

CITY OF LAWRENCE 2004 OPEN SPACE PLAN



Michael J. Sullivan, Mayor

*Prepared by the City of Lawrence
Office of Planning and Development
and Groundwork Lawrence*

**CITY OF LAWRENCE
2004 OPEN SPACE PLAN**

Table of Contents

Section 1: Executive Summary	5
Section 2: Introduction	9
A. <i>Statement of Purpose</i>	
B. <i>Planning Process and Public Participation</i>	
Section 3: Community Setting	11
A. <i>Regional Context</i>	
B. <i>History of the Community</i>	
C. <i>Population Characteristics</i>	
D. <i>Growth and Development Patterns</i>	
Section 4: Environmental Inventory and Analysis	17
A. <i>Geology, Soil and Topology</i>	
B. <i>Landscape Character</i>	
C. <i>Water Resources</i>	
D. <i>Vegetation</i>	
E. <i>Fisheries and Wildlife</i>	
F. <i>Scenic Resources and Unique Environments</i>	
G. <i>Environmental Challenges</i>	
Section 5: Inventory of Lands of Conservation and Recreation Interest	25
A. <i>Private Parcels</i>	
B. <i>Public and Non-Profit Parcels</i>	
Section 6: Community Vision	29
A. <i>Description of Process</i>	
B. <i>Statement of Open Space and Recreation Goals</i>	
Section 7: Analysis of Needs	31

- A. *Summary of Resource Protection Needs*
- B. *Summary of Community's Needs*
- C. *Management Needs, Potential Changes of Use*

Section 8: Goals and Objectives	39
Section 9: Five-Year Action Plan	42
Section 10: Public Comments	48
Section 11: References	49
Attachment A: Maps	

Open Space Improvements Since 1997
Regional Context
Land Use
Lawrence Census Tracts
Lawrence Voting Wards
Zoning Districts
Recreational and Conservation Areas
Population Density
Density of Children Ages 0-5
Density of Children Ages 6-15
Density of Elderly 65+
Open Space Per Capita
Density of Children and Walking Distance to City Parks
Density of Elderly and Walking Distance to City Parks
Housing Density
Median Household Income
Surficial Geology
Flood Areas
Wetlands
Historic Districts
Local Historic Districts
Unique and Scenic Features
Environmental Challenges
Locations of City Parks and Schools
Recreational Field Locations
Historic and Natural Resources
Open Space Opportunities
Trail System Opportunities
Healthy Neighborhoods: Proposed Street Improvements

Five Year Action Plan: Capital Projects

Attachment B: Lands of Conservation and Recreation Interest

*Bourgoin Square
Bruce School Park
Campagnone Common
Costello Park
Coyne Park
Cronin Park
Den Rock Park
Dogwood Park
Donovan Park
Frost School Recreational Complex
Gagnon Park
Guilmette School
Hayden Schofield Playstead
Lawrence Heritage State Park
Highland Park
Howard Playstead
Immigrant Place
Lindquist Playstead
Marston Street Park
McDermott Park
Misserville Park
Mt. Vernon Park
O'Connell South Common
O'Neill Park
Oxford Street Park
Parthum School
Pemberton Park
Plainsman Park
Reservoir and Water Tower
Reviviendo Playground
Riverfront State Park/ Bashara Boathouse
Rowell Park
Shawsheen Park
South Lawrence East School/ Higgins Pool
Stockton Park
Storror Park/ Geisler Pool
Sullivan Park
Van Doorne Park
Veterans Memorial Stadium*

ATTACHMENT C: Powerpoint Presentation from Open Space Plan Meetings

ATTACHMENT D: ADA Accessibility Report

ATTACHMENT E: Letters of Review

SECTION 1: EXECUTIVE SUMMARY

Introduction

The 2004 Open Space Plan, prepared by the Office of Planning and Development with assistance from Groundwork Lawrence, is the result of a strong commitment by the City and the community to improving Lawrence's parks, recreational facilities, and natural resources. As Lawrence enters the twenty-first century, there is a renewed spirit of optimism about the future, and shared dedication to making Lawrence a great place to live, work, and play. Building and maintaining the city's "green infrastructure" of parks, playgrounds, streets, trails, and historic landscapes is vital to this effort. It will require significant investment in both capital projects and maintenance, as well as increased citizen involvement. The 2004 Open Space Plan provides a framework to guide these actions and help create a safe, clean, and healthy environment for all Lawrencians.

Challenges and Opportunities

Lawrence is one of the youngest cities in New England, with more than forty percent of the population under the age of 24 and an average age of 32 years old. This creates a tremendous demand for open space and recreational facilities that meet the needs of children, teenagers, and families. At the same time, Lawrence is a densely built city with relatively little open land. On average, Lawrence has 3.7 acres of parkland for every 1000 residents. In contrast, the City of Boston (with a higher population density) has 9.3 acres of parkland per 1000 residents. It is therefore critically important to protect and improve the City's existing parks, while at the same time seeking new opportunities to develop open space on vacant lots, brownfield sites, and underutilized riverfront areas.

Statement of Open Space and Recreation Goals

Lawrence is a city of neighborhoods—a tightly woven community of homes, schools, and businesses, defined by its rivers and bridges, and punctuated by pockets of green in the midst of a densely settled urban environment. In Lawrence, it is possible to live, work, shop, and play within a few square blocks. This creates both great opportunity and tremendous demand for parks and recreational facilities that serve a diverse population. For Lawrence to thrive, its citizens need places of beauty and places to play; places for enjoyment, for reflection, and for recreation. Residents need places to stretch their legs, to meet their neighbors, and to meditate on the natural world. It is no coincidence that every great city has a system of parks, squares, and streets that invite people to walk, play, and celebrate outdoors. If Lawrence is to prosper in the post-industrial economy, serious attention must be paid to creating an environment that invites this kind of activity and supports quality of life for all residents of the city.

Lawrence's vision for the future includes a safe, clean, and well-maintained system of open spaces that contribute to human health and regional ecosystems. To achieve this vision, the 2003-2004 Open Space Plan establishes the following goals:

- 1) Protect and enhance existing open space assets, from neighborhood parks to recreational fields, natural areas and historic landscapes;
- 2) Increase public access to and enjoyment of the rivers, with new parks and trails that invite a variety of activities;
- 3) Provide recreational facilities that meet the needs of a diverse population, including youth, teens, families and the elderly;
- 4) Develop a linked network of safe, tree-lined streets and walking/cycling paths that provide better connections between existing neighborhoods and open spaces, and support greater physical activity and improved public health;
- 5) Initiate new public-private partnerships to build greater awareness, stewardship, and pride in open spaces;

- 6) Improve management and maintenance of the city's open space resources.

Five-Year Action Plan

Following is a summary of recommendations in the 2004 Open Space Plan.

A. Capital Projects

I. Current Park Projects

1. **Veterans Memorial Stadium**- Complete stadium renovations.
2. **New Lawrence High School**- Complete construction of new playing fields at South Lawrence East, the new high school, and the Kane Gym site; complete renovations to Sullivan Park.
3. **North Common**- Construct new baseball field as planned.
4. **Den Rock Park**- Complete construction of new parking lot.
5. **Oxford Paper site**- Complete remediation, site design and construction for new 2-acre passive park along the Spicket River.
6. **Everett Mills Warehouse site**- Complete site design and construction for a new civic square at the corner of Canal and Union Streets.
7. **Marston Street Park**- Work with MassHighway to complete park construction and transfer ownership to City of Lawrence.
8. **Brook Street Park**- Complete remediation, site design, and construction for new 2.7-acre neighborhood park along the Spicket River.
9. **FEMA site**- Complete site design and construction for new 2-acre neighborhood park along the Spicket River.

II. Recreational Improvements

10. **Bourgoin Square (West Street)**- Renovate and upgrade the existing field to create the city's first dedicated soccer facility.
11. **Hayden-Schofield Playstead**- Redesign the park to improve condition of the ball fields, children's playground, and trail access along the Spicket River.
12. **O'Connell South Common**- Renovate existing ball fields.
13. **Mt. Vernon Park**- Improve/ upgrade ball fields.
14. **Misserville Skate Park**- Complete design and construction for a new skate park and riverfront trail in conjunction with school yard renovations.

III. Historic Landscape Improvements

15. **North and South Commons**- Renovate historic commons, including tree trimming, soil improvements, and pathway reconstruction, as well as new plantings and lighting consistent with the historic character of the parks.
16. **North and South Canals**- Restore the city's historic canals, including stabilization of canal walls; restoration of locks, gates, machinery, and bridges; and new landscaping and walking paths along the canals.
17. **Bellevue Cemetery**- Improve pathways, plantings, and other historic landscape features in the Bellevue cemetery.

IV. Neighborhood Park Improvements

18. **Install new steel trash receptacles and recycling containers** in all city parks in place of the existing steel drums. New receptacles should match those installed in Phase One Park Improvements.

19. **Storror Park:** Complete design and construction for Phase Two park improvements, including new bbq/ picnic area, sidewalk, and paths.
20. **Reservoir:** Install new steel benches and park sign.
21. **Rowell Park:** Identify improvements to make the park safer and more usable, including new play equipment and safety surfacing.
22. **Highland Park:** Identify improvements to make the park safer and more usable.
23. **Cronin Park:** Identify improvements to make the park safer and more usable, including new play equipment and safety surfacing.
24. **Oxford Park:** Identify improvements to make the park safer and more usable, including new basketball courts and/or play equipment. Explore the feasibility of acquiring adjacent vacant lots for park expansion.

IV. New Parks

25. **Water Treatment Plant-** Initiate planning and design for a new riverfront park and walking paths on twenty acres of city-owned land adjacent to the water treatment plant.
26. **Covanta site-** Work with property owners to develop new public parkland and walking trails around Stevens Pond.
27. **Plycraft site-** Work with property owners to develop new publicly-accessible parkland and a walking trail along the south bank of the Merrimack River.
28. **Wood Mill-** Work with property owner to develop new publicly-accessible parkland and a walking trail along the south bank of the Merrimack River.
29. **Ultimate Window site-** Work with property owner to develop new publicly-accessible parkland and walking trail along the north bank of the Merrimack River.
30. **Duck Mill-** Work with property owner to develop new publicly-accessible parkland and a walking trail along the north bank of the Merrimack River.
31. **Tomborello Site-** Work with property owner to develop new publicly-accessible parkland and parking for the Parthum School and surrounding neighborhood.

