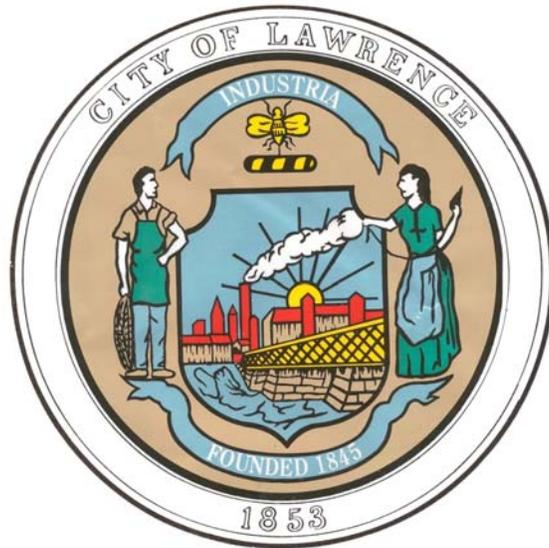


# CITY OF LAWRENCE 2009 OPEN SPACE and RECREATION PLAN



*Prepared by Groundwork Lawrence for  
The City of Lawrence Community Development Department*

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## Section 1: Executive Summary

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**View of Lawrence above the Great Stone Dam looking east.**

Groundwork Lawrence, under contract with the City of Lawrence’s Community Development Department, has completed the 2009 Open Space and Recreation Plan with the Community Development Department and additional research as requested by the Conservation Commission. The City of Lawrence finds importance in improving the quality of life for residents through support of community initiatives and open space improvements. These open space improvements require capital investment, dedicated city officials and an engaged populace. Lawrence suffers, like many cities in the Commonwealth, from a diminished budget in the current fiscal climate but

has a wealth of active, engaged, and dedicated residents who will be vital in helping the City achieve the goals set forth in the 2009 Open Space Plan.

The City of Lawrence is a community facing numerous challenges emblematic of those in other older northeastern urban centers and unique to its particular history. A compact textile manufacturing “machine” built in 1847 that enjoyed about 70 years of industrial prosperity, this densely-built city has experienced a long period of decline and disinvestment. Today our population, estimated around 70,000, is on the rise, particularly among our 65% Latino community although the City still has a per capita income of just \$13,360, a high school equivalency rate of 47%, and unemployment rates routinely

twice the state average. In addition, being one of the youngest communities in the Commonwealth, demand in Lawrence for parks, open space and recreational amenities is high. The challenges of many vacant properties, abandoned alleyways, brownfield sites, and underutilized riverfront areas are opportunities for creative and innovative open space development.

Lawrence’s diverse population desires a variety of open space and recreation amenities that meet their needs. The 2009 Open Space Plan Goals are a framework to improve the City’s infrastructure and maintain it as a vibrant place to live, work, and play. To achieve this vision, the 2009 Open Space and Recreation Plan establishes the following goals:

- Goal Number 1. Increase regular maintenance by dedication of more resources and decrease the amount of litter and debris in parks and open space
- Goal Number 2. Improve safety and perception of safety through increased enforcement of illegal and unsafe activities in parks and open space.
- Goal Number 3. Decrease dependence and burden on the DPW by encouraging public-private partnerships to protect and maintain public space.
- Goal Number 4. Increase activity and attendance in parks by creating and implementing more active in-parks programming.
- Goal Number 5. Increase attendance in parks by creating and implementing more passive park elements.
- Goal Number 6. Increase pedestrian and biking activity by encouraging walking and biking for exercise and enhancing safety and connectivity between schools, neighborhoods, and parks.
- Goal Number 7. Reclaim vacant lots and other abandoned and under-utilized land.
- Goal Number 8. Increase access to waterfront resources (i.e. rivers, canals) through enhancement and protection.

## Section 2: Introduction

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### A. Statement of Purpose



Dr. Nina Scarito Park

The 2009 Open Space and Recreation Plan is intended to guide the City of Lawrence’s investments and plans for parks, recreational amenities, trails, gardens, alleyways, and other open spaces across the community. This Plan is a renewal of the 2004 Plan, and contains numerous updates on improvements and investments that have taken place since the previous Plan was adopted in 2004.

The City of Lawrence has made a significant number of improvements to its parks and open spaces since the 2004 Open Space Plan was established. While the City did not achieve all of the short-term goals highlighted in

the 2004 Plan, Lawrence did take advantage of many distinct opportunities to improve its open spaces in

spite of being challenged by budget shortfalls and a continued lack of maintenance dollars and manpower. For instance, along the Spicket River, three new parks (Dr. Nina Scarito Park, the William Kennedy Playstead, and Manchester Street Park) were constructed, and major renovations were made at a third (Misserville Skate Park); the new state-of-the-art Lawrence High School was constructed, along with an overhaul to the adjacent Veterans Memorial Stadium; and a full renovation of Mt. Vernon Park and ballfields was completed as well. In late 2005, the Merrimack Valley Regional Transit Authority (MVRTA) completed construction of the new McGovern Transportation Center, which includes Lawrence's MBTA Commuter Rail station, a parking garage, a Lawrence Police Department substation, community meeting space, a café, and a public plaza. Funding from the Mayor's Parks Improvement Plan allowed for several phases of recreational field repairs of fencing, bleachers, players' amenities, and ball fields across the city, along with installation of new blue park signage and new trash receptacles; these funds also supported the installation of new field lighting and a field drainage study at Hayden Schofield Playstead, as well as design plans for the renovation of Cronin Park (2009-2010 construction) and the new Gateway Park at the former Oxford Paper Site.

### *B. Planning Process and Public Participation*

The City of Lawrence Community Development Department and the Conservation Commission contracted with Groundwork Lawrence, a local nonprofit focused on environmental and open space improvements, community food programs, youth initiatives and educational programming and events, to complete the evaluation and renewal of the Open Space Plan for 2009. To inform the 2009 Plan with the community's sentiments about open space and recreation needs, on behalf of the City of Lawrence, Groundwork Lawrence conducted extensive public outreach, including individual interviews with local officials, a series of three community meetings, and distribution of bilingual (English/Spanish) surveys to residents and students across the community (with over 250 residents completing surveys). Groundwork Lawrence also met with several neighborhood associations, and made presentations about the Open Space Plan renewal to the Lawrence Conservation Commission, Planning Board, Historical Commission, Board of Health, and Redevelopment Authority. For the additional research at the behest of the Conservation Commission, additional interviews were conducted and are outlined in Appendix E.

## Section 3: Community Setting

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### *A. Regional Context*

Lawrence is a small urban center located 25 miles north of Boston on the Merrimack River. With a land area of only 7 square miles, Lawrence is a densely populated community of 72,000 (2000 Census) people in the midst of a predominantly rural and suburban region. It is the largest municipality in the Lawrence/Haverhill primary metropolitan statistical area (PMSA). Lawrence is part of both Essex County and the Merrimack Valley region, and is located just 15 miles west of the Atlantic Ocean and 2 miles south of the New Hampshire border. The city is host to a variety of regional services, including government agencies, transportation facilities, and a mix of commercial and industrial activities. Lawrence is easily accessible to nearby communities and urban centers by virtue of its proximity to Interstates 495 and 93, as well as State Routes 28, 110, and 114.

### *B. History of the Community*

Lawrence, Massachusetts is known as the Immigrant City - an industrial center rich in ethnic diversity and culture. Today, Lawrence is a majority Latino city, with much of its population hailing from the Dominican Republic and Puerto Rico. This influx of new residents is helping to recharge the city's economy, bringing new life to neighborhoods that were nearly abandoned over two decades ago.

Lawrence is now among the youngest communities in the state, with nearly half its population under the age of 24. This intensifies the demand for open space, especially among children and teenagers.

Lawrence was first settled in 1708 by the Bodwell family, and remained a farming area for the next 150 years. It was incorporated as a town in 1847 and became a City in 1853. The city was built by entrepreneurs from the Essex Company eager to harness the power of the Merrimack River for textile manufacturing. Within three years of acquiring the land from neighboring towns, the Essex Company had built the Great Stone Dam, two canals, the Pemberton Reservoir, fifty brick buildings, a large boarding house, and four textile mills. A total of six parks were given to the City by the Essex Company and by 1924, the City had 185 acres of parks and playsteads.<sup>1</sup> By the early 1900s, Lawrence was the world's leading manufacturer of woolen textiles.<sup>2</sup> The demand for labor in the city's vast mills attracted immigrants from across the world during the nineteenth and twentieth centuries. This contributed to the development of a powerful labor movement in the city, culminating in the 1912 Bread and Roses Strike that established new standards for workers' rights and inspired reform legislation that led to better working conditions in every major American industry.<sup>3</sup>

However, Lawrence's dominance of the textile industry was short-lived. The introduction of synthetic fibers in the 1940s and the migration of textile mills to the south and eventually offshore led to a dramatic decline in jobs and population. By 1950 Lawrence had lost more than 20,000 manufacturing jobs.<sup>4</sup> The city's population went into a steep decline, from a peak of nearly 100,000 in 1920 to approximately 63,000 by 1980.<sup>5</sup>

### *C. Population Characteristics*

#### *2000 Census Information*

According to the 2000 Census<sup>6</sup>, the City of Lawrence has a population of 72,043 people. Lawrence is one of the youngest cities in Massachusetts, with 43 percent of the population under the age of 24 and an average age of 32 years old. The majority of Lawrence residents are Hispanic or Latino, comprising 59.7 percent of the total population. Approximately one-third of Lawrence residents are foreign-born. Median household income for the City of Lawrence is \$27,983, compared to \$50,502 statewide. Of the population age 25 and older, only 30 percent are high school graduates, six percent hold a bachelor's degree, and four percent hold a masters, professional, or doctorate degree.<sup>7</sup>

The City of Lawrence has a total of 25,601 housing units, of which 30.7 percent are owner-occupied, compared to 57.5 percent statewide. The average number of household members is 2.74 persons. Median rent in the city is \$504, compared to the statewide average of \$604. The median housing cost per month for owner-occupied units with a mortgage is \$1,044, and the median value of owner-occupied homes is \$116,400. The average number of vehicles per household for renters is 0.86 compared to an average of 3.11 vehicles per household for owner-occupied units. Of the working

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<sup>1</sup> Images of America: Lawrence Massachusetts, Eartha Dengler et al, p. 120

<sup>2</sup> City of Lawrence 1997 Open Space Plan: Lawrence Community Development Department, page 4

<sup>3</sup> Ibid, page 4

<sup>4</sup> Images of America: Lawrence Massachusetts, Eartha Dengler et al, p. 8

<sup>5</sup> US Census data compiled by the Boston Metropolitan Planning Organization, [www.ctps.org/bostonmpo/data](http://www.ctps.org/bostonmpo/data)

<sup>6</sup> It should be noted that this reflection of Lawrence's demographic information is limited by the outdated nature of Census 2000 data. It is recommended that the community revisit and reexamine this Open Space and Recreation Plan upon the release of new Census 2010 data.

<sup>7</sup> US Census Bureau, 2000 Census, from ePodunk Inc., [www.epodunk.com](http://www.epodunk.com)

population age 16 and over, 86.3 percent of residents drive to work, 6.3 percent take public transit, 3.3 percent walk to work, and 2 percent work at home.<sup>8</sup>

### *2009 Demographic Information*

With Census 2010 right around the corner, it should be noted that Census 2000 data may no longer accurately reflect Lawrence's most current demographic trends. For this reason, we include the following updated demographic information below.

Monthly unemployment figures in Lawrence for 2008 ranged from a low of 8.4 percent in April 2008 to a high of 13.1 percent in December 2008. Statewide, since February of 2008 the rate has risen from 4.8 percent to 9.1 percent in August of 2008 with the 2008 average for the state at 6.5 percent. 2009 has seen significant increases in the unemployment rate in Lawrence – August 2009 measured a rate of 17.8 percent. In the first quarter of 2003, Lawrence was home to 1,247 establishments in a variety of industries, employing close to 22,000 people. In 2008 Lawrence counted 1,608 establishments who employ an average of 23,371 people with the leading industries being Manufacturing, Retail Trade, Professional and Technical Services, Health Care and Social Assistance, and Other Services.<sup>9</sup>

The Massachusetts Department of Workforce Development Division of Career Services estimates the 2007 population for Lawrence to be 70,066 - a decrease in residents from Census 2000. However, the population of the Merrimack Valley is estimated to increase by 5,000 and the employment totals for the city have increased from 2000.<sup>10</sup> Lawrence is still a young community full of tremendous assets, as well as significant challenges to overcome. Chief among these challenges are the persistently high rate of unemployment, low rates of homeownership, and limited educational attainment. While the Open Space Plan cannot fully address all of these concerns, it is clear that parks and open space play a vital role in the physical, environmental, and economic health of the community. Improving Lawrence's parks and open spaces can help to attract jobs to the city, increase property values, improve health among residents, address transit needs, and provide safe recreational opportunities for people of all ages.

In 2007, following nearly a decade-long increase in home ownership rates, Lawrence (like a number of other communities across the country) began witnessing high rates of home foreclosure across the city. As of early 2009, the City of Lawrence's foreclosure rate was 45.2 annualized foreclosure notices per 1,000 properties—the highest in the Commonwealth of Massachusetts, and three times higher than the State median. Between 2007 and 2008, while foreclosure activity across Massachusetts slowed 4%, Lawrence in that time period saw an 8% increase in home foreclosures. The highest concentration of Lawrence foreclosures is located in the 01840 ZIP code with a rate of 63.7 housing units per 1000 units. In fact, eleven of the twenty Census block groups with the highest foreclosure rate in the Commonwealth are located in Lawrence.<sup>11</sup>

Lawrence is unique because it has many of the positive attributes associated with well-designed cities. The city has high connectivity (a dense network of streets and sidewalks connecting residents to

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<sup>8</sup> US Census Bureau, 2000 Census, from ePodunk Inc., [www.epodunk.com](http://www.epodunk.com)

<sup>9</sup> Massachusetts Executive Office of Labor and Workforce Development, Division of Unemployment Assistance, [www.detma.org](http://www.detma.org)

<sup>10</sup> Massachusetts Executive Office of Labor and Workforce Development, Division of Unemployment Assistance, [www.detma.org](http://www.detma.org)

<sup>11</sup> Massachusetts Housing Partnership; Massachusetts Foreclosure Monitor January 2009 [www.mhp.net](http://www.mhp.net)

points of interest), mixed land use, small blocks, and high residential density. It is possible to live, work, shop, and play within a few square blocks. Residential zones are located throughout the city, with a variety of housing types and densities permitted. While almost all of the land is developed, approximately 6 percent of city land area is devoted to parks, and there are 3.7 acres of parkland per 1,000 residents. By comparison, Boston has 9.3 acres of parkland per 1000 people and a higher population density.

