Details of the Preservation Plan

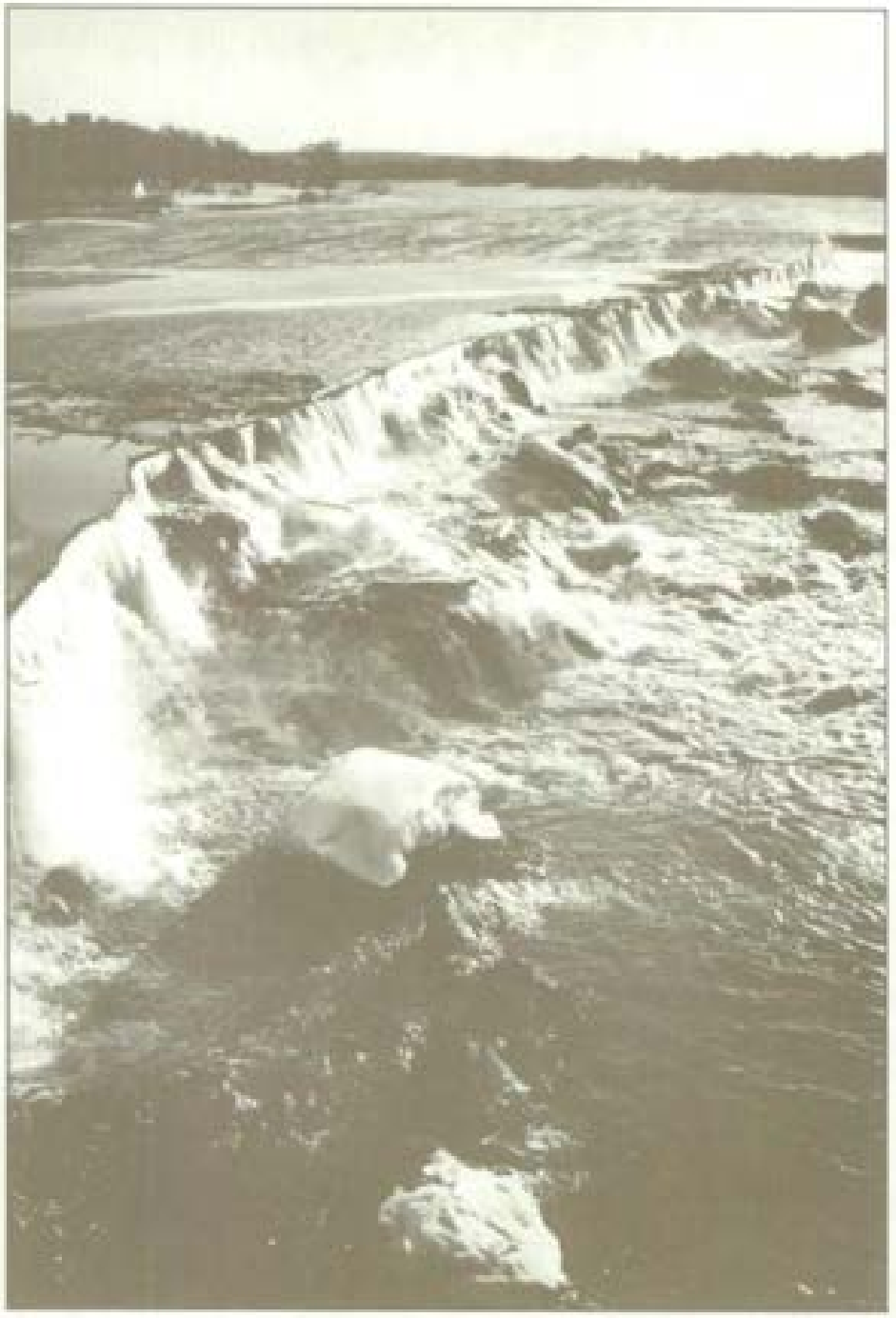
Lowell Historic Preservation Commission

CONTENTS

D-5

Purpose
& the
First Year
and
A Half

Introduction



Introduction

Details is an appendix containing the technical material that accompanies the programs and projects described in the Preservation Plan. It also contains an Environmental Assessment which evaluates the impact of the Plan and alternatives considered for each program and project. While the Plan gives the "big picture" of the Commission's activities for the next eight years, the Details presents the "nuts and bolts."

The purpose of the Details is to provide key information and to guide the reader toward a more detailed understanding of the Plan. In several instances, the scope of the Commission's actions can only be appreciated by the material in the Details. The Index section in the Plan, for example, takes on a new dimension when one reads the actual Index--an inventory of almost 800 buildings and structures.

For easy reference, the Details have been organized to follow the same topical order as the Plan. One need only find the matching section heading in the Details to find the related information.

Sections included in the Details are as follows:

- Historical Perspective: A summary of the history of Lowell.
- Agency Roles: A summary of key projects of the City, State and National Park Service.
- Index: An inventory of every structure in the Preservation District along with its historical ranking.
- Standards: Guidelines for rehabilitation, new construction and public improvements.
- Assistance: Financial and technical assistance models.
- Energy: Planning guidelines for historic buildings and special problems and opportunities for combining energy conservation and historic preservation.
- Transportation: A cost analysis and description of how and where the trolley system will operate within the Park.
- Cultural Perspectives: Civic events and celebrations from the late 19th and early 20th century.
- Cultural Programs: A description of grant categories, award criteria and funding for District-wide programs.
- Budget: A description of costing methodology, costing assumptions and development and operating budgets.
- Environmental Assessment: A document prepared in compliance with the National Environmental Policy Act and to assist in the Commission planning process.
- Public Law 95-290: A reproduction of the enabling legislation.

Historical Perspective

Historical Perspective

Lowell was founded in 1822, at a site on the Merrimack River about 30 miles north of Boston. The area had previously been characterized by Indian settlements, numerous family-owned farms, and small-scale manufacturing operations along the waterways. Raw materials for those operations had been delivered from New Hampshire via several early canals--the Pawtucket (1796) and the Middlesex (1803).

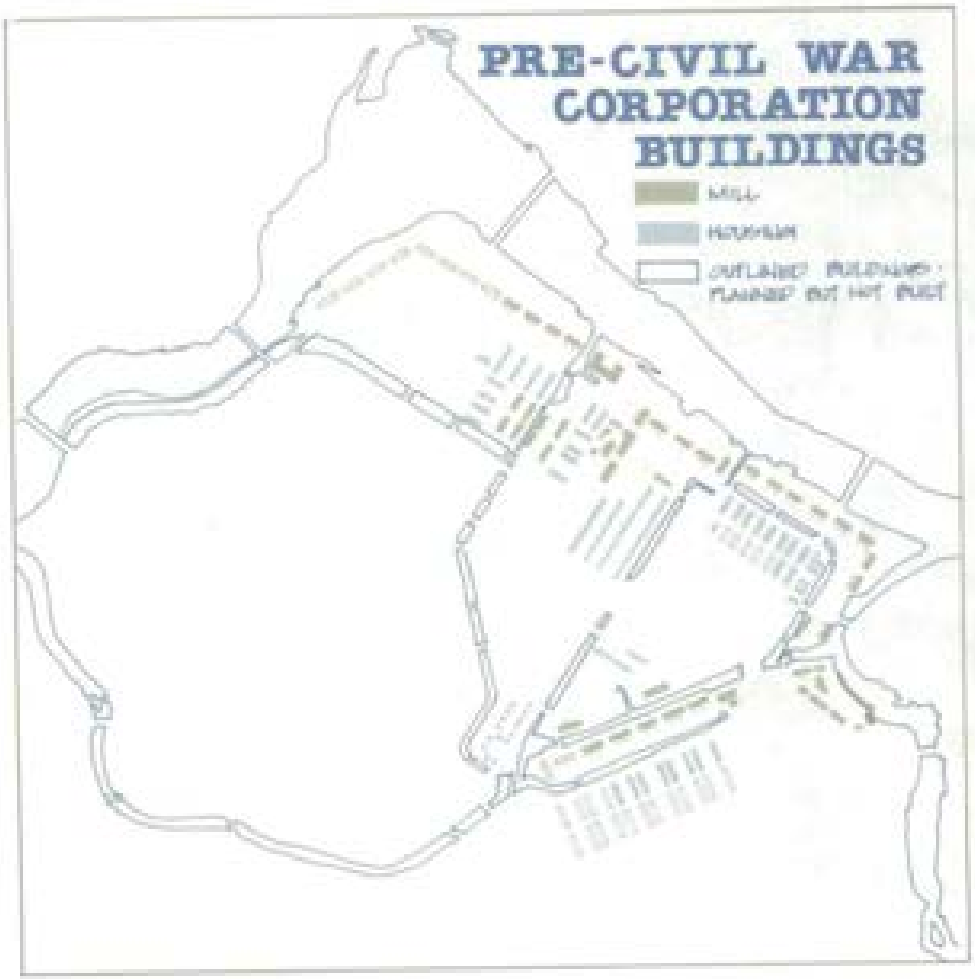
The developers of Lowell brought together for the first time some of the period's most advanced ideas in the areas of power generation, industrial and transportation technology, production control, capital formation, scientific research, and social organization. The nation's most significant planned industrial city, Lowell was the prototype for America's modern industrial society. Its development involved the application of external power to drive machinery, the aggregation of successive steps in the production process to increase output, and the recruitment and training of new sources of labor. The history of Lowell has been shaped by the people it attracted--mill girls, ethnic groups, and various economic classes. It was also influenced by social movements such as utopianism, women's rights, and organized labor.

The Earliest Years

The location for the new city was chosen because of its enormous potential for Hydropower. The Merrimack River dropped over 30 feet at the Pawtucket falls at the bend of the river. The founders built an extensive system of dams and canals to distribute power to sites in central Lowell. Far upriver, engineers of the Proprietors of Locks and Canals dammed the lakes and streams that fed the Merrimack to ensure a reliable and controlled flow of water. The Lowell canal system can rightfully be called one of the most impressive engineering feats of the 19th century. Today, it represents more than 150 years of technological development, and still functions practically unchanged. The founders tapped a tremendously efficient natural source of power and sold "mill-powers" to each company.

Factory sites were dependent on the location of the canals in Lowell. Thus, a continuous "mile of mills" developed along the Merrimack, with an additional arc encircling the center of the city. For reasons of efficient energy use, production was integrated vertically in the mills, with one or more separate processes performed on each floor. Mills were grouped along with printworks, storehouses, and counting houses to create a "millyard," which became the basic unit of the city's industrial matrix. The "Lowell System" represented a departure from the traditional textile industry. For the first time, finished products were created from raw materials at <u>one</u> location.

The entrepreneurs who founded this industrial city were motivated by both profit and the social lessons of the time. They were strongly influenced by the utopian ideas of Francis Cabot Lowell, who believed that an industrial community could be both healthful and moral. Accordingly, the mill corporations constructed mill complexes, with related housing, social institutions, and urban amenities. Initially, the factory work force was recruited largely from the single daughters of New England farmers. These "mill girls" were attracted by good wages, the religious tone of the community, and the educational possibilities. Under the watchful corporate eye, these young women lived in boarding houses adjacent to--and managed by--the mills. Regulations imposed a lifestyle of strict discipline. Social control over the work force was facilitated by the design of the millyard, with its fences, gatehouses and enclosed spaces. Schools were also consciously programmed to encourage the discipline



needed for factory employment. Yet, in the first half of the 19th century, Lowell offered these women a unique opportunity to experience an urban environment and to support themselves in a community that encouraged self-realization. "Mill girls" attended concerts and lectures; and even published their own literary magazines. Social and financial institutions, heavily supported by the corporations, occupied prominent places in the community.

The overseers and agents of the mills also lived in the area of the mills, but in attached or single-family houses whose size and style reflected the status of the occupant. Top management lived in stately houses near the mills, though later they retreated to exclusive residential areas.

The Later Years

One of the best examples of rapid urbanization in early 19th century America, Lowell grew from a rural area to a city of over 30,000 within 20 years. A large commercial district developed to support this population, bringing from Boston a large variety of goods and services. This area remains the heart of Lowell's central business district, with many of the original buildings still intact.

Access to Boston was critical for the textile industry. Mass production required a steady flow of raw materials and finished products between Lowell and the port of Boston. The Boston and Lowell Railroad was founded in 1835. This early railroad came to be the first leg of the "Great Northern Route" between Boston and Canada. As the leading rail center of the textile-producing region, Lowell erected an imposing terminal at the city's major crossroads.

By 1850, Lowell had become the second largest city in Massachusetts and the largest cotton textile center in the nation. Manufacturers throughout the country looked to Lowell for new technologies, building forms, styles of cloth, and even policies concerning the work force. Immigrants began to flood into Lowell from a variety of countries around the turn of the century. Many immigrants had been forced from their homelands by economic disasters. Gradually these immigrants replaced the Yankee "mill girls" as the chief source of labor, and the system of corporate paternalism faded.

The successive immigrant groups were used by many of the later mill owners as a means of avoiding reasonable wages and of resisting the labor movement. Yet, strikes in Lowell frequently occurred and pitted not only labor against management, but immigrant against immigrant.

Neighborhood housing was constructed by mill workers and private entrepreneurs and a series of strong, ethnic neighborhoods developed. By the turn of the century, 80 percent of the city's inhabitants were foreign born or the offspring of immigrant parents. Each group resided in its own area and maintained a distinct culture. They established their own set of institutions, including schools that taught in the native language and a wide variety of churches and clubs. Holy Trinity Church, one of the first Greek Orthodox churches built in this country, is one of Lowell's noteworthy historic resources.

The New England textile industry went into a decline starting around 1920, from which it never recovered. Unemployment and abandoned industrial buildings came to signal the economic stagnation of Lowell, and some large mill complexes were demolished. In recent years, the potential for the reuse of industrial space or other uses has been recognized. Throughout this period, Lowell's ethnic groups have remained strong and cohesive, although the original forces which drew these people to the city are no longer present.

Agency Roles

Agency Roles

The following are brief summaries of the key programs of the City of Lowell, the National Park Service and the State of Massachusetts within the Park and Preservation District.

CITY

Since the Lowell City Council adopted the Park theme for downtown development in 1972, the City has been a leader in the historic preservation effort. Present City plans call for downtown street and pedestrian improvements in concert with the plans of the Commission and National Park Service. This will supplement previous work and will include exposure of cobblestone streets, bricking and paving of sidewalks, construction of mini-parks and installation of period street lamps. A City facade rehabilitation grant program makes up to $4,000 available for approved private renovations. Over 30 successful projects have already been completed. The City Division of Planning and Development has provided substantial technical and design assistance in conjunction with this program.

At present, a major high school addition and a downtown City parking garage are under construction. Of critical importance is the fact that the City Manager and City Council have recognized and promoted the importance of historic preservation and the maintenance of a viable downtown. Two million dollars has been spent on these programs in a concentrated effort to stimulate private development that is complementary to the Park. The resulting private sector investment has turned an old mill town into a spirited and proud city with new hopes for the future.

LOWELL NATIONAL HISTORICAL PARK

The National Park Service (NPS) operates major interpretive programs and provides visitor services in the Lowell National Historical Park. Three areas have been defined in Lowell for its development programs. They are the downtown Park zone, the Wannalancit Mill area and the canal system. Key components of these programs are summarized as follows:

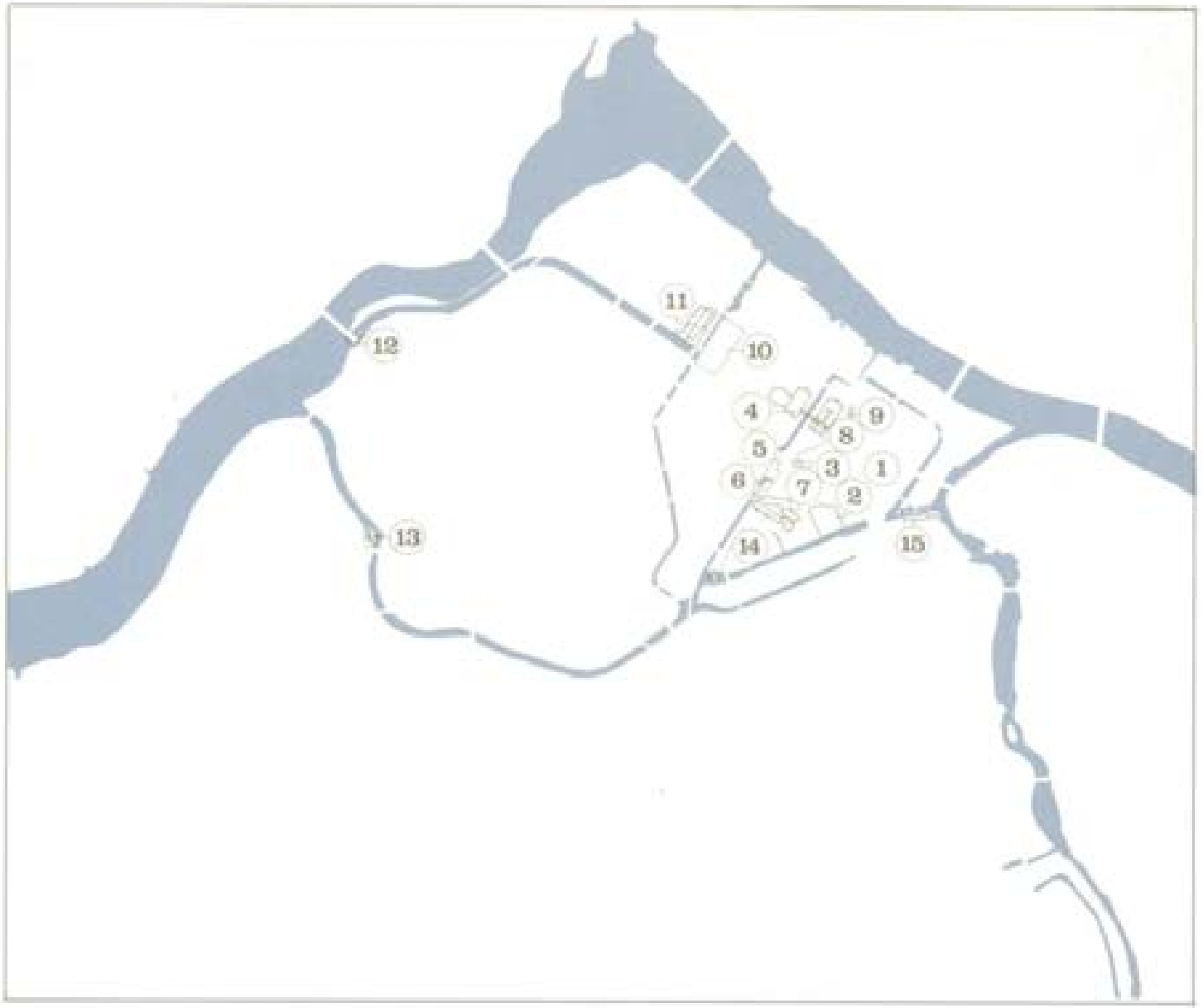
- Development of the Dutton Street lot for visitor parking.
- Interior renovation of a portion of the Lowell Manufacturing complex as a Visitor Information and Orientation Center.
- Exterior rehabilitation and interior adaptive use of the Old City Hall as an interpretive center, commercial space, and NPS administrative offices.
- Demolition of the Jade Pagoda and Solomon's buildings and development of an Old City Hall park and possible restaurant.
- Rehabilitation of the Merrimack Gatehouse and construction of an interpretive exhibit.
- Exterior and interior rehabilitation of the Kirk Street Agents' House and adaptation for interpretive exhibits and a residential conference center.
- Street landscaping and pedestrian improvements to facilitate visitor circulation on Market, Shattuck, Merrimack, Dutton and Kirk Streets.
- Exterior facade improvements to the Boott Mill Boarding House (H & H Paper Company Building) and development of an adjacent park in cooperation with the Commission.
- Development of exhibits in the Boott Mill illustrating the planning and growth of industrial Lowell.
- Assist in the development of a downtown trolley system connecting the Swamp Locks, Visitor Center complex, Wannalancit Mill and the Boott Mill.
- Rehabilitation of the Wannalancit Mill Counting House and exterior and interior rehabilitation of portions of additional mill buildings.
- Potential assistance to the State for site landscaping, partial excavation and structural stabilization of the Tremont Yard as a passive recreation park.
- Operation of canal barges for visitor transportation and the provision of canal-related interpretive and security services.
- Maintenance and security for the National Park and structures.

LOWELL HERITAGE STATE PARK

The downtown programs of the Massachusetts Department of Environmental Management (DEM) will focus on an interpretive center for water power, the development of the canal barge system, and the Lowell Manufacturing Visitor Center. The DEM will also undertake recreational and interpretive programs for scattered sites outside the downtown zone. The following is a brief summary of these programs:

- Renovation of the Mack Building for subsequent utilization as a water power interpretive center.
- Development of the site adjacent to the Mack Building and bounded by Shattuck Street and the Merrimack Canal as an open display area serving as an orientation point and entrance to the Lowell Heritage State Park.
- Acquisition of all or a portion of the 5.6 mile canal system consisting of the canal banks and walls, eleven gatehouses and locks, and the interpretive and recreational water access rights in a cooperative effort with the Locks and Canals Corporation, the National Park Service and the City of Lowell. The DEM will also undertake the landscaping, repair and maintenance of all the basic canal structural components, canal related structures and canal related land for recreational use.
- Provide visitor service information in the Lowell Manufacturing Visitor Center.
- Development of the Francis Gate Park and Francis Gatehouse interpretive site.
- Development of the Pawtucket Boulevard Park to include landscaping, bicycle/walking trails, boat launching areas and picnic facilities.
- Site landscaping, partial excavation and structural stabilization of the Tremont Yard as a passive recreation park.

	CITY	NPS	DEM
1 DOWNTOWN STREET AND PEDESTRIAN IMPROVEMENTS	•		
2 MARKET STREET PARKING GARAGE	•		
3 DOWNTOWN FACADE GRANTS (30+)	•		
4 HIGH SCHOOL	•		
5 MERRIMACK GATEHOUSE		•	
6 MACK BUILDING AND SURROUNDING PARK			•
7 LOWELL MANUFACTURING COMPANY— VISITOR CENTER		•	•
8 OLD CITY HALL		•	
9 KIRK STREET AGENTS' HOUSE		•	
10 TREMONT YARD		•	•
11 WANNALANCIT TEXTILE MILL		•	
12 NORTHERN CANAL GATEHOUSE & LOCK		•	•
13 FRANCIS GATEHOUSE COMPLEX		•	•
14 SWAMP LOCKS		•	•
15 LOWER LOCKS		•	•



Preserving the Nineteenth Century Setting

Index

Index

The objective of the Index was to identify nationally significant buildings within the Park and Preservation District. The Act specified that only buildings identified as nationally significant would qualify for Commission funds.

Formulation of the mandated Index required a comprehensive property survey, historical research and the establishment of evaluation criteria. This data was then analyzed by the Commission staff and consultants. This sections includes:

- Definitions of the four Index categories
- Criteria for assessing properties
- Sample property evaluations
- THE INDEX: A print-out of Park and Preservation District properties ranked for significance

Definitions of Index Categories

NATIONAL SIGNIFICANCE - Category A

Buildings of national significance in the interpretation of the themes of the Park, the American Industrial Revolution and the story of the people who were attracted to and lived and worked in Lowell.

Buildings in this category have been grouped in two sub-categories. Generally, sub-category A1 lists those buildings of high individual importance. Sub-category A2 contains those buildings nationally significant as an individual building or as a group but which do not have the individual historical or architectural importance of the A1 buildings.

LOCAL SIGNIFICANCE - Category B

Buildings which are of local historical and architectural importance because they contribute to the overall historical quality of the Park and Preservation District.

NON-CONTRIBUTING - Category C

Buildings which do not contribute to the themes of the National Park, but which at the same time do not have a negative effect on nationally and locally significant structures.

INCONSISTENT - Category D

Buildings which are inconsistent with the themes of the National Park, and which have a negative impact on nationally and locally significant structures.

Criteria for Assessing Properties

Six factors were considered when evaluating individual properties:

1. Historical Significance
2. Architectural or Engineering Significance
3. Architectural or Engineering Typology
4. Integrity of Historic Fabric
5. Integrity and Significance of Historic Environment
6. Archeological Significance

These factors were then used to define the categories of buildings as follows:

A1 - Properties must be significant in terms of at least one of the first three criteria, and, with a few exceptions, be selected because of their rarity and importance to social and architectural history. They must also conform to criterion #4, integrity of historic fabric.

A2 - Properties must be of sufficient importance in at least one of the first three criteria and/or in the fifth criterion to be considered of national significance. This category also includes properties that are of less individual distinction than those in A1, but which are part of a building group or environment of national significance.

B - Properties which meet one or more of these criteria but which are not as outstanding or as well preserved as A1 or A2 buildings.

C - Properties that do not meet any of the criteria, but do not cause a negative impact on the Park or the Preservation District.

D - Properties that do not meet any of the criteria, and that have a negative effect on the historical or environmental character of the Park or Preservation District.

These criteria, while fairly explicit in nature, are not scientifically quantifiable. The extent to which a particular building meets one or more of the criteria was, of necessity, an informed judgement made by the Commission's consultants and staff.

Sample Property Evaluations

The following property analyses are intended to illustrate how criteria and research data were used to rank buildings by category. The Cultural Resources Inventory prepared by Shepley, Bullfinch, Richardson and Abbott (S.B.B.A.) provided basic research information on properties located within the Commission's jurisdiction. This information is reflected in the samples and is supplemented by the work of the Commission's architectural historian consultant.

HILDRETH BUILDING 1883
45 Merrimack Street

ARCHITECT: Van Brunt & Howe, Boston

INTEGRITY OF HISTORIC FABRIC:	Ground Floor: Major reversible changes Upper Floors: Intact with minor changes
INTEGRITY OF HISTORIC SETTING:	Intact with minor intrusions or losses

GRADE A1

HISTORICAL SIGNIFICANCE: The site was first occupied by the Freewill Baptist Church which was later sold due to "financial difficulties to become the Lowell Museum," [S.B.R.A.] and later the Post Office. The Hildreth Building was developed by the heirs of Fisher A. Hildreth, former newspaper publisher, stockholder in the Lowell Museum and postmaster.

ARCHITECTURAL SIGNIFICANCE: The Hildreth Building is one of the few major structures in Lowell designed by a Boston architectural firm of national reputation. It is one of the first works of the new partnership of Van Brunt and Howe. Henry C. Van Brunt had formerly been part of Ware and Van Brunt, responsible for the designs of Memorial Hall at Harvard, and Van Brunt and Hose who later designed many buildings for the Union Pacific Railroad.

ARCHITECTURAL TYPOLOGY: The Hildreth Building is a variation of the "Queen Anne" style popular in the 1870's and 80's.

INTEGRITY OF HISTORIC FABRIC: Except for the loss of the original storefronts, the parapet ornaments and the erosion of the sandstone details, the historic fabric of the facade is almost intact. Some multipane windows have been changed to one over one, but without negative effect.

INTEGRITY OF THE HISTORIC SETTING: The Hildreth Building is a dominant building on Merrimack Street and an integral part of the historic fabric.

ARCHEOLOGICAL SIGNIFICANCE: The site is almost fully covered, not applicable.

PRESERVATION/REHABILITATION RECOMMENDATIONS: The Hildreth Building is a dominant building on Merrimack Street, with perhaps the most elaborate articulated facade. The facade is generally in good condition, but the sandstone detailing has severely eroded. This decay is not immediately noticeable and does not appear to present a danger, but the spalling should be examined more closely. The present signs "Jupiter" and "Woolworth" are unsympathetic to the building. The original main staircase has been removed and hung ceilings and other alterations cover interior features. Some offices, however, still exhibit original details. The historic window sash contributes to the architecture of the building and should be retained.

GORHAM STREET GROUP

1. JAMES CARR HOUSE - Gorham St. CA 1830
2. DARIUS YOUNG HOUSE - Gorham St. CA 1830
3. THE LOWELL HOTEL - Gorham St. CA 1829

INTEGRITY OF HISTORIC FABRIC:

1. Ground Floor: Major irreversible changes (the storefront although altered, exists as part of the historic fabric and appears to be over one hundred years old)
   Upper Floors: Intact original fabric
2. Ground Floor: Major reversible changes
   Upper Floors: Intact original fabric
3. Ground Floors: Intact with minor changes
   Upper Floors: Intact original fabric

GRADE A1

HISTORICAL SIGNIFICANCE: See notes on individual properties below.

ARCHITECTURAL SIGNIFICANCE: The three houses are simple well designed examples of the late Federal/Greek Revival style. The Young House is particularly significant for its stonework.

ARCHITECUTURAL TYPOLOGY: All three properties are in the characteristic late Federal/Greek Revival style common in Lowell during the first two decades of growth. This ensemble is the most intact cluster of separate pre-civil war privately constructed masonry dwelling houses in Lowell. They provide the best example of the appearance of Lowell during its early stage of development.

INTEGRITY OF HISTORIC FABRIC: All three properties have much of their original exterior walls and rooflines intact, and many windows are original. Part of the lower facade of the Young House is covered by enamel panels.

INTEGRITY OF HISTORIC SETTING: Several 19th century commerical buildings exist in near proximity, but are not of the quality or type that significantly contribute to these buildings.

ARCHEOLOGICAL SIGNIFICANCE: Investigation of the yards behind the structures may reveal finds from early Lowell, including evidence of kitchen use and rear sanitary facilities.

NOTES ON INDIVIDUAL PROPERTIES

The James Carr House (CA. 1830) was originally constructed as a residence. The storefront was probably added later, between 1855-1861. The building was tenanted by Peter Sheehan's passage and exchange office. Peter Sheehan was an "immigrant agent, apparently involved in facilitating immigration to Lowell, particularly from Ireland." (S.B.R.A.) The present business has been located in the building for 64 years.

The Darius Young House 1830-31 was constructed as two attached houses on subdivided property. Because of their prior ownership of part of the site, S.B.R.A. has attributed the construction of the building to stonemasons Cummings and Barr. Cummings and Barr were one of the first contractors to be employed by the Amoskeag Manufacturing Company in Manchester, N.H. They were brought from Lowell in 1837 to lay the foundations of the first mills and boarding houses, and it is likely that they did similar work on the mills in Lowell. The stone work is particularly well laid smooth ashlar. Stone was rarely used as the principle building material in early Lowell.

The Lowell Hotel, 1829, was also later called the City Hotel and Appleton House until it was taken over as a grocery store in 1855. It is the only one of the early Lowell Hotels to survive intact. (A fragment of the American House Hotel survives, but it has been heavily altered and has recently suffered the destruction of its face brick by sandblasting.)

PRESERVATION/REHABILITATION RECOMMENDATIONS

All of these buildings should be investigated on the interior for original work. The group is of museum quality, and rehabilitation should preserve and make visible as much original work as exists. The Carr House should be stripped of the enamel panels covering its facade and all buildings should be fitted with window sash of original design where they are missing. The storefront openings are of historic origin and should be retained.

Lowell Five Cents Savings Bank 1923
36 John Street

INTEGRITY OF HISTORIC FABRIC:

Ground Floor: Intact with minor changes
Upper Floor: Intact

INTEGRITY OF HISTORIC SETTING:

Moderately disrupted

GRADE B

HISTORICAL SIGNIFICANCE: The Lowell Five Cents Savings Bank was founded in 1854. It was formerly located in the Marble Bank on the corner of Merrimack and John Street (now the site of Cherry and Webb).

ARCHITECTURAL SIGNIFICANCE: The bank is a neo-classical structure with classical detailing on the interior and the exterior.

ARCHITECTURAL TYPOLOGY: The temple form of classical architecture was a characteristic style frequently used for banks from the 1890's until the 1930's. There are several examples from these decades in Lowell alone.

INTEGRITY OF HISTORIC FABRIC: The building is essentially intact and is in good repair.

INTEGRITY AND SIGNIFICANCE OF HISTORIC SETTING: John Street to the South is intact, and the bank is a contributing part of the fabric.

ARCHAEOLOGICAL SIGNIFICANCE: Not applicable

Index List

The Index property list has been computerized to allow for sorting by location, construction period, significance ranking and for research and updating purposes. The Index list is compiled alphabetically by street name. Historical building names are used whenever possible.

Following the Index property list are seventeen area maps noting the location and rank of the indexed properties.

SORT 1 PROPERTIES LISTED IN CODE NUMBER ORDER

(ALPHABETICALLY BY STREET
ODD NUMBERS FIRST)

CODE NO.	ADDRESS		HISTORIC NAME	DATE		RANK
0000	00000	0000000000	0000000000000000	00	0000	00
	63-65	ADAMS ST.	(D.REDDING BLDG)			NA
	77&73	ADAMS ST.	W.GREGORY HOUSE	CA	1846	A2
	81-85	ADAMS ST.	(MAHANAN HOUSE)			NA
	93	ADAMS ST.	G.G.COOK HOUSE	CA	1887	B
	93 R	ADAMS ST.	G.G.COOK HOUSE	CA	1847	B
	97	ADAMS ST.	H.CASTLES BLDG.	CA	1892	B
	121-29	ADAMS ST.	(MCNABB BLDG.)	CA	1912	NA
	155	ADAMS ST.	J.C.TREADWELL HS	CA	1847	A2
	163-65	ADAMS ST.	M.M.SULLIVAN BD.	CA	1892	A2
	173	ADAMS ST.	E.COSTELLO HOUSE	CA	1855	A2
	177	ADAMS ST.	(M.MCCUE BLDG)	CA	1892	NA
	207	ADAMS ST.	C.E.M.GARDENAS B	CA	1908	A2
	36-40	ADAMS ST.	(PB.UNION SIDE)			NA
	42	ADAMS ST.	S Z'S LOUNGE	* CA	1967	C
	56-64	ADAMS ST.	(M.MARKIN HOUSE)			NA
	70-78	ADAMS ST.	ABODEELY BLDG.	CA	1958	B
	84	ADAMS ST.	(S.P.FIRE BLDG)	CA	1895	NA
	102-08	ADAMS ST.	MANSUR HOUSE	CA	1927	B
	110	ADAMS ST.	(MAHONEY BLDG.)	CA	1893	NA
	144	ADAMS ST.	(N.A.WRIGHT BDG)	CA	1892	NA
	154	ADAMS ST.	W.E M.CASSIS BD.	CA	1908	A2
	165	ADAMS ST.	T. DOWNING HSE.	CA	1892	A2
	172-78	ADAMS ST.	A. DOWNING BLDG.	CA	1902	A2
	210	ADAMS ST.	F.O. MORRIS BDG.	CA	1892	A2
	232-44	ADAMS ST.	P. SHIFFRIN BDG.	CA	1905	A2
	47-49	ANDOVER ST.	(RICHARDS HOUSE)	CA	1853	NA
	4-6	ANDOVER ST.	(CLIFFORD DYE HO			NA
	26	ANDOVER ST.	TISORS DEN *	CA	1945	D
	49	ANDREWS ST.	G.SHERIDAN HSE.	CA	1885	B
	59	APPLETON ST.	LOWELL POST OFF.		1893	A2
	18-22	APPLETON ST.	D.MURPHY BLDG.	CA	1877	B
	40	APPLETON ST.	BANCROFT BLOCK	CA	1851	A2
	100-26	APPLETON ST.	COBURN BLOCK	CA	1833	A1
		ARCAND DR.	(MERRIMACK HSES)			MA
	15	ARCAND DR.	PROFESSIONAL PRK	CA	1975	C
	50	ARCAND DR.	JFK CIVIC CENTER	CA	1973	D
	51&45	AUSTIN ST.	MOREAU BLDG.	CA	1900	B
	13-27	AUSTIN ST.	H.M. LAWTON BLDG.	CA	1905	A2
	30	AUSTIN ST.	(HENDITE BLDG.)	CA	1892	NA
	32	AUSTIN ST.	(COLBYBRUNELS HO)			NA
	100	BOURNE ST.	P. CRAIG HOUSE	CA	1887	B
	29	BRIDGE ST.	RICKY'S	* CA	1975	C
	31-45	BRIDGE ST.	KEITH BLDG.		1904	B
	31 R	BRIDGE ST.	(KEITH THEATRE)			NA
	100	BRIDGE ST.	ARTHUR'S REST.	* PO	1935	A2
	41	BROADWAY ST.	HELLENIC SCHOOL		1958	C
	153-69	BROADWAY ST.	D.MURPHY BLDG.	CA	1892	A2
	175-83	BROADWAY ST.	(C.SHANAHAN BLD)	CA	1845	NA
	199-207	BROADWAY	J.MORRIS BLDG.	CA	1877	A2
	213	BROADWAY ST.	J.MCNABB HOUSE	CA	1887	A2

CURRENT NAME *
(VACANT SITE) NA

50	225	BROADWAY	ST.	A.MCFADDEN BLDG.	CA	1867		B
51	235-37	BROADWAY	ST.	T.DOWNING BLDG.	CA	1852		B
52	297	BROADWAY	ST.	GULF STATION *	CA	1930		D
53	473	BROADWAY	ST.	J.W. MABEL HOUSE	CA	1872		B
54	481	BROADWAY	ST.	L.MCFARLIN HOUSE	CA	1872		B
55	485	BROADWAY	ST.	A.L.CORLISS HSE.	CA	1872		B
55.5	735	BROADWAY	ST.	DINO DODGE *				D
56	741	BROADWAY	ST.	M.HAMILTON HSE.	CA	1882		B
57	745-49	BROADWAY	ST.	M.HAMILTON BLDG.	CA	1892		B
58	174-88	BROADWAY	ST.	M.ROURKE BLDG.	CA	1872		A2
59	195-204	BROADWAY		P.CRAWFORD BLDG.	CA	1927		A2
60	214-16	BROADWAY	ST.	M.MASSOUD HOUSE	CA	1847		A2
61	236-46	BROADWAY	ST.	T.DOWNING BLDG.	CA	1872		A2
62	274	BROADWAY	ST.	CITY STABLES		1877		A2
63	276	BROADWAY	ST.	CITY STABLES		1877		A2
64	261	BROADWAY	ST.	BOARD OF HEALTH	CA	1938		B
65	295	BROADWAY	ST.	LAND DEPARTMENT*	CA	1895		A2
66	295 R	BROADWAY	ST.	CITY GARAGE	CA	1895		A2
67	670	BROADWAY	ST.	W.F.DOWNING HSE.	CA	1887		A2
68	676	BROADWAY	ST.	E.A.HOWE HOUSE	CA	1872		B
69	652	BROADWAY	ST.	S.J.WRIGHT HOUSE	CA	1872		B
70	650	BROADWAY	ST.	(E.A.WILSON BD.)				NA
71	708	BROADWAY	ST.	E.A.WILSON CO.	CA	1958		C
72	736	BROADWAY	ST.	DINO DODGE	CA	1940		D
73	104	CABOT	ST.	M. SMITH HOUSE	CA	1882		B
74	114	CABOT	ST.	STEARNS HOUSE	CA	1858		B
74.5	120	CABOT	ST.	D. KENSETT HOUSE	CA	1848		B
75	9-11	CENTRAL	ST.	WYMAN'S EXCHANGE	CA	1888		A2
76	21-23	CENTRAL	ST.	HARRISON HOTEL	CA	1894		C
77	25-7	CENTRAL	ST.	BOWDITCH HOTEL		1879		D
78	29-31	CENTRAL	ST.	PRESS CLUB REST		1950		D
79	91-7	CENTRAL	ST.	NEW MANSUR BLDG.	CA	1855		A2
80	101-7	CENTRAL	ST.	MANSUR BUILDING	CA	1836		A1
81	109-31	CENTRAL	ST.	RIALTO BUILDING	CA	1925		D
82	135-57	CENTRAL	ST.	BRADLEY BLOCK		1912		B
83	169-81	CENTRAL	ST.	ROBINSON SHOP		1923		B
84	219	CENTRAL	ST.	FISKE BUILDING	CA	1877		A1
85	231	CENTRAL	ST.	COOK & TAYLOR BG		1884		A2
86	241	CENTRAL	ST.	SAAB ANNEX *	CA	1945		C
87	249-51	CENTRAL	ST.	UNION BUILDING	CA	1838		A2
87.5	253-55	CENTRAL	ST.	UNION BUILDING	CA	1838		A2
88	289&91	CENTRAL	ST.	MOODY GROCERY	CA	1838		A2
89	295-01	CENTRAL	ST.	SHEDD BLOCK		1883		A2
90	317	CENTRAL	ST.	BUILDERS EXCHANG	CA	1890		C
91	321	CENTRAL	ST.	REED & MANSUR BG.	CA	1838		A2
92	341	CENTRAL	ST.	BETTA BUS.MCHN.	CA	1955		D
93	345	CENTRAL	ST.	RAIN PEST CONT.		1971		C
94	353	CENTRAL	ST.	LOWELL CYCLE	PO	1926		C
95	361	CENTRAL	ST.	TONY'S PIZZA *	CA	1900		C
96	369	CENTRAL	ST.	JONNIE'S CAFE *		1925		C
97	373	CENTRAL	ST.	MATHEW'S MARKET	CA	1905		B
98	381	CENTRAL	ST.	OPERA HSE.PHAR.	PO	1916		C
99	30-34	CENTRAL	ST.	MORNING TIMES BG	CA	1843		B
100	40	CENTRAL	ST.	PRESCOTT NAT.BNK	CA	1870		D
101	50-60	CENTRAL	ST.	HARRINGTON BLDG.		1876		C
102	104	CENTRAL	ST.	MARTIN'S MEN ST	CA			B
102.5	104	CENTRAL	ST.	MARTIN'S MEN ST	CA			D
103	120-36	CENTRAL	ST.	STRAND THEATRE		1917		A2
104	130-36	CENTRAL	ST.	AMERICAN HS.HTL.	CA	1841		A2
105	144-62	CENTRAL	ST.	APPLETON BLOCK		1879		A1

104	198-00	CENTRAL	ST.	MERRIMACK FIN.		1950	C
105							
106	210	CENTRAL	ST.	MCGOWAN BLDG.	CA	1965	C
107							
108	212	CENTRAL	ST.	BARTLETT HARDWR.		1876	B
109							
110	220	CENTRAL	ST.	ESPRESSO PIZZA	CA	1965	C
111							
112	226-30	CENTRAL	ST.	MERRIMACK SAVING		1920	B
113							
114	238-54	CENTRAL	ST.	B.& M. R.R.DEPOT		1876	A1
115							
116	278	CENTRAL	ST.	HILDRETH BD.HSE.		1825	A2
117							
118	290	CENTRAL	ST.	1ST BANK & TRUST		1962	C
119							
120	239	CHURCH	ST.	MERRIMACK TRAVEL	CA	1960	C
121							
122	251	CHURCH	ST.	(E.CAWLEY HOUSE)			NA
123							
124	242	CHURCH	ST.	D.C. BROWN FACTY		1848	A1
125							
126	15	CLARE	ST.	A T. MCLAUGHLN W	CA	1894	B
127							
128	17-19	CLARE	ST.	A T.MCLAUGHLIN H	CA	1898	B
129							
130	21-27	CLARE	ST.	J.CONSIDINE BLDG	CA	1901	B
131							
132	29-31	CLARE	ST.	A J. FLYNN HOUSE	CA	1898	B
133							
134	33-35	CLARE	ST.	A J. FLYNN HOUSE	CA	1895	B
135							
136	39-41	CLARE	ST.	T. REARDON HOUSE	CA	1898	B
137							
138	43-45	CLARE	ST.	A T.REARDON HSE.	CA	1898	B
139							
140	47-49	CLARE	ST.	A T.REARDON HSE.	CA	1895	B
141							
142	51	CLARE	ST.	A T.REARDON HSE.		1895	B
143							
144	57	CLARE	ST.	P.WHITING HOUSE	CA	1894	B
145							
146	61	CLARE	ST.	J.F.O'BRIEN HSE.		1895	B
147							
148	63-65	CLARE	ST.	J.BRADY HOUSE		1895	B
149							
150	71	CLARE	ST.	A T.REARDON HSE.	CA	1895	B
151							
152	22	CLARE	ST.	P.&L.MCCARRON H.		1893	B
153							
154	26	CLARE	ST.	D. BRALEY HOUSE	CA	1893	B
155							
156	30	CLARE	ST.	E.SULLIVAN HOUSE		1893	B
157							
158	34	CLARE	ST.	J. BAXTER HOUSE		1893	B
159							
160	36	CLARE	ST.	M.J.HOPAN HOUSE		1893	B
161							
162	40	CLARE	ST.	M.DAWSON HOUSE	CA	1894	B
163							
164	42	CLARE	ST.	A.BISEAULT HOUSE		1895	B
165							
166	46	CLARE	ST.	S.MCCUTCHEON HSE		1893	B
167							
168	50-52	CLARE	ST.	A FARRELL HOUSE		1895	B
169							
170	54-56	CLARE	ST.	A FARRELL HOUSE		1895	B
171							
172	58	CLARE	ST.	M. CULLEN HOUSE		1895	B
173							
174	60	CLARE	ST.	T. CURRAN HOUSE	CA	1898	B
175							
176	66	CLARE	ST.	D.O'DONOGHUE HSE		1893	B
177							
178	7	CLARKS	CT.	GARAGE	CA	1960	C
179							
180	8	CLARKS	CT.	H.STICKNEY HOUSE	CA	1836	A2
181							
182	22	COLONIAL	AVE	(AMONTAGNE HOUSE	CA	1912	B
183							
184	32	COLONIAL	AVE	(C.WESTON HOUSE)			NA
185							
186	52	COLONIAL	AVE	M.E.HART HOUSE	CA	1905	B
187							
188	62	COLONIAL	AVE	M.O'FLAHAVAN HSE	CA	1908	B
189							
190	82	COLONIAL	AVE	DELANEY HOUSE	CA	1922	B
191							
192	92	COLONIAL	AVE	C.B.DESROSIERS H	CA	1922	B
193							
194	26	CROSS	ST.	D.F. LYONS HOUSE	CA	1895	B
195							
196	12	CROSS	ST.	A.SAMARAS BLDG.	CA	1927	B
197							
198	14	CROSS	ST.	KARALIAS BUILDING	CA	1906	B
199							
200	18	CROSS	ST.	SULLIVAN HOUSE	CA	1845	A2
201							
202	24	CROSS	ST.	(WARREN & SMITH)			NA
203							
204	53-61	DUMMER	ST.	(J.SMITH BLDG.)			NA
205							
206	70	DUMMER	ST.	DUMMER ST.GARAGE	CA	1925	C
207							
208	79	DUTTON	ST.	MASONIC TEMPLE	CA	1920	B
209							
210	91	DUTTON	ST.	YORICK CLUB	CA	1859	A1
211							
212	141	DUTTON	ST.	MERIT STATION		1963	D
213							
214	145	DUTTON	ST.	CLUB DINER *		1926	B
215							
216	167	DUTTON	ST.	MECHANICS ASSOC		1835	B
217							
218	183	DUTTON	ST.	MERRIMACK RUG *	CA	1954	D
219							
220	215	DUTTON	ST.	HAFFNER'S STATN.		1935	B
221							
222	243	DUTTON	ST.	FARRELL PLUMBING	CA	1884	A2

39	261	FAYETTE	ST.	(GOODHUE HOUSE)			NA	
273	FAYETTE	ST.	M.C.SULLIVAN BDG	CA	1903	B		
43	FLETCHER	ST.	ASHW'THS FACTORY	CA	1865	B		
61-P3	FLETCHER	ST.	RYAN BLOCK	CA	1904	A2		
121-41	FLETCHER	ST.	G.L. CODY BLDG.	CA	1870	C		
145-47	FLETCHER	ST.	ANSARA BLDG.	CA	1908	A2		
159-61	FLETCHER	ST.	A. KELSL BLDG.	CA	1908	A2		
171-73	FLETCHER	ST.	J. NAMEY BLDG.	CA	1908	A2		
185-87	FLETCHER	ST.	P.H. SAVAGE HSE.	CA	1848	A2		
193-95	FLETCHER	ST.	CATH. TAYLOR HSE.	CA	1845	A2		
201-05	FLETCHER	ST.	S. TOME BLDG.	CA	1908	A2		
211-15	FLETCHER	ST.	T.J. FLYNN HOUSE	CA	1869	A2		
110-12	FORD	ST.	(LOWELL MFG,BDG)			NA		
	FRENCH	ST.	EX LOWELL H.S.ANNEX		1979	C		
8	GARNET	ST.	T.JAMESON HOUSE	CA	1848	A1		
12	GARNET	ST.	J.E.MCGOVERN HSE	CA	1892	B		
69	GORHAM	ST.	(KRUNELS BLDG.)			NA		
91-101	GORHAM	ST.	TOWER NEWS	CA	1912	B		
107	GORHAM	ST.	W.CORBETT BLDG.	CA	1879	B		
24	GORHAM	ST.	TOWER'S CORNER		1975	D		
32	GORHAM	ST.	P. SHANLEY BLDG.	CA	1886	A2		
62	GORHAM	ST.	J.CARR HOUSE ETC	CA	1835	A1		
72-76	GORHAM	ST.	D. YOUNG HOUSE		1830	A1		
88	GORHAM	ST.	THE LOWELL HOTEL		1829	A1		
92-98	GORHAM	ST.	O.M.DONOHOE BLDG	CA	1900	C		
102	GORHAM	ST.	COULSON BOWLING	CA	1920	D		
110	GORHAM	ST.	OLD 66 CAFE	CA	1900	C		
118	GORHAM	ST.	TOM'S DINER	CA	1840	C		
124	GORHAM	ST.	STAR BARBER	CA	1875	C		
15	HAMPTON	AVE	A DONOVAN BLDG.	CA	1905	B		

229	10 R	HAMPTON	AVE	A DONOVAN BLDG.	CA	1905	B	
234	39-41	HANOVER	ST.	NICHOLS/SMITH HS	CA	1837	A2	
238	28	JACKSON	ST.	1ST J.C. AYER BG		1852	A2	
242	32	JACKSON	ST.	O.DANA BRASS FND	CA	1852	A1	
246	340	JACKSON	ST.	BAY STATE STORE.	CA	1915	B	
250	65-77	JOHN	ST.	ROOF TOP PARKING	CA	1960	D	
254	36	JOHN	ST.	LOWELL S. SAVING	CA	1925	B	
258	64	JOHN	ST.	LOWELL TRADE SCH		1908	A2	
262	76	JOHN	ST.	TRADE SCH. ANNEX		1919	A2	
266	5 P	JOINERS	CT.	PASSAGEWAY			NA	
270	5	JOINER'S	CT.	N.GAUTHIER HSE.*	CA	1963	C	
274	5 M	JOINER'S	CT.	(M.MURPHY HOUSE)			NA	
278	6	JOINER'S	CT.	J.BLAKE HOUSE	CA	1857	A2	
282	6	JOINERS	CT.	C.GREEN HOUSE	CA	1874	B	
286		KEARNEY	SQ.	TAXI STAND	CA	1965	D	
290	11	KEARNEY	SQ.	HOWE BLDG.	CA	1894	A2	
294	15	KEARNEY	SQ.	COURIER-CITZ. BG		1889	B	
298	2-14	KEARNEY	SQ.	FAIRBURN BLDG.	CA	1892	A2	
302	50	KEARNEY	SQ.	LOWELL POST OFF.		1910	B	
306	17-21	KIRK	ST.	MITCHEL BLOCK	CA	1887	A2	
310	21-27	KIRK	ST.	ROSE,MAY,WARD HS	CA	1846	A2	
314	29	KIRK	ST.	KELLY & HETH,HSE	CA	1846	A2	
318	31	KIRK	ST.	KIRK ST. PRIM.SC		1881	A2	
322	45-49	KIRK	ST.	EARLY RESIDENCE	CA	1847	A1	
326	63-67	KIRK	ST.	LINUS CHILD HSE.		1846	A1	
330	8	KIRK	ST.	ST, ANNES RECTORY		1825	A1	
334	18	KIRK	ST.	B.F. FRENCH HSE.		1837	A1	
338	30	KIRK	ST.	LOWELL HIGH SCH.		1892	A2	
350.5	30	KIRK	ST.	HIGH SCH ADDITN		1922	B	
259	1	KYAN	ST.	STORAGE SHED	CA	1965	D	

1 W	RYAN	ST.	A NOYES BLDG.	CA	1898	C
	RYAN	ST.	(RYANIZING WRKS)			NA
1-3	LAGRANGE	CT.	(ROW HOUSE)			NA
1	LAGRANGE	ST.	BURKE HSE.	CA	1858	A2
5	LAGRANGE	ST.	RICHARDSON HSE.	CA	1848	A2
9	LAGRANGE	ST.	A.COFFEE BROS HSE	CA	1903	A2
13	LAGRANGE	ST.	PAT UANE HOUSE	CA	1873	A2
31-37	LAGRANGE	ST.	(E.B. WORTHEN HS)			NA
49	LAGRANGE	ST.	W.H. WIGGIN HSE.	CA	1858	A2
8	LAGRANGE	ST.	(A. SOONIS HSE.)			NA
10-12	LAGRANGE	ST.	(ANDREWS HOUSE)			NA
14-16	LAGRANGE	ST.	E.ODONNELL BLDG.	CA	1903	A2
22	LAGRANGE	ST.	E. ODONNELL HSE.	CA	1855	A2
24-26	LAGRANGE	ST.	MASSANO BLDG.	CA	1908	A2
28R	LAGRANGE	ST.	MASSANO BLD REAR	CA	1908	A2
30-32	LAGRANGE	ST.	(SAMO'M/GEO. HSE)			NA
40	LAGRANGE	ST.	(P.CUMMISKEY HSE)			NA
64	LAKEVIEW	AVE	(C.CALLAHAN HSE)	CA	1950	D
78-90	LAKEVIEW	AVE	BLANCHETTES AUTO	CA	1950	D
110	LAKEVIEW	AVE	A C.CALLAHAN BDG	CA	1847	B
120	LAKEVIEW	AVE	A SPAULDING HSE.	CA	1850	B
134	LAKEVIEW	AVE	(HAMBLETT HOUSE)			NA
134 R	LAKEVIEW	AVE	M.MCKEE HOUSE	CA	1855	A2
142-46	LAKEVIEW	AVE	SANITARY ENG. CO	CA	1870	A2
152	LAKEVIEW	AVE	J.W.PEAD HOUSE	CA	1902	A2
162-64	LAKEVIEW	AVE	LEWIS HOUSE	CA	1843	A2
172	LAKEVIEW	AVE	C.CALLAHAN HOUSE	CA	1875	B
172 R	LAKEVIEW	AVE	GRADY HOUSE	CA	1892	B
184	LAKEVIEW	AVE	SHED	CA	1900	B
190	LAKEVIEW	AVE	MERRIMACK MFG.BG	CA	1875	A2
204	LAKEVIEW	AVE	(M.LYMAN HOUSE)			NA
214	LAKEVIEW	AVE	B.FOX HOUSE	CA	1890	B
214 R	LAKEVIEW	AVE	A.GOLDEN HOUSE	CA	1893	B
218	LAKEVIEW	AVE	M.RILEY HOUSE	CA	1893	B
220	LAKEVIEW	AVE	MERRIMACK MFG.BG	CA	1875	A2
228	LAKEVIEW	AVE	MERRIMACK MFG.BG	CA	1875	A2
236	LAKEVIEW	AVE	MERRIMACK MFG.BG	CA	1875	A2
242	LAKEVIEW	AVE	MERRIMACK MFG.BG	CA	1865	A1
268	LAKEVIEW	AVE	ST.CASIMIR CHRCH	CA	1912	A2
278	LAKEVIEW	AVE	ST.CASIMIR RECTY	CA	1930	C
276	LAKEVIEW	AVE	ST.CASIMIR HALL	CA	1955	C
438	LAKEVIEW	AVE	LOWELL POWER PLT	CA	1927	C
498	LAKEVIEW	AVE	C.H.SNYDER HOUSE	CA	1882	B
508	LAKEVIEW	AVE	J.MCMAHON HOUSE	CA	1892	B
514	LAKEVIEW	AVE	MCMAHON HOUSE	CA	1877	B
524	LAKEVIEW	AVE	M.MCMAHON HOUSE	CA	1892	B
530	LAKEVIEW	AVE	C.H.WHITELEY HSE	CA	1887	B
570610	LAKEVIEW	AVE	LOWELL HOUSING A	CA	1955	C
664	LAKEVIEW	AVE	HAMEL RUBBISH	CA	1972	D
664 R	LAKEVIEW	AVE	VACANT LOT			NA
670-88	LAKEVIEW	AVE	(DESMARAIS HSE.)			NA
696	LAKEVIEW	AVE	C.LAVALLEE HOUSE	CA	1892	B
573	LAWRENCE	ST.	GREENWOOD STORE		1872	A1
485	LAWRENCE	ST.	U.S.CARTRIDGE CO	CA	1910	A2
485 H	LAWRENCE	ST.	U.S.CARTRIDGE CO	CA	1910	A2
48	LAWRENCE	ST.	WENTWORTH HOUSE		1831	A1
60	LAWRENCE	ST.	ST.VARTANANTZ	CA	1919	A2
70	LAWRENCE	ST.	W.A.MILES HOUSE	CA	1845	B
80	LAWRENCE	ST.	(ROBINSON HOUSE)			NA
90-92	LAWRENCE	ST.	TORIGAN BUILDING	CA	1910	A2

