

Ayer's City Industrial Park

Urban Revitalization and Development Plan



(Image from Lowell, Massachusetts: A 2020 Vision, produced by The Lowell Plan, Inc.)

City of Lowell
375 Merrimack Street
Lowell, MA 01852

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Executive Summary

Lowell is home to 106,519 people, making it the fourth largest City in Massachusetts. Lowell's 14 square miles are almost completely built out with historic industrial buildings adjacent to high-density residential neighborhoods, leaving a critical shortage of industrial land and modern industrial space with which to attract job-producing industrial business.

The Ayer's City Industrial Park Urban Revitalization and Development Project ("Ayer's City Industrial Park") seeks to revitalize a traditional industrial area of Lowell with the potential to drive the next decade of job creation and industrial resurgence. The Ayer's City Industrial Park encompasses approximately 108 acres of land located one mile south of Lowell's central business district. Today, most of the area is zoned as heavy industry, with some commercial and residential areas identified on the periphery.

Daniel Ayer's original vision of an industrial, job-producing hub, realized in part during the end of the 19th century, was lost over the course of the twentieth century. Job losses mounted as manufacturing facilities changed over time to surface lots and low-density uses like scrap metal, junk yards and used auto parts. The decline and rise of less desirable industrial uses coincides with the recognition of environmental contamination in the plan area, including and especially the designation of the Silresim Superfund site. Ayer's City Industrial Park contains multiple known Brownfields sites and one known National Priorities List (Superfund) site, the Silresim Chemical Corp.

Recently, as a result of the ongoing, successful clean-up activities at the Silresim site the City realized the potential of this district and undertook the Tanner Street Initiative to create a plan for the revitalization of the newly-named Ayer's City Industrial Park. With direct access to the Lowell Connector Highway, and located within close walking distance to Gallagher Terminal, Lowell's public transit hub with commuter rail and bus connections to all of Lowell and the Boston metropolitan area, the Plan Area is uniquely positioned for transformation into a sought-after industrial corridor.

The Ayer's City Industrial Park is a 20-year redevelopment plan for the section of Lowell around Tanner Street roughly bounded by the railroad tracks, Lowell Connector right-of-way and Plain Street. Ayer's City Industrial Park is the culmination of several recent planning efforts for the Tanner Street corridor. Commencing concurrent with the City of Lowell's 2013 comprehensive plan update, and funded through an innovative funding program at the federal Environmental Protection Agency, the planning process for Ayer's City Industrial Park engaged a diverse group of neighborhood and City-wide stakeholders for detailed discussion and received comments from a broad range of participants in several public meetings to craft a vision of neighborhood transformation.

The City of Lowell assessed the current trends and realities of industrial and manufacturing sectors to plan a modern industrial park in the heart of a Gateway City in Massachusetts. The Ayer's City Industrial Park Plan is promulgated by the Lowell City Council, acting as the Lowell Redevelopment Authority under Chapter 353 of the Acts of 1976, with the City Manager, Planning Board and Department of Planning and Development. Designation of an urban revitalization and development project pursuant to

Massachusetts General Laws Chapter 121B will provide necessary tools to the City of Lowell to realize the vision of a thriving industrial district that utilizes vacant and underdeveloped sites to provide jobs and economic opportunities for the residents of Lowell and establish a manufacturing hub for the region. The vision for Ayer’s City Industrial Park builds on and conforms to the Commonwealth of Massachusetts Sustainable Development Principles and Sustainable Lowell 2025, a Comprehensive Plan adopted in the Spring of 2013 in accordance with M. G. L. Chapter 41, Section 81D.

The development of an urban revitalization and development project will allow the City to build on the Industrial Park’s strengths to turn Tanner Street into the Ayer’s City Industrial Park. All of the recommendations in this revitalization plan are designed to support the transformation of Ayer’s City Industrial Park into an area that is both economically and environmentally sustainable - with new clean industries creating jobs and increasing tax revenues; and an attractive, healthy environment with improved multi-modal transportation opportunities and access to natural resources.

When implemented, the plan will result in:

- Brownfields clean-up and redevelopment
- New zoning to support redevelopment
- 334,000 square feet of new development
- \$1.38 million in new annual tax revenues
- Two new parks and a new greenway
- Improved gateways to and signage for the Plan Area
- New and improved multi-modal access to and circulation within the Plan Area
- Enhanced streetscapes to improve marketability

In addition, the redevelopment will create up to 200 construction jobs, up to 670 permanent jobs and generate up to \$30 million in private investment (based on \$90 per square feet for commercial and industrial redevelopment). The Ayer’s City Industrial Park will build on the City’s partnerships developed in the Acre Plan and Jackson/Appleton/Middlesex (JAM) Plan, two urban revitalization and development projects transforming Lowell since 2000. The successful implementation of Ayer’s City Industrial Park will build the City’s existing partnerships with government agencies at the regional, state and federal level, continue long-term engagement with industry and entrepreneurs and advance all ten (10) of the Commonwealth of Massachusetts’ Sustainable Development Principles as follows:

Table 1: Commonwealth of Massachusetts Sustainable Development Principles

Sustainable Development Principle	Ayer's City Industrial Park Plan Implementation Strategies
1. Concentrate Development and Mix Uses	The Plan will revitalize a portion of the industrial core of Lowell through targeted remediation and new development on existing sites with a density consistent with City's infrastructure capacity and neighborhood character.
2. Advance Equity	The Plan will remediate contamination on and around a U.S. EPA National Priority List site (Silresim) to create new businesses and job opportunities for Lowell's residents and visitors.

3. Make Efficient Decisions	The City of Lowell will create a new performance standard and industrial form-based code entitlement regime in Ayer's City Industrial Park to streamline site redevelopment.
4. Protect Land and Ecosystems	The Plan is designed to reclaim River Meadow Brook (Hale's Brook) as an urban recreational amenity and improve conservation above its current use as an industrial run-off area.
5. Use Natural Resources Wisely	The Plan designates three green spaces, including the River Meadow Brook greenway, planned in conjunction with redevelopment sites to maximize benefits for each use.
6. Expand Housing Opportunities	The Plan is designed as an industrial redevelopment project, but residents of the abutting Sacred Heart neighborhood will directly benefit from a district with significant environmental remediation, new access points, improved multi-modal connections and new job opportunities.
7. Provide Transportation Choice	Ayer's City Industrial Park suffers from inadequate access, which The Plan addresses through a multi-pronged strategy of underpass enhancements, new gateway connections, new multi-modal accommodations and enhanced access to the nearby Gallagher Terminal, the City's MBTA commuter rail station and central bus hub.
8. Increase Job and Business Opportunities	The core concept of Ayer's City Industrial Park is to create good, quality jobs in the historic industrial corridor by reinventing existing sites to maximize development potential for modern industrial and manufacturing businesses.
9. Promote Clean Energy	The new industrial performance standards for Ayer's City Industrial Park will focus on incorporating energy generation through a "solar-ready roof" requirement and promote energy efficiency.
10. Plan Regionally	The City of Lowell worked closely with the Northern Middlesex Council of Governments, the regional planning agency for Lowell, to carefully align The Plan goals and actions with regional transportation, economic and sustainability goals and priorities.

12.02(1): Maps (Characteristics)

Map 1: Project Area Boundary

Map 2: Project Area Topography

Map 3: Parcel Numbers and Boundaries

Map 4: Existing Land Use

Map 5: Existing Ownership

Map 6: Existing Thoroughfares, Public Rights of Way and Easements

Map 7: Existing Zoning

Map 8: Parcels with Hazardous Substance Releases Reported to MassDEP

Map 9: Tax Title Properties

Map 10: Deficient Structures

Map 11: Clearance and Rehabilitation

Map 12: Parcels to be Acquired

Map 13: Lots Created for Disposition

Map 14: Proposed Zoning

Map 15: Proposed Buildings, Parcels, Land Uses and Rights-of-Way



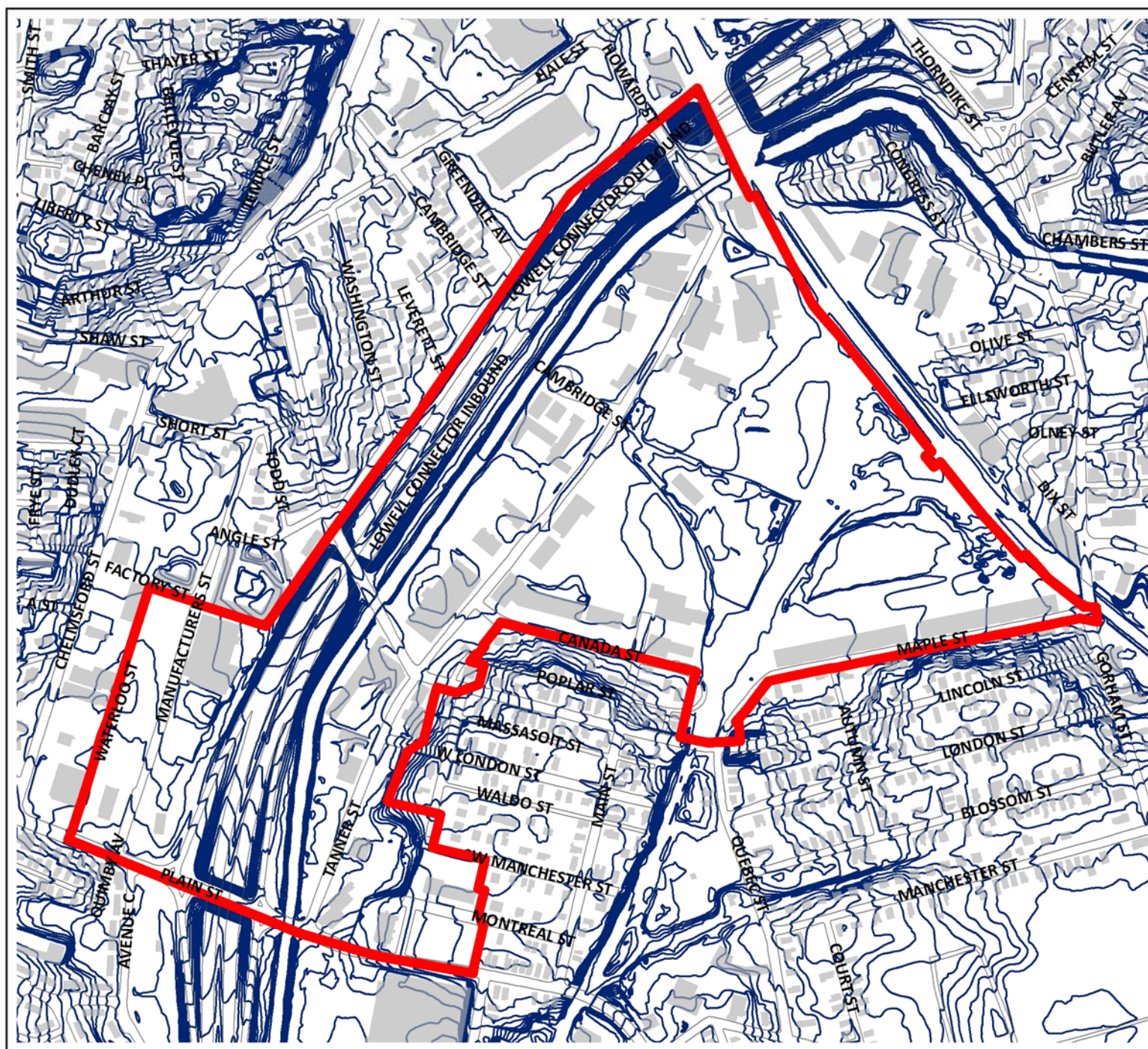
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 Project Area Boundary

Map 1:
Project Area Boundary

*Ayer's City Industrial Park
Urban Revitalization and
Development Project*





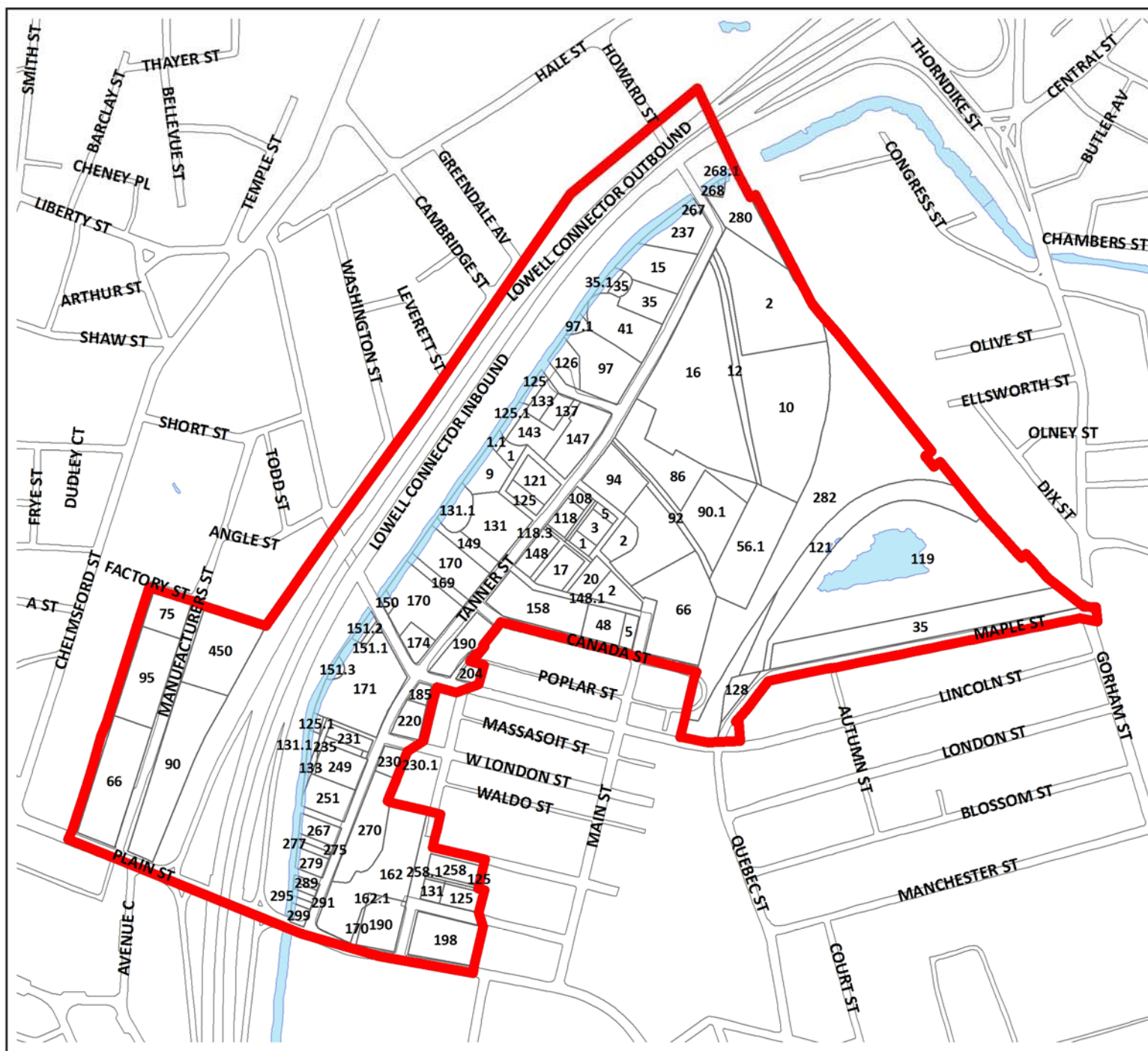
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— 2-foot Contour Lines

Map 2:
Project Area Topography

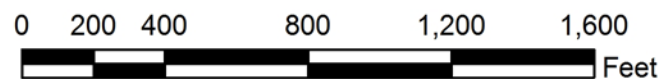
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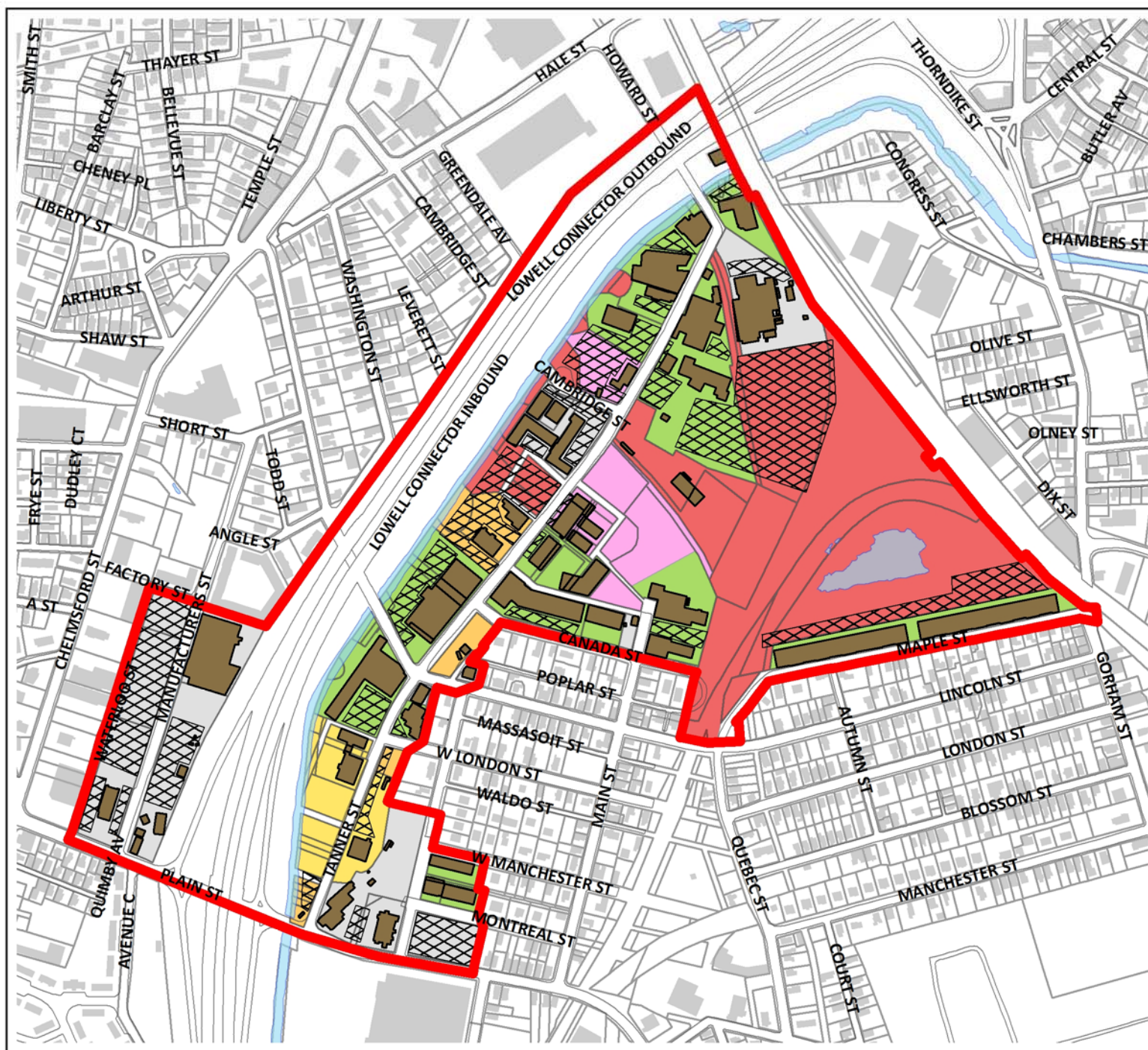