New Walking/ Cycling Trails:

32. **Boathouse Trail Connector:** Build a new trail connecting the Lawrence Boathouse to the Merrimack River Trail in Andover.
33. **Merrimack River Trail (north bank):** Build a new riverfront trail along the north bank of the Merrimack River from the Water Treatment Plant to Broadway.
34. **North Canal/ Pemberton Park Loop:** Build a new walking path along the south side of the North Canal, connecting the existing tow path and Pemberton Park.
35. **Spicket River Greenway:** Build a new walking/cycling trail along the Spicket River, connecting schools, neighborhoods, and parks.
36. **Merrimack River Trail (south bank)-** Build a new trail along the south bank of the Merrimack River from Broadway to Route 495.
37. **Merrimack/Shawsheen Connector:** Build a new trail connecting the Merrimack River and the Shawsheen River Trail at Costello Park.
38. **Shawsheen River Canoe Launch:** Work with the Hampton Inn to secure access to the Shawsheen River for canoe launches.
39. **Rails-to-Trails Feasibility Study:** Conduct a feasibility study for rails-to-trails development of unused rail corridors.
40. **Merrimack Street:** Redesign Merrimack Street as a tree-lined boulevard with cycle lanes and improved sidewalks linking riverfront areas, the South Canal, and the new train station.

B. Maintenance and Programming

1. Increase the resources available to DPW and the Recreation Department for maintenance and programming in the parks.
2. Hire Lawrence youth to assist with parks maintenance during the summer months.
3. Conduct feasibility study for relocation of the City Yard to create additional storage space and improved DPW facilities.

C. *Resource Protection*

- Create a local wetlands bylaw and if necessary create additional conservation restrictions for Jacques Pond, Donovan Park and the Shawsheen River wetlands.
- Conduct a citywide street tree survey to determine location, species, and conditions of trees. Based on this information, establish citywide standards and management practices for street trees.
- Conduct a stem-by-stem inventory of trees in city parks, and label rare and historic trees.
- Rezone existing public parks to Open Space for additional recognition and protection.

D. *Environmental Education*

1. Work with the Lawrence School Department, teachers and students to renovate existing schoolyards for outdoor classrooms and learning environments.
2. Coordinate with public and private schools to establish a citywide “Day of Service” in the parks for Lawrence youth.

E. *Healthy Neighborhoods*

- Conduct an inventory of all city streets to document the condition of roadways, sidewalks and lighting and evaluate the level of pedestrian and vehicle safety.
- Create a citywide pedestrian/bicycle plan to improve the safety and aesthetic character of city streets and encourage walking and cycling.
- Pilot a neighborhood “Adopt-a-Tree” program to engage residents in tree planting and maintenance in their front yards.
- Work with neighborhood residents to identify vacant lots suitable for development as small parks or gardens.

F. *Citizen Involvement*

1. Create a Parks and Recreation Commission to coordinate open space development, maintenance, and programming efforts across the City.
2. Pilot a citywide “Adopt-a-Park” program to encourage citizen involvement and volunteer efforts in the parks.

SECTION 2: INTRODUCTION

The City of Lawrence has made dramatic progress over the past few years in achieving the goals and objectives established in the 1997 Open Space Plan. These accomplishments include the completion of Phase One of the City's Parks Improvement Plan, with repairs, new signage, plantings and amenities in 22 city parks; a complete renovation of Storrow Park; the expansion of Pemberton Park on the Merrimack River; near completion of the Marston Street landfill conversion to a recreational park; the development of a new neighborhood park on a vacant lot in the North Common neighborhood; installation of new play equipment in two city parks; the awarding of "Tree City USA" status; and the completion of several major roadway and tree planting projects. Looking to the future, the City is already moving forward on a number of additional parks projects, from recreational field improvements to the development of new open space on brownfield sites. A new civic plaza will also be built within the next two years as part of the new MVRTA Intermodal Transportation Center on Merrimack Street. At the same time, Lawrence faces significant challenges in maintaining and improving its parks and recreational facilities. These challenges include competing demands for space to accommodate the city's growing school population, the cost and complexity of brownfield remediation projects, and the need for greater resources to support parks maintenance.



New signs were installed in 22 city parks as part of the Phase One Parks Improvement Plan

about open space issues across the city, attract new funding for open space projects, and encourage greater coordination between the public and private sectors.



Pemberton Park looking east toward the Ayer Mill Clock Tower

As Lawrence looks to the future, it is essential to take stock of the full range of open space needs and opportunities across the city, and to ensure that investments in open space are part of a coordinated effort to improve quality of life and support economic development. Like the 1997 Open Space Plan, the 2004 Plan is designed to enhance and complement Lawrence's urban character, mix of cultures, riverfronts, and industrial heritage. The 2004 Plan is intended to provide a vision and clear steps for implementation, and to help guide the decisions of elected officials, city departments, boards, citizens, and community organizations. It also intended to generate greater public awareness

Planning Process and Public Participation

The City of Lawrence Office of Planning and Development is coordinating the open space planning process. To assist with the preparation of the 2004 Open Space Plan, the City contracted with Groundwork Lawrence, a local non-profit organization with expertise in open space planning and development. Over the past nine months, the City of Lawrence and Groundwork Lawrence have conducted extensive public outreach to gather feedback about the community's interests, goals and priorities. Outreach activities have included one-on-one interviews with representatives from the Mayor's Office, the Office of Planning and Development, the Recreation Department, the Department of Public Works, and the Merrimack Valley Planning Commission; presentations to the Conservation Commission, Planning Board, and Neighborhood Associations; a series of three widely advertised community meetings; and distribution of open space surveys in English and Spanish. More than eighty people participated in the community meetings, and a total of 56 surveys were completed. This process has provided a comprehensive overview of community needs and interests, which form the basis for the 2004 Open Space Plan.



Reviviendo Playground under construction

SECTION 3: COMMUNITY SETTING

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 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.



View of Lawrence looking east over the Merrimack River

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 two decades ago. Lawrence is now among the youngest communities in the state, with nearly half its population under the age of 24. This has created a renewed demand for open space to serve a growing population, especially 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. By the early 1900s, Lawrence was the world's leading manufacturer of woolen textiles.¹ 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.²

Lawrence's dominance of the textile industry was short-lived, however. 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.³ The city's

¹ City of Lawrence 1997 Open Space Plan: Lawrence Community Development Department, page 4

² Ibid, page 4

³ Images of America: Lawrence Massachusetts, Eartha Dengler et al, p. 8

population went into a steep decline, from a peak of nearly 100,000 in 1920 to approximately 63,000 by 1980.⁴

Population Characteristics

According to the 2000 Census, 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.⁵

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 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.⁶

In 2003, Lawrence's labor force included approximately 30,000 people. Monthly unemployment figures for 2003 ranged from a low of 13.3 percent in April to a high of 15.2 percent in November. Unemployment in Lawrence has consistently hovered at three times the state average, which ranged from 5.3 to 6.1 percent over the same period. 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 the Lawrence Primary Metropolitan Statistical Area (PMSA), which includes parts of Massachusetts and New Hampshire, the leading industries in 2003 were Trade, Transportation and Utilities; Manufacturing; Educational and Health Services, and Professional and Business Services, which collectively account for more than half of all jobs.⁷

In sum, Lawrence is a young and growing community with great 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 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, and provide safe recreational opportunities for people of all ages.

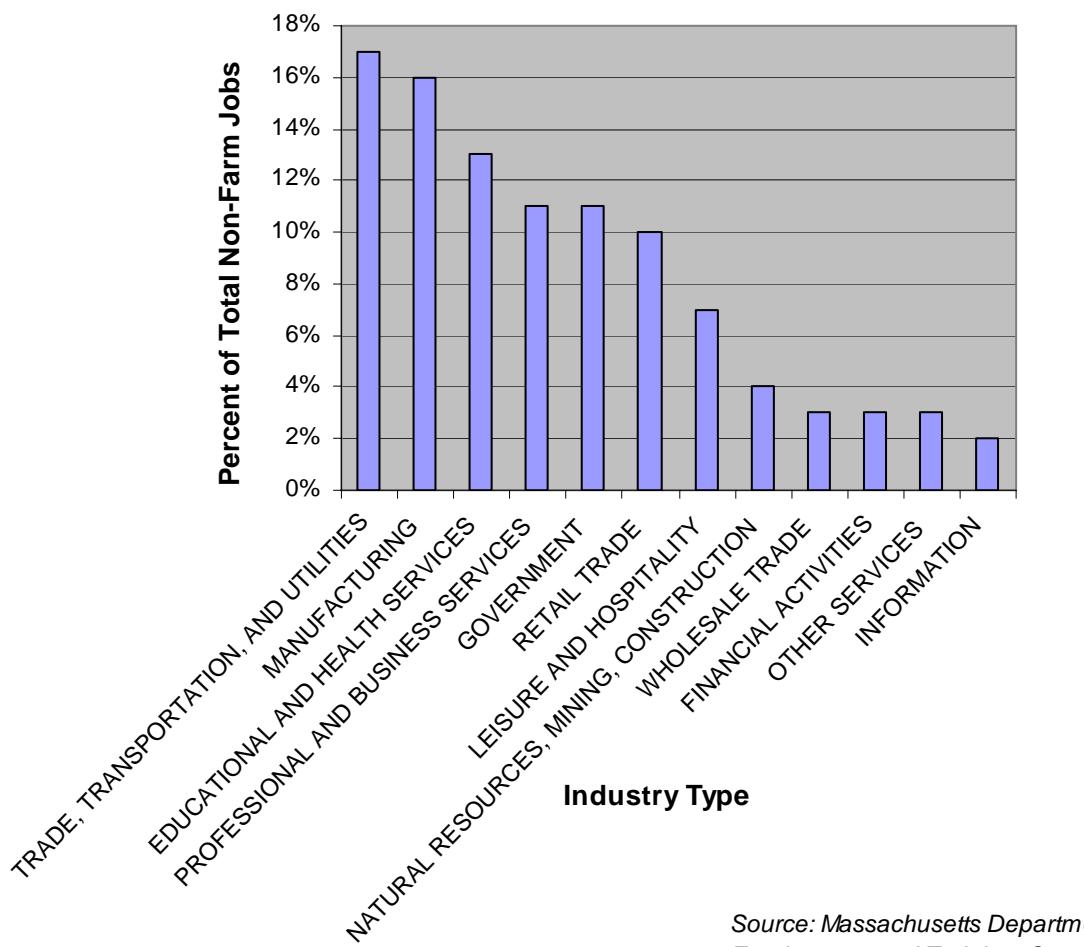
⁴ US Census data compiled by the Boston Metropolitan Planning Organization, www.ctps.org/bostonmpo/data

⁵ US Census Bureau, 2000 Census, from ePodunk Inc., www.epodunk.com

⁶ US Census Bureau, 2000 Census, from ePodunk Inc., www.epodunk.com

⁷ Massachusetts Division of Employment and Training, from the ES-202 Quarterly Data and Local Area Unemployment Statistics (LAUS), www.detma.org

**2003 Employment by Industry Type*, Lawrence MA-NH
Primary Metropolitan Statistical Area**



*Based on monthly data from January through October 2003

Source: Massachusetts Department of Employment and Training, Current Employment Statistics (CES-790)

In the context of open space, the relationship between population density and the location of parks and natural areas are particularly important demographic factors. According to the 2000 Census, the nine census tracts that make up the central core of north Lawrence have less than 140 square feet of open space per capita. In contrast, the two census tracts that constitute the southeastern and northwestern areas of city have the greatest amount of open space, ranging from 672 to 2022 square feet per capita.⁸

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

⁸ US Census Bureau, 2000 Census, from the City of Lawrence Office of Planning and Development

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.⁹ Taken together, these statistics strongly indicate a need for more open space in the northern part of the city, especially along the Spicket River. The current plans to build new parks on the FEMA site, the Brook Street site, and the Oxford Paper site, as well as the development of a Spicket River Greenway, hold great potential to meet the needs of Lawrence's children and elderly residents. These new parks will also increase the overall quantity of open space in neighborhoods that currently have the least.