102	104	LAWRENCE	ST.	(RICHMOND MILL)			NA	
103								
104	110	LAWRENCE	ST.	(COBURN HOUSE)			NA	
105								
106	122	LAWRENCE	ST.	COLBURN SCHOOL		1848	A1	
107								
108	150	LAWRENCE	ST.	(D.BENSON HOUSE)			NA	
109								
110	164-78	LAWRENCE	ST.	MORRILL-BENSON H	CA	1845	A2	
111								
112	180-82	LAWRENCE	ST.	(W.COLBURN HSE.)			NA	
113								
114	184	LAWRENCE	ST.	(M.MCNULLY HSE.)			NA	
115								
116	190-92	LAWRENCE	ST.	H.J.O'BRIEN HSE.	CA	1908	B	
117								
118	202	LAWRENCE	ST.	P.MCDERMOT HOUSE	CA	1839	A2	
119								
120	224&26	LAWRENCE	ST.	A N.RICHMOND HSE	CA	1874	A2	
121								
122-4		LAWRENCE	ST.	RICHMOND MILLS SITE - SEE INDUSTRIAL				
123								
124	310-26	LAWRENCE	ST.	RICHMOND M.HSING	CA	1872	A2	
125								
126	332	LAWRENCE	ST.	E.A.SMITH HOUSE	CA	1855	B	
127								
128	342	LAWRENCE	ST.	(A.C.WHEELER HSE)			NA	
129								
130	352	LAWRENCE	ST.	W.T.BENSON BLDG.	CA	1879	B	
131								
132		LAWRENCE	ST	STERLING MILLS - SEE INDUSTRIAL				
133								
134	602-04	LAWRENCE	ST.	A.MADDEN HOUSE	CA	1887	B	
135								
136	650	LAWRENCE	ST.	J.FLYNN BUILDING	CA	1892	B	
137								
138	768-72	LAWRENCE	ST.	HOUSING PROJECT	CA	1957	C	
139								
140	788	LAWRENCE	ST.	G.RIBERO HOUSE	CA	1930	C	
141								
142	796	LAWRENCE	ST.	T.HARDISTY HOUSE	CA	1887	A2	
143								
144	900	LAWRENCE	ST.	WATER HEAD MILLS	CA	1910	B	
145								
146	900 R	LAWRENCE	ST.	WATER HEAD MILLS	CA	1910	B	
147								
148	900 S	LAWRENCE	ST.	WATER HEAD MILLS			NA	
149								
150	906	LAWRENCE	ST.	WAMESIT POWER CO	CA	1915	B	
151								
152	37	LEE	ST.	LEE ST.CHURCH		1850	A1	
153								
154	22-30	LEE	ST.	(M. ROURKE HSE.)			NA	
155								
156	44	LEE	ST.	MIDDLESEX MACH.	CA	1923	C	
157								
158		LEWIS	ST.	HELLENIC ORTH.CH		1900	A1	
159								
160	11	LITCHFIELD	TER	T.S.KERRIGAN HSE	CA	1916	B	
161								
162	17	LITCHFIELD	TER	M.MULLANEY HOUSE	CA	1916	B	
163								
164	19	LITCHFIELD	TER	J.MURPHY HOUSE	CA	1916	B	
165								
166	22	LITCHFIELD	TER	W.GIBLIN HOUSE	CA	1916	B	
167								
168	28	LITCHFIELD	TER	M.A.O'ROURKE HSE	CA	1918	B	
169								
170	36	LITCHFIELD	TER	H.H.MILLS HOUSE	CA	1916	B	
171								
172	42	LITCHFIELD	TER	P.E.MCCALLUM HSE	CA	1916	B	
173								
174	7	MADONNA	CIR	G.B.BERGHOLM HSE		1962	C	
175								
176	7-29	MADONNA	CIR	VACANT LOT			NA	
177								
178	29	MADONNA	CIR	F.H.DAVEY HOUSE		1962	C	
179								
180	29-39	MADONNA	CIR	VACANT LOT			NA	
181								
182	39	MADONNA	CIR	R.J.FARRELL HSE.		1963	C	
183								
184	43	MADONNA	CIR	T.E.RILEY HOUSE		1963	C	
185								
186	15	MAMMOTH	RD.	PAWTUCKET CH. YD.			NA	
187								
188	1	MARION	ST.	(DONOHOE HOUSE)	CA	1849	NA	
189								
190	1	MARION	ST.	(DONOHOE'S CT.)			NA	
191								
192	4-12	MARION	ST.	J.MORRIS BLDG.	CA	1875	A2	
193								
194	13,14	MARION	ST.	JAMES MORRIS HSE	CA	1852	A1	
195								
196	31	MARION	ST.	F. MCNABB HOUSE	CA	1927	A2	
197								
198	33	MARION	ST.	(BOWERS HOUSE)			NA	
199								
200	39	MARION	ST.	BROOKS HOUSE	CA	1847	A2	
201								
202	41	MARION	ST.	D.B.MELVIN HSE.	CA	1845	A2	
203								
204	45	MARION	ST.	F.MAHONEY HOUSE	CA	1847	A2	
205								
206	51-53	MARION	ST.	(ED.WORTHEN HSE)	CA	1847	NA	
207								
208	28-30	MARION	ST.	A M.ROURKE HOUSE	CA	1872	A2	
209								
210	34	MARION	ST.	GREEK CANDLE CO	CA	1933	D	
211								
212	38-44	MARION	ST.	J.B.SWIFT BLDG	CA	1857	A1	
213								
214	46	MARION	ST.	SARANDOPOULOS BG	CA	1918	A2	
215								
216	50-54	MARION	ST.	PEARSON HOUSE	CA	1847	A1	
217								
218	29-35	MARKET	ST.	H.H.WILDER & CO.	CA	1885	B	
219								
220	43	MARKET	ST.	J. TYLER BLDG.	CA	1885	A2	

184	51	MARKET	ST.	C.B. COBURN BLDG	CA	1885		D
184								
185	61-71	MARKET	ST.	C.B. COBURN BLDG	CA	1874		A2
185								
185.5	67-91	MARKET	ST.	L.M. ANDREWS BLD	CA	1878		B
186	73-91	MARKET	ST.	FATHER JOHNS MED	CA	1920		A2
186								
187	95-101	MARKET	ST.	IND. BEEF CO.	CA	1907		B
187								
188	105-9	MARKET	ST.	D.HARNESS & AUTO	CA	1910		B
188								
189	129-39	MARKET	ST.	CAHILL BROS.	CA	1976		B
189								
190	149-61	MARKET	ST.	LOWELL DENTAL	CA	1873		C
190								
191	165	MARKET	ST.	J.C. AYER & CO.	CA	1858		A2
191								
192	197	MARKET	ST.	FOYE BROS. BLDG.		1897		B
192								
193	199	MARKET	ST.	J. VLAHOS BLDG.		1934		D
193								
194	205-07	MARKET	ST.	PUTNAM BLDG.		1896		B
194								
195	307	MARKET	ST.	GATES BLOCK		1881		A2
195								
196	351	MARKET	ST.	J. HADLEY BLDG.	CA	1885		A2
196								
197	387-97	MARKET	ST.	CLARK GROCERY	CA	1830		B
197								
198	509	MARKET	ST.	JOEL DAVIS HOUSE		1834		A1
198								
199	513	MARKET	ST.	G.E.VOZCOLAS BDG	CA	1915		C
199								
400	20	MARKET	ST.	WAVERLY HOUSE	CA	1849		B
400								
401	40	MARKET	ST.	OLD MARKET HOUSE		1837		A1
401								
402	302	MARKET	ST.	WORLD CHEESE *	CA	1835		B
402								
403	330-48	MARKET	ST.	A M.ROARK BLDG.		1898		A2
403								
404	350	MARKET	ST.	PARKWAY		1917		C
404								
405	360-76	MARKET	ST.	(J.DUMMER HOUSE)				NA
405								
406	7	MERRILL	ST.	(J.HANDLEY HSE.)				NA
406								
407	10	MERRILL	ST.	J.DONOHUE HOUSE	CA	1887		B
407								
408	14	MERRILL	ST.	M.BASSET HOUSE	CA	1865		B
408								
409	16 R	MERRILL	ST.	GARDEN				NA
409								
410	22	MERRILL	ST.	J.HAGGERTY HOUSE	CA	1850		A2
410								
411	26	MERRILL	ST.	M.HEALEY HOUSE	CA	1865		B
411								
412	30	MERRILL	ST.	W.GARRETT HOUSE	CA	1865		B

413	42	MERRILL	ST.	D.DILWORTH HOUSE	CA	1884		B
413								
414	44	MERRILL	ST.	A.D.DILWORTH HSE	CA	1865		B
414								
415	46	MERRILL	ST.	A.H.FIFE HOUSE	CA	1887		B
415								
416	54	MERRILL	ST.	HUGH FIFE HOUSE	CA	1838		A2
416								
417	56-58	MERRILL	ST.	GARDEN				NA
417								
418	1 5	MERRIMACK	ST.	SIMPSON'S BLOCK	CA	1847		A2
418								
419	15-17	MERRIMACK	ST.	(COURIER BLDG.LOT)			N/A	NA
419								
420	19 25	MERRIMACK	ST.	FOXTAIL LOUNGE C	CA	1937		C
420								
421	45	MERRIMACK	ST.	HILDRETH BLDG.		1882		A1
421								
422	61	MERRIMACK	ST.	UNION NAT. BANK		1924		B
422								
423	67	MERRIMACK	ST.	NEW NESMITH BLDG	CA	1853		A2
423								
424	75-83	MERRIMACK	ST.	NESMITH BLOCK	CA	1836		A1
424								
425	105	MERRIMACK	ST.	CHERRY&WEBB		1955		D
425								
426	115-17	MERRIMACK	ST.	RUGG BUILDING	CA	1920		D
426								
427	127	MERRIMACK	ST.	BIG L DISCOUNT C	CA	1850		C
427								
428	133	MERRIMACK	ST.	B.T. THOMPSON BD	CA	1855		B
428								
429	151	MERRIMACK	ST.	FR. NAT.BANK BLD	CA	1874		A2
429								
429.5	143	MERRIMACK	ST	BON MARCHE BLD		1892		A2
430	175	MERRIMACK	ST.	WELLES BLOCK		1846		A1
430								
431	237	MERRIMACK	ST.	ST.ANNE'S CHURCH		1824		A1
431								
432		MERR.DUTT STS		MONUMENT SQUARE		1865		B
432								
433	407	MERRIMACK	ST.	CITY HALL		1893		A1
433								
434	415	MERRIMACK	ST.	MEMORIAL HALL	CA	1891		A1
434								
435	555	MERRIMACK	ST.	LOWELL BANK(*	CA	1978		C
435								
436	585	MERRIMACK	ST.	CAPT.CRIS REST.*	CA	1978		C
436								
437	8	MERRIMACK	ST.	SUN BUILDING		1912		A2
437								
438	16.18	MERRIMACK	ST.	D.L. PAGE CO.	CA	1913		B
438								
439	24	MERRIMACK	ST.	CHALIFOUX BLDG.		1906		A2
439								
440	72	MERRIMACK	ST.	CHURCH 1ST UNTN.		1832		A1
440								
441	100	MERRIMACK	ST.	EXECUTIVE BLDG.*	CA	1860		A2

442	104	MERRIMACK ST.	ROBBINS BLOCK	CA	1855		A2
443	114	MERRIMACK ST.	DAVIS BLOCK	CA	1855		A2
444	124	MERRIMACK ST.	MASONIC TEMPLE		1871		A2
445	144	MERRIMACK ST.	A.S.POLLARD & CO		1877		C
446	154	MERRIMACK ST.	FELLOWS BUILDING		1893		A2
447	160	MERRIMACK ST.	MIDDLESEX TRUST	CA	1893		A2
448	170-84	MERRIMACK ST.	ALBION BLOCK		1879		A2
449	190	MERRIMACK ST.	BASCOM BLDG.		1904		A2
450	200	MERRIMACK ST.	SOLOMON'S BLDG.		1962		D
451	210	MERRIMACK ST.	CARLTON BLOCK		1859		D
452	218	MERRIMACK ST.	TOWN HOUSE		1829		A1
453	256	MERRIMACK ST.	WENTWORTH BLDG.	CA	1844		A2
454	262-66	MERRIMACK ST.	(B&M RR STA.)		NA		NA
455	322	MERRIMACK ST.	GOODYEAR STA. *	CA	1926		D
456	350-76	MERRIMACK ST.	BANK BLOCK	CA	1826		A2
457	450	MERRIMACK ST.	1ST CONG. CHURCH		1804		A1
458	465	MERRIMACK ST.	GREEN SCHOOL		1870		A2
459	502-40	MERRIMACK ST.	SITTO'S FASHION*		1835		A2
460	526	MERRIMACK ST.	BARNES' FOLLY		1832		A1
461	23-39	MIDDLE ST.	MOLLERS STORE		1923		B
462	43-9	MIDDLE ST.	HOSFORD BUILDING		1882		A2
463	55	MIDDLE ST.	PARKER BLOCK		1891		A2
464	83	MIDDLE ST.	POLLARD BLDG.	CA	1892		A2
465	133	MIDDLE ST.	FELLOWS BLDG.		1886		B
466	147-89	MIDDLE ST.	(CITY COMMON)				NA
467	16	MIDDLE ST.	TOWN HOUSE *		1977		C
468	46	MIDDLE ST.	TALBOT BLDG.		1887		A2
469	56	MIDDLE ST.	"K" BUILDING		1886		A2
470	78	MIDDLE ST.	(KITTRIDGE YARD)				NA
471	82-86	MIDDLE ST.	SIMPSON GROCERS	CA	1892		A2
472	92	MIDDLE ST.	HAYES BUILDING	CA	1893		A2
473	98-04	MIDDLE ST.	INSTITUTE BLDG.	CA	1892		A2
474	112	MIDDLE ST.	MCCARTHY BLDG.	CA	1892		B
475	150-4	MIDDLE ST.	COVER GRAIN CO.	CA	1912		A2
476	158-78	MIDDLE ST.	BARKER BUILDING	CA	1892		A2
477	172-92	MIDDLE ST.	J.C. AYER CO.	CA	1892		A2
478	194	MIDDLE ST.	HOVEY HOUSE		1846		A2
479	9	MIDDLESEX ST.	HOYT'S G.C. BLDG		1877		A2
480	65-83	MIDDLESEX ST.	BRADLEY BUILDING		1923		C
481	155-59	MIDDLESEX ST.	MARSTON BUILDING		1889		A2
482	163-67	MIDDLESEX ST.	(MILL HOUSING)				NA
483	169	MIDDLESEX ST.	(WHEELOCK BLDG.)		1954		D
484	173-81	MIDDLESEX ST.	(APPLETON B.HS.)				NA
485	189	MIDDLESEX ST.	SPAULDING BLDG.	CA	1885		B
486	193	MIDDLESEX ST.	ELLIOT BUILDING		1898		A2
487	207	MIDDLESEX ST.	APPLETON CHAMBRS	CA	1910		A2
488	261	MIDDLESEX ST.	APPLETON CO. STR		1896		D
489	295	MIDDLESEX ST.	SKIPPS GALLEY *	CA	1920		B
490	317	MIDDLESEX ST.	S.FARSON HOUSE	CA	1846		A2
491	323	MIDDLESEX ST.	BURGESS LANG BDG	CA	1917		B
492	329	MIDDLESEX ST.	DEPOT TIRE *	CA	1940		D
493	389	MIDDLESEX ST.	SUN ELECTRIC *	CA	1888		D
494	489-91	MIDDLESEX ST.	(LOWELL BREWERY)	CA	1870		C
495	501 R	MIDDLESEX ST.	(LOWELL BREWERY)	CA	1850		NA
496	511	MIDDLESEX ST.	NONE				NA
497	533	MIDDLESEX ST.	HOWARD HOUSE	CA	1835		A2
498	543	MIDDLESEX ST.	ST. JAMES HOTEL	CA	1885		A2
499	561-79	MIDDLESEX ST.	(R.CALL BLDG.)				NA
500	585	MIDDLESEX ST.	DAVIS-SARGENT BG	CA	1888		B
501	637	MIDDLESEX ST.	JAMES BOYLE BLDG	CA	1900		B

502	647-65	MIDDLESEX	ST.	BOY'S CLUB	1971	C
503	8-24	MIDDLESEX	ST.	(HAMILTON BD.HS)		NA
504	50	MIDDLESEX	ST.	TRADERS NAT.BANK CA	1892	D
505	50-56	MIDDLESEX	ST.	HILL BROS. MANF. CA	1871	B
506	60-64	MIDDLESEX	ST.	A.J. CALEF BLDG. CA	1884	B
507	74	MIDDLESEX	ST.	CROWN THEATRE CA	1914	B
508	78	MIDDLESEX	ST.	MIDDLESEX SUPPLY CA	1971	C
509	94-98	MIDDLESEX	ST.	(A.D.PUFFER BLDG)		NA
510	114-16	MIDDLESEX	ST.	HARRY BOSS BLDG.	1925	D
511	118	MIDDLESEX	ST.	D.C.CLARK BLDG. EA	1875	B
512	135,48	MIDDLESEX	ST.	ELLIOT ST. SCHL.	1844	A1
513	150	MIDDLESEX	ST.	HAMILTON SCHOOL	1829	A1
514	160-70	MIDDLESEX	ST.	WORKINGMAN UNION CA	1848	A2
515	182-86	MIDDLESEX	ST.	(DOANE STORE)		NA
516	190-96	MIDDLESEX	ST.	W. FOX BUILDING	1884	A2
517	200	MIDDLESEX	ST.	HOWE BUILDING	1883	A2
518	210-20	MIDDLESEX	ST.	M. HUNT BUILDING CA	1848	D
519	224-26	MIDDLESEX	ST.	UNKNOWN CA	1875	D
520	230-40	MIDDLESEX	ST.	RAYMONDS TAVERN CA	1915	D
521	248-54	MIDDLESEX	ST.	CARP BUILDING CA	1923	B
522	262-66	MIDDLESEX	ST.	PALEFSKY BLDG.	1923	B
523	270-92	MIDDLESEX	ST.	T.GOWARD BLDG.	1898	A2
524	298324	MIDDLESEX	ST.	(HUNTING. STAB.)		NA
525	281	MOODY	ST.	NORTH CANAL APTS	1969	D
526	463	MOODY	ST.	NORTH CANAL APTS	1969	D
527	407-9	MOODY	ST.	BARTLETTE/COOK H CA	1875	B
528	411	MOODY	ST.	R.H. STAPLES HSE CA	1860	B
529	9	MT.HOPE	ST.	E.H.BARKER HOUSE CA	1915	B
530	10-12	OXFORD	ST.	J.D.HORNE HOUSE CA	1908	C
531	19	PAIGE	ST.	W.H.PARKER BLDG.	1845	A2
532	29-31	PAIGE	ST.	ADAMS.ALLEN HSES CA	1846	A2
533	35	PAIGE	ST.	BROMLEY-SHEP.INC CA	1920	C
534	105-27	PAIGE	ST.	JUPITER * CA	1924	C
535	19-23	PALMER	ST.	ART. STAPLES BLD CA	1891	C
536	45	PALMER	ST.	CENTRAL FIRE STA	1869	A2
537		PAWTUCKET	BVD	REGATTA BLDG. * CA	1950	B
538	193	PAWTUCKET	ST.	AN O.DEZIEL BLDG CA	1908	B
539	199	PAWTUCKET	ST.	AN O.DEZIEL BLDG CA	1908	B
540	203	PAWTUCKET	ST.	CATHOLIC ASSOC. CA	1908	B
541	211	PAWTUCKET	ST.	CATHOLIC ASSOC.	1908	A2
542	541	PAWTUCKET	ST.	MEDICAL BLDG. * CA	1972	B
543	267	PAWTUCKET	ST.	AYER HOME	1824	A1
544	279	PAWTUCKET	ST.	DOW-BEARD HOUSE	1827	A1
545	295	PAWTUCKET	ST.	J.& M.ROGERS HSE CA	1873	A1
546	305	PAWTUCKET	ST.	WIGHTMAN HOUSE CA	1872	B
547	309	PAWTUCKET	ST.	DR.PACKER HOUSE CA	1882	B
548	321	PAWTUCKET	ST.	R.J.LORD MANOR	1976	C
549	335	PAWTUCKET	ST.	G.W.SHATTUCK HSE CA	1875	B
550	357	PAWTUCKET	ST.	F.AYER MANSION	1876	A1
551	375	PAWTUCKET	ST.	AN ALLARD BLDG. CA	1908	B
552	383	PAWTUCKET	ST.	SPAULDING HOUSE	1761	A1
553	391	PAWTUCKET	ST.	H.A.LAMBERT HSE. CA	1850	A2
554	403	PAWTUCKET	ST.	EARLE HOUSE CA	1882	A2
555	409	PAWTUCKET	ST.	AN S.LOCKE HOUSE CA	1872	B
556	415	PAWTUCKET	ST.	S.W.LOCKE HOUSE CA	1877	A2
557	423	PAWTUCKET	ST.	A.J.DOWNING HSE. CA	1852	B
558	429	PAWTUCKET	ST.	AN S.LOCKE BLDG. CA	1872	A2
559	453-55	PAWTUCKET	ST.	VESPER BOAT CLUB	1879	B
560	489	PAWTUCKET	ST.	LOWELL FELTING M CA	1890	B
561		PAWTUCKET	ST.	GENERAL ELECTRIC CA	1955	C

562	438	PAWTUCKET	ST.	DR. SAGE HOUSE	CA	1852	B	
563								
564	442	PAWTUCKET	ST.	G.WALKER HOUSE	CA	1850	B	
565								
566	450	PAWTUCKET	ST.	E.COPE HOUSE	CA	1872	B	
567								
568	500	PAWTUCKET	ST.	PARKING LOT *			HA	
569								
570	44-N	PAYNE	ST.	(BROOKS MILL)	CA	1940	HA	
571								
572	40,44	PAYNE	ST.	UNITED AUTO *	CA	1965	C	
573								
574	38	PAYNE	ST.	DOHERTY FOUNDRY	CA	1890	B	
575								
576	35	PEARL	ST.	MOE'S RADIATOR *	CA	1950	D	
577								
578	21	PEARL	ST.	B. BERNS HOUSE	CA	1860	B	
579								
580	207	PERRY	ST.	LOWELL ELECTRIC		1895	A2	
581								
582	207 R	PERRY	ST.	(B.&M.ENGINE HI			HA	
583								
584	117&25	PERRY		AMERICAN MASON C	CA	1896	C	
585								
586	145	PERRY	ST.	AM F.J.FLEMING B	CA	1900	C	
587								
588	151	PERRY	ST.	BHF MOTORS *	CA	1955	C	
589								
590	223-39	PERRY	ST.	E.CAWLEY HOUSES	CA	1896	A2	
591								
592	291 N	PERRY	ST.	(WHITE BROS. CO)			HA	
593								
594	291	PERRY	ST.	WHITE BROS. & CO	CA	1890	A2	
595								
596	329	PERRY	ST.	WHITE BROS. & CO	CA	1893	A2	
597								
598	12-16	PERRY	ST.	BURR AUTO *	CA	1917	C	
599								
600	40	PERRY	ST.	CASEY'S ART *	CA	1960	D	
601								
602	50-52	PERRY	ST.	A J.W.BENNETT HS	CA	1885	B	
603								
604	54-56	PERRY	ST.	A J.W.BENNETT HS	CA	1891	B	
605								
606	58-60	PERRY	ST.	A J.W.BENNETT HS	CA	1891	B	
607								
608	62-64	PERRY	ST.	A J.W.BENNETT HS	CA	1891	B	
609								
610	66-68	PERRY	ST.	A J.W.BENNETT HS	CA	1891	B	
611								
612	85	PEVEY	ST.	J.S.PICARD INC.	CA	1930	C	
613								
614	25-35	PRESCOTT	ST.	PHOENIX BLDG.	CA	1890	B	
615								
616	36-42	PRESCOTT	ST.	THE LOWELL SUN		1965	C	
617								
618	36-R	PRESCOTT	ST.	MASS.COTTON MKTS	CA	1857	A2	
619								
620	58	PRESCOTT	ST.	CLAFLIN BLOCK	CA	1882	A2	

621	72-82	PRESCOTT	ST.	SOUTHWICK BLOCK	CA	1879	A1	
622								
623	86	PRESCOTT	ST.	OLD LOWELL NAT.B	CA	1928	B	
624								
625	44	RACE	ST.	J.C. WOODWARD HS	CA	1846	A1	
626								
627	91	RIVERSIDE	ST.	A.T.SAFFORD HSE.	CA	1893	A2	
628								
629	10	RIVERSIDE	ST.	GULF STATION *	CA	1947	D	
630								
631	22	RIVERSIDE	ST.	COBURN BLOOD HSE	CA	1825	A1	
632								
633	28	RIVERSIDE	ST.	MARSHALL HOUSE	CA	1835	A2	
634								
635	36	RIVERSIDE	ST.	E.PARK HOUSE	CA	1908	B	
636								
637	40-42	RIVERSIDE	ST.	A.A.MARSHALL	CA	1915	B	
638								
639	48	RIVERSIDE	ST.	C.A.BASSETT HSE.	CA	1895	B	
640								
641	52	RIVERSIDE	ST.	J.PHILBRIDGE HSE	CA	1835	A2	
642								
643	66	RIVERSIDE	ST.	E.BARRETTE HOUSE	CA	1912	B	
644								
645	70-72	RIVERSIDE	ST.	C.J.WILSON HOUSE	CA	1912	C	
646								
647	92	RIVERSIDE	ST.	S.COBURN HOUSE	CA	1865	B	
648								
649	23	ROGERS	ST.	J.M.G.PARKER BDG	CA	1898	A2	
650								
651	75	ROGERS	ST.	AMER.HYDE CO.BDG	CA	1915	B	
652								
653	81	ROGERS	ST.	BELVIDERE CAR *	CA	1967	D	
654								
655	85	ROGERS	ST.	E.CAWLEY HOUSE	CA	1900	A2	
656								
657	90	ROGERS	ST.	U.S.BOBBIN CO.	CA	1900	B	
658								
659	23	SCHOOL	ST.	N.CANAL GATE, HS	CA	1847	A1	
660								
661	25 R	SCHOOL	ST.	LOCKS & C. BT.HS	CA	1887	A2	
662								
663	29-31	SCHOOL	ST.	D.W.LANE HOUSE	CA	1908	B	
664								
665	41	SCHOOL	ST.	C. KEILHOUSE	CA	1908	B	
666								
667	49-51	SCHOOL	ST.	AN ALLARD BLDG.	CA	1908	B	
668								
669	191	SCHOOL	ST.	BRIDGES CARPET *	CA	1930	C	
670								
671		SCHOOL	ST.	LOWELL GAS BDG.3	CA	1865	A1	
672								
673		LOWELL GS	CO.	PURIFYING HOUSE	CA	1872	A1	
674								
675		LOWELL GS	CO.	COAL SHED	CA	1902	A2	
676								
677		LOWELL GS	CO.	A GASWORKS BLDG.	CA	1920	A2	
678								
679	5	SHAFFER	ST.	M.HAMILTON HSE.	CA	1882	B	

421	9	SHAFFER	ST.	J.KELLEY HOUSE	CA	1892	B
422	17	SHAFFER	ST.	F.G.BEHARRELL HS	CA	1887	B
423	23	SHAFFER	ST.	J.PILLING FACTRY	CA	1920	A2
424	33	SHAFFER	ST.	J.PILLING FACTRY		1893	A2
425	39	SHAFFER	ST.	J.B.PILLING HS	CA	1892	A2
426	43	SHAFFER	ST.	J.HOLDEN HOUSE	CA	1892	B
427	9-13	SHATTUCK	ST.	BOUTWELL BLDG.	CA	1861	A2
428	25	SHATTUCK	ST.	MACK BUILDING		1836	A2
429	27	SHATTUCK	ST.	LOWELL CARD CO.	CA	1871	D
430	15	SHATTUCK	ST.	SAVINGS BANK BD.		1845	A1
431	22	SHATTUCK	ST.	LOWELL GAS L.CO.		1859	A1
432	17-19	SOUTH	ST.	LOWELL AUTO BODY	CA	1930	D
433	24-26	SOUTH	ST.	(UNION MARKET)			NA
434	17&19	SPRING	ST.	HUNT BUILDING	CA	1885	A2
435	50	STACKPOLE	ST.	WHITTIER MILLS	CA	1890	A2
436	82	STACKPOLE	ST.	GARAGE	CA	1940	C
437		STACKPOLE	ST.	NURSES'RESIDENCE	CA	1940	C
438		STACKPOLE	ST.	BOILER HOUSE	CA	1945	C
439		STACKPOLE	ST.	BOILER HSE. ADD.	CA	1970	C
440	13	SUFFOLK	ST.	THREE COPPER MEN	CA	1965	D
441	25	SUFFOLK	ST.	PARKING LOT			NA
442	38	SUFFOLK	ST.	A.D.REDDING BLDG	CA	1908	D
443	46	SUFFOLK	ST.	(FOSS HOUSE)			NA
444	46	SUFFOLK	ST.	(FOSS HOUSE)			NA
445	52	SUFFOLK	ST.	MCARTHUR HOUSE		1845	A2
446	62	SUFFOLK	ST.	M.KEEFE HOUSE	CA	1895	B
447	66	SUFFOLK	ST.	A KEEFE BUILDING	CA	1893	B
448	74-76	SUFFOLK	ST.	TAYLOR HOUSE	CA	1847	A1
449	84	SUFFOLK	ST.	E.GATES HOUSE	CA	1857	A1
450	92	SUFFOLK	ST.	COFFEY HOUSE	CA	1876	A1
451	120	SUFFOLK	ST.	A.SSONIS HOUSE	CA	1910	A2
452							
453	166	SUFFOLK	ST.	A COFFEY BROS.BD	CA	1857	A2
454							
455	168-72	SUFFOLK	ST.	RICHARDSON HOUSE	CA	1847	A2
456	184	SUFFOLK	ST.	S.S.FISHER HOUSE	CA	1847	A2
457	192-94	SUFFOLK	ST.	C.MURPHY BLDG.	CA	1895	A2
458	244-52	SUFFOLK	ST.	MATHERS HOUSE	CA	1838	A1
459	262	SUFFOLK	ST.	ST.PATRICK RECTY	CA	1920	B
460	284	SUFFOLK	ST.	ST.PATRICK CHRCH		1853	A1
461	312-50	SUFFOLK	ST.	N.COMMON HOUSING		1939	C
462	408	SUFFOLK	ST.	D.J.MURPHY BLDG.	CA	1898	C
463	432	SUFFOLK	ST.	LAW OFFICES	CA	1970	C
464		THOMAS	ST.	E.A.WILSON CO.	CA	1950	NA
465	5-27	THORNDIKE	ST.	UNDEVELOPED LOT			NA
466	9-37	VARNUM	AVE	GEORGE'S REST. *	CA	1915	C
467	35	VARNUM	AVE	P.S.COBURN HOUSE	CA	1872	A2
468	49	VARNUM	AVE	J.J.COLTON HOUSE		1871	A2
469	65	VARNUM	AVE	G.COBURN HOUSE	CA	1872	B
470	71	VARNUM	AVE	F.A.LAMOREAUX HS		1912	B
471	81-83	VARNUM	AVE	COL.VARNUM HOUSE	CA	1838	A1
472	89	VARNUM	AVE	A. VARNUM HOUSE	CA	1857	B
473	101	VARNUM	AVE	KALERGIS HOUSE *	CA	1948	C
474	113	VARNUM	AVE	CHURCH PARSONAGE		1847	B
475	123	VARNUM	AVE	POLIANITES HSE.*	CA	1940	B
476	131	VARNUM	AVE	J. MORSE HOUSE	CA	1855	B
477	139	VARNUM	AVE	D'AMOUR HOUSE *	CA	1960	C
478	145	VARNUM	AVE	LAPOINTE HOUSE *	CA	1960	C
479	12	WALKER	ST.	CHANDLER HOUSE *	CA	1950	C
480	16	WALKER	ST.				C
481	22	WALKER	ST.	J.GAFFNEY HOUSE	CA	1882	B
482	28	WALKER	ST.	VACANT LOT			NA

603	32	WALKER	ST.	VACANT LOT				NA
604	38	WALKER	ST.	VACANT LOT				NA
605	79	MANSALNCT	ST.	BARTLETT SCHOOL		1958		C
606	164	WARREN	ST.	E.CAWLEY HSE.	CA	1898		B
607	168	WARREN	ST.	ZIEMSO HOUSE	CA	1920		B
608	172	WARREN	ST.	MIDDLESEX M. HSE	CA	1838		A1
609	275-85	WESTERN	AVE	N.&L.FREIGHT DEP	CA	1865		A2
610	6-80	WESTERN	AVE	VACANT LOT				NA
611	122-94	WESTERN	AVE	MASS.MOHAIR MILL	CA	1908		A2
612	122-94	WESTERN	AVE	MASS.MOHAIR OFF.	CA	1918		A2
613	122-94	WESTERN	AVE	CORAM BLOCK	CA	1898		A2
614	122-94	WESTERN	AVE	JOAN FABRICS & *	CA	1920		B
615	122-94	WESTERN	AVE	JOAN FABRICS S *	CA	1910		B
616	122-94	WESTERN	AVE	WEAVING BUILDING	CA	1915		B
617	194 W	WESTERN	AVE	VACANT LOT				NA
618	12	WHITE	ST.	VACANT LOT	VAC	&		NA
619	143	WORTHEN	ST.	OLD WORTHEN TAV*	CA	1834		A1
620	169	WORTHEN	ST.	HADLEY'S STABLE		1877		A2
621	205	WORTHEN	ST.	J.KELTY HOUSE	CA	1870		A2
622	213-17	WORTHEN	ST.	(BAPTIST CHURCH)				NA
623	243	WORTHEN	ST.	WHISTLER HOUSE	CA	1825		A1
624	152	WORTHEN	ST.	(SPARKS STABLES)				NA
625	250	WORTHEN	ST.	METHODIST CHURCH		1841		A1
626	222-24	WORTHEN	ST.	S. ASHTON HOUSE	CA	1858		A1
627	228	WORTHEN	ST.	EDUCATIONAL CLUB	CA	1848		A2
628	258	WORTHEN	ST.	ELEC. SUBSTATION		1961		C
629	266	WORTHEN	ST.	LOCKS & C. HSE	CA	1855		A2
630	284	WORTHEN	ST.	E.DOUGLASS HOUSE		1848		A1

1000	APPLETON	MFG CO	MILL NO.		CA	1914		A2
1001	APPLETON	MFG CO	MILL NO.		CA	1912		A2
1002	APPLETON	MFG CO	DYE HOUSE			1909		A2
1003	APPLETON	MFG CO	MILL NO.		CA	1908		A2
1004	APPLETON	MFG CO	MILL NO.		CA	1902		A2
1005	APPLETON	MFG CO	OFFICE BLDG.		CA	1902		A2
1006	APPLETON	MFG CO	NO. 1 COTTON HSE		CA	1901		A2
1007	APPLETON	MFG CO	*NEW MILL*			1873		A1
1008	APPLETON	MFG CO	NO. 5 EXTENSION			1918		A2
1009	APPLETON	MFG CO	MILL		CA	1895		A2
1010	APPLETON	MFG CO	BUILDING NO. 7			1915		A2
1011	APPLETON	MFG CO	STABLE			1918		A2
1012	APPLETON	MFG CO	(COAL POCKET)					NA
1013	APPLETON	MFG CO	BOILER H.& TURB.		CA	1915		A2
1014	BELVIDERE	MFG CO	(MILL NO. 1)					NA
1015	BELVIDERE	MFG CO	(CO. STOREHOUSE)					NA
1016	BELVIDERE	MFG CO	MILL NO. 2			1862		A2
1017	BELVIDERE	MFG CO	STOREHOUSE.NO.2			1862		A2
1018	BELVIDERE	MFG CO	BOILER HOUSE # 2		CA	1890		A2
1019	BELVIDERE	MFG CO	2ND STOREHSE.# 2		CA	1895		B
1020	BODTT	MILL	COUNTING HOUSE			1835		A1
1021	BODTT	MILL	NO. 1 MILL			1835		A1
1022	BODTT	MILL	NO 1&2 CONNECTOR			1865		A1
1023	BODTT	MILL	NO. 2 MILL			1835		A1
1024	BODTT	MILL	NO. 3 MILL			1836		A1
1025	BODTT	MILL	NO 3&4 CONNECTOR			1865		A1

1024	BOOTT	MILL	NO. 4 MILL	CA	1837	A1	
1026	BOOTT	MILL	ADDITION TO # 4		1839	A1	
1027	BOOTT	MILL	NO. 5 MILL E & W		1847	A1	
1028	BOOTT	MILL	NO. 6 MILL		1871	A1	
1029	BOOTT	MILL	NO. 7 MILL	CA	1865	A1	
1030	BOOTT	MILL	NO. 8 MILL		1865	A1	
1031	BOOTT	MILL	NO. 9 MILL		1865	A1	
1032	BOOTT	MILL	NO. 9,PICKER HSE	CA	1868	A1	
1033	BOOTT	MILL	COTTON STORE. #1		1879	A2	
1034	BOOTT	MILL	COTTON STORE. #2		1900	B	
1035	BOOTT	MILL	COTTON STORE. #3		1835	A1	
1036	BOOTT	MILL	(BOARDING HOUSE)			NA	
1037	BOOTT	MILL	(BOARDING HSES.)			NA	
1038	BOOTT	MILL	SIRK'S BLOCK		1832	A2	
1039	BOOTT	MILL	MERRIMACK GARAGE	CA	1925	D	
1040	BOOTT	MILL	BRIDGES, FIXTURES			A1	
1041	MERRIMACK R.		AIKEN ST. BRIDGE		1851	A1	
1042	MERRIMACK R.		CENTRAL BRIDGE		1937	A2	
1043	PAWTUCKET CAN		NEW BROADWAY BR.		1919	B	
1044	WESTERN CAN		OLD STONE BRIDGE		1831	A1	
1045	CONCORD R.		CHURCH ST. BRIDGE		1857	A1	
1046	MERRIMACK CAN		MERRIMACK ST BR.		1848	A1	
1047	PAWTUCKET CANA		RED BRIDGE (RR)		1884	A2	
1048	EASTERN CAN		PRESCOTT RR BR.		1898	A2	
1049	CONCORD R.		ROGERS ST. BRIDGE		1884	A2	
1050	PAWTUCKET CAN		SCHOOL ST. BR.		1911	B	
1051	(CHASE & FAULKNER		MILLS SITE)	CA	1881	NA	
1052	HAMILTON	MFG CO	MILL NO.4		1845	A1	
1053	HAMILTON	MFG CO	MILL NO.6		1881	A1	
1054	HAMILTON	MFG CO	MILL NO.7		1911	A2	
1055							
1056	HAMILTON	MFG CO	WHEEL HOUSE	CA	1934	A1	
1056							
1057	HAMILTON	MFG CO	STOREHOUSE	CA	1865	A1	
1057							
1058	HAMILTON	MFG CO	COUNTING HOUSE	CA	1870	A1	
1058							
1059	HAMILTON	MFG CO	BLUE DYE HOUSE		1883	A2	
1059							
1060	HAMILTON	MFG CO	PACKING RM.BLDG.	CA	1866	B	
1060							
1061	HAMILTON	MFG CO	(STOREHSE. NO.3)			NA	
1061							
1062	HAMILTON	MFG CO	(BOARDING HSES.)			NA	
1062							
1063	HAMILTON	MFG CO	LOWELL EL.LIGHT		1907	C	
1063							
1064	HAMILTON	MFG CO	(BOILER HOUSE)		1907	NA	
1064							
1065	HAMILTON	MFG CO	(STOREHOUSE #3)			NA	
1065							
1066	LAWRENCE	MFG CO	OFFICE		1877	A1	
1066							
1067	LAWRENCE	MFG CO	MILL NO. 3		1832	A1	
1067							
1068	LAWRENCE	MFG CO	MILL NO. 7		1854	A1	
1068							
1069	LAWRENCE	MFG CO	MILL NO. 4		1832	A1	
1069							
1070	LAWRENCE	MFG CO	MILL NO. 8		1861	A1	
1070							
1071	LAWRENCE	MFG CO	MILL NO. 9		1870	A2	
1071							
1072	LAWRENCE	MFG CO	MILL NO. 10		1874	A2	
1072							
1073	LAWRENCE	MFG CO	MILL NO. 11		1855	A2	
1073							
1074	LAWRENCE	MFG CO	MILL NO. 12		1907	A2	
1074							
1075	LAWRENCE	MFG CO	STOREHOUSE NO.10	CA	1868	A2	
1075							
1076	LAWRENCE	MFG CO	STOREHOUSE NO.12		1891	A2	
1076							
1077	LAWRENCE	MFG CO	STOREHOUSE NO.14		1876	A2	
1077							
1078	LAWRENCE	MFG CO	MILL NO.2 ANNEX	CA	1882	A2	
1078							
1079	LAWRENCE	MFG CO	NO. 1 ENGINE HSE		1892	A2	
1079							
1080	LAWRENCE	MFG CO	NO. 2 ENGINE HSE		1876	A2	
1080							
1081	LAWRENCE	MFG CO	BOILER HOUSE		1873	A2	
1081							
1082	LAWRENCE	MFG CO	BLEACHERY		1876	A2	
1082							
1083	LAWRENCE	MFG CO	MILL NO. 6		1855	A2	
1083							
1084	AMES TEX. CORP		LOADING PLATFORM	CA	1933	D	
1084							
1085	LAWRENCE	MFG CO	SHOPS & STABLE	CA	1833	A1	

004	LAWRENCE	MFG CO	LOCOMOTIVE HOUSE	CA	1901		A2
006	LAWRENCE	MFG CO	COMBER BUILDING		1905		A2
007	LAWRENCE	MFG CO	WARPER BUILDING		1883		A2
008	LAWRENCE	MFG CO	YARN DYEING BLDG		1883		A2
009	LAWRENCE	MFG CO	BRIDGES				NA
010	LAWRENCE	MFG CO	LOWELL PRESS CO	CA	1970		C
011	LAWRENCE	MFG CO	AGENT'S HOUSE		1833		A1
092	LAWRENCE	MFG CO	(BOARDING HSES.)	CA	1970		NA
093	LAWRENCE	MFG CO	STOREHOUSE D		1882		S
094	LOWELL	MCH SH	BUILDING NO.14		1920		S
095	LOWELL	MCH SH	BUILDING NO.15		1923		S
096	LOWELL	MCH SH	BUILDING NO.16		1923		S
097	LOWELL	MCH SH	(MACHINE SHOP)				NA
098	LOWELL	MCH SH	FELLON CORP.	CA	1967		D
099	LOWELL	MCH SH	FELLON CORP BLDG		1965		D
100	LOWELL	MCH SH	FELLON CORP.BDG	CA	1967		D
101	LOWELL	MCH SH	FELLON CORP.BG.	CA	1967		D
102	LOWELL	MFG CO	BRUSSELS WEAVE M		1882		A1
103	LOWELL	MFG CO	NO.2 WEAVE MILL		1902		A2
104	LOWELL	MFG CO	ENGINE HOUSE		1882		A2
105	LOWELL	MFG CO	WORSTED MILL		1906		A2
106	LOWELL	MFG CO	COTTON F.FOU.HSE		1910		A2
107	LOWELL	MFG CO	COAL POCKET	CA	1900		A1
108	LOWELL	MFG CO	BOILER HOUSE		1899		A1
109	LOWELL	MFG CO	WOOL HSE..SCOUR.		1906		A2
110	LOWELL	MFG CO	WOOL WASHING BG.		1900		A2
111	LOWELL	MFG CO	DYE HOUSE		1911		A2
112	LOWELL	MFG CO	BIG.LOWELL BG#10		1909		A2
113	LOWELL	MFG CO	(BIG.LOW. BG.#8)				NA
114	LOWELL	MFG CO	MARKET ST.PARK.C				C
115	LOWELL	MFG CO	WAMESIT COURT	CA	1828		A1
116	MASS.COT. MILLS		MILL #1 SECT.#1		1839		A1
117	MASS.COT. MILLS		MILL #1.SECT.#6		1862		A1
118	MASS.COT. MILLS		MILL #1.SECT.#2		1839		A1
119	MASS.COT. MILLS		MILL #1.SECT.#7		1872		A2
120	MASS.COT. MILLS		MILL #2.SECT.#3		1839		A1
121	MASS.COT. MILLS		MILL #2.SECT.#5		1851		A1
122	MASS.COT. MILLS		MILL #2.SECT.#4		1848		A1
123	MASS.COT. MILLS		POWER HSE..SECT8		1856		A1
124	MASS.COT. MILLS		PICKER HSE..SEC9		1891		A2
125	MASS.COT. MILLS		PICKER HSE.SEC10		1904		A2
126	MASS.COT. MILLS		PICKER HSE.SEC11		1910		A2
127	MASS.COT. MILLS		WAPPING BLDG.#12		1911		B
128	MASS.COT. MILLS		CLOTH RM. BG.#15		1893		B
129	MASS.COT.MILLS		WASTE HOUSE		1904		B
130	MASS.COT. MILLS		MAIN POWER HOUSE		1909		A1
131	MASS.COT. MILLS		BOILER HOUSE B		1909		A1
132	MASS.COT. MILLS		(BOILER HOUSE A1				NA
133	MASS.COT. MILLS		STOREHOUSE C		1910		B
134	MASS.COT. MILLS		BRIDGE.CONTROLS		OTH		NA
135	MASS.COT. MILLS		BOARDING HSE.ROW		1839		A1
136	RICHMOND MILLS		LOWELL C.LAUNDRY	CA	1870		B
137	RICHMOND MILLS		STOREHOUSE	CA	1847		A2
138	RICHMOND MILLS		SITE				NA
139	MERRIMACK MFG CO		UNION NAT.BANK *		1967		C
140	MERRIMACK MFG CO		MERRIMACK APTS.*	CA	1970		C
141	MIDDLESEX MFG CO		(MIDDLESEX MFG.)				NA
142	MIDDLESEX MFG CO		W.H.BAGSHAW CO.	CA	1900		B
143	PRESCOTT MFG CO		(PRESCOTT MILLS)				NA
144	LOCKS AND CANALS		MACHERAS MART *	CA	1962		NA

STIRLING	MILLS	MILL & OFFICE		1888	A1
STIRLING	MILLS	CARBONIZING BLDG		1907	A2
STIRLING	MILLS	STOREHOUSE		1897	A1
SUFFOLK	MFG CO	COUNTING HOUSE		1831	A1
SUFFOLK	MFG CO	MACHINE SHOP		1900	A2
SUFFOLK	MFG CO	MILL NO. 5		1862	A2
SUFFOLK	MFG CO	MILL NO. 6	CA	1845	A2
SUFFOLK	MFG CO	MILL NO. 8		1880	A2
SUFFOLK	MFG CO	MILL NO.10 & ANX		1896	A2
SUFFOLK	MFG CO	BOARDING HOUSE		1831	A1
SUFFOLK	MFG CO	BOILER HOUSE #2	CA	1879	A2
SUFFOLK	MFG CO	SUFFOLK ROWHOUSE	CA	1847	A1
TREMONT	MILLS	MILL #2 WHEEL HO.		1862	B
TREMONT	MILLS	WEAVE SHED	CA	1910	B
TREMONT	MILLS	(MILLYARD)			NA
SUFFOLK	MFG CO	AUTO GARAGE *	CA	1948	C
WHIPPLE'S	MILLS	WHIPPLE MILL	CA	1821	A1
WHIPPLE'S	CANAL	WAMESIT CANAL *	CA	1821	A1

1500	EASTERN CANAL	WASTE GATEHO.	1862
1501	EASTERN CANAL	BOOTT DAM	1835,1848,1878,1892
1502	EASTERN CANAL	BOOTT PENSTOCK	1835
1503	HAMILTON CANAL	GUARD GATES	1853
1504	HAMILTON CANAL	WASTEWAY GATEHOUSE	1872
1505	MERRIMACK CANAL	GUARD GATES	1847
1506	MERRIMACK CANAL	YMCA GATES	1922
1507	MERRIMACK CANAL	MOODY FEEDER GATEHO	1845
1508	MERRIMACK CANAL	WASTE DAM	
1509	MERRIMACK CANAL	ROLLING DAM	1835
1510	NORTHERN CANAL	GUARD GATES	1847
1511	NORTHERN CANAL	GREAT RIVER WALL	1847
1512	NORTHERN CANAL	WASTE GATES	1847
1513	PAWTUCKET DAM		1847, 1875
1514	PAWTUCKET CANAL	FRANCIS GATE	1848, 1850
1515	PAWTUCKET CANAL	GUARD LOCKS GATEHO.	1870
1516	PAWTUCKET CANAL	GUARD LOCKS LOCKHOUSE.	1881
1517	PAWTUCKET CANAL	SWAMP LOCKS & DAM	1839,1859,1892, 1942,1946
1518	PAWTUCKET CANAL	LOWER LOCKS & DAM	1941-43,1887,1905, 1946,1958
1519	WESTERN CANAL	GUARD GATES	1848
1520	WESTERN CANAL	TREMONT GATE HOUSE	1855
1521	WESTERN CANAL	HICKEY MALL DAM	1845
1522	WESTERN CANAL	LAWRENCE DAM	CA 1845

INDEX OF PROPERTIES

Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Moore Hadar Team

September 1977

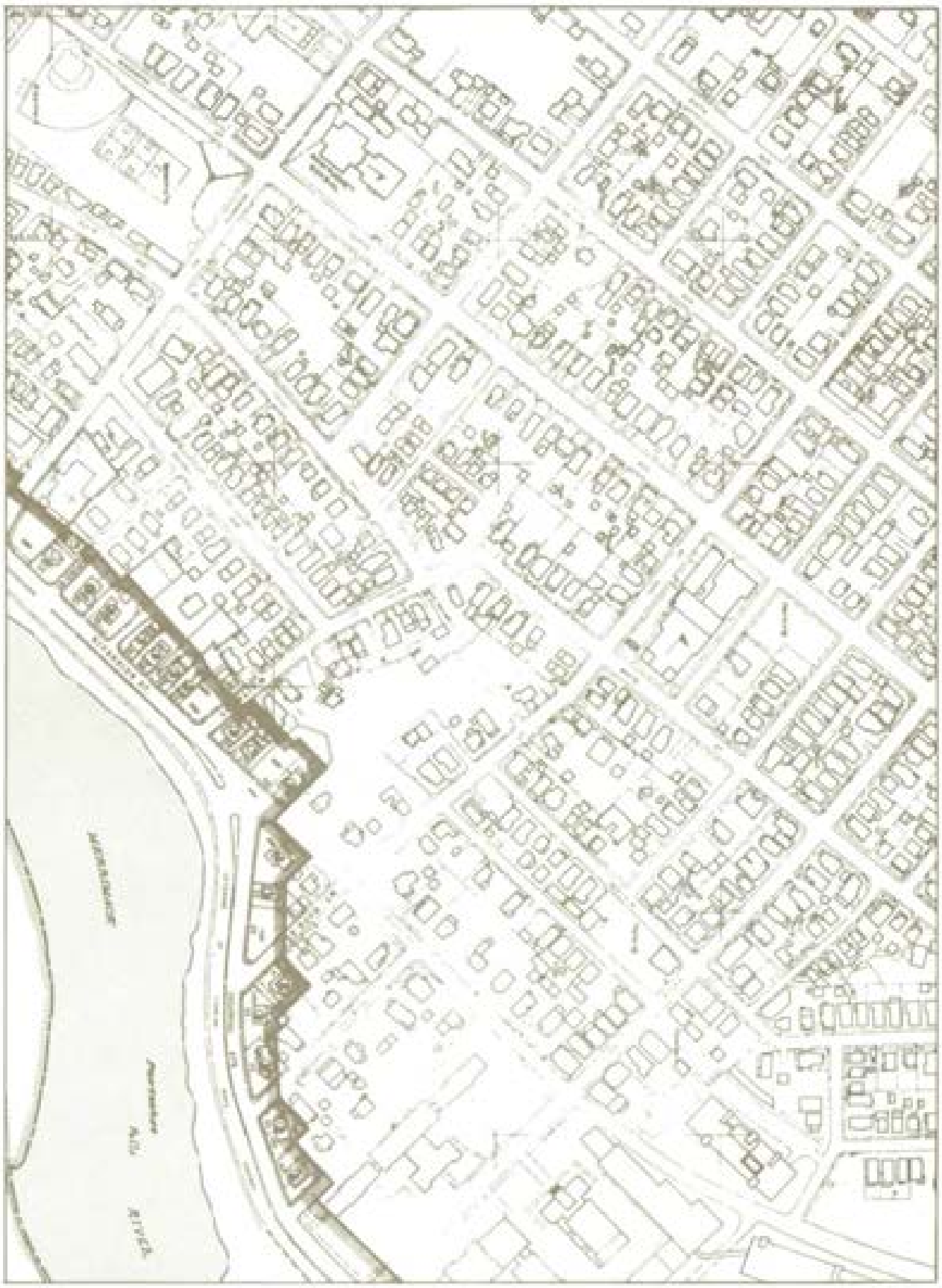
INDEX

Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Moore Heder Team

September 1981

Sheet 1 of 17



INDEX

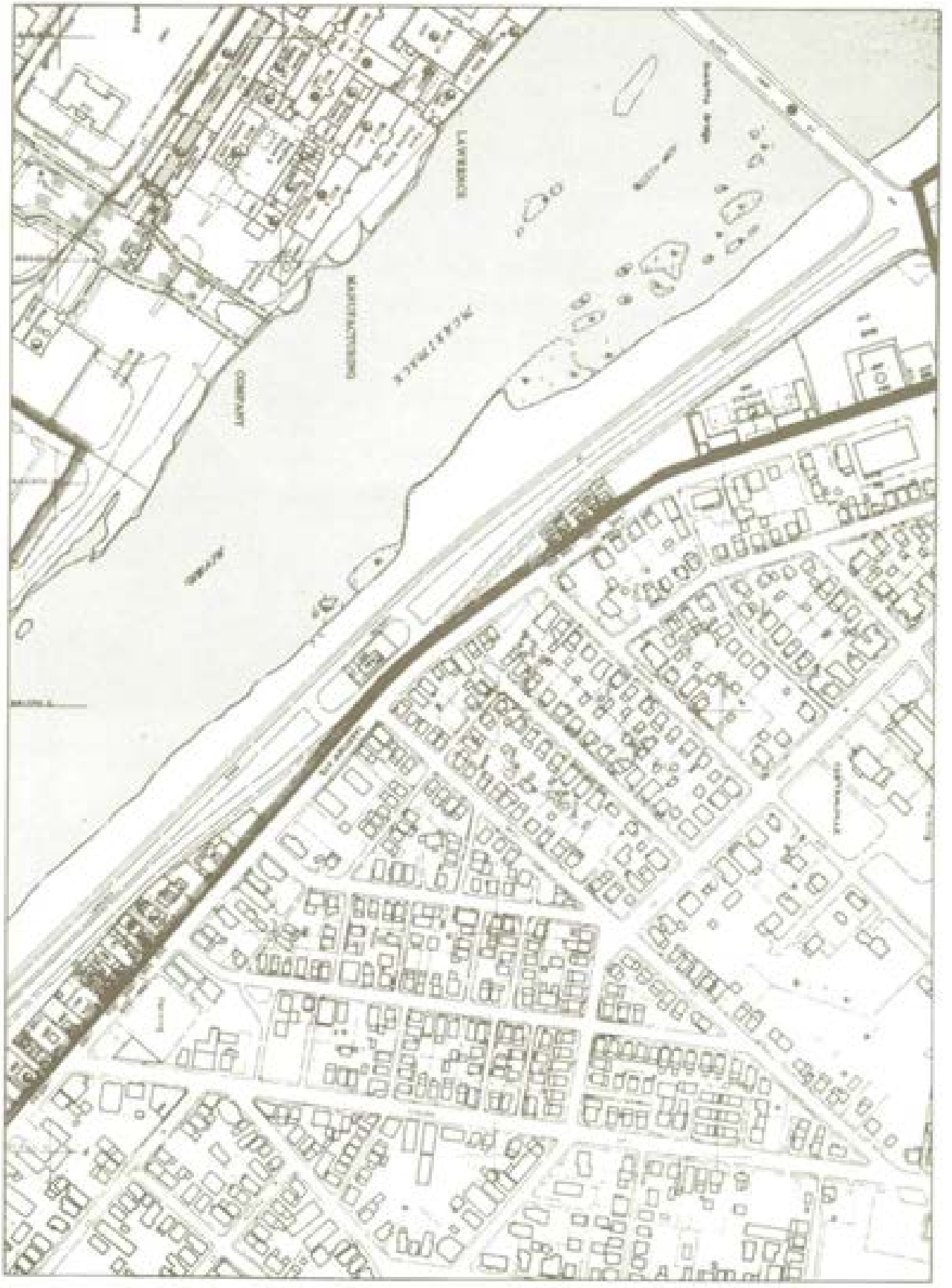
Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Mason Hafer Team

Sheet 2 of 17

INDEX
Lowell National Historical Park and Preservation District
prepared for the Lowell Historic Preservation Commission by the Moore Haley Team