Map 3:
Parcel Numbers and
Boundaries

*Ayer's City Industrial Park
Urban Revitalization and
Development Project*



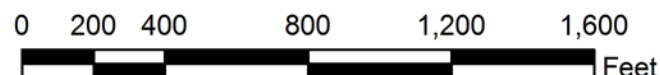


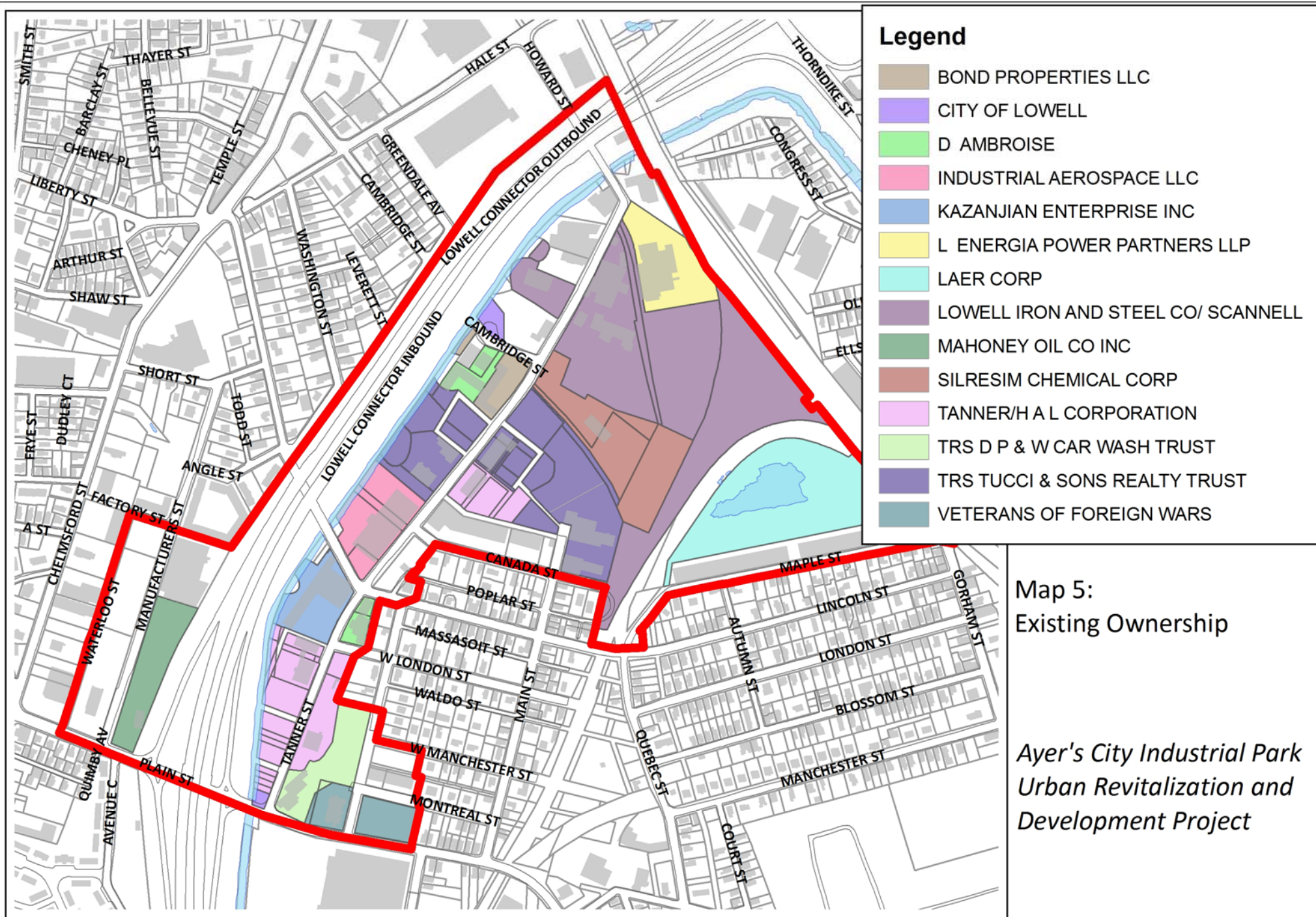
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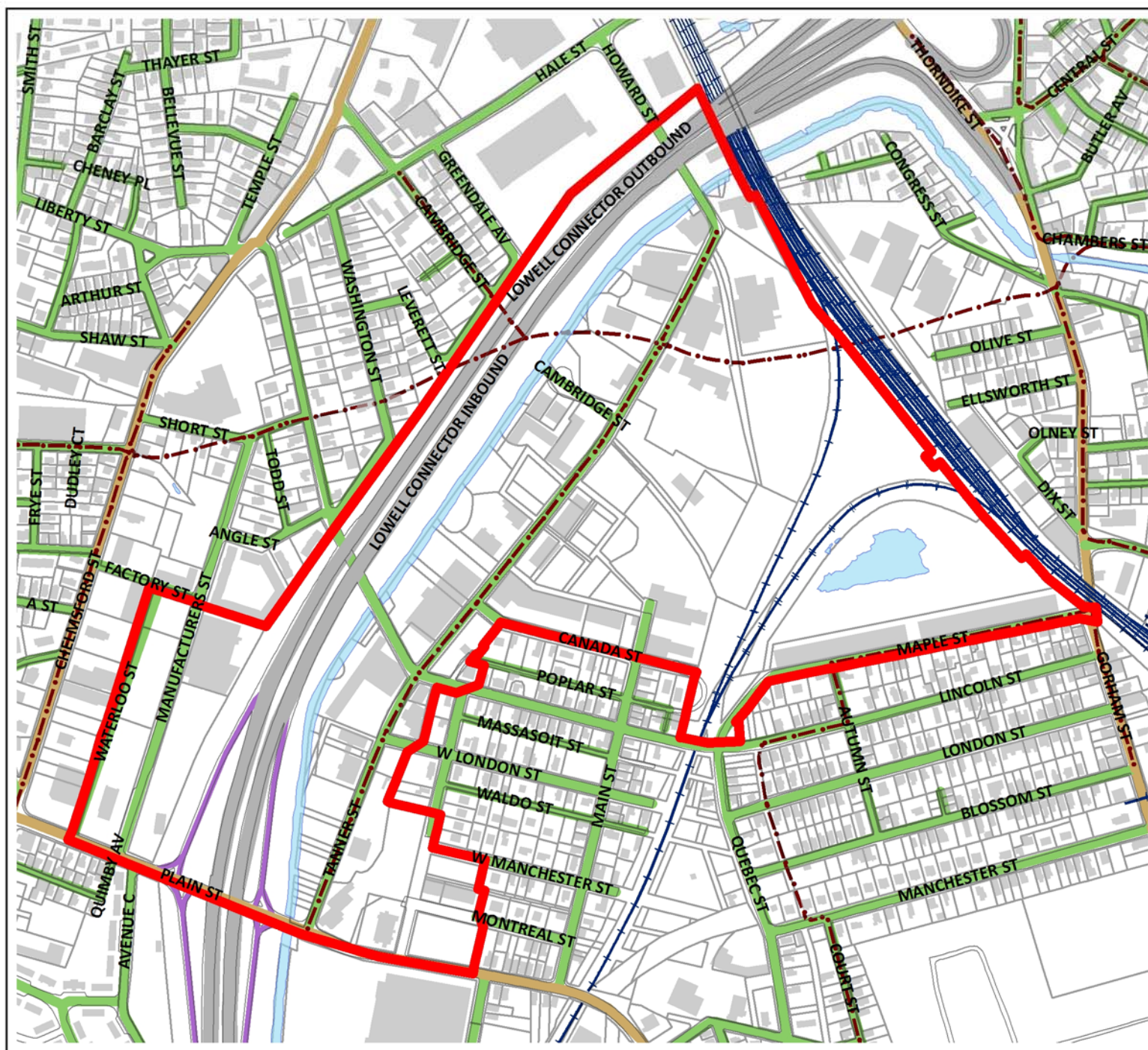
-  Existing Buildings
-  Existing Parking
-  Other Uses
-  Car Dealership
-  Car Storage
-  Industrial/Mfg
-  Scrap Metal
-  Vacant

Map 4:
Existing Land Use

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Urban Revitalization and
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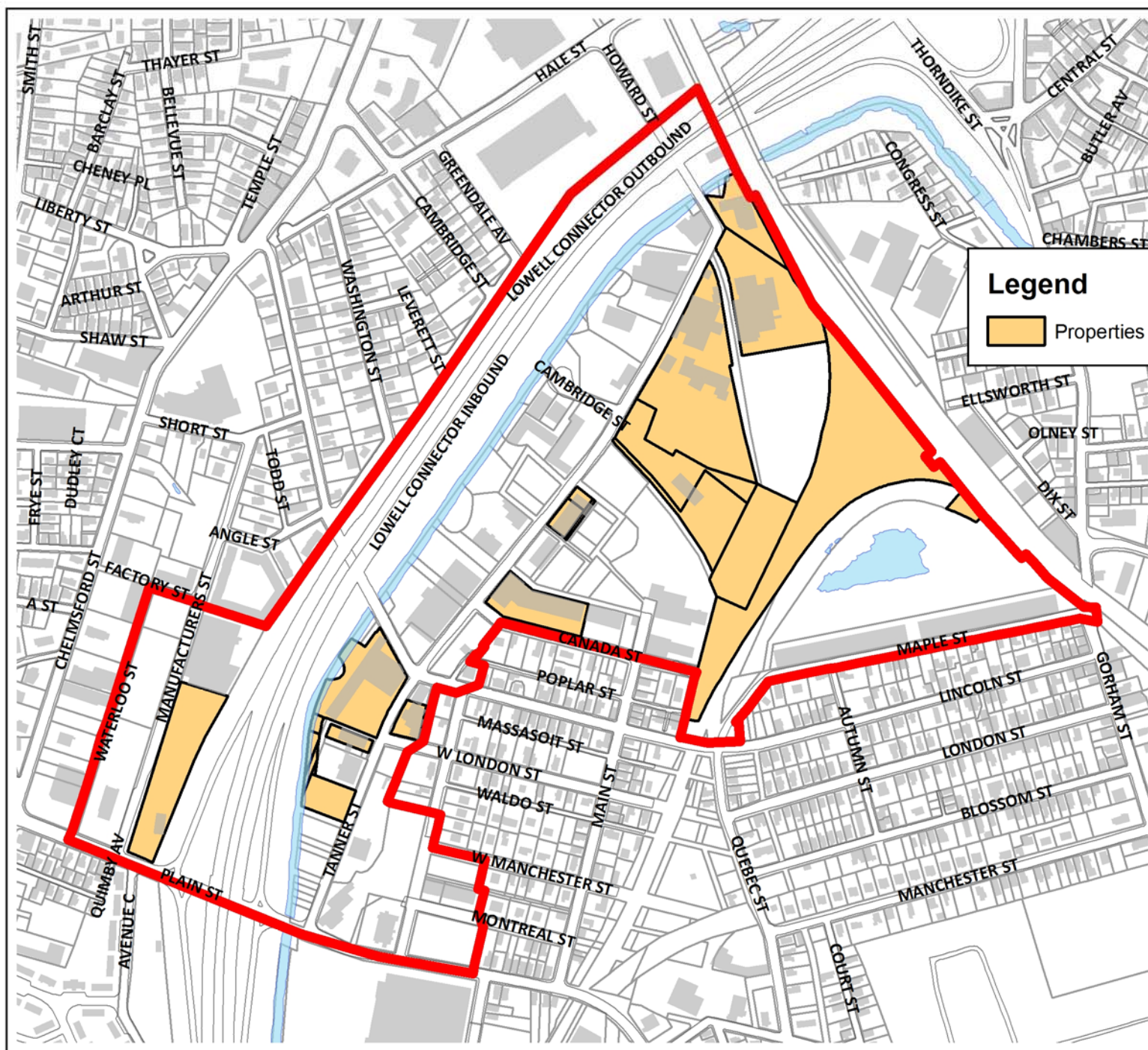
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- Limited Access Highway
- Urban Collector Streets
- Local Streets
- Access Ramps
- Railroads
- Major Sever Lines

Map 6:
Existing Thoroughfares,
Public Rights of Way and
Easements

*Ayer's City Industrial Park
Urban Revitalization and
Development Project*



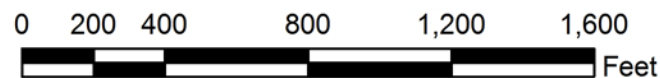


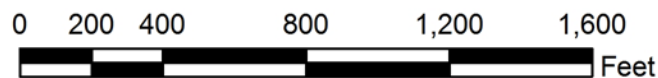
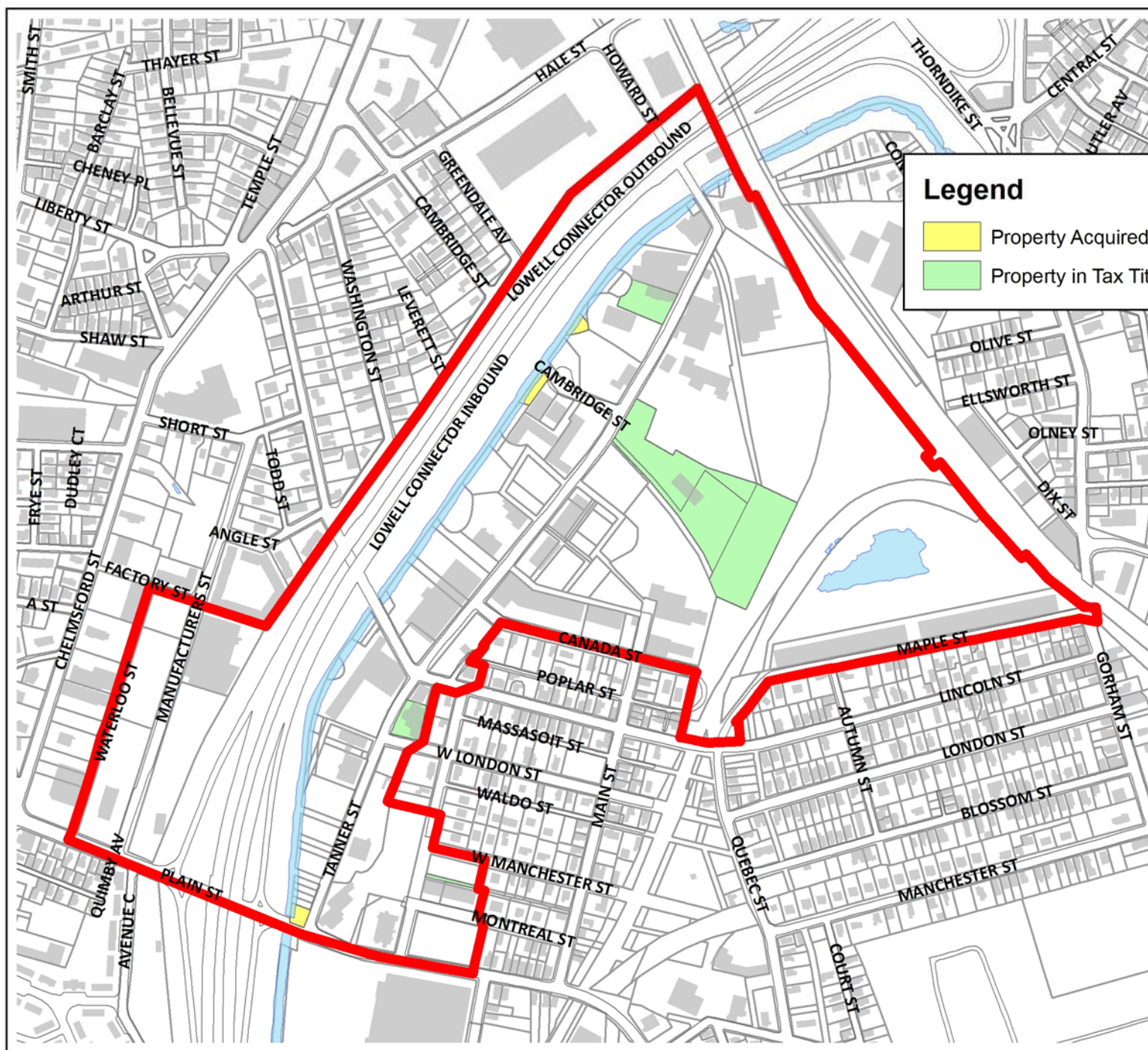
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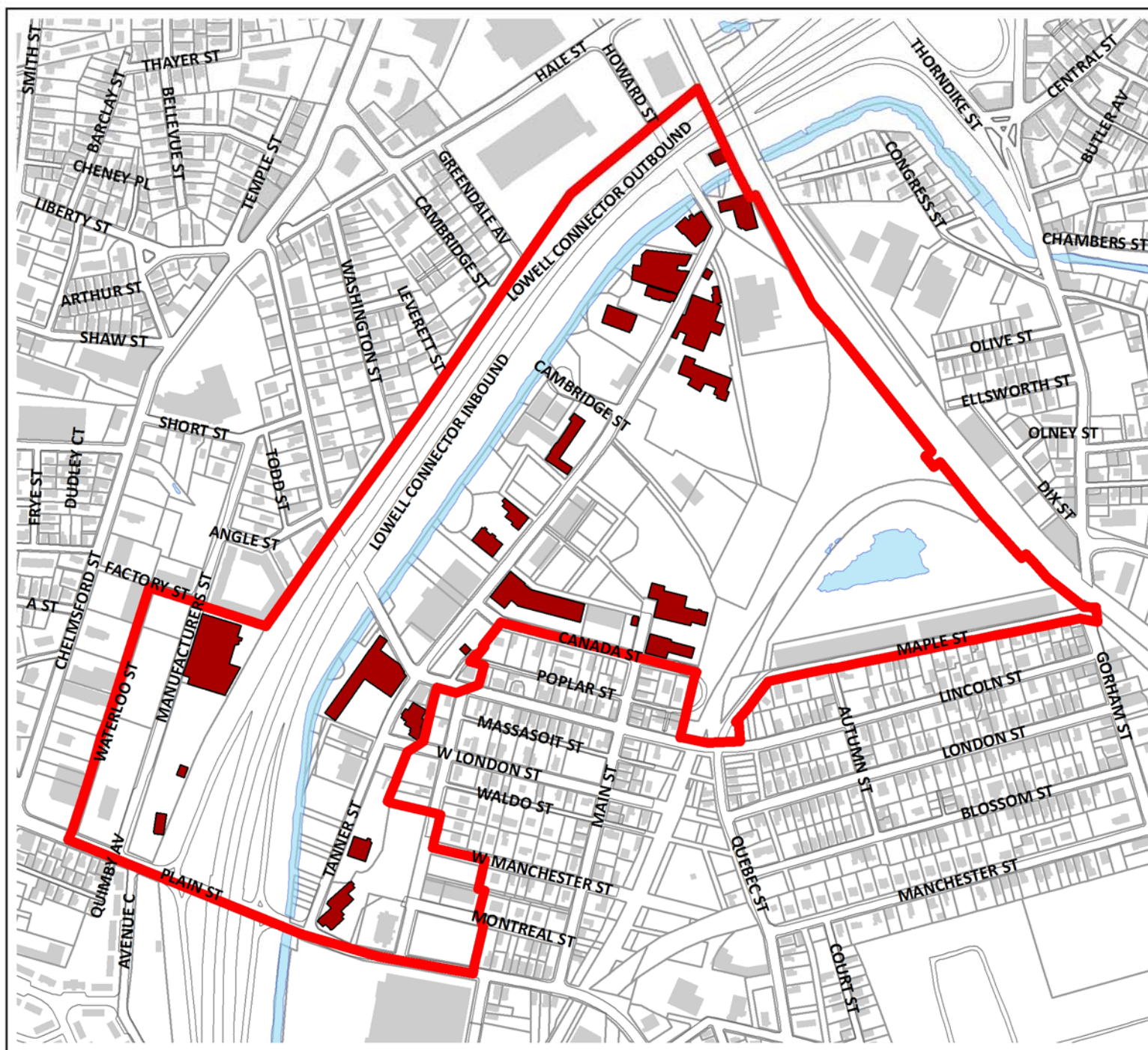
Properties with Hazardous Releases Reported

Map 8:
Parcels with Hazardous
Substance Releases
Reported to MassDEP

*Ayer's City Industrial Park
Urban Revitalization and
Development Project*





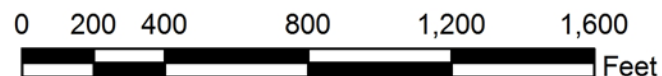


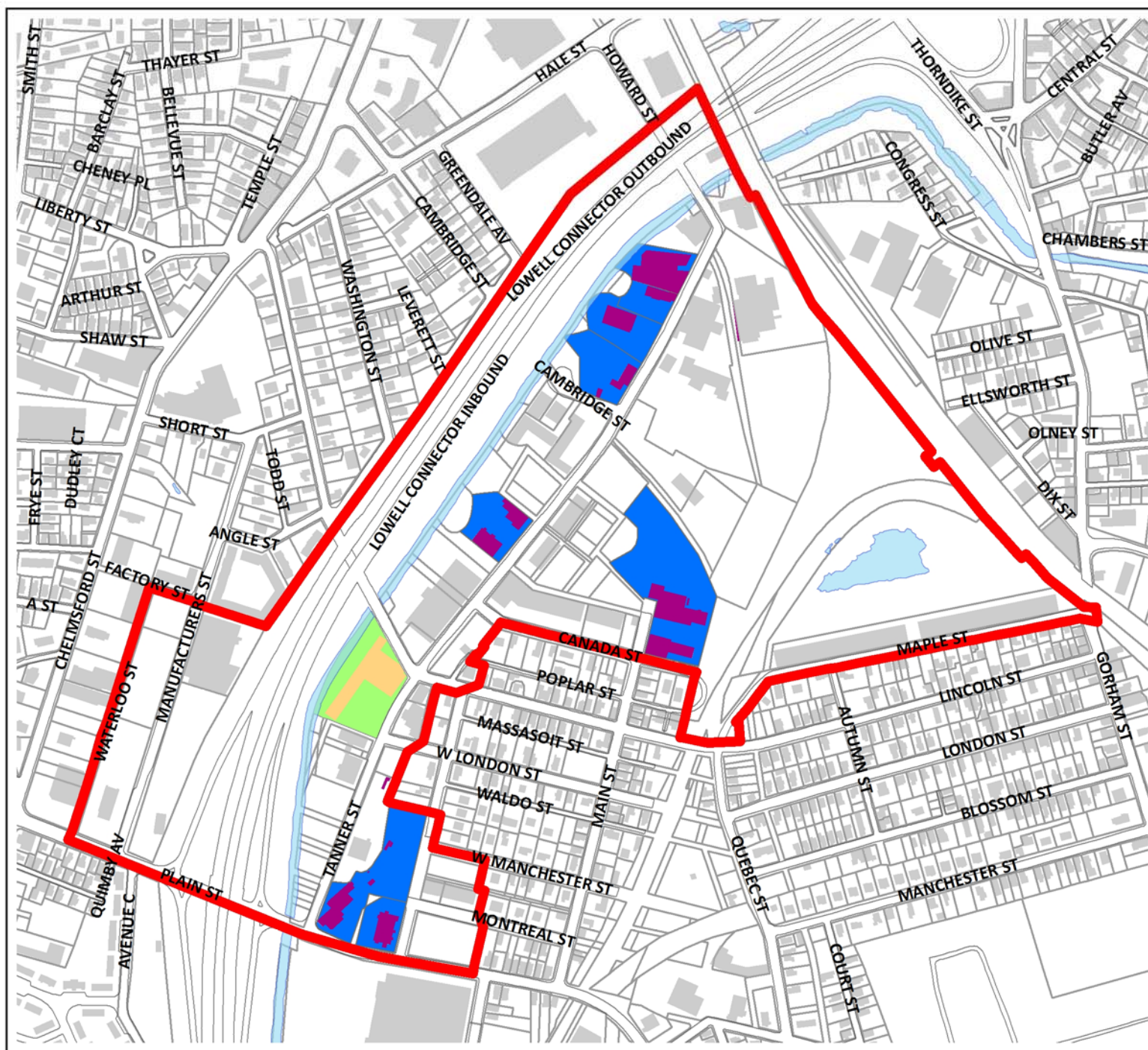
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Deficient Buildings

Map 10:
Deficient Structures

*Ayer's City Industrial Park
Urban Revitalization and
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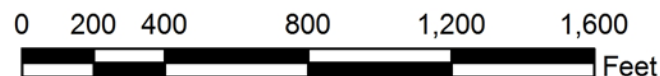