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. 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. Mill buildings were also developed along the south bank of the Merrimack River, 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 a valuable open space in the heart of the city.



Artist's View of Lawrence from Prospect Hill, c. 1854

The construction of a new city high school in South Lawrence adjacent to the Veterans Memorial Stadium will provide new and improved recreational facilities for students as well as the larger community. The project, which broke ground this year, will result in a net gain of 1.15 acres of open space. Highlights of the project include the following¹⁰:

Reconfigured Memorial Park Facilities

- Reconstruction of Memorial Stadium track
- Reconstruction of Memorial Stadium visitor bleachers
- Replacement/ Reconstruction of regulation-sized Mark Devlin Baseball Field (lighted and irrigated)
- Replacement/Reconstruction of regulation-sized Softball/Little League Field (lighted and irrigated)
- New lighted tennis courts (4)
- New Wetland Resources/ Natural Sciences Experiential Learning Site

New Park on Kane Gym site (Osgood Street Parcel)

⁹ US Census Bureau, 2000 Census, from the City of Lawrence Office of Planning and Development.

¹⁰ VHB Environmental Impact Report Table 4-1 "Assessment of Parkland/Recreational Facilities Impacts"

- New construction of 2 regulation-sized Softball/ Little League fields (irrigated)

Other Recreational Facility Improvements

- Renovation of Sullivan Park softball field and basketball courts
- New gymnasium in high school
- New, improved clubhouse and athletic equipment facilities (14,700 SF of space in new high school)
- New Community Arts Center with over 26,000 SF of space available for public use (auditorium, dance, music and recital spaces)
- Pathways (walking, jogging, biking) to link all the open spaces of Memorial Park, South Lawrence East athletic fields, and the Shawsheen Park Greenway (and potentially Higgins Pool)

Lawrence is served by regional bus and rail as well as the nearby airport in North Andover. The development of a new MVRTA Intermodal Transportation Center on Merrimack Street will have a great impact on the growth and development of the surrounding area, providing convenient access to Boston and bringing hundreds of commuters into Lawrence every day. The Intermodal Center will face onto a new civic space with sculpture, seating, and landscaping. The development of multi-level parking above the train station will serve surrounding buildings as well as commuters, and may open the possibility of creating additional green space along the river as parking is relocated to the Merrimack Street corridor.

In addition to transportation improvements, the City is also in the process of upgrading its water system. The Lawrence Department of Public Works is currently completing the design phase for a new 16-million gallon water treatment facility, which will be located next to the existing pumping station on the south side of Water Street. Groundbreaking for the project is expected by the end of 2004 with completion by the end of 2006. When the new treatment facility is opened it will replace the existing treatment facility on the north side of Water Street. The existing pumping station will also be upgraded as part of the project. These improvements are particularly significant in the context of open space planning, since the construction of a new treatment facility could dovetail with development of a riverfront park. In combination with adjacent City-owned parcels, the water treatment facility could become part of a major new riverfront park and trail system on the north bank of the Merrimack. This type of shared use between water treatment facilities and public parkland has been highly successful at the Riverfront Park in Methuen, as well as at Fresh Pond in Cambridge.

Lawrence's sewer system is part of the Greater Lawrence Sanitary District, which serves Lawrence, Methuen, Andover, North Andover, and Salem, New Hampshire. The existing system 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. 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. On average, the GLSD system overflows 14 times per year, averaging 112 million gallons.¹¹ The GLSD is currently in the process of implementing Phase One of a CSO Control Plan to bring the system into compliance with state standards.¹² The GLSD Phase One CSO Control Plan includes 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

¹¹ Minutes of GLSD Public Meeting on September 19th 2003, Thomson Elementary School, North Andover.

¹² 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.

are currently utilizing CSO outfall pipes. CSO issues directly affect water quality downstream and negatively impact parks and recreational boating along the river.

Lawrence's zoning ordinance includes sixteen zoning districts (see zoning map). In general, commercial 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, an overlay zoning district 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 survey of 1,200 high technology workers in 1998 by KPMG found that quality of life in a community increases the attractiveness of a job by 33 percent. Knowledge workers prefer places with a diverse range of outdoor recreational activities, from walking trails to rock climbing. Portland, Seattle, Austin, Denver, and San Francisco are among the top cycling cities; they also are among the leaders in knowledge workers. Workers attracted to an area are then positioned to put money back into the local economy through jobs, housing, and taxes, which then contribute to parks. (APA 2002, City Parks Forum Briefing Paper: How Cities Use Parks for Economic Development, Megan Lewis, AICP)

The buildout analysis for Lawrence conducted by the state Executive Office of Environmental Affairs (EOEA) projects a total buildout potential of approximately 700 new housing units and 1.5 million square feet of commercial/industrial space. The study also indicates that Lawrence has approximately 211 acres of additional developable land area. These calculations do not, however, account for the potential conversion of existing commercial/industrial space to housing. 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. At Malden Mills, for example, preliminary estimates by Winn Development indicate that as many as 600 new housing units could be created in existing mill buildings. In addition, the EOEA analysis does not fully account for the potential of vacant or partially vacant buildings, or infill on smaller vacant lots.¹³ In a city like Lawrence, a more thorough 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, and street 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.

¹³ See MassGIS website: Scope of Services for Buildout Analysis (<http://www.state.ma.us/mgis/buildout.htm>)

SECTION 4: ENVIRONMENTAL INVENTORY AND ANALYSIS

Geology, Soils and Topology

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.

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 St. Augustine's 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.¹⁴

In addition to the Reservoir and Storrow Park, the most dramatic topographic features in the City are DenRock Park and the Frost School Park, both located in South Lawrence. Abundant elevation changes, frequent rock outcroppings, and a natural wooded setting make 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.¹⁵

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 network of streets, parks, and civic buildings, many of which were laid out as part of the original plan for the city in the 1850s. Finally, the

North Canal, Lawrence



¹⁴ City of Lawrence 1997 Open Space Plan, Lawrence Community Development Department, p. 8

¹⁵ Ibid, p. 8

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. 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.

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, 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. They 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:

- ❖ In November 2002, the Massachusetts Executive Office of Environmental Affairs sponsored two community "charrettes" as part of the Urban RiverVisions program to gather ideas for enhancing the areas around the east end of the North Canal and the areas around Stevens Pond, Malden Mills, and the Arlington neighborhood along the upper Spicket River. The results of these charrettes were summarized in poster form and can be found online at:
<http://www.urbanrivervisions.org/lawrence.asp>
- ❖ In November 2003, the Pacific Mills submitted a grant application to the Mass Technology Collaborative for a feasibility study to re-use the turbines under their property for power generation. For this to occur, a major restoration of the North Canal would need to be undertaken, including stabilization of the canal walls and raceways. More than forty Lawrence residents, businesspeople, and community leaders involved in the Reviviendo Gateway Initiative (RGI) signed a support letter for this application, indicating the high level of interest in the North Canal as an economic, historic, and recreational resource.
- ❖ In June 2003, Lawrence hosted a "Rivers Weekend" that included a US-Rowing sanctioned Regatta on the Merrimack, a Kite Festival at Riverfront State Park, and "Riverside Rhapsody," a fundraising event for Lawrence Family Services held next to their offices on the West Island. In June 2004 the second annual Lawrence Celebration Regatta was held at the Bashara Boathouse, and was also a great success, with more athletes in attendance than the first year.



Lawrence Celebration Regatta, Bashara Boathouse, 2003

- ❖ In July and August 2002, volunteers from the National Civilian Community Corps cleaned up trash and removed brush from along the banks of the North Canal. The NCCC members also took the first of many kayak trips down the Spicket River, demonstrating its potential for recreational boating.
- ❖ In October 2002 and 2003, Groundwork Lawrence organized volunteer-led cleanups of the Spicket River, with assistance from the City of Lawrence DPW and numerous local businesses. Through the dedicated work of hundreds of volunteers, more than fifteen tons of debris were removed from the banks of the river, including tires, white goods, construction materials, and other household trash.
- ❖ In June 2002 and 2003, Environmental Arts Inc. organized an exhibit called “Artwalk on the North Canal,” which included a series of temporary sculptural installations sited in and around the North Canal. Many of these sculptures addressed the neglected condition of the canal, and provoked significant public interest and reaction.
- ❖ The Shawsheen River Watershed Association (SWRA) conducts regular river cleanups and offers canoe trips along the Shawsheen River, which have considerably improved the cleanliness and enjoyment of this river in recent years.



Spicket River Cleanup volunteers, 2002

The Merrimack River has become much cleaner in recent years, thanks to upstream treatment facility in Lowell, and is now considered a Class B waterway. However, there are still major challenges to the health of these rivers, including illegal dumping, Combined Sewer Overflow (CSO), stormwater runoff, bank erosion, and the persistent presence of invasive species. A portion of the Spicket River was designated a FEMA flood zone and was cleared several years ago for development as a neighborhood park. The Spicket River in particular suffers from illegal dumping of trash as well as oil and other toxic substances from auto body shops along the river.