Sheet 3 of 17

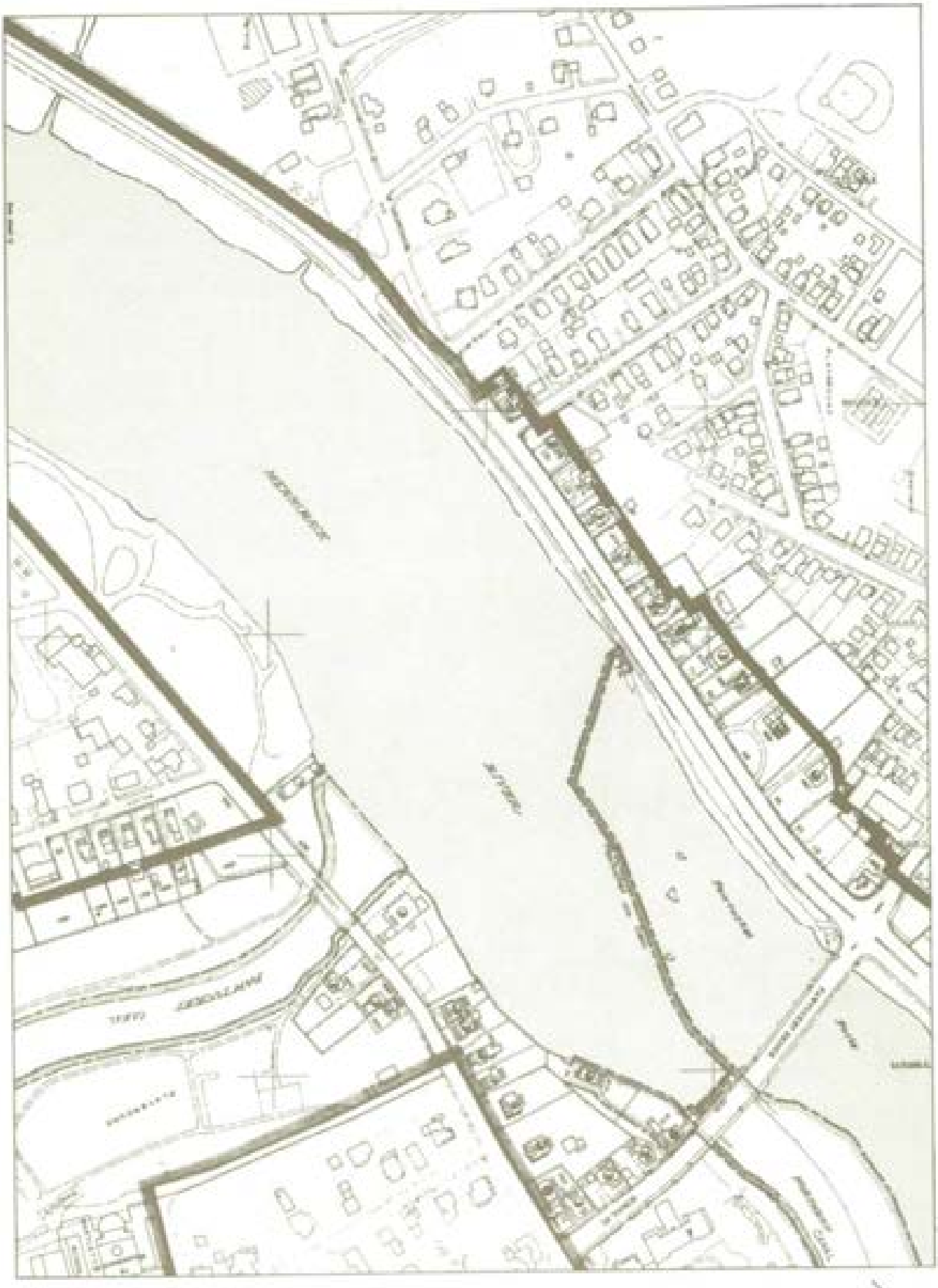


INDEX

Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Moore Heder Team

Sheet 4 of 17

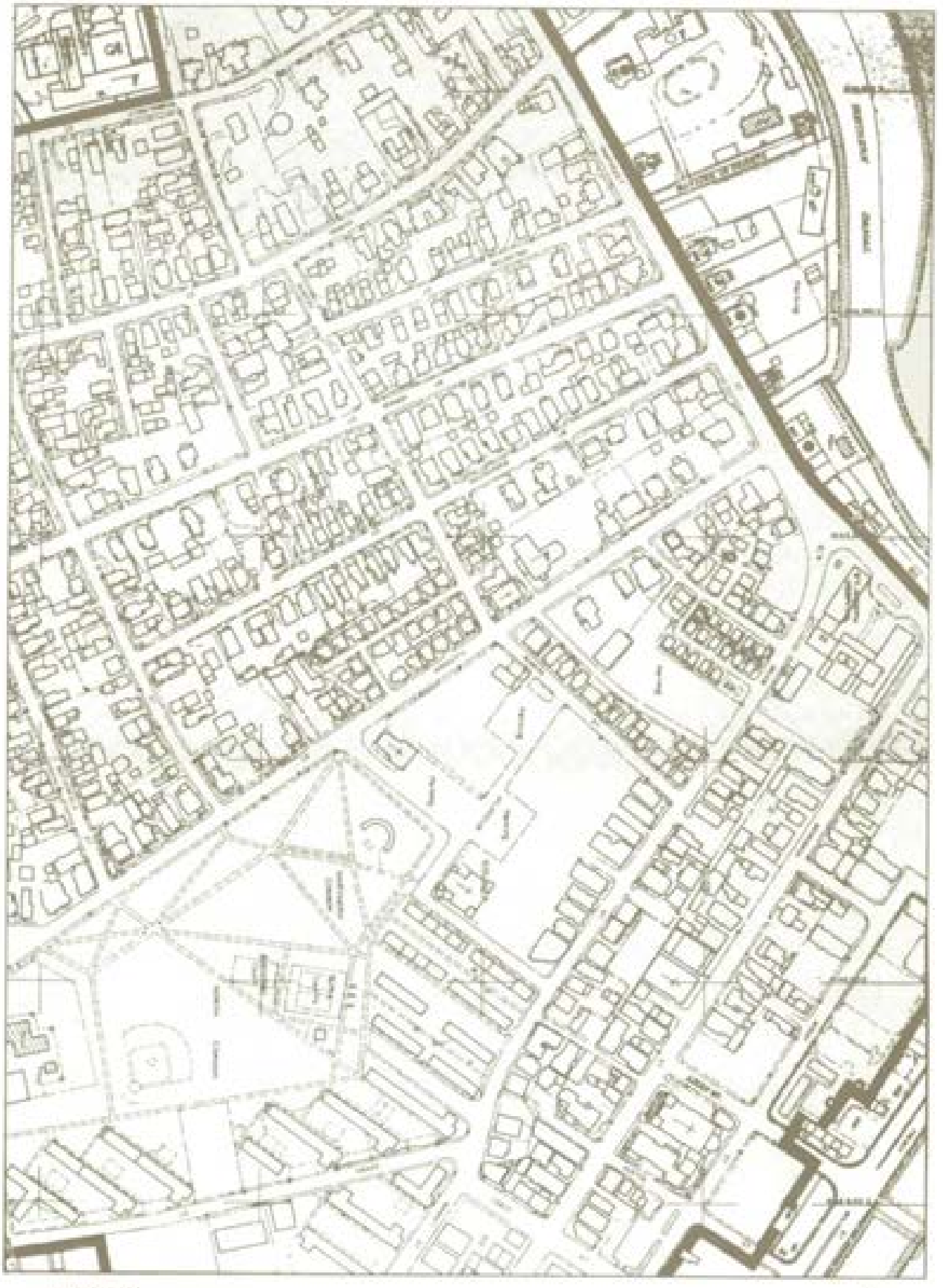


INDEX

Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Moore Haller Team

Sheet 5 of 17

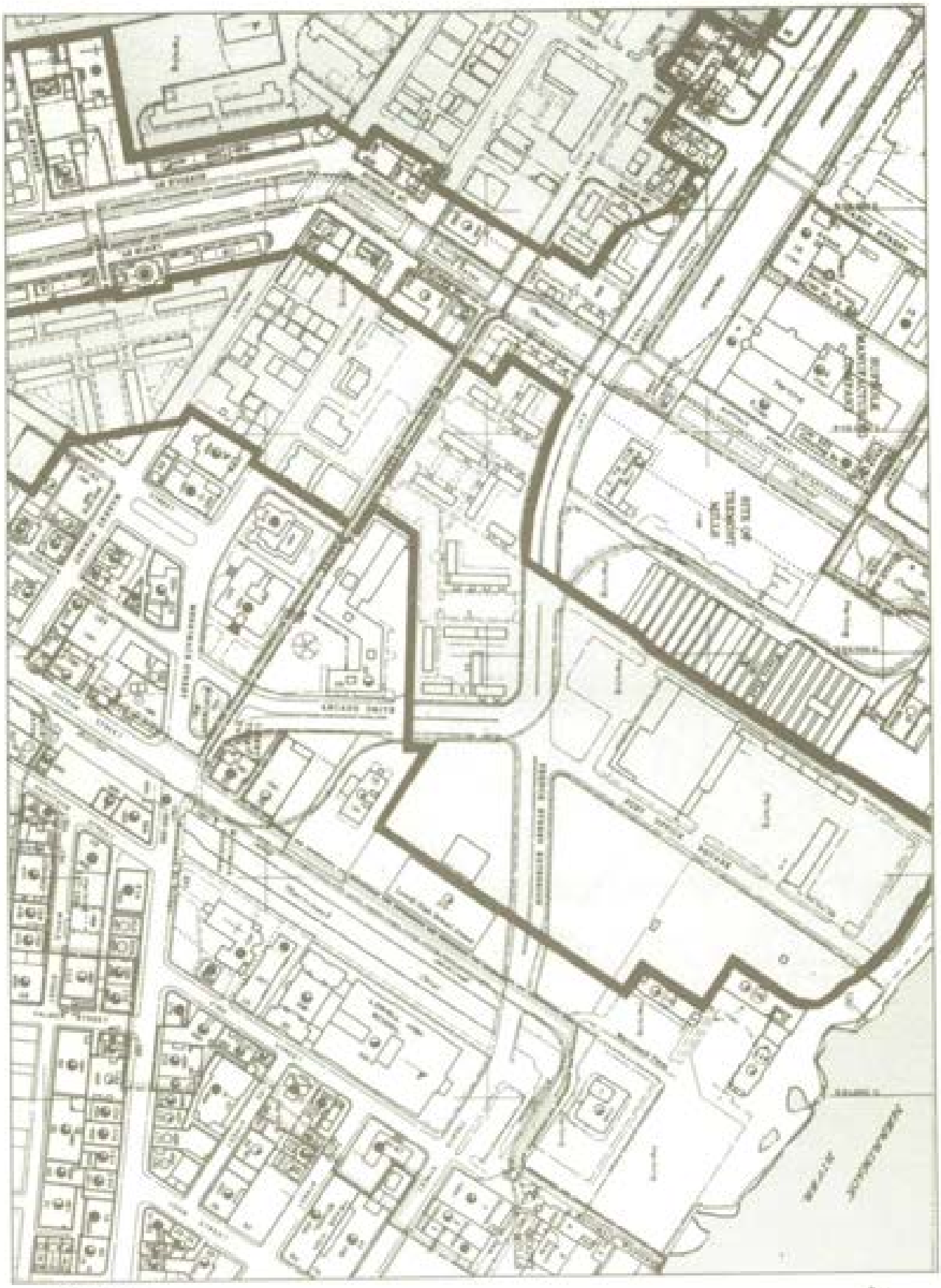


INDEX

Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Moore Heder Team

Sheet 6 of 17



INDEX

Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Minor Heller Team

September 1981

Sheet 7 of 17

INDEX

Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Moore Heder Team

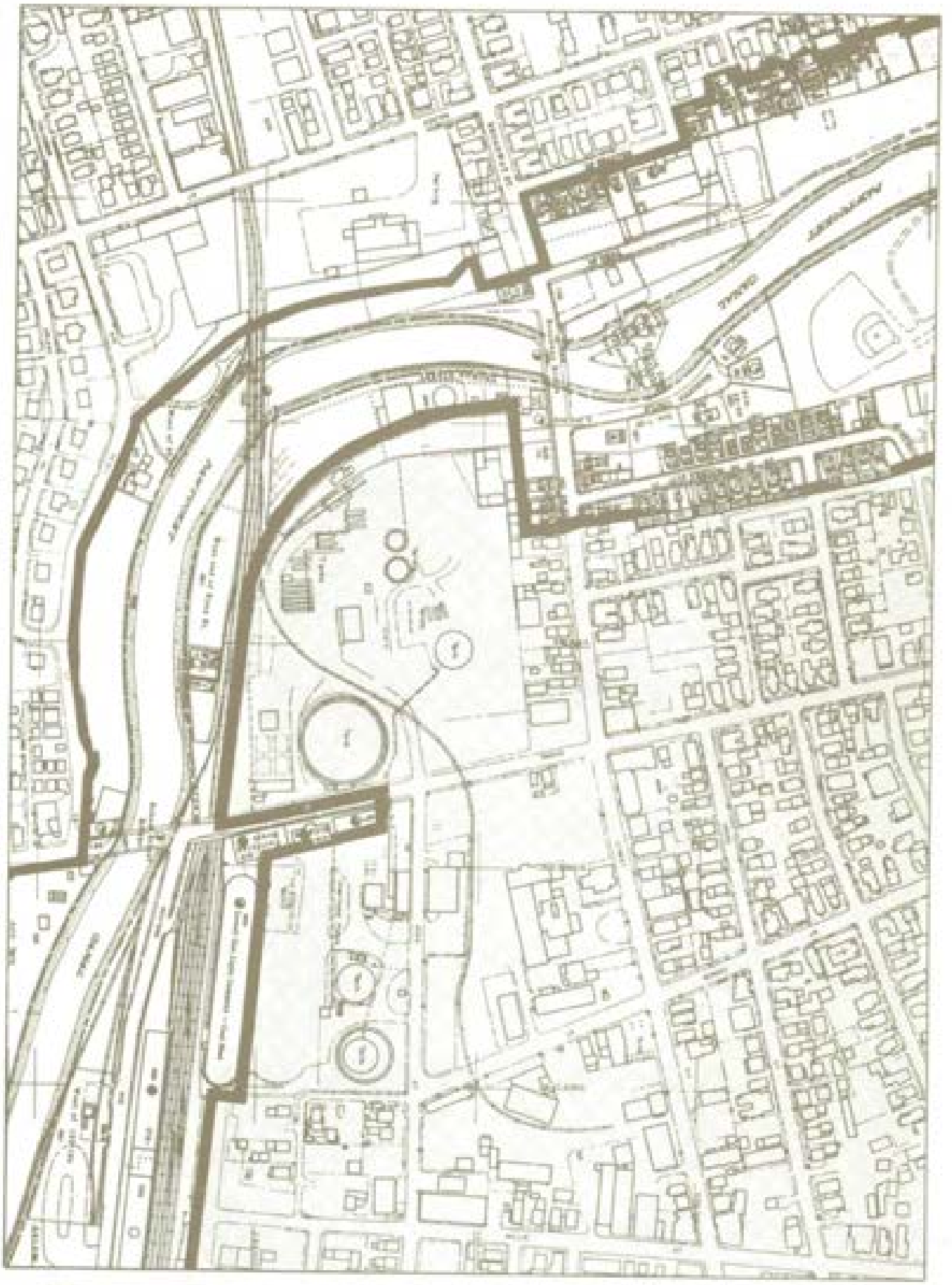
INDEX

Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Moore Rader Team

September 1981

Sheet 9 of 17

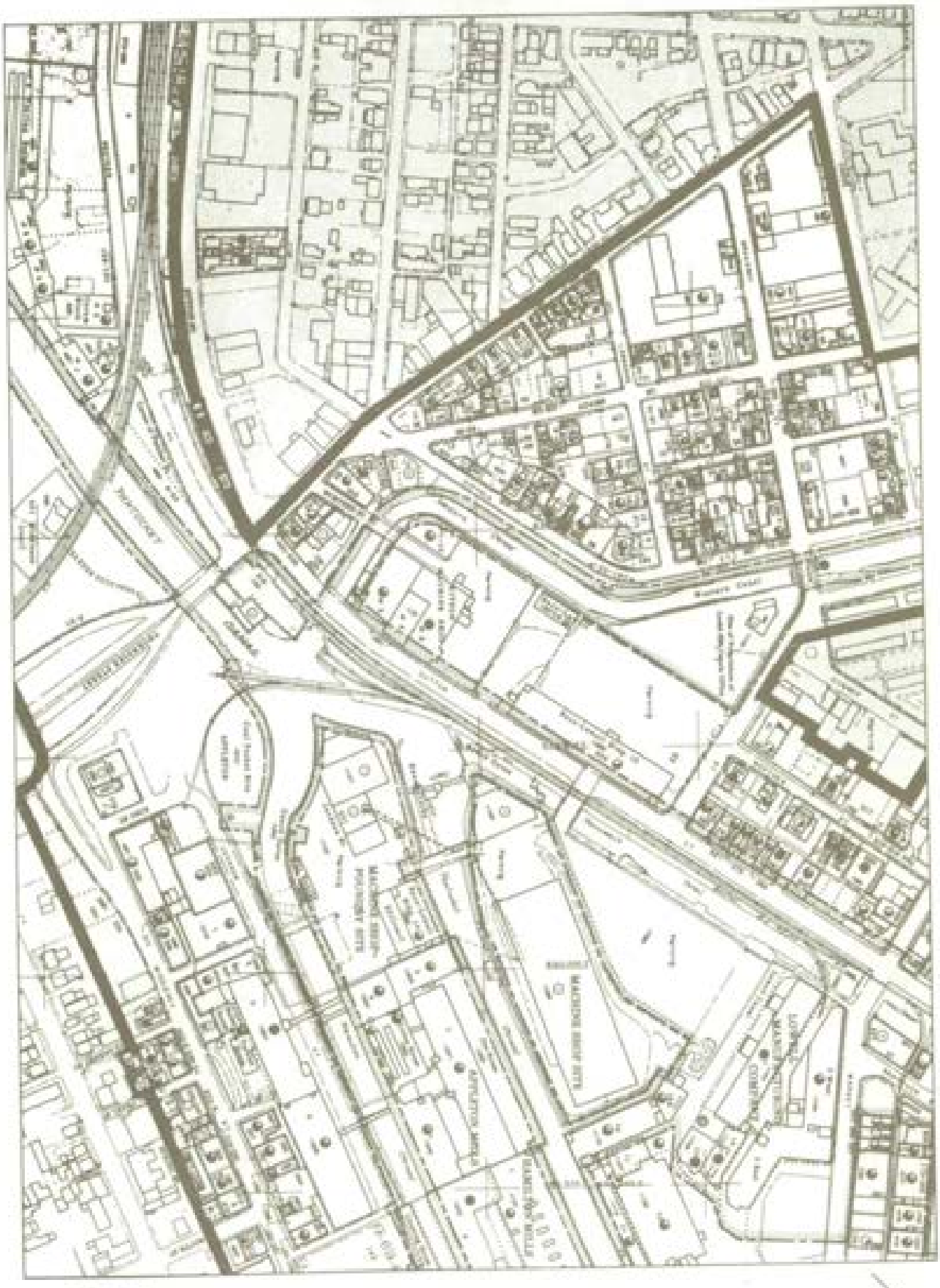


INDEX
Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Moore Heder Team

September 1981

N



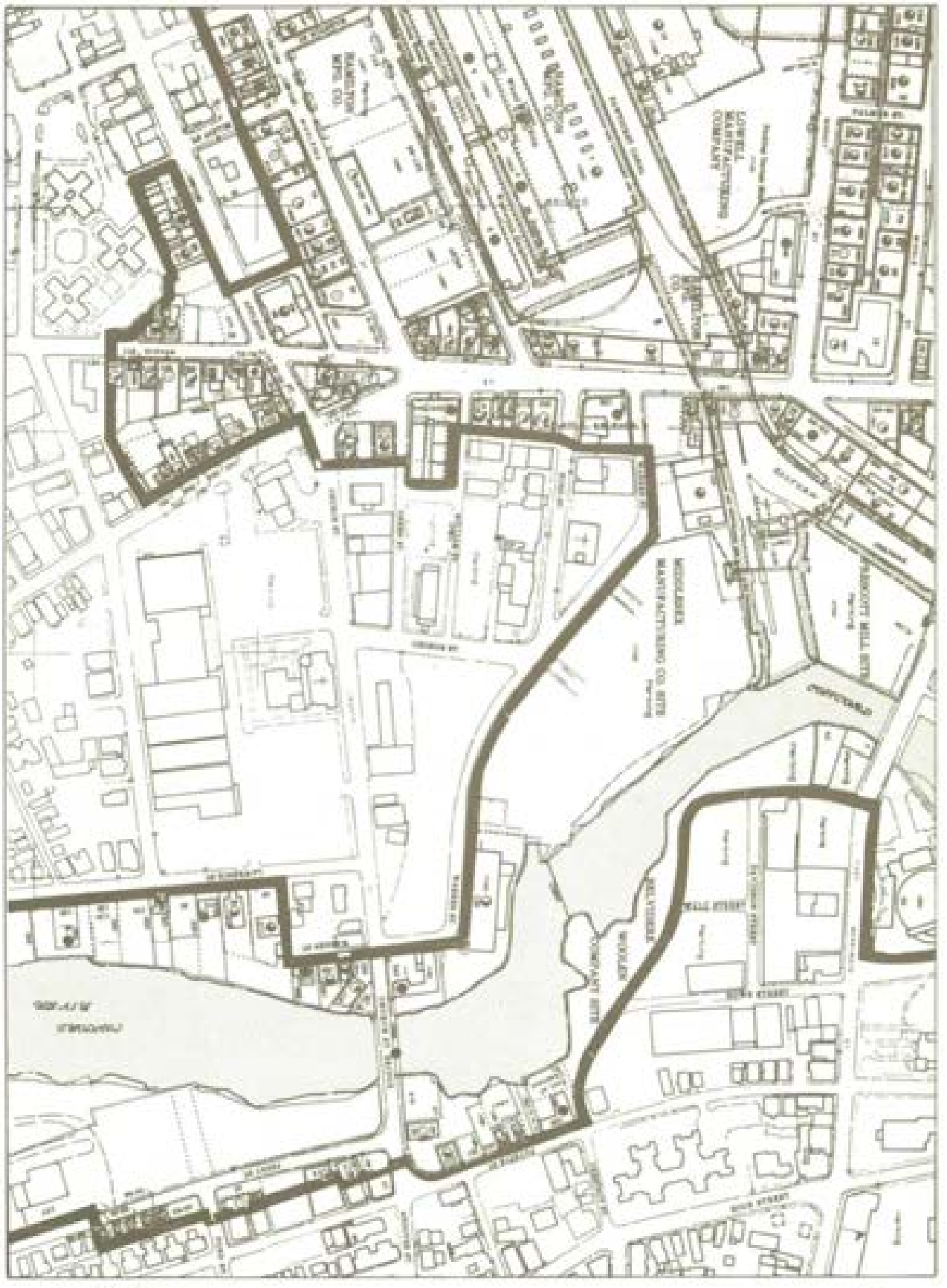
INDEX

Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Moore Heder Team

September 1980

Sheet 11 of 17



INDEX

Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Moore Binder Team

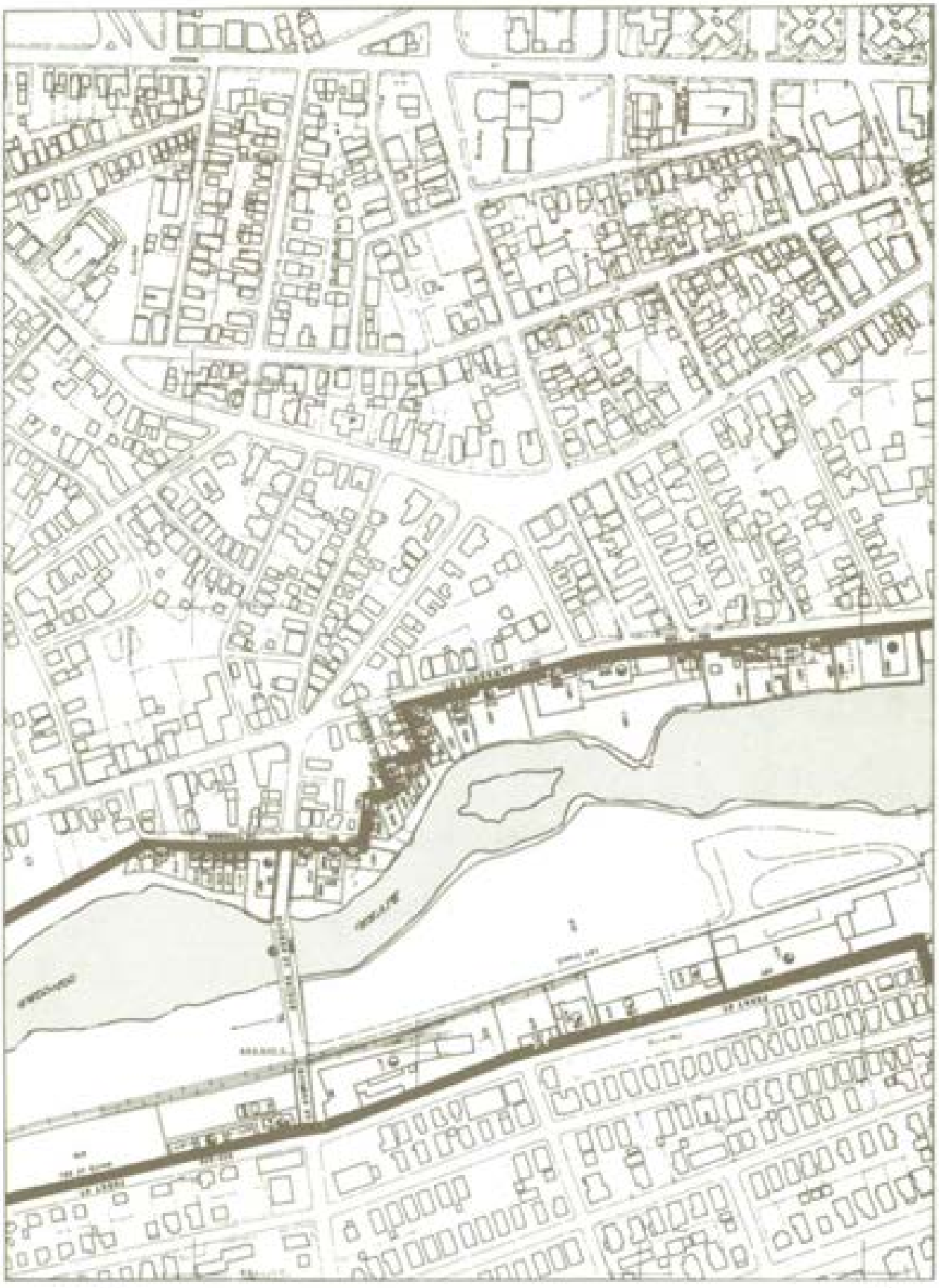
Sheet 12 of 17

INDEX
Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Moore Heder Team

September 1981

N

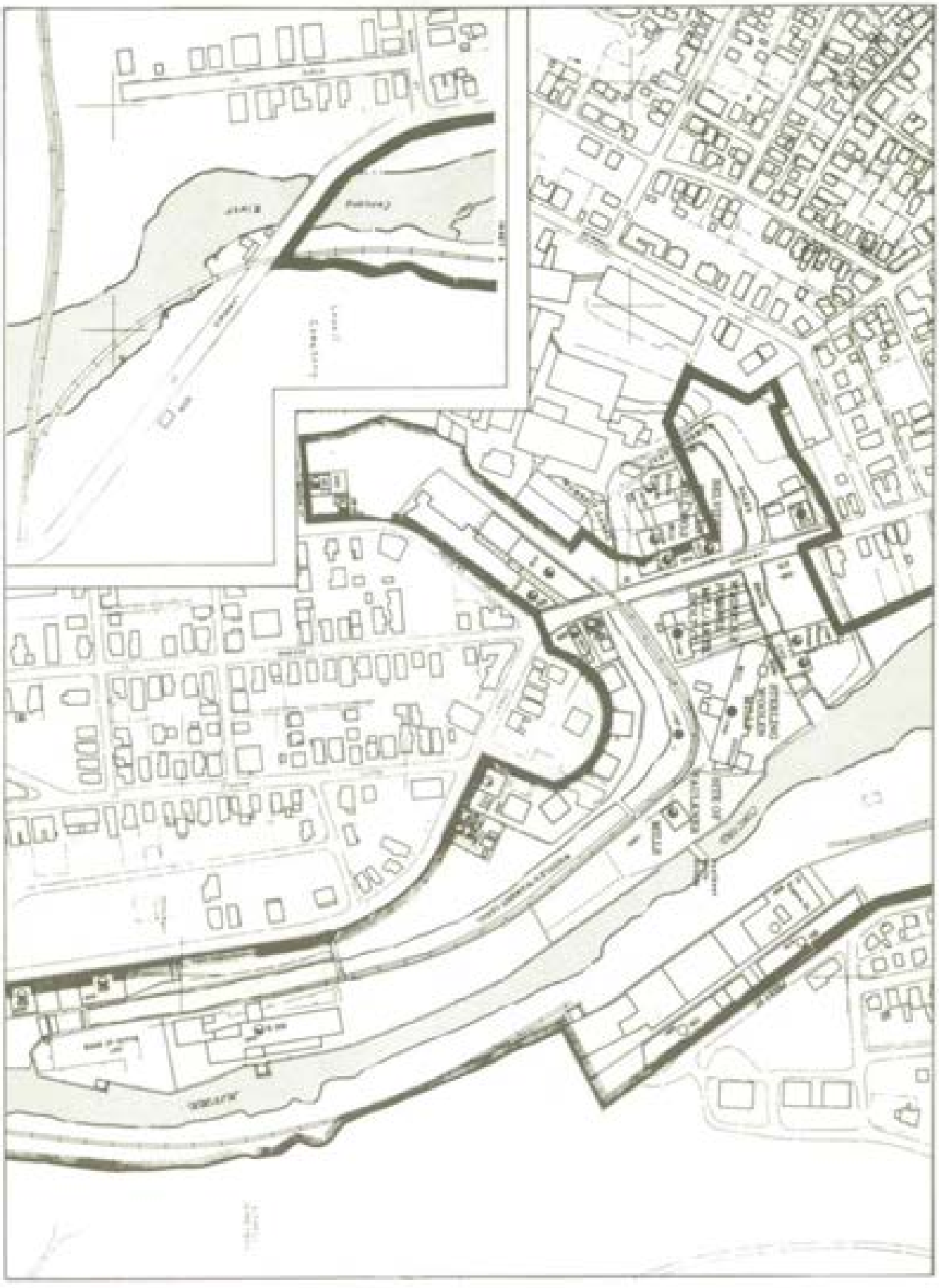


INDEX

Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Moore Hadar Team

Sheet 14 of 17

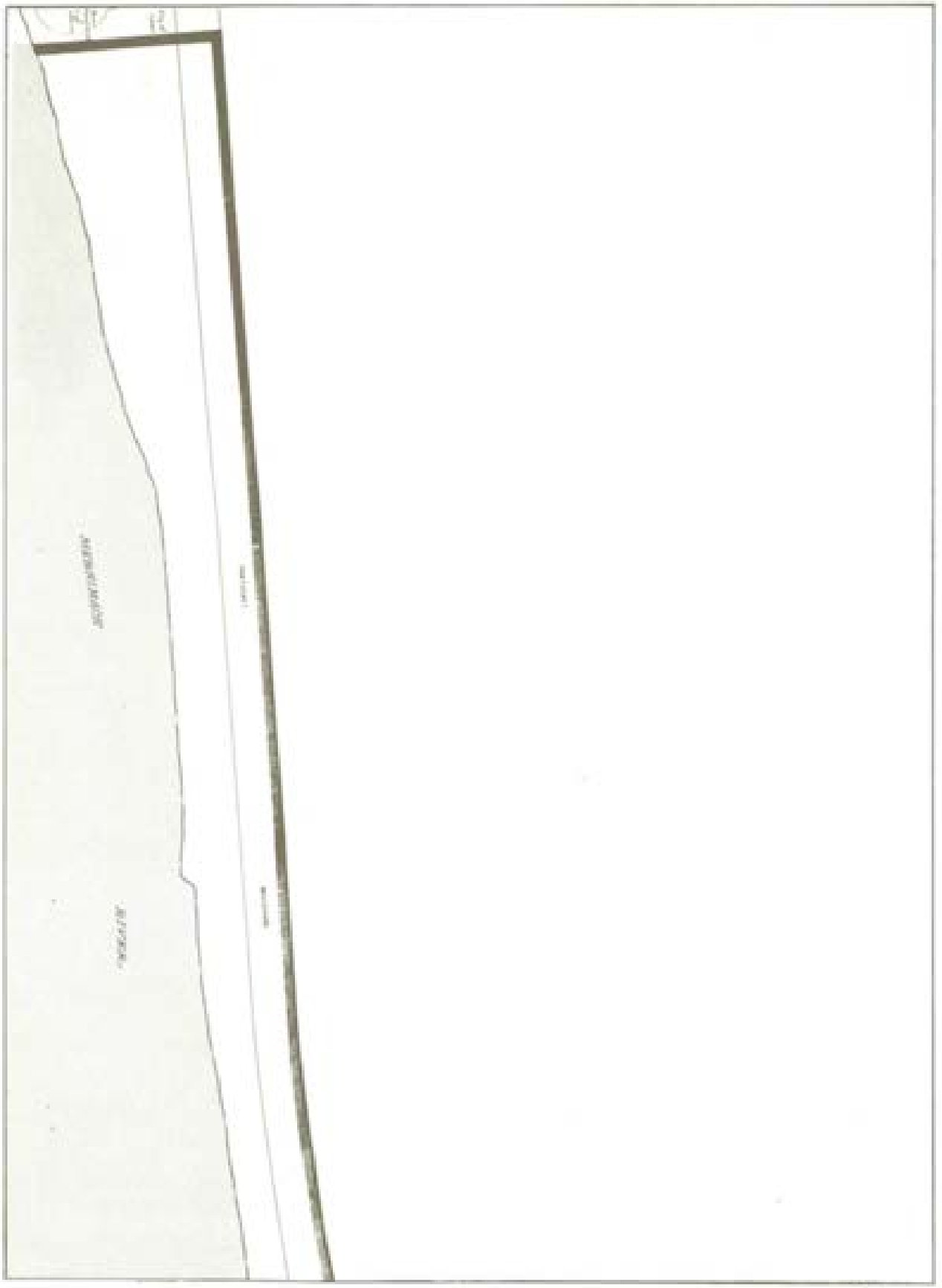


INDEX

Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Moore Heller Team

Sheet 15 of 17

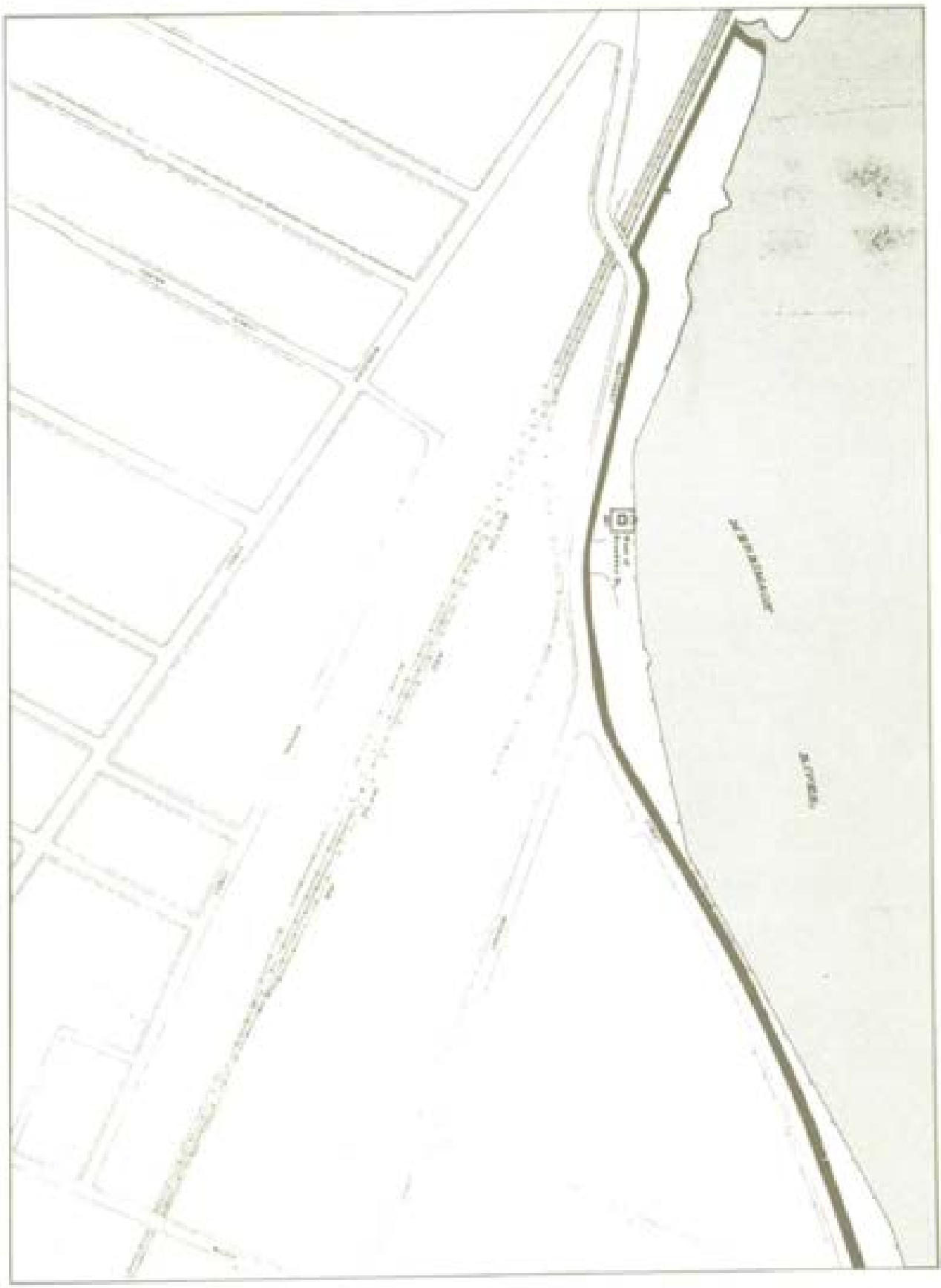


INDEX
Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Minor Heder Team

September 1981

Sheet 16 of 17



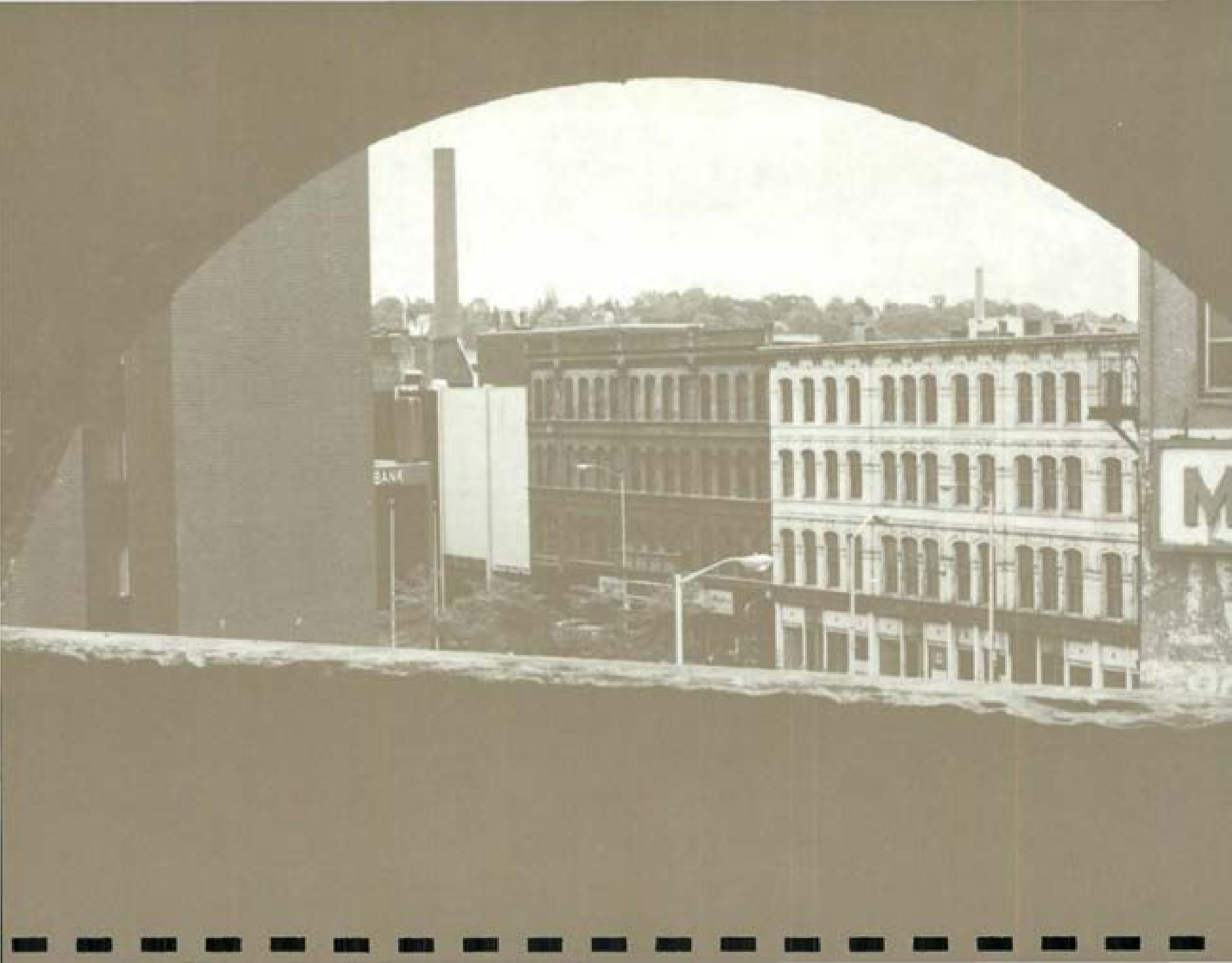
INDEX

Lowell National Historical Park and Preservation District

prepared for the Lowell Historic Preservation Commission by the Moore Heder Team

September 1980

Sheet 17 of 17



Standards

Contents

Introduction

THE PURPOSE OF THE STANDARDS

The purpose of the Standards is to guide rehabilitation and construction in the Park and Preservation District so that the integrity of Lowell's 19th century setting is not disrupted. Development of the Standards is a major responsibility of the Commission as mandated by P.L. 95-290.

The Standards are intended to make sure that privately owned properties in historic Lowell are not altered improperly, or used in a manner that substantially detracts from the intentions of the Act.

Enforcement of the Standards will become the responsibility of the City of Lowell. Before implementation there will be extensive study by Commission and City technical staffs. This document is meant to serve as the basic outline of regulatory issues to be addressed. It is not intended to be converted literally into regulations in its current form but used as the starting point for modifying existing ordinances. Before this process can begin, the guidelines must first be reviewed and approved by the Secretary of the Interior.

Upon approval by the Secretary, both the Commission and City Division of Planning and Development (DPD) will need to utilize the time permitted by the enabling legislation to refine these guidelines and convert them into enforceable ordinances. New methods of project review and the City's desire to streamline development regulations must also be considered.

Ultimately, implementation will require public hearings, a two-thirds vote of the City Council, and possibly, new state legislation.

Another purpose of the Standards is to serve as the basis for a memorandum of understanding with the Massachusetts Historical Commission and the Advisory Council on Historic Preservation to satisfy the requirements of Section 106 of the National Historic Preservation Act of 1966 as amended. This agreement will establish compliance procedures for future Commission actions and will be drafted following approval of the Standards by these agencies. In the interim, the Commission will continue to submit case by case information for its projects.

APPLYING THE STANDARDS

Within a year after the Standards are complete, the legislation calls for their adoption by the City in the form of regulatory ordinances. It is intended that a new review procedure be created that combines some of the current zoning, historic district, and building permit requirements into a single mechanism. The Standards are being designed to be used in this review process as guidelines for decision makers in evaluating proposed rehabilitation and construction projects in the Park and Preservation District.

The Standards are also intended to help property owners design exemplary projects that will meet with a minimum of resistance from reviewers. This will help to ensure that the review process is fair and can be completed quickly. The goal is to minimize reliance on the individual tastes and preferences of those who happen to be awarding permits and instead set up clear rules that everyone will understand.

Standards are outlined here for three types of actions: preservation of existing buildings (E 1-21), new construction (N 1-9) and public improvements (P 1-8). Individual standards within each group give specific information on recommended treatments for various building types and materials.

TECHNICAL AND FINANCIAL ASSISTANCE

Careful rehabilitation of an historic building is a difficult task. Research must be done to find out how it looked when built and what architectural features might still lie beneath layers of grime or unattractive siding. Decisions must be made as to whether existing materials can be repaired and, if so, how. Frequently, buildings contain remnants of renovations made over time which may be just as interesting and important as the original features. Deciding how best to incorporate these evolutionary details into a successful project that meets today's needs can be complex and sometimes more costly than simply covering what is left.

INTRODUCTION
(continued)

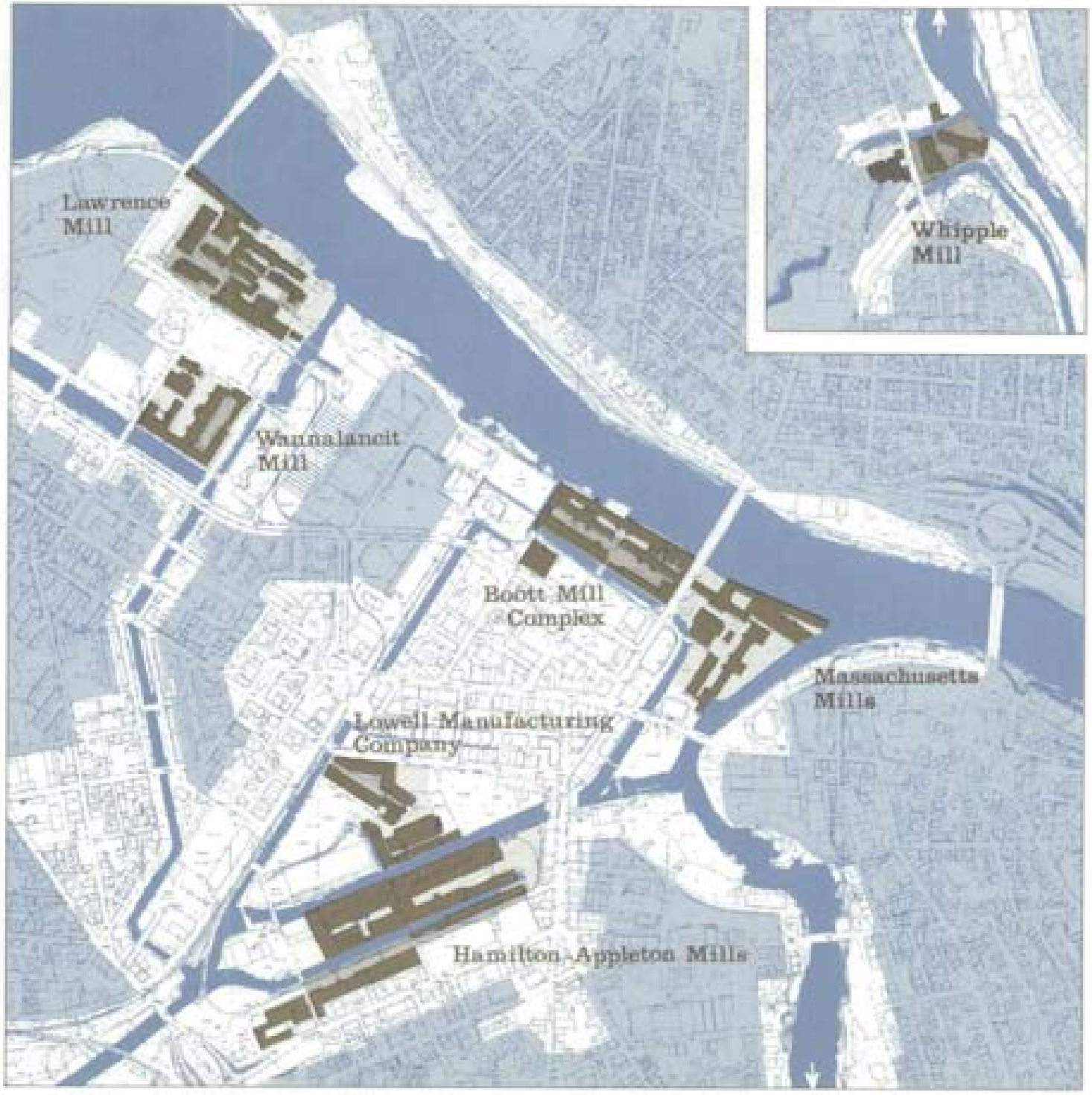
Recognizing that standards and regulations will not be enough to guarantee high quality rehabilitation and new construction, the Commission is concentrating a large portion of its resources over the next eight years on technical and financial assistance. As described more fully in the Preservation Plan, this means that property owners will be able to obtain help from Commission staff on researching, designing and financing a project. Nationally significant buildings (those ranking "A" on the Index of Historic Buildings, Properties, and Sites) will also be eligible to compete for grants and loans to assist with costs of rehabilitation.

The City of Lowell DPD too has made major commitments to financial and technical assistance. More than 30 facade improvements in the downtown area have already been funded. The National Park Service also has design assistance available, primarily for property owners in the Park zone. Both these agencies have reviewed the Standards and will be involved with refining them in the year ahead.

When the Standards and necessary new regulatory ordinances are complete, a series of clearly written and illustrated handbooks will be prepared to explain new procedures. These will be distributed free and will reference related publications such as The Secretary of the Interior's Standards and Lowell - The Building Book. Slide shows will also be prepared in conjunction with some of these. Conferences and workshops will continue to be sponsored. With the continuing cooperation of City and federal agencies it is hoped that these Standards will help to protect Lowell--and the nation's--valuable resources.

REFERENCE BIBLIOGRAPHY

Many of the individual standards contain shortened bibliographic references. Refer to the Reference Bibliography at the end of the Standards to obtain the full citation.



Map 2
Mill Complexes and Yards

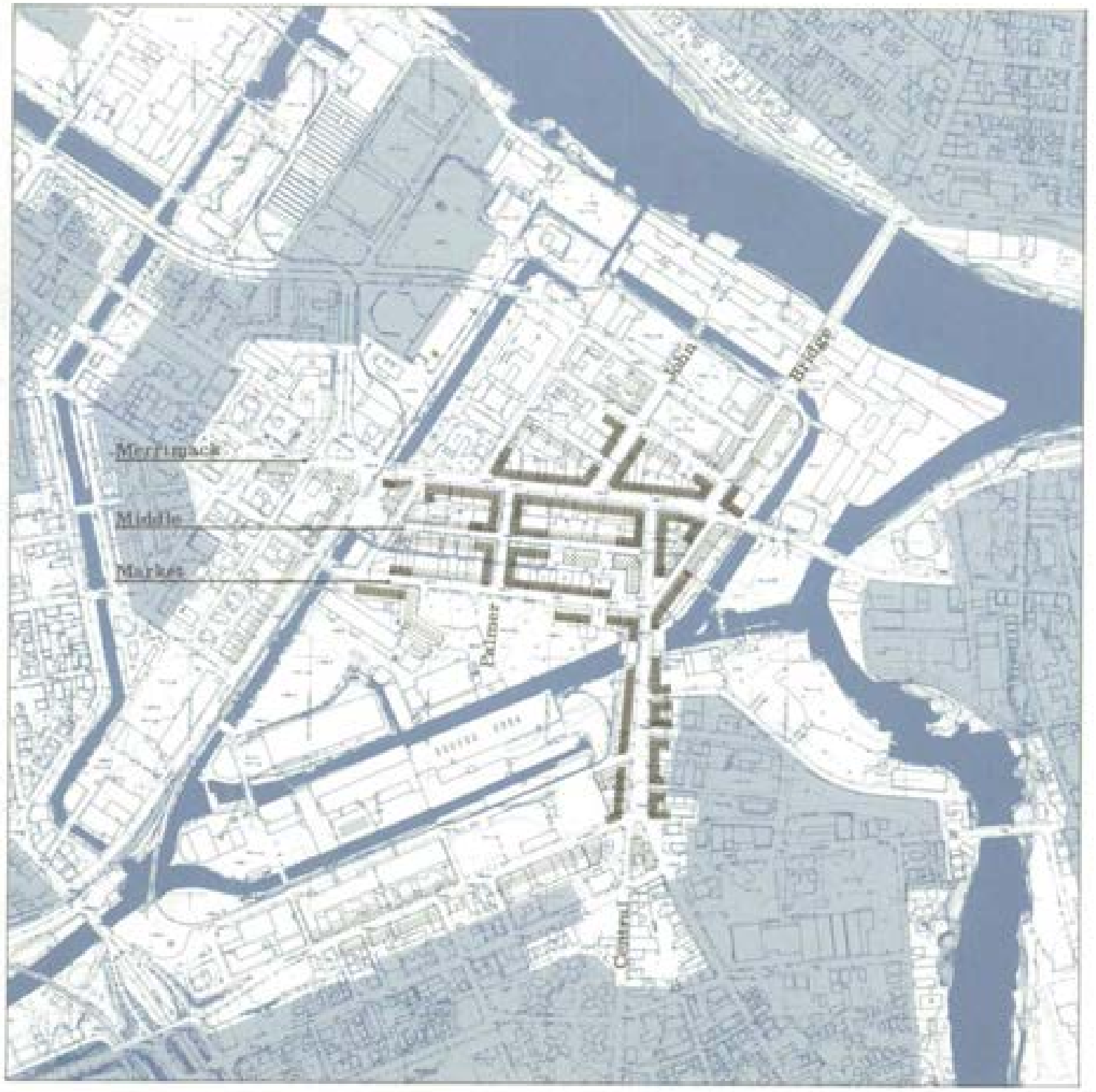
Significant Mills
Primary Millyard Spaces
Secondary Millyard Spaces

Map 3:
Pedestrian Ways

Open Walks and Park Paths

Urban Pedestrian Connections (other than Primary Commercial Streets)

Special Sights or Nodes



Map 4:
Commercial Streets

Primary Shopping Streets

Secondary Shopping Streets

Map 5: Residential Building Groups

Significant Residential Streetscapes

Significant Residential Groups

1. Pawtucket Blvd. Houses
2. Pawtucket St. Houses
3. Clare St. Group
4. Remains of Little Canada and Suffolk Corporation Rowhouse
5. The Acre
6. T. Goward Building and T. Jameson House
7. Appleton Block
8. Gorham St. Group
9. Lakeview Ave. Houses
10. E. Cawley Houses

E-1

Preservation vs. Demolition — General Principles

CRITICAL CONCERNS

Buildings in the District without strong existing uses or active programs for their reuse are likely to be threatened by demolition at some time in the future. The District will lose much of its historic value if there is full or partial demolition of important buildings or of significant details such as cupolas, towers, windows, doors, roofs, cornices, and other decorative or functional elements. Once demolition has occurred this value can never be replaced.

An owner may desire demolition in order to develop new uses requiring different facilities on the site.

Taxes, vandalism and safety problems often contribute to the pressures on an owner to demolish.

Profitable reuse for historic buildings in the District may be possible in the long run but difficult to arrange within the short-term needs of owners under pressure to act.

RECOMMENDED APPROACH

Demolition of any buildings in the District should be avoided except for those ranked inconsistent (D) on the Index. New development and rehabilitation programs should favor building reuse and rehabilitation. Significant buildings should be preserved for future reuse even if immediate economical reuse is not possible.

STANDARDS

- o New development and reuse programs should be planned so that full or partial demolition of buildings in the District is not necessary.
- o An incompatible use that would require demolition should be shifted to another site or portion of the site.
- o Technical assistance can help owners to secure buildings against vandalism and introduce measures to prevent further physical deterioration while a reuse program is being developed.
- o Soundness and reuse potential of a building should not be judged by its present appearance for this may be deceptive. Practical reuse opportunities can be determined through technical assistance.
- o The retention and repair of historic elements such as woodwork, masonry and metal details (see E-4, E-5, E-6) can be more feasible than it may appear. Technical assistance should be sought before removing any building elements.
- o If demolition does occur, historic building materials and details should be salvaged for possible future use in buildings of the same style and type.

REFERENCES

HCRS, Secretary's Standards
ACHP, Urban Revitalization
Warner, Business and Preservation

Lowell Museum/Goodwin Collection

The razing of the Dutton St. Boarding House during the urban renewal period of the 1960's.

E-2
Historic Architectural Features — General Principles

CRITICAL CONCERNS

The quality of historic buildings is determined by the interplay of materials and architectural features. Specific materials and features are discussed in standards E-2 through E-12. In addition to concern with preservation of these specific attributes, there must be an understanding of historic buildings as integrated design compositions.

The design character of a particular historic period is made up of several key factors:

Scale - relationship to human size, form and perception

Rhythm - the pattern of repeating elements such as windows, columns, arches and other facade elements

Form - overall shapes, combinations of shapes as seen from different perspectives, skylines and contours

Massing - height, setback and major dimensions

Proportion - the relationship among the dimensions of various elements.

Each historic period had its characteristic interpretation of these design elements.

Some buildings grew and changed over several historic periods. The blending in architecturally significant ways of building alterations then actually represents the character of the building. A similar understanding of appropriate historic design principles is particularly important when historic buildings can only partially be preserved and when major reconstruction or new building must occur in an historic building complex.

RECOMMENDED APPROACH

Rehabilitate historic buildings to achieve configurations that best represent the historic architectural character of the building as a whole.

STANDARDS

- Original building features should whenever feasible be preserved rather than replaced.
- If features have been or must be removed, technical assistance can help ascertain the original design of the building and determine the most appropriate techniques for replacement.
- Building complexes constructed over time, such as most of the mills, when rehabilitated, should retain the appropriate historic design characteristics of each of their components. The imposition of historically unsympathetic architectural treatments should be avoided.
- Recent remodelling that altered the appearance of an historical structure with applied veneers, or the addition of isolated building features (doors, windows, roof or cornice changes, etc.) should be corrected wherever possible to restore or approximate the original design character.

REFERENCES

The Building Book, pp. 5-13 & 27-34
HCRS, Secretary's Standards

The recent storefront rehabilitation has revealed formerly covered historic materials and details. The building now exhibits an integrated 19th century appearance.

E-3
Historic Materials — General Principles

CRITICAL CONCERNS

Much of the character of historic buildings comes from their materials--both from their intrinsic nature and from the way they were applied.

The deterioration or complete loss of historic materials can occur on any part of a building. Most frequent areas of loss are on parapets and cornices, windows, doors and store fronts. Deterioration is commonly found on wood and sheet metal features, paint, masonry, mortar joints and most roofs.

Impairing the character of the building, deterioration often results from one or more of the following situations: lack of maintenance; inappropriate replacement; and removal or unskilled repair of materials.

It is often widely assumed that construction materials and techniques for appropriate historic restoration are either unavailable or prohibitively expensive. This is often not the case.

RECOMMENDED APPROACH

Retain significant existing materials whenever possible, stabilizing, repairing or matching them with compatible new materials as required. Research can often help determine what materials were typically used at a given point in time.

STANDARDS

- The original materials used in a building, the technical process of repair or replacement required and the availability and cost of appropriate restoration techniques can be determined through technical assistance.
- If immediate complete restoration cannot be accomplished, the preservation of deteriorating materials should be assured through partial or temporary measures to stabilize and protect them.
- Standards for materials most commonly found in Lowell, as well as for appropriate substitute materials are listed on the following pages, covering:
    - Masonry: brick, stone, mortar, stucco.
    - Wood: siding, trim and replacement materials.
    - Metals: iron and steel, sheet metals, contemporary metal replacements.
    - Roofing Materials: membrane and built-up roofing, slate, composition shingles, sheet metal.

REFERENCES

Preservation and Conservation
U. S. Army, Maintenance Procedures

Three prolific building materials of the 19th century, pressed brick, granite and cast iron are juxtaposed in a typical manner on the Bank Block. The conservation of historic building materials is the basis of preserving Lowell's architectural heritage.

E-4
Masonry

CRITICAL CONCERNS

Brick masonry represents the predominant structural system in Lowell's commercial and industrial buildings. Brick, stone and mortar joints are problematic to repair because they are difficult to match in color, texture and size, and to clean or stabilize without causing irreversible damage.

Typical problems in masonry are: partial removal; breakage; replacement with incorrectly matched mortar mixes, mortar joints and masonry units; material deterioration through weathering, sandblasting, harsh chemical cleaning, and moisture damage.

RECOMMENDED APPROACH

Return masonry to a serviceable and visually acceptable state by: replacing missing masonry units and mortar with matching elements; and repointing, cleaning and stabilizing using proper techniques and materials.

A cleaning test patch of the soiled masonry of the Gas Light Building will help determine the proper method for cleaning. Here the previously applied dilute acidic chemical is being pressure rinsed.

STANDARDS

- Do not abrasively blast masonry to clean and/or remove paint. Instead, clean using the gentlest means possible generally by means of an aqueous system which does not damage either the masonry unit or the mortar joints.

- Test all cleaning or paint removal methods before proceeding with the full job to determine the gentlest means of producing acceptable results without immediate or long term negative consequences.

- Use cleaning methods which are based on these procedures: low pressure water presoaking (less than 60 psi); soft bristle brush or low pressure spray application of mild, highly diluted alkaline or acidic cleaners properly matched to the type of masonry; thorough medium pressure (less than 600 psi) rinsing of cleaning solution after a short time (usually no more than 5 minutes). Some masonry may be adequately cleaned using only the rinsing process, possibly in conjunction with soft fiber brushing.

- Remove paint with water rinsable alkali and/or solvent-based chemicals applied by brush and removed with medium pressure spray. As determined by testing, allow paint remover to remain on masonry only long enough to dissolve paint but before soaking into masonry.

- Apply coatings to stabilize deteriorated masonry only if they have been proven neither to cause more deterioration or soiling that accelerates over time nor to block the water vapor permeability of the masonry.

- Replace missing masonry units by matching the original in size, color, and texture; make new mortar joints or repair existing joints by matching the original in width and tooling.

- In the application of new mortar approximate the original in porosity, strength, elasticity, color, and texture.

- Request technical assistance if necessary to evaluate the appropriate techniques for a particular building.

- On principal facades do not coat masonry with stucco.

- Do not paint masonry that historically was not painted unless it can be proven that only such a coating will preserve the masonry.

REFERENCES

HCRS, Preservation Briefs 1, 2 and 6
Building Book, pp.59-60
McKee, Early American Masonry

E-8
Wood

CRITICAL CONCERNS

In Lowell as elsewhere wood was historically the predominant material for windows, entries, cornices, and eaves as well as the universal siding material in residential architecture.

Deteriorating or missing woodwork details on historic facades are often not repaired or reproduced because there is little realization that existing original woodwork is a valuable, reclaimable resource. Often, repair or restoration can be competitive in cost with removal and redesign.

RECOMMENDED APPROACH

Return original woodwork to a serviceable state by sensitive replacement of missing features and by repair of existing features.

The application of synthetic siding can cause immediate or future damage to historic materials. The original window casings are being covered by vinyl siding.

STANDARDS

Caring for existing wood:

- o Patch damaged or deteriorated wood with compatible wood fillers to remedy cosmetic damage.
- o Strip, scrape, and/or sandpaper existing wood to prepare for repainting. Do not sandblast.
- o Paint wood with historically appropriate or compatible colors.

Replacing wood when it is beyond salvage:

- o Duplicate the architectural feature in the original as closely as possible.
- o Use wood rather than synthetic materials.
- o The use of vinyl or aluminum siding to cover or replace wood siding is discouraged.

Infilling with new design in wood:

- o Match existing profiles and moldings where historically significant material provides clues.
- o Relate new design in wood to local historical examples.
- o Paint wood with historically appropriate or compatible colors (see E-9 for colors)

REFERENCES

HCRS, Preservation Brief 8
PLNF, Paint Restoration

Original decorative architectural woodwork such as these characteristic triple decker porches are often lost through neglect or attempts to "modernize" the building. This is detrimental to historic value.

E-6
Metals

CRITICAL CONCERNS

Major architectural metal elements on historic building facades are cast iron columns, cast iron brackets, iron or steel plate sign boards, sheet metal cornices, fascias, spandrel panels and flashing, wrought-iron railings, ornaments and fire escapes.