However, despite the positive attributes of the city's design, obesity and related health disparities are disproportionately prevalent among Lawrence residents. Lawrence lags behind the rest of the state on virtually all health status indicators. The community reports rates of obesity-related indicators that are all higher than state rates (*Massachusetts Department of Public Health, 2001*):

- The age-adjusted mortality rate for coronary heart disease is 167.77 per 100,000 residents, which is significantly higher than the state rate of 145.77.
- The age-adjusted rate for hypertension for Lawrence is 8.73 per 100,000 residents, compared to 5.49 statewide.
- The age-adjusted rate for diabetes is 36.25 per 100,000, or 76 percent higher than the state rate of 20.56.

According to the 2000 Census (and 2009 park acreage), the nine census tracts that make up the central core of north Lawrence have approximately 2 acres per 1000 people. The southern half of the city has approximately 7 acres per 1000 people.<sup>12</sup>

A similar pattern emerges when the census data is broken down by age group, with the greatest concentration of children and elderly residents living in the northern part of city bordering the Spicket River. The greatest density of children under the age of 5 (averaging 2,196 to 4,017 children per square mile) can be found in four contiguous census tracts in the Arlington, Back Bay, and North Common neighborhoods, with the next highest concentrations in the Monmouth Street and Lower Tower Hill neighborhoods. The distribution is similar for children ages 6 to 15, with the greatest densities in the same four census tracts as the under-5 age group. The highest concentration of elderly residents (age 65+) can be found in four census tracts in the South Broadway, Monmouth Street/ Back Bay, and North Common neighborhoods (averaging 1907-6007 persons per square mile). The next highest concentrations of elderly residents are located in three census tracts in the Arlington, Back Bay, and Lower Tower Hill neighborhoods.<sup>13</sup> Taken together, these statistics strongly indicate a need for more open space in the northern part of the city, especially along the Spicket River.

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<sup>12</sup> US Census Bureau, 2000 Census, from the City of Lawrence Office of Planning and Development

<sup>13</sup> US Census Bureau, 2000 Census, from the City of Lawrence Office of Planning and Development.

#### D. Growth and Development Patterns

As an industrial city, Lawrence first developed along the banks of the Merrimack River. The city developed at an extraordinarily rapid pace during the latter half of the nineteenth century, fueled by investment from Boston families eager to capitalize on the textile trade. Unlike many New England cities, however, Lawrence was carefully planned and designed, with streets, parks, churches, commercial areas, and mill buildings located in close proximity. The historic core of the city is located on the north bank of the Merrimack River, and includes the North Canal Mill District, Essex Street, and the North Common neighborhood, where Lawrence's early immigrants worked, lived, shopped, and socialized. This area is also home to City Hall and the Essex County Courthouse. In 1848 the Essex Company donated 17 ½ acres of land to be set aside as the Lawrence Common—now named Campagnone Common. The Common when originally installed was a Victorian Public Garden with a fountain, wading pool and bandstand and was donated with the stipulation that the land “be forever kept open as a place of public recreation and rest.”<sup>14</sup> The North Common, located in the historic center of Lawrence, serves as a central place to walk, play, and relax, much like New York's Central Park. In addition to this initial core of the City, on the south bank of the Merrimack River mill buildings were developed with housing and commercial areas nearby. The South Common serves as a symmetric counterpoint to the North Common, offering many of the same amenities and providing valuable open space in the heart of the city.

- *Improvements to streetscapes (street tree plantings, container plantings, small pocket parks, parking lot screens and median plantings) can add more than 25 percent to the value of a nearby home.*
- *While proximity to a neglected vacant lot subtracts 20 percent from the base value of an adjacent home, adjacency to a stabilized lot—one that has been improved through cleaning and greening—increases the home's base value by approximately 15 percent.*

*Wachter, Dr. Susan. 2006; Public Investment Strategies: How They Matter for Neighborhoods in Philadelphia.*

#### *Public Transit*

Lawrence is served by regional bus and rail as well as the nearby airport in North Andover. A new MVRTA Intermodal Transportation Center, the Patricia McGovern Transportation Center, was completed in 2005 on Merrimack Street. The center includes a civic space with seating, landscaping and sculpture as well as multi-level parking that serves surrounding businesses and commuters.

#### *Water and Sewer Infrastructure*

The City upgraded its water system with a new 16-million gallon treatment facility. The new facility is located near the previously existing pumping station on the south side of Water Street. The design maximized open space at the site, which could still allow for development of a new park along the Merrimack River. This potential new park could further serve Lawrence residents with construction of a looped walking and biking path around the Merrimack River basin in

Lawrence.

Lawrence's sewer system is part of the Greater Lawrence Sanitary District (GLSD), which serves Lawrence, Methuen, Andover, North Andover, and Salem, New Hampshire. The existing system

<sup>14</sup> Images of America: Lawrence Massachusetts, Eartha Dengler et al, p48

functions effectively under normal conditions, but Combined Sewer Overflow (CSO) is a recurring problem during heavy rains, when a combination of raw sewage and storm water empties into outfall pipes along the Merrimack and Spicket Rivers. CSO issues directly affect water quality downstream and negatively impact parks and recreational boating along the river. There are currently five CSO outfall pipes in Lawrence. The primary outfall pipes are located by Lawrence General Hospital on the Spicket River, on the former Ferrous Technology site at the confluence of the Spicket and Merrimack Rivers, and behind the Wood Mill on the south bank of the Merrimack River. In addition, there are two secondary bypass pipes located several hundred yards upstream of the primary pipes on the Merrimack. Before the 2007 upgrade, the GLSD system would overflow an average of fourteen times per year.<sup>15</sup> The GLSD implementation of Phase One of a CSO Control Plan brought the system into compliance with state standards.<sup>16</sup> The GLSD Phase One CSO Control Plan included improvements to the existing wastewater treatment facility and pumping station in North Andover, as well as a limited program to divert storm drains in commercial and industrial areas that are currently utilizing CSO outfall pipes. The control plan reduces overflows from fourteen per year to five.<sup>17</sup>

### *Zoning and Development*

Lawrence's zoning ordinance includes thirteen zoning districts and two Overlay Districts (see zoning map in Attachment A). In general, business districts are concentrated in the downtown area and along major thoroughfares, including routes 28 and 114. The city's industrially-zoned land is primarily located on the north and south banks of the Merrimack River and along the rail corridors, as well as in a large industrial park on the western side of the city. Residential zones are located throughout the city, with a variety of housing types and densities permitted. In 1999, Lawrence's zoning was amended to create a minimum lot size of 10,000 square feet in all residential zones, making many of the city's smaller lots non-conforming. In October 2003, a zoning overlay district called the Reviviendo Gateway Initiative (RGI) was approved that permits a greater mix of uses and streamlined permitting in the mill district, eastern end of downtown, and the North Canal mill district. A similar overlay was created in April of 2008 for the Arlington Mill District in the northwestern corner of the city.

The buildout analysis for Lawrence, conducted in 2001 by the State's Executive Office of Environmental and Energy Affairs (EOEEA), projects a total possible buildout potential of approximately 700 new housing units and 1.5 million square feet of commercial/industrial space for the city. The study also indicates that Lawrence has approximately 211 acres of additional developable land area.<sup>18</sup> These calculations do not, however, account for the potential conversion of existing commercial/industrial space to housing as is partially allowed in the Reviviendo Gateway Overlay and the Arlington Mill District Overlay. This important assumption dramatically shifts the city's buildout potential, since much of the Lawrence's mill space could potentially be converted into lofts or apartments. Washington Mills was the first such mill conversion in Lawrence. The 200,000 square foot mill was renovated in 2007 and now contains 155 apartment units. At capacity, Washington Mills can house over 250 people in downtown Lawrence.

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<sup>15</sup> Minutes of GLSD Public Meeting on September 19<sup>th</sup> 2003, Thomson Elementary School, North Andover.

<sup>16</sup> CSO regulations are mandated through the National Pollutant Discharge Elimination System (NPDES) permit program administered by EPA and authorized as part of the Clean Water Act.

<sup>17</sup> Press release GLSD August 23, 2007 <http://www.glsd.org/news.html>.

<sup>18</sup> Buildout Analysis – Lawrence, MA Executive Office of Environmental Affairs

Similarly, in the fall of 2008, College Street Development LLC received 40R approvals for a mixed use redevelopment of the Malden Mills site. Chapter 40R of the Massachusetts General Laws provide financial incentives and encouragement for Cities and Towns to establish zoning overlay districts to promote housing and smart growth development.<sup>19</sup> This redevelopment will provide up to 500 residential units and 250,000 square feet of retail/commercial space in the buildings.

Another mill redevelopment that will impact residents and businesses is Union Crossing – slated for the Southwick Mill building at 50 Island Street and the Duck Mill across Union Street. This is a massive redevelopment that includes 125 housing units and approximately 125,000 sf of commercial space, with a 12,000 square foot daycare center. This redevelopment also plans to create two acres of new public open space including a streamlined pedestrian thoroughfare, new park space, and playground area.

In a city like Lawrence, further analysis of existing occupancy patterns and potential re-use scenarios is needed to fully account for the city's buildout potential. In any case, conversion of the city's vast mills to higher-intensity uses, such as housing and commercial office space, can yield significant new development opportunities. Conversion of mill space will in turn create a greater demand for high-

quality open space, as new residents and workers move into the area. At the same time, new parks, recreational trails, infrastructure and streetscape improvements can contribute to building the market for these types of uses. It is therefore vitally important that open space improvements are carefully integrated into future redevelopment efforts for mills, brownfield sites, and riverfront areas, as well as existing residential and commercial areas.

### ***What is Smart Growth?***

*Smart growth makes efficient use of land, fully utilizes urban services and infrastructure, promotes a wide variety of transportation and housing options, permanently preserves critical natural resources, and protects architectural and environmental character through compatible, high quality, and environmentally-sensitive development.*

*MA Executive Office of Energy and Environmental Affairs*

### ***Industrial Infrastructure***

A vestige of the high level of design and management of the downtown area by the Essex Company are the numerous alleyways. Historically they were used for trash and waste removal, and the inclusion of alleyways in an urban row could maximize the number of dwellings in one block. Currently they are a unique challenge and opportunity for the City and residents because the alleyways are subject to varying levels of illegal dumping and vandalism of adjacent property.

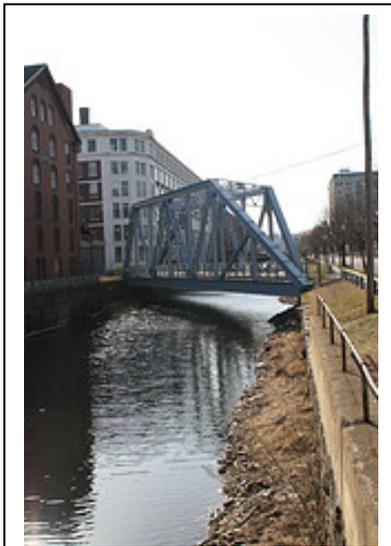
Residents also use the alleyways for pedestrian perambulation through the city, off-street parking and in a few cases for gardening and open space. Originally owned by Enel North America (who absorbed what was left of the Essex Company), the alleyways are now in an unknown state of ownership because they have not been successfully granted to and accepted by the City. Redevelopment options for the alleyways have been explored by GWL. Examples can be found in the LID Alleyway study.<sup>20</sup>

Two alleyways are used for gardening. One space has a few raised garden beds that are tended by the adjacent homeowners, and the other is owned by Groundwork Lawrence. In addition to gardening

<sup>19</sup> Massachusetts Office of Energy and Environmental Affairs Smart Growth Toolkit - [http://www.mass.gov/envir/smart\\_growth\\_toolkit/pages/mod-40R.html](http://www.mass.gov/envir/smart_growth_toolkit/pages/mod-40R.html)

<sup>20</sup> Groundwork Lawrence Low Impact Development Alleyway Guide <http://www.groundworklawrence.org/library>

in alleyways and community space, Lawrence residents garden in their yards and adjacent vacant lots. Vacant lot gardening provides food for residents, but in Lawrence, as in many urban areas, contamination of the lot could be present. Typical concerns are lead and polycyclic aromatic hydrocarbons (PAH's) which is a byproduct of burning certain materials. The Planning Department maintains a list of vacant and non-vacant city-owned lots in the city that are periodically proffered for sale as surplus property. Because of zoning restrictions, some City-owned lots are not buildable for businesses or residences and could meet the demand for more public gardening space. The City, through the Community Development Department, is establishing a more comprehensive list of these lots that would be suitable for garden development and determining what, if any, contaminants might be on site. The City has been successful in utilizing EPA Brownfields funding to conduct assessment on city property and plans to build on that program for vacant lots for gardens and other development.



**North Canal and repaired railroad bridge as pedestrian walkway**

Another remnant of Lawrence's industrial heritage are the North and South Canals. The Canals run parallel to the Merrimack River and were created to bring water power to the mills along the river. The canals are also owned by Enel which is responsible for the maintenance and upkeep of the walls. Water levels remain low in the canals due to the instability of those walls and raceways that extend to the mills. The Lawrence Heritage State Park maintains a portion of the sidewalk adjacent to the North Canal along Canal Street and adjacent property owners maintain other sections. The North Canal walkway provides a pleasant walking environment but a loop of the canals on both sides of the river has gaps lacking sidewalk and the South Canal along Merrimack Street does not have as many trees, benches or other amenities as the North Canal. The North Canal Cleanup in October 2004 removed ten tons of debris and trash from the canals, removed weeds along the walls and planted bulbs near the canal bridges. The work on that day highlighted the condition of this piece of City infrastructure and the work necessary to enhance it.<sup>21</sup>

The power of Lawrence's rivers was used for industrial development until the mills were less viable and the industry began to decline. As in other Massachusetts industrial and formerly industrial communities, that legacy left behind contaminated and sometimes abandoned sites that monopolized large portions of waterfront access. One such location was known as the Brook Street Site. A former industrial laundry facility, the site was pinpointed to be a neighborhood park by a community planning process initiated by Lawrence CommunityWorks in 2001. Groundwork Lawrence developed plans for the brownfield with help and support from the adjacent residents, Lawrence CommunityWorks, the City of Lawrence, and a landscape architect. The park, now named Dr. Nina Scarito Park, was constructed in 2006 and is a showcase brownfield-to-park project. Building on that success, Groundwork Lawrence and the City repeated their success with the construction of a 5 acre park along Stevens Pond that was completed in 2009 and christened Manchester Street Park.

Dr. Nina Scarito Park and Manchester Street Park currently are destination-points along the burgeoning Spicket River Greenway.<sup>22</sup> The Greenway is envisioned as a three-mile long "emerald

<sup>21</sup> North Canal Restoration and Enhancement Study; Groundwork Lawrence; April 2005; <http://groundworklawrence.org/files/library/nc-study.pdf>.