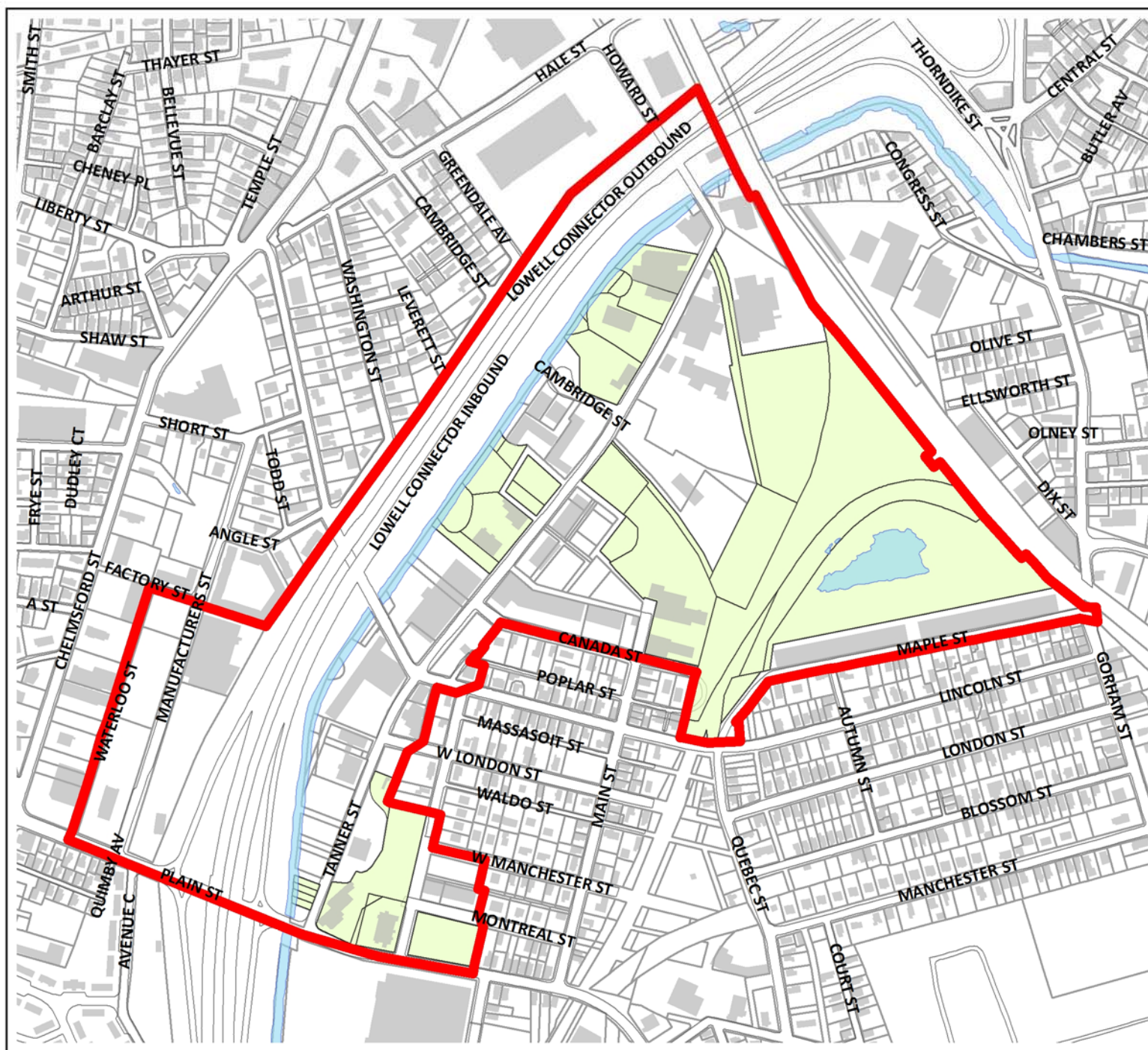
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- Clearance Areas
- Buildings to be Demolished
- Rehabilitation Areas
- Buildings to be Rehabilitated

Map 11:
Clearance and
Rehabilitation

*Ayer's City Industrial Park
Urban Revitalization and
Development Project*





Legend

Acquisitions

Map 12:
Parcels to be Acquired

*Ayer's City Industrial Park
Urban Revitalization and
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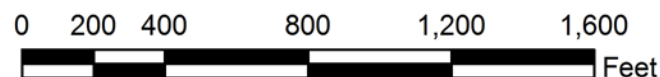
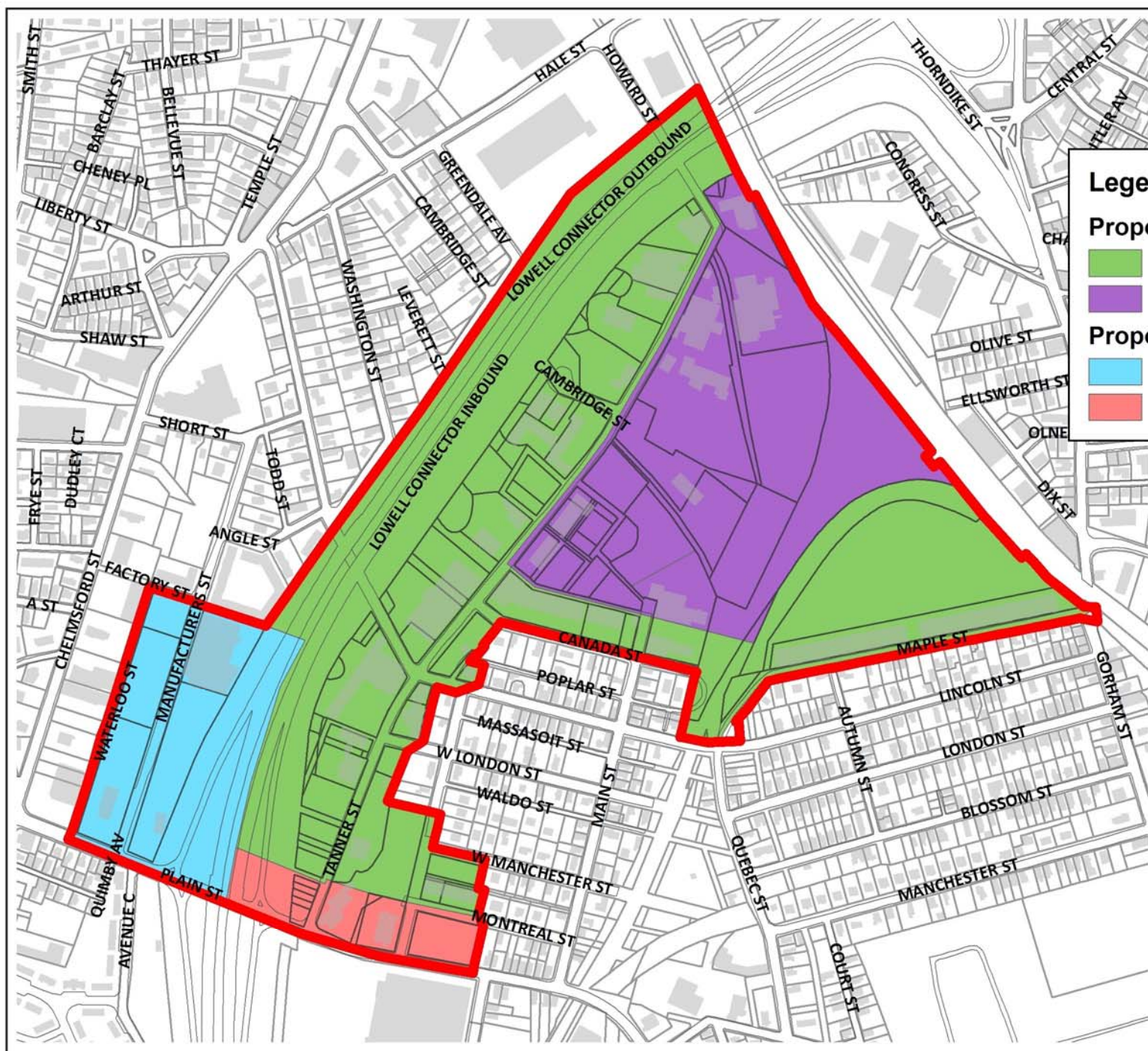


Table 2: Acquisition Parcels, Owners and Uses

(Gray parcels are acquisition parcels)						
Parcel Number	Property Address	Redevelopment Area	Legal Area	Owner	Current Use	Future Use
1	1 HOPE ST	N/A	5,000	TRS TUCCI AND SONS REALTY TRUST	Auto Scrap Yard	Industrial
1	1 BROOK ST	B	6,750	TUCCI RALPH ET UX	Vacant	Industrial
1.1	1.1 BROOK ST	B	6,750	TUCCI RALPH ET UX	Vacant	Industrial
2	2 RUSSELL ST	N/A	14,953	TRS TUCCI AND SONS REALTY TRUST	Auto Scrap Yard	Industrial
2	2 HOPE ST	D	13,164	TRS TUCCI AND SONS REALTY TRUST	Auto Scrap Yard	Industrial
2	2 TANNER ST	N/A	112,385	TANNER STREET GENERATION LLC	Power Plant	Power Plant
3	3 HOPE ST	N/A	10,000	TRS TUCCI & SONS REALTY TRUST	Auto Scrap Yard	Industrial
5	5 MAIN ST	N/A	6,250	KHALID RASHEED	Vacant Residential	Industrial
5	5 HOPE ST	N/A	2,800	TRS TUCCI AND SONS REALTY TRUST	Auto Scrap Yard	Industrial
9	9 BROOK ST	B	18,638	TUCCI RALPH ET AL	Vacant	Industrial
10	10 TANNER ST	C	179,032	TRS HYACINTH TRUST	Vacant	Industrial
12	12 TANNER ST	C	21,663	TRS HYACINTH TRUST	Vacant	Industrial
15	15 TANNER ST	A	26,750	MCNAMARA CHARLES E	Factory	Industrial
16	16 TANNER ST	N/A	182,055	SCANNELL BOILER WORKS	Factory	Factory
17	17 HOPE ST	N/A	15,813	TANNER CORPORATION	Industrial	Industrial
20	20 HOPE ST	N/A	11,728	TANNER CORPORATION	Industrial	Industrial
35	35 MAPLE ST	N/A	100,000	Multiple (Condominium)	Industrial	Industrial
35	35 TANNER ST	A	21,275	WALBERT PLASTICS INC	Vacant	Industrial
35	35 LOWELL CONN	A	4,135	CITY OF LOWELL	Vacant	Industrial
41	41 TANNER ST	A	37,290	TRS 41 TANNER STREET REALTY TRUST	Vacant	Industrial
48	48 CANADA ST	N/A	18,750	REDDS REALTY LLC	Warehouse	Warehouse
56.1	56.1 TANNER ST	C	78,022	SILRESIM CHEMICAL CORP	Superfund/Vacant	Industrial
66	66 PLAIN ST	N/A	69,191	MCDONALDS CORPORATION	Restaurant/Club	Restaurant/Club
66	66 CANADA ST	D	137,414	TRS TUCCI & SONS REALTY TRUST	Auto Scrap Yard	Industrial
75	75 MANUFACTURERS ST	N/A	22,500	TRS LAA REALTY TRUST	Parking Lot	Industrial
86	86 TANNER ST	N/A	56,048	SILRESIM CHEMICAL CORP	Superfund/Vacant	Superfund/Vacant
90	90 PLAIN ST	N/A	92,762	MAHONEY OIL CO INC	Fuel Service	Fuel Service/Industrial
90.1	90.1 TANNER ST	N/A	57,975	SILRESIM CHEMICAL CORP	Superfund/Vacant	Superfund/Vacant
92	92 TANNER ST	D	10,045	TUCCI RALPH ET AL	Auto Scrap Yard	Industrial
94	94 TANNER ST	D	33,430	TUCCI RALPH ET AL	Auto Scrap Yard	Industrial
95	95 MANUFACTURERS ST	N/A	52,270	TRS LAA REALTY TRUST	Parking Lot	Industrial
97	97 TANNER ST	A	40,541	SHEEHAN DANIEL J	Auto Repair	Industrial
97.1	97.1 TANNER ST	A	4,365	BURKE ELEANOR	Vacant	Industrial
108	108 TANNER ST	N/A	13,388	TUCCI RALPH ET AL	Auto Scrap Yard	Industrial
118	118 TANNER ST	N/A	13,388	TUCCI RALPH ET AL	Auto Scrap Yard	Industrial
118.1	118.1 TANNER ST	N/A	13,388	TUCCI RALPH ET AL	Auto Scrap Yard	Industrial
118.2	118.2 TANNER ST	N/A	10,000	TRS TUCCI & SONS REALTY TRUST	Auto Scrap Yard	Industrial
118.3	118.3 TANNER ST	N/A	850	TUCCI RALPH ET UX	Auto Scrap Yard	Industrial
118.4	118.4 TANNER ST	N/A	1,300	TRS TUCCI AND SONS REALTY TRUST	Auto Scrap Yard	Industrial
119	119 MAPLE ST	J	310,274	LAER CORP	Vacant	Park/Industrial
121	121 MAPLE ST	C & J	87,315	BOSTON & MAINE RAILROAD	Abandoned Railroad	Park/Industrial
121	121 TANNER ST	B	14,177	TUCCI RALPH ET AL	Vacant	Industrial
125	125 MONTREAL ST	N/A	13,000	Multiple (Condominium)	Industrial	Industrial
125	125 BROOK ST	N/A	496	H A L CORPORATION	Metal Recycling	Metal Recycling
125	125 TANNER ST	B	6,560	TUCCI RALPH ET AL	Vacant	Industrial
125	125 CAMBRIDGE ST	N/A	6,480	BOND JAMES	Vacant	Natural Resources
125.1	125.1 BROOK ST	N/A	18,218	HAL CORPORATION	Metal Recycling	Metal Recycling
126	126 CAMBRIDGE ST	N/A	14,801	CITY OF LOWELL	Vacant	Park
128	128 MAPLE ST	C	10,865	BOSTON & MAINE RAILROAD	Abandoned Railroad	Right-of-way
131	131 MONTREAL ST	N/A	5,625	JACOB PROPERTIES LLC	Warehouse	Warehouse
131	131 BROOK ST	N/A	11	H A L CORPORATION	Metal Recycling	Metal Recycling
131	131 TANNER ST	B	67,910	TRS TUCCI & SONS REALTY TRUST	Car Dealer Small	Industrial
131.1	131.1 MONTREAL ST	N/A	750	JACOB PROPERTIES LLC	Warehouse	Warehouse
131.1	131.1 TANNER ST	B	67,910	TRS TUCCI & SONS REALTY TRUST	Car Dealer Small	Industrial
131.1	131.1 BROOK ST	N/A	18,218	HAL CORPORATION	Metal Recycling	Metal Recycling
133	133 CAMBRIDGE ST	N/A	8,837	TRS O KEEFE CAMBRIDGE ST REALTY TRU	Auto Repair	Auto Repair
133	133 BROOK ST	N/A	18,218	HAL CORPORATION	Metal Recycling	Metal Recycling
137	137 CAMBRIDGE ST	N/A	8,161	D AMBROISE ROBERT L	Auto Repair	Auto Repair
143	143 CAMBRIDGE ST	N/A	20,564	D AMBROISE ROBERT L	Industrial	Industrial
147	147 CAMBRIDGE ST	N/A	31,490	BOND PROPERTIES LLC	Industrial	Industrial
148	148 TANNER ST	N/A	13,125	TANNER CORPORATION	Warehouse	Warehouse
148.1	148.1 TANNER ST	N/A	8,330	TANNER CORPORATION	Warehouse	Warehouse
149	149 TANNER ST	B	67,910	TRS TUCCI & SONS REALTY TRUST	Car Dealer Small	Industrial
151.1	151.1 LINCOLN ST	E	1,796	WYMAN S AUTO BODY INC	Vacant	Natural Resources
151.3	151.3 LINCOLN ST	E	1,200	THROPE SHIRLEY G ET ALS	Vacant	Natural Resources

157	157 LINCOLN ST	E	95	CITY OF LOWELL	Vacant	Industrial (Rehab)
158	158 TANNER ST	N/A	46,091	MAC S VENTURES LTD PARTNERSHIP	Factory	Factory
162	162 PLAIN ST	F & H	82,896	TRS D P & W CAR WASH TRUST	Car Wash	Retail/Industrial
162.1	162.1 PLAIN ST	F & H	82,896	TRS D P & W CAR WASH TRUST	Car Wash	Retail/Industrial
169	169 TANNER ST	N/A	87,712	INDUSTRIAL AEROSPACE LLC	Factory	Factory
170	170 LINCOLN ST	N/A	87,712	INDUSTRIAL AEROSPACE LLC	Factory	Factory
171	171 LINCOLN ST	E	26,359	KAZANJIAN ENTERPRISE INC	Factory	Industrial (Rehab)
174	174 LINCOLN ST	N/A	67,652	INDUSTRIAL AEROSPACE LLC	Factory	Factory
185	185 LINCOLN ST	N/A	87,712	D AMBROISE JOSEPH	Auto Repair	Auto Repair
190	190 PLAIN ST	G	26,359	VETERANS OF FOREIGN WARS	Restaurant/Club	Retail
190	190 LINCOLN ST	N/A	22,755	SPINNEY JOHN E	Car Dealer Small	Automotive Uses
198	198 PLAIN ST	G	38,985	VETERANS FOREIGN WARS	Parking Lot	Retail
204	204 LINCOLN ST	N/A	5,328	MAM MONOBOHT	Auto Repair	Auto Repair
220	220 TANNER ST	N/A	12,033	DAMBROISE ROBERT L	Warehouse	Warehouse
230	230 TANNER ST	N/A	8,952	H A L CORPORATION	Parking Lot	Automotive Uses
230.1	230.1 TANNER ST	N/A	8,952	H A L CORPORATION	Parking Lot	Automotive Uses
231	231 TANNER ST	N/A	8,500	H A L CORPORATION	Metal Recycling	Metal Recycling
235	235 TANNER ST	N/A	3,750	H A L CORPORATION	Metal Recycling	Metal Recycling
235.1	235.1 TANNER ST	N/A	500	H A L CORPORATION	Metal Recycling	Metal Recycling
237	237 HOWARD ST	N/A	30,248	GEOCHEM INC	Warehouse	Warehouse
249	249 TANNER ST	N/A	21,936	H A L CORPORATION	Metal Recycling	Metal Recycling
249.1	249.1 TANNER ST	N/A	18,218	HAL CORPORATION	Metal Recycling	Metal Recycling
251	251 TANNER ST	N/A	18,218	HAL CORPORATION	Metal Recycling	Metal Recycling
258	258 W MANCHESTER ST	N/A	15,000	MARLOWE DEGAN LLC	Warehouse	Warehouse
258.1	258.1 W MANCHESTER ST	N/A	2,000	MARLOWE DEGAN LLC	Warehouse	Warehouse
267	267 TANNER ST	N/A	8,406	TANNER CORPORATION	Metal Recycling	Metal Recycling
270	270 TANNER ST	F, G & H	43,283	TRS P L & D L REAL ESTATE TRUST	Metal Recycling	Right-of-way
270 Tanner Street is proposed for a partial acquisition of approximately 8,500 sqft at shown on Figure G: Parcels to be Acquired [12.02(1)]						
275	275 TANNER ST	N/A	2,464	TANNER CORPORATION	Metal Recycling	Metal Recycling
277	277 TANNER ST	N/A	2,297	TANNER CORPORATION	Metal Recycling	Metal Recycling
279	279 TANNER ST	N/A	5,883	TANNER CORPORATION	Metal Recycling	Metal Recycling
280	280 HOWARD ST	N/A	29,395	NOWAK PAUL JOSEPH	Factory	Factory
282	282 LINCOLN ST	C	258,931	LOWELL IRON AND STEEL CO	Vacant	Industrial
286	286 LINCOLN ST	N/A	115	BOSTON & MAINE RAILROAD	Vacant	Vacant
289	289 TANNER ST	F	1,456	TANNER CORPORATION	Car Dealer Small	Retail
291	291 TANNER ST	F	1,288	TANNER CORPORATION	Car Dealer Small	Retail
295	295 TANNER ST	F	1,120	TANNER CORPORATION	Car Dealer Small	Retail
297	297 TANNER ST	F	952	TANNER CORPORATION	Car Dealer Small	Retail
299	299 TANNER ST	F	4,877	CITY OF LOWELL	Car Dealer Small	Retail
450	450 CHELMSFORD ST	N/A	61,778	TRS LAA REALTY TRUST	Retail	Retail



Legend

Proposed Industrial Zoning

- Industrial Performance Standard
- Large Industrial Performance Standard

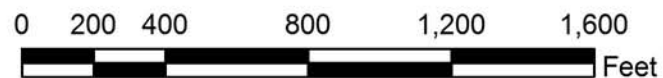
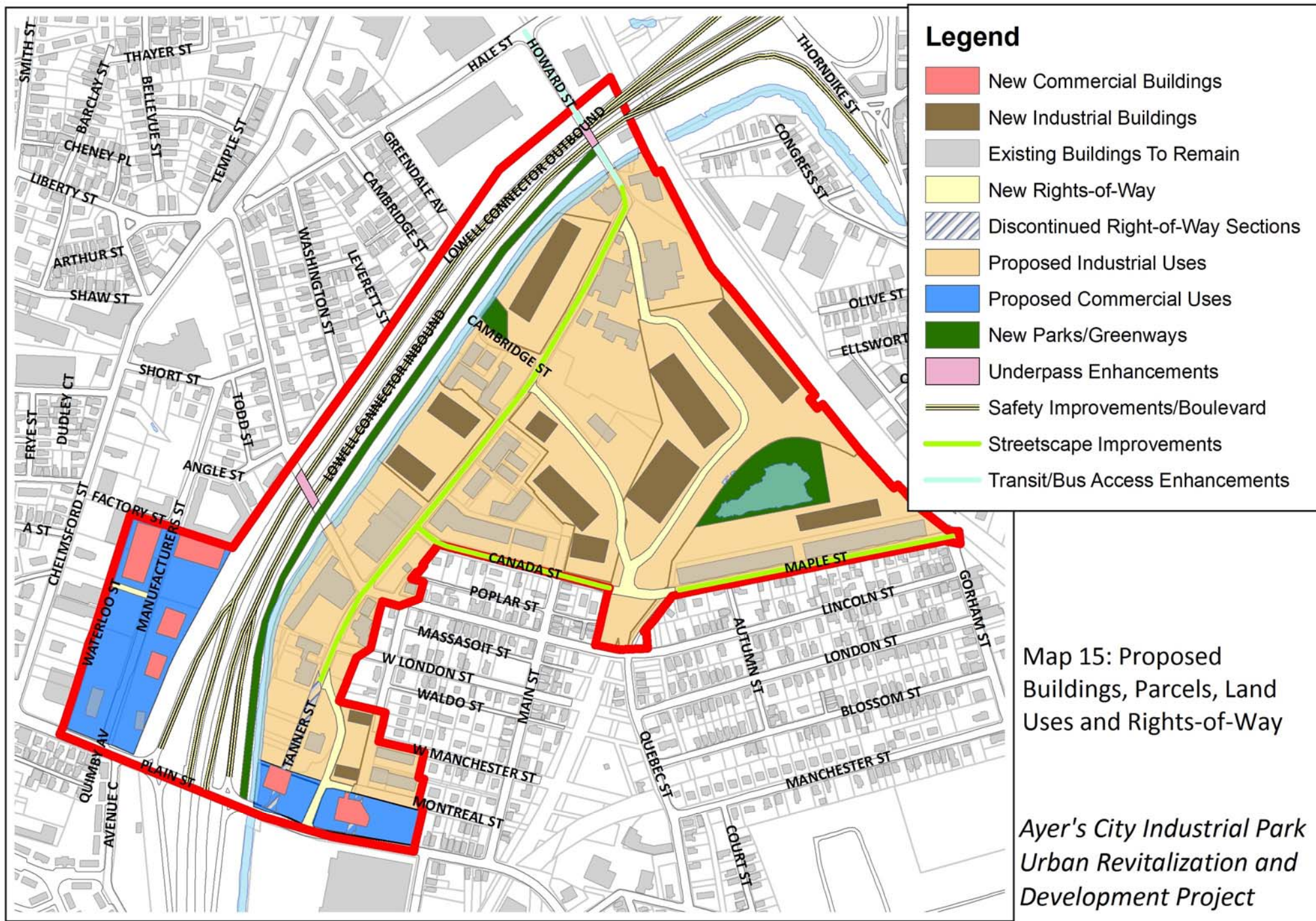
Proposed Commercial Zoning

- Manufacturers Business
- Plain Street Retail

Map 14: Proposed Zoning

*Ayer's City Industrial Park
Urban Revitalization and
Development Project*





12.02(2): Eligibility

Background Information

City of Lowell History

Lowell was America's first large scale planned industrial community. It was incorporated as a town in 1826 and a City in 1836. By 1840, Lowell had become the principal manufacturing center of the United States and a model for many similar ventures. The transformation from rural community to industrial mecca occurred in less than two decades and was one of the most rapid industrialization processes the country had ever experienced.

