

Appendices

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Appendix A

ADJACENT LAND USES AND SHARED OPEN SPACE RESOURCES

Boston is linked with its regional neighbors by infrastructure, commerce and education, and also by the larger regional system of open spaces and natural areas. The summary below of land uses in Boston and adjacent communities specifically notes natural and environmental resources that are shared between communities.

The benefits and impacts of land uses between neighboring communities were determined through consultation of land use maps for the neighborhoods of Boston, and land use, zoning and open space maps for the municipalities adjacent to Boston.

City of Boston

The City of Boston does not currently have a Master Plan. The Boston Redevelopment Authority (BRA) has produced a series of neighborhood land use maps that were consulted for this analysis.

Town of Winthrop

The Town of Winthrop's *2014–2021 Open Space and Recreation Plan* notes that the town has a layout that reflects its location as a peninsula and the influence of railroads. The town is made up of village and transit-oriented residential neighborhoods with a mix of single family homes, 2–4 family houses and mid-sized multifamily housing. New growth occurs through limited redevelopment and infill and expansion of existing structures. The *2005 Open Space Plan* noted that Winthrop has the lowest percentage of developable land in the metropolitan area.

The *2006 Town of Winthrop Street and Zoning Plan* indicates a community of primarily residential development with several nodes of business districts interior to the peninsula. Large open spaces include Ingleside Park, Coughlin Park, Fisherman's Bend, Winthrop Shore Reservation, Yirrel Beach, the Winthrop Golf Club, and several cemeteries. The portion of Winthrop that faces East Boston across Belle Isle Inlet includes large conservation properties owned by DCR and the town including the Belle Isle Marsh Reservation, the Fort Banks Playground, and a cemetery.

The BRA's 2014 map of the *Neighborhood of East Boston* indicates that the portion of East Boston that faces Winthrop across Boston Harbor includes large open spaces of Belle Isle Marsh Reservation, Constitution Beach, and Wood Island Bay Marsh. The remainder of the property use closest to Winthrop is Logan Airport.

City of Revere

The City of Revere's *2010–2017 Open Space Plan* notes that the city covers 10 square miles. Of its entire area, 4.1 miles are open water and wetlands and not suitable for development. Of the 5.9 miles of developed land, 70% is used for housing. Revere is subject to extensive traffic each day as it serves as the "gateway" between downtown Boston and the North Shore. Approximately 1,500 retail and service related businesses are located in Revere. Revere Beach is three miles of uninterrupted crescent shaped beach, the first public beach in America.

The *2010 Zoning Map of Revere* indicates a largely residential community, with industrial uses to the north, and a commercial corridor along Route 107. Large conservation areas include the Rumney Marsh Reservation and the Revere Beach Reservation. The land use adjacent to East Boston is zoned for a Technology Enterprise District, and a Planned Development District. Two areas in Revere across the Belle Island Inlet and the Belle Isle Marsh Reservation in East Boston are city-owned open space. Suffolk Downs racetrack straddles the border of Revere and East Boston. At the time of this writing, the Mohegan Sun casino is proposed to be located on the Revere side of the site in close proximity to Belle Isle Marsh.

The BRA's 2014 map of the *Neighborhood of East Boston* indicates that the portion of East Boston that is adjacent to Revere includes the Belle Isle Marsh Reservation. The remainder of the land use in East Boston closest to Revere is primarily related to Suffolk Downs. A residential neighborhood lies near the boundary with Revere.

City of Chelsea

The City of Chelsea's *2010–2016 Open Space Plan* notes that the city is a highly urbanized, densely populated community with significant industrial uses. It is essentially built out with very little open land left. New development occurs through redeveloping existing land. Chelsea plays an important role in providing access to a number of industries due to its proximity to the airport, Boston Harbor, and significant roadways. The Chelsea Creek waterfront is occupied by petroleum tank farms, a bulk salt storage area, airport-related trucking services, and parking for airport employees. Forbes Industrial Park comprises a group of older industrial buildings at the mouth of Mill Creek, which are currently under redevelopment for residential use.