<sup>22</sup> The Spicket River Greenway Design Guidelines <http://www.groundworklawrence.org/spicketrivergreenway>

bracelet" of green spaces and walking paths connecting parks and open space through multiple neighborhoods and helps support the community's dual goals of riverfront restoration and neighborhood revitalization. Other parks to be linked along the river include Kennedy Playstead (completed in 2007), Misserville Park (renovated in 2007), Hayden Schofield Playstead and Immigrant Park. Linking parks and neighborhoods with car free access is an important tenet of smart-growth development, neighborhood revitalization, and improving the health of Lawrence residents.

## Section 4: Environmental Inventory and Analysis

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### *B. Geology, Soils and Topography*

Lawrence's surficial geology includes Floodplain Alluvium, Till or Bedrock, and Sand and Gravel Deposits. Floodplain Alluvium is located along the Merrimack, Spicket, and Shawsheen Rivers, extending as much as half a mile beyond the Merrimack water channel in some locations. Till or Bedrock can be found in the Prospect Hill/Back Bay and Tower Hill neighborhoods of North Lawrence, as well as some portions of South Lawrence, particularly the Saunders Street Neighborhood. The balance of the city's land is comprised of Sand and Gravel Deposits. See the figure of the surficial geology in Attachment A.

Lawrence's elevation changes approximately 210 feet from the lowest to the highest point within city limits. The lowest points are 40 to 45 feet above mean sea level, located along portions of the Merrimack and Shawsheen Rivers. Downtown Lawrence, which extends along Essex and Common Streets, is at an elevation of 50 to 56 feet above sea level. Much of the rest of the city is located at elevations between 50 and 150 feet above sea level. The highest elevation, approximately 250 feet, is near the water standpipe at the Reservoir on Tower Hill in the northwest corner of the city. The Reservoir is one of the city's largest open spaces, with 20 acres of land, walking paths, and tennis courts. The same elevation is achieved approximately a half-mile to the south, just west of the Our Lady of Good Counsel School. From this point, the grade drops some 200 feet over a distance of approximately 1500 feet to the northern banks of the Merrimack. The second highest point in the City is Prospect Hill, located in the northeast part of the city. Prospect Hill also held a reservoir that has since been closed and built over. The elevation at the peak of Prospect Hill is approximately 190 feet above sea level. Over a very short distance, the elevation drops more than 100 feet from Storrow Park to Marston Street below, creating some of the city's steepest slopes.<sup>23</sup>

In addition to the Reservoir and Storrow Park, the most dramatic topographic features in the City are Den Rock Park and the Frost School Park, both located in South Lawrence. Abundant elevation changes, frequent rock outcroppings, and a natural wooded setting make the 120 acre Den Rock Park valuable for hiking, rock climbing, and nature observation. At the Frost School Park, steep rock cliffs surround the athletic fields, with a shear drop in excess of fifty feet. In addition to providing a dramatic backdrop for the fields, the cliffs could potentially be used for rock climbing.<sup>24</sup>

### *C. Landscape Character*

The City of Lawrence encompasses just over 7 square miles, less than half the size of the surrounding communities of Methuen, Andover, and North Andover. The City's landscape is defined by an unusual combination of natural features, including its three rivers and two hills, and by its remarkable works of industrial engineering and architecture, most notably the Stone Dam, the North and South Canals, and the Ayer Mill Clock Tower. Lawrence's urban landscape is also defined by a tightly woven

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<sup>23</sup> City of Lawrence 1997 Open Space Plan, Lawrence Community Development Department, p. 8

<sup>24</sup> Ibid, p. 8

network of streets, alleyways, parks, and civic buildings, many of which were laid out as part of the original plan for the city in the 1850s. Finally, the city's chimneys and smokestacks, bell towers, steeples, and bridges contribute to a varied and dramatic vista from many vantage points both inside and outside Lawrence.

Lawrence is split roughly in half by the Merrimack River, which flows in a northeasterly direction towards Newburyport and Salisbury. The Spicket River enters the city at its northwest corner by Stevens Pond, and flows southeast through the city until it reaches the Merrimack River near the intersection of Canal and Marston Streets. The Shawsheen River flows north through Den Rock Park until it meets the Merrimack at a point roughly opposite the confluence with the Spicket River. The Shawsheen River also forms a portion of the boundary between Lawrence and North Andover. Den Rock Park forms part of the southeastern boundary of the city.

#### *D. Water Resources*

Lawrence has a wealth of natural and engineered water resources, which are contained within the Merrimack River watershed and the Shawsheen River sub-watershed. These resources include three rivers, two canals, Stevens Pond, Jacques's Pond, and the Reservoir. These water resources have tremendous ecological, historic, and recreational value, and could be greatly enhanced for the benefit of both city residents and the regional ecosystem. The Merrimack River is the state's second largest drinking water source for over 300,000 people in Lowell, Lawrence, and Methuen.<sup>25</sup> The water resources are also potential economic assets, as they contribute to the desirability of the city as a place to live and do business. Several recent initiatives and events in Lawrence demonstrate the growing level of public interest in the city's water resources:

- The Greater Lawrence Community Boating Program, located at the Abe Bashara Boathouse near Riverfront State Park on the Merrimack River<sup>26</sup>, hosts several community events each year, such as the Lawrence Celebration Regatta, the Tony LaHoud Memorial Sailing Classic, and several other educational and community events. In 2006, a competitive youth rowing team was formed that hosts many home meets during the school year, including an annual full squad scrimmage with Phillips Academy. In 2009, guided kayak tours of the Merrimack River were offered.
- Groundwork Lawrence's Annual Spicket River cleanups have been continually successful. 2009 was the 8<sup>th</sup> cleanup with approximately 350 volunteers and approximately 10 tons of garbage collected. Due to low water levels in 2007, the Spicket volunteers removed 17 tons of trash and scrap from the river banks by an unprecedented 700 volunteers. After eight years of Cleanups, thousands of residents have removed 92 tons of trash and over 1000 tires from the Spicket River.
- In 2005 local boaters, Rocky and Paula Morrison, organized the first Merrimack River Scavenger Hunt in response to the amount of trash visible along the banks of the river. The first Hunt collected and removed 300 tires and two 30-yard dumpsters of trash. Two years later they started the non-profit Clean River Project and have organized regular cleanups since. In 2007, a "tire-pullout day" removed over 500 tires from the river and 23 cars with the help of the Massachusetts State Police.<sup>27</sup>
- In 2004 RGI and Enel sponsored and organized the first canal cleanup. To safely remove debris, Enel lowered the water level to access the bottom and required safety gear such as

<sup>25</sup> Merrimack River Watershed Council; <http://www.merrimack.org/watershed/surfacewater.html>

<sup>26</sup> Greater Lawrence Community Boating Program [www.boating\\_program.com](http://www.boating_program.com)

<sup>27</sup> Clean River Project [www.cleanriverproject.org](http://www.cleanriverproject.org)

waders, goggles and heavy gloves. Ropes, ladders and baskets were also necessary to pull items out of the canal. Then in 2005, Groundwork Lawrence and the Architectural Heritage Foundation submitted an application to the National Park Service “Save America’s Treasures” Program for funding to research and repair the canal’s bridges.<sup>28</sup>

- With the assistance of the U.S. Fish and Wildlife Service's Nashua National Fish Hatchery, the Essex Agricultural and Technical High School released Atlantic Salmon smolts (young adult fish) at the base of the Great Stone dam in April of 2009. The hope is for the salmon to migrate to the Atlantic and then return to the Merrimack to spawn.<sup>29</sup>
- The Shawsheen River Watershed Association has regular cleanups, canoe trips and camping on the Shawsheen from Bedford to Lawrence. Since 2002, more than 2000 tires have been removed as well as pallets, lumber, and other trash. In the winter of 2008, the group also successfully removed a waste oil canister from the river that had been washed there by flooding.<sup>30</sup>
- Building on the community involvement begun by the Executive Office of Energy and Environmental Affairs sponsored Urban River Visions program, Manchester Street Park (the former Covanta Site) received grant funding for construction and brownfield remediation and was completed in July of 2009.
- The Friends of Jacques Pond are currently studying what environmental protections are feasible around the pond by methods that include a zoning change to Open Space Conservation and regulations on stormwater management and snow removal. The group is hoping to create a handbook with resident input for planning and protection around the pond that addresses the water quality.
- After significant community input and outreach by Lawrence CommunityWorks, Groundwork Lawrence developed a plan for and the City received a grant to construct a park on the Spicket River at the “Brook Street Site” in 2005. The park, renamed Dr. Nina Scarito Park, opened in 2006 and is a neighborhood amenity with community gardens, basketball court, a gazebo and walking trail.
- After similar neighborhood outreach and collaboration with Arlington Community Trabajando (ACT) and Central Catholic High School, Groundwork Lawrence developed a plan for and the City received a grant to construct a park adjacent to the Spicket River at the former “FEMA site,” a location that after the 2001 flooding saw the removal of 14 homes by FEMA. The park includes a portion of the Spicket River Greenway, playground, picnic areas and a shared softball field.
- Misserville Park, located next to the Leonard School and the Spicket River, was renovated in 2007 and includes expanded green space reclaimed from the parking lot, a basketball court and the city’s first designated skate-park. In addition, a school yard garden was constructed in



**2007 Spicket River Cleanup at the confluence of the Spicket River with the Merrimack River**

<sup>28</sup> North Canal Restoration and Enhancement Study; Groundwork Lawrence; April 2005; <http://groundworklawrence.org/files/library/nc-study.pdf>.

<sup>29</sup> Eagle Tribune; A true fish story: Essex Aggie students release Atlantic salmon into Merrimack River; April 10, 2009.

<sup>30</sup> Shawsheen River Watershed Association <http://www.shawsheen.org/>

- the school courtyard that includes low maintenance perennials, flowering trees and significant space for garden education for the middle school students.
- The Spicket River Greenway, a trail of green spaces and paths connecting parks and neighborhoods along the Spicket River was derived from a multi-year collaborative effort that has included the City of Lawrence, Groundwork Lawrence, numerous other community organizations, and a diverse group of stakeholders. Groundwork Lawrence continues to advocate for further enhancement of the Greenway through neighborhood cleanups, design charrettes, and community events. Through the DCR Recreational Trails Grant Program, the City's Community Development Department and Groundwork Lawrence have created design documents for portions of the trail after completion of a topographic survey of the entire 2.5 mile section of the Spicket River from Stevens Pond to Scarito Park.

### ***Rain to Recreation – Examples of Open Space uses for storm water management***

*After a regional watershed based approach to exploring water quality concerns and improvements, the city of Lenexa, KS created wetlands and lakes for flood retention and improving water quality. Their "Rains to Recreation" program specifically created dry bottom detention basins for use as sports fields. These open spaces are connected to neighborhoods and commercial areas by greenways.*

*Curitiba, Brazil has a high quality of life which is partially from an increase in parks and pedestrian amenities over the past 30 years. Most parks are on land unsuitable for development due to flooding and the linear park system provides buffering from these floods between rivers and streams and the adjacent neighborhoods.*

*Houston, TX's Cullen Park includes sports fields, drainage, trails and bathrooms all designed to withstand flooding that occurs in heavy rains that overflow the city's reservoir.*

*Brush Creek Park in Kansas City, MO was built as storage for big storms and a means for water recirculation for late summer droughts by the US Army Corps of Engineers.*

2004; *The Trust for Public Land and American Water Works Association; Land Conservation and the Future of America's Drinking Water.*

2000; *The Urban Land Institute and the Trust for Public Land; Inside Urban Parks.*

April 9, 2007; "A Convenient Truth: Urban Solutions from Curitiba, Brazil" MariaVazPhotography in Association with Del Bello Pictures. Video posted to <http://www.youtube.com/watch?v=hRD3l3rIMpo&NR=1&feature=fvwp>

The Merrimack River is considered a Class B waterway<sup>31</sup> which means that it is a habitat for fish and other wildlife and is also suitable for drinking water with appropriate treatment<sup>32</sup>. However, there are still major challenges to the health of Lawrence's rivers, including illegal dumping, Combined Sewer Overflow (CSO), stormwater runoff, bank erosion, and the persistent presence of invasive species. The Arlington Neighborhood experienced significant flooding in 2001 and 2006. After repeated floods, a portion of the neighborhood at Marion Avenue was declared a FEMA flood zone in 2001 and is now the site of Kennedy Playstead. The Spicket and Shawsheen rivers in particular suffer from illegal dumping of trash as well as oil and other toxic substances from auto body shops along the river.

<sup>31</sup> Mass DEP Source Water Assessment and Protection Report for Lawrence Water Department, p. 2

<sup>32</sup> 314 CMR 4.0 Massachusetts Surface Water Quality Standards

There are no currently mapped DEP designated Zone IIs, Interim Wellhead Protection Areas or Surface Water Protection areas within the boundaries of the City. There are SWPAs directly upstream and downstream of the Merrimack, however. (For definitions of IWPA's, SWPA's see <http://www.mass.gov/dep/water/drinking/wspaglos.htm> )

The historic flooding patterns of all three rivers in Lawrence have been drastically altered due to development, storm water controls and the construction of Interstate 495. However, significant portions of the city (17% according to MVPC's Merrimack Valley Region Natural Hazards Pre-Disaster Mitigation Plan) are located within the 100-year flood plain of the three rivers. Following is a summary of the flood plains along the banks of the three rivers.

#### *Merrimack River*

Much of the flood plain along the Merrimack River is undeveloped, or developed as parkland. Portions of the flood plain are also located within the Interstate 495 right-of-way. Several neighborhoods and businesses are located within the 100-year flood plain, including:

- An eight-block area southeast of the Guilmette School, which encompasses portions of Water Street, Medford, Melrose, Chandler, and Oxford Streets.
- A large area in the southwest portion of the city between Andover Street and the southern banks of the Merrimack, which encompasses part of the Lawrence Industrial Park.
- All of the area north of Merrimack Street between South Union Street and I-495, which includes several large mill buildings and parking lots.

#### *Shawsheen River*

Much of the land along the western side of the Shawsheen River is within the 100-year floodplain. Most of this land is undeveloped and is part of Den Rock, Shawsheen, Costello, and Coyne Parks, or within the corridor between I-495 and the river. The only developed area within the 100-year flood plain is at the confluence of the Shawsheen and Merrimack Rivers. This area, which includes both residential and industrial uses, encompasses portions of Portland, Market, Greenfield, Salem, Loring, and East Streets, and Crawford Road.

#### *Spicket River*

Several densely developed residential and commercial areas are located within the 100-year flood plain along the Spicket River. This includes the FEMA flood zone in the Arlington neighborhood (roughly bounded by Manchester and Holly Streets and the former Marion Avenue). In addition, the areas south of the river between Hampshire and Short Street, which includes the City Yard, are within the 100-year flood zone. A 16-block residential area north of the Spicket River is also within the 100-year flood zone, and is roughly bounded by Lawrence Street, Park Street, and Broadway. This includes the Hayden-Schofield Playstead, a heavily used neighborhood park with two ballfields. On the eastern end of the Spicket River, a large portion of the former Gencorp and Oxford Paper sites are within the 100-year flood zone. This area is under construction for new downtown parking and design plans have been created for a new park along the river.