Lowell's geographical location at the confluence of the Merrimack and Concord Rivers attracted settlers to its banks for approximately 10,000 years. The site first served as an ideal location for Native American fishing camps and then to early English settlers who made use of the rich farmland along the rivers' floodplains. During the Industrial Revolution, the two rivers provided an abundance of inexpensive yet reliable waterpower for the mills. The level terrain, convenient access to Boston via the Middlesex Canal and to Newburyport via the Pawtucket Canal, and the Merrimack River were also geographical advantages that drew settlers.

In the 19th century, Lowell's City designers designated mill sites and canal routes as their highest priority. To facilitate the use of river power, mill complexes were constructed along the banks of the Merrimack and Concord Rivers, where the force of the watercourses were greatest. As corporations were founded, an intricate system of canals evolved to provide the necessary power. Eventually, 5.6 miles of canals were constructed, cutting up the City into seven islands as they fanned out across the landscape. The rest of the community developed within the confines of the V-shaped wall formed by the mills.

With the expansion of the mills during the 1830s and 1840s, a large middle class grew in three adjoining areas. Chapel Hill was the first neighborhood to develop. Development then spread to the Belvidere section of the City. In 1834, the remaining land above Nesmith Street was annexed to Lowell, which was then sold to developers to build expensive homes during the 1840s. Centralville was settled next and was annexed to Lowell in 1851. The introduction of the streetcar in the 1890's led to the development of Lowell's outlying areas, such as Tyler Park in the Highlands neighborhood. Pawtucketville became a part of the City in 1874.

By the 1860s, Lowell could not keep pace with the very forces of the industrial system it had generated. As the 19th century progressed, conditions in mills and corporate boarding houses became worse as overcrowding became prevalent. Tenement buildings were constructed throughout the City, and the neighborhoods grew to their present size.

Shortly after the turn of the century, Lowell's status diminished when the use of alternate forms of power production became widespread. It was also practical for many aging textile companies to move south where raw materials and labor were less expensive. For several decades, the City's economy

stagnated and the mills and canals fell into disrepair. It would be many decades before efforts were initiated to reuse these impressive facilities.

Lowell has proven that historic preservation and urban economic development can work hand-in-hand to improve a community. Urban disinvestment and decline were a familiar sight in America's older cities in the mid-twentieth century. Lowell was no exception to this phenomenon as the collapse of Lowell's once-thriving textile industry resulted in empty mill buildings and a decaying central business district. During the 1950s and 1960s, federal urban renewal funding became available to Lowell. These efforts relied on the now defunct concept of large-scale clearance instead of a parcel by parcel, building by building analysis to identify preservation priorities and target public actions.

In the early 1970s, planning efforts began to focus on preservation as a core element of the City's revitalization strategy downtown and urban renewal areas. The City established Lowell's first Historic District Commission and two local design review districts. Much of the downtown, mill yards, and canal system were placed on the National Register of Historic Places. The City invested in pedestrian improvements in the downtown that recreated the 19th century feel and provided design assistance for owners of historic properties. The establishment of the Lowell Heritage State Park in 1974 added credibility to Lowell's efforts to establish a National Park, and eventually lead to the creation of the Lowell National Historical Park (LNHP) in 1978 by federal law. That same law also established the Lowell Historic Preservation Commission (LHPC), which during its existence, assisted with much of the historically sensitive building rehabilitation that took place between 1979 and 1995.

The LNHP and the City have played an important part in fostering many public and private partnerships that are responsible for the rehabilitation of over 250 structures in the downtown, and the creation of extensive public programs to preserve and interpret the City's cultural resources. Several major mill complexes have been successfully renovated into housing and office spaces. Aluminum and stucco facades were removed from downtown buildings to reveal 19th century commercial storefronts. The banks of Lowell's canals have been largely reclaimed, providing areas of recreational enjoyment and interpretation of the City's rich history. Streetscape improvements including brick pavement, granite pavers, period lighting and benches have all been placed downtown to enhance the 19th century urban character of the City.

The City can currently be characterized as a highly urbanized community surrounded by wealthier suburban white-collar communities. The City has experienced a resurging economy over the past 20 years with a diversifying economic base including an industrial sector that remains active in the City, along with growing service and research/development sectors now playing a larger role in the region's economy. Most recently the University of Massachusetts at Lowell has taken a more active role in economic development, including new development projects providing additional student housing, research facilities and administrative buildings.

Emergence of Ayer's City¹

During the three decades after Lowell's founding in 1826 most industrial and urban development was concentrated in the vicinity of the Merrimack River and along the Concord near its confluence with the Merrimack. Lands along River Meadow Brook remained largely in the hands of long-time Chelmsford farm families. This area, with its marshy bogs and cultivated meadows, including hay fields, pasture lands, vegetable gardens, and fruit orchards, stood in sharp contrast to the nearby, heavily populated downtown of Lowell and the many massive brick factory buildings, commercial blocks, boardinghouses, and churches. With the exception of the Boston & Lowell Railroad line, which skirted the northern and eastern limits of River Meadow Brook, and the small industrial hamlet of Hale's Mills, little had changed along the stream from the late colonial era until the early 1850s.

The first significant transformation of the land in this area in the 19th century, however, began in 1850 when real estate speculator Daniel Ayer acquired land and platted the development he called "Ayer's New City." Born about 1815 in Canada near the Vermont border, Daniel Ayer first appeared in Lowell in the mid-1830s and initially worked as an operative in the Hamilton Mills. By 1839, Ayer owned a dry goods store on Merrimack Street and he married a young woman from Dracut.² Soon after 1848, Ayer began purchasing large parcels of real estate along River Meadow Brook, in the southern limits of Lowell, which were owned by a number of farmers.

At once, Ayer had his lands surveyed, subdivided, and platted. The "New City" was bounded by Tanner Street, to the west, Canada Street to the north, Quebec Street, to the east, and Plain Street, to the south. Ayer envisioned that industry would locate on Tanner Street, alongside a railroad line, and that most of the remaining parcels of land would be for

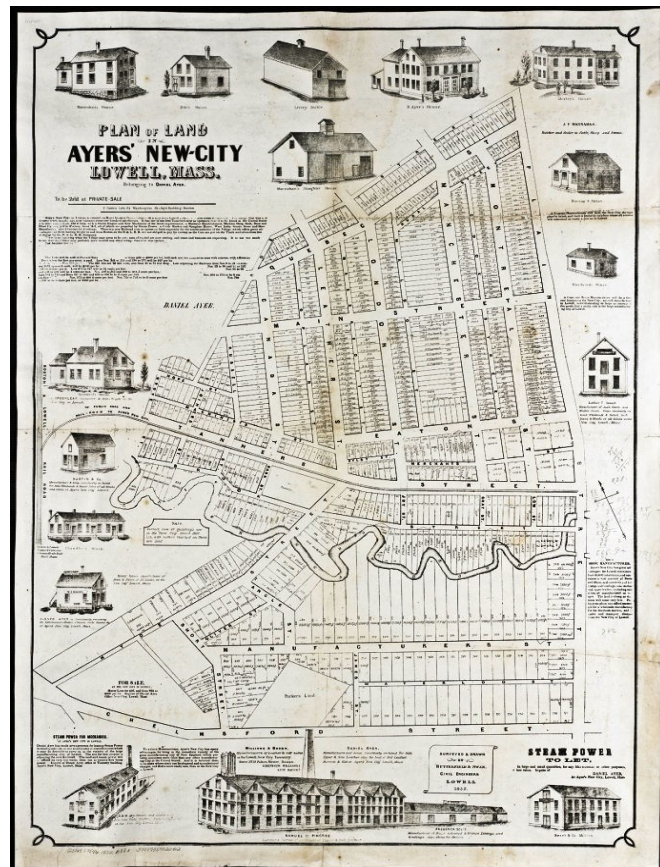


Figure 1: Ayer's City Original Plan

¹ Local historian Gray FitzSimons created this condensed history of Ayer's City, excerpted from a report with significant additional detail to Lowell Parks and Conservation Trust, which is herein lightly edited.

² The earliest biographical piece on Daniel Ayer appeared in a Lowell newspaper that reported on his first (and only) year as a representative in the Massachusetts legislature. This article noted that he was born in Canada in 1815 and reported that Ayer "is quite an operator in real estate and always gets a large company to attend his sales." See the *Lowell Daily Journal & Courier*, May 5, 1854. In the federal census of Lowell for 1850, however, Ayer's birthplace is recorded as Vermont. Ayer first appears in Lowell's city directories in 1837. A short obituary of Ayer is found in the *[Lowell] Saturday Vox Populi*, January 12, 1884.

dwelling or tenements (see Figure 1). He oversaw the initial construction work that centered on a tannery and several small manufacturing buildings, along with the establishment of a cattle market, all of which he personally financed. Importantly for his scheme, Ayer convinced officials of the Boston & Lowell Railroad to build a spur line along the brook to the tannery and cattle market, while pointing out that rail traffic to these new enterprises would be highly profitable.

Although Ayer touted that the New City would be home to many diverse manufacturing enterprises and would rectify the problem of Lowell's dependence on one industry, textiles, he had difficulty attracting other industrial interests. For the first two decades the tanneries, clustered around Tanner and Lincoln streets, formed the principal industry. The largest of the three employed about 100 men, many of whom were Irish immigrants. They produced leather goods primarily for the apparel trade, and in particular for manufacturers of gloves and shoes.³ There was little additional industrial development and by the late 1850s, Ayer's New City was simply called Ayer's City.

Industrial Growth in Ayer's City

With the exception of three tanneries, a grocery store, a small woodworking shop, and about a dozen residences, most of which were erected between 1851 and 1855, there was little new development into the 1870s. Along the brook, there remained numerous marshy areas and swamp lands. Those who resided elsewhere in Lowell, including elected officials, considered Ayer's City a remote location and the little development that had taken place, as well as the small population living in that locale, did not warrant any significant municipal services. The fire department established an engine house on Tanner Street in 1858, but only after a group of citizens petitioned the City council, following a fire that destroyed one of the neighborhood's few dwellings.⁴ These angry demands among some Ayer's City residents for a fire station marked the beginning of long-standing complaints of the need for improved municipal services in this section of Lowell.

The pace of industrial development in Ayer's City began to change in the 1870s aided by the completion of additional railroad lines through this section of Lowell. The first of these was the Framingham & Lowell Railroad which began operation in 1871. The Lowell & Andover Railroad followed three years later, backed by a number of local investors. While the major streets laid out in accordance with Ayer's original plan for the New City remained the dominant pattern for residential development, the new industries brought to this area were built along the rail lines. This included new warehouses and coal storage facilities that were established beginning in the 1870s and expanded over the next three decades.

Of the new industrial enterprises, the largest extended along the railroad spurs on Tanner Street. One of the most notable was the Coburn Shuttle Factory (see Figure 2). Erected in 1882 at the corner of Tanner and Lincoln streets, on a former tannery site, the Coburn Shuttle Company's factory consisted of a

³ Information on these early tanneries is found in Lowell city directories.

⁴ Unlike firemen at other engine houses in Lowell who were paid a nominal fee for their services, those in Ayer's City received no compensation. See "Municipal" *Lowell Daily Citizen & News*, June 23, 1858.

three-story brick building and a large wood frame factory.⁵ The Coburn factory, as with all other Ayer's City manufacturing establishments relied on steam power. Many of these drew boiler water drawn from River Meadow Brook. The Coburn Company manufactured a range of shuttles for cotton, woolen, and silk looms, as well as for jute. In addition, the firm produced bobbins and spools.

During the 1880s the number of residents living in Ayer's City grew. Although no census of this particular section of Lowell

was carried out, an examination of the decennial federal census in 1880 and 1900,

as well as City atlases and City directories, reveals that the population approximately doubled from about 200 to 500 individuals. Nearly half of the residents were either Irish immigrants or of Irish parentage, but the neighborhood also included New Englanders, French Canadians, Portuguese and Azoreans, and Swedes, along with a number of immigrants from England, Scotland, and Germany. Despite its growth, however, many in Lowell considered Ayer's City one of the least desirable places to live. The stench of the tanneries, a glue factory, and the heavily polluted River Meadow Brook, along with the heavy rail traffic and extensive network of railroad sidings, contributed to its unfavorable reputation. Adding to the insalubrious setting was the City's establishment of the first municipal garbage incinerator, called the Engle Crematory, on Plain Street in 1892.

While the tanning of leather goods remained an important industry in Ayer's City, two other major industries emerged here in the late 19th century. One centered on the production of iron goods, and the other on the brewing of beer. The iron goods manufacturers included two firms on Tanner Street, and two others along the rail line in the vicinity of Canada Street and near Plain Street. Of these four the largest were Scannell & Wholey's Boiler Works (later Scannell Boiler Works), and Richard Dobbins' Lowell Steam Boiler Works. Located on opposite sides of Tanner Street and opened at about the same time in the early 1880s, these two companies quickly became fierce rivals, producing not only steam boilers and penstocks, but other iron goods such as stairs and fire escapes.⁶

The most substantial enterprise in Ayer's City, however, was the Harvard Brewery, originally incorporated in 1893 as the Consumers Brewing Company (See Figure 3). Founded by a group of Irish-American businessmen from Lawrence and Lowell, the brewery

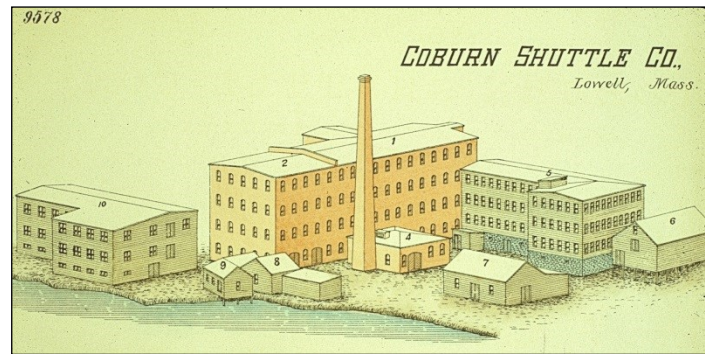


Figure 2: Historical Coburn Shuttle Co.

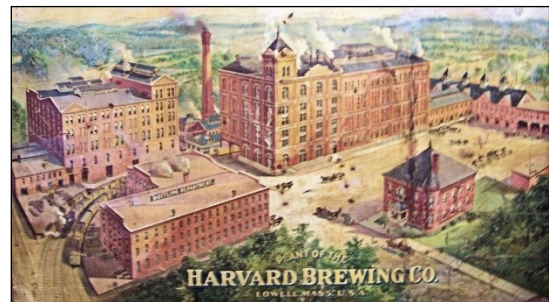


Figure 3: Harvard Brewery

⁵ Duane Hamilton Hurd, *History of Middlesex County, Massachusetts*, v. 2, (Philadelphia: 1890), p. 96. For information on the construction of the factory see a series of brief articles that appeared in the *Lowell Daily Courier*, January 28, 1882; January 31, 1882; and May 27, 1882.

⁶ "Boiler Making in Lowell," *Lowell Daily Courier*, February 13, 1882

opened the following year. It was located off Plain Street and drew water from artesian wells, which were part of the same aquifer in the River Meadow Brook valley that supplied the City with water, through a series of wells. Operating under a new name in 1898, the Harvard Brewing Company, production, distribution, and sales of this beer rose dramatically.⁷ Under Holloway's direction, the company expanded the brewery, which employed about 100 workers, who were primarily Irish and German immigrants, creating one of Lowell's finest industrial showplaces, with ornamented lawns and plantings until the advent of prohibition in 1919 halted the production of alcoholic beverages.

Industrial Decline

By all appearances Ayer's City, especially along the broad plain bordered to the west by River Meadow Brook, was a patchwork of industrial buildings, warehouses, coal trestles, stone piles, scrap yards, and dusty or muddy roads, with an extensive web of railroad tracks and rail sidings. Adding to this stark landscape were the oil storage tanks, offices, and warehouses of the Standard Oil Company, Gulf Refining Company, and the Texas Oil Company. Standard Oil had been the first major oil company to establish a storage facility in Lowell. This was in 1895 and the company located its tanks and warehouse next to the Union Iron Company's foundry.⁸

Observant rail passengers leaving Lowell on the old Framingham & Lowell Railroad would have seen a remarkably different landscape while looking out of the rail car windows toward the brook and beyond. A large barn and smaller sheds were visible in the distance, and farm fields, gently sloping down to the brook, were filled during the summer months with cabbages, fruit bushes, and potatoes. "This field of vegetables," a reporter remarked of this scene in 1922, "attracts much attention these days for many rail travelers look over the acreages, admiring the fruits of nature's offerings spread before their eyes on the rolling farm land."⁹ The tillers of this land, though, were not farmers. They were the inmates of the City's poor farm.

During the first two decades of the 20th century industrial and residential development in Ayer's City continued to grow, bolstered primarily by the expansion of manufacturing during the First World War. But a severe recession in 1921 and a massive collapse of New England's textile industry resulted in hard times for many of Lowell's working people. Ayer's City residents, composed primarily of wage-earners, struggled mightily as foundries, textile mills, and smaller manufactories curtailed production or closed

⁷ For a brief history of the brewery see Mehmed Ali, "The Harvard Brewing Company," exhibit brochure, (1995), at UMass Lowell's Center for Lowell History. Also, see "Brewery Organized," *Lowell Daily Courier*, March 15, 1893; "Brewery Change," *Lowell Sun*, January 25, 1898; "Brewery Meeting," *Lowell Sun*, January 27, 1898.

⁸ The aldermen approved Standard Oil's petition to build oil storage facility on Main Street in late 1894. See "Aldermen Accept Reports and Pass Resolution," *Lowell Sun*, December 6, 1894. Standard Oil relied on rail service to bring oil to its tanks, but shipped its goods in barrels carried in horse-drawn wagons. The Gulf Refining Company built a warehouse and storage tanks on Tanner Street along River Meadow Brook in 1910. See "Two New Buildings," *Lowell Sun*, December 13, 1910. The Texas Oil Company constructed its facility next to the Union Iron Foundry in 1914. It erected two storage tanks each with a capacity of 20,000 gallons. See "Texas Oil Company," *Lowell Sun*, May 22, 1914. In the early 1930s a fourth major oil company, the Shell Oil Company, acquired property on which the Texas Oil Company had built its facility and erected storage tanks with a total capacity of 250,000 gallons. See "Shell Oil Plant Here is Sold," *Lowell Sun*, August 3, 1943.

⁹ "The Man About Town," *Lowell Sun*, September 15, 1922.

altogether. Although a few industrial firms on Tanner Street, including the Lowell Insulated Wire Company, Scannell Boilers, and the Lowell Shuttle Company, continued to operate, other less fortunate owners of businesses or small manufacturing enterprises lost their property for back taxes. Indeed Tanner Street became home to a growing number of junk yards, garbage heaps, and shuttered warehouses. The Harvard Brewery, which for a short time produced non-alcoholic beverages, but, in 1925, was also raided by local police and federal agents for the illegal production of beer, was closed and its massive buildings stood vacant.

Economic Depression and Public Works

Economic conditions in Lowell merely worsened during the Great Depression. Of Massachusetts cities with a population of 100,000 or more, Lowell had the highest unemployment rate until World War II. Estimates of joblessness ranged from 25 to over 40 percent of the City's workforce. During the initial years of these hard times, unemployed and impoverished residents flooded City hall with requests for public assistance. At the same time local government officials and members of the business community sought to alleviate the economic plight by attracting new companies or plotting new developments.

Ayer's City figured into one proposal, which was perhaps also the most imaginative, namely, the construction of an airport and airplane factory. Thaddeus W. Parke, a local architect and civil engineer, came up with the idea in 1930 and developed a plan for a "municipal landing field" off Chelmsford Street, between Lincoln and Plain streets, and bordering the west bank of River Meadow Brook. Parke's design included four runways radiating from a circular apron ringed with hangars. Parke also called for relocating the brook between Tanner and Plain streets so that it would follow a relatively straight course. However, a privately developed air field, built in South Lowell, was already operating and a financially stressed municipal government proved unwilling to fund a second airport.

The election of President Franklin D. Roosevelt in 1932 and the subsequent launching of federally funded public works projects, helped alleviate some unemployment in Lowell. Ayer's City was chosen for one of the many Civilian Conservation Corps works and this entailed the straightening of a section of River Meadow Brook near the Harvard Brewery. Employment in Ayer's City brightened to some extent following the repeal of Prohibition and the reopening of the Harvard Brewery. The brewery, which soon hired over 300 men and women, was the largest single employer in Ayer's City.¹⁰ However, the federal government seized the property and, although the brewery was run under the aegis of the federal government until 1956, it was then put up for bid. A disastrous blaze in 1961 destroyed the brew house, obliterating one of the most impressive architectural landmarks not only in Ayer's City, but in all of Lowell.¹¹

¹⁰ "Harvard Brewery To Turn Out Beer Again," *Lowell Sun*, December 12, 1932. The rehabilitation of the brewery buildings and surrounding lands was carried out in 1933 under the direction of the Lowell contracting firm of Robinson & Robinson, headed by John W. Robinson and his partner, Priscilla Robinson, who was also his daughter. See "Lowell Firm Had Contract," *Lowell Sun*, September 28, 1933.

¹¹ Louis O. Beede of Lynn, Massachusetts, purchased the brewery property from the Hampden Company. Beede produced sawdust in the former brew house. A sawdust explosion and fire in 1961 seriously injured three employees and destroyed the building. "Fire Destroys Brewery Building," *Lowell Sun*, March 7, 1961.

Early Redevelopment Efforts

The most dramatic change to the landscape of Ayer's City and River Meadow Brook occurred in 1960-62 when the Lowell Connector highway was constructed. The large-scale project encompassed not only the building of a limited-access, four-lane, divided highway, but also the rerouting and straightening of River Meadow Brook. Essentially the vastly altered brook was to serve as a drainage ditch for the modern roadway.