In addition to the rivers and canals themselves, the land alongside them offers the city's greatest opportunities for new open space and recreational trail development. New riverfront trails can be linked to regional trail networks along all three rivers. Since the majority of land along the rivers is currently in private ownership, however, long-term protection of these corridors will require the development of effective public-private partnerships.

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 are located within the 100-year flood plain. 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-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.



Shawsheen River, Lawrence

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 Marion Avenue), which was cleared for development of a new neighborhood park. 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 Gencorp and Oxford Paper sites are within the 100-year flood zone.



Spicket River, Lawrence

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

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 or Shallow Marsh Meadow or Fen.

Vegetation

Much of Lawrence's 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.¹⁶ 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, especially Japanese Knotweed and 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



Jacques Pond

¹⁶ City of Lawrence 1997 Open Space Plan: Community Development Department, p. 12

have been removed or destroyed by disease, leaving these neighborhoods 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.

Fisheries and Wildlife

The intensity of development and limited vegetative cover in Lawrence have 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.¹⁷

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.¹⁸

Merrimack River Essex Dam, Lawrence, Massachusetts Year 2003 (as of: 10/29/03)	
Species	Total Returns to Date
Atlantic Salmon	144
American Shad	(includes out of basin transfers 55,620)
River Herrings *	10,607
Striped Bass	1,018
Sea Lamprey	2,124
Gizzard Shad	41

*River herring refers collectively to two fish species: blueback herring and alewife

The construction of a fish ladder at the Lawrence Hydroelectric Facility has significantly improved the environment for anadromous fish up and down the Merrimack River.

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:

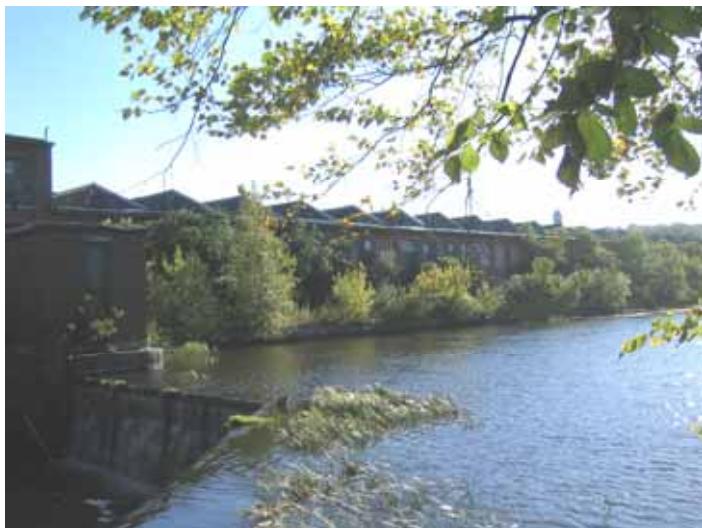
¹⁷ City of Lawrence 1997 Open Space Plan: Community Development Department, p. 12-13

¹⁸ U.S. Fish and Wildlife Service, Anadromous Fish Returns for the Merrimack River at the Essex Dam, Lawrence, as of 10/29/03: www.fws.gov/r5cneafp/returns.htm

- **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.¹⁹
- **The Everett Mills** is one of the City's largest mill buildings, standing six stories tall and occupying an entire city block. The Everett Mills 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 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.²⁰
- **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 to 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.²¹ 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.²²
- **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 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 the city's largest employers. Stevens Pond, located at the center of the Malden Mills 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.
- **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.
- **Den Rock Park** is the city's largest open space, with 80 acres of woodland trails and a natural rock face used for climbing.

¹⁹ Images of America- Lawrence Massachusetts: Eartha Dengler et al, p. 12²⁰ Images of America- Lawrence Massachusetts: Eartha Dengler et al, pp. 105, 115²¹ Images of America- Lawrence Massachusetts: Eartha Dengler et al, p. 47²² Images of America- Lawrence Massachusetts: Eartha Dengler et al, p. 42

- **Views from Storrow Park:** The views from Storrow Park on Prospect Hill are among the best in the city, especially since the park's recent renovation. The Ayer Mill Clock Tower, Lawrence City Hall tower, and other landmarks are visible from the walkways and benches along High Street.



Stevens Pond

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 waterfront 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. In 1996 Lawrence was designated as a Brownfields Pilot community by the EPA, and awarded funds to assess and improve industrial sites in the North Canal Historic District. Major environmental cleanups are now well underway on several sites along the Spicket River. Gencorp Inc. is currently completing a multi-year, \$80 million clean up of an 8-acre former

manufacturing site on Canal Street. Immediately adjacent to the Gencorp site, the City of Lawrence and MassHighway are remediating a 3-acre former industrial site that once housed the Oxford Paper mill. These two sites are slated to become surface parking and a passive green space along the Spicket River. A smaller site at the corner of Canal and Union Streets that formerly housed the Everett Mill warehouse is also slated to become a public park as part of this redevelopment effort. Further up the Spicket River, Fleet DBT Corporation and its successor Bank of America are currently completing testing and cleanup of a 2.7-acre former industrial laundry site near Brook Street. The Brook Street site is intended for redevelopment as a neighborhood park.

There are currently 44 DEP Tier Classified Oil or Hazardous Materials sites in Lawrence, of which more than half are located on or near a river. In addition, there are three DEP solid waste sites. One of these, the landfill on Marston Street, has recently been capped and a new park has been built on the site. A second site, the transfer station on North Parish Road, is being phased out with the construction of the new high school. Finally, flooding around the Spicket River continues to be a major challenge, especially in and around the FEMA site in the Arlington neighborhood.

SECTION 5: INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST

There are 39 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, and Pemberton Park, which are owned and managed by the State Department of Conservation and Recreation (DCR). Sixteen of these parks include active recreational facilities, and thirteen provide opportunities for passive recreation.

City-owned sites with the greatest potential for new open space are the FEMA site, the parcels along Water Street, the Oxford Paper site, and the City Yard. These sites collectively make up 30 acres of land, the majority of which is located along Water Street. Several privately-held parcels also have potential for open space development due to their size and location. Chief among these are the Tomborello site, the Wood Mill site and adjacent parcels on the South side of the Merrimack, the Ultimate Windows site and adjacent parcels on the north side of the Merrimack, and the area around Stevens Pond. Taken together, these parcels could provide more than 40 acres of new parkland, and create important pedestrian linkages between existing parks and riverfront areas.

For photos and parcel maps of existing parks and potential open spaces, please see Attachment B.

City of Lawrence 2004 Open Space Plan

Inventory of Lands of Conservation and Recreation Interest

Name	Size (acres)	Owner	Management Agency	Current Use X=Existing P=Planned/ Potential	Special Characteristics					Received DCS Funding	Public Access	Handicap- accessible	Zoning	Other Statutory Protections										
					Active Recreation	Passive Recreation	Pocket Park	Historic Resource	Natural Resource															
Public Ownership																								
Existing Parks																								
Bourgoin Square	2.7	City	City	X						Yes- LWCF	Y	Y	I-2	None										
Bruce School Park	1.7	City	City	X						Yes- USF	Y	Y	R-2/R2A	None										
Campagnone Common	17.5	City	City	X	X	X				Yes- LWCF and DEM	Y	Y	OSR	Local Historic District, National Register Historic District										
Costello Park	6.9	City	City		X			X		N	Y	Y	OSR	None										
Coyne Park	5.2	City	City					X		N	Y	N	OSR	None										
Cronin Park	1	City	City			X				N	Y	Y	R3/R4	National Register Historic District										
Den Rock Park	81.8	City	City		X			X		N	Y	N	OSR	None										
Dogwood Park	1	City	City		X					N	Y	Y	I3	None										
Donovan Park	3.4	City	City			X		X		N	Y	Y	R2/R2A	None										
Frost School Recreation Complex	2	City	City	X						X	N	Y	Y	R1/ R1A	None									
Gagnon Park	1.2	City	City			X					N	Y	Y	R-2/R2A	None									
Guilmette School	1.5	City	City	X						X	N	Y	Y	OSR	None									
Hayden Schofield Playstead	3.1	City	City	X							N	Y	N	OSR	None									
Lawrence Heritage State Park	0.5	Mass. DCR	Mass. DCR				X				N	Y	Y	B3	None									
Highland Park	0.2	City	City			X					N	Y	Y	B1/R3/R4	None									
Howard Playstead	4.6	City	City	X						Yes- LWCF	Y	Y	OSR	None										
Immigrant Place	1.6	City	City		X						N	Y	Y	OSR	None									
Lindquist Playstead	2	City	City	X						X	N	Y	Y	OSR	None									
Marston Street Park	7	Mass Highway	Mass Highway	X							N	Y	Y	R2/R2A	None									
McDermott Park	0.5	City	City			X					N	Y	Y	I2	None									
Misserville Park	1.6	LRA	City		X					X	Yes- LWCF	Y	Y	R3/RGOD	None									
Mount Vernon Park	12	City	City	X							N	Y	Y	OSR	None									
O'Connell South Common	11	City	City	X	X	X					N	Y	Y	OSR	?									
O'Neill Park	6.9	City	City	X						Yes- LWCF	Y	Y	OSR	None										
Oxford Street Park	0.2	City	City			X					N	Y	Y	B2	None									
Parthum School	1.5	City	City	X						X	N	Y	Y	OSR	None									
Pemberton Park	3	Mass. DCR	Mass. DCR		X					Yes- DEM	Y	Y	I2	National Register Historic District										