#### *Wetlands*

The City of Lawrence has relatively few wetlands, due to the intensive development of riverfront lands and other areas over the past 150 years. Most of the wetlands that remain are concentrated along the undeveloped portions of the Shawsheen River and Merrimack Rivers. This makes the case all

the more important to preserve these existing wetlands, and to ensure that there is no further degradation of the city's wetland resources.

In 2005 the Lawrence Conservation Commission expanded the state wetland ordinance (25 foot buffer along all rivers) to recognize and further protect certain extended areas as wetlands. This designation provides for stricter regulation surrounding the city's wetlands, water resources, and adjoining lands when new development or redevelopment projects are proposed. Four additional riverfront areas were assigned to the City's rivers - 200 feet, 100 feet, 50 feet, and 25 feet based on the existing unique characteristics, development densities and uses.<sup>33</sup> This additional designation is important in preserving the existing wetlands and wildlife corridors that they provide. Further protection of riverbanks and wetlands could be accomplished through conservation or recreation easements (sometimes called a conservation restriction) that "sets aside" property and restricts development completely in a specific area.

***What do wetlands do and what do they provide?***

- *Flood control*
- *Silt Catchment*
- *Erosion Control*
- *Groundwater Recharge and filtration*
- *Vital habitat*
- *Recreation and Economy*

*The US Environmental Protection Agency;*  
<http://www.epa.gov/bioiweb1/aquatic/importance.html>

North Lawrence has virtually no wetlands, save for a very small area inside the cloverleaf of the I-495 interchange and a narrow band along the north bank of the Merrimack between the Spicket River and I-495. In South Lawrence, the wetlands along the Shawsheen River are primarily Wooded Swamp Deciduous, with smaller areas of Shallow Marsh Meadow or Fen. The wetlands on the south banks of the Merrimack River by the Industrial Park primarily consist of Wooded Swamp Deciduous, with several isolated areas of Shrub Swamp and Shallow Marsh Meadow or Fen. In addition to these areas, there are several small, isolated wetlands in the southwestern part of the City, including Jacques Pond and the area behind Donovan Playground. All of these smaller wetland areas are classified as Wooded Swamp Deciduous, Shallow Marsh Meadow or Fen. (see map in Attachment A) .

Lawrence has 12 Potential Vernal Pools and no Certified Vernal Pools as identified in an aerial survey by Natural Heritage and Endangered Species Program (NHESP). A cluster of Potential Vernal Pools is in Den Rock Park and the other isolated pools are also in South Lawrence. For these locations as identified by NHESP, please see Attachment F.<sup>34</sup>

#### ***D. Vegetation***

Much of Lawrence's old growth vegetation is located in Den Rock Park, where the dominant species include White and Red Oak and Gray Birch. Other species include Scotch Pine, White Pine, Poplars and Red Maples. The understory consists primarily of high blueberry bush and ferns.<sup>35</sup> Lawrence's three rivers are home to a variety of wetland plant species, including several spectacular weeping willows along the upper sections of the Spicket River. Invasive species are also prevalent in these areas,

<sup>33</sup> City of Lawrence Codes and Ordinances Rivers and Protection Ordinance September 30, 2004 p. 8

<sup>34</sup> Swain, Patricia C.Ph.D. Natural Heritage and Endangered Species Program; City of Lawrence Open Space Plan Reponse Letter. October 23, 2009.

<sup>35</sup> City of Lawrence 1997 Open Space Plan: Community Development Department, p. 12

especially Japanese Knotweed and Oriental Bittersweet. Other common species include Tree of Heaven (Acanthus), Sumac, and Poison Ivy. These plants, which choke native vegetation, are also commonly found in many of the city’s vacant lots, alleys, and parks. Beyond the riverfront areas, a variety of mature and attractive trees can be found in the neighborhoods of Mt. Vernon, Colonial Heights, and sections of Prospect Hill and Tower Hill. In many of the city’s neighborhoods, however, older street trees have been removed or destroyed by disease, leaving these neighborhoods with a poor urban tree canopy bereft of greenery. Several historic downtown streets including Essex, Common, Canal and Salem Streets are lined with attractive street trees. Species on these streets include Honey Locust, Pin Oak, and Princeton Elms.

Since 2004 over 440 trees have been planted in the City with assistance from Groundwork Lawrence, private contractors, and volunteers. Tree species include pear, lilac, liberty elm, London plane, honey locust and others. Many trees like river birch, silver maple, willows and black gum were planted in new parks but, in 2008 GWL piloted a new GreenStreets Program with 18 trees planted in various city neighborhood road rights-of-way. In 2009, GWL planted an additional 60 trees. Trees within the road right-of-way are planted on private property and the homeowners take care of the trees, but the entire community benefits from the shade, beauty and countering of the urban “heat-island” effect that the “private” trees provide.

*E. Fisheries and Wildlife*

The intensity of development and limited vegetative cover in Lawrence has minimized the extent of wildlife habitat over the years. Nonetheless, a great variety of fish and bird life can still be found in and around the city’s riverfront areas. Three types of wildlife habitat are common to Northeastern Massachusetts: open land, woodland, and wetland. Of these three types, wetlands are by far the most common in Lawrence. Below is a summary of each of the habitat areas and their characteristics:



- 1) Open land habitat consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The kinds of wildlife attracted to these areas include woodchuck, mourning dove, meadowlark, field sparrow, eastern cottontail rabbit, and red fox.
- 2) Woodland habitat consists of areas of hardwoods or conifers, or a mixture of both, and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas includes ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, porcupine, and deer mice.
- 3) Wetland habitat consists of open marshy, swampy, or shallow water areas where water-tolerant plants grow. Some of the wildlife attracted to such areas include ducks, geese, herons, shore birds, muskrat, snapping turtle, and beaver.<sup>36</sup>

<sup>36</sup> City of Lawrence 1997 Open Space Plan: Community Development Department, p. 12-13

A portion of the Shawsheen River just north of 114 has been identified by NHESP as an uncommon natural community - a Small River Floodplain Forest which is a silver maple/green ash forest on alluvial soils. This particular community is currently degraded by abundant exotic species, disturbance, and no buffer from development.

Rare and protected species that have been found in Lawrence include birds, vascular plants, and invertebrates. Our neighboring communities of Andover, Methuen and North Andover are also identified by NHESP to have significant Core Habitat for Watch Listed Species like river birch (*Betula nigra*) and the Bald Eagle (*Haliaeetus leucocephalus*) and recently a listing of Blandings Turtle (*Emydoidea blandingii*) just over the border in Methuen. The habitat areas are shown on the map in Appendix F but are predominantly focused near water resources. River birch is a species found in a floodplain forest and while Lawrence does not have any communities identified by NHESP, stands of the tree with peeling bark are visible along the Merrimack and Spicket's banks. The bald eagle, peregrine falcon and other raptors have increased their population in Massachusetts due to restoration and environmental laws. Numbers of peregrine falcons reached the "pre-DDT" levels for the first time in 2007 after successful introduction of young falcons into the state (NHESP 2009). Peregrine falcons can be found and prefer roosting in high man-made or natural structures that overlook water bodies. The Bald Eagle uses the Merrimack River for winter habitat and is protected and monitored by NHESP.

According to NHESP, Lawrence has lost many species of the past century and a half. It is very important to protect and manage the existing habitat along Lawrence's floodplains and riverside areas to prevent habitat fragmentation for these protected and non-protected species. NHESP states,

Completing conservation protection of remaining unprotected land along the rivers, with buffers included where possible, would enhance the viability of these special areas - size and continuity of open space is particularly important for supporting wildlife populations. Preventing habitat fragmentation is vital in protecting the ecosystem, for the rare species on the enclosed list, as well as for additional common species, particularly reptiles and amphibians.<sup>37</sup>

For further information about Lawrence's rare and listed species, please see the NHESP letter and mapping information in Appendix F.

The Merrimack River is also home to a variety of fish. The most common species found in Lawrence are American Shad, River Herring, Sea Lamprey, Striped Bass, and Atlantic Salmon.<sup>38</sup>

Merrimack River Essex Dam, Lawrence, Massachusetts (as of: 10/31/08)	
Species	Total Returns to Date
Atlantic Salmon	119
American Shad	25, 116
River Herrings *	108
Striped Bass	6

<sup>37</sup> Swain, Patricia C.Ph.D. Natural Heritage and Endangered Species Program; City of Lawrence Open Space Plan Reponse Letter. October 23, 2009.

<sup>38</sup> U.S. Fish and Wildlife Service, Anadromous Fish Returns for the Merrimack River at the Essex Dam, Lawrence, as of 10/31/08: [www. http://www.fws.gov/r5cneafp/returns.htm](http://www.fws.gov/r5cneafp/returns.htm)

Sea Lamprey	4,873
*River herring refers collectively to two fish species: blueback herring and alewife	

A new fish lift was completed just prior to completion of the 2004 Open Space Plan that should have improved passage for anadromous fish in the Merrimack River. Unfortunately, numbers of shad and herring specifically have collapsed across a wide range of their habitat, so the numbers represented above do not reflect improvement from 2004.<sup>39</sup> The lift constructed at the Essex Dam in Lawrence works well, but has a limited flow range. For example, during extremely high (i.e. 2006 Mother's Day Flood) flow events, the fish cannot find the entrance to the lift. The Fish and Wildlife Service is looking for funding to increase passage and capacity in the Spicket River in order to improve habitat for anadromous fish in the Merrimack River watershed. In addition, there are currently three dams under study for removal on the Shawsheen being led by the US Fish and Wildlife Service and the Coastal America Foundation.<sup>40</sup>

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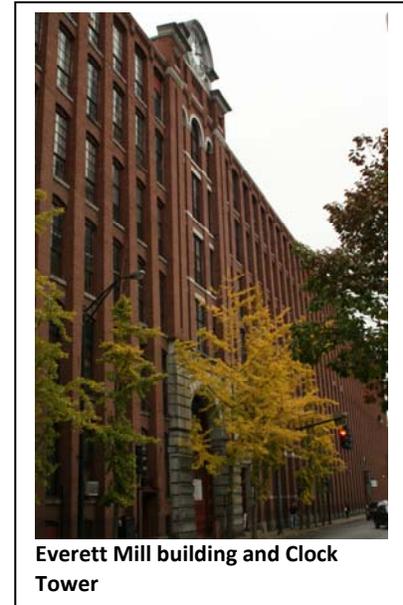
<sup>39</sup> Atlantic States Marine Fisheries Commission 2008 Annual Report; <http://www.asmfmc.org/>

<sup>40</sup> Eagle Tribune; Experts study Shawsheen's Future: Dam removal evaluation begins; May 15, 2008

## F. Scenic Resources and Unique Environments

Lawrence has a wealth of scenic resources and unique environments, many of which have been discussed earlier in this section. These resources include riverfronts, forested settings, and a variety of historic structures and landscapes. The City's most outstanding scenic resources are summarized below:

- **The Great Stone Dam**, designed by Charles S. Storrow, Chief Engineer for the Essex Company, was completed in 1848 to power Lawrence's vast mills. At the time of its construction it was the longest dam in the world, measuring 1629 feet.<sup>41</sup>
- **The Everett Mill** is one of the City's largest mill buildings, standing six stories tall and occupying an entire city block. The Everett Mill Clock Tower, which faces the eastern end of Essex Street, creates an impressive anchor to the city's historic main street.
- **Merrimack River Views:** There are a number of outstanding views of the Merrimack River located throughout the City, especially from the many bridges and the 495 highway overpass. Several locations along the riverbanks also afford excellent views, especially at the Abe Bashara Boathouse, Pemberton Park, and Riverfront State Park.
- **Rollins School Clock Tower:** This stately brick school building and clock tower were built in the early 1900s as part of a citywide school building program that also included the Bruce, Tarbox, Wetherbee, Hood, and Breen Schools. The Rollins School is named for John Rodman Rollins, a two-term Mayor of Lawrence who also served as paymaster of the Essex Company and cashier for the Pacific Mills.<sup>42</sup>
- **Water Tower and Reservoir:** The Water Tower and Reservoir on Tower Hill are among the city's most important historic sites. Built in 1896, the water standpipe was designed by City Engineer Arthur D. Marble to hold more than 500,000 gallons. The brick casing for the tower, designed by Lawrence architect George G. Adams, is the tallest building in the city with an observation deck at 107 feet above the foundation. The Reservoir originally had a storage capacity of more than 40 million gallons of water.<sup>43</sup> Although a portion of the Reservoir has since been filled in, it still serves as the City's primary facility for water storage.
- **City Cemeteries:** The City's three cemeteries (Bellevue, St. Mary's, and Immaculate Conception) on Tower Hill are significant both for their historic and scenic value. In total, the cemeteries comprise more than 130 acres of land.
- **Historic Mill Buildings:** The enormous mill buildings lining the Merrimack River are perhaps the city's most distinctive feature. With close to twelve million square feet of space, these buildings are testament to the city's industrial past. Among these, the Pacific Mill, Washington Mill, Wood Mill, and Ayer Mill are the largest. In 1924, mill buildings covered nearly 300 acres of land along the Merrimack River.<sup>44</sup>



<sup>41</sup> Images of America- Lawrence Massachusetts: Eartha Dengler et al, p. 12

<sup>42</sup> Images of America- Lawrence Massachusetts: Eartha Dengler et al, pp. 105, 115

<sup>43</sup> Images of America- Lawrence Massachusetts: Eartha Dengler et al, p. 47

<sup>44</sup> Images of America- Lawrence Massachusetts: Eartha Dengler et al, p. 42

- **Ayer Mill Clock Tower:** The Ayer Mill Clock Tower, built in 1910 as part of the American Woolen Company headquarters, is the largest mill clock in the world. The clock tower was completely restored in 1998.
- **Arlington Mills and Stevens Pond:** The Arlington Mills complex, originally built in the late 1800s, is now used by Polartec, LLC (formerly Malden Mills) to manufacture their signature Polartec fleece fabric. After a devastating fire in 1995, Malden Mills built a new facility on the site and continues to be one of the city's largest employers. Stevens Pond, located at the center of the complex, is one of the most attractive features of the site and includes a small dam with a walkway connecting the north and south sides of the Spicket River. In 2009, Manchester Street Park opened on the North side of Stevens Pond. The new park includes a large open space, playground, community gardens and a dramatic overlook of the pond and mill buildings. The City received funding in 2009 from the DCR Recreational Trails Grant Program to complete the park's connection with the Spicket River Greenway.
- **Campagnone North Common:** The Campagnone North Common was included in the original plan for the city. The 17 ½ acre park was donated by the Essex Company to the young city of Lawrence. The Common had a bandstand and a pond as well as the pathways, veteran monuments and trees that you see today. Historically, the houses and buildings facing the Common had specific rules regarding the height, material and usage of the structure. The Common was renamed the Campagnone North Common after three sons of a Lawrence family were killed in World War II.
- **Shawsheen River Walkway:** This walkway, which meanders along a section of the Shawsheen River through Costello Park and behind the South Lawrence East School, offers lovely views of the river and surrounding woods and wetlands. The Walkway and Shawsheen River are also used as an outdoor classroom by some Lawrence High School teachers.
- **Den Rock Park** is the city's largest open space, with 120 acres of woodland trails and a natural rock face used for climbing.
- **Views from Storrow Park:** The views from Storrow Park on Prospect Hill are among the best in the city. The Ayer Mill Clock Tower, Lawrence City Hall tower, and other landmarks are visible from the walkways and benches along High Street.
- **Wall Experiment Station:** The Senator William X. Wall Experiment Station, also known as the Lawrence Experiment Station sits on the Merrimack River just upstream of the Great Stone Dam. The facility, designated as a National Historic Civil Engineering Landmark by the American Society of Civil Engineers, was one of the first laboratories in the world to conduct environmental research.<sup>45</sup> Beginning in November 2007, a \$22 million expansion and renovation will take 2 years to complete and the finished building will be LEED (Leadership in Energy and Environmental Design) certified with photovoltaic cells, rainwater recycling, stormwater management, and green roof designs.