The *2008 City of Chelsea Zoning Districts Map* indicates that the land that faces East Boston across the Chelsea River is zoned Waterfront Use, with Industrial Use behind. The portion of East Boston that faces Chelsea across the river primarily includes residential and open space uses. The portion of land that faces Charlestown across the Mystic River is zoned for Waterfront uses, and Naval Hospital uses, with residential uses behind.

The BRA's 2013 map of the *Neighborhood of Charlestown* indicates that the portion of Charlestown that faces Chelsea across the Mystic River is industrial waterfront uses.

City of Everett

The City of Everett's *2010–2017 Open Space Plan* notes that it is a fully developed inner core city in the Boston Metro area. Everett is roughly two thirds residential and one third industrial, with more than 50 acres of parks throughout. The Revere Beach Parkway / Route 16, is a heavily traveled road that divides the residential and industrial areas. Everett's Mystic River frontage is a Designated Port Area and is characterized by heavy industrial uses.

The *2003 Everett Waterfront Assessment* indicates that the waterfront across the Mystic River from Charlestown is Maritime Industrial use. The *2013 Proposed Zoning Map for the Proposed Lower Broadway Economic Development District and Resort Casino*

Overlay District indicates that the land adjacent to the Alford Street Bridge is designated to be developed for Waterfront Mixed Use, Commercial, Employment and Residential uses. This is the site of the proposed Wynn Everett casino.

The BRA's 2013 map of the *Neighborhood of Charlestown* indicates that the portion of Charlestown that faces Everett across the Mystic River includes industrial waterfront uses. Ryan Playground is on the waterfront. The Alford Street Bridge connects Sullivan Square to Everett. The MBTA garage sits on the waterfront north of the bridge seawall. The currently planned realignment of the roads around Sullivan Square will free up seven parcels for redevelopment in the future.

City of Somerville

The City of Somerville's *2008–2013 Open Space Plan* notes that only a few parks were created before significant residential development at the turn of the 20th century. In the 1870s, two parcels were dedicated as permanent open space: Central Hill Park and Broadway Park. Private estates were mostly sold for development, and only one tract of land was donated to the City for public use—Nathan Tufts Park in 1890.

Somerville is a largely residential community with 50% of the current housing stock dating between 1890 and 1910. By 1900, only 52 acres (4.7%) of Somerville's land were dedicated to parks or playgrounds. The City dedicated two parks during this time of rapid residential growth—Lincoln Park (1900) and Trum Field (1903). The rest of the City's parks, playgrounds, and open spaces were constructed with little master planning, and were fit into the residential subdivision of land. For this reason, many of Somerville's open spaces are less than a half-acre in size, and scattered throughout the city in an irregular pattern.

The *2010 City of Somerville Zoning Map* indicates that the boundary along Charlestown is divided into three uses: the upper portion along the Mystic River is the Assembly Square Mixed Use Area. The middle portion is residential. The lower third along boundary with Boston is industrial land with a business district.

The BRA's 2013 map of the *Neighborhood of Charlestown* indicates that the portion of Charlestown that abuts Somerville includes the MBTA Bus Barn which sits on the riverfront adjacent to Assembly Square. The middle portion of land along the boundary is residential use in the Sullivan Square area, against the same use in East Somerville. The southern portion of land along the boundary is commercial and industrial uses that abut the same type of land uses in Somerville.

City of Cambridge

The City of Cambridge's *2009–2016 Open Space Plan* notes that the city is a densely populated, urbanized area adjacent to a metropolitan downtown. The land uses in the city vary from low-density single-family neighborhoods, higher-density multifamily housing, institutions, mixed-use squares and commercial areas, former industrial areas that are evolving into high-tech employment centers, and a few large open spaces including Fresh Pond and the banks of the Charles River.

The Open Space Plan notes that an influx of residents in 1910–1930 prompted residential development, which resulted in the city becoming a series of interlocking street grids from east to west, leaving virtually no undeveloped land remaining, and no great expanses of open space.