Other metal features have been removed from facades in past alterations or are damaged and need to be repaired or replaced.

RECOMMENDED APPROACH

Replacing missing or deteriorated architectural metals with original or substitute metal fabrications or other visually compatible substitute materials.

STANDARDS

- Cast and wrought-iron and steel; clean rusted or over-painted iron and steel with abrasive blasting before repainting while protecting adjacent materials from damage; repair or replace broken or deteriorated cast iron elements with new cast iron or other replacement materials such as cast aluminum, cast or molded plastic, wood, or weather resistant cast fillers, providing for structural sufficiency as required.
- Sheet metals: remove deteriorated or painted sheet metal elements and replace in a matching configuration with the same kind of sheet metal, compatible sheet metal or molded plastic.

REFERENCES

HCRS, Metals
SMACNA, Sheet Metal

Sheet metal was often used for projecting cornices on commercial and industrial buildings. Cornices which have not been maintained can be replaced at moderate cost.

Buildings in Lowell, including the Upton St. Joseph Building, pictured here. Whether or not covered by later remodelings, they are usually in perfect structural condition and need only repainting.

E-7
Windows

CRITICAL CONCERNS

Windows are among the most important elements in the appearance of buildings--they are the eyes of a building. The size, shape, placement and details of windows are characteristic of each historic style and if altered can ruin the character of the building.

In historic buildings the windows, generally made of wood, are often inadequate for new uses in their current condition due to energy conservation requirements and deterioration.

Insulating windows is particularly important in mill buildings where windows make up a great proportion of outside walls.

In the process of renovation windows are often replaced by contemporary units or windows simulating an inappropriate historic style by building owners unaware of the appropriate window types and of compatible and available treatments.

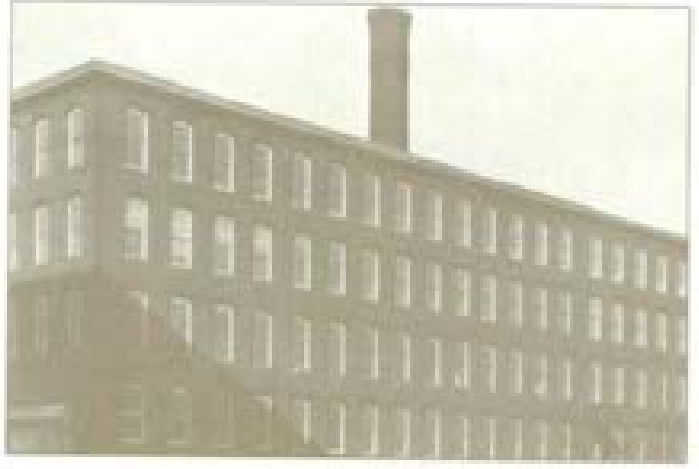
RECOMMENDED APPROACH

Retain, repair and improve the thermal efficiency of existing windows where possible. Where replacement is necessary match new windows to the historic character of the building.

STANDARDS

Repair existing windows if the wood is sound:

- o Patch or replace deteriorated wooden parts.
- o Make sash operable to provide a ready means of natural ventilation by reworking sliding surfaces of sash and frame, by repairing sash cords, and by restoring or replacing hardware.
- o Scrape and sandpaper in order to prepare surfaces for fresh paint.
- o Repaint all window elements with oil-base primer and paint.
- o For thermal protection install insulated shutters or a second layer of glazing on inside of windows to preserve the exterior character of original windows.



The windows of any historic building are important to its architectural integrity. The rehabilitation of Booth Mill No. 4 will see the installation of wooden, thermally efficient double glazed windows, with the same window pane pattern shown in this historic view.

Replace windows only if all or major part of assembly is beyond repair:

- o Reuse existing frames with new sash or install new frames which match visually the size, detail, and setback of the original.
- o Fit the rough openings in exactly the same way as original windows.
- o Match sash with face dimensions of original. Sash would be made with a grid of muntin bars and lights the same as the original in size and number. Avoid non-functional muntin bars.
- o Match the basic structural configuration of original transoms and mullions in size and number.
- o Use wood or metal with color finishes compatible with historic paint colors (E-9 Color).
- o Avoid introducing inappropriate historic motifs.

REFERENCES

Building Book, pp. 35-36
HCRS, Preservation Briefs 3 and 9
NBS, Window Design

E-8
Roofs

CRITICAL CONCERNS

Changes in the configuration of roofs or substitution of roofing material with inappropriate material can impair the architectural character of historic buildings.

The addition of new stories and mechanical equipment rooms or the removal of damaged roof elements changes the roof shape of a building which may be detrimental to its historic character.

Towers, cupolas, pacted roofs and even upper stories have been removed in the recent past from many of Lowell's historic buildings, thereby seriously damaging their appearance and reducing the overall richness of the streetscape.

Inappropriate changes in roofing material may result from: substitution of composition shingles or roll roofing for slate or standing seam sheet metals on gable or hip roofs; and replacement of cornice or eave with inappropriate materials.

RECOMMENDED APPROACH

Preserve or restore the features that give the roof its essential historic character: the original roof shape; original roofing materials or materials compatible with the old in composition, size, shape, color and texture; and architectural details such as dormer windows, cupolas, cornices, brackets, chimneys, cresting, and weather vanes.

The shape of and materials covering roofs of historic buildings are important. Many of the remaining slate roofs in Lowell are in good condition and should be retained.

STANDARDS

- Maintain existing historic roofing material where visible from the street through spot repairs using original or matching materials.
- For coated steel maintain a regular schedule of painting to prevent corrosion.
- For slate roofs replace deteriorated slate in kind and recycle existing slate in good condition.
- If roofing has deteriorated and needs total replacement, consider the life cycle costs of roofing changes. More costly materials such as slate and certain sheet metals can be expected to last much longer than other typically used modern materials.
- If it is infeasible to retain or repair a slate roof, consider replacing it preferably with a fiber reinforced shingle or, as a last resort, a composition shingle, which approximates the variegated coloring and size of the original slates.
- If a sheet metal roof is corroded beyond repair, replace it with a matching or compatible sheet metal, avoiding the use of unfinished aluminum sheet metal. Similarly, avoid the use of this unfinished material for flashing or other roofing accessories.
- Replace concealed gable, flat or hip roofs with modern materials as necessary if preservation of historic materials is infeasible.
- Install roof solar collectors for energy savings or skylights for natural lighting where they will not be visually detrimental to the historic character of the roof.

REFERENCES

HCRS, Preservation Brief 4
NSA, Slate Roofing
HCRS, Preservation Brief 4

E-9
Color

CRITICAL CONCERNS

The choice of colors was an important part of the design concept of historic buildings. Historic buildings have been painted over time in colors sometimes contradictory to their original character.

Features originally not intended to be painted have often been painted. Many wooden features have been repeatedly repainted without proper preparation. Some masonry originally not painted or in need of paint for protective reasons, is now altered in appearance with paint.

RECOMMENDED APPROACH

Restore architectural features with colors and finishes appropriate to the nature of the materials and to the character of the original building.

STANDARDS

- Determine the colors original to the building. Examine old paint for evidence of the historical paint fleishes. Research historical records for the building. Seek technical assistance.
- Consider new colors based on the building's original colors if these can be determined. If these cannot be determined, base color scheme on historic precedents, or contemporary colors compatible in spirit with the period colors.
- Do not use strong paint strippers (chemical or mechanical) that can permanently damage the surface.
- Typical use of color
  - 1830-1860:
    trim--white
    body--light greys, pastels, light browns
  - 1860-1895:
    deep earth tones or tones red, orange, yellow, green, blue, violet
  - 1895-1930:
    all white or light colors

REFERENCES

Building Book, pp. 61-62
Batcheler, Paint Color Research
Dornsife, Exterior Decoration

A wide variety of paint colors are available which are appropriate for exterior uses.

E-10
Interior Spaces

CRITICAL CONCERNS

Many interior spaces and interior design details within the District have intrinsic historic value and contribute to the interpretation of Lowell's history.

These interior spaces often contain craftsmanship and materials that are no longer available and are consequently irreplaceable.

Of special importance are certain commercial interiors, public halls, clubrooms, open stairways, movie theaters, and large impressive spaces.

Details such as wainscoting, handrails, ornamental columns, decorative ceilings, cornices, baseboards, doors, doorways, paneling, lighting fixtures, and flooring play a major role in the quality of these interiors.

New uses sometimes do not readily fit these interior spaces. Altering size, proportion, or finishes can destroy the character of the original space.

RECOMMENDED APPROACH

Develop use programs that preserve and highlight these interiors. Rehabilitation of existing features is encouraged.

STANDARDS

- o Determine whether an interior is significant before starting a major rehabilitation project.
- o Give special attention to buildings rated A1, A2, B.
- o Match new uses of the development programs to interior spaces in the buildings in a way that makes use of significant interiors with the least alteration.
- o Repair and restore original materials if finishes are largely intact.
- o If some decorative details are beyond both repair and practical replacement, eliminate these and simplify design by focusing on preservable details.
- o If some reuse requires subdivision, wherever possible adopt part-height partitioning that allows the original spatial envelope with its shape and proportions to remain intact.

REFERENCES

See Standard E-15, "Alterations for Adaptive Use" for specific information on mills.

The interiors of many of Lowell's historic buildings are as familiar as the building exteriors. Historic interiors, such as the Strand Theatre have a special meaning and need to be preserved.

E-11
Doors & Egresses

CRITICAL CONCERNS

Alterations to egresses or introduction of new ones in order to comply with building code and other regulations for health, welfare, and safety can impair the exterior architectural quality of historical buildings.

Doorways may need to be altered or replaced to meet these requirements. Elements associated with them such as fire escapes, exterior stairs, elevator towers, ramps for the handicapped, and steps may also need to be changed.

RECOMMENDED APPROACH

Required architectural elements associated with doorways should be designed both to meet the functions of health, welfare and safety and to respect the exterior architectural integrity of historic buildings.

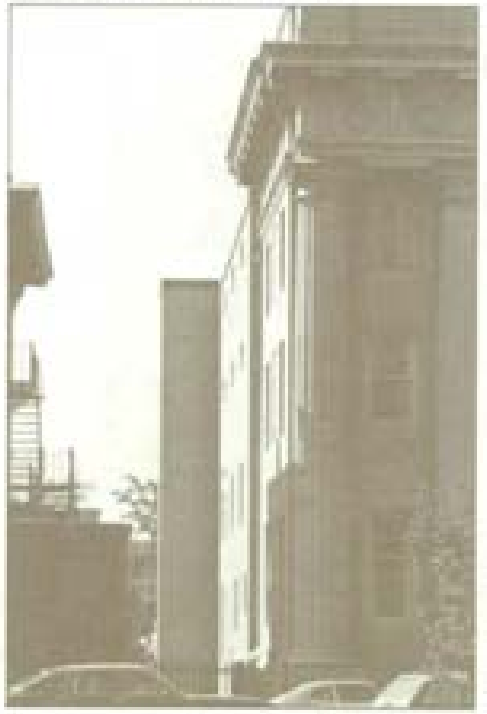
STANDARDS

- Provide new emergency egresses or retrofit existing doors to meet egress requirements in such a way that the historic quality of the building is preserved.
- Preserve and restore historic doors and hardware wherever possible.
- Provide new vertical egress on side walls or on rear elevations of the building out of public view.
- Provide ramps for handicapped access in places other than main historic entrances and/or in a way which does not substantially impair the visual quality of the building. Seek technical assistance with the appropriate architectural design of these elements.
- In satisfying health, welfare, and safety requirements provide interior architectural solutions which do not require changes to the exterior of the buildings and which minimize the need for interior alteration of significant features.
- Take advantage of those portions of the Massachusetts State Building Code which allow alternative methods of compliance for existing buildings. See Section 436.0 Historic Buildings, and Article 22, Existing Buildings.

REFERENCES

State Bldg. Code, Section 436 and Article 22
NTHP, Building Codes
HCRS, Access for the Disabled

The building code requires two means of egress. This can often be provided in a way that preserves the character of original doorways.



An added elevator or stair tower which has no negative impact on a principle facade of a building can usually be attached in a secondary exterior location.

E-12
Mechanical Equipment

CRITICAL CONCERNS

As a result of efforts to update mechanical systems or to increase energy savings, equipment is sometimes installed in a way that impairs the architectural quality of buildings. The choice for placement of equipment can affect not only the exterior but also the interior in terms of plan, historic materials, and spatial qualities.

The elements of concern include: vents for air intake or exhaust; pipes, ducts or larger units for air conditioning, heating, and plumbing. Examples of visually disruptive additions in mechanical equipment would be: the air conditioner inserted in a window or the intake vent cut out as a new opening on a major facade (see E-7 Windows); solar panels that alter the historic roof shape (see E-8 Roofs).

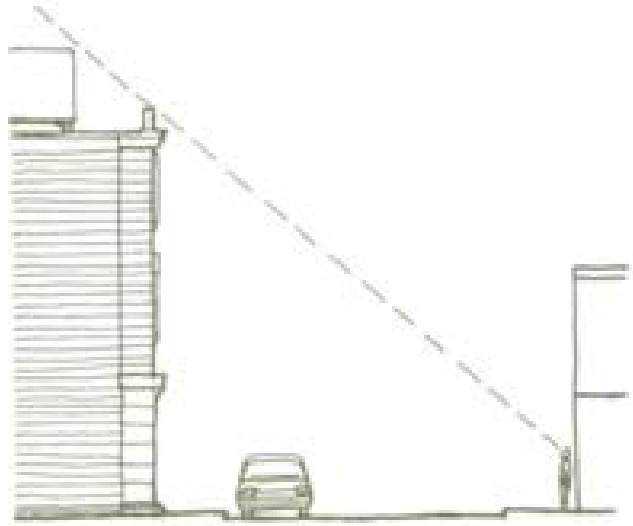
RECOMMENDED APPROACH

Install necessary mechanical systems in places that require the least possible alteration to the structural integrity and historic physical appearance of the building.

Intake and exhaust ducts and grilles are often necessary. Effort should be made to locate such features so that they do not detract, as in this case, from an historic facade.

STANDARDS

- Locate necessary new mechanical equipment unobtrusively: in existing attic spaces; on flat roofs set back out of sight of the street; in basements; in other secondary spaces within the building; or remote from the building.
- Do not locate through wall or window units, vents, air intakes or louvers anywhere on the main public facades of a building.
- Carefully select the least disruptive methods and places for running ductwork, electrical wiring and plumbing pipes.
- Utilize fixtures of the existing mechanical system if they are part of the historic interior of the building and can be adapted to meet contemporary building code requirements. Likely reusable components include lighting fixtures, plumbing fixtures, stoves and fireplaces, radiators and air ducts.
- Obtain technical assistance to ensure the best architectural solution to the introduction of new mechanical systems.



New mechanical equipment added on roofs should if possible be set back far enough not to be visible from any point on the street.

E-13
Relocation of Historic Buildings

CRITICAL CONCERNS

Relocating an historic building from its original site to a new one may detrimentally alter the general cultural, architectural, and landscape setting to which the building contributed.

Relocation happens often either because the original site is sought for a use not suited to the original building or because a new site for the building is preferred.

RECOMMENDED APPROACH

Retain and preserve buildings on their original sites whenever possible. Relocate buildings only as the alternative to demolition; select sites compatible with the old in terms of architectural, cultural, and landscape setting.

STANDARDS

- Avoid relocation of historic buildings by finding a use for the original building on its site.
- If an historic building must be moved, select a site within a setting of similar context and in close proximity to the old. A fitting site may be one where a similar building once sat but which is now cleared. Moving a building requires care and planning. Both wood frame and masonry buildings can be moved and it is sometimes even feasible to move large buildings if this is the only way to preserve them.
- Do not create an artificial historic atmosphere, for example, by concentrating on one site a number of historic buildings into a configuration that has no legitimate historic basis. Instead, select an individual site for each building to occupy within existing compatible urban fabric.

REFERENCES

HCRS, Moving Historic Buildings

Relocating buildings is an old American practice and also occurred in Lowell. As a last resort to demolition, relocation may need to be considered.

E-14
Mill Buildings — General Principles

Location: Map 2

CRITICAL CONCERNS

The surviving mill buildings are the largest, most prominent and most significant structures in the District. Preservation of these structures is essential for interpreting the history of Lowell and of the industrial revolution in America.

Due to their large amount of space and continued significance as a source of jobs for area residents, the mills can only be retained by attracting and accommodating economically viable new uses.

The mills evolved historically with changes in technology and social patterns. The mill complexes are significant as the assemblages of different historic periods.

RECOMMENDED APPROACH

Preservation of the structures and interpretation of the industrial and social history should be combined with adaptive new uses. Critical historic features should be protected while allowing sufficient flexibility to make economically viable current and future uses.

STANDARDS - GENERAL

- These standards discuss the mill buildings in general. On the following pages standards specifically related to mill buildings treat issues of adaptive use, industrial hardware, and millyard landscapes. The preceding standards E-1 through E-13 are also applicable to mill buildings.
- Preserve unaltered the critical exterior features of the mills (see Map 2) including:
  - The front facades of the original mills and connector buildings.
  - Courtyards incorporating such facades.
  - River and canal front facades.
  - Prominent towers, cupolas and other highly visible elements.
- Maintain the true historic differences between structures produced during different periods of the evolution of the mills. Avoid imposing the image of the architectural style of a single period onto building elements from different periods.
- Give preference to new uses that can take advantage of the physical qualities of the buildings in their historical form and do not demand the alteration of significant building features or major additions.
- Somewhat greater flexibility for alteration will be allowed in the interior of the buildings and in secondary courtyard spaces (Map 2).

REFERENCES

Building Book, pp. 51-52

Surviving mill buildings are among Lowell's most important architectural assets. It is imperative that their historic character be preserved.

E-18

Mill Buildings — Alterations for Adaptive Use

Location: Map 2

CRITICAL CONCERNS

Buildings originally used for mill operations may be adapted for office, hotel, housing, exhibit, retail, mixed use and/or may also continue as places for light manufacturing.

Each use may require alterations of the buildings. These alterations may or may not be compatible with the historic character of the mills. Some of the likely alterations include: dividing interior space into small units for privacy; installing space consuming heating and air conditioning equipment; lowering ceilings; creating easily visible and inviting pedestrian paths or dramatic interior pedestrian spaces; adding or relocating delivery and service facilities; sheltering or enclosing spaces that are now outdoors; adding parking and drop-off facilities.

RECOMMENDED APPROACH

Adopt use programs that preserve and highlight the character of the mill buildings. Limit alterations to those that do not violate the historic qualities of the mills.

STANDARDS

- Functions within "primary" millyards (Map 2) and within built space facing these millyards should relate to and be compatible with public pedestrian access.
- Do not alter facades or outdoor space in "primary" millyards.
- Millyards designated "secondary" (Map 2) are better suited for alterations such as elevator towers, or glass roof enclosures over gathering places like hotel lobbies or shopping arcades. Such alterations should be permitted subject to satisfactory design solutions.
- The exterior appearance of windows should not be changed when interior spaces are subdivided with partitions or ceilings are lowered.
- Millyards should be kept free of parking.
- Deliveries and services should be organized to avoid conflict with pedestrians. Services can be restricted to certain periods if necessary to avoid conflict.

REFERENCES

Lowell - The Building Book, "Adaptive Reuse of Mills," pp. 51-52

The historic character of a mill interior can be preserved by leaving exposed original brick walls and heavy timber framing.

E-16
Mill Buildings — Industrial Hardware

Location: Map 8

CRITICAL CONCERNS

Some industrial hardware related to water control and power generation is as historically significant as the buildings which house it because the equipment relates to the original industrial power system and manufacturing processes.

Of special interest are: head gate hoisting equipment, wheel pits, turbines, power transmission apparatus, bridges, walkways, chimneys and storage tanks.

Duct work, stairs, chutes, electrical transformers, lines and poles and other hardware introduced subsequent to the original mill operation may not be historically significant.

Some of the hardware contributes to the character of the millyards while other pieces create distracting clutter.

RECOMMENDED APPROACH

Preserve historically significant industrial hardware. Make a design judgement to determine what more recent equipment should be retained.

Surviving gears and machinery found in and around mills are historically important industrial hardware which should be preserved in place.

STANDARDS

- Determine significance of hardware by its role in original manufacturing, its completeness, and its potential for interpreting the history of Lowell. Retain elements with such significance.
- Retain industrial features within millyards or inside buildings that contribute to the visual composition of the millyard, even if they are not of major historical value.
- If industrial hardware within primary millyards is preserved, keep its original relationship to the building intact and illustrate its original use. In the millyards designated "secondary" (Map 2) industrial equipment may be adapted to unrelated uses with decorative intent; for example, using industrial vats as planters.
- Remove industrial features judged historically insignificant, visually detrimental, and in poor repair.

Enclosed millyard bridges were commonly employed to move materials between buildings.

E-17
Mill Buildings — Millyard Landscape

Location: Map 2

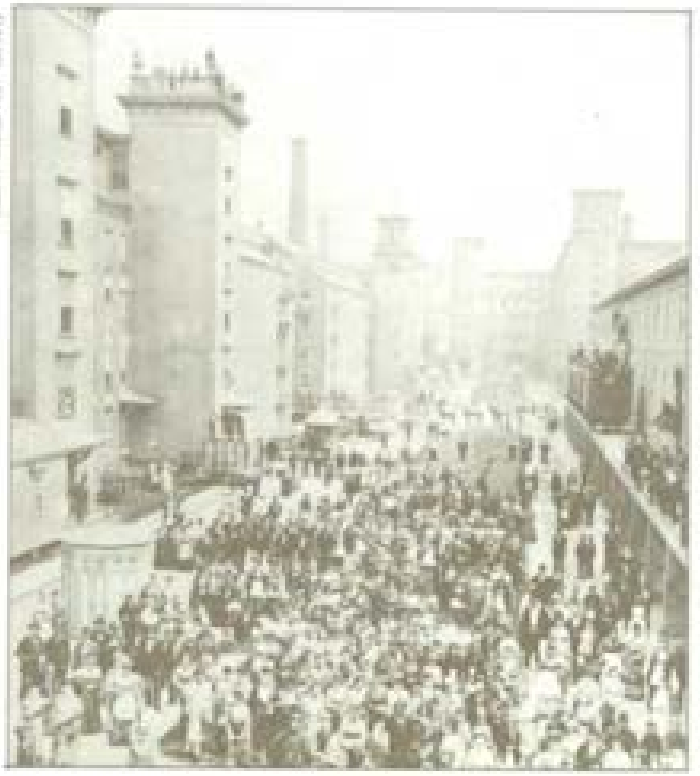
CRITICAL CONCERNS:

The open spaces shaped by the buildings, both within and around a mill complex are essential to understanding the historic character of the mills.

Architecturally the three most significant millyards are the Boott, the Lawrence and the Massachusetts Mills. All the 19th century mill complexes are of historic importance and contain "primary" and "secondary" millyards. See Map 2.

Current uses have filled most of these spaces with parked cars and trucks and haphazardly placed equipment.

Potential new uses require a more comfortable and attractive environment to draw pedestrians.



The buildings around the edges of a millyard delineate an important historical urban form.

STANDARDS

- Develop the space within primary millyards (Map 2) and at mill fronts in simple and robust terms recalling the spirit of these spaces at the height of their original use.
- Restore or re-assemble landscaping elements from the original periods, especially in the Boott, Lawrence, and Massachusetts Mills where the opportunities for restoring the historic atmosphere is greatest. Preserve elements such as: paving blocks from street surfaces; lighting fixtures; fences, stone block walls, gates; fire hose houses and hydrants; and industrial hardware (E-16).
- Exclude parking from the "primary" mill spaces.
- Organize deliveries to avoid conflict with pedestrian uses. Restrict them by time of day if necessary to avoid conflict.
- Allow greater flexibility for design at "secondary" courtyards and facades (See Map 2).

The millyard of the Pilling Shoe Mill was recycled to maintain its historical integrity while providing an outdoor area for elderly residents.

E-18
Commercial Streets — General Principles

Location: Map 4

CRITICAL CONCERNS

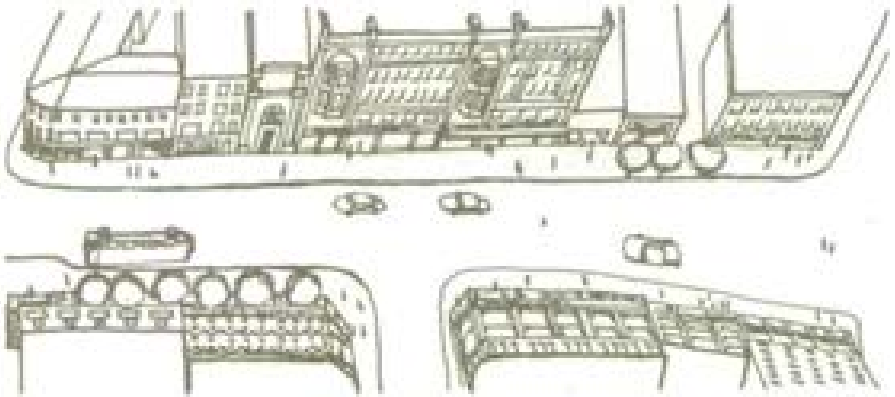
The vitality of downtown Lowell and much of its historic character can be felt today by walking down its main shopping streets, Merrimack and Central. John Street deserves emphasis for developent as a commercial connector to the Boott Mill complex. Shopping activity should also expand along Middle and Market Streets.

Continuity of shopfronts and activity is critical to the success of these streets as lively places that draw people.

If setback is respected from one facade to another along the street edge, the buildings will collectively enclose the street. This kind of continuity which unifies a variety of individual buildings is critical to the historic character of these streets.

RECOMMENDED APPROACH

Every effort should be made to protect the integrity of Lowell's downtown commercial streets through sensitive rehabilitation and new construction that provides a continuity of shops along the street frontages.



STANDARDS

- Preferred ground level uses on "primary" commercial streets (Map 4) are: retail, restaurant, entertainment or other functions directly open to the public and accessible from the sidewalk. Similar uses would be desirable on "secondary" commercial streets.
- When rehabilitating or infilling with new construction, reflect the scale and rhythm, strength of cornice line and general level of architectural detail typical of the street. Maintain also the variety of styles and details historically characteristic of the street.
- The demolition of portions of buildings, the removal of architectural details, or the covering of facades with new materials should generall not be allowed.

REFERENCES

Building Book, pp. 26-38
Berk, Improvement Manual

The uses of ground floor shops on primary shopping streets are as important to the continuity of a commercial district as the rehabilitation itself.

E-19
Commercial Streets — Storefronts

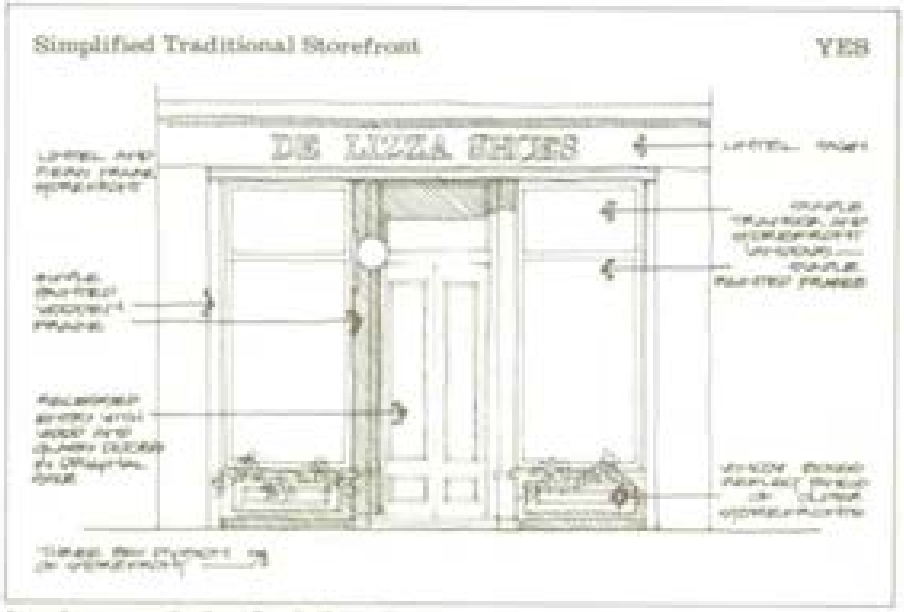
CRITICAL CONCERNS

Many storefronts on Lowell's historic commercial buildings have been altered or replaced with incompatible materials and designs.

Storefronts on historic buildings were designed to be integral to the overall design of the building. Replacing or altering historic storefronts can have seriously negative effects if not done sensitively.

RECOMMENDED APPROACH

Retain and rehabilitate existing historic storefronts. Restore or compatibly redesign storefronts which have been altered or removed.



Storefront example from The Building Book.

STANDARDS

To rehabilitate existing storefronts:

- Remove later fronts applied over remaining original storefront elements.
- Patch or replace in kind deteriorated original wooden parts. (See Standard E-5: wood)
- Remove paint non-abrasively from originally unpainted masonry elements still in good condition.
- Remove non-abrasively or scrape and sandpaper existing painted wood to obtain a good surface for repainting.
- Repaint wood and iron elements.

To redesign storefronts altered or removed:

- Respect the system of structural bays. Reuse the original structural elements, such as piers, columns, and lintels. Infill using elements of base panel, window, and transom that are historically appropriate to the facade. Retain any historic system or elements as closely as the needs of the new uses will allow.
- Construct storefront preferably in wood or in extruded aluminum framing. Coat wood with paint or aluminum with anodized or baked enamel finishes appropriate to or compatible with historic colors.
- Where there is no evidence of the original storefront interpret historic elements with a contemporary design solution.

REFERENCES

Building Book, pp. 39-42
PLAY, Storefronts

Storefront renovations can often successfully take a form similar to the original design.

E-20
Commercial Streets — Signage

CRITICAL CONCERNS

Modern signage on historic buildings often conflicts with architectural style and scale and obscures architectural details.

Inappropriate signs detract from the architectural integrity of historic buildings. Such signs are those which overwhelm the building because of their large size; obscure architectural features or cause the destruction of protruding ones; or visually compete with decorative elements or with the overall style of the building.

Well designed signs can reduce clutter and enhance the visual quality of a street.

RECOMMENDED APPROACH

Retain or provide signage which is in harmony with the historic architecture of the building.

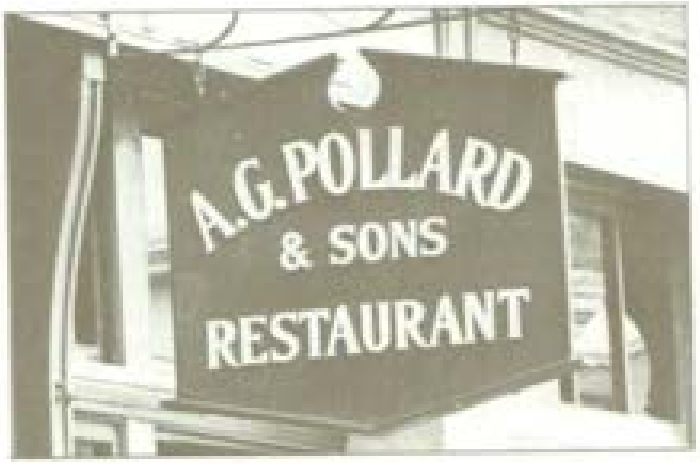
Historical signs usually blended well with building design. The signage was scaled to the pedestrian and located so that the essential architectural features were not lost.

STANDARDS

- Meet the requirements of the Lowell Sign Ordinance, especially noting the requirement that signs not obscure the architectural features of the building.
- Design signs in styles, materials, type faces, color schemes, and letter relief appropriate or sympathetic to the historical style of the building.
- Avoid signs which are done in a style or design which predates the era of the building.
- Refrain from attaching signs in a manner which requires the removal of historic building materials to achieve clearance for the sign.
- Attach signs through joints in masonry units rather than directly into the unit itself.

REFERENCES

Building Book, pp. 43-44
Sign Ordinance
LHPC, Signs



Modern signs can be designed to be in harmony with historic buildings.

E-21
Residential Buildings

Location: Map 5

CRITICAL CONCERNS:

"Lowell's many neighborhoods were settled at various times. Architectural style is often a key to the date and early use of a building and the original character of a neighborhood." (Lowell - The Building Book, p. 5).

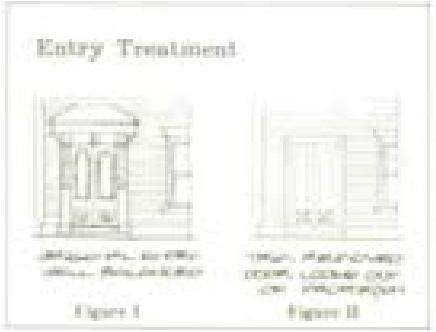
No two residential buildings are exactly the same. Yet each reflects a particular historic style or a "vernacular" mix of several styles. If the design attitudes and elements of these styles are understood, owners/designers can plan preservation, restoration or replacement more sensitively.

Collectively all residential buildings in a street or neighborhood contribute to a distinct, physical urban fabric--they may represent either a wide mix of styles or a more uniform treatment. In addition to the house the landscaping elements, such as plantings, walls, gardens and paving, can also be historically significant in contributing to the feeling of the street.

Residential buildings in the District are concentrated in the Acre neighborhood. Special historic residential groups are shown on Map 5. The building features of greatest concern are the facade with its window parts, doorways, woodwork details and siding, and the roof with its roofing materials, cupolas, chimneys and dormers.

RECOMMENDED APPROACH

The vitality of Lowell's residential neighborhoods should be enhanced by restoring and preserving residential buildings while respecting the historic character created by the various architectural features defining roof and facade.



The removal of important detail is a typical problem that has occured when remodelling historic residential buildings - example from The Building Book.

STANDARDS

- o Review and employ the "Guidelines" for residential facades, windows, shutters, entries, siding materials, and streetscape outlined in Lowell - The Building Book, "Houses," pp. 3-24 and "Technical Information," pp. 55-66.

REFERENCES

Building Book, pp. 3-24 & 55-56

Preservation of important residential streets requires that each building be maintained in a manner which preserves the character of the entire street.

N-1
New Buildings — General Design Criteria

CRITICAL CONCERNS

Some major vacant sites now exist in the District. Many smaller sites embedded in the historic building fabric are also vacant. Even though these standards explicitly discourage building demolition, some additional sites may become vacant in the future.

In downtown Lowell the development of vacant sites is generally desirable both for economically revitalizing and for re-establishing the physical fabric that was historically tightly-knit.

If developed without controls new construction and related parking facilities could be detrimental to the historic character of the District.

RECOMMENDED APPROACH

On now vacant sites encourage new construction that creates buildings and activities that help to re-establish a tightly-knit urban environment resembling 19th century Lowell in its richness, compactness and variety.

STANDARDS

- In the overall design of buildings certain qualities of the physical fabric of historic Lowell should be adopted and interpreted into contemporary design:
  - Use buildings to create continuous walled complexes that hold the lines of streets, canal and riverfronts and to create interior courtyard spaces. Avoid buildings designed as freestanding objects.
  - Animate the cornice lines of buildings and design new high structures in the character of historic spires and towers. Avoid large utilitarian building blocks where these can dominate the skyline.
- The use program and design of ground levels in new buildings should ensure continuous animated cultural or commercial activity along the sidewalks of primary designated Commercial Streets (Map 4) and Pedestrian Ways (Map 3) of the District. Contribute public improvements and pedestrian amenities such as planting, benches, shelter, etc. (see P-2), along these streets.
- In new construction contemporary design vocabulary in details is encouraged rather than copies of historical elements.
- Give preference to using naturally textured materials and subdued colors related to the historic materials of the District. Interpret into contemporary architectural design the scale, rhythm, proportions, and level of animation found in the historic buildings of Lowell.

This major new commercial project in Gothenburg was designed to match street line and to appear as a series of traditionally scaled buildings.

N-2
Infill Structures vs. Major Sites

CRITICAL CONCERNS

Infill structures are buildings inserted into relatively small sites in the midst of historic buildings. The design of these structures can help reinforce the qualities of the group or have a dissonant influence. New construction sites are considered "infill" if they cover an area less than one quarter of a city block and/or less than half of the frontage of a given block face or any block that contains historic buildings.

Regardless of the size of the project, sites occupying larger portions of a block or located on blocks without historic structures will be evaluated as "major sites."

Major new building complexes are likely to be built where blocks or sections of streets have been cleared. The design of these buildings has less impact on existing historic structures but due to the potentially greater size of the projects they may have a significant impact on the overall cityscape and skyline.

RECOMMENDED APPROACH

Distinguish between infill and major sites in order to apply standards appropriate to each.

STANDARDS

- For infill structures: blend with the existing architectural fabric as seen from the street level, and reinforce continuity rather than stand out individually. See detailed standards for:
  - Height and Setback (N-3)
  - Exterior Design and Details (N-4)
- For major sites: on the street level these projects should conform to the general design principles (N-1); they also can create their own contemporary environment with greater flexibility. In regard to the vistas of the city the new projects should allow views of the mills and their towers to dominate the street and cityscape. See detailed standards for:
  - Massing and Height (N-5)
  - Canal and Riverbank Development (N-6)

Examples of existing sites:

Typical Major Sites (M)

Typical Infill Sites (I)

N-3
Infill Structures — Height and Setback

CRITICAL CONCERNS

In order to maintain the historic physical scale of streets and building groups new infill structures must conform in height, massing and scale to the other buildings along the street or in the group.

The continuity of the line represented by facades on the street must be maintained to form a continuous street-wall blending the new construction with the historic streets.

Cornices and other key horizontal and vertical lines typical of a building group can be reinforced by the new infill building in order to increase the unity of the group.

Some streets and groups of historic buildings have a uniform pattern while others exhibit greater variation. The level of variation that now exists in height and setback among the buildings in a group can be reflected in new infill buildings.

Height and setback regulations for new construction in residential areas should be as required by the Zoning Code and are not given here. Variances should only be granted to proposals that are similar in scale and character to the surrounding historic buildings.

RECOMMENDED APPROACH

Infill structures placed in existing historic building groups should closely approximate the relationships of height and setback that now exist among the buildings in the group and should not call attention to themselves with their massing.

STANDARDS

o Height Limitation for Infill Structures:

H_1 = minimum height: recommended to be no less than the lower of the adjacent buildings or two stories, whichever is greater.

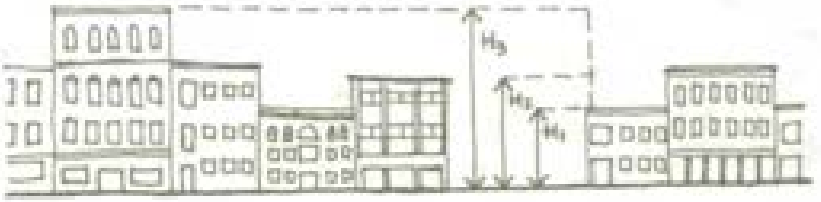
H_2 = maximum height generally allowed: equal to the taller of the immediately adjacent buildings along the block face but no less than two stories.

H_3 = maximum height based on the merits of the design determined through the review process: height can be allowed up to that of the highest existing building along the face of the block which includes the infill structure. Authorization for this extra height will be considered as a bonus for compliance with standards for ground level use and exterior design details.

o Setback limitation for infill structures: the setback of the street wall of an infill building must be no more than that of the adjacent building with the greater setback, and no less than the adjacent building with the lesser setback. Elements exempted from this rule include:

  o The portions of height above H_1 if permitted, may be set back, but if such setback is used it should be a minimum of 20 feet from the street wall.

  o Storefronts at the ground level may be set back from the Street Wall to create arcades, but the line of structural supports should remain at the street wall.



N-4

Infill Structures — Exterior Design & Details

CRITICAL CONCERNS

The compatibility of new contemporary designs for projects designated infill with existing buildings on Historic Commercial Streets depends on the treatment of the following critical architectural elements:

Exterior materials, colors and textures of walls, roofs, exposed structural members. Relationship of major horizontal and vertical building lines created by cornices, sign bands, pilasters and windows.

Openings for windows and doors including the ratio of window to wall area, size, proportion, rhythmical groupings, types of subdivision, frames and mullions.

RECOMMENDED APPROACH

For the exterior design of an infill project, clues can be drawn from elements and the treatment of materials in existing buildings along the street. Determine whether such buildings collectively present a consistent or varied set of design elements and details--in the new design respect this collective effect.

STANDARDS

- Develop design proposals for review. Seek technical assistance for design and presentation. Include in the presentation
  - The treatment proposed for the critical elements listed.
  - Analysis of critical design features of surrounding buildings.
  - Compatibility of the new proposal with existing buildings illustrated by the use of photomontage, architectural model or other suitable technique.
- Avoid obviously incompatible elements: curtain walls; windowless walls facing the street; mill finish aluminum frames; porcelain enamel and other incompatible panel materials; brightly colored, shiny-surfaced materials above the ground level.

Infill structure of contemporary design was detailed to work with historic facades in Nottingham, England.

N-8
Major Sites — Massing & Height

CRITICAL CONCERNS

To reinforce the District it is essential that new buildings create a tightly-knit fabric of streets and urban spaces even in areas where the 19th century building fabric of Lowell no longer survives.

This historic quality can only be restored if new building elements similar in scale to the historic buildings now removed are constructed in continuous wall-like structures along street frontages, canal and river edges.

High rise building elements may be appropriate in some locations, but if they are set in the line of street-walls or directly along canal fronts they will be incompatible with the historic spatial qualities of the District.

If high rise buildings are proposed, the impact of their cast shadows and their effect on wind currents at ground level may be critical.

Height control is critical at street, canal and river frontages and at the axis of major street vistas. Shadow and wind impacts are particularly important at active public pedestrian areas.

RECOMMENDED APPROACH

Recreate a tightly-knit building and street fabric characteristic of 19th century Lowell but in a contemporary idiom adapted to new functional needs.

STANDARDS

- Build new structures in the industrial and commercial sections of the District to the lot line along street and canal fronts. Buildings should be a minimum of 2 stories or 25 feet and a maximum of 5 stories or 60 feet high at these lines.
- Buildings higher than this limit may be allowed as exceptions based on the merits of the design determined through the review process. The following may be considered as the criteria for granting exceptions:
  - Set back the high rise element from the lot line at least 40 feet when there are intervening lower building elements.
  - Demonstrated analysis of and design response to: key historic views, shadows and wind currents caused by the building, traffic and pedestrian flows that are compatible with the District.
  - Design of the building as an appropriate vertical focal point and a worthy neighbor to the towers and spires of historic Lowell.
  - Compliance with recommended ground level uses and provision of public pedestrian amenities.

Diagrametic example of applying size and height Standards for major sites.

- In residential areas the height and massing of new construction should be limited to the maximum height and massing found in the immediately adjacent residential blocks (See Map 5).

REFERENCES

Lowell Zoning Code

N-6
Major Sites — Canal and River Bank Development

Location: Map 3

CRITICAL CONCERNS

The open spaces defined by buildings along the canal and river banks play a significant role in the history of Lowell as a city whose industries had an integral relationship with these waterways.

Maintaining public pedestrian access to some edges of these waterways is one important way to link with this past. Traditionally some public and private access of the waterways was provided.

The character of new buildings along with the existing ones needs to reinforce the unique spatial quality of the waterfronts--critical elements are set back and height discussed in this standard as well as in E-5 Major Sites: Massing and Height.

Parking between the buildings and the canal or river should not extend all the way to the edge of the waterways as this space use would conflict with the historic character of the waterfronts.

RECOMMENDED APPROACH

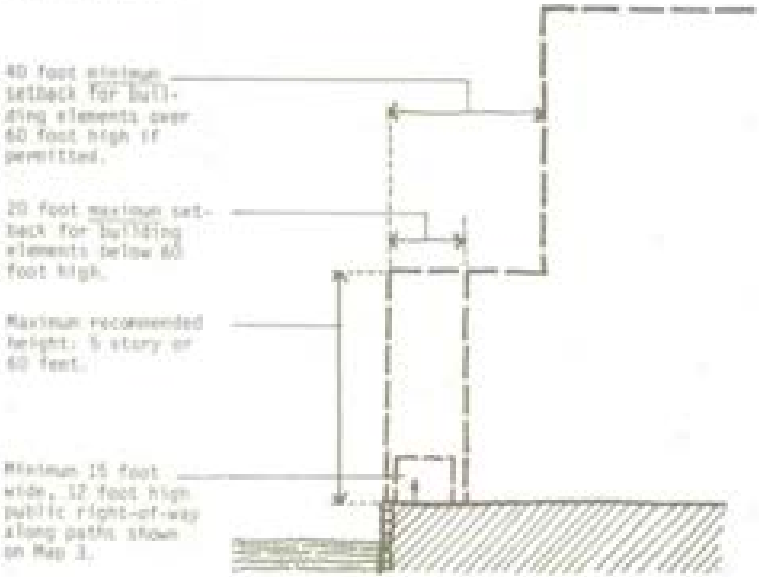
When new buildings are erected along the canal and river banks they should respect the massing and height of existing buildings and public paths designated in Map 3.

The proposed standards suggest building configurations similar to those now demolished historic building shapes at the Prescott and Middlesex Mills sites. These building forms can provide maximum development potential and a strong contemporary urban character as well as historically correct relationships.

STANDARDS

- Buildings under the 5 story or 60 foot height limit should be located within a maximum of 20 feet from the water edge in order to maintain the traditional close relationship of the buildings and the water.
- Building elements higher than this limit, if allowed through the review process, should be set back a minimum of 40 feet from the water's edge. No such high rise elements should be allowed in most cases unless at least 70% of the water edge included in the site is being built up to at least 3 stories in height.
- Provide a public path along the open edges designated on Map 3 or within an arcade as part of the continuous system of public ways.
- Avoid locating open parking lots closer than 20 feet to the edge of the water. Screen the parking lot from the waterfront with dense vegetation or opaque fence or wall.

Diagram of recommended canal front building envelope:



N-7
Commercial Streets — Ground Level Use

Location: Map 4

CRITICAL CONCERNS

New projects as well as existing buildings should contribute to the vitality of downtown commercial streets. This can be accomplished by locating cultural or retail uses on the ground level in the portion of the building immediately adjacent to the sidewalk.

New projects should continue the same character of ground level shopping and pedestrian activity that exists on historic commercial streets. Provision of new pedestrian amenities along sidewalks will heighten pedestrian activities.

RECOMMENDED APPROACH

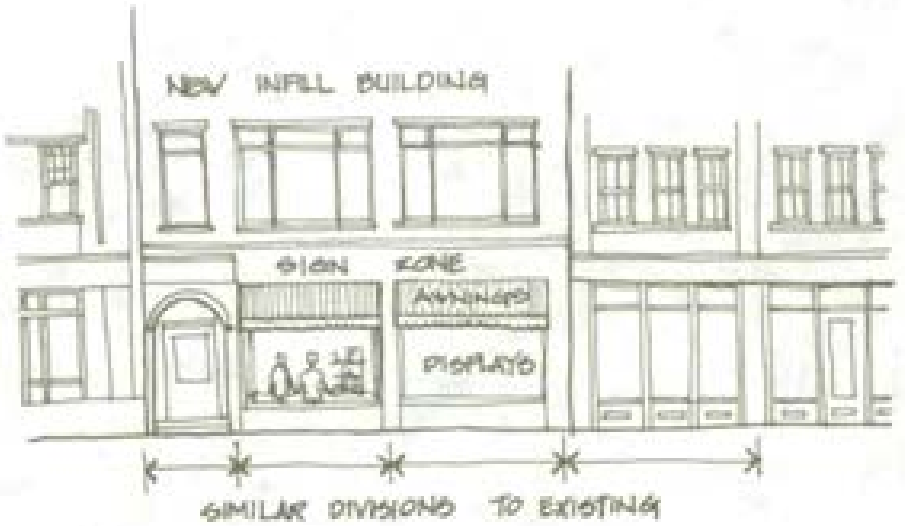
Ground-level use and design of new buildings should follow existing patterns created by the type and scale of shops, street facades, sign design, shop window configurations, and materials of buildings on historic commercial streets.

STANDARDS

- Signs and awnings on new buildings should respect the zone and manner of display for these on existing historic buildings in the historic commercial area (See E-20 Commercial Streets - Signage).
- Provide a minimum of 60% transparency for shopfronts with pedestrian-oriented displays. (See N-4 Infill Structures - Exterior Design and Details)
- Incorporate pedestrian amenities such as street furniture and awnings or arcades into the design of new buildings.
- Maintain columns or walls of new building in line with existing facades--this Standard also applies when the ground-level design includes an arcade.

REFERENCES

Building Book, "Commercial Buildings," pp. 25-48.



N-8
Auto Access, Parking & Service

CRITICAL CONCERNS

Streets and other pedestrian paths should be as comfortable as possible for pedestrians. Parking and servicing sometimes can interfere with pedestrian use of the sidewalk and with pedestrian access to shops on the street. By limiting curb cuts for parking lots and service facilities and by visually screening these areas the pedestrian/vehicular conflict will be kept to a minimum.

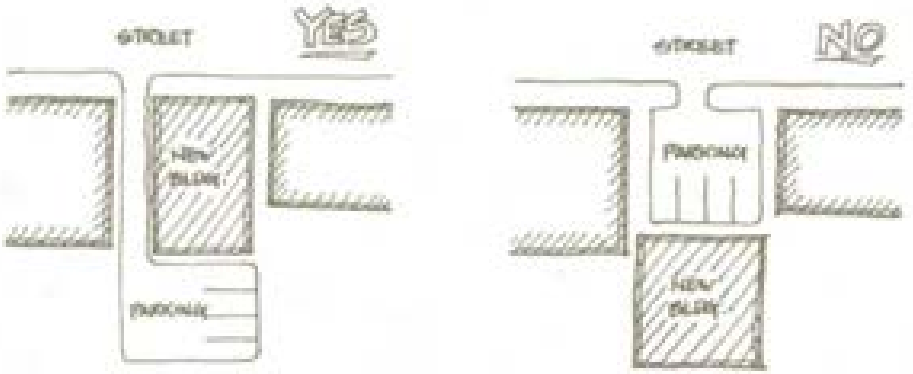
RECOMMENDED APPROACH

Minimize the interference of parking and auto traffic with pedestrian activity by limiting curb cuts, by restricting location of parking, and by requiring screening for parking.

Landscaping and screening for the parking lot at the corner of John and Paige Streets is an example of recommended treatment for existing small lots.

STANDARDS

- Auto access to new project sites should be as direct as possible from major access routes. Dutton or French Streets should be used if possible. Channeling additional traffic through major commercial streets (Map 4) or pedestrian paths (Map 3) will be discouraged.
- New curb cuts and open lot parking along primary shopping streets such as Merrimack and Central will be discouraged.
- One curb cut (maximum 20 feet wide) per lot or per 100 feet of frontage are strongly recommended on other than primary shopping streets.
- Parking should be prohibited between building and street line.



- Parking lots visible from the street or other pedestrian paths should be screened and landscaped with walls and vegetation.
- Design of traffic signs, signals and islands should be considered from the point of view of the historic streetscape (See P-2).

N-9
Parking Garages

CRITICAL CONCERNS

Providing parking in garages is essential to supporting the intensive uses intended in the District and to avoiding the proliferation of surface parking lots. However, the large unrelieved bulk of parking garages can have a detrimental visual impact on historic streetscapes. Traffic generated by garages can also cause congestion and conflict with pedestrians.

To ensure that garages can be built in the District but do not detract from its historic character it is important to control: the location of the garages at appropriate sites; the design and uses at the ground level; compatibility of massing, scale and materials with the surrounding buildings; and the location and design of auto and pedestrian entrances and exits.

RECOMMENDED APPROACH

Encourage the construction of parking garages on the appropriate sites within the District and ensure that their design is compatible with the historic environment.

New Market Street garage has facade treatment compatible with the historic buildings on the street.

STANDARDS

- o Location. Locate no garages directly within any of the historic mill complexes (Map 2) or historic residential groups (Map 5). Avoid parking on the ground level along primary commercial streets (Map 4) and give preference if possible to uses other than parking along the upper floors of the street facade. Provide access to garages directly from automobile feeder streets and avoid all curb cuts along major commercial streets (Map 4) and pedestrian ways (Map 3).
- o Ground Level Treatment. Include shops along the full ground floor frontage on primary shopping streets (see N-7 commercial streets - Ground Level Use for design requirements). Provide design treatment continuous with the adjacent buildings and add landscaping and pedestrian amenities appropriate for the street.
- o Massing and Facade Treatment. Large garages are comparable in size to the mill structures. They should not imitate these historic buildings but may best fit in by responding to their scale and emphasizing overall mass and exterior brick walls with openings rather than the structure of horizontal floor levels.
- o The construction of any garage in the District containing more than 25 cars should be permitted only contingent on the compatibility and merit of the design determined through the review process.

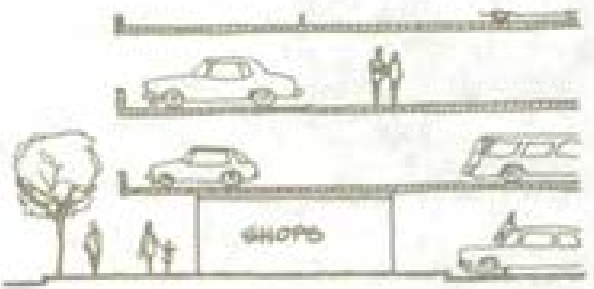


Diagram of appropriate ground level treatment of parking garage on a commercial street.

P-1
Pedestrian Amenities — General

CRITICAL CONCERNS

Public improvements should complement the preservation efforts for individual buildings in the District in order to ensure a continuous improved environment. Such improvements should focus on the streets, sidewalks, transit and trolley stops, parking lots, canal- and river-banks and the public parks.

Different public spaces historically had different characters. Present-day variety of usage suggests maintaining a variety of design. For instance, commercial streets such as Merrimack Street carry large numbers of people in everyday activity and focus on the shops. By contrast, the historic walk along Kirk Street will largely serve the more leisurely pace of National Park visitors.

The public improvements will require considerable cooperation between the City of Lowell, which has primary responsibility for its streets and public ways, and all the other agencies and private developers, which will contribute improvements along with their specific projects. The latter include: the National Park Service, the Massachusetts Department of Environmental Management, the Lowell Historic Preservation Commission and any private owner of buildings fronting on the public ways of the District.

RECOMMENDED APPROACH

Ensure the improvement of all significant public spaces in the District by cooperation among several contributing agencies and by a variety of designs appropriate to the historic architecture.

STANDARDS

- Each public or private developer of building rehabilitation projects in the District should either assume responsibility for improving the immediate public surroundings of the building at the same time or should have an explicit agreement with a public agency to do so.
- Different types of public spaces should respond to the following general performance criteria:
  - Commercial Streets (see Map 4) should be treated simply with maximum open sidewalk space, minimal obstruction on the ground and pedestrian preference for street crossing (See E-18 Commercial Streets - General Principles).
  - Historic, Non-Commercial Pedestrian Streets and Walks should have a smaller scale, more intimate design using textures and smaller elements that stimulate interest along the path.
  - Millyards should be restored as historic places open to the public (See E-17 - Mill Buildings - Millyard Landscape).
  - Canal and Riverfronts were not typically pedestrian spaces in 19th century Lowell but should be opened up to the public due to their historic interest and value as a public amenity.
  - Parking Areas are the first thing most visitors and daily commuters see in Lowell and must be carefully designed (See P-6).
  - Parks should play a special role in historic interpretation and provide day-time cultural activity for the District as well as relief from paved areas. (See P-8).

A number of the recommended street elements have been successfully combined on Palmer Street.

P-2
Streetscape Components I — Paving and Planting

CRITICAL CONCERNS

New pavement and planting throughout downtown Lowell are important in order to provide pedestrians with shade and texture along their walk.

New paving and planting are probably the most influential public improvements in the streetscape. It is not necessary to completely standardize these for the District but it is desirable to encourage: improving these types of public amenities as much as possible; applying some general consistency; and taking advantage of specific local opportunities. There are many existing areas of pavement and planting that add to the historic character of the District andcould be incorporated in new improvements.

RECOMMENDED APPROACH

Enrich the streetscape particularly around historic buildings and heavily used pedestrian areas. Create some consistency and historic appropriateness without uniformity.

Granite pavement still exists under the asphalt covering on most of the downtown Lowell streets--its restoration by the City is a good example of what is being recommended in the Standards.

STANDARDS

Paving:

- Retain historic paving features where possible and incorporate these into improvements. Features found in the District include: large granite paving slabs; steps; granite curbs; bollards; and retaining walls.
- Burn off asphalt surface and restore Belgian block paving on streets where only slow moving local auto traffic is desirable (i.e., Merrimack Street, John Street, Kirk Street, etc.). Replace this pavement with smoother granite slabs for easier walking at cross-walks.
- Use subtle variations in paving patterns to enrich sidewalks and plazas and relate to patterns of street lights, furniture, street crossings and entryways. Variations may include: directional changes and different sizes in pavers; and changes in the patterns and color of bricks.

Planting:

- Use a variety of tree species which should all be: hardy, indigenous street trees (linden, maple, locust, sycamore, crabapple, etc.); high branching to avoid conflict with pedestrians and store signs and to minimize damage through vandalism; at least 4" in diameter or larger; in cast iron tree grates that are level with the pavement and that match heavy construction steel tree guards; and guaranteed by the contractor for two years.
- Encourage flowering shrubs and seasonal flowers only if a special party contractually agrees to their maintenance. Such parties may be: the National Park Service; Garden Clubs; building owners; merchants; or other groups or institutions.
- Plant grass only in relatively large lawn areas where it can be easily protected and maintained.
- Build irrigation equipment with all planting as appropriate.

P-3

Streetscape Components II — Lights, Signs, and Traffic Signals

CRITICAL CONCERNS

Common problems with these elements now are lack of pedestrian scale, visual clutter and confusion of necessary information. The influx of visitors who are strangers to the area increases this concern. Lighting also plays a major role in making the city attractive, safe and accessible in the evening, thereby extending its economic and social activities.

RECOMMENDED APPROACH

Clarify, coordinate and make compatible with the historic setting the range of lights, signs and traffic signals required on the streets of the District.

Directory on Market Street orients visitors in downtown Lowell.

STANDARDS

Lights:

- Throughout the commercial and residential areas of the District and along major pedestrian ways (Map 3) use pedestrian scale street lights (about 9 foot high poles).
- Replicated historic street lights with cast iron or steel poles are appropriate along historic commercial and residential streets. Modern, simple designs are more appropriate in parking lots and at canal banks.
- Daylight color corrected mercury vapor lamps are recommended. High pressure sodium vapor lights, even with color correction, are too bright and harsh for use along the pedestrian-oriented streets although they may be appropriate along major auto approach routes and in parking lots.

Signs:

- A uniform street name sign that is historically appropriate and clearly visible to both pedestrians and drivers needs to be developed and used at all street corners. These signs could be attached to light or signal poles or integrated with these, but they should always appear at a uniform height and location and not be obscured by other elements on the street.
- Combine other public signs - "No Parking," "Loading," "Bus Stop," "Public Phone," "Toilet," etc., on as few poles as possible. Use compatible graphics, colors, and fabrication methods for all of these. Make support poles and their footings heavy enough to insure that they survive the usually heavy wear-and-tear and remain vertical. Paint all sign poles black.
- For drivers provide clear signage to parking areas by: directional signs as well as automatic indicators if area is full at driver-decision points; clearly recognizable small signs lining the route; and entry signs to parking areas.
- For pedestrians provide orientation maps in public areas near visitor centers showing park attractions, shopping streets and other destinations. Also provide symbol signs for public telephones, public toilets, bus and trolley stops.