### *G. Environmental Challenges*

Like many industrial cities in New England, Lawrence faces significant environmental challenges related to the contamination of land and buildings from former industrial uses. This is especially true of the city's riverfront sites where industrial activity was historically concentrated. Recognizing this, the City has been actively working with private landowners to clean up and redevelop contaminated sites. Since 2004, the City of Lawrence has received \$800,000 in EPA Brownfields Funding for site assessment and cleanup. GenCorp is scheduled to complete their clean-up at the 8 acre former manufacturing site on Canal Street in the fall of 2009. Adjacent to that site, the Massachusetts Highway Department and

<sup>45</sup> Massachusetts Department of Environmental Protection; <http://www.mass.gov/dep/about/organization/wes.htm>

the City of Lawrence have been working collaboratively to remediate a 3 acre site. The two sites together will become parking and a passive park along the Spicket River. The parking lot construction will begin this year but the park is currently not funded.

There are currently 44 DEP Tier Classified Oil or Hazardous Materials sites in Lawrence (Tier Classified Sites are oil or hazardous waste sites that have been reported to the Massachusetts Department of Environmental Protection and “tier classified” under M.G.L. Chapter 21 and the Massachusetts Contingency Plan).<sup>46</sup> More than half are located on or near a river; for approximate locations see Attachment A. Lawrence still has one solid waste site after two DEP solid waste sites closed in Lawrence since 2004. The remaining location, a materials recycling facility operated by Waste Management, Inc, is on Marston Street.<sup>47</sup>



Flooding along the Spicket and Shawsheen Rivers continues to be a major problem. The 2006 Mother’s Day event flooded half of the Arlington Neighborhood along the Spicket River.<sup>48</sup> Rainfall between 10-15 inches was recorded in Northeastern Massachusetts over four days. The estimated property damage (commercial, residential, and municipal) along the rivers exceeded \$34 million.<sup>49</sup> For maps of the 500 and 100 year flood plains, please see Attachment A.

Native invasive species and non-native invasives make up a portion of the flora along the rivers and in Lawrence green spaces. Invasive species degrade floodplain and adjacent habitat and NHESP recommends monitoring conservation land and removing invasives before they become a problem and impact native species. The predominant trouble plants (not all non-native) are Japanese Knotweed (*Fallopia japonica*), Oriental Bittersweet (*Celastrus orbiculatus*), common reed (*Phragmites australis*), and poison ivy (*Toxicodendron radicans*). In park construction and renovation projects the City includes measures to remove the invasives at the site during construction; unfortunately, the long term maintenance and diligence required in final removal of some invasives is more than the Department of Public Works (DPW) can currently manage.

Erosion along the three rivers is not currently an issue that dramatically affects residents and properties. The banks of the three rivers is mostly stable; flooding is an issue as previously discussed, and with the flooding, some areas see deposits of sand and sediment that is costly to clean up. A large portion of the Merrimack has existing development including buildings and parking lots directly abutting the river, so there is concern that contaminants can be regularly washed into the river. Unchecked or increased stormwater runoff from new impervious area can be a significant factor for new erosion concerns on river banks or sloped areas. Future development on all three rivers will be subject to

<sup>46</sup> For more information visit <http://www.mass.gov/dep/> or for the Massachusetts Contingency Plan see <http://www.mass.gov/dep/cleanup/laws/mcptoc.htm>

<sup>47</sup> [www.wmdisposal.com](http://www.wmdisposal.com)

<sup>48</sup> Informing the Plan for a Neighborhood Revitalization Strategy Area for the Neighborhood of Arlington in Lawrence, MA. MIT Department of Urban Studies and Planning; Fall 2007.

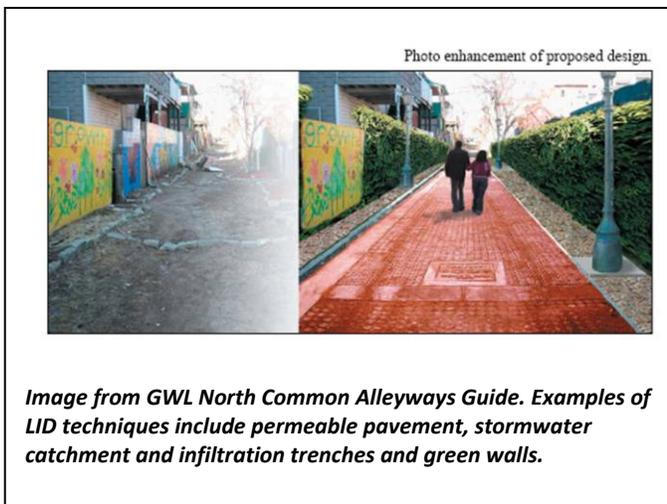
<sup>49</sup> DRAFT Merrimack Valley Region Natural Hazards Pre-Disaster Mitigation Plan; Merrimack Valley Planning Commission; Spring 2009.

current stormwater and wetland regulations which protect against erosion potential by the development.

There are a few areas of the City where steep riverbank slopes exist as defined and mapped by the USDA and NRCS however most of the City is identified as “water or urban land-no slope.” The steeper locations with a slope of 25-35% are along the north bank of the Merrimack along Water Street as well as the southern bank of the Merrimack near Wolcott Street and Riverfront State Park. Although mapping does not show it, some locations along the Spicket have significantly steep banks or sedimentation issues. Some steep areas, based on observation, include the bank across from Scarito Park, the bank under the E. Haverhill Street Bridge and some sections along Erving Avenue. The DPW yard also sits on the southern bank of the Spicket at Auburn Street. For their operations they are required to stockpile piles of sand, gravel, and dirt which without proper storage and management could pose threats to the Spicket. All of these locations should be given special attention for any increase in the level of existing erosion, adverse impacts by new and existing development, and if necessary soliciting professional recommendations for repairing the river bank and armoring against further erosion.

Lawrence’s alleyways are a unique environmental challenge. Historically used for garbage and sewer access to homes, the alleyways have since fallen into disrepair and negligence without an obvious

owner. The alleyways are predominantly paved surfaces used for parking and garage access. They consistently have poor drainage and can be found as illegal dumping grounds of household waste, larger items such as televisions, computer monitors, mattresses and other white goods. Groundwork Lawrence has developed schematic visions for Low Impact Redevelopment of the alleyways that await funding availability and a comprehensive plan for establishing ownership.<sup>50</sup> Wetlands Regulations, 310 CMR 10.04, and the Water Quality Certification Regulations, 314 CMR 9.02, define low impact Low Impact Development (LID) techniques to mean



innovative stormwater management systems that are modeled after natural hydrologic features. Low impact development techniques manage rainfall at the source using uniformly distributed decentralized micro-scale controls. Low impact development techniques use small cost-effective landscape features located at the lot level.<sup>51</sup>

LID techniques such as rain gardens, infiltration beds, or permeable pavement are comprehensive approaches to the stormwater management of a site or facility and generally attempt to “treat the rainwater where it falls” instead of large catchment basins and piping.

<sup>50</sup> Groundwork Lawrence Low Impact Development Alleyway Guide <http://www.groundworklawrence.org/library>

<sup>51</sup> Massachusetts Stormwater Handbook 2008 can be found here <http://www.mass.gov/dep/water/laws/policies.htm#storm>

## Section 5: Inventory of Lands of Conservation and Recreation Interest

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There are 41 publicly owned parks in the City of Lawrence, comprising a total of more than 270 acres of open space. Approximately half of these parks are less than 2 acres in size. The majority of these parks are owned and managed by the City, with the exception of the Lawrence Heritage State Park Visitors Center, the Riverfront State Park, Abe Bashara Boathouse, and Pemberton Park, which are owned and managed by the State Department of Conservation and Recreation (DCR). Twenty of these parks include active recreational facilities and fifteen provide opportunities for passive recreation.

Open Space and areas for recreation in Cities are important to the health and strength of the community and its residents. Cities' built environment encompassing streets, sidewalks, buildings, and infrastructure and the less structured open space affect the daily lives of residents by providing healthy means of getting to work and safe places to exercise. A community as a whole is healthy because of safe access to parks and open space across their City. The report, *Strategies for Enhancing the Built Environment to Support Healthy Eating and Active Living* by the Healthy Eating Active Living Convergence Partnership outlines several organizational practices and policies that can shape healthy communities through the built environment. Two main components are walkable and bikable neighborhoods and park and recreation facilities. Parks and recreation facilities provide the space for unstructured or structured outdoor play and a walkable community has equal opportunity access to those amenities.

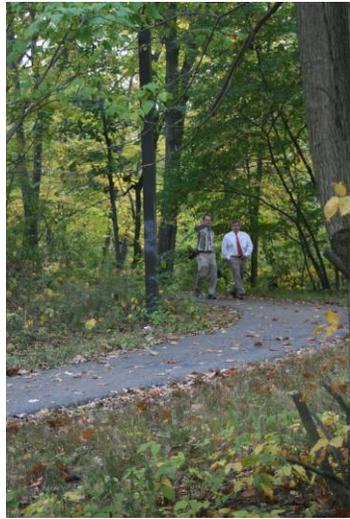
The City of Lawrence, like most Massachusetts communities, uses zoning to define and restrict use on its land. The Open Space and Recreation (OSR) zone is the most basic of definitions for protecting and maintaining park and recreation areas and is defined to "permit public recreational uses in areas which will benefit and be compatible with surrounding uses." Areas zoned Open Space Conservation (OSC) are designated to "preserve natural resources and environmentally significant area while promoting public access for passive recreation..." Also for OSC zones, infrastructure is only permitted to promote passive recreation and access to the natural areas. Changes to zoning are required to have a public hearing, a positive recommendation by the Planning Board and a vote by the city council. Any infrastructure proposed in an OSC area must also be approved by the Conservation Commission.

There are other mechanisms for protecting land in the Commonwealth which include conservation restrictions (CR's), deed restrictions, and combinations of the same. "Conservation restrictions are interests in land acquired through gift, purchase, or regulatory exaction which are designed to preserve natural resources from adverse future change"<sup>52</sup> Municipalities through their Conservation Commission or non-profits can "hold" the restriction on property which defines the potential uses or lack of uses on land that the owners wish to preserve in a specific way. Deed restrictions are legal covenants included in the property deed which are imposed on a buyer at the time of sale of the property. These can limit the use on property and restrict development, hence protecting the land or preserving an existing use.

Although quite dense and urbanized, the capacity for green connections of the existing parks and open space is vast. With the burgeoning Spicket River Greenway, existing trails along the Shawsheen and Merrimack Rivers, vacant lots and alleyways, Lawrencians could walk to work, school, and home on almost exclusively off-road routes. With regional connections, residents of Lawrence and neighboring communities could walk, bike and hike through a large portion of the Merrimack Valley including New

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<sup>52</sup> Massachusetts Conservation Restriction Handbook; Executive Office of Energy and Environmental Affairs; First Edition 1991 rev 2008 <http://www.mass.gov/Eoeea/docs/eea/dcs/crhandbook08.pdf> .



***Shawsheen River Trail behind  
South Lawrence East School***

Hampshire as well as further south towards Boston. Regional initiatives are detailed in Appendix E but include connections to the Bay Circuit trail to the west of Lawrence through Andover, northern connections along the Spicket River and former rail lines in Methuen and into Salem, connections south through Den Rock Park along the Shawsheen River into Andover. Regional non-motorized connections are not limited to off road trails. Andover is moving forward with sidewalk and streetscape improvements along Rt 28 that include lighting, landscaping and more pedestrian space. To date, Andover has completed Wheeler Street to Stevens Street and is seeking funding to complete the area from downtown Andover to the Lawrence border. In their planning in the Open Space Plan and Master Plan, The Town of Andover identified linkages and locations for improved access to the Shawsheen and their existing river trail that could extend to their border with Tewksbury and the 93 Junction Project.<sup>53</sup>

Section 3C discusses the quantity of open space in Lawrence but a discussion of access to open space can be accomplished by reviewing the 1/10 th mile walking distance to parks. In that analysis one can see the *coverage* of parks in relation to areas with high concentrations of children. The radius was chosen for the walkability and universal access of this short distance. As previously mentioned, the northern portion of the City's open space distribution is 2 acres per 1000 people and in south Lawrence is 7 acres per 1000 people. The heavy use of parks and playgrounds in the north portion of the city is reflected by the sheer concentration of young people as shown in the map depicting that density (Attachment A). This map also displays the locations in the City that do not have parks within the tenth of a mile radius. As the City utilizes and improves existing parks and infrastructure in neighborhoods, increasing the coverage of parks could become a future goal.

The following six pages tabulate park land and recreational space in the City by owner and usage.

