Massachusetts Office on Disability
Comonwealth of Massachusetts State Historic Preservation Officer
Saugus River Watershed Council
Saugus Conservation Commission
Saugus Planning Board
Saugus Board of Selectmen
Saugus Town Manager
Hon. John F. Tierney
Hon. Edward M. Kennedy
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