Traffic Signals:

- Signal heads should be of U.S. Department of Transportation approved design but mounts and poles need to be tailored to fit the streetscape.
- Use black metal poles and mounts.
- Avoid obstructing sidewalks with poles or control equipment.
- Provide pedestrian signals--preferably ones using international graphic symbols--at all intersections with significant pedestrian activity.

P-4
Streetscape Components III — Street Furniture

CRITICAL CONCERNS

Seats, trash receptacles, bicycle racks, water fountains and other miscellaneous items are important parts of making the streets of the District comfortable for pedestrians. Public Services such as telephones and toilets are essential for visitors but they also encourage local people to spend more time in the city center. Street furniture in the District is likely to be provided by several different agencies: the City, the National Park Service and owners of adjacent projects. It is not necessary to standardize these elements completely, but it is desirable to encourage: general consistence and compatibility with the 19th century environment; the use of simple, durable and vandal-resistant materials; the use of standard designs or components that can be bought and/or replaced from a catalogue without costly special orders; and the placement of street furniture in coordination with a plan sensitive to pedestrian flow requirements and the design of adjacent buildings.

RECOMMENDED APPROACH

Encourage the placement of historically appropriate, attractive and durable street furniture. Careful study of how people use a street should guide placement of street furniture.

Benches in park off Middle Street.

STANDARDS

Seats:

- Contour-type benches are recommended because they are historically appropriate and much more comfortable for sitting than slab-type designs.
- Painted cast iron or steel frames and hard wood seating are the materials that are likely to remain attractive and functional the longest. Very hard woods like green-heart, purple-heart and Honduras mahogany are ideal because they can be left to weather without any applied finish. Varnished or painted wood is not recommended for outdoor seating.
- Moveable seating is especially convenient and attractive in active outdoor open spaces. If a private business (such as a restaurant) or nearby public institution is willing to maintain moveable seating, it should be encouraged.

Trash Receptacles:

- Provide at least one trash receptacle per block on sidewalks along commercial streets, an additional one at transit stops and one or more at public open spaces (depending on size and activity).

Bicycle Racks:

- Provide bicycle racks near active open spaces and at entrances of major public buildings and exhibits.
- Use standard, sturdy designs that protect the whole bicycle and are easily locked.
- If possible, place within view of stores, attendants or other constant activity to provide informal protection against theft or vandalism.

Public Telephones:

- Provide telephones available to the public at regular, convenient locations.
- Indicate the location of public phones with clearly visible symbol signs on the street.
- When possible, integrate telephones with other information facilities or transit shelters.

P-8
Bus and Trolley Stops

CRITICAL CONCERNS

Transit service in the District is not now an attractive alternative to auto use and thus does not minimize the adverse impacts of traffic and parking. Transit shelters and related facilities can improve the image of the service and the convenience of passengers. The design and maintenance of transit shelters in the District is likely to involve several public agencies: the Lowell Regional Transit Authority; the City; the National Park Service; and the Commission. These agencies need to agree on a specific design, mode of installation and maintenance of shelters.

RECOMMENDED APPROACH

Provide transit shelters throughout the District that are functionally and historically appropriate and that reinforce the image of public transit.

Arcade type bus shelter in Chelsea, Massachusetts provides a focal point in the downtown area.

STANDARDS

Bus Stops

- At the main city center bus stop where most transfers occur (probable future location: Paige Street) an indoor, climate-controlled passenger facility needs to be provided.
- Shelters at other bus stops in the District need to have a recognizable image consistent with the historic streetscape and be designed big enough to hold all the people who normally wait at a particular stop.
- When next to public open spaces bus shelters should be expanded to a larger scale and form general shelters or arcades for people sitting and socializing in the open space.
- Lighting is essential at all stops where nearby street lighting is not available. The night lighting of bus stops will improve their safety and public image and can reduce vandalism.
- Vulnerable materials such as plexiglass or lexan should be avoided on vertical surfaces in easy reach because these tend to become particularly badly vandalized in bus shelters.

Trolley Stops:

- Trolley stops need to have shelter facilities similar to the bus stops. Initially trolleys will operate only in the summer when shelters can be more open. Since some trolley stops will not be directly on well-traveled streets, lighting for night security and orientation information about the city are important.

P-6
Parking Lots

CRITICAL CONCERNS

In the long term, the construction of garages is preferable in the District to open air parking lots. However, because in the near future parking lots will be used, they must not impair the historic character of the District. Areas of possible problems: the direct visual impact of the lots; the potential for traffic conflicts with pedestrians; and general confusion if lots are poorly planned. In addition, some special opportunities unique to the District that could turn parking lots into interesting arrival experiences should not be missed.

RECOMMENDED APPROACH

Where parking lots are necessary, they should be well planned and adequately screened from the historic environment of the District and designed to enhance arrival.

STANDARDS

- Auto access to parking areas should always be as direct as possible from major automobile gateways and feeder streets of the District (the Sampson Connector, Dutton Street, French Street, Market and Central Streets). Traffic approaching or leaving parking areas should always be channeled away from major commercial and pedestrian streets. (See Maps 3 and 4).
- Parking Lots should be screened from all streets and pedestrian areas by opaque fences and/or vegetation at least 5 feet high. The screening should be designed to be attractive from both the street and the parking lot side.
- Walkways should be marked with special pavement, pedestrian lights, weather protection canopies, directional signing to destinations and concentrations of planting. Parking lot circulation should be designed to channel pedestrian flow along existing attractions such as canals or buildings.
- Parking lots and access to them should be well lit at night. High pressure sodium vapor lights may be appropriate at these locations but they should be directed away from historic buildings, streets and sidewalks.
- Many of the larger parking lots (such as the Dutton Street Lot) are on the sites of former millyards where old foundations, turbine pits and underground spillways may lie buried. Revealing some of these remnants as small archeological excavations should be considered as part of the layout and landscaping of the lots.

Landscaping, lighting and artwork improve the street edge of this parking lot at Towers Corner.

P-7
Canal and River Banks

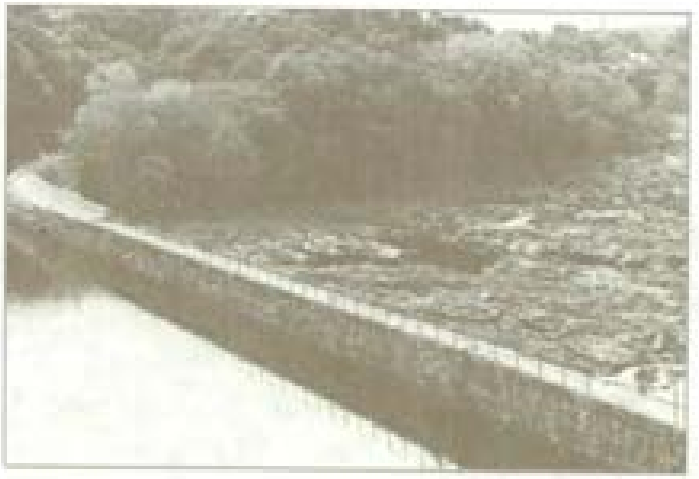
CRITICAL CONCERNS

The canals and rivers are of prime importance to the history and to present attractiveness of the District. While the historic plan of the city did not greatly emphasize pedestrian access to the waterways, public access to them has now become very important. The waterways can also become major public amenities to the present-day functions of the city center; for instance, canal tours and walks can be very enjoyable.

Technical problems include: repairing retaining walls, insuring water quality and removing obsolete equipment. Legal and administrative issues are still complex and must be resolved prior to major public use of canal banks.

RECOMMENDED APPROACH

Provide pedestrian access to the water's edge wherever it is appropriate to historic interpretation, circulation or amenity reasons. Introduce an appropriate new design vocabulary for bringing people to the water.



Unlike the earlier canals, the Northern Canal was provided with a continuous pedestrian pathway intended as a public amenity.

STANDARDS

- Make the water's edge available for public use by direct public ownership or by easement wherever justified for: historic interpretation (locks and other equipment); circulation (See Map 3); special amenity areas as required; and canal barge landings with related walkways. See N-6 for relating public easements to private development sites.
- Where water edges are used as pedestrian ways create intimate pedestrian spaces visually focused on the canals and away from traffic-carrying streets, parking lots and service areas. Design solutions may include lowering footpaths closer to the water and screening them from adjacent areas with fences and/or vegetation.
- Remove existing vegetation that is structurally destructive to the retaining walls.
- Repair retaining walls with rough granite to match the existing construction.
- Water quality should be maintained by periodic flushing, bottom cleaning, and controlling required minimum flow speeds.
- Plant large new specimen trees and other flowering trees and shrubs where open space exists at the water's edge. Maintain sufficient distance between planting and water-edge retaining wall (depending on species and root structure) to avoid structural problems.
- When providing new pedestrian walkways over the water along the edges of the canals, at barge landings or foot bridges, construct heavy timber and plank boardwalks using pressure-treated lumber.
- At waterside provide railings based on historic designs or of contemporary design that is complementary to the historic image.
- For security and extended use during the evenings light well the waterside areas intended for pedestrian use and barge landings.

P-8
Urban Parks

CRITICAL CONCERNS

New parks developed within the District can contribute to historic interpretation, restore some of the amenities that existed in the 19th century and provide settings for present-day festivals, outdoor exhibitions and performances. They can also provide needed places for shoppers and visitors to rest and find relief from the noise and activity of the city.

RECOMMENDED APPROACH

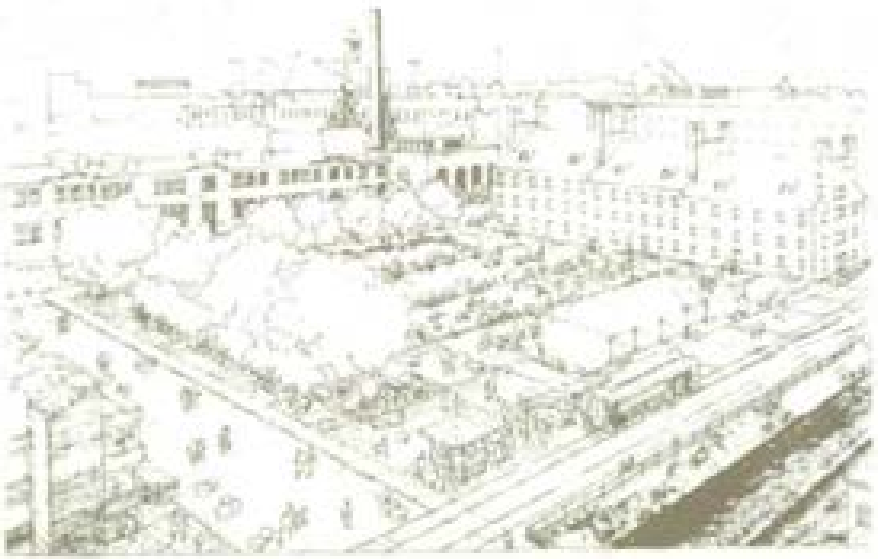
Design parks to serve historic interpretation and present-day cultural activity as well as to provide green spaces within the city.

Lucy Larcom Park replaced an unnecessary street along the Merrimack Canal. It now serves as an inviting downtown park.

STANDARDS

- o Design each park area for particular historic interpretation and cultural activities.
- o Focus on archeological elements, water-power generating equipment and the settings of historic activities.
- o Provide physical facilities for exhibits, festivals and performances, including: amphitheaters, stage areas, fixed and moveable seating, lighting, paved plaza areas, bandstands, shelters for socializing, exhibits, and vendors.
- o For other landscape elements see P-2, P-3 and P-4.

Proposed Boott Mill Park (See Preservation Plan section entitled Site-Specific Projects).



Bibliography

ACHP, Urban Revitalization

Advisory Council on Historic Preservation. The Contribution of Historic Preservation to Urban Revitalization. ACHP, Washington 1979.

Berk, Improvement Manual

Illinois Department of Local Government Affairs. Emanuel Berk, principal author. Downtown Improvement Manual. American Society of Planning Officials, Chicago,1976.

Batcheler, Paint Color Research

Batcheler, Penelope H. Paint Color Research and Restoration. Technical Leaflet No. 15. American Society for State and Local History, Nashville, 1968.

Building Book

City of Lowell, Division of Planning and Development and Anderson Notter Associates. Lowell-The Building Book. City of Lowell, DPD, Lowell, 1977.

Dornsife, Exterior Decoration

Dornsife, Samuel J., ed. Exterior Decoration (1885 ed.). The Athenaeum of Philadelphia, Philadelphia, 1975.

HCRS, Access for the Disabled

Parrott, Charles. Historic Buildings: Access for the Disabled. Dept. of the Interior, Heritage Conservation and Recreation Service, Washington,1980. (in press)

HCRS, Metals

Gayle, Margot, et al. Metals in America's Historic Building: Uses and Preservation Treatments. Dept. of the Interior, Heritage Conservation and Recreation Service, Washington,1980. (in press)

HCRS, Moving Historic Buildings

Curtis, John O. Moving Historic Buildings. Dept. of the Interior, Heritage Conservation and Recreation Service, Washington, 1979.

HCRS, Preservation Briefs 1

Mack, Robert C., Preservation Briefs: #1 The Cleaning and waterproofing of Masonry Buildings. Dept. of the Interior, Heritage Conservation and Recreation Service, Washington,1975.

HCRS, Preservation Briefs 2

Mack, Robert C., Preservation Briefs: #2 Repointing Mortar Joints in Historic Buildings. Dept. of the Interior, Heritage Conservation and Recreation Service, Washington,1976.

HCRS, Preservation Briefs 3

Smith, Baird M. Preservation Briefs: #3 Conserving Energy in Historic Buildings. Dept. of the Interior, Heritage Conservation and Recreation Service, Washington,1978.

HCRS, Preservation Briefs 4

Sweetser, Sarah M. Preservation Briefs: #4 Roofing for Historic Buildings. Dept. of the Interior, Heritage Conservation and Recreation Service, Washington,1978.

HCRS, Preservation Briefs 6

Grimmer, Anne E. Preservation Briefs: #6 Dangers of Abrasive Cleaning to Historic Buildings. Dept. of the Interior, Heritage Conservation and Recreation Service, Washington, 1979.

HCRS, Preservation Briefs 8

Myers, John H. Preservation Briefs: #8 Aluminum and Vinyl Sidings on Historic Buildings. Dept. of the Interior, Heritage Conservation and Recreation Service, Washington,1979.

HCRS, Preservation Briefs 9

Myers, John H. Preservation Briefs: #9 The Repair of Historic Wood Windows. Dept. of the Interior, Heritage Conservation and Recreation Service, Washington,1980. (in press)

HCRS, Secretary's Standards

Heritage Conservation and Recreation Service, The Secretary of the Interior's Standards for Historic Preservation Projects. Dept. of the Interior, HCRS, Washington,1979.

LHPC, Signs

Conklin, Carrie. Lowell Sign Handbook. Lowell Historic Preservation Commission, Lowell, 1980 [in press]

McKee, Early American Masonry

McKee, Harley J. Introduction to Early American Masonry, Stone, Brick, Mortar and Plaster. National Trust for Historic Preservation, Washington, 1973.

NBS, Window Design

Hasting, S. Robert and Richard W. Crenshaw. Window Design Strategies to Conserve Energy; Building Science Series 104. Dept. of Commerce, National Bureau of Standards, Washington, 1977.

NSA, Slate Roofing

National Slate Association. Slate Roofing. (1926 ed.). Vermont Structural Slate Association, 1976.

NTHP, Building Codes

National Trust for Historic Preservation. Preservation and Building Codes. Preservation Press, Washington, 1975.

PLNY, Paint Restoration

Cawley, Frederick D. Property Owners Guide to Paint Restoration and Preservation. The Preservation League of New York State, Albany, 1978.

PLNY, Storefronts

Mintz, Norman M. A Practical Guide to Storefront Rehabilitation. The Preservation League of New York State, Albany, 1979.

Preservation and Conservation

Preservation and Conservation: Principles and Practices, North American International Regional Conference, Williamsburg and Philadelphia, 1972. Smithsonian Press, Washington, 1976.

Sign Ordinance

City of Lowell. Sign Ordinance. Approved by the Lowell City Council, January 29, 1980.

SMACNA, Sheet Metal

Sheet Metal and Air Conditioning Architectural Sheet Metal Manual SMACNA, Vienna, Virginia, n.d.

State Building Code, Section 436 and Article 22

Commonwealth of Massachusetts. State Building Code, 3rd ed. Commonwealth of Massachusetts, State Building Code Commission, Boston, 1979.

U.S. Army, Maintenance Procedures

Historic Preservation Maintenance Procedures TM 5-803-2. Headquarters, Dept. of the Army, Washington, 1977.

Warner, Business and Preservation

Warner, Raynor M., et al. Business and Preservation. Inform, New York, 1978.

Assistance

Housing Rehabilitation Models

The former Trade School has the potential to be converted into a successful mixed-use development which will reinforce the objectives of the National Park. A combination of uses is proposed:

1) an enclosed "Market Place" in the former gymnasium, providing 10,000 s.f.± of space to function as a hybrid of Boston's Quincy Market and Haymarket

2) a total of 44 market-rate apartments, either rental or condominium

The structure itself is not of tremendous architectural significance, but it is an important "background building" to set off its more historic neighbors. The building also lends itself to the proposed economic reuse given the large open classroom spaces, generous window areas and other features. Only selective demolition to open up the interior courtyard will be required. Of all the structures surveyed in the downtown area--other than the large mill buildings--the Trade School is the most readily convertible to housing. In comparison, typical commercial blocks suffer from small size, limited frontage, non-repetitive layouts, and other limitations which reduce the feasibility of mixed-use conversion. Finally and perhaps most importantly, the Trade School enjoys a very central location within the downtown and National Park--across from the Boott Mill complex with its Exhibit Center with forecourt park and parking. This location is critical to such a "pioneering" development, encouraging people to consider living downtown and in turn adding activity to that downtown.

The balance of this report evaluates the two components of the proposed reuse--the market place and the market-rate housing--in greater detail. Reference is also made to the attached financial proformas and the attached schematic architectural plans.

Market-Rate Housing

A total of 44 market-rate apartments (36 one-bedrooms and 8 two-bedrooms) can be accommodated on the upper levels of the school. The school is two structures--the Paige Street and the French Street blocks--which because of grade changes are juxtaposed at split levels (see also architectural section). The courtyard in the French Street structure is enlarged to provide sufficient exposure for the apartments, also resulting in a pleasant private outdoor space for the housing. Entry to the housing is by the side yard adjacent to the Kirk Street Agents' House and the power plant; access to the private courtyard is also provided at this entry point. One (or more) elevators will provide circulation to the upper floors from the lobby. Typical floors are organized with a double loaded corridor system in the Paige Street wing and a single loaded corridor in the French Street wing. Ramps provide the transition between the split levels, allowing handicapped access. A variety of apartment layouts are provided within this general configuration, respecting the structural bays, window openings, etc. The apartments will generally enjoy convenience, privacy, light and air while still being "in the thick of things."

The following factors must be addressed when assessing the market potential for the described housing:

1) HUD's "fair market rents" (FMR) for the new or substantial rehab Section 8 Program are even more appropriate as a measure of the potential market. These rents are intended to reflect comparables in the market area. The fiscal 1980 fair market rents in the Lowell area are:

Type	Max. FMR(a)	120% FMR(b)
1 BR	$444	$533
2 BR	$502	$602

(a) The 2-4 story elevator FMR is shown.
(b) The "maximum" FMR can be increased by 120% for family housing costs and comparables are supportive.

2) No similar data is readily available for condominium housing. However, a reasonable translation from rentals to sales is to apply a factor of 60-100 times monthly rent to project sales. Therefore, extrapolated sales values using HUD new/substantial rehab FMRs at par are as follows:

	60x	100x
1 BR	$26,600	$44,400
2 BR	$30,100	$50,200

3) These housing costs translate into the following income levels assuming 25% of income is spent for rent or ownership.

Type	Rent	Income
1 BR	$444-533	$21,300-$25,600
2 BR	$502-602	$24,100-$28,900

These incomes are well within the range of middle to upper level salaries--especially when taking into account two wage earners in a household. The additional unanswered question is whether or not such households will elect to spend their income for this type of housing even if they can afford it. Ownership of a single-family home of comparable occupancy cost is still the standard in this market area. The attractiveness, activity and convenience of the school conversion will have to draw against these prevailing trends in order to be successful. As further described in the financial analysis section, possible federal subsidies will also be an extra competitive inducement.

Commercial Space

The two-story ground floor of the Paige Street frontage could be converted to a "Market Place" where small shops and vendors can ply their wares. This market is envisioned as a combination of Quincy Market with its food stands and gift shops and the adjacent Haymarket with its produce and meat stalls. The market area can also be cleared for civic or private functions or, as an alternative, retained by the City for use as a special education facility. While the market would be geared to everyday activity, it compliments the themes of the adjacent National Park.

The flexibility of use is possible since the area is a large hall formed by the trusses of the former gymnasium. Approximately 10,000 s.f. of retail/function space is available plus another 4,000+ s.f. of storage and circulation. The ground floor is actually about six feet below the street grade but it is visually connected to the street through large arched windows. This visual connection will be combined with an inviting stair and ramp access into the space. While this commercial area is directly beneath the housing developed in the school above, its physical separation and independent circulation should provide non-conflicting facilities.

The biggest question concerning the Market Place is its form of ownership and operation. The options include:

1) owned and operated by the same management as the housing on a private basis

2) owned by the housing management but net leased to a public body, a non-profit, or an independent management

3) sold as a condominium to a public, non-profit, or private party

As discussed further in the financial section, some degree of public support will be required to achieve rents that are affordable by many of the potential small entrepreneurs who may wish to operate in the Market Place. Furthermore, the hall may well serve public functions or functions associated with the National Park and therefore will need to be reserved for these purposes.

Financial Analysis

A number of alternative financing approaches are applicable for the proposed mixed-use conversion of the Trade School. These include:

1) Conventional - loans from banks or other institutional lenders which, while free of governmental regulation, are currently at rates which are probably prohibitive.

2) HUD - insured loans under the S.221(d)4 program (and with favorable rates under the FNMA/GNMA Tandem Plan), but possibly constrained by the amount of commercial space: A pending middle-income/mixed-income program may also be legislated in time for this development.

3) MHFA - tax-exempt bonds issued by this state agency could more flexibly cover both the residential and commercial; 25% low income (through S.8) is a statutory requirement.

4) MIFA - loans in the form of tax-exempt industrial revenue bonds may be possible if a CARD district is established and the current prohibition against housing uses is eliminated.

The attached financial proforma assumes some form of government assisted financing--an amalgam of HUD, MHFA, and/or MIFA with an 8.4% debt constant. Other assumptions applied in this proforma are standard estimates based on current experience with similar projects. These assumptions produce a total development cost of just under $3,000,000 and rent (or sales) levels as follows:

Residential	No.	Rents	Sales *
1 BR	36	$615	$55,000
2 BR	8	$725	$65,000

Commercial

Net Lease 10,000 s.f. $5/s.f. $50,000

*Note: Sale prices based on conventional financing for condominiums.

Based on the previous discussion, these rents appear to exceed the market expectancy if not affordability. Therefore, some form of subsidy is required to reduce the effective rents--the targets assumed are the HUD FMRs (without multipliers) and an arbitrary $3.00 per square foot for the commercial. Based on these targets the total annual subsidy required is as follows:

Residential

1 BR:	36x($615-$444)x12 =	$ 73,872
2 BR:	8x($725-$502)x12 =	21,408
Subtotal		$ 95,280
Commercial	10,000x($5-$3) =	20,000
Total		$115,280

This level of subsidy would require an initial capital grant of approximately $1,375,000 (at the debt service constant of 8.4%). This magnitude of assistance could be sought under current guidelines for the federal UDAG program, especially if $200-$300,000 was made available from another source, thereby meeting the UDAG formula. Alternatively, a favorable lease for the commercial space could assist in the development at market rates or greater.

Summary

The conversion of the former Trade School into a multi-purpose commercial and into market-rate housing has an exciting potential. This proposed development both draws upon the plans of the Commission and National Park and related activity downtown. It can also add substantially to the downtown activity through its commercial and residential use. Financial support through federal, state or other loan programs will be required as well as capital grants of as much as $1.4 million. This level of public support is warranted given the resulting development.

Preliminary Proforma

Development:		
Rehab Costs (64,600 gross s.f. @ $35/s.f.)		$2,261,000
Architectural & Engineering (6% of costs)		135,600
Related Costs:		
Interest (12 mos. @ 8%)	$106,700	
Financing Fees (2%)	53,400	
Agency Fees	5,000	
Taxes & Insurance	18,000	
Legal & Title	20,000	
Organization & Accounting	12,000	
Marketing & Rentup	15,000	
Other	-	
Total		230,100
Developer's Fee (10% of above)		262,700
Land Acquisition		75,900
Total Development Cost		$2,964,400
Mortgage Amount (90% of Total)		$2,668,000

Operating:

Type	Units	Computed Rent	Target Rent
1 BR	36	$615	$446
2 BR	8	$725	$502
		****	****
Total/Average	44	$635	$455
		****	****
Commercial	10,000 s.f	$5/s.f.	$3/s.f.

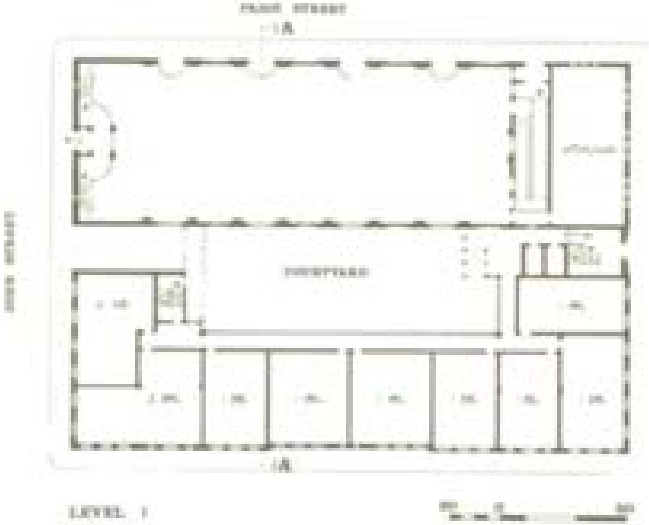
Total Residential Income (computed rent)	$335,280
Commercial Income (net lease @ $5/s.f.)	50,000
Vacancy Allowance (5%)	(19,300)
Total Collected Income	$365,980
Subsidy Income*	0
Gross Effective Income	$365,980

Operations:

Management Fee, Maintenance, Utilities, Reserves	($1,800/unit)	$79,200
Real Estate Taxes (15%-121A)		54,900
Total		(134,100)
Net Income		$231,880
Debt Service (8.4% constant)		(224,100)
Cash Flow		$ 7,780

*Note: A subsidy of $115,000+ annually or an initial capital grant of $1.4+ million will be required to reduce the computed rentals to the target rentals (before adjustment for taxes, etc.).

LEVEL 2 LEVEL 1 (2 story building only)



LEVEL 1

TRADE SCHOOL

Section 8 Moderate Rehabilitation

The "Acre" is a predominantly residential neighborhood with some mixed uses. It is immediately adjacent to the National Park, and its visibility from the major approach to the Park is prominent. Housing stock, built during the middle and late 1800s, is in a state of progressive deterioration but represents a dimension of historic Lowell that should be considered for rehabilitation.

Rehabilitation

HUD Section 8 Moderate Rehabilitation is a logical and available housing assistance program for the Acre. This program is designed to:

- Rehabilitate rental units which are now substandard or which will soon require major repairs and replacements;
- Provide the owner with sufficient rental income to cover rehabilitation costs and allow a reasonable profit on investment in the property;
- Provide rental subsidies to those who qualify and who wish to live in the rehabilitated apartments.

The Lowell Housing Authority (LHA) is experienced with the Section 8 Moderate Rehabilitation program and can successfully compete for a funding set-aside either from HUD or from the State Executive Office of Communities and Development.

A series of six prominent buildings which skirt the Acre's fringe near the Western Canal are used in this analysis as an example of what can be accomplished. These buildings are known as the Michaels and Papadopoulous buildings and contain 36 apartments in the following configuration:

# Units	Size	Approximate Av. S.F.
3	1 BR	480 S.F.
25	2 BR	599 S.F.
8	3 BR	968 S.F.

Additional spaces include 1,800± S.F. of uninhabitable residential space and 3,000± S.F. of commercial space on the ground floor of one structure. The six buildings are frame construction and vary in height from 2-4 stories.

Although exterior deterioration reveals an aged structure; habitable, maintained interiors allow the buildings to be considered as prime candidates for a moderate scope of rehabilitation.

Owners of these properties have indicated a willingness to undertake the rehabilitation under this program. The LHA must immediately make an effort to determine feasibility of rehabilitation by evaluating the buildings as follows:

- Tenant Census -- A thorough tenant census will determine the extent (if any) of relocation. The moderate rehab program cannot support extensive relocation and a large population of residents may render the application infeasible. A census will also help determine the number of subsidy-eligible/non-eligible residents.
- Work Write-Ups -- The LHA should assist the owner to prepare "work write-ups" establishing the scope and costs of rehabilitation and to select a contractor.
- Feasibility Determination -- Based on the work write-ups and cost estimates as well as other known development and operating estimates, a proforma budget should be prepared as shown in Appendix A. Allowed Section 8 rents are maximized in the proforma and based on a set of reasonable assumptions about vacancy, operating cost and real estate taxes, net income is derived and capitalized to determine the approximate size of a loan which could be supported. The "value per unit" compared with contractor's cost estimates will conceivably yield a negative differential which must be otherwise funded.
- Facade Grant Money -- As illustrated in the accompanying proforma, allowable Section 8 Fair Market Rents will not support the necessary extent of moderate rehabilitation. The LHA should determine the shortfall and working with the Commission apply for grant money in exchange for a facade easement. Funds received in exchange can be utilized for those necessary exterior repairs and replacements, consistent with the Commission's goals. Facade grants to building "D" can additionally be used to upgrade the existing storefronts and will help to hold down commercial rents for current tenants.

- o HAP Contract -- Once a feasible budget has been established the LHA would prepare a Housing Assistance Payments Contract for the owner, guaranteeing a stream of subsidy for 15 years. The owner's rate should be carefully explained to avoid confusion, especially concerning rents and tenancy. The LHA and owner should review the extent of any commercial space rehabilitation with existing commercial tenants in building "D". Since commercial rehabilitation cannot be supported by income from Section 8 residential rents, the commercial work on building "D" must be assisted by triggering additional public sector funds, such as the creation of an exhibit space serving both as a neighborhood meeting place and as a place to record the Acre's cultural history.
- o City Efforts -- During the overall feasibility process, the LHA should continue to work with the City's Division of Planning and Development to target municipal improvements in support of the proposed rehabilitation.

Summary

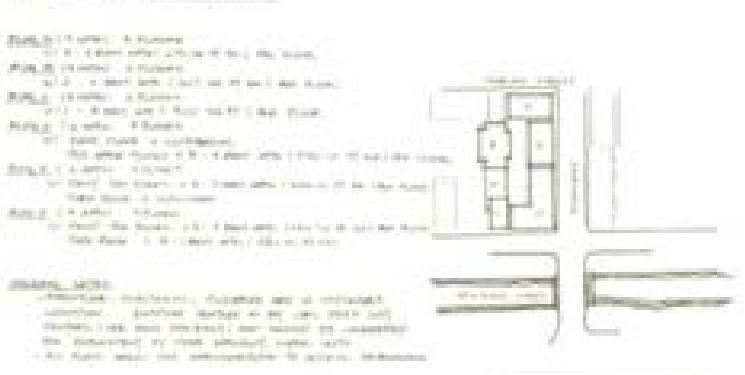
The moderate rehabilitation of these 36 units can have an impact well beyond the size of the project. Facade grant funds will be an essential component of a successful demonstration revitalization effort. Most importantly, the commitment of facade grant aid to property owners will help to assure other public and private sector commitments to the project. The level of such grant funding will be determined by the scope of rehabilitation priced and matched against values per unit supportable in the proforma example. It is estimated, based on a superficial review of the properties targeted that between $1,500 and $3,000 per housing unit would be necessary to offset the cost of rehabilitation--meaning a total facade grant in the range of $60,000 for the six properties.

Preliminary Proforma: Appendix A

Unit Type	# Units	100% Fair Market Rents	120% Fair Market Rents(a)
1 BR	3	$ 300	$ 359
2 BR	25	355	426
3 BR	8	409	491
	36		
Total Annual Rents		$169,344	$203,196
Vacancy Allowance (1%)(b)		(1,693)	(2,032)
Gross Effective Income		$167,651	$201,164
Real Estate Taxes (c)		(25,148)	(30,175)
Operating Costs (d)		(54,000)	(54,000)
Net Income		$ 88,503	$116,989
Capitalized Value @ 12.5% Constant		$708,024	$935,912
Value per Unit		$ 19,667	$ 25,998

Notes:

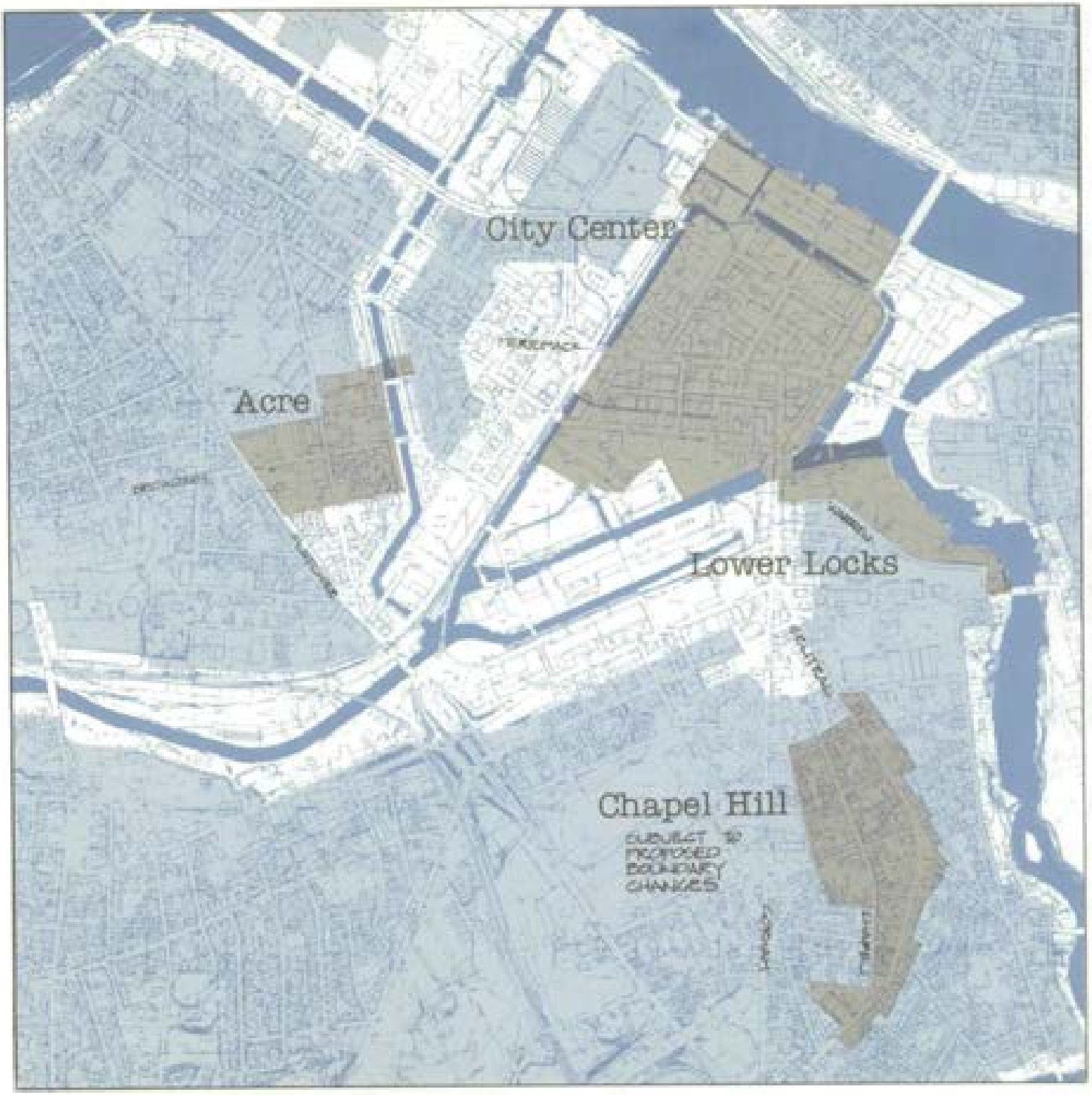
(a) HUD allows an increase of 20% above FMRs for family units in high-cost areas.
(b) Vacancy allowance is 1% because of Section 8 subsidy.
(c) Real Estate Taxes at 15% of GEI.
(d) Operating Costs are $1,500/unit.



Commission Priority Funding Areas

Preservation District

Priority Funding Areas



Sample Preservation Grant Agreement

AGREEMENT BETWEEN LOWELL HISTORIC PRESERVATION COMMISSION AND ___

FOR THE PRESERVATION OF _____

THIS AGREEMENT, entered into this _____ day of _____ BY AND BETWEEN THE LOWELL HISTORIC PRESERVATION COMMISSION (hereinafter the "COMMISSION") and _____

WITNESSETH THAT:

WHEREAS, the COMMISSION is a Federal agency within the U.S. Department of the Interior, duly created and organized pursuant to and in accordance with the provisions of the Lowell National Historical Park Act of June 5, 1978, (hereinafter the "Act"), Pub.L. 95-290,92 Stat. 290, and is duly authorized by section 302 of said Act to restore, manage, develop, or maintain certain nationally significant historic properties including the Welles Block at 169 Merrimack Street in Lowell, Massachusetts; and,

WHEREAS, the COMMISSION is further authorized to take any action the Commission considers necessary to provide owners of property with national historical cultural significance, within the Lowell National Historical Park or the Lowell Historic Preservation District, emergency assistance for the purpose of preserving and protecting their property in a manner consistent with the purposes of the Act; and

WHEREAS, the Secretary of Interior has reviewed and approved the assistance provided for in this agreement, in accordance with section 302b(2) of the Act; and

WHEREAS, D.C.A. is the owner in fee simple of the Welles Block at 169 Merrimack Street in Lowell, Massachusetts; and,

WHEREAS, the COMMISSION and D.C.A. recognize and acknowledge that in the public interest of national historic preservation and intergretation the Welles Block should be restored, maintained, and protected for the benefit and inspiration of present and future generations;

NOW, THEREFORE, the parties with the intention to be legally bound hereby and in consideration of the obligations hereinafter set fort, agree as follows:

A. The Property - The real estate covered by this agreement (hereinafter referred to as the "property") consists of parcel of land and the building theron (hereinafter referred to as the Welles Block) located at 169 Merrimack Street, City of Lowell, Middlesex County, Massachusetts, and is more particularly described in Attachment A.

D.C.A. generally warrants that it is the owner in fee simple of said property by conveyance recorded in Registry of Deeds Book _____, page _____

B. Restoration of Welles Block, Commission Approval, and Reimbursement

(1) D.C.A. agrees to complete the following renovations to Welles Block within sixty (60) days from date of this agreement.

a. clean all exterior brick with a non-corrosive solution
b. repoint brick where necessary
c. match news mortar with existing mortar
d. remove fire escapes on Merrimack Street side of building, fill and patch holes
e. replace existing windows with appropriate new windows
f. replace eroding brownstone window headers with granite headers
g. treat brownstone window sills with a material which will preserve the remaining brownstone
h. prepare and erect signage in scale with existing signboard, lettering and transom area
i. install roof flashing which is consistent in color and/or materials with roof and gutters

(2) Plans and specifications for repairs or renovations under section B1 must be submitted to and approved in writing by the Commission prior to the commencement of said repairs or renovations. D.C.A. shall secure completion of the work in accordance with such approved plans and specifications. The COMMISSION may provide architectural or engineering services for exterior repairs or renovations to ensure that renovations are consistent with the Secretary of Interior's Standards for Rehabilitation as appearing in 36 CFR 67.7, incorporated herein by reference. D.C.A. agrees to provide and maintain supervision by a person or persons whose professional qualifications have received the prior approval of the COMMISSION to ensure that work conforms with the approved work program and to provide a certificate of completion signed by the approved supervisor and progress reports or such other information as may be required by the COMMISSION.

(3) The COMMISSION shall reimburse D.C.A. for allowable costs, as defined below, incurred for restorations under section B1 within a reasonable period of time after work items are completed and a satisfactory work item completion report is submitted, up to $26,000 during fiscal years 1979 and/or 1980.

(4) Allowable costs are defined as:

a) reasonable and necessary for proper and efficient accomplishment of work, and
b) verifiable from D.C.A. accounting records, and in conformity with section H of this agreement, and
c) not including expenditures used as matching contributions for any other federal or state-assisted program, and
d) not including expenditures paid by or agreed to be paid by federal or state government under another assistance agreement, and
e) are limited to charges of performing obligations under section B1 and include only charges for materials, labor, supplies, and equipment.

C. Project Execution

(1) Procurement of supplies, equipment, and services to perform the obligations of this agreement shall comply with Procurement Standards in Attachment O of Federal Circular A-102, 42 Fed. Reg. 45869 (1977), incorporated herein by reference.

(2) D.C.A. shall inform all bidders on contracts for construction in excess of $10,000 that Federal funds are being used to assist in construction.

(3) D.C.A. shall comply with the regulations of the Secretary of Labor contained in 29 CFR 3 (1978), incorporated herein by reference, made pursuant to 40 U.S.C. Sec. 276(c) which require from each contractor or subcontractor a weekly wage payment statement. Wages and benefits of mechanics and laborers for work performed under this agreement shall not be less than the rates in Attachment B.

(4) D.C.A. shall incorporate, or cause to be incorporated, into all construction contracts the following provisions:

During the performance of this contract, the contractor agrees as follows:

(a) The contractor will not discriminate against any employee or applicant for employment because of race, creed, color, national origin or sex. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, national origin, or sex. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

(b) The contractor will, in all solicitations or advertisements for employees placed on or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, national origin, or sex.

(c) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the COMMISSION advising the labor union workers; of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1954, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the COMMISSION and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the contractor's noncompliance with the non-discrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The contractor will include the provisions of sections (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the COMMISSION may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the COMMISSION, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

(5) D.C.A. shall (1) comply with the above provisions in construction work carried out by itself, (2) assist and cooperate actively with the COMMISSION and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the above contract provisions and with the rules, regulations and relevant orders of the Secretary of Labor, (3) obtain and furnish to the COMMISSION and to the Secretary of Labor such information as they may require for the supervision of such compliance, (4) enforce the obligation of contractors and subcontractors under such provisions, rules, regulations, and orders, (5) carry out sanctions and penalties for violation of such obligations imposed upon contractors and subcontractors by the Secretary of Labor or the COMMISSION pursuant to Part II, Subpart D, of Executive Order No. 11246 of September 24, 1965, and (6) refrain from entering into any contract with a contractor debarred from Government contracts under Part II, Subpart D, of Executive Order No. 11246 of September 24, 1965.

D. Use of the Property by D.C.A.

D.C.A. shall use the premises only for commercial and office purposes.

E. Insurance

(1) D.C.A. agrees to obtain and maintain policies of casualty and physical damage insurance to protect the property and any future improvements and renovations thereto so long as it owns the property. Such insurance shall be maintained in an amount equal to not less than 80% of the full insurable value of the property, defined as the cost of restoring the property plus the cost of removing debris created by the casualty minus fair market value of the property as a cleared site. Such insurance shall be reviewed by an insurance appraisal of the property either annually or whenever substantial restorations are undertaken, whichever period is shorter, so as to protect such restoration.

(2) D.C.A. will insure against loss or damage by fire and other hazards covered by standard extended coverage as well as the hazards of vandalism, windstorm, flood or water damage, and boiler and machinery explosion or damage.

(3) D.C.A. further agrees to comply with the flood insurance purchase requirements of section 102(a) of the Flood Disaster Protection Act of 1973, Pub. L. 93-234, 84 Stat. 975 which requires the purchase of flood insurance in communities where such insurance is available as a condition for the receipt of Federal financial assistance for construction purposes in any area identified by Secretary of Department of Housing and Urban Development as an area having special flood hazards.

(4) Upon the execution of this agreement D.C.A. will furnish the COMMISSION a certificate of insurance for said premises and with companies satisfactory to the COMMISSION.

(5) In the event of any casualty loss to the premises, D.C.A. shall make necesary repairs and restoration in accordance with Sections A, B, and C of the Historic Preservation Restriction, dated _____, executed by the parties and to be recorded at the appropriate Registry of Deeds, which is incorporated herein by reference. However, if said loss is substantial, D.C.A. may elect not to rebuild, in which case D.C.A. shall provide the COMMISSION with a figure representing the percentage of insurance proceeds collected against the value of the building prior to the casualty loss. This figure, when certified by the COMMISSION, shall be applied as a percentage against the COMMISSION grant and the arrived at sum shall be paid to the COMMISSION by D.C.A. from the insurance proceeds. Should the loss be substantial and GRANTEE elect not to rebuild, the COMMISSION shall forthwith execute and deliver a discharge of the Historic Preservation Restriction.

F. Project Completion Report:

D.C.A. agrees to submit a Project Completion Report within thirty (30) days after completion of work. This report shall contain, but is not limited to:

(a) A fiscal report, including full financial documentation of project costs.

(b) A narrative report of specifications including complete architectural elevations of existing conditions or architectural photographs approved by the COMMISSION.

D.C.A. shall revise the report, if requested, in response to the written comments of the COMMISSION and shall submit a revised report within thirty (30) days from the COMMISSION's written response.

G. Inspection: (1) At any reasonable time during the project the COMMISSION, the National Park Service, the Comptroller General of the United States or their authorized representatives reserve the right to monitor and inspect project work and any pertinent books, documents, papers, and records for determining compliance or for making audit, examination, excerpts or transcriptions. The COMMISSION, upon request, shall be furnished with copies of any such books, documents, papers, or records. D.C.A. shall include a similar provision in all contracts or subcontracts for grant-assisted work. (2) In the event the project covered by this agreement remains subject to audit by federal or State agencies following payment, the COMMISSION reserves the right to recover costs disallowed by the auditing agency resulting from any such audit.

H. Records:

D.C.A. shall provide a system of financial management and recordkeeping relative to grant activities which provides for:

(a) Records that identify the source and application of all funds (federal and non-federal) for grant supported activities. These records shall contain information pertaining to Fedral awards and authorizations, obligations, unobligated balances, assets, liabilities, outlays and income.

(b) Effective control over accountability for all funds, property, and other assets. D.C.A. shall adequately safeguard all such assets and shall ensure that they are used solely for authorized purposes.

(c) Accounting records that are supported by source documentation.

(d) Documentation of employment practices and procedures.

(e) Records which identify persons involved in grant-assisted activities including a description of the dates, hours and types of work performed if requested. These records shall include payroll information or, where applicable, documentation and justification of pay rates assigned to volunteer or donated services.

I. Termination:

(1) If, through any cause, D.C.A. shall fail to fulfill in a timely manner its obligations under this agreement, the COMMISSION shall notify D.C.A. in writing, as to the nature of the violation(s) and allows sixty calendar days to cure said violation(s). In the event the violation(s) is not cured to the satisfaction of the COMMISSION, it may then terminate this agreement by giving written notice at least ten (10) calendar days before the effective date of such termination and recover the full value of any Commission grants which have previously been provided. Upon termination, all finished or unfinished documents, studies, surveys, drawings, maps, plans, photographs, and reports or other material prepared by D.C.A. under this agreement shall at the option of the COMMISSION become its property.

(2) In the event of termination, D.C.A. shall not be relived of liability for damages sustained by the COMMISSION as the result of any breach of this agreement and the COMMISSION may withhold any payments to D.C.A. for the purposes of set-off until such time as the exact amount of damages due the COMMISSION from D.C.A. is determined.

J. Assignment:

No transfer of assignment of this Agreement or of any part thereof or interest therein, directly or indirectly, voluntary or involuntary shall be made unless such transfer or assignment is first approved by the COMMISSION in writing.

K. Compliance with Local Laws:

D.C.A. shall comply with all applicable laws, ordinances and codes of the State and local government in performing any of the work under this agreement.

L. Conflict of Interests:

(1) No member, employee, or agent of the COMMISSION or who exercises any functions or responsibilitites in connection with the carrying out of the project to which this agreement pertains, shall have any personal interest, direct or indirect, in this agreement.

(2) No official, employee or agent of the D.C.A. who is authorized in his official capacity to negotiate, make, accept, or approve, or to take part in such decisions regarding a contract or subcontract in connection with this project shall have any financial or other personal interest in any such contract or subcontract.

(3) No person performing services for D.C.A. in connection with this project shall have a financial or other personal interest other than his employment by D.C.A. in any contract or subcontract in connection with this project.

(4) No member of or delegate to Congress shall be admitted to any share or part of this agreement, or to any benefit to arise hereupon, unless such benefit shall be in the form of an agreement made with a corporation for tis general benefit.

M. Indemnification:

D.C.A. agrees to Hold the COMMISSION harmless from damages in any action arising from any activities conducted under the terms of this agreement.

N. Nondiscrimination:

(1) D.C.A. shall not discriminate against any person on the basis of race, color, national origin, or sex in the use of the property developed pursuant to this agreement.

(2) D.C.A. shall comply with the terms and intent of Title VI of the Civil Rights Act of 1964, 78 Stat 252, and with the regulations promulgated pursuant to such Act by the Secretary of the Interior and contained in 43 C.F.R. 17. (1978)

O. Lobbying: No part of the money appropriated by any enactment of Congress shall, in the absence of express authorization by Congress, be used directly or indirectly to pay for any personal service, advertisement, telegram, telephone, letter, printed or written matter, or other device, intended or designed to influence in any manner a Member of Congress, to favor or oppose, by vote or otherwise, any legislation or appropriation by Congress, whether before or after the introduction of any bill or resolution proposing such legislation or appropriation; but this shall not prevent officers or employees of the United States or of its departments or agencies from communicating to Members of Congress on the request of any Member or to Congress, through the proper official channels, requests for legislation or appropriations which they deem necessary for the efficient conduct of the public business.

P. Appropriations:

Nothing herein contained shall be construed as binding the COMMISSION to expend in any one fiscal year any sum in excess of appropriations made by Congress or administratively allocated by the COMMISSION for the purposes of the Agreement for the fiscal year, or to involve the COMMISSION in any contract or other obligation for the further expenditure of money in excess of such appropriations or allocation.

Q. Recordation of Historic Preservation Restriction:

This agreement is conditioned upon the execution and recordation of an historic preservation restriction between the COMMISSION and D.C.A.

IN WITNESS WHEREOF, the COMMISSION and D.C.A. have executed this agement as of the date first stated herein, intending to become bound hereby.

Attest: Lowell Historic Preservation Commission

_____ by_____

Attest:

_____ by_____

Attest:

_____ by_____

Sample Preservation Restriction

THIS INDENTURE made this ____day of_____, by and between _____ having Its principal place of business at _____ (hereinafter referred to as the "GRANTOR") and the Lowell Historic Preservation Commission LHPC and Agency within the U.S Department of the Interior having its principal office at Lowell, Massachusetts (hereinafter referred to as the "GRANTEE").

WITNESSETH:

WHEREAS, by Act of June 5, 1978 Publ. L. 95-290, 92 Stat. 290, the Lowell National Historical Park was established and the Lowell Historical Preservation Commission created and empowered under sections 302b(2) and 302c(1)(A) to carry out activities to preserve, resore, manage, develop or maintain certain nationally significant historic properties including the Welles Block at 169 Merrimack Street in Lowell, Massachusetts; and,

WHEREAS, the Grantee is further authorized under section 302b(3)(C)(i) of said Act to acquire property or any interest therein which is identified in the report of the Lowell Historic Canal District Commission as a property to be preserved, restored, managed, developed, or maintained in a manner consistent with the purpose of this Act and would be subject to demolition or major alteration in a manner inconsistent with the purpose of this Act unless acquired by the Commission; and,

WHEREAS, the Welles Block is so identified in said report and is subject to alteration; and,

WHEREAS, the Secretary of Interior has reviewed and approved a grant for said property in accordance with Section 302b(2); and recognized the need to establish preservation restrictions; and

WHEREAS, the GRANTOR is the owner in fee simple of a certain portion of the Welles Block (hereinafter referred to as the "premises") described hereinafter; and

WHEREAS, the GRANTOR and GRANTEE recognize and acknowledge that in the public interest of national historic preservation and interpretation, said Welles Block should be maintained and protected; and

NOW THEREFORE, The GRANTOR, for an in consideration of one dollar and other valuable consideration, the receipt of which is hereby acknowledged, does hereby give, grant, and convey unto the GRANTEE and its successors and assigns for a term of ten years (from date of this agreement) and with general warranty convenants, a preservaton restriction for the premises described as follows:

A parcel of land and the improvements thereon (hereinafter referred to as the "Welles Block") located at 169 Merrimack Street, City of Lowell, in Middlesex County, Commonwealth of Massachusetts, and more particularly described as follows:

A certain lot of land situated in said Lowell at the corner of Merrimack and Kirk Streets, with the buildings thereon now supposed to be numbered 169-177 Merrimack Street, bounded and described as follows:

Beginning at the southwest corner of land now or formerly of Tappan Wentworth; thence running westerly on said Merrimack Street sixty-seven and 36/100 (67.36) feet; thence northwesterly forty and 83/100 (40.83) feet on a circle tangent to Merrimack Street of twenty (20) feet radius to a point on the easterly side of Kirk Street; thence running northerly on said Kirk Street sixty-seven and 36/100 (67.36) feet; thence running easterly at a right angle sixty-one and 28/100 (61.28) feet to said Wentworth's land; thence southwardly at an angle of one hundred seventeen (117) degrees, erroneously set forth in prior deeds of record as 170 degrees, sixty-one and 28/100 (61.28) feet to the point of beginning; be any or all of said measurements more or less and however otherwise said premises may be measured, bounded or described.

Being the same premises conveyed to us by deed of Milton G. Green et als, Trustees dated December 12, 1978, recorded with Middlesex North District Registry of Deeds, Book 2342, Page 685.

The preservation restriction herein granted constitutes a binding agreement of ten years (from the date of this agreement) upon said premises and to that end the GRANTOR covenants on behalf of itself and its successors and assigns, such covenants to run with the land for a period not to exceed ten years, to do (and to refrain from doing) upon the premises the following:

a) Without prior written approval of the GRANTEE, duly signed by its authorized representative, no additional buildings, structures or improvements of any kind, temporary or permanent, shall be located on the above-described land, nor shall improvements, restoration, construction, alteration, modification, or remodeling of any kind be undertaken or permitted to the exterior, including the roof of the Welles Block with the exception of minor reconstruction, repair, or refinishing of presently existing parts of the lot or building damaged by deterioration, wear and tear, or casualty loss, provided that such minor reconstruction, repair, or refinishing may not be performed in a manner which would alter the appearance of the premises or be inconsistent with the Secretary of Interior's Standards for Rehabilitation, appearing in 36 CFR 67.7, and incorporated herein by reference.

b) Without prior written approval of the GRANTEE, duly signed by its authorized representative, no improvement, restoration, construction, alteration, modification, or remodel-

ing of the interior of the building shall be made which compromises or destroys the historic nature of the exterior of building or prevents further development of the structure in a manner consistent with said Standards.

c) Approval for purposes of sections "a" and "b" above shall be deemed to have been given upon failure of GRANTEE to respond to written request within thirty days of actual receipt thereof by GRANTEE at its principal office.

d) Grantor shall insure the Premises against fire, the extended coverage perils, vandalism, windstorm, flood, water damage, and boiler and machinery explosion or damage. Such insurance shall be maintained in an amount equal to not less than 80% of the full insurable value of the Premises, defined as the cost of restoring the Premises plus the cost of removing debris created by the casualty, minus the fair market value of the Premises as a cleared site.

e) The GRANTOR agrees to take reasonable steps to maintain the premises in a good state of repair, to prevent deterioration of the exterior of the Building, and in the event of a casualty loss to reconstruct and restore the Building, except that nothing herein shall be construed to require Grantor: (1) to reconstruct, repair or restore the Building if the Building is substantially damaged or diminished in value by such casualty loss; or (2) in any case, to expend funds for reconstruction, repair or restoration of the Building in excess of any insurance proceeds actually awarded to Grantor in the event of a casualty loss.

f) The GRANTOR agrees that a representative of the GRANTEE shall be permitted at reasonable times to come upon the premises to inspect for breaches of the covenants of this preservation restriction.

g) In the event of a breach of any covenants, the GRANTEE may, following reasonable notice to the GRANTOR, institute suit to enjoin by temporary and/or permanent injunction such violations and to require the restoration of the premises to its prior condition, or, in the alternative, the GRANTEE may enter upon the premises, correct any such breach, and hold the GRANTOR or its successor and assigns, liable for the cost therof.

h) GRANTOR agrees that before selling, leasing or otherwise transferring the premises or any interest therin (including but not limited to an easement or fractional interest), it shall give notice in writing to GRANTEE of the terms and conditions thereof.

i) The GRANTOR agrees that covenants letter "a" through "h" will be inserted in any subsequent deeds or other legal instruments by which it divests itself of fee simple title or a possessory interest in the premises until the termination of this preservation restriction. No purchaser or lessee shall be bound by such covenants for a term exceeding ten years from the date of this agreement.

Witness our hand and seal this_____ day of _____

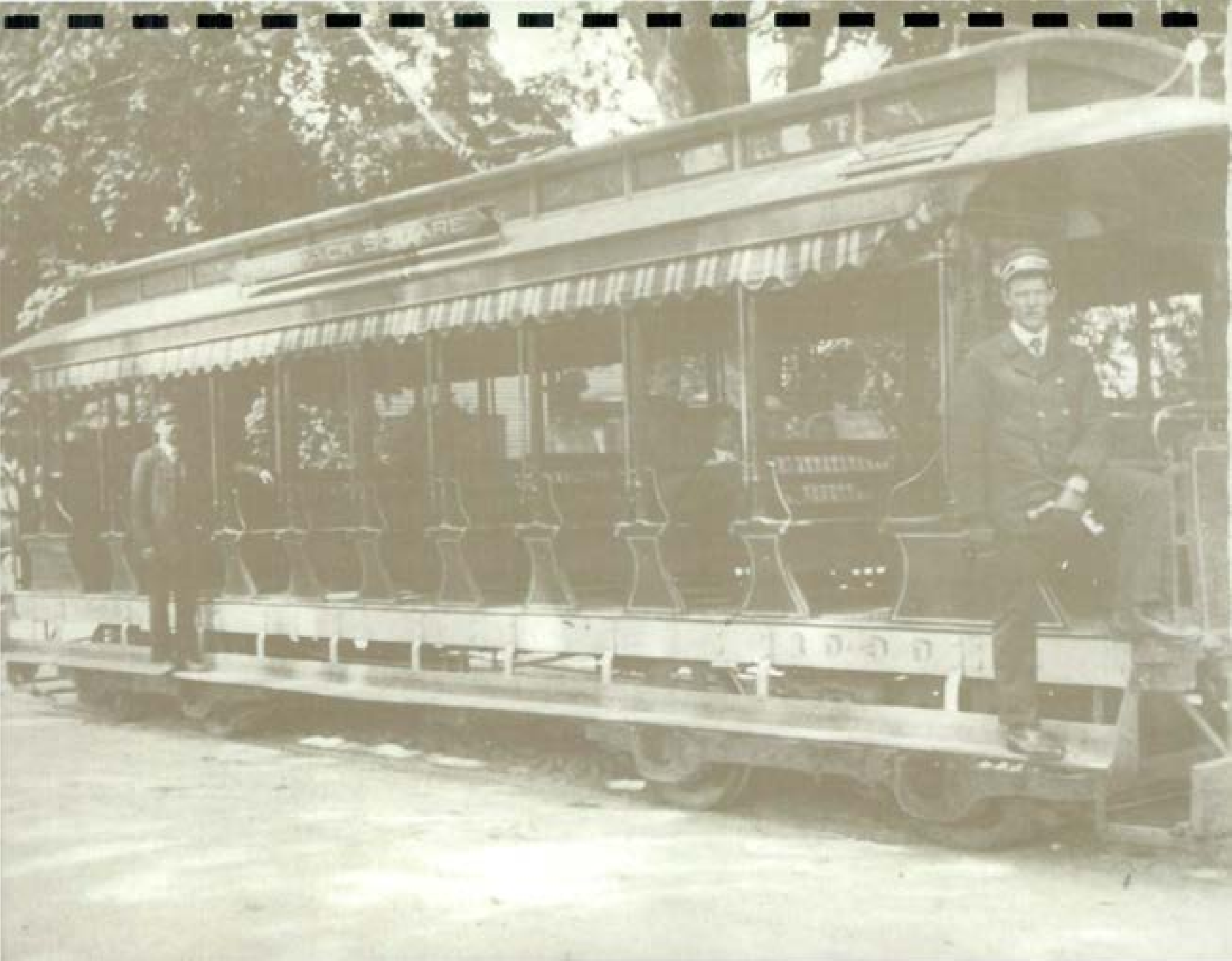
_____

_____

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss.