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<sup>53</sup> I-93 Interchange Project Information <http://i93tritowninterchange.mhd.state.ma.us/>

**City of Lawrence 2009 Open Space Plan  
Inventory of Lands of Conservation and Recreation Interest**

Name	Size (acres)	Owner	Management Agency	Current Use		Special Characteristics			DCS Funded	Public Access	HC access	Zoning	Other Statutory Protections
				X=Existing P=Potential		Active Recreation	Passive Recreation	Pocket Park					
<b>Public Ownership</b>													
<b>Existing Parks</b>													
Bourgoin Square	2.7	City	City	X						N	Y	I-2	None
Bruce School Park	1.7	City	City	X				X		N	Y	R-2/R2A	None
Campagnone Common	17.5	City	City	X	X		X			N	Y	OSR	Local Historic District, National Register Historic District
Costello Park	6.9	City	City		X			X		N	Y	OSR	None
Coyne Park	5.2	City	City					X		N	Y	OSR	None
Cronin Park	1	City	City			X				N	Y	R3/R4	National Register Historic District
Den Rock Park	81.8	City	City		X			X		N	Y	OSC	None
Donovan Park	3.4	City	City			X		X		N	Y	R2/R3	None
Frost School Recreation Complex	2	City	City	X				X		N	Y	R1/ R1A	None
Geisler Pool		Mass. DCR	Mass. DCR	X						N	Y	Y	
Gagnon Park	1.2	City	City			X				N	Y	R-2/R2A	None
Guilmette School	1.5	City	City	X				X		N	Y	OSR	None

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				X=Existing P=Potential		Active Recreation	Passive Recreation	Pocket Park					
Hayden Schofield Playstead	3.1	City	City	X					N	Y		OSR	None
Kennedy Playstead	1.3	City	City	X	X				Y	Y	Y	I2/R3	None
Lawrence Heritage State Park	0.5	Mass. DCR	Mass. DCR				X		N	Y		B3	None
Higgins Pool		Mass. DCR	Mass. DCR	X					N	Y	Y		
Highland Park	0.2	City	City			X			N	Y		I2/B1/R3/R4	None
Howard Playstead	4.6	City	City	X					N	Y		OSR	None
Immigrant Place	1.6	City	City		X				N	Y		B2/OSR	None
Lindquist Playstead	2	City	City	X				X	N	Y		OSR	None
Manchester Street Park	5	City	City	X	X			X	Y	Y	Y	OSR	AUL
Marston Street Park	7	Mass Highway	Mass Highway	X					N	Y		R2/R2A	None
McDermott Park	0.5	City	City			X			N	Y		R2	None
Misserville Park	1.6	City	City	X	X			X	Y	Y	y	R3	None
Mount Vernon Park	12	City	City	X					N	Y		OSR	None

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				X=Existing	P=Potential	Active Recreation	Passive Recreation	Pocket Park	Historic Resource	Natural Resource					
O'Connell South Common	11	City	City	X			X				N	Y		OSR	?
O'Neill Park	6.9	City	City	X							N	Y		B2/R3	None
Oxford Street Park	0.2	City	City				X				N	Y		B2	None
Parthum School	1.5	City	City	X					X		N	Y		OSR	None
Pemberton Park	3	Mass. DCR	Mass. DCR		X						N	Y		I2	National Register Historic District
Plainsman Park	0.7	City	City				X				N	Y		R3	None
Reservoir and Water Tower	20.8	City	City		X		X				N	Y		R2/R2A	National Register Historic District
Riverfront State Park/ Bashara Boathouse	12	Mass. DCR	Mass. DCR		X			X			N	Y		OSR/R1/ I1	?
Reviviendo Playground	0.25	City	City				X				N	Y		B2	None
Rowell Park	0.8	City	City				X				N	Y		R3/R4	None
Dr. Nina Scarito Park	2.78	City	City	X	X						Y	Y	Y	OSR	None
Shawsheen Park	9	City	City		X				X		N	Y		R1/OSR	?
South Lawrence East School	5	City	City	X							N	Y		OSR/R1/ R1A/R2	None



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Inventory of Lands of Conservation and Recreation Interest**

Name	Size (acres)	Owner	Management Agency	Current Use		Special Characteristics					DCS Funded	Public Access	HC access	Zoning	Other Statutory Protections
				X=Existing	P=Potential	Active Recreation	Passive Recreation	Pocket Park	Historic Resource	Natural Resource					
Boys & Girls Club: Rec. Center and Playing Fields	n/a	Boys & Girls Club	Boys & Girls Club	X							N	Members only		B2	None
Sons of Italy: Playing Fields	n/a	Sons of Italy	Sons of Italy	X							N	Members only		I3	None
Union and Mechanic Community Garden	n/a	Groundwork Lawrence	Groundwork Lawrence		X						N	Members only		B2/R3	
YMCA: Rec. Center and Pool	n/a	YMCA	YMCA	X							N	Members only		B3	None
<b>Private Ownership</b>															
Bellevue Cemetery	?	?	?				X				N	Y		R2/R2A	None
St. Mary's Cemetery	?	?	?				X				N	Y		R2/R2A	None
Immaculate Conception Cemetery	?	?	?				X				N	Y		R2/R2A	None
Duck Bridge Riverfront	?	KGR Properties	KGR Properties		P				P		N	N		I2	National Register Historic District
East Island Riverfront	8	(window manufacturer)	(window manufacturer)	P	P				P		N	N		I2	National Register Historic District

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Name	Size (acres)	Owner	Management Agency	Current Use		Special Characteristics			DCS Funded	Public Access	HC access	Zoning	Other Statutory Protections
				X=Existing	P=Potential	Active Recreation	Passive Recreation	Pocket Park					
Malden Mills/ Covanta	?	Malden Mills/ Covanta	Malden Mills/ Covanta	P	P			P		N	N	I2/40R/P IOD	National Register Historic District
South Merrimack Riverfront	?	multiple owners	multiple owners	P	P			P		N	N	I1,I2	None
Jacque's Pond	?	?	?		P			P		N	N	R1/R1A/ R2/R2A	?
Plycraft site	?	Merrimack Paper?	Merrimack Paper?	P	P			P		N	N	I2	?
North Canal	n/a	Enel North America	Enel North America		P			P		N	Limited	n/a	National Register Historic District
South Canal	n/a	Enel North America	Enel North America		P			P		N	Limited	n/a	none
Tombarello site	?	First Essex Bank?	First Essex Bank?	P	P					N	N	I3	none

### A. Private Parcels

The roughly 14 Lawrence alleyways in the North Common comprise approximately 2.5 acres of land in the heart of the downtown area. One alleyway (the “Garden Street alleyway”) was transformed in 2004 to a passive park. Residents from the adjacent homes participated in a charrette with Groundwork Lawrence to create a plan for the space, and on Earth Day with help from corporate sponsors and volunteers, the trash was cleaned out and stormwater rain gardens (see sidebar) were constructed along the edges of the alley. The gardens have native and flowering plants and a grape arbor was constructed for a shady place to sit on granite benches. One resident planted a tree just outside of her back gate and tends this space diligently. Unfortunately the alley garden still experiences vandalism and illegal dumping. A second alleyway off of Elm Street has raised wooden garden beds that the adjacent homeowners garden in. These beds were constructed in 2006 when the alleyway was cleaned out of garbage and overgrown vegetation by corporate volunteers and residents.

Additional large private parcels include the former Oxford Paper site which is currently slated for parkland in conjunction with the reconstruction of the Spicket bridge at Canal Street. In addition the so-called “Ferrous Site” at the end of the East Island is a large parcel (approximately 4 acres) with little development on it at this time. The connection across the Spicket from the Oxford Site to the Ferrous site would tie the Spicket River Greenway to the Merrimack River. Other privately owned and undeveloped property along the Spicket River is in the Arlington Neighborhood. Approximately 2 acres of property between Wells Street to Broadway currently has no buildings and lies within the 100 year flood plain.

### B. Public and Nonprofit Parcels

Groundwork Lawrence, as a land trust, owns and manages a community garden in the North Common Neighborhood in an alleyway adjacent to Union and Mechanic Streets. The garden was constructed in 2006 with the help of volunteers. The garden houses two large stone beds and nine people garden there. The Boys and Girls Club of Lawrence is on the north bank of the Merrimack River and opened a renovated 58,000 square foot facility in 2006. The club recreational spaces include game rooms, two gymnasiums, swimming pool, and a large backyard field. Members enjoy sports leagues, karate classes, swimming lessons and additional summer program activities. The Boys and Girls Club also operates the Beacon Club in South Lawrence whose recreational facilities include an outdoor field and basketball courts. The Lawrence branch of the Merrimack Valley YMCA has a wellness center, two gymnasiums, aquatic center, track and racquetball courts. The YMCA also has sports programs for youth and adults as well as Day Care and After School Care. Movement City at Our House, managed by Lawrence CommunityWorks, offers after school programming in dance, music, art and homework help at their facility on Newbury Street.

#### **Rain Gardens**

*Bioretention is a technique that uses soils, plants, and microbes to treat stormwater before it is infiltrated and/or discharged. Bioretention cells (also called rain gardens in residential applications) are shallow depressions filled with sandy soil topped with a thick layer of mulch and planted with dense native vegetation. Stormwater runoff is directed into the cell via piped or sheet flow. The runoff percolates through the soil media that acts as a filter. Bioretention areas can provide excellent pollutant removal for the “first flush” of stormwater runoff. Properly designed and maintained cells remove suspended solids, metals, and nutrients, and can infiltrate an inch or more of rainfall.*

*2008 Massachusetts Stormwater Manual  
– Chapter 2 – Structural BMPs*

## Section 6: Community Vision

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### A. Description of Process

As part of the Open Space Plan renewal, Groundwork Lawrence conducted extensive public outreach, individual interviews with local officials, and distributed open space plan surveys in English and Spanish. Groundwork Lawrence presented the Open Space Plan renewal to Neighborhood Associations, the Conservation Commission, Planning Board, Historical Commission, Board of Health, and Lawrence Redevelopment Authority. A small number of residents participated in the three community meetings, but over 250 residents completed surveys. Below is a summary of the outreach and presentations made for the 2009 Open Space Plan.

- One on one interviews were conducted with Frank McCann, Director of Public Works; Susan Fink, Acting Director of Community Development Department; Linda Schiavone and Nelson Ortiz, Department of Recreation; Tom Schiavone, Mayor's office; Mike Sweeny, Director of Planning; John Romero, Chief of Police; Peter Takvorian, Fire Chief; and Dennis DiZoglio and Alan Macintosh, Merrimack Valley Planning Commission. Interviews are summarized in Attachment B.
- Presentations were made to the Planning Board, Conservation Commission, Board of Health, Historical Commission and the Lawrence Redevelopment Authority to discuss the 2004 Open Space Plan and its achievements as well as solicit input for the 2009 Plan. Notes from the presentations are summarized in Attachment B.
- Presentations were made at the following neighborhood association meetings from September to November 2008: General Donovan Neighborhood Association, South Common Neighborhood Association, Tower Hill Neighborhood Association, Lawrence Alma Arlington Neighborhood Association, Prospect Hill Neighborhood Association, and the North Common Community Safety Meeting. In addition, the Tower Hill Neighborhood Association, South Common Neighborhood Association and the Mount Vernon Neighborhood Associations published information about the Open Space Plan renewal and community surveys in their print or online newsletters.
- Groundwork Lawrence hosted three public meetings on October 2, 9 and 16 to solicit community input and involvement in establishing goals for the 2009 Open Space Plan. Meeting notices were faxed to every public school principal and organized PTA in Lawrence; additionally, the meetings were advertised with posters and/or flyers at the following events and locations:
  - LiveLawrence! presents Edwin Pabon on September 18
  - Manchester Street Park public meeting September 24
  - Lawrence Alma Arlington Neighborhood Association Meeting September 25
  - General Donovan Neighborhood Association Meeting September 29
  - Greater Lawrence Community Action Council
  - YMCA of Lawrence
  - Boys and Girls Club
  - Lawrence CommunityWorks – Our House and Hennigan Center
  - Lawrence Public Library-Main Branch
  - Lawrence Public Library-South Branch
  - Lawrence City Hall
  - Lawrence Public Schools-Central Office
  - 60 Island Street
  - Lawrence Farmers Market

- Flyers were displayed on Lawrence Community Access Television
- The resident surveys were available at the community meetings and after the meetings were concluded Groundwork Lawrence continued accepting resident surveys in hand and online from our website through the month of November. A copy of the resident survey is included in Attachment C. Promotion of the surveys was completed in the following ways:
  - Fax of the survey and Open Space Plan information to every public school principal and organized PTA;
  - The Groundwork Lawrence Green Team had a contest as to who could return the most completed surveys;
  - Surveys and a poster were displayed at LiveLawrence! Canal Illuminations on October 5; and
  - Emails were forwarded to Lawrence residents in the Groundwork Lawrence mailing list as well as to all Neighborhood Association presidents.
- Copies of the flyers, poster, and slides for cable access are included in Attachment D.
- For research on regional trail and pedestrian improvements, see Attachment E for a list of interviews and research documents.

#### *B. Statement of Open Space and Recreation Goals*

Through the Open Space Plan meetings Lawrence residents asked for and visualized many changes and improvements not just to the parks and open space but the City's infrastructure and community as a whole. Feedback highlighted that the existing density and diversity of the City can be expanded upon and enhanced through stronger open space connectivity, public involvement, and municipal oversight.

Lawrence's community vision for infrastructure and public open space includes safe spaces, clean spaces and a consistently maintained park and trail system. Across the board residents were clamoring for more maintenance in parks and public space. Maintenance includes trash removal, lawn and planting care, equipment repair and brush removal. The citizens who attended the meetings and responded to surveys envision walking through their neighborhood or even from one end of the City to the other through well maintained trails and lush parks. Residents could stop by their community garden or the Farmers Market then shop on Essex St or Broadway. Some residents would plan to bring their dogs and stop at a new dog park to let the dog off-leash for an hour or more. Many residents will bring their children and even more will likely *be* children or teens going to visit friends and family or merely taking a fun bike ride. Well maintained parks and trails, safe bicycle routes, and activities for youth and teens creates a healthy Lawrence community. A community as a whole is healthy because of safe access to parks and open space across their City.

This community vision can be realized through further public-private partnerships, support of DPW, and systematic enhancement of trail connections between parks and the region. Lawrence is a small community with fantastic resources that can be shared and enjoyed by residents and the Merrimack Valley Region.

## Section 7: Analysis of Need

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### A. Summary of Resource Protection Needs

Lawrence is a highly urbanized community with 72,000 (2000 Census) people living on seven square miles. Currently 14 parks are not covered by Open Space Recreation or Open Space Conservation Zoning. Rezoning all city parks to Open Space Recreation is recommended as a minimum for protection of these assets. With new mixed use developments of mill buildings in the City, the population stands to grow and the demand for parks and recreation to increase. The consensus from community officials and residents during the Open Space Planning Process was for a focus on existing parks and no great demand for creating new parks was evident. In turn, the residents demanded an increase in maintenance and upkeep. Until the City can afford to maintain existing infrastructure, construction of new parks should be a lower priority. However, construction of connections between parks, enhancing existing trails, and facilitating greater use of the parks in the City can bring more users to parks and in turn more stewards. Because of this mandate, protection and enhancement of the current resources are highly important.

The Statewide Conservation Open Space and Recreation Plan is the Commonwealth's Open Space and Recreation Plan – outlining goals, priorities and deficits for open space and recreation across the Commonwealth. The Northeastern region of the state ranks fifth (out of seven) among the regions in open space acreage and percentage of regional land in open space. A strong concentration of that land is in Essex County. This is a strong resource base for Lawrence residents to participate and enjoy regional activities, but as we have found, the community and the region lack *access* to much of these amenities. The Northeast Region's popular activities matches much of the statewide patterns with swimming, walking, sightseeing, hiking and fishing at the top of the list. However, the region has stronger reported demand and activity of sports like baseball, soccer, tot lot activity, sunbathing, horseback riding, off-road vehicle driving, snowmobiling, boating, surfing and hockey. The above state average demand for soccer, baseball, and tot lot activity is a reflection in Lawrence of the average age and population demographics.