Plainsman Park	0.7	City	City		X		N	Y	Y	R3	None
Reservoir and Water Tower	20.8	City	City		X	X	N	Y	Y	R2/R2A	National Register Historic District
Riverfront State Park/ Bashara Boathouse	12	Mass. DCR	Mass. DCR		X		X	N	Y	Y	OSR
Reviviendo Playground	0.25	City	City		X		N	Y	Y	B2	None
Rowell Park	0.8	City	City		X		N	Y	Y	R3/R4	None
Shawsheen Park	9	City	City		X	X	N	Y	Y	OSR	None
South Lawrence East School/ Higgins Pool	5	City	City	X			N	Y	Y	OSR/R1/R1A	None
Stockton Park	0.4	City	City		X		N	Y	Y	OSR	None
Storrow Park/ Geisler Pool	9.8	City	City		X		N	Y	Y	OSR	None
Sullivan Park	4	City	City	X	X		Yes- LWCF	Y	Y	OSR	None
Van Doorne Park	0.4	City	City		X		N	Y	Y	R2/R2A	None
Veterans Memorial Stadium	23	City	City	X		X	Yes- SURF	Y	Y	OSR	None
Bellevue Cemetery	87	City	City			X	N	Y	Y	R2/R2A	None
Open Space Opportunities											
City Yard	3	City	City	P	P	P	N	N		R3/R4	None
FEMA land	2	City	City	P	P		N	Y		I2/R3/R4	None
Oxford Paper site	3	City	City		P		N	N		I2	National Register Historic District
Water Street parcels	21	City	City	P	P	P	N	N		B1/R2/R2A/R3/R4	None
MVRTA Intermodal Transportation Center	0.5	City	City		P		N	Y		I2	None
Everett Mill Warehouse site	.1	City	City		P		N	Y	Y	I2	None
Non-profit Ownership											
Adelante Youth Center: Pool	n/a	Adelante	Adelante	X						B1	None
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
YMCA: Rec. Center and Pool	n/a	YMCA	YMCA	X			N	Members only		B3	None
Private Ownership											
St. Mary's Cemetery	24	Catholic Church	Catholic Church		X		N	Y		R2/R2A	None
Immaculate Conception Cemetery	22	Catholic Church	Catholic Church		X		N	Y		R2/R2A	None
Brook Street site	2.7	Bank of America	Bank of America	P		P	N	N		I2	None
Duck Bridge Riverfront	1	KGR Properties	KGR Properties	P		P	N	N		I2	National Register Historic District
East Island Riverfront	8	Ultimate Windows	Ultimate Windows	P	P	P	N	N		I2	National Register Historic District

Malden Mills/ Covanta	Approx. 3	Malden Mills/ Covanta Mass Innovation Center	Malden Mills/ Covanta	P	P	P	N	N	I2/PIOD	National Register Historic District
Wood Mill site	10	Estate of Bella Magee	Mass Innovation Center	P	P	P	N	N	I2	None
Jacques Pond	2.7	Estate of Bella Magee	Estate of Bella Magee	P	P	P	N	N	R1/R1A/R2/R2A	None
Plycraft site	2.5	Merrimac Paper	Merrimac Paper	P	P	P	N	N	I2	None
North Canal and Gatehouses	n/a	Enel North America	Enel North America	P	P		N	Limited	n/a	National Register Historic District
South Canal and Gatehouses	n/a	Enel North America	Enel North America	P	P		N	Limited	n/a	none
Tombarello site	14	American Recycling	American Recycling	P	P		N	N	I3	none

SECTION 6: COMMUNITY VISION

Description of Process

As part of the Open Space planning process, the City of Lawrence and Groundwork Lawrence conducted extensive public outreach to share information and gather feedback about the community's goals and priorities. Outreach activities over the past nine months have included one-on-one interviews with City officials and Department heads; presentations to the Conservation Commission, Planning Board, and Neighborhood Associations; a series of three widely advertised community meetings; and distribution of open space surveys in English and Spanish. Below is a detailed summary of these outreach activities:

- One-one-one interviews were conducted with the following individuals to discuss their views on the City's open space challenges, opportunities, and priorities: Tom Schiavone, Mayor's Office; Tom Galligani, Director of Planning and Development; Linda Schiavone, Recreation Director; Frank McCann, DPW Director; Alan McIntosh, Merrimack Valley Planning Commission.
- Presentations were made to the Lawrence Conservation Commission and the Planning Board to advise them of the Open Space planning process, distribute information about upcoming community meetings, and solicit feedback on progress since the 1997 Open Space Plan.
- Presentations were made at the following Neighborhood Association meetings during the months of September and October: Prospect Hill/ Back Bay, Whitman Street, North Broadway, South Common Central, and Monmouth Street. In addition, phone calls were made to all Neighborhood Association presidents to advise them of upcoming community meetings. Information about the Open Space Plan update was also published in the Tower Hill Neighborhood Association newsletter.
- The City of Lawrence hosted a series of three community meetings on October 16, 23, and 30 to solicit public feedback about the Open Space Plan. These meetings were advertised in the Boston Globe Northwest, the Eagle Tribune, and Rumbo, the local Spanish-language newspaper. The Eagle Tribune also published a story about the Open Space Plan prior to the first public meeting. Notices about the community meetings were also posted at City Hall and on the City of Lawrence website. In addition, letters of invitation from the Mayor's Office were sent to approximately 500 people, including all Neighborhood Association presidents; leagues and teams with permits to use city fields; City Councilors and School Committee members; City department heads; members of the state and federal delegation; local arts, education, and community organizations; regional and state environmental organizations; local business leaders; and participants in the Urban RiverVisions charrette and the 2002 and 2003 Spicket River Cleanup. Spanish translation was available at all three community meetings, and free childcare was

THE SEVEN FACTORS OF EXCELLENCE
FOR CITY PARK SYSTEMS
from "The Excellent City Park System" by
Peter Harnik, Trust for Public Land, 2003

1. A clear expression of purpose
2. An ongoing planning and community involvement process
3. Sufficient assets in land, staffing and equipment to meet the system's goals
4. Equitable access
5. User satisfaction
6. Safety from crime and physical hazards
7. Benefits for the city beyond the boundaries of the parks

provided at the October 23 meeting. In total, more than eighty people attended these meetings. In addition, a follow up meeting was held on April 22, 2004 to discuss recreational field improvements. This meeting was well-attended by representatives of the City's athletic leagues and teams, including both youth and adult programs.

- Surveys in both English and Spanish were distributed at the community meetings, Neighborhood Association meetings, and the October board meeting of the Greater Lawrence Community Boating Program. A total of 56 surveys were completed as part of this process.

Statement of Open Space and Recreation Goals

Lawrence is a city of neighborhoods—a tightly woven community of homes, schools, and businesses, defined by its rivers and bridges, and punctuated by pockets of green in the midst of a densely settled urban environment. In Lawrence, it is possible to live, work, shop, and play within a few square blocks. This creates both great opportunity and tremendous demand for parks and recreational facilities that serve a diverse population. For Lawrence to thrive, its citizens need places of beauty and places to play; places for enjoyment, for reflection, and for recreation. Residents need places to stretch their legs, to meet their neighbors, and to meditate on the natural world. It is no coincidence that every great city has a system of parks, squares, and streets that invite people to walk, play, and celebrate outdoors. If Lawrence is to prosper in the post-industrial economy, serious attention must be paid to creating an environment that invites this kind of activity and supports quality of life for all residents of the city.

"A 2001 survey by the National Association of Realtors (NAR) revealed that 57 percent of voters would choose a home close to parks and open space over one that was not. In addition, the NAR survey found that 50 percent of voters would be willing to pay 10 percent more for a house located near a park or protected open space. The National Association of Home Builders found that 65 percent of home shoppers surveyed felt that parks would seriously influence them to move to a community. According to Economics Research Associates (ERA), a 1991 survey in Denver found that 48 percent of residents would pay more to live in a neighborhood near a park or greenway." (APA 2002, City Parks Forum Briefing Paper: How Cities Use Parks for Economic Development, by Megan Lewis, AICP)

Lawrence's vision for the future includes a safe, clean, and well-maintained system of open spaces that contribute to human health and regional ecosystems. To achieve this vision, the 2004 Open Space Plan establishes the following goals:

- 1) Protect and enhance existing open space assets, from neighborhood parks to recreational fields, natural areas and historic landscapes;
- 2) Increase public access to and enjoyment of the rivers, with new parks and trails that invite a variety of activities;
- 3) Provide recreational facilities that meet the needs of a diverse population, including youth, teens, families and the elderly;
- 4) Develop a linked network of safe, tree-lined streets and walking/cycling paths that provide better connections between existing neighborhoods and open spaces, and support greater physical activity and improved public health;
- 5) Initiate new public-private partnerships to build greater awareness, stewardship, and pride in open spaces;
- 6) Improve management and maintenance of the city's open space resources.

SECTION 7: ANALYSIS OF NEEDS

Summary of Resource Protection Needs

Lawrence is a highly urbanized community, with a population of 72,000 people living on less than seven square miles. With the notable exception of Den Rock Park, an 80-acre wooded area in the southeastern corner of the city, there is very little undeveloped land remaining in Lawrence. This makes it all the more important to protect the open space and natural resources that do exist, including parks, waterways, historic sites, wetlands, and forests. Developing a coordinated strategy for protection of these resources is essential for the long-term health of the city and its residents.

Parks

The scarcity of large parcels of undeveloped land has made the city's parks particularly vulnerable to development in recent years. In the late 1990s two elementary schools were built on city parks. This open space was replaced elsewhere, but the process indicates the vulnerability of parkland to competing needs. In addition to maintaining and improving its existing parks, the City has numerous opportunities to create new parks on existing vacant and brownfield sites, especially in densely built neighborhoods where the need is greatest. Some of this work is already well underway, and additional projects are in the planning stages. Balancing the need for parks and schools will continue to be a challenge as the city grows. Making the equation work will require coordinated long-range planning and a creative approach to redevelopment of under-utilized land and buildings.

The City of Lawrence and the State Department of Conservation and Recreation (DCR) currently own and maintain approximately 270 acres of parkland across the city, distributed across 39 parks. Of these, only 20 are currently

How Does Lawrence Compare to Other US Cities?			
	Population Density (persons per acre)	Percent of City Land Area Devoted to Parks	Acres of Parkland Per 1000 Residents
New York City	41	19%	4.6
San Francisco	26	20%	7.6
Chicago	20	8%	4.0
Boston	19	18%	9.3
Philadelphia	18	12%	7.0
Lawrence	16	6%	3.7
Miami	16	5%	3.1
Washington, DC	15	19%	13.2
Long Beach	14	9%	6.0
Baltimore	13	11%	8.8
Los Angeles	12	10%	8.2
Oakland	11	11%	9.6
Minneapolis	11	16%	14.9

Source: "The Excellent City Park System" by Peter Harnik, Trust for Public Land, 2003

zoned for Open Space. Four of the existing parks fall within National Register Historic Districts, providing some measure of additional protection. Rezoning of all city parks to Open Space is recommended as a first step towards recognition of these parks as city assets. A more detailed study should also be undertaken through the Conservation Commission to explore the possibility of additional Conservation Restrictions for public parks.

Waterways

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 and the Reservoir on Tower Hill, 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 the improving the health of regional ecosystems, as well as enhancing Lawrence as a place to live, work, and do business.

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 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, and historic monuments. 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 80 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. The cemeteries are also significant historic sites and should be considered part of the city's open space system. In addition to the measures described above for protecting and enhancing city parks, the City should consider developing more detailed design guidelines for plantings, pathways, lighting, and other features in the North and South Common and the cemeteries 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.