The Lowell Connector originated with a master transportation plan in 1956 for a new highway extending from Lowell to Lawrence and Haverhill, and on to its juncture with Route 1 near Salisbury, Massachusetts. The plan for this highway, which would become Interstate 495, included a major arterial road that connected Lowell with the "new Route 3 expressway to Boston."¹² The very first phase of the work comprised the relocation of River Meadow Brook, which included altering the course of the brook at the interchange between I-495 and the Connector and the excavation of a mile-long ditch for the relocated stream in Lowell, along with the earthwork related to the filling and grading of the old streambed, above which the highway was built. All of the old bridges crossing the brook at Plain, Lincoln, and Howard streets into Ayer's City were to be removed and replaced with new spans across the relocated channel.

The channel of the relocated brook was constructed with a uniform width of 16 feet at the base of the streambed and gently sloped with stone rip rap and earth embankments. The width between the stream banks varied from 40 to 50 feet. Contractors planted grass on either side of the brook. The serpentine course of the brook and its many marshy bogs, which were so familiar to Ayer's City residents, was eliminated. Instead, a straight channel extended nearly one mile along the base of the hill of the Lowell Connector that diminished the visual prominence of the brook on the Ayer's City landscape. Interestingly, to save on construction costs the brook's relocation entailed only the building of an earth-lined and rip-rapped ditch, rather than a concrete-lined channel. Over the years, as vegetation thickened the brook, though visually less noticeable, achieved a more natural appearance, even if the extremely straight course of the channel was clear evidence of its re-engineered function.

In the 1960s, with the encouragement of Lowell's planning department, parts of Ayer's City experienced some new development. The most highly publicized commercial project was the building of a new shopping center off Plain Street in which a Sears & Roebuck department store opened in 1964. The developer, Star Properties of Lowell, Inc., purchased land next to the defunct Lowell Brewery from the New Industrial Plants Foundation and, after receiving a variance to build a commercial building in an industrial district, sold the property to Sears & Roebuck. In addition to 60,000 square feet of retail space, the "low-slung, steel frame and brick building" contained a warehouse area and offices.

For Ayer's City the largest scale redevelopment project emerged in 1966 when the Lowell Redevelopment Authority (LRA), established in 1961 to oversee the planning and execution of Lowell's federally funded urban renewal efforts, proposed a major urban clearance initiative of the Hale-Howard

¹² "Plan Lowell-Route 3 Access in \$90,000,000 Master Highway Plan," *Lowell Sun*, January 13, 1956. In this master plan the highway which would become I-495 was called the "Route 110 limited access expressway."

neighborhood, which included Tanner Street. The Hale-Howard project was the City's second "slum removal" effort of the post-World War II period, the other being the demolition and redevelopment of the "Little Canada" neighborhood, which was part of the Northern Canal Renewal Area. Although the City encountered some community resistance to this project in 1963 and 1964, opposition to Hale-Howard and the proposed Tanner Street project was far more intense due to the misplaced use of widespread clearance. Indeed, the protests voiced by several community organizations and neighborhood residents reflected a small but growing movement against a powerful coterie of businessmen and City officials who directed Lowell's redevelopment initiatives.

In spite of this spirited opposition the City council approved the Tanner Street project by a vote of 5-3. Public debate continued, however, as the Hale-Howard project received more scrutiny within Lowell, as well as between federal and local officials. In the end the City council dropped the Ayer's City portion of the redevelopment initiative. The City Development Authority, which had replaced the LRA, oversaw the five-million dollar Hale-Howard urban renewal work. The project was carried out in the early 1970s with the demolition of dozens of residential buildings, many in very poor repair.

An Environmental Catastrophe

Although over the decades Ayer's City residents faced various threats from floods, as well as from air and water pollution, the most significant environmental disaster occurred in the 1970s at the Silresim Chemical Corporation's plant on Tanner Street. Established in 1971 by John and Constantine Miserlis to reclaim petrochemical wastes, Silresim operated less than six years, but it created a five-acre site the U.S. Environmental Protection Agency declared a Superfund site in 1983.

The Miserlis brothers chose to locate their waste recycling plant on the site of the former Shell Oil Company's storage facility and next to the Scannell Boiler Works because it had good rail and truck connections, along with "pumps and storage facilities for 180,000 gallons." Industrial wastes in metal barrels arrived at Silresim and, by 1974, the petroleum and chemical wastes were processed with a thermal oxidizing unit, which enabled the heating of various volatile organic compounds and the recovery of chemical solvents and oils. Fires in 1975 and 1977 raised concerns about the safety of the operation, but few were aware that the Silresim Company was not only struggling financially, but engaging in illegal dumping of hazardous wastes.¹³ Company officials were cited by the state for repeated violations of environmental laws, including the illegal discharge of contaminated wastes into City sewers. The state moved to close down the facility in 1976, but the company declared bankruptcy in 1977, leaving the state responsible for the containment and cleanup of the toxic wastes.

A New Ayer's City

After pressure from local residents led to the rejection of the Ayer's City renewal project in 1966, the City turned its attention to planning and redevelopment initiatives in other parts of Lowell. It was not until 2001, with funds from the U. S. Environmental Protection Agency (EPA), that the City's planning

¹³ "From Day to Day," *Lowell Sun*, June 27, 1975; "Lowell Firemen Contain Raging Fire at Chemical Firm," *Lowell Sun*, October 22, 1977. A short circuit in a repaired electrically powered pump sparked the fire. "Fire Department Rules Fire Accidental," *Lowell Sun*, October 24, 1977.

department examined in a comprehensive manner the Tanner Street district. A concept plan, created by Chris Reed and his associates at Stoss Landscape Urbanism, called for a mixed commercial and industrial corridor. The Stoss Plan recommended zones of heavy industry, light industry, commercial, and office use.

Silresim site remediation continued throughout and after the Stoss planning process. With funds amounting to \$20 million from the American Recovery and Reinvestment Act of 2009, EPA administered a project which used an innovative thermally enhanced soil vapor extraction technology with electrical resistive heating to remove hydrocarbons and volatile organic compounds from soil.¹⁴ In 2010, the City received a \$175,000 “Brownfields Area-wide Planning Pilot Grant” from EPA to build on the redevelopment concepts, including the Stoss Plan, to create a plan, hereafter referred to as the “EPA Plan,” to maintain the industrial nature of the corridor while providing public-sector actions to kick-start new development.

Project Location

Ayer’s City Industrial Park creates a coherent and recognizable place which seeks to weave together a collection of industrial uses, public open spaces and the surrounding neighborhoods in conformance with and to support the Commonwealth of Massachusetts Sustainable Development Principles. Ayer’s City Industrial Park is bounded as follows:



Figure 4: Ayer’s City Industrial Park Boundary

- The northernmost point of Plan Area is the intersection of the Lowell Connector right-of-way with the MBTA's commuter rail tracks. From there, the boundary continues southeast along the western edge of the tracks to the intersection of Gorham Street and Maple Street.
- The boundary continues west on Maple Street and then follows Quebec Street south to Lincoln Street, crosses the abandoned railroad tracks and follows the western edge of the railroad right of way north to the south side of Canada Street, where it continues west to the back of the parcels fronting on the east side of Tanner Street.
- The boundary continues south along Eaton Street to West Manchester Street where it continues east to the back of the parcels fronting on the east side of Eaton Street and then south to Plain Street.
- Plain Street forms the southern boundary. The boundary continues north from Waterloo Street to Factory Street. At that point, it continues east to the western edge of the Lowell Connector right of way and follows that edge north to the starting point.

¹⁴ “New System to Speed Up Cleanup at Silresim Site in Lowell,” *Lowell Sun*, August 16, 2011.

Project Area Existing Conditions

Land Ownership

Ayer's City Industrial Park is comprised of 99 parcels of land, totaling 70.7 acres; including rights-of-way and River Meadow Brook, the area includes 108 acres. According to the City Assessor's records there are 40 individual land owners, of which the 18 largest own more than one acre each and the remaining 22 owners own less than one acre each. This faulty parcelization necessitates parcel assembly for modern industrial use. The largest land owners are as follows:

Table 3: Significant Land Owners in Ayer's City Industrial Park		
Owners	Parcels Owned	Total Acres
Lowell Iron & Steel/Scannell Boiler Works	6	15.43
TRS Tucci & Sons Realty Trust/Tucci Ralph et al	22	8.41
Laer Corp	1	6.96
Tanner Corp/PL & DL RE Trust/HAL Corp	26	4.75
Silresim Chemical Corp	3	4.32
LAA Realty Trust	3	3.02
Boston & Maine Railroad	3	2.71
Montgomery L'Energia Power Partners	1	2.47
Gerald F McMahon Jr.	1	2.4
Industrial Aerospace LLC	4	2.35
Mahoney Oil Company Inc.	1	2.05
DP&W Car Wash Trust	2	1.91
Kazanjian Enterprise Inc.	1	1.82
McDonalds Corporation	1	1.58
Veterans of Foreign Wars	3	1.43
Mac S. Ventures Ltd. Partnership	1	1.06
Daniel J Sheehan	1	1.02
Robert L D'Ambroise	4	1.1
Total	84	64.79

Land and Building Use Data

Ayer's City Industrial Park (ACIP) land is primarily in industrial, auto-related and open-lot storage uses. City Assessor records and site verification show over 22 percent of the land within ACIP is vacant when

similar use categories were aggregated. Land in auto-related uses accounts for 11.2 percent of ACIP area, although this number is actually higher as many of the parcels classified as industrial, which comprise over 14 percent of ACIP, are actually a mix of uses including auto-repair or other auto-related uses. The complete land use breakdown is as follows:

Table 4: Land Use in Ayer's City Industrial Park		
Use	Acres	Percent of Total
Right-of-Way	34.46	31.89%
Vacant	24.09	22.29%
Industrial	15.42	14.27%
Other: fuel service, power facility, RR	6.7	6.20%
Water	4.04	3.74%
Warehouse	3.91	3.62%
Commercial	2.69	2.49%
Auto Repair*	2.79	2.58%
Car Storage*	2.65	2.45%
Scrap yard	2.46	2.28%
Auto Sale*	2.39	2.21%
Parking (designated as off street)*	2.37	2.19%
Restaurant/club	2.19	2.03%
Car wash*	1.91	1.77%
Residential	0	0%
Retail	0	0%
Park (Open Space)	0	0%
Total	108.07	100.00%

*A total of 11.2% of the land area is in auto-related use.

Building use is shown in Table 3. Out-buildings such as garages were classified the same as the use to which they belong. Buildings visibly vacant from the outside were classified as vacant. Individual vacant units within buildings were not counted. As with land use, auto-related use is actually higher as many of

the buildings classified as industrial are a mix of uses including auto-repair or other auto-related uses. The following table provides the complete listing of building use:

Table 5: Building Classification in Ayer's City Industrial Park				
Building Use	Number of Buildings	Percent of Total Buildings	Building Square Footage	Percent of Total Building Square Footage
Industrial	14	31.11%	223,472	37.33%
Vacant	5	11.11%	115,046	19.22%
Warehouse	10	22.22%	80,882	13.51%
Power generation	1	2.22%	64,896	10.84%
Office	1	2.22%	42,378	7.08%
Auto-related	8	17.78%	26,590	4.44%
Restaurant/club	2	4.44%	20,515	3.43%
Commercial	2	4.44%	18,100	3.02%
Fuel sales	2	4.44%	6,836	1.14%
Residential	0	0.00%	0	0.00%
Retail	0	0.00%	0	0.00%
Total	45	100.00%	598,715	100.00%

Brownfields

CDW Consultants, Inc. (CDW), on behalf of the City of Lowell, conducted a district-wide environmental assessment within the Ayer's City Industrial Park for the evaluation of site conditions and to inventory Brownfields sites as part of the EPA plan. The assessment consisted of reconnaissance, document research to identify potential environmental concerns, an environmental database review, and interviews with local officials and agency employees on eleven (11) focus areas (See figure 5, which is available as a full-size map in Appendix 1). As a result of the assessment, an Existing Conditions Report was produced which summarized preliminary information to establish existing conditions in Ayer's City Industrial Park, to narrow the planning focus for the best use of Brownfields resources for viable economic redevelopment, and then to develop recommendations to support the planning study (Full report available in Appendix 1).

Figure 5: Eleven Brownfields Focus Areas

Brownfields Focus Area	Owner	Wetlands Resources	Silresim Impacts	Release Tracking Numbers	Activity and Use Limitations	Recognized Environmental Conditions	Total
A	Private	YES	2	0	0	7	9
B	Private	YES	2	0	0	4	6
C	Private	NO	3	0	0	3	6
D	Private	NO	3	0	0	6	9
E	Private	YES	0	2	1	5	8
F	Public	YES	0	0	0	4	4
G	Private	NO	0	0	0	2	2

H	Private	NO	0	0	0	3	3
I	Private	NO	4	1	0	6	11
J	Private	YES	2	0	0	2	4
K	Private	NO	0	0	0	2	2

Based upon the results of the ranking, Brownfields Focus Areas G, H, and K, located at the southern end of the industrial park, have the fewest points due to the least amount of RECs, RTNs or documented impacts from Silresim. Higher scores for the other Brownfields Focus Areas represent a number of RECs, some of which might limit feasible redevelopment options and include the following:

1. Contaminated subsurface soil or groundwater may be present due to historic industrial uses. Contaminants may include heavy metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), chlorinated compounds, polychlorinated biphenyls (PCBs), dioxins and furans, petroleum hydrocarbons (such as fuel oil and waste oil) coal tar, oil and grease and fly ash.
2. Contaminated subsurface soil or groundwater may be present due to current industrial uses. Contaminants may include heavy metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), chlorinated compounds, petroleum hydrocarbons (such as fuel oil and waste oil), and oil and grease.
3. Contamination with petroleum hydrocarbons from former, existing or unknown underground storage tanks and undocumented spills.
4. Contamination with VOCs, SVOCs, metals, PCBs, and pesticides as a result of the Silresim Superfund Site.
5. Potential contamination from two RCRASQGs, and one CESQG.
6. Current and historic railroad and related operations which may have contaminated the area with petroleum hydrocarbons, waste acids and caustics, heavy metals, VOCs, BTEX, solvents, fuels, oil and grease, and PCBs.
7. Existing Activity and Use Limitations (AULs).

Significant costs will be associated with the assessment and remediation of Brownfields Focus Areas A through K as each will be fully or partially redeveloped; a cost estimate for these actions, developed with a Licensed Site Professional (LSP), is included in the Project Budget in 12.02(4). Further study will be required to properly identify RECs which are applicable to individual properties and the extent to which further environmental review and investigation is warranted. It is anticipated that prior to redevelopment, particularly in those focus areas in which higher scores were documented, individual properties will require full Phase I Environmental Site Assessments. For those properties with buildings, a Hazardous Building Materials Inspection may be required.

Incompatible Land Uses

The significant density of auto-oriented lots clustered in such proximity, especially open-lot uses, negatively impact the possible industrial redevelopment on ACIP parcels. The auto-oriented focus is a legacy of past zoning that pushed these less desirable uses from other areas. These uses produce few

jobs and detract from the desirability of the industrial area. In addition, the areas where residential uses abut industrial uses need thoughtful streetscape improvements to support successful neighborhoods and ensure viable industrial uses.

Many of the businesses and land uses, especially car scrap yards, exist in the Plan Area today as a legacy of the perceived and real contamination of the area, especially the Superfund site, precluding modern industrial redevelopment. The Ayer's City Industrial Park implementation will utilize targeted interventions to change this vicious cycle of degrading land uses.

Private Enterprise Not Sufficient

A review of site development in Ayer's City Industrial Park, outlined previously in Table 5, demonstrates an inability for private enterprise to overcome identified issues of faulty parcelization and contamination. There are few buildings compatible with modern building codes and the overwhelming majority of recent buildings are small, single-story industrial corrugated steel structures constructed with reduced lifespans and less opportunity for reuse beyond the current uses and/or owners. The following table documents the age of buildings constructed in ACIP:

Table 7: ACIP Building Ages	
No. of Structures	Period (Years)
10	Pre-1940
15	1940 - 1970
16	1971 - 1999
4	Last 15 years (2000 - 2014)

Comprehensive Survey and Finding of Decadence

The City Administration and Council declare that it is in the best interest of the City of Lowell and of the general welfare of its citizens to undertake an Urban Revitalization and Development Project in accordance with the Ayer's City Industrial Park and in accordance with the overriding planning objectives outlined in the Sustainable Lowell 2025 Master Plan and Zoning Ordinance.

Under Massachusetts General Law, Chapter 121B, Sections 45 and 46, the Lowell City Council are required to make findings that the Area is substandard, decadent or blighted in order to undertake urban renewal activity. Based on the information summarized herein, the Council finds that the Area is decadent, and that it is unlikely to be redeveloped by the ordinary operations of private enterprise.

A "decadent area" is defined by Massachusetts General Laws Chapter 121B as "an area which is detrimental to safety, health, morals, welfare or sound growth of a community because of the **existence of buildings which are out of repair, physically deteriorated, unfit for human habitation, or obsolete, or in need of major maintenance or repair, or because much of the real estate in recent years has been sold or taken for nonpayment of taxes** or upon foreclosure of mortgages, or **because buildings have been torn down and not replaced** and under existing conditions it is improbable that the buildings

will be replaced, or because of a substantial change in business or economic conditions, or because of inadequate light, air, or open space, or because of excessive land coverage or **because diversity of ownership, irregular lot sizes or obsolete street patterns make it improbable that the area will be redeveloped by the ordinary operations of private enterprise**, or by reason of **any combination** of the foregoing conditions" (emphasis added).

The City undertook a survey of the Area which included inspection of 100% of the exteriors and 11% of the interiors of all 45 buildings and assembled data from a variety of other sources to support its finding that the Area is in fact decadent and that it is improbable that the Area will be redeveloped by the ordinary operations of private enterprise.

The Council's finding of decadence is based upon a survey of all buildings within the Area, not only buildings slated for acquisition, and the following information has been compiled from the survey:

1. Within the Area 53% of the existing buildings (53% of the building square footage) are out of repair, physically deteriorated, unfit for human habitation, obsolete, or in need of major maintenance or repair.
2. Nine (9) properties or nine percent (9%) of all properties within the Area have been foreclosed upon or are in the tax title process by the City for failure to pay real estate taxes to the City of Lowell. This includes three parcels (totaling 4.32 acres) that comprise the Silresim Superfund Site.
3. Diversity of ownership, irregular lot sizes and obsolete street patterns have made it improbable that the ordinary operations of private enterprise can assemble parcels for redevelopment.

The supporting documentation for each finding is as follows:

1. **Within the Area 53% of the existing buildings are out of repair, physically deteriorated, unfit for human habitation, obsolete, or in need of major maintenance or repair.**

Table 8: Ayer's City Industrial Park Building Condition		
Existing Building Condition	Existing Amount	Percent of Existing
Number of deficient buildings	21	47%
Square footage (SF) of deficient buildings	275,353	46%
Number of structurally deficient buildings	3	7%
SF of structurally deficient buildings	39,960	7%
Number of deficient and structurally deficient buildings	24	53%
SF of deficient and structurally deficient buildings	315,313	53%

Building conditions were determined by field surveys conducted during 2012. The field surveys rated structures as standard, deficient or substandard on the basis of exterior conditions as well as a representative number of interior surveys. Structural observations for each individual building were recorded in the field and placed on file.

Structural deficiencies and defects were divided into the following categories of severity:

- Major:** critical structural damage correctable only by major repairs or clearance.
- Serious:** defects seriously affecting structural soundness and non-structural deterioration for which correction involves costs far above those incurred by normal maintenance.
- Minor:** conditions contributing to structural weakness as well as non-structural conditions correctable within the costs of normal maintenance.

To be structurally substandard to a degree warranting clearance, a building must have one of the following combinations of deficiencies:

1. Two major deficiencies
2. One major and two serious deficiencies
3. Four serious deficiencies
4. One major, one serious and five minor deficiencies
5. Three serious and six minor deficiencies

It should be noted that a structural component could not be counted more than once in the enumeration of deficiencies -- e.g. if the columns and beams of a building had major splits as well as serious sagging, columns and beams would only be counted once as a major deficiency.

To be substandard (deficient) and included in the general project eligibility count a structure must have more than one serious deficiency or one serious deficiency and more than five minor deficiencies.

Although structural defects were the primary basis for determining required clearance, the interior surveys also determined the presence and condition of basic facilities and utilities:

- 1) Adequacy of artificial and natural lighting
- 2) Adequacy of mechanical and artificial ventilation
- 3) Adequacy and condition of electrical service
- 4) Adequacy, type, and condition of heating systems
- 5) Adequacy of fire protection
- 6) Presence and condition of sanitary facilities
- 7) Number, type, and condition of elevators
- 8) Number, type, and condition of loading facilities

The adequacy of these facilities and utilities were evaluated in terms of prevailing building codes and sanitary codes.

As previously noted in the Building Deficiencies Map (see Section 12.02, Map 10), building deficiencies are distributed throughout the Area and do not leave any significant portions of the Area free from this condition. Specifically, pursuant to findings required in 760 CMR 12.02(2), more than 50 percent of the floor area of each of the four clearance areas is functionally obsolete, structurally substandard or is not reasonable capable of being rehabilitated for productive use.

2. Nine (9) parcels out of 99 (9%) comprising the Ayer's City Industrial Park Urban Renewal Area have been foreclosed upon or are presently in tax title.

The number of properties presently in foreclosed upon or in tax title foreclosure indicates an area that is experiencing hardship. The properties are not located in just one portion of the site, but rather are indicative of area-wide problems. This includes three parcels (totaling 4.32 acres) that comprise the Silresim Superfund Site, as well as several small land-locked parcels which would be difficult to develop as individual parcels.

It is hard to establish why this condition has occurred, but it may signify that the property owners have a deep lack of confidence in the successful redevelopment of the Area.

As an integral part of The Plan, several of these parcels will be disposed of in concert with parcels designated to be acquired under The Plan to facilitate the redevelopment of the Area. The parcels would contribute to parcel assemblage, one of the more critical aspects to successful redevelopment.

3. Diversity of ownership, irregular lot sizes and obsolete street patterns have made it improbable that the ordinary operations of private enterprise can assemble parcels for redevelopment.

Obsolete street patterns reduce access to the district, which diminishes the marketability of available industrial sites, and divide legal ownership of redevelopment sites. The street network does not provide safe, convenient access from Plain Street for commercial trucks and several redevelopment areas currently have a single access point or none at all. In addition, when Daniel Ayer created the original industrial subdivision on and around Tanner Street he added several small streets including Hope Street, Brook Street, and Russell Street, among others, which divide legal ownership of otherwise contiguous redevelopment sites. The streets were designed to create access to parcels that are too small for modern industrial uses, but currently add an additional obstacle to redevelopment of existing sites.