*Parks and Greenways can mitigate air pollution and increased temperatures. Mature tree canopies can reduce air temperature five to ten degrees, helping to counteract the urban heat island effect, according to the University of Washington's Center for Urban Horticulture, and trees filter pollutants out of the air. According to American Forests, trees in Atlanta remove 19 million pounds of pollutants annually, a service worth \$47 million.*

*The Trust for Public Land, How Parks Help Keep Americans and Their Cities Fit and Healthy. 2006*

A special note is necessary on regional satisfaction of bikeways – the Northeast region residents report the highest level of dissatisfaction for bikeways for reasons of cleanliness, maintenance and other. Although not as strong, the same is true for forests with capacity and attractiveness cited as complaints. The Northeast Region has a high satisfaction level for cultural and historical sites, followed by wildlife conservation areas. Again, there is a great quantity of resources close to Lawrence – in the region and Essex County and improvements should be made to bring residents from the dense cityscape to the nature in their county and region's backyard.

#### *Parks and Trails*

Habitat and resource protection in Lawrence is possible in a few ways. Large open spaces provide the most obvious type of habitat, but rivers and protected

pathways provide additional habitat for wildlife through the urban center by linking these open spaces. The burgeoning Spicket River Greenway could enhance the network for wildlife through the densest part of the city and the Shawsheen River is already protected along a large portion of its path through South Lawrence. These rivers and the Merrimack are part of a greater regional habitat for wildlife; expanded protection in Lawrence through open space recreation and conservation can also tie into regional recreational trail endeavors. Den Rock Park with its 120 acres of woodland and wetlands is protected by Open Space Conservation zoning. This method of zoning further protects land from development than Open Space Recreation zoning which can still fall prey to development pressures.



*Jacques Pond*

Regional trails protect wetland resources by providing a buffer from neighboring development. (for benefits of buffers, see below ) Andover's trails on the south bank of the Merrimack are within a 50-100' conservation restriction behind existing businesses and institutions. Since a large portion of land along the rivers is currently in private ownership, long-term protection of these corridors will require the development of effective public-private partnerships. Trail stewards and recreational users can protect riverfront buffers from illegal dumping and keep it undeveloped and therefore able to provide necessary

habitat and stormwater management. Along the Shawsheen River, through volunteers, the SRWA removed a grease trap that had washed into a remote portion of the river during the 2006 flooding and conducts regular clean-up activities and monitors for illicit stormwater discharges. The Andover Trails groups cleaned the area up from dumping 20 years ago and now through their presence prevents dumping and can react to the rare instances of it.

#### *Forests and Tree Canopy*

A 2004 statistical study of Lawrence's street trees show that the city is overplanted with Norway Maples which has the potential to provide optimal conditions for insects and disease through this lack of diversity. The Norway Maple is also an invasive species that reseeds aggressively and out competes other species. The city's street trees are all primarily young trees under 16" diameter. These young trees need regular maintenance and care to become a strong urban forest in years to come.<sup>54</sup> This survey was of street trees in the city and a proper inventory of the full breadth of the city's trees including trees in the parks has not been done. A study published in 2007 showed that "New York City receives \$5.60 in benefits for every dollar spent on trees."<sup>55</sup>

Groundwork Lawrence and the City partnered on tree planting initiatives in 2007 and the City continues their "Tree City USA" status that was first achieved in 2002. 17 trees were planted on the North Common, 6 trees on the Bodwell Lot, and more at the Tarbox School, St. Patrick's School, Hayden Schofield Playstead and Appleton Way. Species planted included pear, lilac, London plane, honey locust, crab apples, maples and others. The Groundwork Lawrence's "GreenStreets" Program provides trees to homeowners for their yard. The residents receive a planted tree and instructions on maintaining the tree for its first two years. 78 trees have been planted in the first two years of the program. The North Common and South Common are home to many significantly sized trees but no survey on the make-up

<sup>54</sup> The Community of Trees of Lawrence MA; Jane Calvin MA DCR Urban Forestry Program p.4

<sup>55</sup> Maybe Only God can Make a Tree, but Only People Can Put a Price on It; The New York Times; April 18, 2007.

of species, sizes, or health exists. The city also does not have a long term care or replacement plan for their trees.

Beginning in early 2009, through support and collaboration with the Department of Conservation and Recreation and the US Forest Service (USFS), Groundwork Lawrence convened an Urban Forestry Coalition of local officials and stakeholders to define goals to strengthen the urban tree canopy, identify improvement projects for the same and plan a tree inventory of Lawrence's trees. The support from DCR and the USFS also provided GIS analysis to highlight areas of need for increased tree canopy. This analysis will also be helpful in analyzing the threat of Asian Long Horned Beetle (ALB). ALB is a foreign beetle that bores into hardwood trees and destroys their vascular system. Trees affected include maple, elm, birch, willow, horse chesnut, poplar, sycamore, mimosa and katsura.<sup>56</sup> In Worcester County, a 74 square mile area has been quarantined with over 15,000 infested trees and over 10,000 high risk host trees have been removed.<sup>57</sup> According to the small study here, Lawrence is heavily planted with the most common trees affected, maple and birch.



**Dr. Nina Scarito Park Community Garden**

### *Gardening*

There are a handful of “squatter” gardens in Lawrence where residents keep vacant lots tidy and grow vegetables. Some concerns for these open space stewards is soil in these lots could have been impacted by previous uses. Typical problems with urban soils include lead contamination, polycyclic aromatic hydrocarbons (PAH's) and other heavy metals. Resources for protecting these gardens and the health of the residents is lacking. LID could be used in creative redevelopment of these lots; rainwater harvesting would lessen the need for municipal water for gardening and creative site design could attenuate stormwater impacts from adjacent properties. The City has begun a process to identify small undevelopable vacant lots and transform them into community gardens if environmental factors are safe or remediated and the neighborhood supports the effort. By partnering in this endeavor, neighborhood associations can help

outreach to members and neighbors who are gardening in unsafe conditions and engage them to create the design parameters for these new gardens.<sup>58</sup>

Illegal dumping is still prevalent in the city's rivers, vacant lots, and alleyways. Trash can attract rodents and also is hazardous to mammal and aquatic life. Some materials dumped include oils, tires, computer monitors and televisions as well as household white goods. Many of these items can leach heavy metals over time and are usually disposed of in hazardous landfills. Protection of resources from dumping is two-fold: enforcement of target areas combined with education and outreach as to how to safely and legally dispose of materials.

<sup>56</sup> Massachusetts Regulated Area: The Asian Longhorned Beetle Plant Protection and Quarantine Factsheet; USDA Animal Plant Health and Inspection Service; August 2008.

<sup>57</sup> Department of Conservation and Recreation Urban and Community Forestry Cooperative Asian Longhorned Beetle Eradication Project – Weekly Report; October 13, 2009.

<sup>58</sup> Parkland Acquisitions and Renovations for Communities Grant Program – Fiscal year 2010 Application for funding for Neighborhood Community Gardens Initiative; Community Development Department; July 15, 2009.

Even though Lawrence is a very dense urban community, Lawrence residents are not oblivious to its natural areas; over half of the survey respondents rated land conservation to protect water and natural habitats as highly important.

#### *Waterways and Wetlands*

Three rivers run through the City of Lawrence: the Merrimack, the Spicket, and the Shawsheen. These three rivers, in combination with the North and South Canals, the Reservoir on Tower Hill, Stevens Pond and Jacques Pond constitute an unusual and important concentration of water resources. These resources are vitally important from an ecological, historic, and recreational standpoint (see Section 4 for more information about the city's water resources). Protecting the city's waterways is vital to improving the health of regional ecosystems, as well as enhancing Lawrence as a place to live, work, and do business. A 2005 report by the RGI Steering Committee outlines phases of research, planning, design and construction necessary to restore and enhance the North Canal. Those enhancements include restoration of the walls, bed, bridges, and mechanical infrastructure as well as studying the feasibility of repairing the capacity for energy production in adjacent mill buildings.<sup>59</sup>

As previously mentioned in Section 4, the largest area of wetlands in the city are along Rt 495 at the edge of the Shawsheen River. The two isolated wetlands in the City are within a 3.4 acre site owned by the City that includes a neighborhood playground, Donovan Park, and Jacques Pond located off Genesee Street in South Lawrence.<sup>60</sup> The Friends of Jacques Pond Association is currently determining the best means for further protection of this resource.

Buffers enhance viability of resource habitat areas and help filter runoff before reaching water bodies. Buffer zones are important in preserving the "physical, chemical, and biological" characteristics of wetlands and waterways.<sup>61</sup>

#### *Historic Sites*

The City of Lawrence has a wealth of historic buildings, parks and infrastructure with regional and national significance. In the context of open space protection, the most important historic sites are the North and South Canals, the Reservoir, the North and South Commons, and the cemeteries. The North Common was part of the original plan for the City prepared by Charles Storrow, and includes open lawns, recreational facilities, walking paths, performance spaces, play equipment, a baseball field, and historic monuments. In fact, in 1857 a gold fish pond was installed at the North Common with a public groundbreaking. The goldfish pond was replaced in 1914 with an artificial pond and fountain.<sup>62</sup> The Leonard Bernstein Stage now stands in place of the fountain.<sup>63</sup> The South Common offers many of the same amenities, with more space dedicated to recreational facilities.

The city's three cemeteries, located on Tower Hill, collectively make up more than 130 acres of land. These cemeteries offer a peaceful, green setting with walking paths and trees. Although they are not officially designated as city parks, they are frequently used for walking and jogging by nearby residents.

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<sup>59</sup> North Canal Enhancement and Restoration Study; Groundwork Lawrence; April 2005; <http://groundworklawrence.org/files/library/nc-study.pdf>.

<sup>60</sup> City of Lawrence 2004 Open Space Plan Community Development Department p. 32

<sup>61</sup> Massachusetts Department of Environmental Protection; Wetlands PPA Summary and Workplan; July 2009.

<sup>62</sup> Dorgan, Maurice B. One Hundred Years of History of Lawrence, MA; 1924.

<sup>63</sup> Walking Tour of Lawrence Common; Lawrence History Center.

The cemeteries are also significant historic sites and should be considered part of the city's open space system. Built in 1847, Bellevue Cemetery was listed in the National Register of Historic Places in 2003.<sup>64</sup>

Another site only tangentially discussed in Open Space Planning is the Reservoir on Tower Hill. A number of residents frequently use this area for walking and quiet reflection. The Reservoir is protected by OSR Zoning, local historic district designation, and is maintained by standards protecting the water quality although there has been little aesthetic enhancement in regards to benches or permanent shade structures.

The City should consider developing more detailed design guidelines for plantings, pathways, lighting, and other features in the North and South Common, cemeteries, and Reservoir that are in keeping with the historic character of these important civic spaces. Finally, the Bodwell site in the North Common neighborhood has significant historic value. This small lot was the location of the oldest house in Lawrence prior to its demolition in 1957. The lot is still vacant with a small historical marker; in 2007 six trees were planted at the lot. Sadly, the young trees did not survive and need to be removed and replaced.

### *B. Summary of Community's Needs*



The Open Space Survey asked residents to choose their top 5 items most important for future investments. The top five responses were a swimming pool, walking trails, bike paths, family picnic areas and basketball courts. The parks in Lawrence with the greatest use according to the Survey were the North Common, Howard Playstead, Misserville Park (from a large proportion of Leonard school respondents), Dr. Nina Scarito Park, South Common, Riverfront Park and Shawsheen Park with the top activities there being walking, jogging, playing sports, biking and social gatherings. These survey responses speak to a desire in the community for active and diverse recreation

spaces. Lawrence residents and families look for space that groups or individuals can go to relax, play, and socialize. The parks with the most use provide almost all of the desired park activities of the community—sidewalks and paths, playgrounds, unstructured lawn, picnic and sitting areas and shade. The North Common, in the heart of the city, contains all but a swimming pool and is a focal point of the dense downtown matrix. Two public pools are operated in Lawrence by the Department of Conservation and Recreation located at Storrow Park and near the South Lawrence East School. The pools charge a nominal fee, are very busy in the open months, and generally close in August.

In interviews City officials expressed a desire for focusing investments on existing parks in the City over the next five years and specifically the North Common. All officials and employees discussed the challenges of encouraging festivals such as carnivals and car shows with their heavy traffic on the North Common while also protecting the grounds. Currently the North Common is the site for Semana Hispana and the Bread and Roses Festival, two festivals with high turnout celebrating the rich culture

<sup>64</sup> Massachusetts Cultural Resource Inventory; <http://mhc-macris.net/index.htm>

and history of the city. The City needs a site to hold these two festivals as well as the Feast of the Three Saints, currently utilizing the streets adjacent to the Common, which bring significant activity to the City.

The festivals celebrate the rich culture of the city, but unfortunately highlight issues with maintenance and city budgets. High use and traffic on the Common is damaging to the grounds and trees. Maintenance that addresses soil compacting and tree damage does not happen under the current budget. This neglect can have long lasting effects on the nature of the Common. The Recreation Department, responsible for almost 300 hours of free summer programming for youth, depends on the income and fees associated with the festivals and DPW collects a security deposit that is refundable to the users. This fee is nominal and hardly covers the high cost of staff time required when a user does not appropriately repair the grounds after a festival. It does not include any tree protection or maintenance associated with ground compaction due to equipment and trucks. During the interviews City officials discussed moving the festivals from the North Common to other locations such as Pemberton Park. The Canal District Strategic Master Plan identified Pemberton Park as a location for an outdoor performance space as a means of reconnecting the Downtown area to the Merrimack River.<sup>65</sup> Pemberton Park is the site of the annual Kite Festival-a Family Fiesta because of the large lawn space, access to the River and sufficient parking. For some, the festival grounds of Pemberton Park seem too far removed from downtown foot and vehicular traffic while the abuse of the North Common is almost sacrilegious to others. A plan for festivals, post-activity maintenance, and requirements for the users should be created with public involvement in order to meet the needs of the users, respect the historical significance of the site, and protect its natural resources.