Wetlands

There are relatively few wetlands in the city, with the large majority concentrated along the western edge of the Shawsheen River next to Route 495. Much of this land is privately owned and may be vulnerable to development without additional conservation restrictions or river setback protections. In addition to the wetlands along the Shawsheen, there are two small, isolated wetlands in South Lawrence that warrant further study. One is a 3.4-acre site owned by the city that includes a small neighborhood playground called Donovan Park, located just south of Andover Street. This site is classified as a Shallow Marsh Meadow or Fen. The other significant wetland is Jacques Pond, located off of Gennessee Street in South Lawrence. The pond is surrounded by residential development, and a new road and several new houses are under construction immediately adjacent to the southeast edge of the pond. Further investigation of these sites should be carried out in partnership with the Conservation Commission to identify additional protection measures needed for these sites.

Forests

The only significant forested area in the city is Den Rock Park, an 80-acre wooded site that borders the neighboring towns of Andover and North Andover. Den Rock Park currently offers walking trails and a rock-climbing wall. The park is bordered by Route 495 to the west, Route 114 to the north, and residential development to east and south. The trails are generally in fair to poor

condition, and access to the park is limited. The construction of a new landscaped parking lot and signage at the Route 114 entrance, slated to be complete this summer, will be the first stage of a multi-phase effort to improve access and conditions in the park. A variety of trail improvements, including the development of handicapped-access trails, are planned for later phases.

Summary of Community's Needs

The Statewide Comprehensive Outdoor Recreation Plan (SCORP) identified trail-based activities, especially walking and biking, as the greatest recreational need in Massachusetts. When the survey data was broken down by ethnic/ racial group, the SCORP found that Hispanics expressed "significantly higher levels of interest in facilities for basketball and playground activities, along with somewhat greater levels for baseball, soccer, mountain biking and swimming." In the northeast region, which includes Lawrence, the SCORP found that playgrounds, walking, biking, and swimming were the greatest perceived recreational needs. This data is highly consistent with the open space survey results in Lawrence, which found that the highest priorities for new recreational facilities are walking/biking paths along the rivers and canals, a sports stadium, basketball courts, and children's play areas. While the survey represents a relatively small sample of city residents, it is nevertheless indicative of general trends and preferences.

In addition to these recreational facility needs, the surveys indicated that the greatest field needs are for baseball and soccer. For baseball, the highest priority is for full-sized ball fields. The renovation of the baseball field on the North Common also emerged as a high priority, and this project is already well underway. For soccer, the greatest need is for a dedicated, full-sized field that can be divided into several smaller fields for younger teams. With no dedicated soccer fields in the entire city and hundreds of kids enrolled in soccer programs, this is clearly a high priority. Participants in community meetings also voiced a desire for amenities such as bathroom facilities and water fountains. At the April 22 follow-up meeting, recreational park users from across the City expressed a strong need for new bleachers, protective fencing, players' benches, trash receptacles, and lighting. Improvements to field turf are also a high priority in all of the parks.

When asked to rate the level of satisfaction with places and programs for children under 12, teens, and adults, based on a rating scale of 1 to 5 (with 5 being most satisfied), Lawrence survey respondents showed an average satisfaction of 2.8, 2.3, and 2.7 respectively. This is reinforced by the narrative responses to questions, in which new or better facilities for teens were frequently cited as an important need. Several survey respondents suggested the development of a skate park as one way to improve recreational options for teens and young adults. This is borne out by the recent efforts of a group of young skaters, self-dubbed as the "sk8 kids," who have been working with local organizations Groundwork Lawrence and Lawrence CommunityWorks for the past two years to develop a skate park. On the other end of the age spectrum, chess/ domino tables were proposed to meet the needs of adult and elderly

"We found that a good place provides a range of things to do ("uses and activities"); is easy to get to and connected to the surrounding community ("access"); is safe, clean, and attractive ("comfort and image"); and, perhaps, most important, is a place to meet other people ("sociability"). ...What types of activities make parks community magnets? When a park provides a place for people to ice skate and also an area nearby where people can sit and talk, get warm and get something to eat or drink, its chances of becoming a good place are increased, simply because there are numerous things to do, attracting many different people."
(From "Good Places" by the Project for Public Spaces, Urban Parks Online)

populations.

Perhaps one of the most important indications of community needs and preferences is demonstrated by existing patterns of use. In response to the question “which three parks or playgrounds do you use most often?” survey respondents consistently listed the same twelve parks: North Common, South Common, O’Neill, Hayden-Schofield Playstead, Riverfront Park and boating program, Mt. Vernon, Storrow, Howard, the Reservoir, Stadium complex, South Lawrence East, and Costello Park/ Shawsheen River trail. These twelve parks have several important characteristics in common: they are medium to large in size (all of them are at least three acres, and most are between five and twelve acres); they include a mix of both active and passive recreational uses; and they are generally well-maintained. What is most striking about this list is the complete absence of some of the city’s most attractive parks, including Pemberton and Den Rock Park, as well as the absence of any of the city’s smaller pocket parks. Based on the surveys, it may be concluded that the former is attributable to a lack of access and/or awareness of the parks’ existence, since these parks are located some distance from residential neighborhoods; while the latter is attributable to the absence of any desired recreational activities in the park, combined with lower levels of maintenance and the perception that these parks are not safe.

There are several important lessons to be drawn from this survey data:

- The city should actively seek to develop a new park or parks of at least three acres in size, preferably with riverfront access, and designed to include a mix of active and passive uses.
- Near-term investments in fields should focus on upgrading and improving existing baseball and soccer facilities with new irrigation, lighting, players’ benches, bleachers, fencing, trash receptacles and other amenities.
- The city should seek to develop a system of riverfront walking paths linking existing and future parks.
- Better access for pedestrians and cyclists are needed to connect residential neighborhoods, the Merrimack River, and Den Rock Park.
- The City should actively seek to increase facilities and activities for teenagers, including the development of a skate park.
- Smaller “pocket” parks should be retrofitted to include desired uses such as basketball courts and children’s play areas.

In addition to the quantitative data that was collected in the surveys, feedback from surveys and community meetings yielded a number of specific suggestions for improvement to the city’s parks and open space. These included the following:

Maintenance

- Maintenance of the parks was a universal concern among all participants. The need to keep the parks clean and the facilities in good working condition is critical to the overall health and usability of the city’s open space system.
- More of high-quality steel trash receptacles and recycling containers are needed in all of the parks in order to reduce littering and trash problems.

Cooperation with private landowners

- In the past, public projects have been held up by a lack of cooperation or agreement from private landowners where the project is located. The City should make every effort to work closely with property owners early in the development process to ensure that projects can be accomplished with a minimum of delay.

Water-related resources

- Community meeting participants voiced a strong desire to see improvements to the city's water-related resources, especially the Canals, Reservoir, and the areas around the Stone Dam. One proposal was to link these assets as part of a tourist attraction. There was also a specific interest in installing benches along the walking paths at the Reservoir, since many of the people who use the paths are elderly or infirm. In addition, residents would like to see the gatehouse/ interpretive center by the Stone Dam opened for public use, and turnaround space provided for trolley tours that pass through the area. Lastly, improvements to the O'Leary Bridge are needed to open up the views to the river. New lighting on the bridges was also proposed.

Urban forestry

- There was a universal desire for more trees in the city, especially at the South Union and South Broadway entrances to the city. Other recommendations included a tree survey and an adopt-a-tree program.

Community Involvement

- There was a strong desire for increased community involvement and stewardship of the parks. Suggestions for achieving this included the establishment of an Open Space or Parks Commission, and more coordination between Neighborhood Associations on citywide open space issues.

Environmental Education

- Parks and open space resources need to be integrated with educational programs to promote greater stewardship of these spaces. Specific suggestions included the development of a citywide environmental curriculum in the public schools and more service learning programs in the parks.

New open space opportunities

- The areas that were most frequently identified as having potential for new open space include the city-owned parcels on Water Street, the smaller parcels around the Stone Dam, and small vacant lots in the neighborhoods.
- To improve access to the Shawsheen River for canoeing and kayaking, an access point was proposed behind the Hampton Inn.

Additional feedback regarding community open space priorities can be found in the January 2002 draft of the 5-Year Health Plan for the City of Lawrence, developed by the Northeast Center for Healthy Communities and the Area 11 Community Health Network. The draft plan identified the Lawrence Healthy Communities Vision Statement as: "A community that nurtures, develops, and sustains the health and well-being of all." One of the specific objectives of the Plan is to "make city

parks clean, safe, and accessible.” Specific recommendations to achieve this included regular spring and fall park cleanups and neighborhood enhancement strategies such as:

- Adopt a park program
- Increase number of garbage disposal cans throughout the city
- Implement a Mural with a Message Project
- Develop a beautification project
- Paint old park benches
- Identify streets that need lighting

In addition to these recommendations, one of the objectives of the Health Plan is to “remove barriers to access to recreational opportunities” for youth. To accomplish this, the Plan recommends the following actions:

- Disseminate information about existing recreational opportunities.
- Identify barriers Lawrence youth face when accessing recreational opportunities.
- Create an action plan to remove identified barriers.
- Develop two community youth centers: 1) North Lawrence and 2) South Lawrence.
- Create an action plan with Superintendent Assistance to turn school facilities and resources into community assets.
- Create a plan with Greater Lawrence Technical School to expand their summer camp enrollment and hours of services.
- Utilize business sector as a resource to develop new recreational activities.

Management Needs

The single most important management concern is the lack of resources within DPW to maintain the city’s parks. While funding for capital improvements can be obtained through one-time grants, the ongoing maintenance costs are more difficult to fund through outside sources. The DPW currently has a staff of eleven people to maintain all of the city’s parks, including a graffiti-removal specialist, a tree warden, a foreman, and eight laborers. With close to 300 acres of open space, this is equivalent to one person for every 25 acres of parkland. This is a dramatic decline from previous eras; in the 1970s, the parks department had 25 full-time staff as well as 200 summer employees. Currently, the only regular parks maintenance services that are provided are trash collection and mowing. In addition to parks maintenance, DPW is responsible for emergency tree removal and tree trimming. With 10 to 20,000 trees in the city and only one person dedicated to tree care, it is impossible to provide the level of maintenance that is needed across the city. The current DPW budget for tree maintenance is \$5000, which allows for removal of approximately 7 trees per year. There are no dedicated funds for tree planting or pruning. With so little manpower, preventative maintenance is difficult at best, and the Department responds to maintenance concerns on an emergency basis.