With 40 individual property owners, 18 of which own lots of a size over one (1) acre and only six (6) property owners which own lots over three (3) acres, a very diverse ownership structure exists. This is indicative of a core issue impacting the Plan Area; namely that small parcel sizes are not sufficient for modern industrial uses. Diverse ownership is inhibiting the assemblage of parcels large enough for economically viable redevelopment.

In addition to a high percentage of vacant land, many of the parcels have low utilization. The Floor Area Ratio (FAR: the ratio of building square footage to land square footage) allowed by existing zoning is 2.0, for a total potential build-out of 6,276,704 square feet. The existing build-out of 608,411 square feet represents an FAR of 0.19, representing only 9.7% of the allowable FAR.

This low FAR is in part due to the fact that many of the vacant parcels, and some of the developed parcels, are irregularly shaped with poor access and narrow frontage or depth. For example:

- 10 Tanner Street, a 3.55 acre parcel, has only 20 feet of frontage.
- 12 Tanner Street, a 0.48 acre parcel, is only 15 to 30 feet wide for the entire length of the parcel.
- 92 Tanner Street, a 0.25 acre parcel, is only 8 to 20 feet wide for the entire length of the parcel.
- 282 Lincoln Street, a 6.15 acre parcel, has only 50 feet of frontage.

All of these factors together – diversity of ownership, irregular parcel size and configuration, low FAR and high vacancy rates – underscore the need for a strong targeted intervention through M.G.L. CH. 121B and facilitation by the City to encourage parcel consolidation and redevelopment.

Area Eligibility Findings: A Decadent Area

The conditions described in the findings set forth in the preceding pages have substantially impaired the sound growth of the Area, decreasing the value of private investment. Based upon the data contained and referenced in the Ayer's City Industrial Park Urban Revitalization and Development Plan, the City Administration and the City Council find that the Area is in a decadent condition which is beyond remedy and control solely by the existing regulatory process in place, and cannot be dealt with effectively by the ordinary operations of private enterprise without the aid provided for in this Plan. Therefore, the redevelopment and/or rehabilitation of the Area, by the means set forth in this Plan and in accordance with the Comprehensive Plan, is necessary in order to achieve the permanent and comprehensive elimination of the decadent conditions in the Area.

12.02(3): Project Objectives

Ayer's City Industrial Park Urban Revitalization and Development Plan is crafted around a framework of recommended improvements to parcelization, multi-modal access and circulation, open space and urban design. All of the recommendations are designed to support the transformation of the Ayer's City Industrial Park into a place that is both economically and environmentally sustainable, with new clean industries creating jobs to reduce Lowell's unemployment burden; and an attractive, healthy environment with improved multi-modal transportation opportunities and access to natural resources. When implemented, The Plan will result in:

- Brownfields clean-up and redevelopment
- 334,000 square feet of new development
- \$1.38 million in new annual tax revenues to support a DIF infrastructure fund
- Two new parks and a new greenway
- Improved gateways and streetscapes
- New and improved multi-modal access and circulation
- New zoning to support redevelopment

This chapter sets out the conceptual redevelopment strategy for the Ayer's City Industrial Park over the life of the 20-year plan consistent with the Vision and Goals outlined herein. Based on industry standards and local project experience, the City expects the project to generate up to 200 construction jobs (based on 50 jobs per 100,000 square feet of development and 33 jobs from infrastructure) and up to 670 permanent jobs (based on 2 jobs for every 1,000 SF of development) over the life of The Plan. Actual job creation will be based upon market conditions and the timing of each redevelopment project.

Vision

The City of Lowell used the EPA Plan process, especially a series of public meetings detailed in section 12.02(11), to build consensus around the vision, goals and objectives for the redevelopment of the Tanner Street corridor into Ayer's City Industrial Park. Residents, business owners and City planners worked to build a vision aimed to create good jobs, improve environmental health and quality of life for area residents, workers and property owners. The vision collaboratively established is as follows:

The Ayer's City Industrial Park should be an active, economically vital, attractive, environmentally and economically sustainable commercial/industrial district that:

- **Supports and enhances existing businesses**
- **Attracts new development/businesses that create jobs and support the City's tax base**
- **Provides attractive multi-modal links/connections to and between adjacent residential and commercial districts**
- **Enhances appreciation of and connection to natural resources**

Goals

The following goals were developed through consultation with a Citizens Advisory Committee (further described in Section 12.02(11)), established in and selected from the EPA Planning process, to guide the Ayer's City Industrial Park redevelopment strategy:

1. Develop a comprehensive and accurate picture of existing conditions, opportunities and constraints.
2. Identify future land uses that will both create jobs and increase the City's tax base to enhance the economic sustainability of The Plan Area.
3. Define a vision for an active, economically vital, attractive Plan Area that is realistic from three points of view:
 - A market and financial perspective: Development plans and zoning requirements should have a strong footing on market realities so that recommendations not only preclude undesirable projects, but actually encourage desired development.
 - A political perspective (including residents, business owners and the City): The vision and resulting implementation should be supported by residents, business owners and the City.
 - A technical perspective: Recommendations for environmental clean-up, circulation, open space and other infrastructure improvements have to be both technically and financially feasible, with identified funding sources.
4. Identify infrastructure and other public improvements that support and enhance the desired future land uses and area Identity.
5. Create new open space to serve area residents and employees, and to connect those users to both local and regional natural resources.
6. Create a framework for furthering a series of discreet fundable infrastructure improvement projects.
7. Enhance and promote the sustainability of the Ayer's City Industrial Park through Brownfields redevelopment, building and property reuse, and incorporation of sustainable infrastructure elements.
8. Identify and plan for transportation improvements that improve circulation and increase multi-modal opportunities to and through Ayer's City Industrial Park.

Market Analysis

Full implementation of this Plan is greatly dependent on private developers, market conditions and economic circumstances. To that end, the City of Lowell contracted with Bartram & Cochran, a

Connecticut-based real estate consulting firm, to develop a market study to guide effective redevelopment planning for Ayer's City Industrial Park.

Bartram & Cochran's market analysis was undertaken in two distinct phases. In 2011 the consultants looked at a geographic area that included 125 acres, including retail, industrial and residential developments on both the east and west sides of the Lowell Connector. The final market report focused on a redevelopment plan for 72 acres (111 acres including water and roadways) located on or in close proximity to Tanner Street – the Ayer's City Industrial Park central business hub.

The market area for the Ayer's City Industrial Park varies based on the type of use. The national average for a commute via automobile is approximately 25 minutes; the market area for commercial uses is within the same general range at a 20-30 minute drive radius. Retail has a closer market area of generally less than 10 minutes for routine daily shopping and 20 minutes for larger purchases.

Ayer's City Industrial Park is characterized by both advantages and challenges as to how the vacant and underutilized land could be repurposed to provide employment opportunities. There are numerous active businesses within the study area, and overall, the area serves a variety of consumer and business needs. Opportunities and impediments to redevelopment in Ayer's City Industrial Park are as follows:

Findings: District Advantages

- Proximity to Boston
- Cost advantage within Boston Metro Area
- Freight rail availability
- Highway access via the Connector to I-495 and Route 3
- Commuter Rail access to Boston
- Land values
- Educational infrastructure and a supportive educational community
- City government approach and incentives
- Demonstrated ability of City to leverage outside resources
- Access to labor (including commuters from New Hampshire)
- Available land

Findings: District Obstacles

- There are viable businesses in The Plan area that would be difficult to relocate.
- A major obstacle to redevelopment of The Plan Area is the high asking price for the buildings that are on the market.
- Some of the vacant properties have substantial impairments, such as title, environmental, or easement, that prevent or complicate redevelopment.
- The overall high vacancy rate of the Class C buildings that no longer meet market needs is attributed to their functional obsolescence and/or their being in very poor condition and beyond repair.

- Ayer’s City Industrial Park would greatly benefit from an overall program for aesthetic improvement.
- Developers cannot tolerate uncertainty in these economic times. To attract developers to The Plan Area they will need to know that the parcels/assemblages can be acquired free and clear and with an expedited and certain entitlement process.
- While the interview process identified market demand, market rental rates do not support the cost of new construction.
- Development of large lots will be dependent on securing a tenant in advance. Owners might consider creating a joint venture with a regional/national developer who would market the property and pay for the infrastructure and development costs.

This study divided Ayer’s City Industrial Park into three distinct sub-districts separated by rail lines or by Tanner, Maple and Manufacturers Streets. Based on a review of each sub-district, the market consultant recommends that the City focus its attention on the Tanner Sub-district—the section of Tanner Street north of Canada Street that includes redevelopment areas A, B, C and D (see Figure 6)—with its high concentration of properties (65% of all properties) and the most potential for improvement. All of the buildings (owner occupied and rentals) in The Plan Area total 608,411 SF and 18.9% of the space is vacant. There are nine properties in Ayer’s City Industrial Park that have availabilities totaling 218,143 square feet.

The market study focused on the two highest potential types of property uses: retail and industrial. It was concluded that the south end of Tanner Street is very suitable for additional retail development and that the balance of Ayer’s City Industrial Park is well suited for higher and better uses such as light manufacturing, research and development (R&D) and industrial and warehouse/distribution. The presence of a power generating station and the Superfund site preclude other uses, at least in the near term. It is understood that with the placement of an impermeable cap on the Superfund site land, some portion of the site could be used for parking at some point in the future. And given market acceptance, it might even support other uses including new construction.

The full market study is available in the Appendices.

Redevelopment Strategy

Based on an assessment of existing land and building use and utilization, and conversations with some existing property owners regarding their future plans, properties were categorized as:

- Industrial / commercial unlikely to change
- Residential—unlikely to change
- Potential for near to mid-term change
- Natural resource opportunity

The development plans focused on the latter three categories. In general, there is demand for:

- Heavier industries near rail and the power plant at the north end
- Light industrial (and some R&D) in the center
- Industrial “plain Jane” sub-dividable buildings
- Retail at the southerly end and along Plain Street
- Business services and retail along Manufacturers Street
- Warehousing and distribution

There is no demand for:

- Office
- Large speculative spaces

The market study found properties with the highest occupancy in the market accommodate smaller industrial needs – tenants that require less than 10,000 SF. Such tenants require basic and flexible space with a loading dock. This Plan proposes to develop industrial “plain Jane” buildings of 20-30,000 SF range that can be subdivided into 5,000 SF increments to meet the identified market demand. The consultants recommend a series of smaller (under 30,000 SF) buildings along Tanner Street. These would be leased to tenants requiring space in 5,000 SF increments. The west side of Tanner Street lends itself to a series of smaller industrial buildings. Existing buildings that are easily divided to accommodate smaller tenants are leased and occupied. New buildings can be expected to lease in a fairly short time frame.

A marketing effort to “midsize box” stores is also merited. Traditional “big box” is challenged and it is known, for example, that Lowes is closing seven stores in New England including several in New Hampshire and one in nearby Haverhill, Massachusetts as of the writing of this Plan.

Parcel Assembly

Site assembly will be important to the revitalization of Ayer’s City Industrial Park. The individual properties are not adequate for the development of buildings in the 20,000 to 40,000 SF range (or larger) due to irregular shapes, poor access, limited frontage and narrow depths. Landlords typically seek the flexibility to subdivide smaller buildings while maintaining minimum specifications for truck loading and employee parking, which can be as high as eight (8) spaces per 1,000 SF for a technical training institute or contact center, to create a “portfolio” effect to hedge against rental income risk and facilitate businesses to expand or contract as may be required.

Ayer’s City Industrial Park illustrates options for creating redevelopment parcels with the flexibility to accommodate different building sizes and configurations. Illustrations include both consolidating smaller parcels into larger, more efficient parcels, as well as breaking up very large parcels with new access roads to provide access and frontage for smaller development sites.

The parcels are designed to accommodate the flexible, industrial buildings described in the market study. The conceptual site plans illustrate buildings that can easily be subdivided into 5,000 or 10,000 square foot increments to accommodate several smaller tenants, with each 10,000 square foot unit having a separate loading dock. Loading areas are designed to accommodate tractor-trailers. Sites redeveloped for a specific occupant may have different parking or loading requirements. For example, the occupant could require more loading docks, and/or anticipate the need to accommodate only smaller trucks; alternatively, the need for parking could be significantly larger, depending on the industry.

While buildings can be sited in a variety of ways, redevelopment concepts were drawn to meet the following standards:

- Parking: minimum of 2.5 parking spaces/1,000 square feet, with at least some portion of the parking in front of the building to serve customers
- Loading docks: one per 10,000 square feet
- Limited, delineated curb cuts

Redevelopment Sites

The proposed redevelopment actions in Ayer's City Industrial Park Urban Revitalization and Development Project are enumerated in 12.02(1): Maps in Figure I: Proposed Buildings, Parcels, Land Uses and Rights-of-Way and defined in further detail on the following pages. All public actions are designed to initiate or complement private redevelopments. Site assembly and redevelopment are envisioned as a public-private partnership with the City intending to employ urban renewal authority and powers in conjunction with and in support of private developers or existing land owners interested in redevelopment only in the absence of a private transaction option. The City does not anticipate speculatively acquiring sites in the absence of coordination with potential developers.

The proposed redevelopments can be found in Figure 6 with additional information on the following pages.

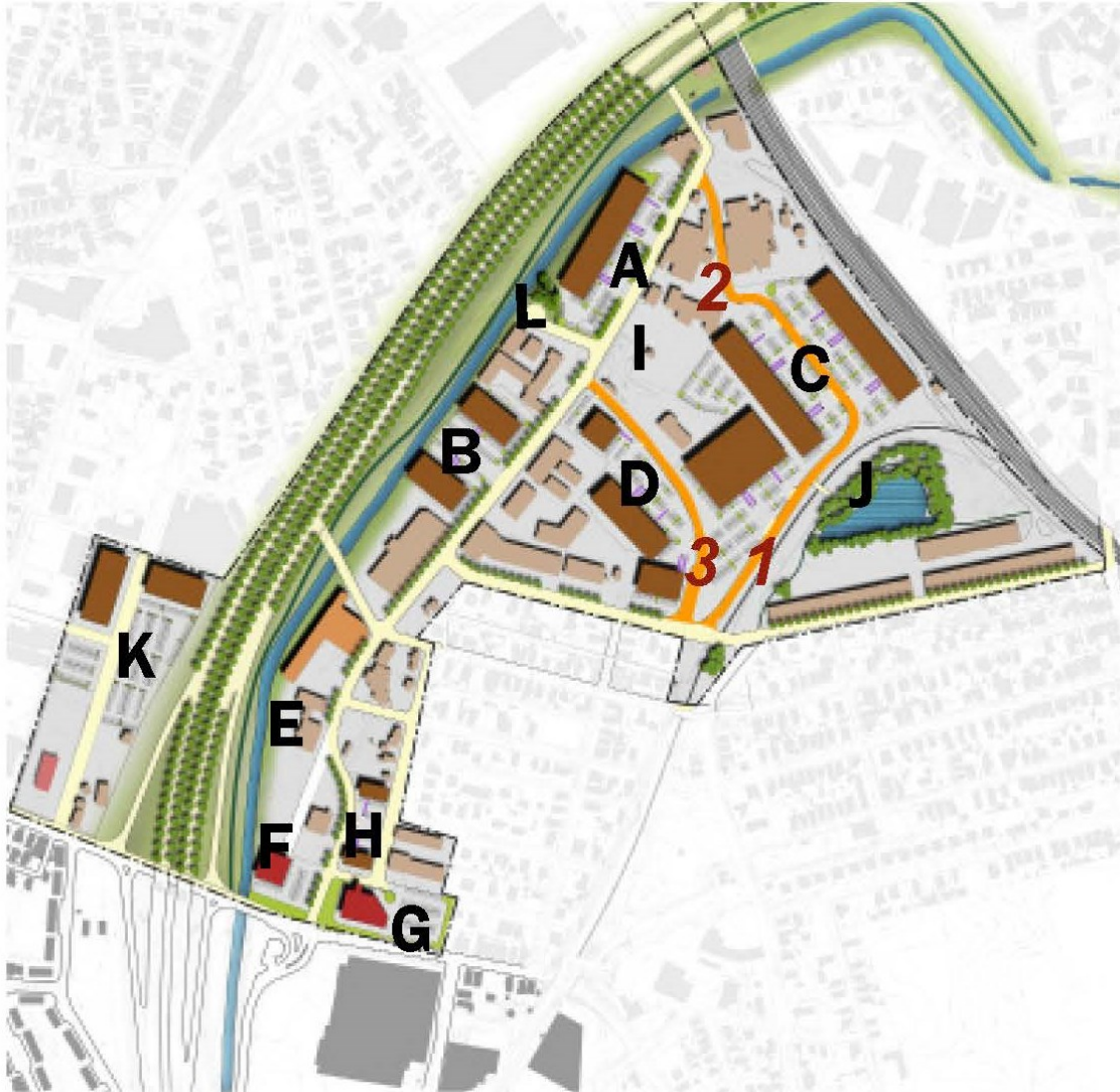


Figure 6: Redevelopment sites in the Ayer's City Industrial Park

Redevelopment Site: A

The following parcels comprise site A:

- 97 Tanner Street
- 97.1 Tanner Street
- 41 Tanner Street
- 35 Tanner Street
- 35.1 Tanner Street
- 15 Tanner Street
- 35 Lowell Connector

In addition, there is one small parcel, created during the development of the Lowell Connector, for which there is no assigned street address and ownership is currently unknown. Redevelopment Site A is proposed, under the maximum build-out scenario, for 45,000 square feet of industrial space.

Redevelopment Site: B

The following parcels comprise site B:

- 149 Tanner Street
- 131 Tanner Street
- 131.1 Tanner Street
- 125 Tanner Street
- 121 Tanner Street
- 9 Brook Street
- 1 Brook Street
- 1.1 Brook Street
- Portions of Grove Street, Brook Street and Joiner Street, all of which are paper streets in the redevelopment area

Redevelopment Site B is proposed, under maximum build-out scenario, for 40,000 square feet of industrial space.

Redevelopment Sites: C & D

A key development area is the central portion of Ayer's City Industrial Park bounded on the west by existing development along Tanner Street, on the east by the Commuter Rail/freight railroad tracks and the unused railroad tracks and on the south by Canada Street. The site includes the eastern portion of the Silresim Superfund site. It is understood that the eastern portion of the Silresim site could be ready for redevelopment within the next few years.

Current access to the parcels is via a driveway at the eastern end of Canada Street and a private driveway near the northern end of Tanner Street. These driveways are unpaved without delineated edges and no signage.

The Proposed Buildings, Parcels, Land Uses and Rights-of-Way map in 12.02(1) shows three new public rights-of-way (in yellow) serving this area:

1. From the south: an access road using the existing driveway at the eastern end of Canada Street provides access to the parcel at the eastern end of the Silresim Site, and the parcel between the two railroad lines. The road is shown 30 feet wide, to accommodate large tractor-trailers.
2. From the north: an access drive using the existing driveway between the L'Energia Power and Lowell Iron and Steel/Fleet Management parcels provides access to the parcel behind L'Energia Power and Lowell Iron and Steel (1 and 2 are shown as a continuous road).
3. A new access road/driveway from Tanner Street, shown immediately south of the Silresim Property, provides access to the adjacent parcel and connects to Canada Street.

These parcels are shown developed with the flexible industrial buildings described previously. The privately-owned parcels north and south of the Silresim parcel can be developed with or without development of the Silresim parcel.

The following parcels comprise Section C:

- 56.1 Tanner Street
- 10 Tanner Street
- 282 Lincoln Street

The following parcels comprise Section D:

- 2 Hope Street
- 66 Canada Street
- 94 Tanner Street
- Portions of Grove Street, Border Street and Hope Street, all paper streets in the redevelopment area

Redevelopment Site C is proposed, under maximum build-out scenario, for 160,000 square feet of industrial space and Redevelopment Site D is proposed for 55,000 square feet of industrial space.

Redevelopment Site: E

Site E, with a street address of 171 Lincoln Street, contains a four-story 62,800 square foot building at the corner of Lincoln and Tanner Streets. The former 1890s American Bobbin Spool and Shuttle Company building has been identified as a potentially catalytic building for branding Ayer's City Industrial Park. The rehabilitation of this structure could make a significant impact and potentially spur additional rehabilitation/façade improvements in The Plan Area. *The Reuse Assessment Study for the Green Technology Center*, prepared by Stoss Landscape Urbanism and Taylor & Burns Architects in 2006 (See Appendices for full report), recommended reusing the building as the Lowell Green Technology Center, "a green factory for the production of sustainable technologies, businesses, and community/cultural facilities. In this vein, 'sustainable' encompasses environmental, economic, and social/cultural realms. Potential occupants for this innovative development may include start-up/

incubator businesses; research institutes and firms; artist work and display spaces; community facilities; and other innovative commercial, office, or institutional uses.” The following image was created for the proposed renovation:

Redevelopment Sites: F & G

The following parcels comprise Section F:

- 299 Tanner Street
- 297 Tanner Street
- 295 Tanner Street
- 291 Tanner Street
- 289 Tanner Street
- Plain Street section of 162 Plain Street
- Portion of Low Street, a paper street in the redevelopment area

The following parcels comprise Section G:

- 198 Plain Street
- 190 Plain Street
- Portion of Eaton Street South of Montreal Street and a portion of the Montreal Street right-of-way

Redevelopment Site F is proposed, under maximum build-out scenario, for 10,000+ square feet of retail space and Redevelopment Site G is proposed for 14,000 square feet of retail space.

Redevelopment Site: H

Redevelopment Site H is the rear portion of 162 Plain Street that remains on the northwest section of the new Tanner Street alignment. Under the maximum build-out scenario it is proposed for 10,000+ square feet of industrial space.

Redevelopment Site: I

Redevelopment Site I contains the two parcels—86 Tanner Street and 90.1 Tanner Street—on the former Silresim site with an active water treatment system. The site may be available for redevelopment in the long-term, but it is unlikely it can be redeveloped post-closure of the active treatment system on the property during the lifetime of the Ayer’s City Industrial Park plan.

Redevelopment Site: J

Redevelopment Site J is the portion of 119 Maple Street around an existing pond proposed for East Pond Park (see 12.02(7): Public Improvements). There is an existing foundation for an industrial building on the southeastern section of the property that is proposed for private redevelopment, if possible.

Redevelopment Site: K

West of the Lowell Connector, The Plan shows a consolidated facility that could house auto repair and/or used car dealers; the exact configuration is unknown and the square footage is not included in the build-out totals. Recommendations for this area include converting the private ways to public ways to help improve Victory Plaza Access Drive (from Chelmsford Street to Manufacturers Street) and Manufacturers Street (from Plain Street to Factory Street). Parcels targeted to induce private redevelopment include:

- 450 Chelmsford Street
- 95 Manufacturers Street
- 75 Manufacturers Street

Redevelopment Site: L

Redevelopment Site L, 126 Cambridge Street, is proposed as the Cambridge Street Overlook Park at River Meadow Brook and will be an access point for the future greenway along the Lowell Connector.