*The Broken Windows theory was first published in a 1982 Atlantic article by James Q. Wilson. "...at the community level, disorder and crime are usually inextricably linked, in a kind of developmental sequence. Social psychologists and police officers tend to agree that if a window in a building is broken and is left unrepaired, all the rest of the windows will soon be broken. ...one unrepaired window is a signal that no one cares, and so breaking more windows costs nothing."*

Lawrence residents express a desire and concern for safety in their community. Safety and security, as discussed in the survey and community meetings encompasses multiple aspects. Residents strongly desire more regular maintenance in parks and the city as a whole. Regular maintenance and enforcement of dumping and graffiti were the top responses in many survey questions including concrete actions the city should take to improve open space and recreation, overall goals the city should set for recreation and open space, changes they would like to see for youth and adults, the level of satisfaction in youth spaces and programming as well as perceived obstacles to improving open space and recreation. 58 out of 180 Lawrence respondents wanted the parks and streets cleaned and maintained when asked "What concrete actions should the City take to improve Open Space and Recreation." Another large response was for improved planting, benches and paths. Not only do residents desire safer spaces but they state that the lack of safety from

traffic, drugs, and gangs is the City's greatest obstacle to improving open space. The lack of maintenance, enforcement, funding, and community perception can create an environment that fosters further dilapidation of the park and neighborhood. This has been tested in an experiment related to the "Broken Window Theory" (see sidebar) by researchers and police in Lowell: cleaning up the physical

<sup>65</sup> MassDevelopment and the City of Lawrence; Lawrence Canal District Strategic Master Plan; November 11, 2008; can be found at [http://www.cityoflawrence.com/Pages/LawrenceMA\\_WebDocs/cmp](http://www.cityoflawrence.com/Pages/LawrenceMA_WebDocs/cmp)

environment was proven to be the most effective in preventing crime over misdemeanor arrests and boosting social services.<sup>66</sup>

While 40% of survey respondents were satisfied with places and programs for play for children under 12, almost all of the additional comments stressed the concern with trash and broken equipment in the play areas. Similar rates of satisfaction were recorded for children aged 12-18 but the comments also included requests for more ball fields and basketball courts.

Lawrencians want more constructive and healthy activities for their children to take part in. Demand for park programming and cultural activity appears high in the survey and was a common theme at the community meetings. Eighty-two youth on average each weekday in July and August come to five park sites in the city (South Common, Howard, Storrow, North Common, and Riverfront) for activities during the day managed by the Recreation Department. The program is open to any young people every day with no registration or commitment required and there is no charge. To advertise the Recreation Department sends flyers to schools, advertises on the local radio, and places announcements in the Eagle Tribune and Rumbo.



2007 Earth Day Alleyway Cleanup.

Volunteer activities and youth programming topped the suggestions in five different survey questions; residents are taking advantage of the programming in the city, but are consistently looking for inexpensive activities for all ages. According to Recreation Department records, adult softball leagues that they manage have 107 teams and serve 2,300 residents and the street hockey league has 18 teams that play four times a week. Additionally, the Recreation Department permits 77 adult teams of soccer, softball, basketball and women's volleyball for a total of 1,500 active adults. Additional leagues permitted by the Recreation Department include eight

Little Leagues, two youth football leagues and youth soccer. The Recreation Department does not manage an active handball league that used to play in Lawrence as well as Worcester. While the City's last public handball court was removed at Misserville Park during the renovation in 2007, a new one will be constructed at Costello Park in 2010 and the Recreation Department will issue a permit for its use.

#### *Management Needs, Potential Changes of Use*

DPW Parks Division has a staff of five that includes one foreman and four laborers; this foreman is also the tree warden for the city. In 2004 the DPW staff included eleven individuals including a tree warden, a foreman, a graffiti-removal specialist, and eight laborers. In addition to park maintenance, street maintenance, and city building maintenance, the DPW is responsible for emergency tree removal and tree trimming. Previous generations in Lawrence saw a DPW Parks Division staff of 25 full time employees and roughly 200 summer employees.<sup>67</sup> From the initial adoption of parks in the City as public property to the 1900s there was a Parks Commission that reported on work completed and required in the City Parks. Mr. McCann and his staff are responsive to and appreciate volunteer cleanup

<sup>66</sup> Breakthrough on "broken windows"; In Lowell Experiment, crime linked to conditions. Boston Globe; February 8, 2009.

<sup>67</sup> City of Lawrence 2004 Open Space Plan Community Development Department p. 32

activity but DPW has to store trash or lawn and leaf bags and dispose of them outside of the regular trash collection. The director, in his interview, asked for maintenance free equipment installed in parks and establishing a surplus of certain items that can be replaced more quickly in the event of damage or vandalism. Grants cannot sustain maintenance in parks but can be used to purchase equipment and furniture in parks.

In highlighting maintenance and litter in the city parks, residents also discussed the vacant and abandoned properties and the alleyways. Residents see these spaces as a large opportunity for open space improvement if developed into positive uses. Specific community objectives included creating an inventory of vacant land and reclaiming it for a host of uses such as new recreation spaces, community gardens or beautification, and dog parks.

The survey responses to the questions regarding changes for adults, changes for youth, overall goals, and concrete actions all show a desire for age and gender focused times on the basketball courts and more toddler safe playgrounds. There were additional comments on creating better access and amenities for the elderly. Some suggested programming activities included concerts, clean-ups, movie nights, sporting events, and environmental education.

## Section 8: Goals and Objectives

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The Goals and Objectives were compiled by the responses to survey question #11-What overall goals should the City set for recreation and open space, the community meetings' discussions of the same question and by responses to the needs of the community and resource protection needs outlined above. A desire for safety, cleanliness, and enforcement permeates every survey response and discussion with officials and community members. Lawrencians want and deserve safe clean places to play and socialize. They recognize the vast opportunities in the community as well as the very real obstacles to continued improvement and enhancement of natural areas and playscapes. Below are eight quite broad goals created by the community through meetings and surveys. The number one goal is safety through increased maintenance, without which, further park or policy improvements will suffer. Larger investment in park maintenance can lead to increased safe activity in the parks which in turn fosters community pride, a sense of ownership, and improved health of the community.

- Goal Number 1. Increase regular maintenance by dedication of more resources and decrease the amount of litter and debris in parks and open space
- Goal Number 2. Improve safety and perception of safety through increased enforcement of illegal and unsafe activities in parks and open space
- Goal Number 3. Decrease dependence and burden on the DPW by encouraging public-private partnerships to protect and maintain public space
- Goal Number 4. Increase activity and attendance in parks by creating and implementing more active in-parks programming
- Goal Number 5. Increase attendance in parks by creating and implementing more passive park elements
- Goal Number 6. Increase pedestrian and biking activity by encouraging walking and biking for exercise and enhancing safety and connectivity between schools, neighborhoods, and parks.

- Goal Number 7. Reclaim vacant lots and other abandoned and under-utilized land
- Goal Number 8. Increase access to waterfront resources (i.e. rivers, canals) through enhancement and protection

## Section 9: Seven Year Action Plan

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The elements of the Seven Year Action Plan are formulated to achieve the goals outlined above. It is also necessary to recognize the changing community of Lawrence that will be demonstrated with the completion of the 2010 Census. This Plan update relied on 9 year old census data and may not accurately depict the face of the city. All points in the Action Plan increase activity and programming in the city’s open space as desired by Lawrencians but cannot be successful and thrive without increased maintenance and enforcement of safety in the city.

The following seven-year Action Plan identifies the tasks and objectives, schedule, and responsible parties required to implement the City’s open space goals and objectives.

<b><i>To achieve Goal 1 : Increase regular maintenance by dedication of more resources and decrease the amount of litter and debris in parks and open space.</i></b>	<b><i>Anticipated Schedule</i></b>	<b><i>Primary Organizers</i></b>
Develop a detailed needs assessment for DPW parks maintenance operations and identify potential funding sources to supplement the existing budget.	2010-2011	DPW, Mayor’s Office, Budget and Finance Office
Conduct a city-wide tree survey that accounts for street trees, park trees and trees on private property.	2010-2011	CDD, Groundwork Lawrence

<b><i>To achieve Goal 2: Improve safety and perception of safety through increased enforcement of illegal and unsafe activities in parks and open space.</i></b>	<b><i>Anticipated Schedule</i></b>	<b><i>Primary Organizers</i></b>
Build on existing Neighborhood Associations and police relationships to identify, track, and respond to crime in neighborhood parks.	2010-2017	Police Department, Neighborhood Associations, CDD
Work with Neighborhood Associations and police to create and implement educational programming about public safety for youth and adults.	2011-2017	Police Department, Neighborhood Associations, CDD, Recreation Department

<b><i>To achieve Goal 3: Decrease dependence and burden on the DPW by encouraging public-private partnerships to protect and maintain public space.</i></b>	<b><i>Anticipated Schedule</i></b>	<b><i>Primary Organizers</i></b>
Encourage public private partnerships to	2010-2017	Mayor’s Office, CDD,

protect and maintain parks and open spaces.		Planning Department
Work with existing Neighborhood Associations to create “friends of” type groups for parks in their neighborhoods.	2011-2013	Neighborhood Associations, CDD, Planning Department, Mayor’s Office
In collaboration with the Lawrence Historic Commission and Lawrence History Center, outline a plan for a Friends of the North Common that includes studying existing “friends of” type groups and Business Improvement Districts to fund capital investments in the Common.	2011-2012	Historic Commission, Lawrence History Center, Bread and Roses Committee, Groundwork Lawrence, CDD, Planning Department
Create a plan for systematic inventory and improvements to the North Common focusing on its significance to the history of the city and the health and age of the trees.	2012-2014	Friends of the North Common, Historic Commission, Lawrence History Center, Bread and Roses Committee, Groundwork Lawrence, DPW
Enhance collaboration between DPW, Recreation, and the Planning and Community Development Departments with regular meetings between department heads in discussion of planning open space and healthy community initiatives.	2010-2017	Mayor’s Office, DPW, CDD, Recreation Department, Planning Department
Address the barriers to hiring Lawrence youth to maintain parks and trails in the summer months.	2010	Mayor’s office, DPW, DPW Union Representatives, Groundwork Lawrence
Establish City-wide day of service with Lawrence Public Schools in schoolyards, parks and open space across the city.	2011-2012	Lawrence Public Schools-Superintendent’s Office, Mayor’s Office, DPW, Groundwork Lawrence

<b><i>To achieve Goal 4: Increase activity and attendance in parks by creating and implementing more active in-parks programming</i></b>	<b><i>Anticipated Schedule</i></b>	<b><i>Primary Organizers</i></b>
Using the existing open space inventory, work with Neighborhood Associations, local non-profits, and existing recreation programs to create recreational programming in the parks for youth, teens and adults.	2011-2017	Neighborhood Associations, Recreation Department, non-profit youth programs(GWL, Boys and Girls Club, YMCA, ACT, YDO etc)
Work with schools, Neighborhood Associations, local non-profits, and existing recreation programs to create educational environmental education programming in the parks.	2012-2017	Neighborhood Associations, Recreation Department, Lawrence Public Schools, non-profit youth programs (GWL, Boys and Girls Club, YMCA, ACT, YDO

		etc)
Identify sources of and implement funding support for city led recreational programming.	2011	CDD, Mayor's Health Task Force, Groundwork Lawrence, Mayor's Office, Recreation Department
Establish and promote regular concert series in the parks.	2011	Mayor's Office, Lawrence Cultural Alliance, CDD
Establish and promote a regular movie series in the parks.	2012	Mayor's Office, Lawrence Cultural Alliance, CDD, Recreation Department
Establish a youth jobs initiative and apprenticeship to train Lawrence youth (ages 18-24) in landscaping and park maintenance.	2012	Mayor's Office, CDD, Groundwork Lawrence

<b><i>To achieve Goal 5: Increase attendance in parks by creating and implementing more passive park elements</i></b>	<b><i>Anticipated Schedule</i></b>	<b><i>Primary Organizers</i></b>
Continue to invest in park benches, picnic tables and trees and plantings in existing open spaces.	2010-2017	CDD, DPW, Groundwork Lawrence
Establish new passive recreation spaces in vacant lots and alleyways.	2012-2017	CDD, Groundwork Lawrence
Improve the quality of the open lawn space of parks and open spaces by systematic improvements and regular maintenance.	2017	DPW, Mayor's Office

<b><i>To Achieve Goal 6: Increase pedestrian and biking activity by encouraging walking and biking for exercise and enhancing safety and connectivity between schools, neighborhoods, and parks.</i></b>	<b><i>Anticipated Schedule</i></b>	<b><i>Primary Organizers</i></b>
Identify and map highly used pedestrian/bike corridors within the city and to surrounding regions.	2010	CDD, Planning Department
Build walking/bike paths in parks and between parks.	2011-2017	CDD
Install signage in parks and along highly traveled pedestrian corridors indicating distances traveled.	2011-2015	CDD, Mayor's Health Task Force, Department of Public Health
Conduct a "walkability" study for the entire city.	2011	CDD, Groundwork Lawrence, Department of Public Health
Build on the walkability study by creating a plan to improve safety and connections within highly used pedestrian/bike corridors.	2012-2014	CDD, Groundwork Lawrence
Build walking/bike paths between parks such as the Spicket River Greenway and	2012-2017	CDD, Groundwork Lawrence, Regional Trail and

expansion of the Shawsheen River trail and the proposed Riverwalk Trail.		Watershed Partners
Create trails and linkages between trails along all the waterways including the canals.	2013	CDD, Planning Department, Canal Abutters
Highlight regional trail connections and work with neighboring communities to collaboratively improve regional trails including implementing a “Rails to Trails” feasibility study.	2013	CDD, MVPC, Groundwork Lawrence, Methuen Rails to Trails

<b><i>To achieve Goal 7: Reclaim vacant lots and other abandoned and under-utilized land.</i></b>	<b><i>Anticipated Schedule</i></b>	<b><i>Primary Organizers</i></b>
Re-evaluate the open space demands and population statistics after the 2010 census and complete a buildout analysis that includes residential mill redevelopments.	2014	Mayor’s Office, Planning Department
Inventory and create a plan for reuse of vacant lots and other abandoned/under utilized land, including alleyways.	2010	CDD, Planning Department
Work with Planning Department to find safe garden locations for squatter gardeners and homeowners with contaminated soil.	2010	Planning Department, CDD, Groundwork Lawrence
Build upon Groundwork Lawrence’s Alleyway LID Report and Environmental Site Analysis of the alleyways to establish criteria for systematic improvements of the alleyways that meet community needs.	2011	CDD, Planning Department, Groundwork Lawrence

<b><i>To achieve Goal 8: Increase access to waterfront resources (i.e. rivers, canals) through enhancement and protection.</i></b>	<b><i>Anticipated Schedule</i></b>	<b><i>Primary Organizers</i></b>
Create a plan to remove invasive plants along the river using a Natural Resource Management Plan as a guide.	2010	Groundwork Lawrence, Conservation Commission
Initiate discussions around permanent cleanup and repair of the canals.	2011	CDD, Mayor’s Office
Support and encourage river cleanups on all three rivers.	2010-2017	CDD, Conservation Commission, Mayor’s Office
Build walking/bike paths between parks such as the Spicket River Greenway and expansion of the Shawsheen River trail.	2012-2017	CDD, Groundwork Lawrence, Regional Trail and Watershed Partners
Create trails and linkages between trails along the waterways including the canals.	2013	CDD, Planning Department, Canal Abutters