Cambridge is linked with its regional neighbors by transportation infrastructure, commerce and education, and also by the larger regional system of open spaces and natural areas. The most significant part of Cambridge's "green infrastructure" is the Charles River, which links it ecologically and recreationally with Boston and the Boston Harbor to the east, and with upriver communities.

The 2013 map of *Zoning Districts for Cambridge* indicates that the waterfront along the entire Charles River waterfront, across from Boston's Downtown, Back Bay and Allston/Brighton neighborhoods, is zoned as open space with primarily residential uses behind.

The BRA's 2013 map of the *Neighborhoods of Downtown*, 2013 map of the *Neighborhood of Back Bay*, 2014 map of the *Neighborhood of Fenway*, and 2012 map of the *Neighborhoods of Allston and Brighton* indicate the uses along the Charles River across from Cambridge.

The length of this riverfront in Boston is predominantly open space of the Charles River Reservation. At the north end, institutional uses such as the Museum of Science lie within this landscape, while Mass General hospital is just beyond. Storrow Drive follows this landscape, with the residential uses of Beacon Hill beyond. The Boston Common and the Public Garden connect to the Commonwealth Mall, creating the start of the Emerald Necklace.

Continuing west, the residential uses of Back Bay abut the Charles River Esplanade. Institutional uses at Boston University and Harvard's Allston Campus are along the river. Soldier's Field Road follows the Charles River Reservation, across from Cambridge and Watertown.

Town of Watertown

The Town of Watertown's most recent Open Space Plan dated 2005–2010 was extended, and expired in October 2013. The *2013 Comprehensive Plan* notes that Watertown has more than four miles of frontage on the Charles River, and therefore strongly identifies itself with the river which provides a natural setting that includes waterfront parks, trails, and recreational opportunities. The plan notes that this system of parks and open space has helped define the development pattern in the town, which is primarily residential with some industry.

The *2008 Zoning Map of Watertown* indicates that the land use across the Charles River from Boston is entirely green space. The Arsenal Mall, Perkins School for the Blind, and residential neighborhoods lie beyond.

The BRA's 2012 map of the *Neighborhoods of Allston and Brighton* indicates that the land use across the Charles River from Watertown includes commercial and industrial uses set into the green space along the Charles River Reservation.

City of Newton

The City of Newton's *Recreation and Open Space Plan Update 2013–2019* notes that Newton was one of the country's first railroad suburbs. Its location close to Boston, contributed to its density and Boston's economy created development pressures and escalated land values in Newton.

The increasing residential, commercial, and institutional development over the past century has led to increased traffic and the loss of open space. Newton's land area is nearly built out—less than 3% of the land area is undeveloped and unprotected.

Newton is a "Garden City" with portions that were designed and laid out by Frederick Law Olmsted and Alexander Wadsworth. Newton has established village centers, generally surrounded with a mix of single- and multi-family dwellings, with generous protected open space. A portion of the Charles River runs through the city.

The *2010 Zoning Map of Newton* and the *2012 Land Use Map of Newton* indicate that the land uses adjacent to Brighton are institutional (Boston College), residential, and open space. The BRA's 2012 map of the *Neighborhoods of Allston and Brighton* indicate that the land uses adjacent to Newton are primarily institutional (Boston College), residential, and the open space of the Chestnut Hill Reservoir and nearby open spaces such as Cassidy Playground, Reilly Playground, Evergreen Cemetery, Saint John's Seminary, Chandler Pond, and The Cenacles.

The *2010 Zoning Map of Newton* and the *2012 Land Use Map of Newton* indicate that the land uses adjacent to West Roxbury are residential and open space. The BRA's 2012 map of the *Neighborhood of West Roxbury* indicates that the land use along the boundary of Newton is almost entirely open space, with a few areas of residential. This land includes Leatherbee Woods, Hancock Woods, Mount Benedict Cemetery, St. Joseph's Cemetery, Mount Lebanon Cemetery, Gethsemane Cemetery, Brook Farm, and Millennium Park.