Proposed Zoning and Performance Standards

Zoning will be promulgated to encourage both desirable uses and development standards consistent with the vision for Ayer's City Industrial Park. While the City appreciates the existing heavy industrial uses such as Lowell Iron and Steel, which are, and historically have been, an integral part of the area's industrial fabric, creating jobs and contributing to the City's tax base are the focus for the new zoning, which will include performance standards to ensure appropriate industrial redevelopment while reducing uncertainty for developers. The four proposed zoning districts with associate performance standards as follows (See Figure D3: Proposed Zoning in 12.02(1): Maps for further clarification):

- Manufacturers Business: A commercial zoning district for large redevelopment along the Lowell Connector.
- Plain Street Retail: A commercial zoning district focused on retail/commercial opportunities near the reconfigured Tanner Street entrance.
- Industrial Performance Standard: An industrial district created for areas near residences and the River Meadow Brook with a focus on smaller sites.
- Large Industrial Performance Standard: An industrial district targeting the large, vacant section of Ayer's City Industrial Park with the greatest reuse potential. The district envisions larger sites to provide opportunities for more significant redevelopment concepts.

Timeline and Project Expiration

The Ayer's City Industrial Park Revitalization and Development Project will begin in 2014 and run for twenty (20) years until 2034.

12.02(4): Financial Plan

Acquisition Costs

The Ayer's City Industrial Park Revitalization Plan identifies thirty-six (36) parcels to be acquired, one of which will be a partial parcel acquisition. The acquisition cost is based on an independent appraiser's valuation of the thirty-six parcels as six Parcel Blocks. The appraisal costs are included in the Project Budget at the end of this section. The appraisals will be submitted with the Ayer's City Industrial Park Urban Revitalization and Development Project Appendices.

Statement of Direct and Indirect Interest: No member of the Lowell City Council, empowered as the Lowell Redevelopment Authority under Chapter 353 of the Acts of 1976, or the Lowell Planning Board established under M.G.L. Chapter 41, Section 81A has, or is believed to have, any direct or indirect interest in any parcel to be acquired as part of the Ayer's City Industrial Park Plan.

Relocation Costs

Cost estimates for relocations completed as part of the Ayer's City Industrial Park implementation are included in the Project Budget at the end of this section. Cost estimates are based upon the City of Lowell's experience implementing the Jackson/Appleton/Middlesex and Acre Urban Revitalization and Development Projects. It should be noted that true relocation costs cannot be established until a relocation claim is filed.

Based on our experience small industrial relocations cost approximately \$100,000 each. There appears to be 11 active businesses in the acquisition parcels, although actual relocation claims will only be required in the event of a municipal acquisition without partnership with the existing businesses. State relocation law requires proof of business activity and income for all claims.

Site Preparation Costs

Site preparation costs are only projected for demolition of buildings on acquisition parcels. Relocation, environmental relocation, survey, design and engineering are included in other costs. Based on the City of Lowell's experience demolishing small industrial buildings, we predict the approximate cost per demolition of the eight (8) targeted buildings is \$75,000 each.

Environmental Remediation Costs

The City of Lowell will conduct, to the extent possible, all appropriate inquiries prior to acquiring a parcel and any identified environmental concerns will impact the purchase price. Remediation costs will vary significantly based on the site investigations. Costs, to be shared between private redevelopers and the City through federal and state grants, are estimated based on the City's experience redeveloping former industrial properties.

Cost of Public Improvements

The costs of public improvements, the details of which are described in detail in 12.02(7), are included in the Project Budget at the end of this chapter. These costs include associated work by Surveyors, Engineers and Designers; however, the total project cost of the Lowell Connector conversion to a boulevard and associated construction of the River Meadow Brook/Hale’s Brook Greenway are not included.

The Lowell Connector redevelopment and River Meadow Greenway project are proposed wholly within the Connector Right-of-Way. The City will work with MassDOT as landowner to complete these projects within the state financing and project implementation systems.

District Improvement Financing: Fund Creation and Revenue

The City will use District Improvement Financing (DIF) as a primary funding source for infrastructure improvements. DIF is a program that enables municipalities to fund public works, infrastructure and development projects by allocating future, incremental tax revenues collected from a predefined district to pay project costs. In other words, the City can use the increase in tax revenues resulting from new development in Ayer’s City Industrial Park to pay for infrastructure improvements (including land acquisition) in The Plan Area. The municipal investment is designed to stimulate private investment, which in turn increases the taxable value of property and generates the incremental taxes. The City can pay for the improvements after the tax increases have been realized, or float revenue bonds to fund the improvements up front, and then use the future tax increases to pay off the bonds.

In addition to paying for specific infrastructure improvements, DIF funds can be used for administrative costs (e.g., hiring an implementation manager) related to the implementation of the improvements.

A City or town wishing to utilize DIF must first designate a development district and a corresponding development program, describing, among other issues, how the DIF will encourage increased residential, commercial and/or industrial activity within that district. It must also detail the project improvements, financing plans and community benefits.

Ayer’s City Industrial Park calls for demolishing functionally obsolete buildings and the new construction of approximately 334,000 square feet of six new industrial and one retail development [see 12.02(3)]. The total cost of these developments is expected to be \$57 million and add \$49.76 million to the City’s Grand List. The City can anticipate as much \$1.4 million annually depending on adjustments that may be required to offer tax incentives for development, as explained by the following tax increment projection:

Table 9: Projected Changes in Appraised Values and Tax Revenues						
Redevelopment Site	Acres	Current Appraised Value	Current Tax Assessment	Projected Appraisal Value	Potential Tax Assessment	Tax Increment
A	2.61	\$721,600	\$20,061	\$6,107,100	\$169,783	\$149,722

B	5.8	\$1,518,700	\$42,221	\$5,629,500	\$156,506	\$114,284
C	11.87	\$527,300	\$14,659	\$20,782,800	\$577,783	\$563,123
D	1.38	\$248,600	\$6,911	\$7,233,600	\$201,101	\$194,190
FGH	3.47	\$1,903,000	\$52,905	\$14,925,800	\$414,952	\$362,047
K	3.02	\$2,210,500	\$61,454	\$2,210,500	\$61,454	\$0
All other	43.9	\$23,581,700	\$655,595	\$23,581,700	\$655,595	\$0
Total	72.05	\$30,711,400	\$853,808	\$80,471,500	\$2,237,174	\$1,383,366

Source: Bartram and Cochran

The value in the Project Budget reflects a ten-year period without benefits followed by a ten-year period of steady tax increment accrual to the City of Lowell to reach the full tax increase projected.

Funding Experience

The City of Lowell Department of Planning and Development (DPD) is the entity responsible for all aspects of short and long term planning projects, economic development, community development and grants management, transportation planning and engineering, parks design and housing programs for the City, in addition to building, trade, and sanitary code enforcement, permitting, inspections, and project review. DPD is also responsible for all aspects of administering the City's four major entitlement grants from HUD. DPD administers \$3.5 million in annual local allocations through the CDBG, HOME, and ESG program along with more than \$700,000 in annual allocations for Middlesex North County through the Housing Opportunities for Persons with AIDS (HOPWA) program and was recently awarded a \$2.5 million Lead Based Paint Hazard Control Grant. The City maintains tight financial controls of all projects to ensure the timely and accurate expenditure of funds on eligible activities; provides ongoing inspections of work to ensure project milestones are met; and manages data collection and analysis of grant funded programs to measure success.

With a staff of 25 economic development, community development, housing, urban planning, and project management professionals, DPD will utilize its strong community leadership, involvement, and project management expertise to successfully complete this project. DPD handles approximately \$7 million in federal and state grants each year having obtained more than \$4 million in new grant funds in FY12-13, along with more than \$3 million in HUD entitlement grant funds. DPD was also responsible for administering more than \$11.7 million in federal funds under the American Recovery and Reinvestment Act.

Governmental funding programs with strong histories of partnership in the City of Lowell that will be critical to complete Ayer's City Industrial Park include:

Table 10: Available Governmental Funding Programs			
Funding Entity	Funding Program	Program Administrator	Available For Use
State Government	MassWorks Infrastructure	Executive Office of Housing and Economic Development	Public Infrastructure
State Government	Growth Districts Initiative	Executive Office of Housing and Economic Development	Site Preparation, Infrastructure
State Government	Parkland Acquisitions and Renovations for Communities (PARC) Program	Executive Office of Energy and Environmental Affairs, Division of Conservation Services	Acquisition and Construction of Public Parks
State Government	Economic Development Incentive Program (EDIP)	Office of Business Development, Economic Assistance and Coordinating Council	Private Investment Tax Credit
Federal Government	Public Works and Economic Development Program	U. S. Department of Commerce, Economic Development Administration	Public Infrastructure
Federal Government	Brownfields Economic Development Initiative (BEDI)	U. S. Department of Housing and Urban Development	Site Acquisition and remediation
Federal Government	Brownfields Program	U. S. Environmental Protection Agency	Site assessment and remediation

Project Budget: Gross and Net Project Costs

The Ayer's City Industrial Park Urban Revitalization and Development Project comprehensive budget is presented in the following table:

Table 11: Ayer's City Industrial Park Project Budget	
Acquisition	
Land Acquisition	\$10,350,000.00
Appraisals (72)	\$140,000.00
Legal Services	\$400,000.00
Subtotal	\$10,890,000.00
Relocation	
Consultant	\$200,000.00
Claim Payments (11 @ \$100,000 each)	\$1,100,000.00

Subtotal	\$1,300,000.00
Site Preparation	
Building demolition (8 @ \$75,000)	\$600,000.00
Environmental Remediation Costs	\$3,922,500.00
Cost of Public Improvements*	
Realignment of Tanner Street	\$2,000,000.00
Tanner St sidewalk/streetscape improvements	\$2,000,000.00
New rights-of-way to large interior parcels	\$1,500,000.00
Maple St streetscape improvements	\$1,000,000.00
Canada St streetscape improvements	\$750,000.00
Connection to transit/bus hub improvements	\$500,000.00
Connect Maple and Canada Street	\$500,000.00
East Pond open space	\$500,000.00
Improvements to Manufacturers Street	\$250,000.00
Cambridge St overlook park	\$150,000.00
Gateway/underpass treatments	\$100,000.00
Improvements to Victory Plaza Drive	\$50,000.00
Subtotal	\$9,300,000
Consultants	
Legal	\$200,000.00
Financing	\$100,000.00
Subtotal	\$300,000.00
Gross Project Cost	\$26,312,500.00
Contingency (20%)	\$5,262,500.00
Project Income	
District Improvement Financing	[\$7,000,000]
Income from sale or lease of property	[\$3,925,000]
Net project cost	\$20,650,000.00
City 50% Share (for URD Grant Request)	\$10,325,000.00
State 50% Share (for URD Grant Request)	\$10,325,000.00

*Does not include Lowell Connector/River Meadow Brook Greenway Projects

Table 12: Ayer's City Industrial Park Budget Sources	
Gross Project Cost with Contingency:	\$31,575,000.00
SOURCES	
State URD grant	\$10,325,000.00
District Improvement Financing	\$7,000,000.00
State infrastructure grants (MassWorks, etc.)	\$5,000,000.00
Income from sale or lease of property	\$3,925,000.00
U.S. EPA grants (Assessment/Clean-up)	\$2,000,000.00
City CDBG grant funding	\$1,200,000.00
City bonds	\$1,000,000.00

City operating budget (various line items)	\$625,000.00
Miscellaneous grant sources	\$500,000.00
TOTAL SOURCES	\$31,575,000.00

12.02(5): Requisite Municipal Approvals

Public Hearing

The Lowell City Council, acting as the local redevelopment authority under Chapter 353 of the Acts of 1976, held a public hearing on the Ayer's City Industrial Park Urban Revitalization and Development Project on April 15, 2014. The Lowell Planning Board, created under M. G. L. Chapter 41, Section 81A, held a public hearing on March 17, 2014 to make a finding consistent with the requirement of M. G. L. Chapter 121B, Section 48.

Municipal Approvals

The following approvals follow in this section:

- Lowell City Council vote, acting as the local redevelopment authority under Chapter 353 of the Acts of 1976 and chief legislative body, approving the Plan.
- Lowell Planning Board finding of basis in a local survey and conformity with the recently adopted local comprehensive plan, Sustainable Lowell 2025.

Opinion of Counsel

A copy of the Opinion of Counsel that the Ayer's City Industrial Park Urban Revitalization and Development Project complies with applicable laws follows:

COMMONWEALTH OF MASSACHUSETTS

CITY OF LOWELL

In City Council

VOTE

Approving the Ayer's City Industrial Park Urban Revitalization and Development Plan for the City of Lowell.

The City of Lowell is an Urban Renewal Agency with all the powers of such, pursuant to Chapter 353 of the Acts of 1976; and

The Lowell Planning Board, after hearing, has made necessary findings, adopted and approved the Ayer's City Industrial Park Urban Revitalization and Development Plan for the City of Lowell; and

Pursuant to Massachusetts General Laws Chapter 121B, §48, the City of Lowell, as an Urban Renewal Agency, must hold a public hearing prior to any vote to approve the Ayer's City Industrial Park Urban Revitalization and Development Plan; and

The City Council and the City Manager are the municipal officers of the City of Lowell, as defined in Massachusetts General Laws Chapter 121B, §48.

BE IT VOTED BY THE CITY COUNCIL OF THE CITY OF LOWELL:

That the City of Lowell, acting through its City Council and City Manager as municipal officers of the City of Lowell, as defined in Massachusetts General Laws Chapter 121B, §48, and after public hearing, approves the Ayer's City Industrial Park Urban Revitalization and Development Plan for the City of Lowell.

Further, the City Council authorizes the City Manager, acting through the Department of Planning and Development, to approve minor changes to the Ayer's City Industrial Park Urban Revitalization and Development Plan if such changes are

recommended by the Department of Housing and Community Development, the Commonwealth of Massachusetts urban renewal approval authority.



Diane Nichols Tradd
Acting Assistant City Manager/Director

R. Eric Slagle
Director

Craig R. Thomas
Urban Renewal Project Manager

CITY OF LOWELL PLANNING BOARD

Resolution and Vote

RE: Findings pertaining to Ayer's City Industrial Park Urban Revitalization and Development Project

Recitals

1. The City of Lowell Planning Board (the "Board") has been duly constituted pursuant to Ordinance #8 of 1959 in accordance with M.G.L. c. 41, s. 81A.
2. Ayer's City Industrial Park Urban Revitalization and Development Project (the "Plan") has been forwarded to the Board for the purpose of reviewing the Plan and making the findings required by M.G.L. c. 121B, s.48.

Now therefore, following a review of the Plan, the Board finds that the Plan is based upon a local survey and conforms as a whole to the Comprehensive Master Plan of the City, known as Sustainable Lowell 2025.

Adopted the 17th day of March, 2014 by a majority of the members of the Board, consisting of five members, by a vote of 5 to 0.



City of Lowell - Law Department

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Christine P. O'Connor
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Elliott J. Veloso
Assistant City Solicitors

April 30, 2014

Aaron Gornstein, Undersecretary
Dept. of Housing and Community Development
100 Cambridge Street
Boston, MA 02114

Undersecretary Gornstein:

Please accept for filing, in accordance with Massachusetts General Laws Chapter 121B, Section 48, the City of Lowell's ("City") Urban Renewal Plan, entitled "Ayer's City Industrial Park Urban Revitalization and Development Project" ("the Plan"). Pursuant to the provisions of Section 48 of Chapter 121B the City has secured all necessary municipal approvals prior to submitting its Plan to the Department of Housing and Community Development ("DHCD"). Those approvals are as follows:

i. **Approval of the Plan by the Urban Renewal Agency**

Pursuant to Chapter 353 of the Acts of 1976, the City of Lowell, through its City Council ("Council"), has been vested with the authority to be and operate as an Urban Renewal Agency within the meaning and requirements of Massachusetts General Laws, Chapter 121B. Accordingly, the Council, sitting as both a governmental body and as a lawful urban renewal agency, opened the public hearing on the Plan on April 15, 2014, and continued the public hearing until April 29, 2014. On April 29, 2014, the Council then approved the Plan after closing the public hearing.

ii. **Approval of the Plan by the requisite municipal officers following a duly called public hearing before the City Council, with Notice of such hearing with a map indicating the area to be renewed having been previously sent to the Massachusetts Historical Commission.**

On March 24, 2014 and again on March 31, 2014, notice of the April 15, 2014 public hearing was published in the Lowell Sun, a local newspaper of general circulation. On April 1, 2014, notice of the public hearing along with a map of the Plan area was forwarded to the Massachusetts Historical Commission.

- iii. **A Finding by the Planning Board of the City (where one has been established) that the Urban Renewal Plan is based upon a local survey and conforms to a comprehensive plan for the locality as a whole.**

On March 17, 2014 the Planning Board for the City of Lowell found that the Plan was based upon a local survey and conforms to the comprehensive plan for the City as a whole.

In closing, I note that all applicable votes and findings are enclosed. Subject to and based on the foregoing, it is my opinion that the Plan is in compliance with applicable law. This opinion is rendered only in connection with the submittal of the Plan to DHCD and may not be relied upon by any other party.

Respectfully,



Kerry Regan
Assistant City Solicitor

12.02(6): Site Preparation

Site preparation activities will be extremely limited in the build-out of Ayer's City Industrial Park. The City will partner with private redevelopers for on-site water and sewer infrastructure, regrading and stormwater systems in each redevelopment area as needed based on individual redevelopment plans. The City anticipates undertaking some environmental activities on parcels where a private redeveloper does not undertake the remediation to reduce environmental uncertainty and make parcels more attractive for redevelopment. In section 12.02(1): Maps, Figure L: Parcels with Hazardous Substance Releases Reported to MassDEP shows parcels with known hazardous substance releases. It is likely additional parcels will require remediation for heretofore unknown contamination. In addition, the City may demolish any of the eight (8) standing buildings on redevelopment parcels.

12.02(7): Public Improvements

Ayer's City Industrial Park is defined by clear and imposing barriers. Physical barriers include the grade-separated Lowell Connector limited access highway River Meadow Brook running in a channelized streambed on the western boundary, heavily-used commuter and freight rail tracks on the northern edge and an abandoned rail spur just beyond the eastern project boundary. From the southern edge of Ayer's City Industrial Park at Plain Street to the railroad tracks on the northern edge, a distance of more than 1/2 miles, only Lincoln Street and Howard Street connect The Plan area to the adjacent Highlands neighborhood on the western side of the Lowell Connector. In addition, only Lincoln Street crosses the abandoned railroad tracks at the eastern edge of The Plan Area. One unofficial, at-grade crossing of the abandoned rail line is used by pedestrians and vehicles in an unsafe, chaotic manner.

Access Issues

The redevelopment of vacant and underutilized properties in Ayer's City Industrial Park will create additional demand for improved commercial vehicle access to The Plan Area. The planning process reviewed two possibilities to improve access to the district. First, the City's consultants worked with transportation engineers to review the possibility of a new northbound off-ramp from the Lowell Connector to connect with the remaining section of Cambridge Street across from the Silresim site. However, this alternative was rejected due to safety and cost/permitting concerns. The consultant's transportation engineers determined that car weaving movements from the northbound on-ramp at the Plain Street intersection and the proposed off-ramp would conflict and create an unsafe situation. Cost and permit concerns center on a new bridge required to cross River Meadow Brook at the proposed Cambridge Street off-ramp. Therefore, the concept for a new Lowell Connector off-ramp was rejected.

Tanner Street Realignment

Instead, planning for improved access into Ayer's City Industrial Park shifted to a realignment of the southern end of Tanner Street to shift the intersection with Plain Street east away from the Lowell Connector exchange at Plain Street and into the new signal for the Target and Meadow Brook shopping plaza. The relocation will necessitate relocation of utilities, a new retaining wall and upgrades to the current signal infrastructure, but is comparable in scale and feasibility to other road construction projects recently completed in Lowell and is the focus herein for enhanced gateway access.

The goals defined in the planning process for realigning Tanner Street at the Plain Street intersection include:

- Enhance redevelopment potential of existing vacant and underutilized sites;
- Accommodate increased traffic from new development and reduce congestion on Plain Street;
- Provides a more attractive and recognizable gateway into Ayer's City Industrial Park.

Several alternatives for the realignment were examined and evaluated on factors including:

- Ease of maneuverability for trucks;

- Minimize impacts to existing businesses in the southern Tanner Street area to the greatest extent possible;
- Maximize redevelopment potential of parcels impacted by the realignment.

Because there are existing traffic signals at the Lowell Connector off-ramp and at the entrance driveway to Target on Plain Street, it is not possible to install a new signal at the existing intersection of Tanner and Plain Streets. Therefore, all of the alternatives were examined locating the new intersection across from the signalized entrance to Target and the Meadow Brook plaza. After careful review of several options, the Preferred Alternative creates a 90 degree intersection with Plain Street, with significant stacking area for trucks (See Figure 10). The resulting development parcels, which would enjoy more direct access from the realigned Tanner Street, create the opportunity for a total of 24,000 square feet of new retail space in two buildings and 10,000 square feet of industrial space in two buildings (on one parcel). This alignment would change the circulation on the Max Levine parcels and the Lowell Car Wash, although the businesses could continue to operate.

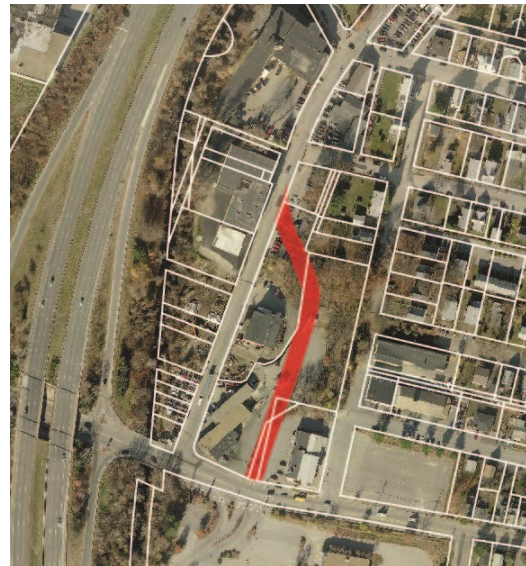


Figure 7: Conceptual Realignment of Tanner Street at Plain Street (Red)

The next step in implementation of the realignment will be a more detailed engineering and traffic analysis of the impacts of the proposed alignment. A detailed land survey to provide more accurate site information will be important.

The Lowell Connector Safety Improvements

The Lowell Connector provides a valuable link to the regional interstate highway system for businesses, commuters, and other motorists in Downtown Lowell and in the neighborhoods and commercial/industrial districts served by this spur highway. Highway system accessibility is one of the key attributes of Ayer's City Industrial Park that provides promise for future industrial and commercial redevelopment.