On this_____ day of _____,19__, before me appeared _____, to me personally known, who, being by me duly sworn did say that they are _____ D.C. Associates and that they executed the foregoing instrument on behalf of D. C. Associates and acknowledged said instrument to be the free act and deed of said partnership.



Transportation

Trolley Implementation Schedule and Costs

SUMMARY

The Lowell Historic Preservation Commission and National Park Service (NPS) are currently operating a trolley demonstration project on a portion of industrial trackage in downtown Lowell. It is the intent to expand the existing system and erect overhead wires so that electrically-powered trolley cars can eventually replace the single self-powered rail car now in use. Extensions are programmed to occur in two stages, each involving minor track rehabilitation and new track additions. Costs and project management responsibilities will be shared by the two agencies, with the Commission providing capital monies and the NPS operating the system as part of its visitor transportation program.

Further track extensions and year round use by non-visitors are possible but cannot be funded from existing NPS/Commission authorizations.

Estimated Stage I capital costs (FY 1981 - 1982) are $651,500. Stage II capital costs (FY 1983 - 1986) will be $1,548,500. Operating costs are projected to range from $250,000 to $350,000 per year as service expands and prices escalate over time.

STAGE I - FY 1981 - 1982

First Steps

Before service can be increased or track extension work begun, a number of legal, institutional and technical issues must be resolved. These include transferring ownership of the existing tracks and right of way to the federal government, securing permanent storage space for the trolleys, arranging for continuing the freight service to the remaining industrial user of the track and determining the final criteria for selection and restoration of trolley equipment.

Work has already begun in some of the areas identified above and will continue during the coming year. During this time firms should be selected to provide engineering services related to car restoration, design of power supply (overhead wires and electrical tranformer), maintenance facility and track work.

Equipment and Service

A wide search was made for appropriate cars of the type which operated around the turn of the century in Lowell. The results of this effort led us to conclude that the preferred approach will involve rehabilitating trucks of retired cars (under carriages) and reconstructing bodies according to historic plans.

During Stage I a prototype car will be completed and tested in actual visitor use. The projected test period is June 1982. Following testing of this first car, restoration work could begin on four more cars which will be put into service as they are finished. Any design problems identified in the prototype could be corrected before production of the remaining cars.

Current trolley service connects the Mack Building (Dutton and Market Streets) with the Boott Mill and a stop near the Wannalancit Mill and the Post Office. Stage I service would electrify this route where tracks have already been upgraded for the demonstration project. Additional tracks will be added from the Post Office to the Wannalancit Mill and along French Street to link the Boott Mill and the Post Office. With some additional upgrading of tracks (from Swamp Locks to Mack Building) a one way triangular route will be possible connecting the interim barge landing at the Swamp Locks, the Boott Mill, and the Wannalancit Mill. Intermediate stops would be the Visitor Center and the Merrimack Gatehouse on Merrimack Street (see map).

Costs*

Capital costs for Stage I total $651,500. Major items include: construction of prototype car ($120,000), right of way acquisition and lease ($100,000), electrification of trackage ($133,000), new tracks and switches ($95,000) and engineering services ($60,000). See Attachment A for full description of costs.

STAGE II - FY 1983 - 1986

Equipment and Service

Stage II will see increasing service levels as additional trolley cars are completed and put into operation. At the beginning of this period three restored trolleys will be operating (summer of 1983). By the summer of 1986 the full fleet of six operating cars and one spare could be in place.

Service extensions during this stage will tie the trolley system into a broader transportation network serving both National Park visitors and city users. Three termini would be added to the system, each linking a new portion of the city with existing stops downtown. The first of these would extend tracks from the Boott Mills along the Eastern Canal, past the Curran-Morton Warehouse to Merrimack Street. This could provide an excellent link with the Rex Lot-Memorial Auditorium area which has been identified as a potential site for development as a convention and hotel center. The second extension, where existing tracks will be upgraded, would enable passengers arriving in Lowell by B & M commuter rail to transfer directly to the trolley system. They could then be shuttled to the Visitor Center and other Park sites. This could be accomplished by arranging with the B & M railroad to make a second stop after the regular Lowell terminus. Preliminary discussions have indicated a willingness by the railroad to explore this possibility. The third service extension in Stage II would be associated with the development of a visitor intercept parking lot near the Swamp Locks. Erection of a storage and display building at this site would serve several purposes. Trolley cars could be protected from the weather as well as shown to full advantage in a building with transparent walls. Colorful lighted displays would attract people to this area, encourage them to use the intercept lot, and give them something to do while waiting for the trolley to take them downtown. With the opening of this facility the barge terminal would be moved here also. Users would also have the choice of walking to the Visitor Center along an improved route which would provide excellent views as the pedestrian proceeded along the Merrimack Canal Bank over historic bridges and past 19th century commerical and mill buildings.

When all six cars are in service maximum waiting times (headways) would be reduced to six minutes. One shuttle trolley would meet incoming B & M trains and run to the Swamp Locks parking lot, bringing passengers to the Visitor Center. The remaining five cars will shuttle between the Boott and Wannalancit Mills and the Visitor Center.

Costs

Costs for Stage II total $1,348,500. Major items include:

* Cost estimates from Storch and Fay Feasibility Study for Surface Rail Passenger Circulation System, October 1979 and Memorandum dated June 24, 1980; and Moore-Heder Team.

construction of six cars ($720,000), the maintenance and display building ($250,000), and upgrading tracks ($82,000), electrification of trackage ($72,500), new tracks ($69,000) and engineering services ($140,000).

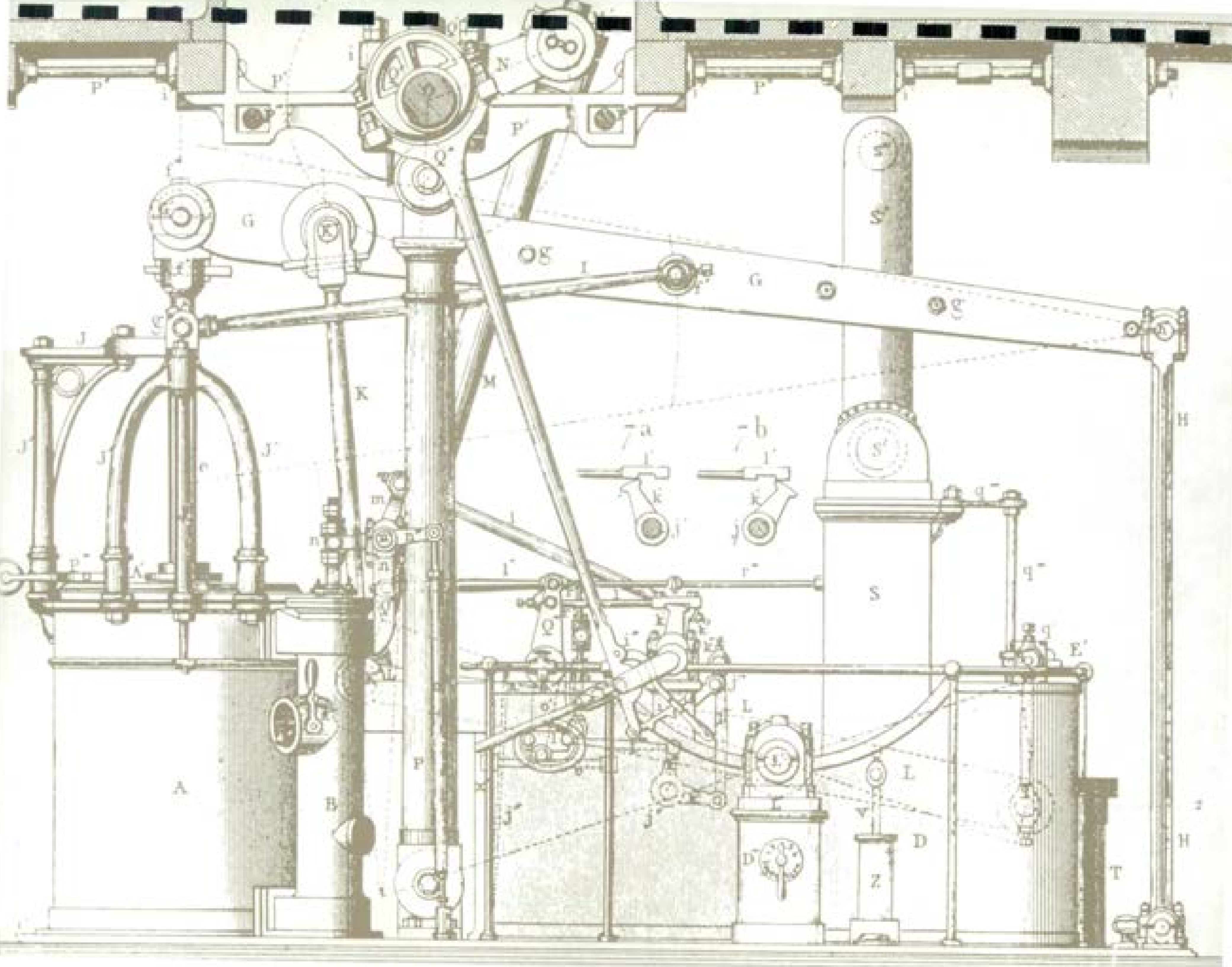
TROLLEY - CAPITAL COSTS

STAGE I FY 1981 - 1982

Item			Cost
1 prototype car - design and build			$ 120,000
Upgrade tracks:			
Mack - Barge Landing			38,500
New Tracks & Switches:			
Post Office - Wannalancit			33,000
Boott-Wannalancit (French St.)			62,000
Power Source			50,000
Electrification:			
Barge Landing - Wannalancit - Boott			133,000
Pit and Tools:			
Coal Pocket Improvements			55,000
Right of way acqutsition/lease			100,000
Engineering services			60,000
	STAGE I	TOTAL	$ 651,500

STAGE II FY 1983 - 1986

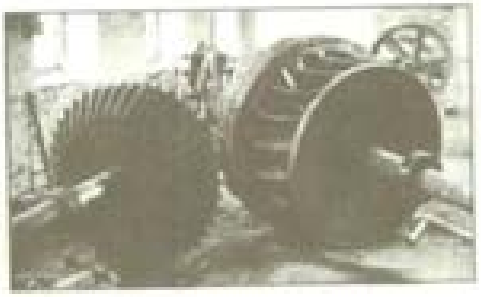
6 cars @ $120 K			$ 720,000
Upgrade tracks:			
Boott - Warehouse			17,000
Barge Landing - Swamp Locks Parking			19,500
Barge Landing - B & M Junction			45,500
New Tracks & Switches:			
Warehouse - Merrimack Street			18,000
Display track & switches			51,000
Electrification:			
Boott - Merrimack Street			19,000
Barge Landing - Swamp Locks Parking			19,500
Barge Landing - B & M Junction			34,000
Right of way acquisition/lease			15,000
Engineering services			140,000
Maintenance/Display Building			250,000
Pedestrian Improvements			200,000
	STAGE II	TOTAL	$1,548,500
	STAGE I & II	TOTAL	$2,200,000



A
B
P
G
K
M
S
T
Z
D
L
H
a
b

Energy

Energy Planning Guidelines



INTRODUCTION:

The purpose of the Energy Planning Guidelines is to summarize the Commission's involvement with energy: its conservation, its generation and its interpretation. The guidelines explain how the Commission can assist Lowellians with energy planning as part of carrying out the Preservation Plan. This assistance has two general objectives:

1) to encourage preservation work that is energy efficient

2) to encourage the interpretation of Lowell's historical energy systems.

The Guidelines are divided into five sections to more clearly explain how the Commission will incorporate energy issues into its activities:

I. Technical Assistance for Energy Planning

II. Financial Assistance

III. Energy Planning Guidelines

IV. Case Studies--Market Mills and Gas Light Building

V. A Glossary is included to help the reader understand the terms used in the discussion.

Section I. Technical Assistance

Architectural Assistance

Architectural assistance will focus on how to make energy conservation compatible with exterior preservation work by finding suitable treatments for windows, doors, walls, roofs, visible foundations and chimneys. This will be offered as part of the Commission's Grant and Loan Program which makes funds available for exterior rehabilitation of certain properties in the Park and District. Help will also be available for buildings not receiving direct financial assistance. In addition, the Commission will be more actively involved in two instances: where it is carrying out its own projects as outlined in the Preservation Plan, and where historic energy systems or building features exist and are considered to be of interpretive importance. In the latter case, Commission funds will be directly available as part of the "Grants to Interpretive Projects" Program.

Commission staff will provide Energy Guidelines to the building owners when application is made for the grant and loan programs, and advise them as to how the Guidelines could apply to the building with particular attention to the historic fabric of the exterior. This review will be carried out in cooperation with the City, to ensure compliance with local energy codes. Finally, advice will be given on funding for energy improvements and interpretation (see Financial Assistance).

Educational Assistance

The Commission expects to carry out various educational activities, including:

- Library on Energy Conservation, Rehabilitation, and Renewable Energy

The Commission expects to maintain library resources in these primary areas of interest. They will be available to the general public and to design professionals.

- The Sash Clinic

Windows are a key element for both energy conservation and historic preservation. The Commission proposes to hold periodic clinics to demonstrate, with examples of working windows, and by field trips, how best to repair, restore and improve windows (and doors) for acceptable preservation and energy conservation.

- Workshops on Energy Conservation/Preservation Good Practice

The Commission will continue to hold workshops which will offer practical advice to building owners and building trades.

Section II. Financial Assistance

Direct Assistance--Exterior Rehabilitation

The Commission will be able to offer assistance for energy improvements through its exterior grants and loans programs. To qualify, actions must be related to exterior improvements. These include: windows, doors, roofs, walls, shading devices, insulation, caulking and weatherstripping. These actions will be encouraged to go beyond Art. 20 of the State Building code, and must be consistent with good preservation practice. Funds will be available to nationally significant buildings (those ranking "A" on the Index) located in priority areas of the district which are described in the Preservation Plan.

Direct Assistance--Interpretation

The Commission can also offer assistance for interpretation of important historic energy systems and building features. This assistance would come through the cultural grants program for interpretive exhibits (see Preservation Plan). This assistance would be carried out after consultation with the State Heritage Park and the National Park Service, which are the lead agencies for interpreting the canal system and its power producing components in Lowell. Public access will be a requirement.

As part of the Preservation Plan contract, Commission consultants prepared a preliminary inventory of energy systems and features, and ranked them for their preservation value.

Examples of systems which might be preserved because they are important parts of Lowell's 19th century setting include:

- The old hydro turbines and generators. The equipment inside the buildings is just as interesting and had as big an impact on Lowell's early residents as did more visible features of the mills.

- The steam/electric cogeneration system. This is an old and somewhat rundown but still working and visually impressive system, which was very important to mill operations. It is also an inherently efficient technology which is being revived in many places today.

Examples of building features which are interesting, affected 19th century life (indoor comfort, clothing, etc.) and offer potential efficiencies include:

- The thick walls of mill buildings, which can retain heat and cold for later use.

- Geared sash, as found in some mills, which allow easy operation of very large wooden windows.

- The Smith Baker Center, in a former church, displays an excellent example of a disused passive cooling system which can be cheaply rehabilitated and provide un-powered summer comfort. Air enters shaded vents and exits through grilles and a glazed cupola at the top of the nave. This system was rediscovered during an energy audit. It was not properly shut off in winter and thus a source of heat loss.

Other Sources of Funds

In addition to the direct financial assistance discussed above, the Commission staff will offer aid in packaging applications for energy-related financial assistance from other sources. This aid will consist of project review, making contacts, and aid in filing applications.

The staff has collected information on energy related grants and loans, from public sources. This information will be maintained as part of the energy library, available to the public.

Many such programs are or will be available through the City and other agencies. Examples include CDBG, EDA, Section 312, HUD Innovative Grants and CDAG's. The Commission will coordinate its work and the approval of projects with the City, State and NPS.

Section III. Planning Guidelines

The guidelines for energy planning assume certain major goals:

1. Energy efficiency improvements will be fully consistent with historic preservation.

2. Major rehabilitation projects will be encouraged to surpass the requirements of the Massachusetts Building Code, Article 20 for performance of parts of the building's skin, and also the requirements for energy use per square foot of floor area in the proposed federal "Building Energy Performance Standards" (BEPS).

3. To promote use of renewable energy whenever possible with an energy analysis of all financially assisted rehabilitation projects.

4. For residences, the Commission will encourage maximum feasible conservation and renewable energy use. The basis for advice and action should be an energy audit.

Examples of guidelines which the Commission will use in its work are:

For Mill Buildings:

- To inventory the problems and opportunities, the Commission will encourage and in some cases assist owners to obtain an energy audit and analysis in conjunction with their rehabilitation. The Commission will encourage the analysis results to be put in the format of a simple "energy budget" (see the case studies for further discussion).

- As the case studies clearly show, a key energy factor in mills is the set of windows. Windows are responsible for 80% of the heat loss in mills. If replacement of windows is necessary, use double glazed wooden sash which look like the originals from the outside.

- Covering the windows at night with special insulating shades or shutters will enable the use of single glazing and still effectively reduce heat loss.

- Window sashes that move are useful for natural ventilation. Operable roof ventilators will help to pull hot air out in the summer. Exterior awnings or inside blinds can reduce summer heat from direct sunlight.

- Flat roofs of mill buildings have opportunities for solar systems, since they are not visible from the ground and don't otherwise interfere with historic roof lines. Solar systems that involve alterations of the exterior walls of the building may be inconsistent with the goals of historic preservation.

- Reuse of hydropower equipment (turbines, etc.) will be encouraged where possible and efficient.

For Other Commercial Buildings:

- As for mill buildings, an energy analysis and energy budget will be encouraged.

- Whenever possible, renewable resources will be encouraged.

- Windows in other buildings may have the same problems as above, but may occupy a smaller percentage of the wall area, and thus have a smaller impact on energy use.

- Insulation and caulking will be encouraged, and should be compatible with related rehabilitation. Improper wall insulation in wood frame buildings can cause rot and peeling paint; technical assistance will inform owners of the causes and ways to avoid such problems.

For Residences:

- Owners and tenants will be encouraged to use energy audits as the basis for energy improvements. Such audits analyze present energy use and costs and savings associated with energy improvements, based on visit by the auditor to the dwelling. Such audits are available from private contractors and will soon be available through the Residential Conservation Service (RCS), offered by the local electric and gas utilities. These audits will be reviewed for consistency with the preservation process.

- Renewable systems will be encouraged if they do not violate the historic fabric. This generally will mean that these systems must be out of sight of pedestrians, set on the ground, or built consistent with 19th century practice. Examples of the latter include cold frames, and conservatory/greenhouses with "old style" glazing.

- Windows and doors play key roles in the appearance and energy efficiency of houses. They will be given careful attention by staff review. The staff will offer "sash and door clinics" as part of its technical assistance in this area.

- The remarks above about painting and caulking apply to residences with at least equal force. Special attention will be given in technical assistance and review of these areas, as well as of gutter, trim and roof repair. The latter offer special problems with regard to wall and roof insulation, and greatly affect the appearance of the house.

Section IV. Case Studies

Two case studies summarized below illustrate what the Commission means by an energy analysis--a systematic approach taken to determine 1) the potential for low energy consumption heating and cooling systems, 2) the important historic features of a building, and 3) the opportunity for using renewable energy sources. As a result of the analysis, the owners of the buildings can better understand what methods and materials can be used to heat and cool the buildings. They can also learn how to take advantage of a structure's assets such as thick walls and efficient window design.

These studies not only illustrate the desired type and level of analysis, they also show that it is often possible to design building rehabilitation which surpasses the requirements of the energy code (Art. 20), at costs which are competitive with those for rehabilitation which just meets the code. This is true because extra dollars spent on the efficiency of the building shell are recouped in savings they make possible in smaller heating and cooling distribution systems, boilers and air conditioners. This conclusion is supported by another recent study (Lowell) National Historical Park: A Cost Effective Plan for Energy Independence, Clark McGlennon Associates, Boston, January 1980, pgs. 11 and exhibits 32-34).

Furthermore, the "energy efficient" preservation of old buildings is often more in line with low energy goals than is new construction, at least at large scale. First, the old building often is already energy efficient in general design, including efficient wall construction, efficient windows, and forms of passive energy systems. Second, the energy embodied in the old structure is already invested, while new energy must be used to construct a new building. This difference is a significant fraction (up to 50%) of the total energy tied up by the building over its entire life.

The two cases were chosen to represent two scales of commercial building. The level of analysis was chosen to be both broad and fairly simple. The calculations required were all done by hand, and assumed constant operating conditions. (This is a static idealization of building behavior. A dynamic analysis is more realistic and much more complex, and often requires a computer.) The "budget" format was chosen to show just where in the building the energy "debits" and "assets" are, how big they are, and to aid in analysis of alternative designs and opportunities for renewable energy.

These two cases are for buildings with which the Commission has been involved. Since the energy analysis began well after rehabilitation work was designed, only a few of the suggested design changes were able to be incorporated into these buildings. However, important changes to the windows at Market Mills (and Boott Mills, analyzed but not included here) were able to be included.

Market Mills

Market Mills (Lowell Manufacturing Company) is a typical mill, with thick brick walls, large windows and a floor area of 270,000 sq. ft. in two buildings. A large boiler room is attached, which generates steam to feed the mill, a district steam system (to other buildings), and an electric generator across the alley.

The study of Market Mills included a detailed site visit and analysis --the inventory--and an energy budget projection based on how the buildings were to be reused. The mill building was looked at in terms of how much and where heat is lost (e.g. through windows, roof, and walls) and where and how much heat is gained (e.g. from the sun, the people and machines likely to inhabit the building.) The next step was to calculate how much energy the building was likely to consume for heating water and for electricity. This data was developed for Market Mills as it stood when the analysis was done, as it was proposed to be rehabilitated, and as an alternate plan which included heavier roof insulation, tighter windows and triple glazed or double glazed windows with night insulation.

Several conclusions can be drawn from the three energy budget alternatives that were developed:

1. Market Mills as recently rebuilt just meets the maximum per square foot energy use consistent with Massachusetts Code Article 20.

2. A more heavily insulated roof and more efficient windows will reduce the energy consumption by 20-25%. Windows can also provide enough daylight to surpass the code lighting load allowances by 50%.

3. Windows need very careful study because they account for 85% of the overall heat loss; even with triple glazing, they account for 65% of the loss.

4. A more efficient building rehabilitation can be carried out at nearly equal first costs. This conclusion follows from a cost trade-off study which examined the first costs of the various alternatives.

5. There is significant opportunity for using a renewable energy source, namely the sun, at Market Mills. It was estimated that active solar collectors could provide 55% to 90% of the building's energy needs.

Energy Budget
(all figures per sq. ft. of floor area)

Heat Loss	As Is	As Rehabil.	Alternatives
Net Wall	9,980 BTU/Sq. Ft./Yr.	3,070	9,980
Windows	46,850	26,790	16,850 or 13,370 (TG/NI)*
Roof	8,530	3,370	2,700
Infil.	44,730	11,140	8,260
Gross Loss	110,100 BTU/Sq. Ft./Yr.	44,400	37,800 or 34,400
Gains			
Solar	-7,170	-7,170	-7,170
Lights & Mac.	-9,760	-9,760	-4,780
Net Loss	93,200 BTU/Sq. Ft./Yr.	27,500	25,900 or 22,500
Heat Conv.	155,980*	39,730	28,970 to 24,950
Hot Water			
Comm. & Res.	9,290	9,290	9,290
Elec. (raw source ener.	54,350	54,350	29,890
Total BTU/ Sq. Ft./ Yr. (raw ener)	219,000	103,000	68,000 to 64,000

Approx. Energy Cost per Sq. Ft. floor area/ Yr.	$1.08	.38	-.27 to .25

*TG = triple glazing, NI = double glazing & night insulation.

+Assumes various efficiencies, see notes.

Notes to the Budget

1. Assumptions

The above short form energy budgets evaluate the annual usage for Market Mills under various conditions, including As Is, As Rehabilitated by the developer, and Alternates which omit wall insulation and include heavier roof insulation, tighter windows, and triple glazing or night insulation.

The particular assumptions used are as follows: the three cases have U-values for the walls of 0.17, 0.052, 0.17; the roof U-values are 0.21, 0.083, 0.006; Window U-values are 1.13, 0.65, 0.41, 0.32, respectively.

Domestic hot water (DHW) is heated at 75% efficiency. No separate ventilation is assumed. The infiltration rates chosen are 2 cfm/SFGA, 0.5 cfm/SFGA (per Art. 20) and 0.36 cfm/SFGA for the three cases.

The assumed heater efficiencies are consistent with old, good conventional and best available (pulsed combustion) gas heat boiler efficiencies. Solar gains are based on gains to vertical glass at an average of 600 BTU/SFGA/day (including cloud factor), taken over about 20% of the window surface to allow for orientation and shading at the site. Lights and machines are taken to have a connected load of 3.3 watts/SFFA based on the space use (residential plus commercial) and analyses based on State Lighting Code (Art. 20) requirements.

Based on actual audits, it is possible to do about 50% better than Code as shown in the Alternates (1.5W/SFFA). Electric loads are assumed to run 50% on for 8 hours per day over the 210 day heating season, and over 365 days to calculate electric energy use. There is no electric cooling. The conversion of heat load in BTU/°F/hour to BTU/season (heating) is given by the factor F: F = 24 hr. x 6056 DD = 145,344, where the DD are appropriate to Lowell. All calculations are static. Conversion of watt hours to BTU is by the factor 3.4 and to raw source BTU (required by the state ACI and federal BEPS is by 3.35).

2. Renewable Potential

Solar:

At the improved heat loss "as rehabilitated" of 27,500 BTU/SF/yr, the loss figure of merit is 4.7 BTU/SFFA/DD, and at the lower alternate case, it is 4.1 BTU/SFFA/DD. Given the existing roof area, active solar collectors can provide about 3 to 6 BTU/SFFA/DD on the average. Thus the solar load fraction could lie in the range of 55% up to 90%. This is a very significant load fraction.

The only site considered for solar collection was the roof, since wall collectors would conflict with historic preservation goals.

Daylight:

Improved use of daylight would not affect the connected lighting load but would cut hours of operation, as reflected in the energy budget.

Passive:

The present window input provides about 15% of the improved loss in the rehabilitated alternative, and the heavy masonry walls can easily store this and maintain comfort. The only passive strategy employed (which doesn't affect wall appearance) is night insulation. That is accounted for in the Alternative column of the Energy Budget.

Wind:

This is not a good site.

Gas Light Building

An energy budget was also computed for the 4500-sq. ft. Gas Light Building on Shattuck and Middle Streets. The structure was analyzed as it stands now: a two-story brick building with offices on both floors with an uninsulated attic. In addition, it was analyzed as it would be with improvements.

The analysis demonstrated that there is opportunity for cooling the offices using fans, especially if cool air could be pulled up from the basement through a vertical riser in the middle of the building and if hot air could be pushed from the attic with a fan. Awnings could be used to shade windows and reduce the sun's heat by 25%. Insulating the attic floor would cut heat loss through the attic by 90%. By taking these actions (among others), the overall energy use would drop by 50%.

Energy Budget

	As Is	Improved
Heat Loss:		
Gross Consumption	188,000 BTU/Sq.ft./yr.	65,000
Gains:		
Solar	-22,200	-22,200
Lights & Machines	-22,000	- 4,700
Net Heat Consumption	144,000 BTU/Sq.ft. yr.	38,000
DHW		
Comm.	10,200	5,100
Electricity-raw source energy		
Lights & Machines	73,700	15,600
A/C or Fans	17,800	3,170
BTU Raw Energy/ SFFA/Yr.	245,000	62,000
Approx. Cost/SFFA/ yr.	$1.90	$ .45

Notes to Gas Light Budget

1. Assumptions

The Gas Light Building is partially leased by the Commission for its headquarters. As a result, only part of the building was rehabilitated. The bottom floor continues as commercial office space. The budget reflects the building as is and improvements to the whole building. The budget was derived with the same methods used for Market Mills (see above). The discussion and assumptions there apply here except that here natural ventilation was analyzed versus air conditioning. The format has been slightly abbreviated here.

2. Renewable Potential

The Gas Light Building has no hydro access, is not a good wind site, and cannot take advantage of solar energy (except possibly on the South wall) because of orientation and because the roof and facade are to be preserved as they are.

Section V. Glossary

Active Solar

Solar systems with separate places for solar heat collection, storage and use, and which convey heat by pumps or fans, are called active systems. The usual domestic hot water package with collectors on the roof is an example.

AEI

Annual Efficiency Index, a Massachusetts state efficiency measure, defined like the energy budget in BEPS, in BTU/sq. ft./year of raw source energy. This measure is used in State training programs for municipal officials and staff, but is not part of Article 20.

Article 20

The chapter of the Massachusetts State Building Code which mandates minimum energy conservation standards. Since January 1976, it has covered new buildings and major rehabilitation. The standard mostly relates to specific parts of the building such as walls, windows, etc., and is thus called a "components" standard.

Baseboard System

Baseboard heating systems consist of finned metal tube, in a low enclosure, which is set against the baseboard in a room. Hot water or steam is circulated through it to heat the space.

BEPS

Building Energy Performance Standards, proposed for all new buildings (and eventually major rehabilitation) in the U.S. The standards give a maximum permissible energy budget, which varies by climate, fuel type and building use. This is a general performance standard which allows great design flexibility. However, the present compliance procedure is complex. This report advocates use of the BEPS numbers and an abbreviated compliance procedure. Thus stricter than Article 20 standards would be required, but showing compliance would be as easy as for Article 20.

BTU

British Thermal Unit, a measure of energy. One gallon of No. 2 heating oil contains 141,000 BTU of heat energy. Usually some is wasted in heating a building. Kilowatt-hr is another common energy unit, equal to about 3400 BTU.

Building Shell

The exterior surfaces (walls, roof, foundation) of a building, through which heat flows, and therefore which are of prime importance to improve for energy efficiency.

Degree Days (DD)

A climate rating relating to heating (or cooling) needs, defined as the number of days for which the outdoor temperature is less than (greater than) 65°F times the average difference between outdoor temperature and 65°F. Lowell has about 6000 heat DD per year, Boston about 5800, on the average.

Design Load

The biggest heating/cooling load, or electrical load, which a building is expected to encounter in a normal year. It depends on climate, space use and building design.

The seasonal load is the total energy consumption of a building over a whole season, for heating, cooling, etc.

Embodied Energy

When a building is constructed, energy is required to produce, transport and assemble all materials on site. This is called the building's embodied energy. In some cases it can be comparable in amount to the energy used in operating the building over a typical mortgage period (say 30 years).

Energy Analysis

An analysis of all forms of energy use in a building, by fuel type, by HVAC supply system, by use, or by season. Such an analysis is used in computing energy budgets, costs, comparing energy system design alternatives, and designing buildings.

Energy Audit

A careful examination and report on the energy use in a building, usually based on an on-site visit and an energy analysis, with recommendations for improvements based on costs and savings.

Energy Budget

A single number, in energy units per square foot of floor area per year, which is an efficiency rating for buildings. It is called a budget because it shows, in a systematic way, what a building should or has used, including all types of fuel for all uses (unless otherwise stated). This figure is closely related to energy operating cost per sq. ft., and to rents per sq. ft.

Energy Features

Aspects of building construction which relate to efficient use of energy, and of historical importance. Thus they are doubly worthy of preservation, and in some cases, renovation.

Heat Gains

Heat generated in a building (but not from the heating system) by internal sources, such as lights, people and machines, or from sunlight passing through windows. In winter these sources cut the work of the heating system; in summer they add to the work of air conditioning.

Heat Load

The required energy output for a building's heating system. The system size is required to cover the "design" (worst-hour) load. The annual heating energy use, however, is dependent on the average heating load. In Lowell's climate, the average is less than half the design load in most buildings, due to climate factors and internal gains.

HVAC

The heating, ventilating and air conditioning systems in a building. The systems include the heater or cooler and all controls, ducts, pipes, fans and filters associated with them.

Hydro System

Either the whole system of locks, gates, canals, hydro turbines and generators in Lowell, or the turbines, generators and other equipment in a building. The context indicates the meaning to be assumed.

Lifecycle Costs

The total costs of ownership of a building over its life (economic, physical) including purchase costs, operating and maintenance costs. Often a building which has somewhat higher purchase cost can be more efficient and thus have lower operating and lifecycle costs than a "cheaper" building. In general

the more efficient building will thus require smaller cash flows and save energy.

Passive Solar

Passive solar systems use natural circulation to store and use absorbed solar heat. Usually the heat is stored in a massive structure, such as a tiled floor, concrete wall or water drums. No fans or pumps are needed.

Raw Source Energy

The energy required at an energy source to yield the energy usefully used on site. For example, the number of gallons of oil in the storage tank, required to deliver the season's heat needs (this allows for heating system inefficiency), or the gallons of oil stored at a power plant to deliver the electric energy used in a building. Thus this measure of efficiency has a broad social use, and goes beyond the usual concerns of the building owner, which often end with "in-the-building" efficiency. Raw Source Energy use is taken account of in the BEPS standards, but not in Article 20.

Renewable Resources

Energy sources, such as the sun and the wind, which are constantly replenished at a rapid rate, and can be used to supply our energy needs. Coal, oil, and gas are renewed only over millions of years and are thus called non-renewable; they can be quickly used up.

Solar Load Fraction

That fraction of a building's yearly heating needs, normally supplied by a conventional system, which is or could be supplied by a passive or active solar system. This fraction can be estimated or measured.

Static Energy Calculations

Calculations of a building's energy consumption which only account for the average behavior of the building, or the behavior at a worst-case (design) condition. The building is assumed to be operating under constant conditions.

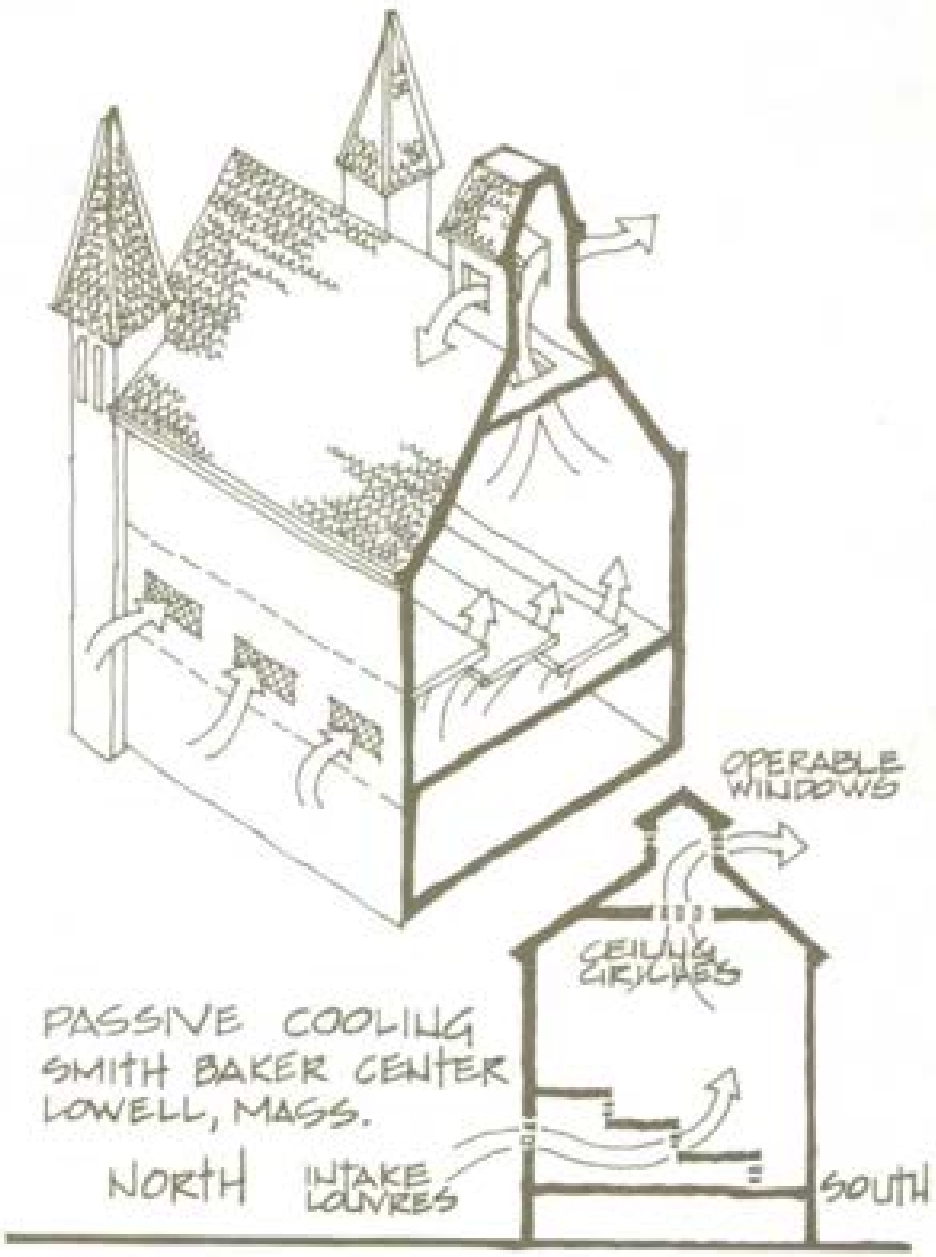
A computer is generally needed to do dynamic calculations which account for rapid changes in operating conditions (sun, occupancy, etc.).

Trade-Off Analysis

An analysis of the relative costs and benefits of several alternative ways of constructing or rehabilitating a building. In this report some of the alternatives were designed to be energy efficient and then compared in cost to more conventional ones. The efficient building had extra costs for some insulation, more expensive windows but less costly walls, heating and cooling systems.

U-Value

A measure of a material's ability to transmit heat by conduction, or of a whole wall's ability to transmit it by conduction, convection, and radiation. When you are trying to keep warm, low U-values are desirable. An uninsulated wood wall as a U of .25; when insulated this drops to .07. The inverse of the U value is the R (resistivity) value. For these 2 cases the R values are 4 and 15, respectively.




COMPANY.

Preserving the Varieties of Cultural Expression

Cultural Perspective

Cultural Perspective

Civic Events and Celebrations in Lowell's Past

For a glimpse into Lowell's cultural heritage, a content analysis of two newspapers for selected years was performed. This analysis recorded past events and occasions in Lowell and suggests future opportunities.

The following list of public events and civic occasions was excerpted from the Lowell Daily Courier, 1900, and from L'Etoile, the French Canadian paper, 1886, 1887, 1889, 1891 and part of 1900.

HOLIDAYS

May 16, 1900
P.8) On Memorial Day
- Mills will be closed on Memorial Day

Saturday, June 23, 1900
P. 5) Governor's Day
- Company C of Lowell Militia had best line in the March

Wednesday, June 27, 1900
P. 1) The Fourth Parade
- In addition to trades features and individual cyclist features: Y.M.C.I. Co., The Portuguese Society, Banks Club, P.A.C., Greek Society, Hosford Club

Saturday, June 30, 1900
P. 1) Bells will ring
Old custom to be observed on the Fourth

July 5, 1900
P. 1) The National Holiday
The Civic celebration voted big success
- It was an average celebration
- $4000 was spent
- Parade, though void of remarkable features, was good

July 5, 1900
P. 1) Mayor Disappointed
Speaks of the Fourth of July celebration
Gives reason why oration is not popular feature
- Only small audience came to hear Hon. John C. Burke
- Probable that in future years there will be no oration

July 5, 1900
P. 4) Audience was Missing
The "Fourth" oration was not delivered
- Mr. Burke could not do hieself justice in an empty hall
- The paper printed his address

P. 10) For the Children
A varied entertainment given in Hunting Hall
- 300 school children attended

At City Institutions
- At the city farm - extra good dinner followed by band concert - fireworks
- At the jail - special dinner - sports
- Fireworks on South Common were enjoyed by those who could see them from jail
- At the truant school - same thing

P. 10) The Fireworks Display
- On South Common
- Over one hundred rockets were sent up

Friday, August 31, 1900
P.8) Labor Day
Joint Committee on Observance holds meeting
Parade will cost $2500
- Committee of 3 from unions were present
- Thomas Connolly reported for Trades & Labor Council
- 8 bands
"We urged the ladies to parade like men, but could not induce them to do so"
- City contributes $1000 - Unions - $2500
- Labor Day as important as the 4th of July

Friday, August 31, 1900
P. 8) Barbers and Labor Day
- Many barbers want to close on Labor Day
- Several others will do so if all will consent to general closing
- But some may insist on staying open

CULTURAL EVENTS

Monday, February 12, 1900
P. 7) Orchestral Society presents excellent program at Odd Fellows Hall

Friday, March 16, 1900
P. 6) Do you notice that Lowell is fast becoming a theatrical center? There are 6 theatres now open and the Savoy and Music Hall each has its profitable list of attendants

Wednesday, April 10, 1900
p. 10) The Zulu Minstrels
Once more score big hit with a large audience at opera house
- Cast has their faces blackened

August 27, 1900
P. 1) Hot Weather Music Band Concert in Centralville by the Lowell Cadet Band

SOCIAL/SELF-HELP CLUBS

Monday, January 8, 1900
P.4) Self-Help Club
- Ladies of the First Baptist Church have organized as a self-help club for young girls
- They will procure instructors in physical culture, sewing and will also give the girls rational amusement

Thursday, February 8, 1900
P.8) People's Club
- Rooms are open every weekday evening from 7-9 and public is invited to use them freely
- It has amusement room for men
- Reading Room
- Women's Branch
- Classes in dressmaking, millinery

UNIONS

Saturday, January 26, 1900
P. 8) Railroad Men
4th concert & ball at Associate Hall Spindle City Lodge of Brotherhood of Railroad trainmen

Saturday, February 10, 1900
P.10) The Journeymen Horse Shoers had a basketball game and dance in Associate Hall last night - 500 people present.

May 19, 1900
P.8) Print Workers' Ball
- 1st grand complimentary ball given by Print Workers Protective Union given last night - 1200 people

Monday, June 25, 1900
P. 1) Trades and Labor Council
- An executive committee elected, consisting of one delegate from each union
- It was voted to celebrate Labor Day with a grand parade
- It was voted that the Council deem it inexpedient to participate in the parade on July 4

WOMEN'S CLUBS

May 14, 1900
P.8) Women's Club
- Annual field day of the Middlesex Women's Club held Saturday
- They went to Chelmsford to observe birds, flowers, and trees.

FRATERNAL ORGANIZATIONS

Thursday, February 8, 1900
P. 7) Fraternal
J.P. Maxfield Circle, Ladies of the G.A.R. held a dance at Highland Hall.

Friday, February 8, 1900
P.8) The entertainment committee of the Loyal Victoria Lodge I.O.O.L.M.U. has arranged for a supper and entertainment in Odd Fellows Hall tomorrow night.

August 10, 1900
P.4) Fraternal
Etrene Lodge of Good Templars met Wednesday night at Pilgrim Hall
- Announced that bicyclists of the local lodges would meet at Post Office on Labor Day morning and bicycle to district lodge session at Montvale

ETHNIC GROUPS

Monday, April 9, 1900
P.8) Greek Independence
The 79th Anniversary celebrated yesterday in the local church
- Service was attended by between 800 and 900 people
- Hall was decorated with American and Greek flags

May 14, 1900
P.8) Portuguese will parade
Portuguese Benefit Society of Lowell will observe its 5th Anniversary today
- The festival will begin by parade

The Portuguese Fair
- Held in aid of the Portuguese Church
- Went on for four days

Friday, August 31, 1900
P.8) Portuguese Festival
- Many societies will observe sacred day with parade in Boston
- Festival very important - 1st year in which they will celebrate most sacred festival in commemoration of "Bon Jesus"
- Special train will transport Lowell people

MISCELLANEOUS CLUBS

Tuesday, June 26, 1900
P.1) Harvard Graduates
- Organization of Harvard men in the city will be formed

Monday, May 21, 1900
P.1) Sons of Abraham
- 54 Hebrews met in the Master Builder's exchange and organized a branch of the Sons of Abraham, a benefit society

Monday, May 21, 1900
P.8) Aid for Starving India
Meeting in Behalf of the Famine Relief Fund
- Attended by representatives of all denominations

FESTIVALS

Friday, August 31, 1900
P.1) Ponona Grange Picnic
- 1st annual picnic of Ponona Grange held at Willow Dale
- Dancing, sports, boat races - male and female

FAIRS

Friday, September 14, 1900
P. 10 Middlesex North Fair
Evening sights: The evening crowd was about 1,000 strong. More reviewed the exhibits outside while others were entertained by Ring's "Temple of Music" indoors.

Other outdoor sights were a vaudeville show and more horse-racing. Vaudeville acts entertained between races.

- There was a trick bicycle rider

During the Day: The grounds swarmed with children who were given free admission. There were exhibits to please a wide variety of interests. Piano, banjo and guitar exhibits for the music-loving; cakes and breads for the homemaker; useful hardware tools for the handy.

There was a 3/4 mile horse race with a purse for the winner.

Saturday, September 15, 1900

Other big drawing cards (for 9/15/00) were the cycle racing

An unplanned automobile exhibit intrigued the crowd as they witnessed the car's ability to reverse direction with ease.

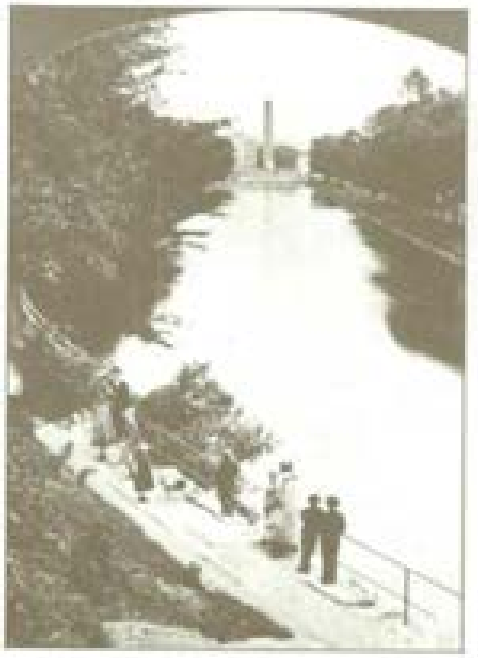
In between horse races some boys participated in amusing games and competitions. One consisted of boys scrambling for coins buried in a tub of white flour.

Prizes were awarded for best apple in a variety of categories; best herd of milk cows in two categories: (native breed, foreign breed); best heifers, best swine.

Friday, September 21, 1900
P.10) Dracut Grange - Second Annual Fair
Sponsored by the Dracut Grange No. 216 it was a great success. It had the usual sports events: horse racing; bicycle racing; horse pulling contest; boys race. Prizes were given to the winner.

But innovatively a new event was added to the fair outside of the sporting arena. Indoors a baby contest featured 25 of the "handsomest and cutest little children"

Shortly after 6:00 p.m. an old fashioned supper took place. After supper many viewed vegetable exhibits and floral displays. Awards were given to the best exhibits and displays.



Lowell Historical Society

YWCA

Thursday, April 12, 1900
P.8) YWCA Work
General Secretary publishes her report for March
- Attendance at the rooms during March numbered almost 5,000

August 24, 1900
P.8) Home for Young Women
- The directors of the YWCA about to open home for young women in Lowell, owing to the fact that many of the young business women of Lowell are compelled to board in undesirable places

CHURCHES

Wednesday, April 10, 1900
P.10) Easter festival
- Held at First Baptist Church - big success
- Proceeds will be used to furnish the primary department rooms in the church
- Entertainment was singing

Monday, June 25, 1900
P.8) Under Fair Skies
First Trinitarian Sunday School has its picnic

June 30, 1900
P.5) The Picnic Season
Sunday Schools and churches enjoy outings

July 2, 2900
P.1) Wesley Church Picnic
- Boating and fishing
- 150 attended

July 9, 1900
P.1) St. Mary's Lawn Party
Annual church affair at Collinsville a success
- Over 700 people

CITY

Vol. 1, No. 28
March 24, 1887
P.3) St. Patrick's Day was celebrated with great pomp last Thursday with a large parade

Vol. 1, No. 21
February 3, 1887
P. 3) The famous Zoyo made a visit to Lowell, filling a hall in which Lowell's most prominent citizens attended. The group is composed of a number of citizens.

Vol. 1, No. 29
March 31, 1887
P.3) A concert will be held Sunday night at Huntington Hall.

Vol. 1, No. 37
May 26, 1887
P.3) The opening of the Lowell Museum will be held Monday, May 30th.

Vol. 1, No. 37
May 26, 1887
P.3) Last Monday "St. Peter's Total Abstinence Society" held its concert. There were quartets, different songs, solos and music by the American Orchestra.

Vol. 1, No. 38
June 2, 1887
P.3) The "Burke Temperance Institute" will hold its annual picnic at Canobie Lake, N.H. on July 29th.

Vol. 1, No. 38
June 3, 1887
P.3) Decoration Day
Decoration Day was celebrated last Monday. Many banks and public offices closed their doors that afternoon. The Ladd and Whitney Monument was decorated by the ladies of St. Peter's Church. A flowered cross hung with the inscription "1861-1887." Pots of flowers surrounded the monument and flags were at half mast.

Vol. 1, No. 43
July 7, 1887
P.3) The Fourth in Lowell
Lowell does not officially celebrate the Fourth of July, however, firecrackers could be heard throughout the day. At midnight the church bells pealed, children screamed, and firecrackers and fireworks were set off.

On the morning of the fourth a baseball game was held between the Lowell and Manchester teams. Manchester was the victor.

Vol. 1, No. 44
July 14, 1887
P.3) On Monday morning, the Barnum Circus exhibited its magnificent vehicles and part of its menagerie in the streets.

Vol. 1, No. 47
August 4, 1887
P.3) About two thousand people attended the grocer's picnic at Willow Dale.

Vol. 1, No. 50
September 1, 1887
P.3) The first Monday in September is a legal holiday called Labor Day. There is no information as to how it will be celebrated in Lowell. Factory agents have not yet decided on closings. However, since it is a legal holiday they will probably suspend work next Monday. Banks and public offices will be closed and school openings will probably be delayed.

Vol. II, No. 53
September 22, 1887
P.3) Last Saturday, flags waved on public buildings in honor of the 100th anniversary of the adoption of the United States Constitution.

Vol. 3, No. 123
January 24, 1889
P.3) This week the Opera, "Le Mascoo" will be performed with a magnificent choir of voices.

Vol. 3, No. 130
March 14, 1889
P.3) The young men and young ladies of St. Joseph's Church are preparing an opera, "The Pharoah's Daughter." The opera will be played May 8, 1889 at Huntington Hall. Profits will go to the construction of the new church.

Vol. 3, No. 134
April 18, 1889
P.3) P.T. Barnum is preparing to make his habitual visit with his menagerie and acrobats.

Vol. 3, No. 135
April 25, 1889
P.3) Bars were closed Monday because of the vote on the Prohibition Amendment. The Prohibition Amendment was defeated by a majority vote of 44,553.

Vol. 3, No. 136
May 3, 1889
P.2) On May 9th at the Music Hall the "Prodigal Child" will be performed and the Circle Lavallee will also be presenting some of its music.

P.2) Today is Decoration Day. There will be a parade in the street with music in memory of brave men.

P.3) Some stores decorated their facades in the memory of the valiant soldiers.

Vol. 3, No. 143
June 20, 1889
P.3) On Friday, July 5th, the Barnum Circus will be in town.

Vol. 3, No. 143
June 20, 1889
P.3) Ice Cream Party
There will be an ice cream party held next week at Huntington Hall. Profits will go towards the construction of the new church. It will be held on the evening of the St. John the Baptist festivities, after the ceremonies.

Vol. 3, No. 144
June 27, 1889
P.3) A group of well-known amateurs will hold a soiree to benefit Lowell's poor. The opera "Le Royal Dindon" will be played on July 11th.

Vol. 3, No. 145
July 3, 1889
P.3) The Sports Committee for the Fourth of July has organized a program to be executed at South Common. The Regatta Committee is planning races for boats with two and four oars, as well as sailboats and canoes.

Vol. 3, No. 145
July 3, 1889
P.3) The procession committee for the Fourth of July projects that around 1500 persons will participate in the parade. A large float will carry thirty-two young girls in various costumes. Boston's "National Lancers" will also take part.

Vol. 3, No. 146
July 11, 1889
P.3) The Lowell Chamber of Commerce held its annual picnic last Tuesday at Tyng's Island. There was a band to perform for everyone.

Vol. 5, No. 224
January 15, 1891
P.3) A dramatic club will be formed soon in Lowell.

Vol. 5, No. 226
January 29, 1891
P.3) The presentation of the "Dramas of the Cabaret" will be at the Opera House tonight by the Dramatic Union of Marlboro, MA.

Vol. 5, No. 227
February 5, 1891
P.2) The dramas of the Cabaret
The performances of the members was a success, but the bad weather kept many people away.

Vol. 5, No. 232
March 12, 1891
P.3) Drama "John Without a Name"
Next Wednesday the drama will be presented at the Catholic Association halls by the actors of the St. Thomas Club. The drama is about a principal phase of the Canadian Insurrection of 1837-38.

Vol. 6, No. 8
November 5, 1891
P.3) The Opera "Solanthe" will be performed next Wednesday at the Opera House.

FRENCH CANADIAN

Vol. 1, No. 9
November 11, 1886
P.3) Local News
Last night an assembly of French Canadians resolved to form a naturalization club. Seventy persons enrolled in the new club. Preliminary elections were held.

Vol. 1, No. 12
December 3, 1886
P.3) There will be a large naturalization assembly on December 12. Onward with naturalization - it is the way to become respected.

Vol. 1, No. 5
October 14, 1886
P.4) Catholic Temperance Societies paraded last Saturday. The parade was a reunion of young people showing a visible interest against abuse and bad effects of alcohol.

Vol. 1, No. 28
March 24, 1887
P.3) The "Soiree" given by the "Mathew Temperance Institute" at the Music Hall on the night of St. Patrick's Day made a profit of $300 which was given to the Sister Superior of St. John's Hospital.

Vol. 1, No. 24
February 24, 1887
P.3) Lundi Gras
The Military Play entitled "l'Ancien Canadien" was performed by l'Oeuvre de l'Orgue Monday night. L'Orchestra Americaine played musical pieces. "Le Tricot Canadien" was also played with success.

Vol. 1, No. 35
May 12, 1887
P.3) The French Canadians of Lowell will celebrate the St. John the Baptist Day as in the past. There will be a procession that evening followed by a seance in Huntington Hall.

Vol. 1, No. 41
June 23, 1887
P.3) Program of the St. John the Baptist Day Celebration in Lowell, Massachusetts, June 24, 1887
- High Mass at 8:00 Friday morning at St. Joseph's
- Large national procession
- Music: Lowell Cornet Band
- St. John the Baptist Society
- L'Union St. Joseph
- Horses
- Refershments and music at Huntington Hall after parade

Vol. 11, No. 66
December 22, 1887
P.3) On Tuesday night the "Forgeron de Stragborg" was presented at Huntington Hall to profit the Naturalization Club. The evening was magnificent and the actors performed their roles with success.

Vol. 3, No. 144
June 27, 1889
P.3) Monday night, the evening of the feast of our patron saint, the ice cream party will be held. The hall will be decorated and there will be music.

Vol. 3, No. 154
September 5, 1889
P.3) A large French Canadian picnic has been arranged for September 12th at Willow Dale in Bowers Woods.

Vol. 4, No. 161
October 24, 1889
P.3) Soiree
The Canadian Band is organizing a soiree to be held on November 5th at the Music Hall. Different comic pieces will be performed. The Catholic Association will also be executing a comic piece.

Vol. 5, No. 231
March 5, 1891
P.3) The St. Andre Corporation will be holding a concert on April 16th. The program will include a comedy and an operetta.

Vol. 5, No. 234
March 26, 1891
P.3) The June 24th parade will have a regiment of zouaves composed of young Canadian men dressed in costume.

Vol. 5, No. 25
April 2, 1891
P.3) On April 16th, at Huntington Hall, there will be a presentation of "Les Deux Timides" et "Les Violonneux." "La Four de Londres," a tragedy, will be performed on May 12th.

Vol. 5, No. 247
July 2, 1891
P.3) Due to a collection throughout the city, $270 was gathered to enable the Canadian societies to join in the Fourth of July celebration.

Vol. 6, No. 14
December 17, 1891
P.4) A large concert will be held on Sunday night, given under the auspices of the Cercle Canadien at the Opera House.

U. of Lowell

Cultural Programs

District-Wide Cultural Programs

The Commission recognizes that to preserve and celebrate Lowell's cultural diversity both past and present, it is necessary to initiate or support a series of programs that allows Lowell "to interpret itself." Dependence on the purchase of cultural events from outside of Lowell would neither encourage the extraordinary collection of existing organizations nor would it provide the foundation for continued expression after the legislated life of the Commission and its funding. For these reasons, the district-wide cultural programs noted herein will focus on those organizations who can "help themselves," who can demonstrate both commitment and community support to the themes of the Park.

Details of the specific programs are as follows:

Festivals, Celebrations and Performances

The Commission will support a year-round cycle of events which will be of interest to residents as well as visitors. Musical, theatrical, ethnic and artistic celebrations will all be encouraged, and the Commission will assist sponsoring organizations in the scheduling, promoting and housing of such events.

FUNDING: Approximately six events per year, with grants ranging from $1,000 to $20,000. Estimated total grants of $35,000 per year.

ELIGIBILITY: Any non-profit organization, including neighborhood groups, arts organizations, civic, religious, cultural or ethnic groups.

CRITERIA: Applications will be reviewed to determine: Extent and quality of the impact on the public; involvement of local individuals, groups and/or institutions in the program planning; artistic merit and demonstration of applicant to responsibly organize and conduct the proposed program. The Commission will especially seek to support those programs where Commission funds will be used to supplement the financial support of an event, as opposed to providing all or the major share of the cost of a program.

HOW TO APPLY: Applications should be submitted on Commission forms:

On or before	For events scheduled to take place after
November 15	February 15
February 15	May 15
May 15	August 15
August 15	November 15

Notification will be within 60 days of submission.

CONDITIONS OF FUNDING: Programs may be scheduled to take place within one year of the application. Funds will be awarded under written contracts for services and will be paid on a reimbursable basis.