Town of Brookline

The *2010 Open Space and Recreation Plan for the Town of Brookline* notes that the town was originally named Muddy River. It was settled in 1630 and incorporated as a town in 1705. At this time, the Charles River was tidal for nine miles upstream to Watertown, where a dam was built. There were mud flats in the Back Bay of Boston and between the Charles and Muddy Rivers. Extensive wetlands, ponds, and streams in Brookline were filled, drained or channeled through culverts into the 20th century. South Brookline was developed around extensive wetlands; wetland issues continue to be significant in this area.

In 1871, Brookline created the first public playing fields in the country, Cypress Field and Boylston Street Playground, and in 1885, built the first public pool. Many of the existing public parks and recreation areas were acquired by 1930. At present, just over 14% of Brookline's 4,355 acres of land is devoted to public parks, open space and recreational facilities.

In 1914, the Town's first Planning Board was established with Chairman Frederick Law Olmsted, Jr., co-author of the nation's first planning enabling legislation and son of the designer of the Emerald Necklace park system. In the past 40 years, the overall trend has been to reduce the amount of development allowed.

The *2008 Land Use Map for the Town of Brookline* indicates that the land use along the boundary with Brighton is predominantly multi-family residential and retail. The BRA's 2012 map of the *Neighborhoods of Allston and Brighton* indicate that the land use along the boundary with Brookline is single and multi-family residential.

The *2008 Land Use Map for the Town of Brookline* indicates that the land use along the boundary shared with Mission Hill is entirely open space of the Emerald Necklace. The BRA's *Map of Mission Hill* indicates that the land use along the boundary shared with Brookline is entirely made up of the Emerald Necklace, specifically the Riverway and Olmsted Park.

The *2008 Land Use Map for the Town of Brookline* indicates that the land uses along the boundary with Jamaica Plain are predominantly single family residential with some vacant land, religious affiliation use, municipal open space, educational, charities, nursing homes and hospitals, agricultural and recreation land, and multi-family uses.

The BRA's 2013 map of the *Neighborhood of Jamaica Plain* indicates that the land uses along the boundary shared with Brookline is largely the Emerald Necklace including Olmsted Park and Jamaica Pond, as well as the open space created by the privately owned Hellenic College. Some single family residential neighborhoods abut Brookline. Open space associated with the Showa Institute, Daughters of Saint Paul, Lawrence Farm and Allendale Woods is also along this boundary.

The *2008 Land Use Map for the Town of Brookline* indicates the uses along the boundary with West Roxbury include multi-family and municipal open space. The BRA's 2012 map of the *Neighborhood of West Roxbury* shows that the land use along the boundary of Brookline is residential with open space at Leatherbee Woods, Hancock Woods, and Mount Benedict Cemetery.

Town of Dedham

The Town of Dedham's *2010 Open Space and Recreation Plan* notes that Mother Brook, a man made canal, was constructed by 1640 to connect the Charles River to the Neponset River to provide power for a corn mill. In 1831, the Boston and Providence Railroad was chartered and Dedham was included on the route. Dedham's natural landscape was changed with embankments, railroad cuts, massive quantities of fill, grade crossings, and new bridges. Construction of Route 128 occurred in 1947–1956, which encouraged the location of technology companies. The consequent demand for residential land drove development to agricultural areas and wetlands. The uplands along Routes 1 and 128 were almost completely developed by the late 1970s. Strip malls and shopping centers along the main roads increased traffic problems. East Dedham underwent urban renewal and lost historic context.

The *2012 Zoning Map for the Town of Dedham* indicates that the land uses along the boundary with Boston are entirely residential uses. The Charles River follows the northern boundary between the municipalities.

The BRA's 2012 map of the *Neighborhood of West Roxbury* indicates that the land use along the boundary of Dedham includes the Charles River. Nearby open space includes Brook Farm and Millennium Park, public playgrounds, private cemeteries, and the nearby West Roxbury Quarry. The Stony Brook

Reservation and the Mill Pond Reservation at Mother Brook are near the boundary with Dedham. The remaining land uses are residential along the West Roxbury and Hyde Park boundaries.