In addition to a shortage of labor, DPW has limited facilities for storage and transfer of materials. Although trash collection is subcontracted to BFI, the city has very little space for the collection of white goods, yard waste, and recycled materials, as well as storage of sand, salt, recreational equipment, and other supplies. The former transfer station on North Parish Road has been closed since May in anticipation of the new high school being built on the site. The provision of a modern facility for DPW with more space for storage and better truck access would significantly improve the city’s services and operational efficiency.

"In addition to land, the park and recreation department needs sufficient public revenue for land management and programs. This entails both an adequate operating budget and a regular infusion of capital funds for major construction and repairs and land acquisition. A detailed survey of the 55 biggest cities showed that, in fiscal year 2000, the "adjusted park budget" — the amount spent by each city on parks operations and capital, minus everything spent on such big-ticket items as zoos, museums, aquariums or planetariums — came to an average of \$80 per resident". (From "The Excellent City Park System" by Peter Harnik, published by the Trust for Public Land, 2003)

In addition to the lack of resources within DPW, overall coordination among all city departments is a challenge. Three separate departments currently have oversight and responsibility for the parks: the Office of Planning and Development is responsible for planning, acquisition, and grant-funded capital improvements; DPW is responsible for maintenance; and the Recreation Department provides summer programs in the parks and issues permits for use of city fields. In

addition to the need for greater internal coordination, there is no established mechanism for ongoing citizen involvement in the parks, such as a Board or Commission.

Potential Changes of Use

The most significant opportunities for conversion of existing land to open space are located on older industrial sites along the Merrimack and Spicket Rivers. Many of these sites are brownfields, and may require some level of cleanup before they can be reused as parks. Notwithstanding the cost, there is great potential for development of new riverfront open space and walking paths in these areas. Below is a brief summary of these sites and their salient characteristics.

Merrimack River sites

There are five sites along the Merrimack River with significant potential for new open space: the East Island riverfront, the Wood Mill site, the Duck Bridge riverfront, the Plycraft site, and the city-owned parcels on Water Street. With the exception of Water Street, all of these sites are currently in private ownership and may require environmental testing and cleanup prior to reuse. In total, these sites could provide approximately forty acres of new public open space and riverfront access. In addition, they could support the development of new trails connecting existing parks and nearby neighborhoods. There are no existing plans for open space on these sites, but property owners have indicated a willingness to work with the City.

Spicket River sites

There are five sites along the Spicket River with significant potential for new open space: the Oxford Paper site, the Brook Street site, the City Yard, the FEMA site, and the Malden Mills/ Covanta properties around Steven's Pond. Three of these sites are currently in city ownership (Oxford Paper, City Yard, and FEMA land). The city will likely take ownership of the Brook Street site when environmental testing and remediation are completed. A multi-million dollar cleanup is also in progress on the Oxford Paper site as part of the City's Gateway Project. In total, these sites could provide approximately ten acres of new public open space and riverfront access. In addition, they constitute vital elements of a future Greenway along the Spicket River, which can connect existing parks, neighborhoods, schools, and commercial areas. Conceptual plans for new public open space have already been developed for the Oxford Paper site, the Brook Street site, and the FEMA site. Finally, the recently plans by Malden Mills to create 600 new units of housing reinforces the need for a master plan in this area that builds on the Urban River Visions charrette and the Whitman

Street Neighborhood Plan, integrating housing and commercial uses with new open space and public access to Stevens Pond and the Spicket River.

Tombarello site

The Tombarello site is a 14-acre industrial site located off of Route 495 across from the new Parthum Elementary School. The site, which is currently in private ownership, was previously used for recycling of industrial materials and will require environmental testing and cleanup before any reuse can occur. The site offers great potential for new public open space, especially with its proximity to the elementary school. In addition, the loss of a city park to build the school next door makes it vitally important to replace some of this open space nearby. Additionally, the site could provide public access from the Prospect Hill neighborhood to Dogwood Park and walking trails along the Merrimack River.

SECTION 8: GOALS AND OBJECTIVES

The following goals and objectives synthesize the community vision and needs analysis contained in the previous sections. These goals and objectives have much in common with the priorities outlined in the 1997 Open Space Plan, and also introduce new ideas based on current opportunities.

Goal A: Protect and enhance existing open space assets, from neighborhood parks to recreational fields, natural areas and historic sites.

Objective A1: Advance the development of ongoing parks improvement projects.

Objective A2: Renovate existing athletic fields that are in need of repair.

Objective A3: Improve the city's historic properties through renovation and rehabilitation.

Objective A4: Reduce trash and improve cleanliness in city parks.

Objective A5: Increase usage and safety in smaller neighborhood parks.

Objective A6: Protect wetlands and other natural areas that are vulnerable to development.

Objective A7: Protect existing parks from future development.

"Most cities have one or more very large unspoiled natural areas. By virtue of topography — mountain, wetland, canyon, stream valley — they are not, of course, equidistant from all city residents. But created parks — squares, plazas, playgrounds, neighborhood parks, ballfields, linear greenways — should be sited in such a way that every neighborhood and every resident is equitably served. Preferably, people and parks are no farther than 10 minutes apart by foot in dense areas or 10 minutes apart by bicycle in spread-out sections. Moreover, it is not enough to measure access purely from a map; planners must take into account such significant physical barriers as uncrossable highways, streams and railroad corridors, or heavily-trafficked roads. Also, the standard for acceptable distance shouldn't be based on an idealized healthy adult, but rather on a senior with a cane, a mother pushing a stroller, or an eight-year-old riding a bicycle." (From "The Excellent City Park System" by Peter Harnik, published by the Trust for Public Land, 2003)

Goal B: Increase public access to and enjoyment of our rivers, with new parks and trails that invite a variety of activities.

Objective B1: Develop a new riverfront park on city-owned land along Water Street.

Objective B2: Work with property owners to develop new public open space and increase public access to riverfront areas at the Wood Mill site, Malden Mills/ Covanta properties, Plycraft site, and East Island/Duck Bridge Riverfront.

Objective B3: Build new riverfront trails to connect existing and potential parklands with residential neighborhoods, commercial areas, and neighboring communities.

Objective B4: Create more access points for canoe and kayak launches along the Shawsheen and Spicket Rivers.

Goal C: Provide recreational facilities that meet the needs of a diverse population, including youth, teens, families, elderly, and mobility-impaired residents.

Objective C1: Provide more recreational facilities for teenagers.

Objective C2: Work with neighborhood groups to identify vacant lots appropriate for conversion to green space (playgrounds, basketball courts, community gardens).

Objective C3: Provide benches and improve walking paths in existing parks to encourage use by elderly and mobility-impaired residents.

Goal D: Develop a network of safe, tree-lined streets and walking/cycling paths that provide better connections between existing neighborhoods and open space, and support greater physical activity and improved public health.

Objective D1: Improve pedestrian and cycle access along major residential, civic, and commercial routes through the city.

Objective D2: Plant more trees along major thoroughfares and on neighborhood streets to improve air quality and create a pleasant canopy that encourages walking and cycling.

Objective D3: Develop new public paths/ greenways along unused rail rights-of-way.

Healthy Streets: Recommended Improvements

	Residential Streets	Civic & Commercial Streets	Boulevards
Pedestrian-scale lighting	X	X	X
Striped crosswalks		X	X
Textured or raised crosswalks	X		
Striped bicycle lanes	X	X	X
Street trees		X	X
Trees in front yards or setbacks	X	X	X
Planted or tree-lined medians			X
Accessible sidewalks	X	X	X
Benches		X	
Trash/Recycling Receptacles		X	

Goal E: Initiate new public-private partnerships to build greater awareness, stewardship, and pride in our open spaces.

Objective E1: Establish a City Parks Commission to track implementation of the Open Space Plan and to coordinate parks development, maintenance, and programming efforts across the City.

Objective E2: Enlist local citizens, businesses, and Neighborhood Associations to help care for and maintain open spaces.

Objective E3: Introduce environmental curriculum and service learning projects in the public schools to create more awareness and stewardship of the city's open spaces.

Goal F: Improve management and maintenance of the city's open space resources.

"No single park, no matter how large and how well designed, would provide citizens with the beneficial influences of nature; instead parks need to be linked to one another and to surrounding residential neighborhoods.

Frederick Law Olmsted

The recreational and social values of city parks are well known. However, linking parks, greenways, river corridors, and other natural or restored lands together to create an interconnected green space system provides far greater benefits for people, wildlife, and the economy. It helps connect people and neighborhoods, provides opportunities for exercise that can counter today's trends in obesity and adult onset diabetes, and enhances emotional well-being by bringing nature "close to home." A network of parks can also provide pathways for wildlife moving from one isolated natural area to another. And just as it is necessary to design and construct road networks and other built infrastructure in advance of metropolitan growth, it is also important to plan and protect urban green infrastructure as a city grows." (From the APA City Parks Forum Briefing Paper: How Cities Use Parks for Green Infrastructure, Mark Benedict and Edward T. McMahon, 2003)

Objective F1: Renovate or relocate the existing City Yard to provide DPW with more storage space and better truck access.

Objective F2: Initiate a citywide street tree survey and management plan.

Objective F3: Seek additional funds to support DPW staff and training for maintenance of city parks and recreational facilities.

SECTION 9: FIVE-YEAR ACTION PLAN

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

Objective A1: Advance the planning and development of ongoing parks improvement projects.

Task	Schedule	Responsible Party
Complete renovations to Veterans Memorial Stadium and new high school fields and athletic facilities.	2004-2005	Mayor's Office, School Department
Complete upgrades of existing ball fields and construction of new soccer/football field at South Lawrence East School	2004-2005	Mayor's Office, School Department
Complete parking lot improvements at Den Rock Park.	Summer 2004	Groundwork, OPD
Complete design and redevelopment of the Brook Street Park.	2004-2005	Mayor's Office, City Council, OPD, Lawrence CommunityWorks, Groundwork Lawrence
Complete design and development of a new neighborhood park on the FEMA site.	2004-2005	OPD, Arlington Community Trabajando (ACT)
Complete design and development of new public parks on the Oxford Paper site and the Everett Mills warehouse site as part of the Lawrence Gateway Project (LGP).	2005-2006	OPD, MassDevelopment
Complete improvements to the new park on the incinerator site.	Fall 2004	OPD
Complete design and construction of accessible trail improvements at Den Rock Park.	Fall 2004	OPD
Complete construction of North Common ball field.	Fall 2004	OPD

Objective A2: Renovate existing athletic fields that are in need of repair.