When it was conceived in the 1950s, the Lowell Connector was envisioned continuing through the Back Central neighborhood and entering Downtown Lowell along a route that followed an extension of Lawrence Street through the sites where the Gateway Center office buildings, UMass Lowell Inn and Conference Center, the Lower Locks Garage, Middlesex Community College, and the Massachusetts Mills are currently located. Fortunately, those plans were never implemented and both the Back Central neighborhood and Downtown Lowell remain more intact and cohesive environments as a result.

However, the decision to abandon the plans to complete an intra-City highway system left the end of the Lowell Connector as an awkward and unsafe abrupt terminus onto Gorham Street. Over the past

several years, MassDOT and the Lowell Police Department have undertaken numerous efforts to address the safety issues through aggressive speed enforcement, additional guard rails, warning signage, strobe-equipped traffic signals, and other measures. None of these efforts has effectively resolved the safety issues and none have made any meaningful improvement to the transition from highway conditions to urban streets.

The Ayer's City Industrial Park planning process identified a series of potential changes to the design of the Lowell Connector between Plain Street and Gorham Street that could more effectively resolve the safety issues that have plagued the highway for years, and provide a much more attractive and comfortable gateway transition to Lowell's urban street network as a tree-lined boulevard with staged speed reductions and narrower travel lanes. A boulevard-style Lowell Connector would provide a more compelling point of entry to the City's downtown event venues, the Lowell National Historical Park and the Hamilton Canal District.

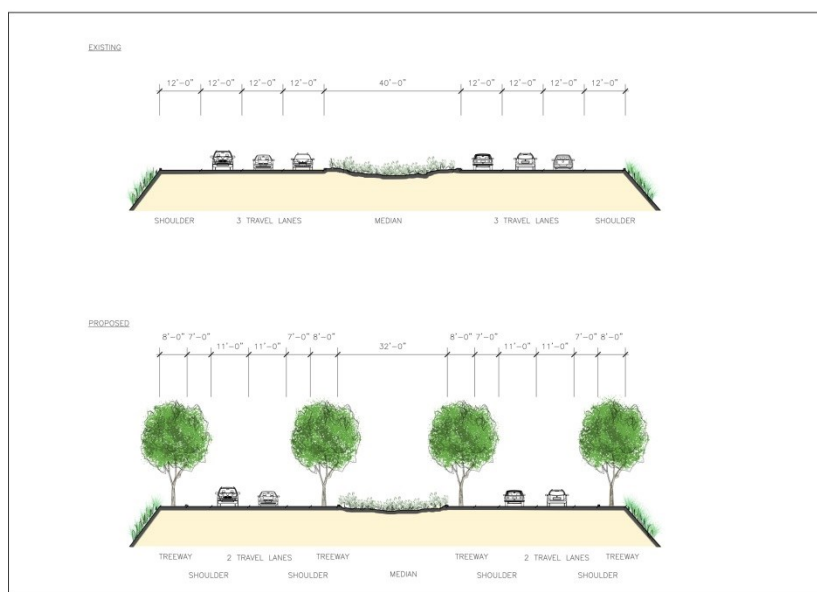


Figure 8: Lowell Connector Safety Improvements

The Lowell Connector would transition in stages from its present cross-section of three lanes in each direction and 55 miles per hour (MPH) design speeds beginning at the Plain Street overpass. On the in-bound side from the Plain Street overpass to the northern ends of the ramps, lanes would narrow to 11'-0" in width, design and posted speed limits would be reduced to 45 MPH and one through travel lane would be eliminated, preventing an abrupt and immediate merge for traffic entering on the northbound Plain

Street ramp, and leaving two through lanes north of the ramp. Design and posted speed-limits would then be reduced to 35 MPH after crossing the bridge over Howard Street and the rail lines.

The outbound side would provide a similar staged transition from 35 miles per hour through to 45 MPH and, finally, to the present 55 MPH design speeds at the same locations. The roadway cross-section, presented as Figure 11, would also transition in stages from a tree-lined boulevard with two travel lanes to its present three-lane highway profile from Plain Street southbound.

This concept does not include any changes to the right-of-way, roadway elevations, drainage profiles, existing bridges, overpasses, or ramps. It is achieved entirely using pavement markings, reductions in paved areas, adjustments to drainage structure locations, and introduction of street trees. In addition to

coordination with MassDOT, a much more detailed engineering study will be required to determine the feasibility of these changes.

Charles A. Gallagher Transit Terminal and Robert B. Kennedy Bus Transfer Center Connection

Improving access for pedestrians and bicyclists between the Howard Street entrance to Ayer's City Industrial Park and the Transit Terminal/Bus Transfer Center will benefit both existing and new employees in Ayer's City Industrial Park and residents of the Sacred Heart neighborhood. Regional riders of the MBTA commuter rail existing at the Lowell terminal and riders of the regional bus service operated by Lowell Regional Transit Authority, which is now fully equipped for pedestrians and bicyclists, form the core users of the multi-modal transportation center that provides significant opportunity for expanding transit access to The Plan Area.

The critical project to improve the multi-modal connection will be to create a new sidewalk from YMCA Drive down to and continuing alongside the LRTA driveway, which would allow pedestrians to walk directly to the terminal from the existing sidewalk network to/from Ayer's City Industrial Park. Pedestrians would no longer have to walk out to Thorndike Street, which is both inconvenient and pedestrian-unfriendly, and which will reduce the safe pedestrian route by approximately two tenths of a mile. The ramp and sidewalk could both be accommodated on MBTA-owned land. For bicyclists, new sharrows can be added to show the commuting direction to The Plan Area.

Streetscape Improvements

Tanner Street

Pavement, curbing and drainage structure on Tanner Street are in poor condition, with curb lines delineated in only a few locations. For much of the street, parcel frontages function as one continuous curb cut, with cars and trucks entering the street at numerous locations and frequently using a portion of the curb line as a parking area. In addition to the lack of a continuous sidewalk, Tanner Street has no pedestrian amenities such as street trees or landscaped buffers between parking and the street. There is minimal screening of outdoor storage areas, and many properties have somewhat derelict chain link fences.

The goal for streetscape improvements to Tanner Street is to accommodate truck traffic from both existing and proposed new development, while creating a more attractive and pedestrian friendly environment to attract new development and better serve residents and employees in the area. Several alternative cross sections were assessed, incorporating varying travel lane and sidewalk widths, the potential for separate bike lanes, and curbside parking on one or both sides of the street. The preferred cross section, illustrated in Figure 12, includes two 11-foot travel lanes, an eight-foot sidewalk and parking on the west side, and a two-foot right-of-way reservation on the east side. The eight foot sidewalk would allow for street trees; planting them on the west side would preclude them from interfering with the overhead utility lines. The travel lanes will be signed for joint use with bicycles. The proposed River Meadow Brook Greenway will provide an off-road bike path through The Plan Area.

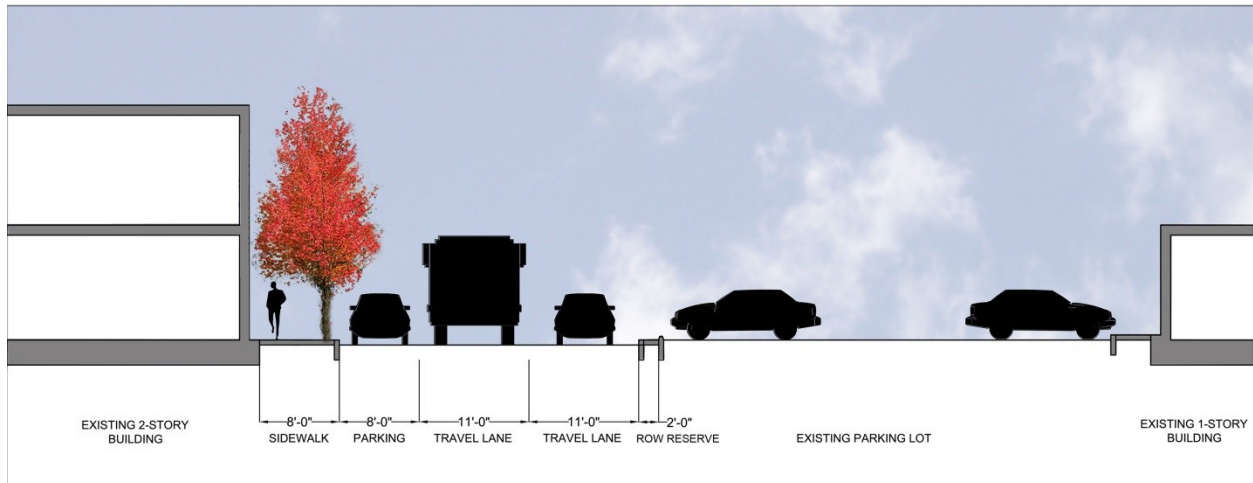


Figure 9: Proposed Tanner Street Section

Canada and Maple Streets

Maple and Canada Streets are lined with residential uses on the south side and industrial uses on the north side with no buffers to reduce impacts on the residential areas. The homes on both streets are near the right-of-way edge with narrow or non-existent lawns to help reduce the interactions of the incompatible uses. The goal of the recommended improvements is to help buffer the residents from the industrial uses while continuing to accommodate required truck access.

Maple Street and Canada Street are large rights-of-way, 40-feet wide and 50-feet wide respectively, and utility poles are located along the north edges. Maple Street has six (6) foot sidewalks on both sides. Increasing the width of the sidewalk on the north side from 6 to 10 feet would allow room for street tree planting. This widened sidewalk and the use of a columnar tree such as a columnar red maple, would keep the street trees from interfering with the overhead utility lines. The two travel lanes would be 12 feet each. Canada Street, with a 50 foot right-of-way, allows for a 10 foot sidewalk on the north side, a six foot sidewalk on the south side, two 12 foot travel lanes and a parking lane on the south side. On both streets, it is recommended that trees be planted on the north (industrial) side of the street to buffer views from the residences.



Figure 10: Streetscape Enhancement Concept, Maple Street

Currently, the unused rail line creates a barrier between Canada and Maple Streets, although pedestrians can and do walk across the tracks and vehicles sometimes summit the small grade change to use the crossing. Acquisition of a small section of the rail right-of-way will allow Canada and Maple

Streets to be connected, improving both pedestrian and vehicular circulation in this area. That connection is shown in section 12.02(1): Maps.

Gateway Treatments

The north and south ends of Tanner Street provide the two main gateways into Ayer's City Industrial Park, particularly for commercial vehicles and customers of the many area businesses. Both ends of the street are somewhat problematic. At the northern end, vehicles on Howard Street go through an underpass and then make a sharp right turn onto Tanner Street. Visibility is impeded by the underpass and by the building at the northwest corner of Howard and Tanner Streets. At the southern end, the intersection with Plain Street is difficult for vehicles to turn left onto Tanner Street from Plain Street eastbound due to the proximity of the Lowell Connector exit ramps. There is no indication that this intersection is the main entrance into a bustling industrial district.

Other gateways into The Plan Area - Lincoln Street from the Highlands to the west and Gorham Street from the east - also enter Ayer's City Industrial Park via underpasses. These gateways are less used by commercial vehicles, but provide primary connections for the adjacent residential neighborhoods. The Lincoln Street overpass, just outside of The Plan Area, provides broad views of the Ayer's City Industrial Park to drivers and pedestrians, and is also a primary gateway.

Improvements to the gateways will play an important role in improving the attractiveness of the available redevelopment sites. Signage, either stand-alone or incorporated into underpasses, should be installed at the major gateway intersections:

- Tanner and Plain Streets
- Howard and YWCA Streets
- Maple and Gorham Streets
- Lincoln Street (both west side underpass and east side overpass)

The realignment of Tanner Street includes generous landscaping at the corner to accommodate new district signage. Views into Ayer's City Industrial Park from the Lowell Connector, the MBTA Commuter Rail and the Lincoln Street overpass will be greatly improved by the clean-up and redevelopment of adjacent parcels, and requirements for the elimination and/or screening of outdoor storage.

Underpasses

Underpasses at Howard and Lincoln Streets are both gateways to Ayer's City Industrial Park that can be improved with relatively low cost strategies. Painting and lighting can be used to brighten the underpass environment, as well as to enforce the identity of Ayer's City Industrial Park. A design competition or public design contest could be held for one or more of the overpasses. Such a program would help to tie The Plan Area to the City's strong arts community.

Open Space

River Meadow Brook Greenway

There has been longstanding interest in creating a greenway along River Meadow Brook. A River Meadow Brook Greenway would provide the link between the Bruce Freeman Trail near Cross Point Towers on the southern boundary of Lowell and the Concord River Greenway to the east, an ongoing project that also connects to the Merrimack River Trail. These trails are all segments of the Bay Circuit Trail, proposed to eventually encompass a continuous trail extending from Newburyport, MA to Kingston, MA, a span of more than 100 miles.

The proposed segment of the River Meadow Brook Greenway in Ayer's City Industrial Park extends from Plain Street to Gorham Street within the Lowell Connector right-of-way. It is shown on the west side of the Brook, where the MassDOT right-of-way exists, as opposed to private industrial parcels along the east side of the brook which will make development of a greenway on that side much more difficult.

At the southern end, south of Lincoln Street, the steep bank may require the path to be cantilevered over the brook. At the northern end, the difficulty will be crossing the railroad tracks. It may be possible to cantilever the path from the Lowell Connector in this location, providing an elevated pathway over both Howard Street and the rail lines. Building the path could be done in conjunction with the redesign of the Lowell Connector, discussed previously.

The Northern Middlesex Council of Governments recently completed a study of the greenway, which is included in the Appendices.

East Pond

East Pond, currently hidden from sight behind industrial buildings on Maple Street and the railroad tracks, provides the opportunity for a new public open space which could create an amenity for both neighborhood residents and area employees. The pond and surrounding parcel are currently in private ownership. Acquisition of a portion of the private parcel would be required to create the park, which is proposed as a passive recreation area with benches and picnic tables. While the current isolated nature of the parcel previously has created safety concerns about a park in this location, increased development on surrounding parcels will provide more eyes on the park.

Cambridge Street Overlook Park

A small park is shown on the City-owned parcel at the northwest end of Cambridge Street, abutting the River Meadow Brook. The park will provide an amenity for area employees and residents of adjacent neighborhoods as well as an access point to the River Meadow Brook Greenway.

Stormwater Management

Much of Ayer's City Industrial Park contains combined sewers, capturing both wastewater and stormwater. A small section of Tanner Street has separated wastewater and stormwater sewers,

generally in the area of Tanner St., Lincoln St. East, Canada St., Quebec St., London St. and Main St. Generally, the sewer lines are large and well suited for additional development with plenty of excess capacity.

North of Lincoln Street, where the CSO separation has not been constructed, increased drainage capacity that takes advantage of the existing outfall and drain lines should be installed. Because the quality of stormwater run-off in this area is a bit of a concern, Best Management Practices such as tree wells – for treatment before conveyance to an outfall in River Meadow Brook – will probably work well in addressing any water quality concerns. Street tree plantings along Tanner, Canada and Maple Streets, as well as within individual sites, should be designed with tree wells. Additionally, techniques like vegetated buffers, permeable pavement and other low impact development (LID) may be required for some parcel redevelopment in the Plan Area.

12.02(8): Relocation

Under M. G. L. Chapter 79A, and regulations at 760 CMR 27.00, all business and residents displaced by public action are entitled to receive relocation assistance and payments. Chapter 79A, and complementary federal statute 49 CFR 24, provide for fair and equitable treatment for all parties to be displaced as a result of public action. It is the City of Lowell's intention to assist any affected businesses in relocating successfully, consonant with the parameters set forth in 760 CMR 27.00 and 49 CFR 24, as applicable. Any relocations carried out as part of the implementation of Ayer's City Industrial Park shall occur only as a last resort for one or more reasons under 760 CMR 27.03.

A relocation consultant shall be contracted to develop a Relocation Plan consistent with M. G. L. Chapter 79A, subject to review and approval by the Department of Housing and Community Development, concurrent with initial relocations. As of April 15, 2014, the plan public hearing date with the City Council, the businesses located on acquisition parcels which will be eligible for relocation claims if still in operation and impacted by future City redevelopment actions are as follows (information compiled from Economic Development Dept. ground surveys and MUNIS business licenses):

Table 13: Existing Businesses on Acquisition Parcels	
Property Address	Existing/Registered Businesses
1 BROOK ST	None
1.1 BROOK ST	None
2 HOPE ST	None
9 BROOK ST	None
10 TANNER ST	None
12 TANNER ST	None
15 TANNER ST	Former Union Sheet Metal - business closed
35 TANNER ST	Former Walbert Plastics - business closed
35 LOWELL CONN	None
41 TANNER ST	None
56.1 TANNER ST	None
66 CANADA ST	Recent enforcement actions by Fire Dept. and Dept. of Development Services due to numerous, significant code violations closed several unlicensed auto repair operations - no active businesses
92 TANNER ST	None
94 TANNER ST	Lowell Used Auto Parts (Scrap Yard)
97 TANNER ST	None
97.1 TANNER ST	None
119 MAPLE ST	None
121 MAPLE ST	None
121 TANNER ST	None
125 TANNER ST	None

128 MAPLE ST	None
131 TANNER ST	All Start Auto Repair; Ourb's Auto
131.1 TANNER ST	Lowell Bottle & Can Return Center
149 TANNER ST	None
162 PLAIN ST	Lowell Car Wash & Detail Center
162.1 PLAIN ST	Lowell Car Wash & Detail Center
190 PLAIN ST	Veterans of Foreign Wars Walker-Rogers Post #662
198 PLAIN ST	Veterans of Foreign Wars Walker-Rogers Post #662
282 LINCOLN ST	None
289 TANNER ST	Howe's Auto Sales
291 TANNER ST	Howe's Auto Sales
295 TANNER ST	Howe's Auto Sales
297 TANNER ST	Howe's Auto Sales

12.02(9): Redeveloper Obligations

Each disposition will utilize a Land Disposition Agreement (LDA) executed between the approved redeveloper and the Lowell City Council acting as the local redevelopment authority. The LDA will describe in detail the proposed development including edifices, site improvements and sub-surface systems with a definite and appropriate timetable. The LDA will contain protections to ensure the City of Lowell and Lowell residents' interests are protected including a right of reversion and additional performance standards as applicable. In addition, each LDA for Ayer's City Industrial Park projects will include the specific details of a project's use of sustainable design principles, the use of which will be enumerated in the forthcoming Performance Standards for the district, and explain how the project promotes the Commonwealth's Sustainable Development Principles. All LDAs will be subject to approval by the Department of Housing and Community Development.

12.02(10): Disposition

The improvements shown on Figure H: Lots Created for Disposition in 12.02(1) are conceptual in nature and intended to depict one manner in which Ayer's City Industrial Park could be developed consistent with this Plan. Subject to the requirements of this Plan, the goals and objectives of the City of Lowell, and applicable law, the proposed redeveloper(s) of the sites and the City of Lowell Department of Planning and Development will be provided with the opportunity to propose an alternative building and/or land use arrangement for Ayer's City Industrial Park. Any such development proposal will be reviewed by the City Council and the appropriate City representatives in accordance with the terms of the Land Disposition Agreement(s) to be negotiated with the proposed redeveloper, the City of Lowell and applicable law.

The Ayer's City Industrial Park Plan creates seven (7) disposition parcels for redevelopment by private partners, which are identified and proposed for reuse as defined in 12.02(1): Maps (Characteristics) in Map 15. Under M.G. L. Chapter 121B and Chapter 30B, the sale or lease of industrial or commercial real property by redevelopment authorities or their successors, engaged in the development and disposition of the real estate in accordance with an approved plan, is exempt from public disposition procedures required of all other local entities.

12.02(11): Citizen Participation

Public Process

Public input, as well as input from a broad range of City departments, has been an important component in the development of this Plan. The Public Process has had three major components:

- **Community Advisory Committee:** The Committee, composed of Project Area residents and property/business owners, as well as representatives from City and other public agencies, met with the City and Consultant Team three times over the course of the project to review project progress and provide input (a list of members and affiliations of this committee is included in the Acknowledgements section of this Plan).
- **Stakeholders:** In addition to holding a project update meeting with the property owners to hear the input on draft concepts, the team met individually with many of the large property owners to gain an understanding of their plans, as well as their suggestions for improvements to The Plan Area.
- **Public Meetings:** Three public meetings were held to elicit public feedback:
 - One to introduce the project and discuss ideas and concerns,
 - A second one to present and discuss early draft concepts for the EPA Plan, and
 - A third one to present and discuss a draft of the final EPA Plan prior to completion.

Presentations from these meetings were posted on the City's website. Public outreach that occurred in preparation for the public meetings included:

- E-flyers sent out to 2,000 community members
- Hard copy flyers distributed to residents and business owners in The Plan Area
- Invitations mailed to all business in The Plan Area
- Outreach through City website, Manager's blog and social media (Facebook and Twitter)
- Outreach through the Lowell Sun
- Outreach through local blogs

Monthly Project Progress Meetings with the Lowell Department of Planning and Development staff, EPA representatives, the Consultant Team and other interested parties, as needed, provided frequent opportunities for reviewing project progress and discussing new concepts. In addition, meetings were held with representatives from City agencies including Engineering, Public Works, Conservation Commission, Planning Board, Green Building Commission and Wastewater Utility.

Ongoing Public Participation

The City is committed to public participation and implementation of this Plan as it moves forward, there will be a number of opportunities for residents and stakeholders to continue to participate. The preparation and adoption of the Urban Renewal Plan will include the continued participation of the Citizens Advisory Committee established during the EPA Plan. Public meetings will be held to discuss

both the Urban Renewal Plan and proposed zoning amendments, as well as the design of major infrastructure improvements such as the recommended changes to the Lowell Connector and the realignment of Tanner Street.

Appendices

1. Existing Conditions Report: Ayer's City Industrial Park, Lowell, MA by CDW Consultants, Inc., 2013 (Environmental Conditions Report).
2. Market Analysis: Tanner Street District, Lowell, Massachusetts by Bartram & Cochran, 2012.
3. Connecting Lowell: Linking to the Concord River Greenway by Northern Middlesex Council of Governments, 2013 (River Meadow Brook Study).
4. River Meadow Brook, Lowell, Massachusetts Natural Resource Inventory by Mass Audubon Ecological Extension Service, 2012.
5. Silresim Superfund Redevelopment Study, Tanner Street Initiative, Lowell, Massachusetts by Stoss Landscape Urbanism, 2002.
6. Reuse Assessment Study for the Green Technology Center, Tanner Street Initiative, City of Lowell, Massachusetts by Stoss Landscape Urbanism and Taylor & Burns Architects, 2006.