Public Exchange Programs

The Commission will support a series of program mechanisms which will support the re-establishment of the interconnections among Lowell's citizens. These may include spiritual needs (via churches); needs for sustenance (via markets); colleagueship (via neighborhood activities); educational needs (via educational programs in the schools and elsewhere).

While these are difficult to classify as educational or cultural "programs", they are ultimately the mainstay of the cultural fabric of the city.

In attempting to maintain and reinforce the 19th century character of the city, the Commission will award grants to certain programs which, by their nature, promote that kind of interconnectedness that characterizes a vibrant city.

Programs which might gain support include Workers' Conferences; History Conferences; Social Service and Education Programs for adults and Farmer's Markets.

FUNDING: One - five grants per year with a maximum of $15,000 per grant, although most will be considerably less. The average annual cost of these programs will be $25,000.

ELIGIBILITY: Any individual or organization, institution or association may apply for these funds.

CRITERIA: Applicants will be judged as to the extent and quality of the program's impact on the public; the involvement of local individuals and institutional resources; community need and demonstrated support; experience of the program's developers and likelihood of the program becoming self-sustaining beyond the period of Commission funding.

HOW TO APPLY: Applications should be submitted on Commission forms:

On or before	For programs beginning after
November 15	February 15
February 15	May 15
May 15	August 15
August 15	November 15

Guest House Program

Citizens thoughout the city will be encouraged to invite visitors into their homes as paid overnight guests, as part of a program operated in a manner similar to England's famed Bed and Breakfast program. The Commission will support the establishment and operation of this coordinated network of guest houses through a grant program which will allow Lowell residents to perform required renovations to their premises and which will support the development of training programs and materials to assure that the Guest House Program is operated in an effective manner.

FUNDING: 2 - 4 grants per year averaging $2,500 per site or approximately $7,500 per year.

ELIGIBILITY: Owner/occupants of Lowell residences with suitable dwelling units throughout the city.

CRITERIA: Applications will be reviewed to determine the adaptability of the proposed guest house, its location, condition and accomodations. Prospective operators of guest houses should be able to demonstrate an interest in Lowell's heritage and express both a willingness and ability to participate in the interpretive activities of the Park.

HOW TO APPLY: Applications should be submitted on Commission forms at any time throughout the year. Applicants will be notified of approval or disapproval within 60 days of submission.

CONDITIONS OF FUNDING: Upon approval of the grant, the Commission will enter into a reimbursement agreement stipulating mutually agreed-upon physical improvements to be made at the premises. After certification that these improvements have been completed the Commission will make the actual cash award.

Local Artisans Programs

The Commission will take an active role in encouraging a wider understanding and appreciation of both fine and applied arts, as well as the many craft traditions that exist in Lowell. The Commission intends to exhibit, commission, promote and purchase works of art and craft, and will establish educational programs for the public.*

FUNDING: Two - five grants per year with an individual grant maximum of $8,000. The Commission's annual budget for this program is approximately $30,000. *(A proposed artisans' gallery/public workshop/educational facility is expected to be funded out of development monies by the Commission).

ELIGIBILITY: Individual artists, arts groups and associations, musicians, performers or organizations are eligible to apply.

CRITERIA: Applications will be reviewed to determine: Extent and quality of the impact on the public; artistic merit; demonstration of applicant to responsibly utilize the award; financial need and relevance to the preservation of Lowell's heritage.

HOW TO APPLY: Applications should be submitted on Commission forms:

On or before	For awards to be used after
November 15	January 15
May 15	August 15

Notification will be within 60 days of submission.

CONDITIONS OF FUNDING: Funding will be made in accordance with written contracts for services and will be paid to the recipient per a mutually agreed-upon schedule. In some instances awards may be utilized to pay for materials, equipment rentals, etc., and in such instances the Commission will make payments on a reimbursable basis.

Assistance to Interpretive Projects

The Commission will encourage individuals, organizations, institutions, businesses and others to develop a network of displays, exhibits, presentations, open-houses, plant tours and other interpretive devices which will allow visitors and residents of Lowell to gain a fuller appreciation of the history and culture that has shaped the city's past and which may influence the city's future.

Funds will be made available to research, plan and develop programs which will contribute to making Lowell an "educative city".

FUNDING: Two grants per year will be awarded as matching grants for the planning phase of proposed projects. The maximum grant amount will be $15,000. Additionally, implementation grants for the actual construction and preparation of exhibits, displays, etc., may be eligible for up to 50% matching grants with a $25,000 maximum. (Certain programs may also be eligible for support as part of the Commission's development programs). The average annual budget for this program is $40,000.

ELIGIBILITY: Any private or public agency, institution, business or organization may apply for these funds.

CRITERIA: Applications will be reviewed to determine: Extent and quality of impact on the public; relevance of proposed project to the goals of the Commission; ability of the project to become and remain self-sustaining; community need and support; calibre and experience of the program planners and developers and involvement of local individual and institutional resources.

HOW TO APPLY: Applications should be submitted on Commission forms:

On or before	For awards to be used after
November 15	February 15
May 15	August 15

CONDITIONS OF FUNDING: All grants made in this category of programs will be matching grants with no more than 50% of program budgets supplied by the Commission.

Educational Programs

The Commission will support programs initiated by the Lowell Public Schools, University of Lowell and other educational institutions or groups when those programs will further the goals of the Commission.

These programs may fall into the categories of classes, workshops, programs, conferences, and in some instances, facilities where programs would be conducted.

FUNDING: Three - five grants per year up to a limit of $15,000 per grant (most will be considerably lesser amounts). A curriculum development program, for example, might be funded at the highest amount, while a teacher training workshop might include faculty stipends of $500-$1,000 per teacher. The average annual budget for this program is $35,000.

ELIGIBILITY: Any educational organization, school or institution may apply, as can any individual provided that the application is sponsored by an existing educational institution that has been previously established to provide educational programs to the public.

CRITERIA: Programs funded through grants in this category are NOT intended to supplement the nature or scope of normal course offerings or programs that educational institutions would expect to offer. Instead, programs will be selected for development or pilot usage in areas dealing with topics which have heretofore been unavailable. Applicants will be required to demonstrate the uniqueness of the proposed program, the need and support of the community for such programs, the likelihood of continued support beyond the Commission-funded period and the capability of the applicant to carry out the project.

HOW TO APPLY: Applications should be submitted on Commission forms:

On or before	For awards to be made
May 15	August 15

CONDITIONS OF FUNDING: Funds will be awarded under written contracts for services and will be paid on a reimbursement basis.

Writing, Research and Publishing Programs

The Commission will support programs of academic or scholarly significance which will provide a wider understanding of the issues upon which the National Park and Preservation District were founded. The areas of inquiry may vary greatly - Hydropower, Weaving Techniques, Immigration or Street Furniture - but the focus will be to sponsor responsible research and dissemination of ideas, theories and information which will futher the understanding of Lowell's origins.

FUNDING: One - three grants per year averaging $2,500 each or an annual budget of $6,000.

ELIGIBILITY: Any applicant qualified to conduct the work proposed is eligible to apply.

CRITERIA: Two kinds of awards may be made: a) An award to an applicant proposing an area of inquiry which the Commission feels has merit and deserves to be funded and b) awards to individuals who respond to Commission-initiated Requests for Proposals on topics the Commission has decided to pursue. In both instances, candidates will be selected for their ability to undertake the work, as demonstrated in past performance in comparable projects.

HOW TO APPLY: Applications should be submitted on Commission forms on or before July 15 for projects which will commence on or after September 15.

CONDITIONS OF FUNDING: Funds will be awarded under written contracts for services and will be paid per mutually negotiated terms, typically progressive payments throughout the course of the project.

Work/Study Student Grants

The Commission will provide a number of individuals the opportunity to assist the Commission in the implementation of its programs through a series of scholarships and internship awards. These awards will be competitively made three times each year. While designed to provide temporary "apprenticeships" of benefit to the participating students, this program will also provide the Commission with a significant amplification of its staff, as students will be assigned research, administrative and coordination responsibilities for National Park and District-wide programs.

FUNDING: Approximately five students each semester will receive grants of up to $650. Up to three students will be eligible to receive summer stipends of $2,000 each. The average annual budget for this program is $13,000.

ELIGIBILITY: Any student, full-time or part-time, may compete for these awards.

CRITERIA: Students will be selected from among those who can demonstrate, through past activity and proposed plans, that they would most benefit from a work/study grant. It is probable that the Commission will determine on a periodic basis those areas where particular skill, expertise or interest of prospective interns might be most useful (such as in the planning of an ethnic music festival or architectural tour), and would-be applicants will be so informed.

HOW TO APPLY: Applications should be submitted on Commission forms:

On or before	For awards for
July 15	September - December
November 15	January - May
April 15	June - August

CONDITIONS OF FUNDING: No student will be eligible for more than two consecutive grants. Students must remain enrolled in good standing in their respective schools while participating in this program.


ED STATES OF AMERICA
B 5170125 4 H
WASHINGTON, D.C.
SERIES
1977
A

Costs
and
Phasing

Budget

Budget

This section includes the budget details as listed below. All costs are calculated in 1980 dollars and include escalation.

- costing methodology

  a description of the "preferred alternative" planning selection process

- costing assumptions

  unit costs for preservation and renovation, relocation, landscaping, exhibition, transportation and escalation

- Development Budget, 1979-1981
- Operating Budget, 1979-1981

Costing Methodology

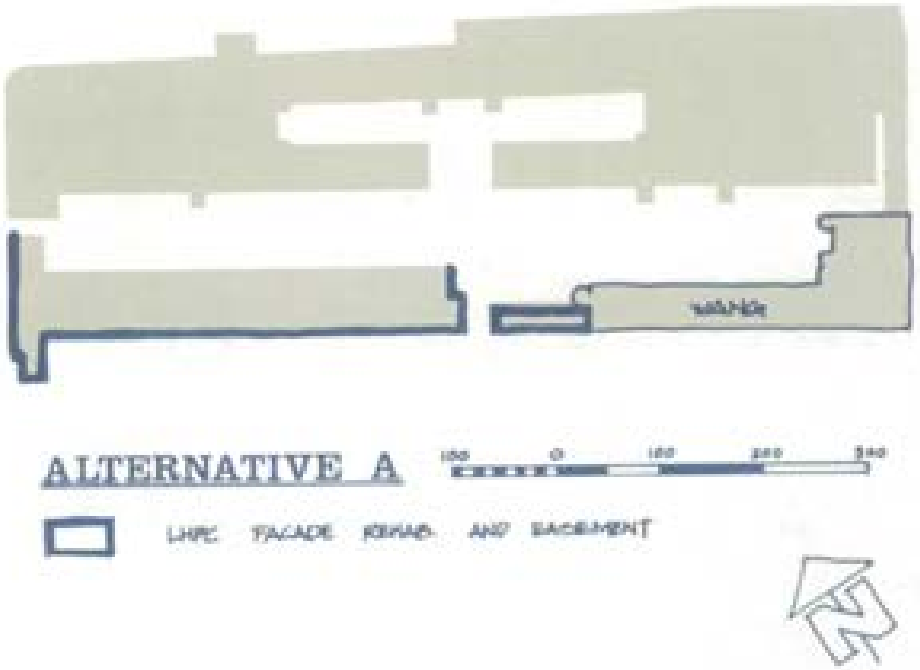
As a planning methodology, alternative costs were developed for each of the Commission's priority projects identified as "Site-Specific Projects" in the Plan. Costs for alternative actions were formulated at three levels based upon the funding commitment of the Commission. The criteria for the three alternative actions are as follows:

ACTION A - Minimal Commission action: technical assistance and/or grants and loans.

ACTION B - Moderate Commission action: limited acquisition and/or capital assistance for development. Minimal operational and management costs.

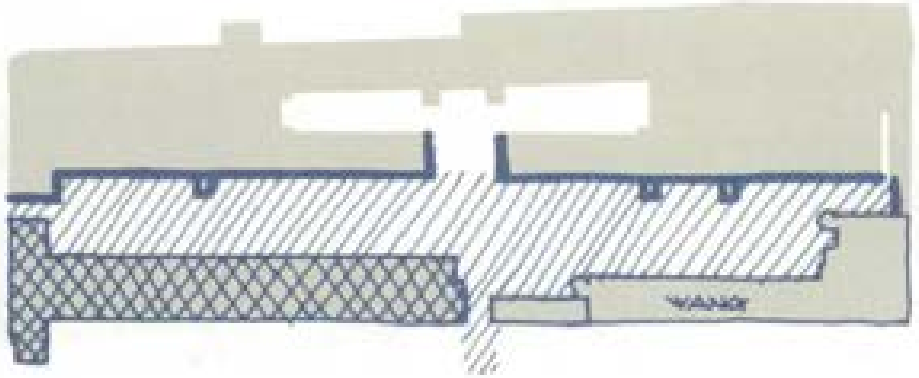
ACTION C - Major Commission action: total acquisition and funding of capital development, management and operational costs. Resale or transfer options.

The Boott Mill project, besides being the most significant of the Commission's development programs, is representative of this "action and alternative" planning process. The following paragraphs describe in detail the proposed Boott Mill actions:



ACTION A ($300,000)

Exterior rehabilitation grant and easement for the south facade of Mills 8, 9 and the Picker Building: $300,000.



ALTERNATIVE B

LHFC ACQUISITION AND FACADE EASEMENT

LHFC FACADE EASEMENT AND EASEMENT

LHFC SITE IMPROVEMENT AND EASEMENT

ACTION B ($2,907,000)
"Preferred Alternative"

Acquisition, relocation and assembly costs for Mills 8, 9 and the Picker Building (101,810 sq.ft.): cost available pending negotiations.

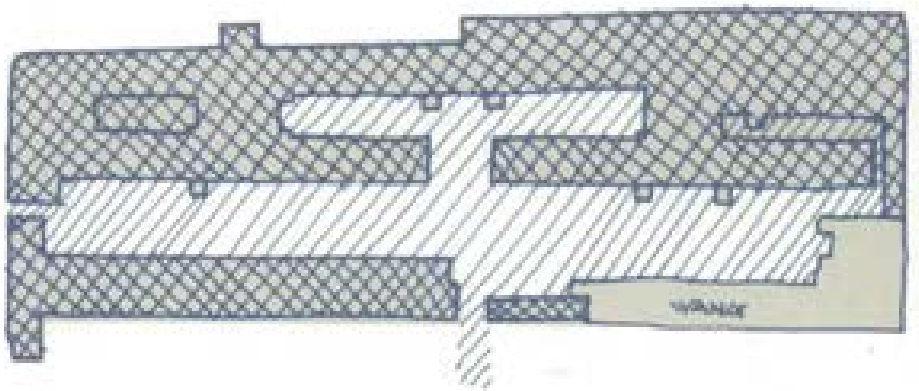
Exterior rehabilitation and facade easement for the Counting House: $66,000.

Site improvements and easement for the upper (south) millyard: $264,000.

Exterior rehabilitation and facade easement for the south facades of Mills 1, 2, 3 and 4: $960,000.

Interior improvements for 40,000 sq.ft. of museum exhibit space: $1,056,000.

Architect/Engineering fees: $121,000.



ALTERNATIVE B'

LHFC ACQUISITION AND FACADE EASEMENT

LHFC FACADE EASEMENT AND EASEMENT

LHFC SITE IMPROVEMENTS

ACTION B' ($4,463,000)

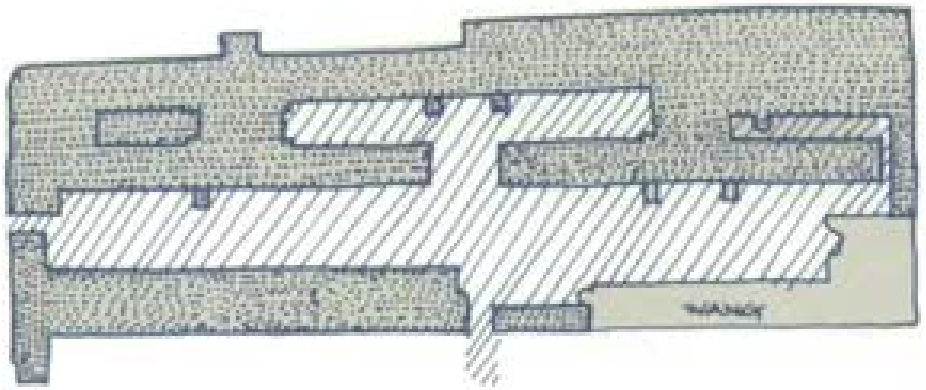
Acquisition, relocation and assembly costs for the Boott Mill complex (59,000 sq.ft.): cost not available pending negotiations.

Exterior rehabilitation and facade easement for entire complex: $2,938,000.

Site improvements and easement for the upper (south) millyard: $265,000.

Entrance bridge and canal access improvements for 40,000 sq.ft. of museum exhibit space ($1,056,000).

Architect/Engineering fees: $170,000.



ALTERNATIVE C

LHFC ACQUISITION, FACADE REHAB. AND INTERIOR IMPROVEMENT

LHFC FACADE REHAB AND EASEMENT

LHFC SITE IMPROVEMENTS

Detailed programs and action alternatives were developed in a similar manner for each of the priority projects and a preferred alternative was selected by the Commission. The advantages of this planning/selection process are that 1) a full range of alternatives were explored and the long-term implications of capital and operational commitments were determined and 2) all the priority projects were scaled to the legislated budget rather than omitting some of the priority projects when there was a lack of available funding. A further benefit of this methodology was that an environmental assessment for each proposed project could be made during the planning process and alternative strategies could be formulated concerning the role that each would play in achieving the overall objectives for the Plan.

ACTION C ($24,263,000)

Acquisition, relocation and assembly costs for the Boott Mill complex ($71,000 sq. ft.): cost not available pending negotiations.

Exterior rehabilitation for entire complex: $2,938,000.

Site improvements for the upper and lower millyards: $500,000.

Interior improvements for 591,000 sq./ft. : $20,595,000.

Architect/Engineering fees: $240,000.

Costing

Preservation

- Building acquisition: Mills are calculated between a low range of $1.90/sq.ft. and a high range of $5.00/sq.ft. depending on occupancy, site, condition, and access. Acquisition costs for other building types have been based upon comparable sales.
- Exterior preservation, mills: Preservation costs are calculated at $5.00/sq.ft. of gross area and include cleaning and repointing brickwork as required, repair of window frames, replacement of window sash, repair of roof cornice and roof drainage system, installation of a new insulated membrane roof, and miscellaneous carpentry and painting.

  Replacement of historic window sash (to match existing) with interior storm windows is estimated at $380 for a 4' X 8' opening. Installation of a new loose-laid membrane and ballast roof (insulated per energy code requirements) is estimated at $3/sq.ft. Repair or replacement of lead flashing over the arched window openings varies between $25 and $60 per window. Replacement of the roof cornice varies from $30 to $100/lineal foot depending on the complexity of the profile.
- Exterior preservation, other buildings: Costs are calculated as the sum of specific line items for each individual building. As a general rule, $10/sq.ft. of floor area is computed for exterior preservation. Specialized restoration work may run as high as $45/sq. ft. of floor area for exterior restoration.

Renovation

- Renovation, mills and commercial buildings: Renovation costs are computed at a range of $25 to $40/sq.ft. of floor area. $25 would apply to large, open mill spaces, $35 for more complex commercial structures, and $40 for residential structures or extensively renovated mills spaces including interior furnishings.

  Elevators for handicapped access are computed at $50,000 for the basic equipment with a cost increase depending on the number of level changes. Fire stairs are calculated at $6,000 per level change.

Relocation

- Commission projects are subject to the Federal Uniform Relocation and Assistance and Real Property Acquisition Policies Act of 1970. Small business moving costs are computed at a maximum of $10,000. For larger businesses the awarded moving costs are dependant on the size of the machinery to be moved and the complexity of the rigging. No residential relocation is proposed in the Preservation Plan.

Landscaping

- Reinstatement of historic landscaping: In areas such as the upper Boott Millyard, restoration landscaping is computed at $5/sq.ft.
- Public parks: the landscaping and pedestrian access costs for areas such as the Boott Mill park are estimated at $9.50/sq.ft. and include site work, archeological exploration, retaining structures, paving, landscaping, site lighting and park furniture.
- Canal Walks: The site improvement costs for the construction of paths, sitting areas, landscaping, and lighting for areas such as the pedestrian walk from the Swamp Locks bridge along the Pawtucket Canal to the Dutton Lot are calculated at $3/sq. ft.

Exhibits

- Interior exhibits: Costs vary from $30 to $100/sq. ft. depending on the complexity of the exhibit. A modest, primarily photographic exhibit is computed at $30/sq. ft. of floor area and includes fabrication and installation. An exhibit budgeted at $100/sq. ft. of floor area would be highly technical in composition and would involve audio-visual equipment, working replicas, models etc. The exhibit costs quoted above include exhibit research, technical design and installation supervision.

Transportation

- Transportation staging and costs are extensively described in the Transportation Section of the Details of the Preservation Plan.

Escalation

- Escalation: All costs are quoted in 1980 dollars and include escalation based on the following assumptions:

  Phase I (Fiscal Year 1981-1982): 1980 calendar year dollar cost plus 10%.

  Phase II (Fiscal Year 1983-1986): 1980 calendar year dollar cost plus 30%.

  Phase III (Fiscal Year 1987-1988): 1980 calendar year dollar cost plus 50%.

Development Budget

FISCAL YEARS 1979-1981

Program	79	80	81
Preservation Plan	100,000	50,000	--
Acquisition related	39,500	348,000	1,000,000
Rehabilitation Grants			
Historic facades	114,600	297,000	120,000
Mandated projects	193,900	163,000	1,180,000
Transportation	52,000	75,000	--
Lowell Development and Financial Corporation	--	--	200,000
	$500,000	$933,000	$2,500,000

Operating Budget

FISCAL YEARS 1979-1981

	79*	80**	81
Salary & Benefits	60,413	199,700	265,000
Travel	9,275	13,300	15,000
Janitorial/Security	1,000	1,500	1,500
Rent & Utilities	3,665	18,600	15,000
Printing	655	4,100	3,000
Other Services	87,573	--	--
Cultural Programs ***	--	50,000	50,000
Transportation Operations	--	16,500	10,000
Office Renovations	--	8,000	--
Appraisals	--	11,300	--
Misc. Services	--	44,400	14,500
NPS Cooperative Agreement	5,000	5,000	5,000
Supplies / Materials	25,751	27,600	20,000
Equipment	20,468	200	1,000
	$200,000	$400,000	$400,000

* Less than full year of operation

**August, 1980 estimated figures

*** See Cultural Operating Budget on opposite page for funding levels for implementation of projects in the Plan.

Cultural Operating Budget

PROJECTED ANNUAL FUNDING

Festivals, Celebrations and Performances	35,000
Public Exchange Programs	25,000
Guest House Program	7,500
Local Artisans Programs	30,000
Assistance to Interpretive Projects	40,000
Educational Programs	35,000
Writing, Research and Publishing Programs	6,000
	$178,500

Environmental Assessment

Environmental Assessment on the Preservation Plan

Prepared by
Lowell Historic Preservation Commission
Lowell, Massachusetts
August 1980

For further information contact:

Sarah Peskin or Nancy Bellows
Lowell Historic Preservation Commission
204 Middle Street
Lowell, Massachusetts 01852
(617) 458-7653

Section I. Preface

Purpose of the Environmental Assessment

This document was developed to: (1) make public the key alternatives that were considered and evaluated during the Commission's planning process, and (2) to partially comply with the requirements of the National Environmental Policy Act of 1969, as amended (NEPA). Specifically, Section 102(2) of NEPA requires that the agencies of the federal government analyze the impacts of their proposed actions on the human environment. These impacts on the City of Lowell have been assessed by both the National Park Service and the Commission.

The National Park Service prepared an Environmental Impact Statement on their General Management Plan and on the overall impacts of the Commission's eight-year involvement in Lowell (draft Environmental Impact Statement, June 1980). The document covers the Commission's proposed actions in so far as they were known at the time. Because of the complementary--and close jurisdictional--relationship between the two agencies, the Commission worked closely with the Park service during the preparation of the Environmental Impact Statement.

The Commission prepared this document, an Environmental Assessment, to analyze the impacts of the Preservation Plan and alternatives that were not fully addressed in the NPS Environmental Impact Statement. Extensive references to the Environmental Impact Statement are used in order to avoid unnecessary duplication of narrative and analysis material. Such references are noted as "NPS/DEIS."

In conclusion, while the Commission and the National Park Service each has a responsibility to prepare its own NEPA compliance documents, the Impact Statement and the Assessment should be read together so the public can understand the impact of the Department of the Interior on the City of Lowell.

Need for the Project

The project which is the focus for this environmental analysis is the Preservation Plan of the Lowell Historic Preservation Commission. The Plan itself has been developed according to directives and guidelines set forth in Public Law 95-290, the enabling legislation for the Lowell National Historical Park. In general, the legislation - and the various agencies and individuals involved in the National Park development process - recognized the need for a well-integrated Plan for the Preservation District that would present a clear strategy for actions to be undertaken by the Lowell Historic Preservation Commission during its 10-year life.

Relation to the Preservation Plan

The Environmental Assessment is a preliminary analysis of the impacts of the Lowell Historic Preservation Plan. It is important to understand that it is an analysis of a complex, multi-faceted plan, rather than an analysis of one specific proposed action such as construction of a highway.

Throughout the planning process, a variety of alternatives were developed for the major types of proposed projects. The probable physical, social, economic and institutional impacts of the alternatives were then evaluated and discussed. The Assessment records the highlights of this analysis process in accordance with regulations established by the Council on Environmental Quality and adopted by the Department of the Interior. Thus, the Assessment gives the background to the Plan by documenting why certain alternatives were preferred over others.

Organization and Methodology

The Environmental Assessment has five sections:

I. Preface
II. The Existing Environment
III. Lowell Historic Preservation Commission Objectives and Overall Criteria
IV. Environmental Impact Analysis
V. Consultation

Section IV, a discussion of proposed actions, alternatives and the probable environmental effects thereof, is the key technical section. The discussion in Section IV parallels the sequence of material presented in the Preservation Plan.

In terms of technical methodology, the Environmental Assessment utilizes a mix of quantitative and qualitative tools. The emphasis is on known facts and figures and common sense evaluations. The Environmental Assessment is thus not meant to be a highly technical research document.

Next Steps

This Environmental Assessment is a document prepared to assist planning and decision-making. It will be reviewed by the Lowell Historic Preservation Commission. The Commission will then make a formal finding on the significance of the probable environmental impact of the Preservation Plan. The finding will be either: (1) a Finding of No Significant Impact ("FONSI") or (2) Significant Environmental Impact. The latter finding would necessitate a full Environmental Impact Statement (EIS).

Section II. The Existing Environment

Lowell in Brief

Extensive background material on the City of Lowell, both in terms of history and existing conditions, is contained in the National Park Service's General Management Plan, in the Draft Environmental Impact Statement on the Plan, in the Report of the Lowell Historic Canal District Commission (the "Brown Book"), in the final report for the Lowell Historic Preservation Plan and in various other documents. There is no need to repeat these details here. (See NPS/DEIS, "Affected Environment," pp. 9-74).

In brief, however, the environmental factors in Lowell that were of primary concern in the development of the Lowell Historic Preservation Plan were:

- Lowell's nationally significant and colorful history, exemplified today by the many fine historical buildings and by the continuing cultural diversity and vitality of the city's ethnic neighborhoods.
- Lowell's period of economic decline, from about 1920 to 1970.
- Current strong trends toward economic revitalization and the development of a new physical and economic structure for the city.
- The need to preserve historical sites and structures, and to encourage the continued vitality of ethnic neighborhoods even as Lowell grows, changes and prospers.
- The actions of the major public agencies that are involved in the current program of economic revitalization and historic preservation, including Lowell's elected officials and line departments, the Massachusetts Department of Environmental Management, the National Park Service and the Lowell Historic Preservation Commission.
- Facilities required for and impacts created by the hundreds of thousands of visitors who are expected to come to Lowell every year.
- The logistical, financial and institutional challenges involved in creating a national cultural historical park in the heart of a densely developed city of 95,000 people.

The Preservation District

The primary impact area for the Preservation Plan will be the National Historical Park and the Preservation District. The next few pages will provide key data on the Park and the Preservation District. The objective here is to provide baseline data on the existing environment that may be affected by the actions proposed in the Preservation Plan.

The boundaries of the Preservation District and the National Historical Park are shown on the accompanying map. It can be readily seen that these boundaries have been designed to include all major river banks and canals in Lowell, all of the major historic mill complexes, the downtown commercial district (Central and Merrimack and vicinity), and parts of the two neighborhoods know as "the Acre" and Chapel Hill. The boundaries were also designed to include all of the National Park properties, and to provide buffer areas between the Park and other areas of the City. The Preservation District encompasses about 583 acres of land area, 5.6 miles of canals, and 9.6 miles of river banks.

The Preservation District contains most of the primary historic resources of the City of Lowell. Within the District's boundaries, there are 383 buildings and structures of national historical significance and 227 buildings of local historical or architectural significance. There are also numerous sites of historical or archeological significance, and a variety of special historical resources such as old canal locks and mill machinery.

Much of the Preservation District consists of commercial and industrial buildings and uses. The District's population is centered in the Acre and Chapel Hill. The major ethnic groups within the district are Greek, Portuguese, Hispanic, Franco-American and Blacks. The land use pattern is generally that of a densely developed, industrialized nineteenth century city. The commercial buildings on Central and Merrimack Streets and the large mill complexes are the dominant land uses.

The cultural dynamics of the two major neighborhoods within the Preservation District - the Acre and Chapel Hill - are an important factor. The Acre is a historically strong ethnic neighborhood that is currently suffering from problems of absentee landlords, physical deterioration and loss of buildings through fire. The residents are primarily Hispanic people with low incomes. Chapel Hill is a strong ethnic neighborhood that is characterized by a high level of social cohesion, a high percentage of home ownership and well-maintained homes. The residents are primarily Portuguese people. Saint Anthony's Church serves the neighborhood as a center for social and cultural activities.

The transportation system consists of a dense network of relatively narrow one- and two- way city streets. The major access routes into the Preservation District are Gorham/Central Street and Thorndike Street from the south, and four bridges spanning the Merrimack River to the north. City buses provide public transportation along Merrimack Street and along other City arteries. Traffic congestion and parking are major problems, especially in the downtown area.

The Preservation District's economic resources consist primarily of industrial and commercial establishments. The historic mill buildings provide most of the industrial space - a total of 3,376,290 square feet in 1980. About 73% of this space is currently occupied. Retail space is concentrated in the Downtown section of the Preservation District. Current occupied retail space Downtown totals 305,294 square feet. There is also a total of 540,135 square feet of existing general office space in the Downtown area, of which 73.1% is presently occupied. Available data indicate that commercial sales and selling prices for industrial and commercial real estate are both increasing at a healthy rate. (See NPS/DEIS pp. 45-58).

Natural resources within the Preservation District, other than water resources, are not of great significance. The District is a highly urbanized area. Adverse impacts on biological resources such as vegetation and wildlife, and irretrievable use of non-biological resources such as soils, rock materials and land area had already occurred by the early nineteenth century. Water resources are, of course, of primary importance to the Preservation District. The 5.6 miles of canals and 9.6 miles of riverbanks included within the District are important historical/visual/natural resources. Generally, water quality for the canals and the Merrimack and Concord Rivers has improved during the past decade, but there are still illegal discharges and storm drain overflows that flow directly into the canals. Incompatible land uses such as scrap metal and oil storage on the banks of the Pawtucket Canal may have an adverse impact on water quality. It is expected that water quality will

continue to improve during the 1980's, and that water-related active and passive recreational activities, as well as a number of low-head hydro-power projects, will increase in importance.

The NPS/DEIS provides basic information on air quality resources (pp. 45-47) and potential impacts of Park visitors on air quality (pp. 92-94). Primary current air quality problems are violations of the state ozone standard (a problem common to all Massachusetts communities) and the presence of several industries that are not in compliance with state air pollution emission standards.

Existing Regulatory Controls that affect the Preservation District include the following:

1. Building Code.
2. Lowell Zoning Code, including Flood Plain District Regulations.
3. Lowell Historical Commission-approval powers for certain kinds of projects within the City Hall Historic District and the Locks and Canals Historic District.
4. Lowell Health Code.
5. Wetlands Protection Act.

These regulatory controls have been considered adequate for the normal range of business and development activities that Lowell has experienced in recent years. New initiatives sponsored by the Park Service and the Preservation Commission will, however, require some improvement in regulatory controls and procedures.

The major Current Plans and Programs that will affect the Preservation District are:

1. The Preservation Plan, Lowell Historic Preservation Commission.
2. The Lowell National Historical Park General Management Plan, National Park Service.
3. The Lowell Heritage State Park Plan, Massachusetts Department of Environmental Management.
4. The Lowell Plan, City of Lowell.

These important planning, action and investment efforts have been designed to complement one another so as to provide for the greatest possible economic, cultural and historic preservation benefits for the people of Lowell. (See NPS/DEIS pp. 48-52 for summary of other plans.)

Section III. Lowell Historic Preservation Commission Objectives & Overall Criteria

During the development of the Preservation Plan, alternatives for important projects and programs were evaluated in terms of environmental impact, fiscal and institutional feasibility, and the goals and objectives of the Lowell Historic Preservation Commission.

This section of the Environmental Assessment contains a brief description of Commission objectives and related criteria. (See the final report for the Preservation Plan, for more details.)

Summary of Commission Mandates

It should be clearly understood that several important Commission areas of action and concern were mandated by P.L. 95-290, the Park enabling legislation. Mandated actions were:

1. To compile an index of important historic and cultural properties within the Park and Preservation District.
2. To develop Standards for future construction activities within the Preservation District, and to work with the City to incorporate these Standards into appropriate local ordinances.
3. To provide for the preservation and rehabilitation of ten significant buildings within the National Park.
4. To assist in the development of trolley and barge transportation systems for Park visitors.
5. To provide for educational and cultural programs.
6. To provide grants and loans to preserve naturally significant structures.

For these elements of the Preservation Plan, then, the alternatives of "No Action" or a substantially different kind of action were not feasible alternatives. Thus, alternatives for these elements consisted of relatively detailed options that could reasonably be considered within the overall framework of the legislative mandate.

Summary of Commission Theme

The Lowell Historic Preservation Commission is a unique federal agency. The Commissioners are representatives of local, state and federal agencies who are working together to ensure that the various major plans and development initiatives will respect, support, and provide for expression of the special way of life of the people of Lowell, both past and present.

The Commission's overall theme is thus: "To tell the human story of the Industrial Revolution in a nineteenth century setting by encouraging cultural expression in Lowell."

This overall theme, together with the Commission's legislatively-mandated programs, constitutes the primary evaluative framework for all elements of the Preservation Plan.

Related Evaluation Criteria

During the course of the planning process, a "second level" of evaluation criteria began to be articulated. These criteria were then used to assess the feasibility and impacts of reasonable alternatives for the various elements of the Preservation Plan. These related evaluation criteria included the following:

1. Responding to Cultural Needs - Commission projects and programs should be designed in a way that will maximize support of important ethnic/cultural resources and respond to identifiable needs for cultural activities.

celebrations, festivals and exhibits.

2. Fiscal Feasibility - Commission's total fiscal resources will be limited to $21.5 million (construction) over a 10 year period. The desirability of certain alternative actions and projects - especially in the capital intensive areas of major acquisition and rehabilitation - must therefore be evaluated within the context of finite funds.

3. Leveraging of Funds - given its limited fiscal resources, the Commission should seek to increase the effectiveness of its project and program expenditures by linking such expenditures to the investment of other substantial public or private funds.

4. Concentration of Resources - Commission should also seek to concentrate its expenditures so that designated parts of the overall Preservation District will benefit significantly during the Commission's 10 year life span.

5. Management Feasibility - the ability of Commission to manage larger projects on a day-to-day basis should also be carefully considered. The 12 member staff of full-time professionals has a wide range of abilities. However, the staff's time and energies are finite, and significant future growth in the size of the staff is not expected.

6. Implementation Timing - Alternatives for major projects and programs should also be evaluated in terms of probable time required for implementation. Since the Commission must complete its work by the end of 1988, extremely complex and long-range alternatives should not be given a high priority.

7. Acceptability to the City - The goals, objectives, policies and programs of key city agencies and officials must be considered and respected. Alternatives that may cause conflicts with City policies and programs should not be pursued.

8. Accountability - The Lowell Historic Preservation Commission is primarily accountable - in theme and in spirit, if not by actual legislation - to the people of Lowell. All alternatives must therefore be carefully evaluated in terms of their social and cultural implications.

Section IV. Environmental Impact Analysis

This section of the environmental analysis provides a discussion of the major proposed actions that make up the Preservation Plan, the reasonable alternatives that were considered, and the probable environmental impacts, whether beneficial or adverse, that the proposed actions and the alternatives may be expected to have. The intent here is to provide highlights of the planning/evaluation process, and to discuss probable impacts in a concise fashion. As mentioned earlier, the National Park Service Environmental Impact Statement analyzes the overall impacts of the Commission actions (see NPS/DEIS p. 96).

The organization of this discussion parallels the organization of the final report for the Lowell Historic Preservation Plan. The reader is referred to that document for more details on various plan elements.

The assessment of each of the major elements of the Plan generally follows a standard narrative sequence:

- objectives
- specific criteria
- the proposed action
- the alternatives
- probable environmental impacts
- mitigating measures, if appropriate.

Summary of Findings

An analysis of probable environmental impacts, both adverse and beneficial, was conducted for 21 components of the Lowell Historic Preservation Plan. For each of the major proposed actions, the findings of this impact analysis have been summarized in the accompanying chart. Beneficial impacts have been noted with a "+", adverse impacts have been noted as "-".

Summary of Impacts

MAJOR COMPONENTS OF THE PLAN	HISTORIC PRES.				SOCIAL	PHYSICAL							ECONOMIC						GOVERNMENTAL			
	Historic Bldg. Rehab.	Historic Bldg. Maint.	Historic Interpretation	Design Controls	Cultural Expression	Public Access	Pedestrian Access	Visual Quality	Motor Vehicle Traffic	Parking Resources	Air Pollution	Open Space	Employment	Tax Base	Property Tax Revenues	Financial Assistance	Concentration of Resources	Leverages of Funds	Displacement	Local Gov. Control	Legal Clarity	Administrative Changes	Regulatory Costs
Boundary Changes			+																				
Index			+													+							
Standards			+																				-
Regulatory Framework																				+	+	+	-
Financial Assistance Programs																+	+						
Transportation																							
Trolley System			+						+	+													
Parking Garages									+									-					
Canal Barges			+																				
Pedestrian Improvement							+																
District-Wide Cultural Programs					+																		
Key Projects																							
Gateway Exhibits	+				+								+	+			+						
Labor Exhibits	+				+								+	+									
Cultural Center	+				+									-			-						
Boott Mill Park					+		+		-	+				-									
Boott Mill	+				+	+							+	+	+			-					
Mandated Projects																							
AHEPA Building					+																		
Jordan Marsh Co.	+																						
St. Anne's		+																					
Welles Block	+												+	+			-						
Yorick																							
Lowell Institution for Savings																							
Lowell Gas Light Co.	+												+	+									
World's & Martin's										+				-				-					

+ Beneficial Impact
- Adverse Impact

ENVIRONMENTAL IMPACT FACTORS

Boundary Changes

The boundaries of the Lowell Historic Preservation District were first defined in 1977. One of the important results of the Commission's past year of study has been a determination that some adjustments in the District's boundaries are necessary.

The final recommended boundaries for the district, as documented in the Preservation Plan, were determined according to several criteria:

1. Protect significant properties and cultural resources.

2. Provide reasonable limits for areas and properties that would be eligible for financial assistance from the Commission.

In response to these criteria, and as a result of careful research, a total of five small areas were added to the Preservation District. These changes are considered minor. Two major changes were also proposed:

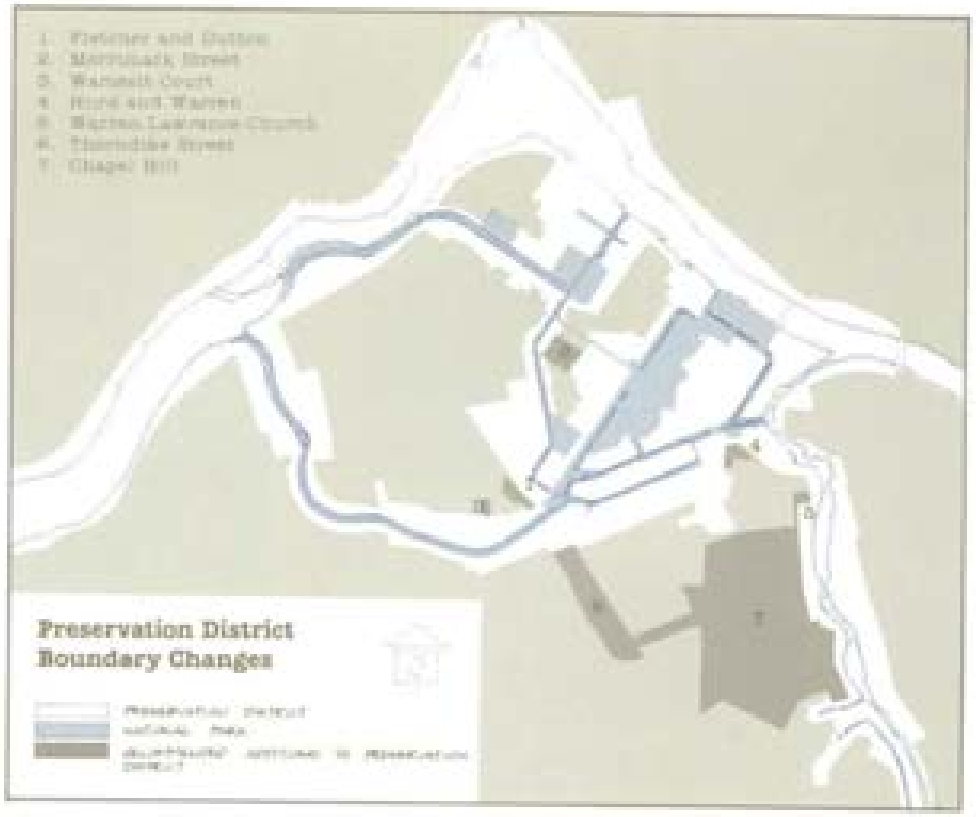
1. Thorndike Street, Highland South Common area - an area of about 16 acres with two nationally significant structures.

2. Chapel Hill - an area of about 90.5 acres with over 750 structures, primarily residential, with a small number of nationally significant buildings.

The primary impact resulting from inclusion of these two areas within the Preservation District will be the applicability of the Commission's standards for rehabilitation and new construction. The application of the standards to the Thorndike Street area will help to ensure that this primary vehicular "gateway" to the National Park will be appropriately rehabilitated and preserved.

Chapel Hill residents will be able to apply for grants and loans for exterior rehabilitation work that might otherwise not be done according to preservation standards. Adding the small number of buildings that are eligible for grants and loans to the District will only slightly increase the workloads required to administer the standards. Outreach efforts to explain the opportunities for financial and technical assistance will be necessary. In general, the addition of Chapel Hill to the District will draw Commission funds and staff time away from other projects.

The No Action alternative was considered for the two major proposed boundary changes. In this case, No Action would simply mean that these two additional areas would not be included in the Preservation District. It was determined that action in these two cases was appropriate in view of the objectives for the Preservation District boundaries.



The Index

The objective of the Index was to identify nationally significant buildings within the Preservation District. These buildings would be eligible to receive grants and loans from the Commission for the purposes of historic preservation and rehabilitation.

In practice, the Index provides succinctly formated data for a total of 759 buildings, divided among the following categories:

Category A: Buildings of national significance; 382 buildings and structures. The A category was further subdivided into A1 buildings - those of high individual importance (total of 156) and A2 buildings - buildings nationally significant as a group (total of 227).

Category B: Buildings of local historical and architectural importance; 227 buildings.

Category C: Buildings that do not contribute to the themes of the Park, and that have no special negative effect on A or B buildings; 96 buildings.

Category D: Buildings that are inconsistent with the Park themes and negatiaely affect A or B buildings; 56 buildings.

Of primary concern here are the criteria that were used to group buildings into these four categories. The criteria are described in detail in the Index. In brief, there were six factors considered in the grouping process:

1. Historical significance
2. Architectural or Engineering Significance
3. Architectural or Engineering Typology
4. Integrity of Historic Fabric
5. Integrity and Significance of Historic Environment
6. Archeological Significance

These factors were then used to define the categories of buildings as follows:

A1 - Properties must be significant in terms of at least one of the first three criteria, and, with a few exceptions, selected because of their rarity and importance to social and architectural history; must also conform to criterion #4, integrity of historic fabric.

A2 - Properties must be of sufficient importance in at least one of the first three criteria and/or in the fifth criterion to be considered of national significance. A2 includes properties that are of less individual distinction than those in A1, but which are part of an urban building group or environment of national significance.

B - Properties which meet one or more of these criteria, but which are not as outstanding or as well preserved as A1 or A2 buildings.

C - Properties that do not meet any of the criteria, but do not cause a negative impact on the Park or the Preservation District.

D - Properties that do not meet any of the criteria, and that have a negative effect on the historical or environmental character of the Park or Preservation District.

It can readily be seen that these criteria, while fairly explicit in nature, are not scientifically quantifiable. The extent to which a particular building meets one or more of the criteria was, of necessity, an informed judgment made by the architectural historian consultant and the Commission's staff.

For the Index, the No Action alternative was not considered, since development of the Index was mandated by P.L. 95-290. There were, in effect, only two alternative strategies considered for the development of the Index:

A. Develop an Index for nationally and locally significant historical buildings only.

B. Develop an Index for all buildings within the Preservation District, including ranking of buildings that are of no particular historic value (categories C & D).

Alternative B was chosen because it provided for a more comprehensive survey and indexing methodology.

The probable impacts of the two alternative indexing methods relate primarily to economic and historic preservation factors. The method proposed for Alternative B has resulted in the identification of almost 610 buildings of national and local historical and architectural significance. Buildings designated as nationally significant will be eligible for Commission grants, loans and technical assistance, thus encouraging private owners to develop and implement plans for rehabilitation and adaptive re-use. These buildings will also be affected by a number of special provisions in the Standards developed by the Commission. Thus, the Index will have the combined impact of encouraging certain kinds of investment and development, while at the same time guiding and regulating rehabilitation activities.

Alternative A would be expected to have a similar effect. Since this alternative would not have given an official designation to buildings of no particular significance, however, it can be expected that an Index developed under this alternative would have resulted in a certain amount of confusion among property owners.

Standards

One of the Commission's major responsibilities under P.L. 95-290, the Park enabling legislation, is to develop Standards for "construction, preservation, restoration, alteration, and use of all properties within the preservation district." The purpose of the Standards is to guide private and public rehabilitation and construction efforts so that the integrity of Lowell's 19th century setting is preserved.

Within a year after the Standards have been completed, the legislation calls for their adoption by the City in the form of regulatory ordinances. Thus, the Standards and the recommended Regulatory Framework are integrally related, and the probable impacts of these two important elements of the Plan must be considered in close relation to one another.

The specific criteria that were set forth at the beginning of the work on Standards included the following key points:

1. Standards must be sensitive to and specific to environmental, architectural and developmental characteristics of the City of Lowell.
2. Standards should complement material contained in the Secretary of the Interior's Standards or in Lowell - The Building Book.

3. Standards should be documented in a standard format, with good illustrations and a text readable by the layman.

The final product of the past year's work on Standards is a document that contains standards for three major areas of construction: Preservation of Existing Buildings, New Construction and Public Improvements. These recommended standards constitute the proposed action for this element of the Plan.

The No Action Alternative does not apply, as this plan element was mandated by P.L. 95-290. The primary alternative action that was considered was the development of Lowell-specific design and use standards that would be enacted as specific ordinances rather than as guidelines.

The expected impacts of the proposed action and the alternative action relate primarily to economic, political and historic preservation factors. The impacts may be summarized as follows:

1. The proposed action will have a number of beneficial impacts. Standards used in the form of guidelines will provide a flexible working tool that will help to ensure that future construction activities within the Preservation District are compatible with the 19th century theme. The proposed action will also be more politically acceptable and will avoid some legal complications.

   The primary adverse impact is one that will generally be true of any form of new regulations: property owners will be obliged to deal with yet another set of regulations and review procedures. Implementation of economically important building projects may thus experience significant delays. Certain specific standards may also be found to conflict with materials and construction methods preferred by homeowners and property owners. This kind of conflict may cause enforcement problems. By not requiring permits for certain minor exterior work, the process will be simplified - thus mitigating the adverse impact.

   A related concern is that it may be difficult to translate the Commission's standards (which are written as guidelines) into a form that can be enforceable preservation tools. A streamlined regulatory framework within which the standards will be used is crucial in order to mitigate adverse impacts.

2. The alternative action would presumably provide for much stronger control of construction activities within the Preservation District, and thus a more substantial beneficial impact in terms of historic preservation. On the negative side, however, experience in the field of historic preservation has clearly shown that it is both legally difficult and politically controversial to attempt to enact design standards as mandatory rules and regulations. A proposal to proceed with the alternative action would surely meet with resistance from many businessmen and property owners who have a financial stake in the Preservation District. Even if the alternative action was successfully implemented, frequent legal challenges and requests for appeals would have to be expected, with attendant costs to the City and, ultimately, to the taxpayer. Detailed, mandatory design standards would also probably cause substantial delays in major construction projects within the Preservation District.

Mitigating measures for the possible adverse effects of the proposed standards will take the form of a well-designed regulatory system for use and administration of the standards. The regulatory system will provide an efficient, stream-lined system for implementing the standards. An additional mitigating measure will be technical assistance provided by Commission staff to property owners in the use and application of the standards. This system is the subject of the next part of this section.

Regulatory Framework

In accordance with the provisions of P.L. 95-290, this element of the Preservation Plan defines a regulatory framework or system which will provide for effective application of the Standards to future construction activities within the Preservation District.

Specific criteria used in the development and evaluation of alternative regulatory systems included the following:

1. Legal authority and precedents must exist.

2. The cooperation of City officials and personnel will be essential.

3. Regulatory systems must be implementable - as per P.L. 95-290 - within a one year period.

4. Insofar as possible, regulatory systems should simplify rather than complicate the building permit process.

5. The regulatory system must be clear, strong, yet flexible.

Initally, five alternative actions were considered and evaluated. They were:

1. Overlay District - with emphasis on special permits to be granted by City Council.

2. Amend Zoning - technical revisions to Lowell's existing Zoning Ordinance.

3. Expand Local Historic Districts - create one or more new local historic districts to coincide with Preservation District boundaries.

4. New State-Established Local Historic District - including creation of a new Commission with review and approval powers.

5. Design Review Board - creation of an independent review board to approve permits within the Park and Preservation District.

The proposed action is a regulatory system that combines desirable aspects of the five alternatives that were evaluated initially. The major features of the proposed system are:

- Creation of a new overlay zoning district that coincides with the boundaries of the Preservation District.

- Creation of a 5 or 7 member Historic Preservation District Advisory Board to review major proposed actions (using the established standards), and to make appropriate recommendations to City Council.

- All major action to require a special permit from City Council.

- Approval of minor actions and program administration to be handled by a special District Administrator (full-time professional).

- Establish all of the above by means of special state legislation, thus ensuring a clearly-defined, efficient, and legally solid regulatory system.

The primary environmental impacts of the five alternatives (to be discussed first) and of the proposed action are primarily in the areas of political acceptability, enforcement problems and administrative - and thus cost-implications. The major adverse and beneficial impacts are summarized below.

1. Overlay District - The primary beneficial impacts would be in the area of clear structure and lines of authority. The Overlay District would be made a part of Lowell's existing Zoning Ordinance via amendment. No special legislation would be required. This alternative would, however, have a definite negative ipact on the City's Department of Planning and Development (DPD). The DPD would presumably be in charge of technical reviews of all significant building proposals within the Overlay District, but the Department might not have adequate staff to handle this kind of added workload.

2. Amend Zoning - Beneficial impacts are the relative ease of incorporation into an existing regulatory framework and relative clarity to property owners and the public. The primary negative aspect is the fact that this alternative makes no clear provision for use of the Standards that have been developed as part of the Preservation Plan.

3. Expand Local Historic Districts - This alternative would also have a clear legal status and would build on precedents already existing in Lowell. Adverse impacts, however, include: no direct involvement for City Council, major new responsibilities for the existing Lowell Historical Commission and the necessity for the addition of a full-time staff for the Commission.

4. New State-Established Local Historic District - Beneficial aspects include the creation of a new local Commission with a strong identity and considerable regulatory powers, as well as the creation of a strongly defined special district. The primary adverse impact would be the necessity of creating an entirely new Commission and related full-time staff.

5. Design Review Board - The primary beneficial aspect would be the creation of a separate, identifiable and potentially well-qualified Board that could apply the Standards to future proposed projects within the Preservation District. Here again, however, an entirely new entity - and related staff - would have to be created. Another negative aspect would be the limited enforcement powers of Design Review Boards. Finally, this concept seems to have little support from City officials.

6. The Proposed Action - The proposed regulatory system essentially combines key aspects from alternatives 1, 3, and 4. The primary beneficial aspects include: a clear legislative basis, a clearly defined district, strong involvement on the part of City Council, an Advisory Board that would be a natural extension of the current informal review process being used by the Commission, NPS and DPD, and the creation of a special District Administrator position. This regulatory system would also provide for strong application of Standards.

Adverse impacts could be experienced in the area of existing institutional/political structures: the existing Lowell Historical Commission may be reluctant to relinquish some of its responsibilities to the new Advisory Board, and the Building Department may react negatively to the creation of a new Advisory Board and District Administrator. Special state legislation may also require more time and energy than would several of the other alternatives.

The possible adverse impacts outlined above may be at least partly mitigated by careful design of this new regulatory system so as to provide for: (1) a significant role for the Lowell Historical Commission, (2) a clear link to the Building Department - the agency that will still be in charge of issuing building permits. The time and energy problem - as well as the possible problem of new administrative costs - can be mitigated through a commitment of significant Commission staff and funding resources.

Grant and Loan Program

The objective of the Grant and Loan Program is to provide incentives for private sector rehabilitation of exteriors of buildings that are of national historical significance. The cost of these assistance programs is substantially less than the alternative of federal acquisition and management of significant buildings. It is estimated that for every Commission grant dollar, there will be over $20 in private investment. Due to the strengthening economic climate in Lowell, it is felt that this investment will occur whether or not the Commission participates with its grants and loan program. There were no special criteria associated with the development of the grant & loan program. The Commission's prime concern in this area of its activities is to follow criteria #3 and #4 discussed in Section III of this Assessment: "Leveraging of Funds" and "Concentration of Resources".

The proposed action consists of concentrating 90% of the Commission's annual financial assistance budget in four areas of the Preservation District: City Center, Lower Locks, the Acre, and Chapel Hill. These four areas have been identified as having the greatest potential for both active cultural programs and preservation of the 19th century setting. Major Commission cultural and development programs have been planned so as to concentrate on these four priority areas. Owners of historic buildings within these areas that are designated A1 or A2 in the Index will be invited to submit proposals for financial assistance twice each year. Grants and/or loans may be requested. Maximum grant amounts will be 50% of cost of exterior rehabilitation or up to $75,000; maximum loan amounts will also be $75,000.

The $5,750,000 allocated for grants and loans represent about 27%

of the Commission's overall development authorization.

The principal alternative that was considered for this element of the Plan was a district-wide (rather than concentrated) grant and loan program. Under this alternative, all buildings within the Preservation District that are designated A1 or A2 in the Index would be eligible for grants and loans.

The major environmental impact concerns here are the preservation of the 19th century setting and stimulation of private sector initiatives for rehabilitation and adaptive reuse of major historic buildings. The expected environmental impacts for the proposed action and the alternative action are:

1. The concentration of funding resources that will occur under the proposed action will have a number of beneficial impacts. The selection of the four specific areas as priority funding areas will assure that residential, commercial and industrial buildings will receive funds. Concentration of resources will create possibilities for the recreation of the 19th century streetscape - an important aspect of the Commission's overall theme as well as a significant resource for Park visitors.

   The probable adverse impact will occur in the area of preservation incentives and development economics; grant and loan funds (other than a 10% emergency fund) will not be available to the owners of the A1 and A2 buildings that are not within the four priority areas. This lack of financial assistance and incentives may significantly affect the quality of preservation and rehabilitation work that may be undertaken for these buildings. There may also be a related public reaction to this limitation of grants and loans: some property owners may well feel unfairly excluded from the program.

2. The district-wide funding strategy that would occur under the alternative action would, of course, solve this negative aspect of the proposed action. Possible negative impacts of the alternative are, of course, linked to the realities of the Commission's limited financial resources. With only about $5,750,000 to allocate to the grant and loan program over the next eight years, a district-wide program would seriously detract from the potential for strong visual and historic preservation impact for specific streets and groups of buildings. A district-wide financial assistance program would thus not be the best expression of the Commission's overall theme, nor of the related concern for concentration of resources.

Mitigating measures for the adverse impact of the proposed action will include technical assistance provided by Commission staff for A1, A2 and B category properties that are not eligible for grants and loans. Technical assistance will consist of advice on historic preservation-oriented rehabilitation and on other possible sources of financial assistance.

Transportation

The Commission's objectives in the important area of transportation systems and facilities are to support specific transportation projects which are essential to its overall objectives, which fulfill its legislative obligations and which could not be implemented by other agencies without Commission participation.

Commission actions and commitment of resources are proposed in four areas:

- Trolley system
- Parking garage development
- Canal barges
- Pedestrian related improvements

The alternatives and probable impacts relating to these transportation projects are summarized below (see NPS/DEIS for additional discussion of impacts).

1. Trolley system - The proposed action involves the investment of $2,200,000 in Commission resources, in two stages, to assist with the development of an historic surface trolley system that will link important parts of the Park and Preservation District for Park visitors. Capital improvements to be funded by the Commission will include track improvements, electric power systems, maintenance facilities, trolley equipment. The National Park Service will acquire the tracks and will be responsible for on-going operations and maintenance.

   Comprehensive plans for the visitor trolley system were undertaken by transportation consultants under a separate contract with the Commission. Studies of the future trolley system included an evaluation of options and alternatives that are too numerous to discuss in detail here. Generally, these options call for the development of additional trolley lines and the acquisition and rehabilitation of more trolley cars. Although the Commission supports the concept of an extensive trolley system, its limited resources preclude investment beyond the level described in the Preservation Plan.

   The proposed action will have beneficial impacts in the areas of historic interpretation and reduction of automobile traffic and air pollution. The trolley system will provide visitors with a unique opportunity to experience Lowell's resources - the mills, canals, and historic landmarks - from a vantage point not offered by the existing system of streets and roads. At the completion of Stage 2, the trolley system will have a capacity of approximately 600 passengers per hour. Most of these passengers will leave their cars at the intercept parking lot, and will board the trolley for a leisurely tour of the Park and parts of the Preservation District. Visitor-related automobile traffic will be substantially reduced. The trolley system will thus serve to mitigate the adverse impact that the Park may have on downtown traffic, air quality and noise.

   The trolley system is not expected to have any significant adverse environmental impacts. The No Action alternative would mean that visitors would have to walk or drive to the Boott and Wannalancit Mills. Walking may be difficult for some and thus lessen the Park experience. Parking at locations other than visitor lots will be frustrating for those unfamiliar with the area.

2. Parking garages - The proposed action involves the

Commission and the National Park Service jointly acquiring and constructing a 240-car parking lot (Swamp Locks intercept parking lot) and the Commission contributing $1,530,000 toward the construction of one or more parking garages in the area of Boott Mill.