Task	Schedule	Responsible Party
Complete planning, design and construction for renovation of athletic fields at Bourgoin Square/West Street, Hayden-Schofield Playstead, O'Connell South Common, Mt. Vernon Park, and Kane Field.	2004-2006	OPD
Upgrade all recreational fields with new/ improved fencing, lighting, bleachers, players' benches, goal posts/nets, trash receptacles, and bicycle racks.	2004-2005	OPD

Objective A3: Improve the city's historic properties through renovation and rehabilitation.

Task	Schedule	Responsible Party
Develop detailed design guidelines for historic landscapes, including the North and South Commons, North and South Canals/gatehouses, and the cemeteries.	2005-2006	OPD, Historic Commission
Work with the RGI Steering Committee and other stakeholders to develop an improvement, ownership and maintenance strategy for canals and alleyways.	2004-2005	Mayor's Office, City Council, OPD, City Attorney, Groundwork Lawrence, Lawrence CommunityWorks
Implement comprehensive improvements to historic landscapes, including the North and South Commons, North and South Canals/gatehouses, alleyways, and cemeteries.	2007-2008	OPD

Objective A4: Reduce trash and improve cleanliness in city parks.

Task	Schedule	Responsible Party
Install additional steel trash receptacles to match Phase One improvements, and install new steel recycling containers in all city parks.	2005	OPD

Objective A5: Increase usage and safety in smaller neighborhood parks.

Task	Schedule	Responsible Party
Initiate community-based planning effort for renovation of small pocket parks (Rowell, Highland, Oxford, Cronin) to include basketball, children's play areas, community gardens, and other improvements as needed.	2005-2008	OPD
Work with Neighborhood Associations and police to identify, track, and respond to crime in neighborhood parks.	2004-2009	Mayor's Office, OPD, Neighborhood Associations, Police Department

Objective A6: Protect wetlands and other natural areas that are vulnerable to development.

Task	Schedule	Responsible Party
Create a local wetlands bylaw, and if appropriate draft conservation restrictions for Jacques Pond, Donovan Park and Shawsheen River wetlands.	2004-2005	OPD, Conservation Commission, City Council

Objective A7: Protect existing parks from future development.

Task	Schedule	Responsible Party
Rezone existing parks to Open Space.	2004-2005	OPD, Planning Board, City Council

Objective B1: Develop a new riverfront park on city-owned land along Water Street.

Task	Schedule	Responsible Party
Initiate a community-based planning process and identify funds for a new city park on Water Street.	2005-2007	OPD, Conservation Commission, Water Department, City Council
Build a new public park on city-owned land on Water Street.	2007-2008	OPD, Conservation Commission, Water Department

Objective B2: Work with property owners to develop new public open space and increase public access to riverfront areas by the Wood Mill, Malden Mills/ Covanta properties, Plycraft site, and East Island/Duck Bridge Riverfront.

Task	Schedule	Responsible Party
Initiate master planning process for key waterfront areas in partnership with current land owners.	2004-2005	OPD, Mayor's Office, Conservation Commission, Planning Board
Prepare and implement conservation easements and Chapter 61B tax abatements to support the development of new open space on privately owned waterfront properties.	2005-2006	OPD, Conservation Commission
Work with property owners to identify construction funds and maintenance plans for new riverfront open spaces and commence design and construction.	2006-2008	OPD, Conservation Commission

Objective B3: Build new riverfront trails to connect existing and potential parklands with residential neighborhoods, commercial areas, and neighboring communities.

Task	Schedule	Responsible Party
Develop detailed design guidelines and a funding strategy for a Merrimack River trail system.	2004-2006	OPD, Conservation Commission
Develop detailed design guidelines and a funding strategy for the Spicket River Greenway.	2004-2006	OPD, Conservation Commission, Groundwork Lawrence
Initiate planning, identify funds, and build a new trail from the boathouse to the Andover line.	2005-2006	OPD, Conservation Commission
Conduct a feasibility study for Shawsheen River trail connections to the Merrimack River, North Andover, and Den Rock Park.	2005	OPD, Conservation Commission

Objective B4: Create more access points for canoe and kayak launches along the Shawsheen and Spicket Rivers.

Task	Schedule	Responsible Party
Develop a canoe/kayak launch from the Hampton Inn.	2004-2005	OPD, Groundwork Lawrence, Shawsheen River Watershed Association

Identify and build canoe/kayak launches along the Spicket River as part of the Greenway trail system.	2005-2009	OPD, Groundwork Lawrence
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Objective C1: Provide more recreational facilities for teenagers.

Task	Schedule	Responsible Party
Complete design work and seek funding for a new skateboarding facility at Misserville Park.	2004-2005	OPD, School Department, Groundwork Lawrence

Objective C2: Work with neighborhood groups to identify vacant lots appropriate for conversion to green space (playgrounds, basketball courts, community gardens).

Task	Schedule	Responsible Party
Initiate a neighborhood planning process that includes a lot-by-lot strategy for redevelopment of vacant lands.	2005-2006	OPD, Planning Board

Objective C3: Provide benches and improve walking paths in existing parks to encourage use by elderly and mobility-impaired residents.

Task	Schedule	Responsible Party
Install new steel benches adjacent to walking paths at the Reservoir.	2004-2005	OPD
Repave existing sidewalks and paths in the North and South Common and other parks as needed to improve accessibility.	2006	OPD, DPW

Objective D1: Improve pedestrian and cycle access along major residential, civic, and commercial routes through the city.

Task	Schedule	Responsible Party
Begin planning for “Healthy Streets”: inventory characteristics of targeted streets; work with residents and businesses to develop recommendations and phasing; identify funding to implement recommended improvements.	2005-2006	OPD, DPW
Implement “Healthy Streets” recommendations in selected locations for residential streets, commercial/civic streets, boulevards.	2006-2009	OPD, DPW

Objective D2: Plant more trees along major thoroughfares and on neighborhood streets to improve air quality and create a pleasant canopy that encourages walking and cycling.

Task	Schedule	Responsible Party
Establish citywide standards for street trees that include dimensions for planting pits and pavements, species, and care regimens.	2005-2006	OPD, DPW

Objective D3: Develop new public paths/ greenways along unused rail rights-of-way.

Task	Schedule	Responsible Party
Initiate feasibility study for rails-to-trails conversions.	2005-2007	OPD

Objective E1: Establish a City Parks Commission to track implementation of the Open Space Plan and to coordinate parks development, maintenance, and programming efforts across the City.

Task	Schedule	Responsible Party
Create and appoint a Parks Commission to track implementation of the Open Space Plan and to coordinate development, maintenance, and programming efforts across the City.	2004-2005	Mayor's Office, City Council

Objective E2: Enlist local citizens, businesses, and Neighborhood Associations to help care for and maintain open spaces.

Task	Schedule	Responsible Party
Pilot "Adopt-a-Park" program: provide materials and technical assistance to assist community groups with gardening and basic repairs/ cleanups. The program should focus on engaging institutions such as schools, community centers, etc. located close to parks and establishing a long-term commitment to park maintenance and supervision.	2004-2005	Groundwork Lawrence, OPD, DPW
Pilot "Adopt-a-Tree" program: provide materials and technical assistance to support tree planting in front yard setbacks on residential streets that do not have enough width for street trees.	2004-2005	Groundwork Lawrence, OPD, DPW

Objective E3: Introduce environmental curriculum and service learning projects in the public schools to create more awareness and stewardship of the city's open spaces.

Task	Schedule	Responsible Party
Pilot Lawrence Schoolyard Initiative: work with students and teachers to renovate schoolyards for "outdoor classrooms" and learning environments.	2004-2009	School Department, Groundwork Lawrence, Partners in Education
Coordinate with public and private schools to establish citywide "Day of Service" in the parks to increase appreciation and stewardship of the City's open spaces.	2005-2006	School Department, DPW, Groundwork Lawrence

Objective F1: Renovate or relocate the existing City Yard to provide DPW with more storage space and better truck access.

Task	Schedule	Responsible Party
Conduct feasibility study for relocation and/or improvements to the City Yard.	2004-2005	OPD, DPW

Objective F2: Initiate a citywide tree survey and management plan.

Task	Schedule	Responsible Party
Conduct a citywide tree survey to determine general locations, distribution of species, and conditions.	2004-2005	OPD, Groundwork Lawrence
Conduct a stem-by-stem inventory of trees in city parks, and label significant species and/or trees.	2004-2005	OPD, Groundwork Lawrence

Objective F3: Seek additional funds to support DPW staff and training for maintenance of city parks and recreational facilities.

Task	Schedule	Responsible Party
Develop a detailed needs assessment for DPW parks maintenance operations and identify potential funding sources to supplement the existing budget.	2005-2006	Mayor's Office, Budget and Finance Office, DPW, City Council

SECTION 11: REFERENCES

Benedict, Mark and Edward T. McMahon. *APA City Parks Forum Briefing Paper: How Cities Use Parks for Green Infrastructure*. American Planning Association, 2003.

Eartha Dengler et al. *Images of America: Lawrence Massachusetts*. Charleston, South Carolina: Arcadia Publishing, 1985.

Harnik, Peter. *The Excellent City Park System*. Trust for Public Land, 2003.

Lawrence Community Development Department. *City of Lawrence 1997 Open Space Plan*.

Lewis, Megan, AICP. *City Parks Forum Briefing Paper: How Cities Use Parks for Economic Development*. American Planning Association, 2002.

Massachusetts Division of Conservation Services. *Massachusetts Statewide Comprehensive Outdoor Recreation Plan (SCORP)*, www.state.ma.us/envir

Massachusetts Division of Conservation Services. *The Open Space Planner's Workbook*, www.state.ma.us/envir

Massachusetts Division of Employment and Training. *ES-202 Quarterly Data and Local Area Unemployment Statistics (LAUS)*, www.detma.org

MassGIS. *Scope of Services for Buildout Analysis*, <http://www.state.ma.us/mgis/buildout.htm>

Minutes of GLSD Public Meeting on September 19th 2003, Thomson Elementary School, North Andover.

Project for Public Spaces. *Good Places*. Urban Parks Online: <http://www.pps.org/upo/>

U.S. Census Bureau. *2000 Census*, www.epodunk.com and City of Lawrence Office of Planning and Development.

U.S. Fish and Wildlife Service. *Anadromous Fish Returns for the Merrimack River at the Essex Dam, Lawrence, as of 10/29/03*, www.fws.gov/r5cneafp/returns.htm

VHB. *Lawrence High School Environmental Impact Report, Table 4-1 “Assessment of Parkland/Recreation Facilities Impacts”*