The proposed action in relation to the Swamp Locks intercept parking lot will provide for approximately 50% of the total estimated construction cost, and will have significant positive impacts in terms of alleviating downtown traffic that may be adversely affected by visitor cars. The negative aspect of this proposal is the need to acquire and relocate a small auto repair shop located at the southern end of the site. The construction of a major garage at this site was evaluated as an alternative. This alternative was rejected because of anticipated traffic problems at the Lord overpass.

The construction of a 1000-car parking garage at John Street, and a possible 600-car parking garage just west of the Boott Mill may eventually be needed to accomodate both visitors and commuting workers employed in a redeveloped Boott Mill Complex. While these parking garages are considered to be important facilities for the Park and for a revitalized downtown area, the Commission's limited resources preclude a major investment for such facilities. It is expected that the lack of major Commission assistance will not have a significant adverse effect on the implementation of these projects. The City Government is well aware of the need, and has already taken steps to obtain funding assistance. The Commission's proposed level of assistance ($1,530,000) will be sufficient to compensate for the loss of surface parking spaces adjacent to the H&H Paper Company. That site is scheduled for development as a passive recreation park.

An alternative for these parking garages that would have necessitated a major Commission investment was considered and rejected because of the many other priorities that the Commission must fund with its limited resources.

3. The Canal Barges - The Commission will assist the National Park Service with the development of the canal tour program by providing up to $600,000 for the acquisition of barges, to be operated by NPS. Beneficial impacts of this action will include direct assistance to NPS in an important interpretive program, and increased access for visitors to the popular canal trips. No adverse impacts are anticipated. The No Action alternative was considered and rejected as being inappropriate to the Commission's objective of supporting the development of the Park and meeting mandates of the enabling legislation.

4. Pedestrian Improvements - The Commission has assumed that the lead role for various pedestrian system and street improvements will be taken by the City, and secondarily by the National Park Service. The Commission's Standards will contribute to the development of historically appropriate street improvements to be funded by other agencies. In addition, the Commission will fund the construction of a walkway connecting the Swamp Locks parking lot and the NPS Visitor Center. The walkway will provide for easy pedestrian access between these two key points, and will serve as a model for streetscape designs for the entire Preservation District.

An alternative involving the investment of significant Commission funds for pedestrian improvements was evaluated and rejected because of limited resources and because of the lead role that the City intends to take for streetscape projects. Commission funds for the model walkway are included in the budget for development of the Swamp Locks parking area.

District-Wide Cultural Programs

The Commission will support a wide variety of cultural programs throughout the Preservation District. The reader is referred to the Preservation Plan for details on these various programs. The major program names and approximate 8-year budgets are as follows:

- Festivals, Celebrations and Performances - $280,000
- Public Exchange Programs - $200,000
- Guest House Program - $60,000
- Local Artisans Programs - $240,000
- Assistance to Interpretive Projects - $320,000
- Education Programs - $280,000
- Writing, Research and Publishing Projects - $48,000
- Work/Study Student Grants - $104,000

Total Commission resources to be allocated to District-Wide Cultural Programs will thus be $1,532,000. These programs will be among the Commission's most important undertakings. Although the proposed funds are relatively modest - in the range of $200,000 per year - the potential benefit of these programs is considerable. The various cultural programs have been designed to benefit a wide variety of people. Acting by and through these programs, the Commission expects to have a beneficial impact on the cultural and ethnic activities that are the essence of Lowell's vitality. In allocating these resources on a project by project basis, the Commission will also take care not to create adverse impacts through possible conflicts with established cultural and educational institutions. The Commission's role is thus seen as one that is both active and yet supportive of existing cultural organizations and energies.

A variety of program options and alternative funding levels were considered during the development of plans for the District-Wide Cultural Programs. These many options do not warrant a detailed discussion at this level of evaluation. Of some importance, however, is the fact that no other agency currently active in Lowell has the staff, funding resources or overall objectives that would provide for a varied cultural program of this kind. Thus, the No Action alternative would mean fewer and possibly no programs of this type available to Lowellians.

Site-Specific Projects

The objective of this part of the Preservation Plan is to develop specifics for five priority projects that combine both physical rehabilitation and cultural programs. The five projects will serve as first phase cornerstones for the Preserva-

tion Plan, and will provide opportunities and facilities for cultural programs that both preserve and celebrate Lowell's living history.

The specific criteria that were used to select these five key projects, and to evaluate related alternatives were:

1. The projects should be located in the City Center area. Opportunities for concentrated resources and strong visual, cultural and economic impacts will thus be maximized.

2. Projects should be selected that will add significantly to the preservation of the 19th century setting.

3. Physical improvements should be creatively linked with specific cultural programs.

The next several pages describe the five key projects, their alternatives and expected impacts in some detail (see NPS/DEIS for additional information).

1. Gateway Exhibits/Lowell Manufacturing Co.

The Lowell Manufacturing Co. mills - two buildings totaling about 270,000 square feet - were included as one of the ten buildings requiring Commission action as per P.L. 95-290. A description of this project has been provided under site-specific projects: because of the important related cultural programs.

The preferred alternative for this project consists of the Commission obtaining a long-term lease and acquisition agreement for about 42,000 square feet of the 270,000 square foot complex. The National Park Service will lease 17,000 square feet from the Commission for use as a visitor orientation and information center. The remaining 25,000 square feet will be subleased to suitable commercial users. The rest of the complex will be developed by Market Mills Associates for housing. The Commission has also made a grant to the developers for historically appropriate landscaping of the millyard. The Secretary of the Interior approved these Commission actions on January 4, 1980.

Total commitment of Commission funds was $1,000,000.

The No Action alternative was the only alternative seriously considered. Basically, the Commission was obliged to choose between no action and a set of actions that would be of sufficient magnitude to ensure the feasibility of the entire project.

The primary beneficial impact of the proposed action is, quite simply, the assurance of project feasibility. The commitment of nearly $1 million of Commission funds means that there will be 230 units of rental housing provided. There will also be substantial, newly rehabilitated space for shops and restaurants, a visitor orientation/information center at a key "gateway" location of the Park, and the landscaped millyard that will provide space for outdoor cultural exhibits as well as for informal gatherings. The entire project, once implemented, will increase the City's tax revenues by $146,000 annually.

The adverse impact will be the special management workload and responsibilities that this project will place on the Commission's staff. The Commission's primary purpose is not to be a manager of space. However, this project will require that a certain amount of Commission staff time and energy be devoted to real estate management. In addition, residents and users will generate a new demand for parking.

There are no special beneficial impacts associated with the No Action alternative - other than the related lack of real estate management responsibilities for Commission staff. The primary adverse impact would be the probable demolition of a nationally significant building and the demise of the project.

Mitigating Measures. Arrangements have been made with the City for residents to park in the new parking garage on Market Street. This garage and the Dutton Street lot will help keep other vehicles from further congesting Market Street.

2. Labor Exhibits/Early Residence

The Early Residence on Kirk Street is one of the few remaining pre-Civil War private residences in the center of Lowell. This building is also one of the ten "mandated projects." The building is 8,800 square feet in size, and was constructed ca. 1845 in the late Federal style. The structure has been inconsistently altered during the years, and is at present in a state of disrepair.

The preferred alternative is for acquisition of the property by the Commission, and rehabilitation in cooperation with the Greater Lowell Central Labor Council. Upon completion of the rehabilitation work, the Commission will transfer ownership of the building to the Labor Council. The Labor Council will create ground floor exhibits that describe the labor skills and professions of the Greater Lowell area. Upper floors will be used for meeting rooms and offices. The Commission will commit a total of $461,000 to this project, including $40,000 for the development of about 1,000 square feet of exhibits.

Beneficial impacts of the proposed action include rehabilitation of a nationally significant historic building, support of NPS activities (rehabilitation of the adjacent corporation-constructed mill agent's house), and provision of space for exhibits that will help to tell the story of Lowell's people. No adverse impacts are anticipated.

The No Action alternative was rejected because of the legislative mandate requiring some form of Commission action. Several alternatives were considered for the Commission's role in assisting with exhibits. Alternative A provided for minor technical assistance for exhibit planning, but no direct funds. Alternative B consisted of a $20,000 grant for exhibit planning and design. Alternative C (the preferred alternative) allocated $40,000 for the development and installation of a "modest cost" exhibit of about 1,000 square feet. Alternative D called for the investment of $112,000 for the development and installation of a more ambitious exhibit of about 1,500 square feet.

Basically, Alternatives A and B were rejected because of the clear need for a more active role for the Commission in the development of special exhibits in the renovated Early Residence. Alternative D was rejected because the Greater Lowell Central Labor Council - rather than the Commission - should be the lead agency for the development of the major labor exhibits.

3. Cultural Center/ H&H Paper Company

The H&H Paper Company building (15,750 square feet) was constructed between 1835 and 1838 as a traditional 3-story brick boarding house block for operatives of the Boott Mills. This structure is the only remaining boarding house of the 8 originally constructed for the Boott Mill. The building has been extensively altered over time, and is currently used as a retail store and warehouse.

The proposed action is acquisition of the building by the Commission and rehabilitation and restoration of the exterior in cooperation with the Park Service. The interior of the building and portions of the adjoining warehouse will be rehabilitated to accomodate a Boarding House restaurant and a Cultural Center. The Cultural Center will be an activity center, open to the public, that will allow both residents and visitors to explore Lowell's history and traditions. The Commission will also fund interior renovations, install 10,000 square feet of interpretive exhibits and provide funds for institutional start-up costs. Total Commission funds to be committed to the project are $3,450,000.

The primary beneficial impacts will be substantial rehabilitation of an important but severely degraded historic building, the establishment of an interesting restaurant to serve residents and visitors, and the establishment of a multi-faceted Cultural Center that will provide space for a wide range of exhibits and on-going programs. These actions will take maximum advantage of the building's dramatic location overlooking the Boott Mills at the northeastern edge of the National Park, and will help to tell the "Lowell story" by restoring an example of the classic relationship between living and working place that was typical of early nineteenth century Lowell.

Adverse impacts will occur primarily in the areas of displacement and loss of tax revenues to the City. Relocation compensation to be paid by the Commission should mitigate any financial hardship to the company. The proposed new uses are such that the property will no longer generate tax revenues.

There were two other primary alternatives considered for Commission participation in the Cultural Center/H&H Paper Company project. Alternative A was limited to an investment of about $10,000 plus technical assistance to encourage the adaptive use of the building in a manner consistent with the Commission's themes. Alternative B was similar to the proposed action - program development grant, interior rehabilitation and contribution for institutional start-up costs - but did not include approximately $1,000,000 for 10,000 square feet of interpretive exhibits.

Alternative A was rejected as being inadequate for the development of any kind of significant Cultural Center. Alternative B was also seen as inadequate, since there is at present no other agency or institution in lowell that would be able to develop the major exhibits that will be an essential part of the Cultural Center.

Considerable time and energy were invested during the planning process in the development of concepts for a Cultural Center or Ethnic Center to be located at the nearby Trade School. The principal beneficial aspects of such an action appeared to be suitable adaptive reuse of a large centrally located building that would soon be vacant. Negative aspects, however, were the creation of yet another activity center and the consequent weakening of the H&H Paper Co. project. Further research also indicated that the Trade School building would be more suitable for rehabilitation for market-rate housing.

4. Boott Mill Park

The Boott Mill Boarding House lot is a parcel of land of almost 0.8 acres, located between the city owned Trade School and the Boott Mill, and adjacent to the H&H Paper Company building. The parcel is the orignal site of the eight Boott Mill boarding houses. All of these structures, with the exception of the H&H building, have been destroyed. The site is presently used for open air parking, and accomodates about 80 cars.

The proposed action consists of the development of a city park that will serve as an open space focal point complementing the proposed Cultural Center and the proposed redevelopment of the Boott Mill. The property will be acquired by the Commission and transferred to the Park Service. NPS will be responsible for site improvements, maintenance and operations. Schematic design of the park calls for sitting areas and an open-air performance area overlooking the rehabilitated boarding house block. Proposed Commission expenditures for this project are $417,000.

It is expected that the proposed action will have beneficial impacts. A key open space area will be provided in a densely developed urban setting that has few such spaces. The park will reinforce the Cultural Center by providing outdoor space for performances, festivals and special displays. The park will also generally reinforce the Boott Mill development project by removing the visually discordant open air parking lot and by providing a vantage point from which the Boott Mill's impressive southern facade - and the historic clock tower - can be viewed.

Parking spaces for 80 cars will be eliminated in an area where parking is already a problem, possibly creating an adverse impact. This impact will eventually be mitigated by the proposed construction of a new 1,000 car parking garage on John Street. Construction of this structure must occur simultaneously with the acquisition and park development so that there will not be a shortfall of spaces.

The No Action alternative was considered for the Boott Mill Park project. The principal positive aspect of this alternative would be the avoidance of eliminating 80 parking spaces. On the negative side, however, no action would mean the continued use of the site in a way that would conflict visually and functionally with the important Cultural Center and Boott Mill projects. There would also be the longer range risk that the site might eventually be purchased by private interests and be used for a new building that might conflict in use and/or in style with the two priority historic resturation projects.

Two other alternatives were also considered. Alternative A called for a $15,000 grant and technical assistance for archaeological research and seasonal programs that would utilize the site without the development of a city park. Alternative B

limited the Commission's involvement to a $120,000 allocation for the design and fabrication of a portable stage including light and sound.

Alternative A was rejected as being an inadequate response to the opportunity and need for a significant open space project in this area of the Preservation District. After careful consideration of Alternative B, and discussions with the National Park Service, it was determined that a relatively modest Commission investment ($120,000) would not be enough to guarantee the design and construction of an attractive, multi-purpose city park.

5. Boott Mill Exhibits/Boott Mill

The Boott Mill (678,000 square feet) is one of the most significant architectural and cultural properties in Lowell. It is also one of the ten mandated projecs. This complex is the most intact surviving example of the first phase of Lowell's mill construction. At present, most of the complex is under single ownership. The primary uses are light manufacturing and storage. A portion of the complex, Mill #6, was acquired in 1979 by Wang Laboratories, a growing computer company.

It is the Commission's objective to initiate an adaptive use program that will: (1) preserve and rehabilitate the exterior of the Boott Mill complex, (2) provide for interpretive exhibits and public access to historically important interior spaces, (3) intensify and upgrade industrial uses with the least possible negative impact on existing businesses and jobs.

The proposed action is to gain control of the "first tier" (or buildings visible from French Street) of mill buildings (Mills #6, #9 and the Picker Building) in order to rehabilitate them, and to enter into an agreement with the Boott Mill Corporation to ensure appropriate private use and development of the remainder of the complex. The Commission will retain about 40,000 square feet of space, of which 20,000 square feet will be leased to the Park Service for development of a series of major exhibits on the process of industrialization, architectural history and the planning of Lowell. Much of the remaining space will be developed for use as a National Museum of Printing and Publishing. Plans have been formulated for the development of an industry-sponsored museum that will portray the evolution of the craft of printing up to and including today's highly automated word processing communications industry.

The planning process for the Boott Mill was a fairly complex undertaking. Many alternative plans and strategies were devised and tested. The final set of alternatives may be summarized as follows:

Alternative A (the proposed action): Limited acquisition, cooperative development with present owners. Budget: $3,407,000.

Alternative B: Total acquisition, phased development, limited operation, major re-sale. Budget: $7,000,000

Alternative C: Total acquisition, major Commission role in development and operation. Budget: $26,800,000.

The important environmental impacts associated with the alternatives are summarized below.

Alternative A - Beneficial impacts will include preservation and rehabilitation of the critical "first tier" of mill buildings, provision of space for important historical exhibits, access to parts of the Boott Mills for the public, and some degree of Commission control over the future rehabilitation, use and development of the complex. This alternative is also manageable for the Commission in terms of budget, staff resources, and implementation time.

There will be a number of adverse impacts in the area of economics. Two businesses will be displaced. These businesses employ a total of about 200 people. The two businesses will receive relocation benefits. It is probable that these businesses can relocate to other vacant mill space in Lowell.

The proposed use of Mill #6 for Park-related exhibits will mean the loss of some tax revenues to the City.

Over the next few years, however, it is expected that the Commission's actions relative to the Boott Mill will substantially mitigate these negative economic impacts. The planned rehabilitation and resale of Mill #9 will result in an increase in property tax revenues for that building of about $250,000 per year.

Cooperative agreements between the Commission and the Boott Mill for future use, rehabilitation and redevelopment of the rest of the complex should also eventually lead to substantial increases in property tax contributions and new jobs.

Alternative B - Beneficial impacts will be primarily in the area of historic preservation and Commission control of future use and development of the Boott Mill complex. Total acquisition of the complex by the Commission would clearly provide for significant preservation and restoration actions.

Adverse impacts would be primarily economic, legal and organizational. In terms of economics, Alternative B would require a commitment of more than 1/3 of the Commission's entire 10-year budget. It is also possible that many of the 33 businesses currently located in Boott Mill would have to be displaced - along with many of the 1300 workers currently associated with these businesses. Some of the businesses might not have been able to relocate in Lowell.

The legal implications of Alternative B would also be serious. It is probable that total acquisition of Boott Mills would not be possible without eminent domain proceedings. Such an action would almost certainly result in a lawsuit initiated by the current owners against the Commission. A lawsuit could conceivably jeopardize the entire project; it would certainly put a significant strain on the Commission's future planning efforts.

Alternative B would also require substantial commitments of Commission staff time for the coordination and management of a "phased development" program. The management demands of a project of this size and complexity could well prove to be beyond the capacity of the Commission's relatively small staff.

Alternative C would have beneficial and adverse impacts similar to Alternative B. In this case, however, the Commission's control would be at the highest possible level. However, demands on the Commission's financial and staff resources would be so high that this alternative would not be feasible.

Mandated Projects

P.L. 95-290 mandates that the Commission undertake programs for the "preservation, restoration, management, development, or maintenance of ten buildings designated A through J." Preservation programs for three of the ten "mandated projects" - Lowell Manufacturing Co., Early Residence and Boott Mill - have already been discussed in the preceding section. This section will review the proposed actions, alternatives, and expected related impacts for the remaining seven projects.

Specific criteria used to shape strategies for these seven projects were:

1. Reinforcement of NPS projects and of the National Park in general.

2. Commission assistance should be limited to those areas of preservation that are not likely to be addressed by private sector actions.

The next few pages provide an environmental analysis of proposed actions for the seven mandated projects.

1. AHEPA Building - This 5,385 square foot building was constructed by the city in 1881 as a school and was given to the American Hellenic Educational Progressive Association (AHEPA) in 1945. At present the building is in an excellent state of preservation but is in need of maintenance and repair.

The proposed action involves the investment of up to $40,000 by the Commission for the planning, design, fabrication and installation of an exhibit that would feature products made throughout Greater Lowell, both past and present. Such an exhibit would have a beneficial impact in terms of contributing to the variety of interpretive exhibits that will be a key part of the Park.

Several alternatives were considered, the primary alternative being the acquisition of the AHEPA building by the Commission, exterior rehabilitation and site improvements, and the development of a "Commerce Exhibits Center". This alternative, with a price tag of $165,000, was rejected as being to costly for a building that is architecturally interesting but not of major significance in Lowell's cultural history.

2. Jordan Marsh Co. Building, (Bon Marche Building) - This building, a complex of about 116,000 square feet built in the late 19th century, is a major architectural and commercial element on Merrimack and Kirk Streets. The building's facades are in good repair. Unfortunately, however, the Merrimack St. facade has been altered: the brick has been painted and the windows have been "painted out".

The proposed action is to provide a facade grant in the amount of $150,000 for the removal of paint from the Merrimack St. facade and for the rehabilitation of the entrance canopy. Grant monies will also be allocated for some renovations of the Kirk Street facade. In return for this grant, the Jordan Marsh Co. will accept a preservation restriction on both facades.

The proposed action will serve to restore the building's facades to their original appearance. The building will once again become a visual/historical centerpiece of Merrimack Street. No adverse environmental impacts are anticipated. The preservation restriction will in no way constrain continued use of the building by Jordan Marsh.

3. St. Anne's Church and Rectory - These are the oldest surviving corporation buildings in Lowell. The church and rectory were built in 1824 by the Merrimack Manufacturing Company. Both buildings are in an excellent state of preservation, and are actively used by the congregation.

The Commission's objectives are thus to assist in the maintenance of the buildings and to encourage their continued use as an historic place of worship. If the Commission can legally give grants to a church, the proposed action is to provide a grant in the amount of $20,000 for exterior masonry repairs and preservation of the church's wonderful stained glass windows.

The proposed grant will promote continued high level maintenance of this historic church. There are no adverse effects anticipated from the proposed action.

4. Welles Block - The Welles Block (16,500 square feet) is an important surviving pre-Civil War commercial structure. As recently as 1978, the building was in poor repair and suffered from major structural problems. With the assistance of a Commission grant, the building was privately rehabilitated as office space. The building is now in an excellent state of repair; it is leased as temporary offices and a visitor center by the National Park Service.

The restoration and rehabilitation work completed for the Welles Block is in keeping with the Commission's goal of reinforcing Lowell's nineteenth century setting. No further Commission action is needed for this building. The impacts relating to Commission actions have already taken place: i.e. a substantially renovated historic building with a productive and appropriate use.

5. Yorick Club - This 15,000 square foot building was constructed by the Merrimack Manufacturing Company in 1855 as housing for its executives. It has recently been tastefully rehabilitated and reopened as a public restaurant.

The Yorick Club's current use and excellent state of exterior preservation are entirely consistent with the Commission's goals and objectives. No Commission action is necessary at this time. There are no significant impacts associated with this no action alternative.

6. Lowell Institution for Saving - The Institution for Savings was founded in 1829 to provide a savings bank for the early mill workers. The existing 14,000 square foot building was constructed in 1845. At present, the building is occupied by the orig-

inal bank corporation which has recently renovated the first floor facade with the installation of new windows and a brick veneer. With the exception of the inappropriate brick veneer, which covers the original brick, the building is in a good state of preservation.

The Lowell Institution for Saving's current use and good state of preservation are consistent with the Commission's goals. No Commission action is necessary at this time. There are no significant impacts associated with this no action alternative.

7. Lowell Gas Light Company - This 5,000 square foot building was constructed in 1859 as an office building. Although generally well-maintained, the building is in need of some exterior rehabilitation.

The Commission has leased the second floor of the Gas Light Building for its administrative offices. Interior restoration and rehabilitation work has already been completed. A rehabilitation grant in the amount of about $12,000 is proposed to assist with exterior rehabilitation work.

These Commission actions will have a significant positive impact on this particular historic building, and will generally serve to enhance the historic preservation quality of Middle Street.

8. World Furniture Building & the Martin Building - These two buildings are included in the enabling legislation to be acquired and demolished. Demolition was deemed desirable because the two buildings are constructed over the Pawtucket canal, and completely block any possible vistas up or down the canal from Central Street.

The proposed action is to acquire the two buildings, assist the present occupants in relocation, demolish the buildings, and provide opportunities for public observation sites overlooking the Hamilton Mills upstream and the lower Pawtucket gatehouse, locks and falls downstream.

The expected beneficial impact of the proposed action would be the opening of vistas along the Pawtucket Canal. The primary adverse impacts will be in the area of economics: the forced relocation of two businesses and the loss of about $25,000 per year (1980 rate) in property taxes. Every effort will be made to relocate these businesses in other areas of downtown Lowell.

A number of alternatives were discussed, including the possibility of acquisition, partial demolition, and reconstruction so as to provide for some continued building use as well as the desired canal vistas. This alternative was rejected as being too complicated and beyond the Commission's ability to implement.

Section V. Consultation

The Preservation Plan and the Environmental Assessment were prepared in consultation with many individuals and agencies at the local, state and federal level. Both formal and informal review sessions were held over the course of the first year and a half.

To inform residents, businesses and interested individuals in the District of Commission plans and activities, two bulletins were published and mailed to over 2000 people.

Public hearings were held in June 1979 and March 1980. Over one hundred people attended them, including representatives of the following organizations: Lowell City Council, Lowell Division of Planning and Development, Human Services Corporation, Franco-American Centre Committee, Lowell Museum Corporation, Lowell Sun, Merrimack Valley Textile Museum, Lowell Musicians Association, St. Jean Baptist Rectory, Lowell Public Schools, Lowell Opera Corporation, Lowell Historical Commission, Merrimack Regional Theater, Downtown Businessmen's Association, Greater Lowell Indian Cultural Association, Lowell Council on Aging, Lowell Garden Club, and Acre Model Neighborhood Organization.

State and national participants included the Massachusetts Department of Environmental Management, National Parks and Conservation Association, and National Park Service.

The Commission relied extensively on research and analysis previously carried out by the National Park Service in conjunction with the preparation of their General Management Plan and Draft Environmental Impact Statement. The Council on Environmental Quality and the Office of Environmental Project Review, Department of the Interior, were also consulted during the preparation process.

Reinforcing the Park — Mandated Projects

Public Law 95-290

Public Law 95-290
95th Congress

An Act

June 5, 1978
[H.R. 11662]

To provide for the establishment of the Lowell National Historical Park in the Commonwealth of Massachusetts, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Lowell National Historical Park, Mass.

FINDINGS AND PURPOSE

16 USC 410cc.

SECTION 1. (a) The Congress finds that—

(1) certain sites and structures in Lowell, Massachusetts, historically and culturally the most significant planned industrial city in the United States, symbolize in physical form the Industrial Revolution;

(2) the cultural heritage of many of the ethnic groups that immigrated to the United States during the late nineteenth and early twentieth centuries is still preserved in Lowell's neighborhoods;

(3) a very large proportion of the buildings, other structures, and districts in Lowell date to the period of the Industrial Revolution and are nationally significant historical resources, including the five-and-six-tenths-mile power canal system, seven original mill complexes, and significant examples of early housing, commercial structures, transportation facilities, and buildings associated with labor and social institutions; and

(4) despite the expenditure of substantial amounts of money by the city of Lowell and the Commonwealth of Massachusetts for historical and cultural preservation and interpretation in Lowell, the early buildings and other structures in Lowell may be lost without the assistance of the Federal Government.

(b) It is the purpose of this Act to preserve and interpret the nationally significant historical and cultural sites, structures, and districts in Lowell, Massachusetts, for the benefit and inspiration of present and future generations by implementing to the extent practicable the recommendations in the report of the Lowell Historic Canal District Commission.

DEFINITIONS

16 USC 410cc-1.

SEC. 2. For purposes of this Act—

(1) the term "park" means the Lowell National Historical Park, established by section 101(a)(1) of this Act;

(2) the term "preservation district" means the Lowell Historic Preservation District, established by section 101(a)(1) of this Act;

(3) the term "Commission" means the Lowell Historic Preservation Commission established by section 301(a) of this Act;

(4) the term "Secretary" means the Secretary of the Interior; and

(5) the term "report of the Lowell Historic Canal District Commission" means the report submitted to the Congress by the Lowell Historic Canal District Commission pursuant to an Act entitled "An Act to provide for a plan for the preservation, interpretation development and use of the historic, cultural, and architectural resources of the Lowell Historic Canal District in Lowell, Massachusetts, and for other purposes", approved January 4, 1975 (88 Stat. 2330).

16 USC 461 note.

TITLE I—ESTABLISHMENT OF PARK AND PRESERVATION DISTRICT

ESTABLISHMENTS; BOUNDARIES

16 USC 410cc-11.

SEC. 101. (a)(1) To carry out the purpose of this Act, there is established as a unit of the National Park System in the city of Lowell, Massachusetts, the Lowell National Historical Park. There is further established in an area adjacent to the park the Lowell Historic Preservation District, which will be administered by the Secretary and by the Commission in accordance with this Act. The boundaries of the park and preservation district shall be the boundaries depicted on the map entitled "Lowell National Historical Park, Massachusetts", dated March 1978, and numbered "Lowe-80,008A". Such map shall be on file and available for inspection in the office of the National Park Service, Department of the Interior, and in the office of the city clerk, city of Lowell.

Publication in Federal Register.

(2) The Secretary shall publish in the Federal Register, as soon as practicable after the date of the enactment of this Act, a detailed description and map of the boundaries established under paragraph (1) of this subsection.

(b) The Secretary may make minor revisions of the park and preservation district boundaries established under subsection (a)(1) of this section, after consulting with the Commission and the city manager of Lowell, by publication of a revised drawing or other boundary description in the Federal Register; but no waters, lands, or other property outside of the park or preservation district boundaries established under such subsection may be added to the park or preservation district without the consent of the city manager of Lowell and the city council of Lowell. A boundary revision made under this subsection shall be effective only after timely notice in writing is given to the Congress.

Notice to Congress.

COOPERATION OF FEDERAL AGENCIES

16 USC 410cc-12.

SEC. 102. (a) Any Federal entity conducting or supporting activities directly affecting the park or preservation district shall—

(1) consult with, cooperate with, and to the maximum extent practicable, coordinate its activities with the Secretary and with the Commission; and

(2) conduct or support such activities in a manner which (A) to the maximum extent practicable is consistent with the standards and criteria established pursuant to section 302(e) of this Act, and (B) will not have an adverse effect on the resources of the park or preservation district.

(b) No Federal entity may issue any license or permit to any person to conduct an activity within the park or preservation district unless such entity determines that the proposed activity will be conducted in a manner consistent with the standards and criteria established pursuant to section 302(e) of this Act and will not have an adverse effect on the resources of the park or preservation district.

AUTHORIZATION OF APPROPRIATIONS

16 USC 410cc-13.

SEC. 103. (a) There are authorized to be appropriated such sums as may be necessary to carry out this Act, except that—

(1) the total of the amounts authorized to be appropriated for the purpose of acquisition and development under the park management plan established pursuant to section 201(b) of this Act and emergency assistance under section 205(a)(1) of this Act shall not exceed $18,500,000; and

(2) the total of the amounts authorized to be appropriated for the purpose of carrying out section 202(b)(2) of this Act, for the payment of grants and loans under section 203 of this Act, for the acquisition of property under section 204 of this Act, and for carrying out any transportation program and any educational and cultural program described in section 202(c) of this Act shall not exceed $21,500,000.

(b) No funds shall be authorized pursuant to this section prior to October 1, 1978.

(c) Funds appropriated under subsection (a) of this section shall remain available until expended.

Report to Congress.

(d)(1) Within 60 days after the date of the enactment of this Act, and on each subsequent October 1 and March 1, the Secretary shall submit to the Congress a statement certifying the aggregate amount of money expended by the Commonwealth of Massachusetts, the city of Lowell, and by any nonprofit entity for activities in the city of Lowell consistent with the purpose of this Act during the period beginning on January 1, 1974, and ending on the date such statement is submitted.

(2) The aggregate amount of funds made available by the Secretary to the Commission from funds appropriated under subsection (a)(2) of this section may not exceed the amount certified by the Secretary in the most recent statement submitted to the Congress under paragraph (1) of this subsection.

SPENDING LIMITATIONS

16 USC 410cc-14.

SEC. 104. Notwithstanding any other provision of this Act, no authority to enter into agreements or to make payments under this Act shall be effective except to the extent, or in such amounts, as may be provided in advance in appropriation Acts.

TITLE II—ROLE OF THE SECRETARY

PARK MANAGEMENT PLAN

Report to Congress. 16 USC 410cc-21.

SEC. 201. (a) The Secretary shall submit a statement to the Congress, within two years after the date on which funds are made available to carry out this Act, which—

(1) reports on the progress that the Secretary has made in acquiring the properties identified under section 202 of this Act, and describes the way the Secretary intends to use these properties;

(2) identifies the properties within the park and preservation district respecting which the Secretary has entered into or intends to enter into agreements relating to interpretive exhibits or programs under section 203(a) of this Act;

(3)(A) reports on the progress of the Secretary in leasing a portion of the Lowell Manufacturing Company, located on Market Street, for the purpose of establishing a visitors' center in close proximity to parking and other transportation facilities, and (B) identifies any other property within the park which the Secretary has leased or intends to lease for purposes of the park;

(4) reports any other activities which the Secretary has taken or intends to take to carry out the purpose of this Act; and

(5) contains a tentative budget for the park and preservation district for the subsequent five fiscal years.

Plan, submittal to Congress.

(b)(1) Not later than three years after the date on which funds are made available to carry out this Act, the Secretary shall establish and submit to the Congress a park management plan containing the information described in subsection (a) of this section. Such plan shall, upon request, be available to the public.

Availability to public.

Publication in Federal Register.

(2) After consulting with the Commission, the city manager of Lowell, and the Commonwealth of Massachusetts, the Secretary may make revisions in the park management plan established pursuant to paragraph (1) of this subsection by publication of such revisions in the Federal Register. A revision made under this paragraph shall be effective 90 days after written notice of the revision is submitted to the Congress.

Notice to Congress.

ACQUISITION OF PROPERTY

16 USC 410cc-22.

SEC. 202. (a)(1) The Secretary is authorized to acquire the properties designated in paragraph (2) of this subsection, or any interest therein, by donation, purchase with donated or appropriated funds, condemnation, or otherwise. Any property or interest therein owned by the Commonwealth of Massachusetts or any political subdivision thereof may be acquired only by donation. The Secretary may initiate condemnation proceedings under this paragraph only after making every reasonable effort to acquire property through negotiations and purchase, and consulting with the Commission (if established) and the city council of Lowell.

(2) The properties referred to in paragraph (1) of this subsection are the following:

(A) The Linus Childs House, 63 Kirk Street.

(B) The H and H Paper Company (commonly referred to as Boott Mill Boarding House), 42 French Street.

(C) Old City Hall, 226 Merrimack Street.

(D) Merrimack Gatehouse, 269 Merrimack Street.

(E) The Wannalancit Textile Company, 562 Suffolk Street.

(F) The structures containing the Jade Pagoda and Solomon's Yard Goods, 210 and 200 Merrimack Street.

(b) Until the date on which the Commission conducts its first meeting, the Secretary may acquire any property within the park or preservation district not designated in subsection (a)(2) of this section, or any interest therein, if such property—

(1) is identified in the report of the Lowell Historical Canal District Commission as a property which should be preserved, restored, managed, developed, or maintained in a manner consistent with the purpose of this Act;

(2) is listed in the National Register of Historic Places, as maintained by the Secretary pursuant to section 101(a) of the Act entitled "An Act to establish a program for the preservation of additional historic properties throughout the Nation, and for other purposes", approved October 15, 1966 (16 U.S.C. 470a), and section 2(b) of the Act entitled "An Act to provide for the preservation of historic American sites, buildings, objects, and

antiquities of national significance, and for other purposes", approved August 21, 1935 (16 U.S.C. 462); or

(3) is determined by the Secretary to be of national significance; and would be subject to demolition or major alteration in a manner inconsistent with the purposes of this Act unless acquired by the Secretary. Such property may be acquired only as provided in subsection (a)(1) of this section.

(c) The Secretary may acquire easements within the park for the purpose of carrying out this Act. Such easements may be acquired only as provided in subsection (a)(1) of this section.

AGREEMENTS AND TECHNICAL ASSISTANCE

16 USC 410cc-23.

SEC. 203. (a) The Secretary may enter into agreements with any owner of property with national historic or cultural significance within the park to provide for interpretive exhibits or programs. Such agreements shall provide, whenever appropriate, that—

(1) the public may have access to such property at specified, reasonable times for purposes of viewing such property or the exhibits or attending the programs established by the Secretary under this subsection; and

(2) the Secretary may make such minor improvements to such property as the Secretary deems necessary to enhance the public use and enjoyment of such property, exhibits, and programs.

(b)(1) The Secretary shall provide, upon request, technical assistance to—

Regulations.

(A) the city of Lowell to assist the city in establishing regulations or laws consistent with the standards and criteria established pursuant to section 302(e) of this Act; and

(B) the Commission to assist the Commission in establishing the index and the standards and criteria required by section 302 of this Act.

(2) The Secretary may provide to any owner of property within the park or preservation district, the Commission, the Commonwealth of Massachusetts, the city of Lowell, and any other Federal entity or any institution such technical assistance as the Secretary considers appropriate to carry out the purpose of this Act.

WITHHOLDING OF FUNDS

16 USC 410cc-24.

SEC. 204. The Secretary may refuse to obligate or expend any money appropriated for the purposes described in section 103(a)(1) of this Act or section 103(a)(2) of this Act if the Secretary determines that—

(a) the city of Lowell has failed to establish regulations or laws consistent with the standards and criteria established pursuant to section 302(e) of this Act within one year after the date such standards and criteria have been established, except that the Secretary may extend such one-year period for not more than six months if the Secretary determines that the city has made a good faith effort to establish such regulations or laws;

(b) the city of Lowell has failed to notify the Commission of (1) applications for building permits or zoning variances respecting any property which is included in the index established pursuant to section 302(d) of this Act, or (2) any proposals of the city of Lowell to change the regulations or laws described in paragraph (c)(1) of this subsection;

(c)(1) during the period before the city of Lowell has established regulations or laws consistent with the standards and criteria established pursuant to section 302(e) of this Act, the city of Lowell has granted any building permit or zoning variance or has taken any other action respecting any property within the park or preservation district, which either the Secretary or the Commission consider to be inconsistent with such standards and criteria;

(2) after the city of Lowell has established the regulations or laws described in subparagraph (1) of this paragraph, the city of Lowell has granted any building permit or zoning variance or has taken any other action respecting any property within the park or preservation district, which either the Secretary or the Commission consider to be inconsistent with such regulations or laws; or

(d) the Commission has not made good faith efforts to (1) provide for the preservation, restoration, management, development, or maintenance of property within the park and preservation district or (2) carry out the park preservation plan approved under section 302 of this Act.

GENERAL ADMINISTRATIVE FUNCTIONS

16 USC 410cc-25.

SEC. 205. (a)(1) The Secretary, acting through the National Park Service, shall take appropriate actions to implement to the extent practicable the park management plan established pursuant to section 201(b) of this Act. In carrying out such plan, the Secretary shall administer the park in accordance with laws, rules, and regulations applicable to the national park system. Before the date on which the Commission conducts its first meeting, the Secretary may take any other action the Secretary deems necessary to provide owners of property with national historic or cultural significance within the park or preservation district with emergency assistance for the purpose of preserving and protecting their property in a manner consistent with the purpose of this Act.

Rules and regulations.

(2) Subject to sections 204 and 302(b) of this Act, the Secretary shall make available to the Commission any funds appropriated under section 103(a)(2) of this Act for the purpose of carrying out title III of this Act.

Funds, availability.

(b) Notwithstanding any other provisions of law, the Secretary may accept donations of funds, property, or services from individuals, foundations, corporations, and other private entities, and from public entities, for the purpose of implementing the park management plan.

(c) The Secretary may sponsor or coordinate within the park and preservation district such educational or cultural programs as the Secretary considers appropriate to encourage appreciation of the resources of the park and preservation district.

(d) The Secretary may acquire such leases respecting property within the park as may be necessary to carry out the purpose of this Act.

TITLE III—ROLE OF THE COMMISSION

ESTABLISHMENT OF LOWELL HISTORIC PRESERVATION COMMISSION

16 USC 410cc-31.

SEC. 301. (a) There is established within the Department of the Interior a commission to be known as the Lowell Historic Preservation Commission which shall administer the preservation district and provide certain services within the park in accordance with this title. The

Members.

Commission shall consist of fifteen members appointed by the Secretary as follows:

(1) Three members who are members of the city council of Lowell, appointed from recommendations made by the mayor of Lowell.

(2) Three members appointed from recommendations made by the city manager of Lowell of persons who are representative of organized labor, the business community, local neighborhoods, and cultural institutions, and who are not elected officials.

(3) One member appointed from recommendations made by the president of the University of Lowell.

(4) Three members appointed from recommendations made by the Governor of the Commonwealth of Massachusetts.

(5) One member appointed from recommendations made by the Secretary of Commerce and who shall be an employee of the Department of Commerce.

(6) One member appointed from recommendations made by the Secretary of Transportation and who shall be an employee of the Department of Transportation.

(7) One member appointed from recommendations made by the Secretary of Housing and Urban Development and who shall be an employee of the Department of Housing and Urban Development.

(8) Two members who are qualified to serve on the Commission because of their familiarity with programs of the Department of the Interior involving national parks and historic preservation and who shall be an employee of the Department of the Interior.

(b) If any member of the Commission who was appointed to the Commission under paragraph (1) or (4) of subsection (a) of this section as a member of the city council of Lowell or any other government leaves that office, or if any member of the Commission who was appointed from persons who are not elected officials of any government becomes an elected official of a government, such person may continue as a member of the Commission for not longer than the thirty-day period beginning on the date such person leaves that office or becomes such an elected official, as the case may be.

Terms of office.

(c)(1) Except as provided in paragraph (2) of this subsection, members shall be appointed for terms of two years. A member may be reappointed only three times unless such member was originally appointed to fill a vacancy pursuant to subsection (e)(1) of this section, in which case such member may be reappointed four times.

(2) Of the members first appointed pursuant to subsection (a) of this section, the following shall be appointed for terms of three years:

(A) The members appointed pursuant to paragraphs (2), (3), and (8) of such subsection.

(B) One of the members appointed pursuant to paragraph (4) of such subsection, as designated by the Secretary at the time of appointment upon recommendation of the Governor.

(d) The chairman of the Commission shall be elected by the members of the Commission. The term of the chairman shall be two years.

(e)(1) Any vacancy in the Commission shall be filled in the same manner in which the original appointment was made.

(2) Any member appointed to fill a vacancy shall serve for the remainder of the term for which his predecessor was appointed. Any member may serve after the expiration of his term for a period not longer than thirty days.

(f) Eight members of the Commission shall constitute a quorum, but a lesser number may hold hearings.

(g) The Commission shall meet at least once each month, at the call of the chairman or a majority of its members.

(h)(1) Except as provided in paragraph (2) of this subsection, members of the Commission shall each be entitled to receive $100 for each day (including travel time) during which they are engaged in the performance of the duties of the Commission.

(2) Members of the Commission who are full-time officers or employees of the United States, the city of Lowell, or the Commonwealth of Massachusetts shall receive no additional pay on account of their service on the Commission.

(3) While away from their homes or regular places of business in the performance of services for the Commission, members of the Commission shall be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in the Government service are allowed expenses under section 5703 of title 5 of the United States Code.

Termination.

(i) The Commission established pursuant to this Act, shall cease to exist ten years from the date of enactment of this Act.

PARK PRESERVATION PLAN AND INDEX

16 USC 410ee-32.

SEC. 302. (a)(1) Within one year after the date on which the Commission conducts its first meeting, the Commission shall submit to the Secretary a draft park preservation plan meeting the requirements of subsection (c) of this section. The Secretary shall review the draft park preservation plan and, within ninety days after the date on which such plan is submitted to the Secretary, suggest appropriate changes in such plan to the Commission.

(2) Within eighteen months after the date on which the Commission conducts its first meeting, the Commission shall submit to the Secretary a park preservation plan which meets the requirements of subsection (c) of this section. The Secretary shall, within ninety days after the date on which such plan is submitted to the Secretary, approve or disapprove such plan. The Secretary may not approve such plan unless the Secretary determines that such plan would adequately carry out the purpose of this Act.

(3) If the Secretary disapproves a park preservation plan, the Secretary shall advise the Commission of the reasons for such disapproval together with the recommendations of the Secretary for revision of such plan. Within such period as the Secretary may designate, the Commission shall submit a revised park preservation plan to the Secretary. The Secretary shall approve or disapprove any revised park preservation plan in the same manner as required in paragraph (2) of this subsection for the approval or disapproval of the original park preservation plan.

Publication in Federal Register.

(4) If the Secretary approves a park preservation plan, the Secretary shall publish notice of such approval in the Federal Register and shall forward copies of the approved plan to the Congress.

Availability to public.

(5) Any park preservation plan or draft plan submitted to the Secretary under this subsection shall, upon request, be available to the public.

(6) No changes other than minor revisions may be made in the approved park preservation plan without the approval of the Secretary. The Secretary shall approve or disapprove any proposed change in the approved park preservation plan, except minor revisions in the

same manner as required in paragraph (2) of this subsection for the approval or disapproval of the original park preservation plan.

(b)(1) Except as provided in paragraph (2) of this subsection, the Secretary shall not make any funds available to the Commission to carry out section 303 or 304 of this Act until a park preservation plan has been approved under subsection (a) of this section.

Funds, availability.

(2) Before a park preservation plan is approved under subsection (a) of this section, the Secretary may make available to the Commission such funds as the Commission may request to carry out any activity specified in paragraph (3) of this section. However, no funds shall be made available under this paragraph unless a proposal describing such activity is reviewed and approved by the Secretary.

(3) The Commission may request funds from the Secretary to—

(A) carry out activities to preserve, restore, manage, develop, or maintain any property identified in subsection (c)(1) of this section;

(B) take any action the Commission considers necessary to provide owners of property with national historical or cultural significance within the park or preservation district with emergency assistance for the purpose of preserving and protecting their property in a manner consistent with the purpose of this Act; or

(C) acquire in accordance with section 304 of this Act, any property within the park which—

(i) is identified in the report of the Lowell Historic Canal District Commission as a property which should be preserved, restored, managed, developed, or maintained in a manner consistent with the purpose of this Act;

(ii) is listed in the National Register of Historic Places, as maintained by the Secretary pursuant to section 101(a) of the Act entitled "An Act to establish a program for the preservation of additional historic properties throughout the Nation, and for other purposes", approved October 15, 1966 (16 U.S.C. 470a), and section 2(b) of the Act entitled "An Act to provide for the preservation of historic American sites, buildings, objects, and antiquities of national significance, and for other purposes", approved August 21, 1935 (16 U.S.C. 462); or *

(iii) is determined by the Secretary to be of national significance;

and would be subject to demolition or major alteration in a manner inconsistent with the purpose of this Act unless acquired by the Commission.

(c) Any plan submitted to the Secretary under subsection (a) of this section shall—

(1) describe the manner in which the Commission, to the extent practicable in accordance with the recommendations in the report of the Lowell Historic Canal District Commission, proposes to provide for the preservation, restoration, management, development, or maintenance of—

(A) the Welles Block, 169 Merrimack Street;

(B) the Jordan Marsh Company Building, 153 Merrimack Street and 15 Kirk Street;

(C) the Yorick Club, 91 Dutton Street;

(D) the Lowell Gas Light Company, 22 Shattuck Street;

(E) St. Anne's Church and Rectory, 237 Merrimack Street;

(F) Lowell Institution for Savings, 18 Shattuck Street;

(G) the Ahepa Building, 31 Kirk Street;

(H) Boott Mill, Foot of John Street;

(I) Lowell Manufacturing Company on Market Street; and

(J) the structure commonly referred to as the Early Residence, 45, 47, and 49 Kirk Street;

(2) identify the properties included in the index established pursuant to subsection (d) of this section;

(3) identify the properties which the Commission intends to acquire under section 304 of this Act and specify how such properties shall be used;

(4) include the standards and criteria established pursuant to subsection (e) of this section;

(5) provide a detailed description of the manner in which the Commission intends to implement the grant and loan programs under section 303 of this Act, including information relating to the estimated amount of such grants and the manner in which such grants shall be awarded by the Commission;

(6) provide for a transportation program by which the Commission shall provide, directly or by agreement with any person or any public or private entity, transportation services and facilities for park and preservation district visitors, including barge equipment, docking facilities, and local rail facilities;

(7) provide for educational and cultural programs to encourage appreciation of the resources of the park and preservation district; and

(8) include a tentative budget for the subsequent five fiscal years.

(d) The Commission shall establish, within one year after the date on which the Commission conducts its first meeting, an index which includes— Index.

(1) any property in the park or preservation district (except for any property identified in section 201(a)(2) of this Act) which should be preserved, restored, managed, developed, maintained, or acquired by the Commission because of its national historic or cultural significance; and

(2) any property which should be preserved, restored, managed, developed, or maintained in a manner compatible with the purpose of this Act because of its proximity to (A) any property referred to in paragraph (1) of this subsection, or (B) any property designated in section 201(a)(2) of this Act.

The index may be modified only by a majority vote of the members of the Commission, taken when a quorum is present.

(e)(1) The Commission shall establish standards and criteria applicable to the construction, preservation, restoration, alteration, and use of all properties within the preservation district with the advice of the Commonwealth of Massachusetts and of the Secretary, and the consent of the city manager of Lowell. Standards and criteria.

(2) The Commission shall establish the standards and criteria described in paragraph (1) of this subsection for any property within the park with the advice of the Commonwealth of Massachusetts and the city manager of Lowell and subject to the review and approval of the Secretary.

(3) The Commission shall establish standards and criteria under paragraphs (1) and (2) of this subsection within one year after the date on which the Commission conducts its first meeting. Such stand-

ards and criteria may be revised in the same manner in which they were originally established.

Publication in Federal Register.

(4) The Secretary shall publish the standards and criteria established under paragraphs (1) and (2) of this subsection, and any revisions thereof, in the Federal Register.

LOANS, GRANTS, AND TECHNICAL ASSISTANCE

16 USC 410ee-33.

SEC. 303. (a) The Commission may make loans to the Lowell Development and Financial Corporation (established under chapter 844 of the Massachusetts General Laws and hereinafter referred to as the "corporation") to enable the corporation to provide low interest loans for the preservation, restoration, or development of any property described in section 302(d)(1) of this Act. The Commission may make any such loan to the corporation only after entering into a loan agreement with the corporation which includes the following terms:

(1) The loan to the corporation shall have a maturity of thirty-five years. At the end of such period, the corporation shall repay to the Secretary of the Treasury (in a lump sum) for deposit in the general fund of the Treasury the full amount of the loan and any additional amounts accruing to the corporation pursuant to this subsection excepting those amounts expended by the corporation for reasonable administrative expenses.

(2) The money received from the Commission, and any interest earned on such money, may be obligated by the corporation only for low interest loans made under paragraphs (6) and (7) of this subsection, except that the corporation may use such money to the extent the Commission considers reasonable to satisfy the costs of the corporation in administering the loan or procuring loan guarantees or insurance.

(3) Within five years after receiving the loan from the Commission, the corporation shall make loans under paragraphs (6) and (7) of this subsection which, in the aggregate, obligate the full amount of money received from the Commission (minus any amount required to satisfy the costs described in paragraph (2) of this subsection).

(4) As loans made under paragraphs (6) and (7) of this subsection are repaid, the corporation shall make additional loans under such paragraphs with the money made available for obligation by such repayments.

(5) The corporation shall make available to the Commission and to the Secretary, upon request, all accounts, financial records, and other information related to loans made under paragraphs (6) and (7) of this subsection.

(6) Before the corporation approves any application for a low interest loan for which money has been made available to the corporation by the Commission, the corporation shall require the prospective borrower to furnish the corporation with a statement from the Commission stating that the Commission has reviewed the application and has determined that any loan received by the prospective borrower will be spent in a manner consistent with—

(A) the standards and criteria established pursuant to section 302(e) of this Act, and

(B) the goals of the park preservation plan approved under section 302(a) of this Act.

(7) The corporation may approve any application for a low interest loan which meets the terms and conditions prescribed by the corporation with the approval of the Commission and for which money has been made available to the corporation by the Commission if—

(A) the prospective borrower furnishes the corporation with the statement described in paragraph (6) of this subsection;

(B) the corporation determines that such borrower has sufficient financial resources to repay the loan; and

(C) such borrower satisfies any other applicable credit criteria established by the corporation.

Audit.

In order to determine whether the corporation has complied with this subsection, the Commission, or such other appropriate person or entity as the Commission may designate, shall conduct an audit at least once every two years of all accounts, financial records, and other information related to loans made under paragraphs (6) and (7) of this subsection. If the Commission determines, after conducting a hearing on the record, that the corporation has substantially failed to comply with this subsection, the outstanding balance of any loan made to the corporation under this subsection shall become payable in full upon the demand of the Commission.

Hearing.

(b)(1) The Commission may make grants to owners of property described in section 302(d)(1) of this Act for the preservation, restoration, management, development, or maintenance of such property in a manner consistent with the standards and criteria established pursuant to section 302(e) of this Act.

(2) The Commission, with the approval of the Secretary, may make grants to any person or any public or private entity to provide for (i) educational and cultural programs which encourage appreciation of the resources of the park and preservation district, or (ii) any planning, transportation, maintenance, or other services the Commission considers necessary to carry out the purposes of this Act.

(3) Grants under this subsection shall be made under agreements which specify the amount of the grant, the installments (if any) by which the grant shall be paid to the grant recipient, the purpose for which the grant may be used, and any other condition the Commission considers appropriate. The Commission shall be entitled, under the terms of any grant agreement, to recover from the recipient any funds used in a manner inconsistent with such grant agreement.

(c) The Commission with the advice of the Secretary may provide technical assistance to—

(1) owners of property within the park or preservation district to assist such owners in (A) making repairs to or improvements in any property included in the index established pursuant to section 302(d) of this Act, or (B) applying for loans under subsection (a) of this section; and

(2) any other person or public or private entity to assist such person or entity in taking actions consistent with the purpose of this Act.

(d) The Commission shall make available to the Secretary, upon request, all accounts, financial records, and other information of the Commission relating to grants and loans made under this section.

Report to Congress.

(e) The Secretary shall make an annual report to the Congress describing the loans, grants, and technical assistance provided under this section and under section 303 of this Act. Such report shall specify the amount, recipient, and purpose of any loan, grant or technical

assistance so provided and contain such additional information as the Secretary considers appropriate.

ACQUISITION AND DISPOSITION OF PROPERTY

16 USC 410cc-34.

SEC. 304. (a)(1) The Commission may acquire any property designated in paragraph (3) of this subsection, any property described in section 302(d)(1) of this Act, or any interest therein, by donation, by purchase with donated or appropriated funds, or by condemnation in accordance with paragraph (2) of this subsection.

(2) Only properties within the park or property designated in paragraph (3) of this subsection may be acquired by the Commission by condemnation. The Commission may initiate condemnation proceedings only after making every reasonable effort to acquire any such property through negotiations and purchase and consulting with the city council of Lowell. No lands or interests therein may be acquired by the Commission by condemnation without the approval of the Secretary.

(3) The Commission may acquire in accordance with paragraph (1) of this subsection the following properties, or any interest therein:

(A) World Furniture Building, 125 Central Street; and

(B) The Martin Building, 102–122 Central Street.

(b) The Commission, with the approval of the Secretary, may sell or lease any property which it acquires under subsection (a) of this section subject to such deed restrictions or other conditions as the Commission deems appropriate to carry out the purpose of this Act.

(c) Pursuant to a written agreement between the Commission and the Commonwealth of Massachusetts, the Commission, with the approval of the Secretary, may sell, donate, lease, or in any other manner the Commission and the Secretary deem appropriate make available to the Commonwealth any property which the Commission has acquired under subsection (a) of this section in order to provide for the administration or maintenance of such property by the Commonwealth in a manner consistent with the purpose of this Act.

POWERS OF COMMISSION

Hearings. 16 USC 410cc-35.

SEC. 305. (a) The Commission may for the purpose of carrying out this Act hold such hearings, sit and act at such times and places, take such testimony, and receive such evidence, as the Commission may deem advisable. The Commission may administer oaths or affirmations to witnesses appearing before it.

(b) When so authorized by the Commission, any member or agent of the Commission may take any action which the Commission is authorized to take by this section.

(c) Subject to section 552a of title 5, United States Code, the Commission may secure directly from any department or agency of the United States information necessary to enable it to carry out this Act. Upon request of the chairman of the Commission, the head of such department or agency shall furnish such information to the Commission.

(d) Notwithstanding any other provision of law, the Commission may seek and accept donations of funds, property, or services from individuals, foundations, corporations, and other private entities, and from public entities, for the purpose of carrying out its duties.

(e) The Commission may use its funds to obtain money from any source under any program or law requiring the recipient of such money to make a contribution in order to receive such money.

(f) The Commission may use the United States mails in the same manner and upon the same conditions as other departments and agencies of the United States.

(g) The Commission may obtain by purchase, rental, donation, or otherwise, such property, facilities, and services as may be needed to carry out its duties. Any acquisition of property by the Commission shall be in accordance with section 304 of this Act: *Provided, however,* That the Commission may not acquire lands or interests therein pursuant to this subsection by condemnation. Upon the termination of the Commission, all property, personal and real, and unexpended funds shall be transferred to the Department of the Interior.

STAFF OF COMMISSION

16 USC 410cc-36.

SEC. 306. (a) The Commission shall have a Director who shall be appointed by the Commission and who shall be paid at a rate not to exceed the rate of pay payable for grade GS-15 of the General Schedule.

5 USC 5332 note.

(b) The Commission may appoint and fix the pay of such additional personnel as the Commission deems desirable.

5 USC 5101 et seq. 5 USC 5331.

(c) The Director and staff of the Commission may be appointed without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, and may be paid without regard to the provisions of chapter 51, and subchapter III of chapter 53 of such title relating to classification and General Schedule pay rates, except that no individual so appointed may receive pay in excess of the annual rate of basic pay payable for grade GS-15 of the General Schedule.

(d) Subject to such rules as may be adopted by the Commission, the Commission may procure temporary and intermittent services to the same extent as is authorized by section 3109(b) of title 5, United States Code, but at rates determined by the Commission to be reasonable.

(e)(1) Upon request of the Commission, the head of any Federal agency represented by members on the Commission may detail, on a reimbursable basis, any of the personnel of such agency to the Commission to assist it in carrying out its duties under this Act.

(2) The Administrator of the General Services Administration shall provide to the Commission on a reimbursable basis such administrative support services as the Commission may request.

Approved June 5, 1978.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 95-1023 (Comm. on Interior and Insular Affairs).
SENATE REPORT No. 95-813 (Comm. on Energy and Natural Resources).
CONGRESSIONAL RECORD, Vol. 124 (1978):
Apr. 3, considered and failed passage in House.
Apr. 11, considered and passed House.
May 18, considered and passed Senate, amended.
May 23, House concurred in Senate amendments.
WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 14, No. 23:
June 5, Presidential statement.

○

AMENDMENT TO PUBLIC LAW 95-290

The Act was amended in September of 1980 to allow the Commission to reuse certain revenues. The amendment follows.

That title III of the Act entitled "An Act to provide for the establishment of the Lowell National Historical Park in the Commonwealth of Massachusetts, and for other purposes," approved June 5, 1978 (92 Stat. 290; 16 U.S.C. 410cc et seq.), is amended by adding at the end thereof the following new section:

USE OF FUNDS

"SEC. 307. (a) Any revenues or other assets acquired by the Commission by donation, the lease or sale of property or fees for services shall be available to the Commission, without fiscal year limitation, to be used for any function of the Commission authorized under this Act. The Commission shall keep financial records fully disclosing the amount and source of revenues and other assets acquired by the Commission, and shall keep such other financial records as the Secretary may prescribe.

"(b) The Secretary shall provide for audits of the financial records of the Commission to be conducted not less frequently than once each year in order to ensure that revenues and other assets of the Commission are being used in a manner authorized under this Act."

Credits

The Commission would like to thank these individuals and organizations for the use of photographs which appear on the following pages of the Details of the Preservation Plan.

11	University of Lowell
2	Randolph Langenbach
6	James Higgins
11	James Higgins
13	Randolph Langenbach
15	Randolph Langenbach
50	Randolph Langenbach
59	Lowell Museum
60	James Higgins
63	Randolph Langenbach
65	Locks and Canals
68	Jack McWilliams
71	Locks and Canals
72	Randolph Langenbach
75	Lowell Historical Society (left)
78	University of Lowell (left)
79	Randolph Langenbach
80	Moore-Heder
81	Moore-Heder
83	Moore-Heder
87	Moore-Heder
93	John Gustavsen
100	James Higgins
116	Louis Sarre
122	William R. Alschuler
128	University of Lowell
129	Lowell Sun
131	Lowell Historical Society
132	Ann Metherall
134	University of Lowell
148	Randolph Langenbach
166	Moore-Heder

The photos on the following pages were taken by the Commission Staff.

10, 14, 54, 61, 62, 64, 66, 67, 69, 70, 73, 74, 75 (right), 76, 77, 78 (right), 88, 89, 90, 91, 92, 94, 95, 96.