Town of Milton

The *2013 Town of Milton Master Plan* states that “Milton’s open landscapes, grand estates and attractive residential neighborhoods are highly valued by community members. In visioning sessions, participants noted that rural and residential character are top priorities for preservation. In addition to Milton’s distinctive homes, the expanse between homes, the pervasive tree canopy throughout town, the town’s protected open spaces and the seamless integration of the New England style campuses are fundamental to Milton’s identity and appeal.”

The *2002 Town of Milton Zoning Districts* map indicates that the land uses along the Neponset River boundary with Boston are residential with two small business nodes at the northwest boundary and the northeast boundary along the Neponset River Reservation. The Blue Hills Reservation is an open space of regional significance located along the southwest town border.

The BRA’s 2014 map of the *Neighborhood of Hyde Park* indicates that the Neponset River Reservation straddles the southeast border with Milton. An area of single family residential use follows the river north, bordered by the Neponset River Reservation on the Boston side, and the West Street Urban Wild and Euclid Street Urban Wild. The large swath of green space in Boston continues with the Pope John Paul II Park, Cedar Grove Cemetery and Dorchester Park.

City of Quincy

The City of Quincy’s *2012–2018 Open Space and Recreation Plan* indicates that Quincy has 27 miles of shoreline and contains several flowing bodies of water, including the Neponset River, Furnace Brook, Town Brook, Town River, and Black’s Creek. These resources have made Quincy an excellent location for fisheries, shipbuilding, and marine transportation.

The landscape of Quincy has benefited and been harmed by its proximity to Boston. The city has been a desirable manufacturing location over time, but its proximity has also caused it to be affected by problems such as water pollution, sewage treatment issues, and public transit problems.

The beaches of Quincy Bay have long been impaired by their connection to Boston Harbor and the City’s role in the Metropolitan Water Resource Area potable and waste water treatment systems. The primary waste water treatment plant on Nut Island was demolished after 100 years of discharges to Quincy Bay. In 1998, the Nut Island Headworks, a sewage screening facility, went into service. The ocean around Quincy and in Boston Harbor is remarkably cleaner and continues to improve.

The *City of Quincy Zoning Map* indicates that the land uses across the Neponset River from Boston predominantly include business development. The Blue Hills Reservation is an open space of regional significance which is located along the southwest town border. Significant open spaces are located along Boston Harbor.

The BRA’s 2014 map of the *Neighborhood of Dorchester* indicates that green space is the predominant land use across the Neponset River from Quincy, including the Pope John Paul II

Park, Garvey Playground and Tenean Beach. Savin Hill Beach, Malibu Beach and William T. Morrissey Boulevard are green spaces along Dorchester Bay at the tip of Quincy. Moon Island (owned by the City of Boston) is accessed from Quincy.

References

- Neighborhoods of Allston and Brighton, Boston Redevelopment Authority
- Neighborhood of Back Bay, Boston Redevelopment Authority
- Neighborhood of Charlestown, Boston Redevelopment Authority
- Neighborhood of Dorchester, Boston Redevelopment Authority
- Neighborhoods of Downtown, Boston Redevelopment Authority
- Neighborhood of East Boston, Boston Redevelopment Authority
- Neighborhood of Fenway, Boston Redevelopment Authority
- Neighborhood of Hyde Park, Boston Redevelopment Authority
- Neighborhood of Jamaica Plain, Boston Redevelopment Authority
- Neighborhood of Mattapan, Boston Redevelopment Authority
- Neighborhood of Mission Hill, Boston Redevelopment Authority
- Neighborhoods of Roslindale and Hyde Park, Boston Redevelopment Authority
- Neighborhood of Roxbury, Boston Redevelopment Authority
- Neighborhood of South Boston, Boston Redevelopment Authority
- Neighborhood of the South End, Boston Redevelopment Authority
- Neighborhood of West Roxbury, Boston Redevelopment Authority
- 2006 Town of Winthrop Street and Zoning Plan
- 2010 Zoning Map of Revere
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- 2003 Everett Waterfront Assessment
- 2013 Proposed Zoning Map for the Proposed Lower Broadway Economic Development District and Resort Casino Overlay District in Everett
- 2010 City of Somerville Zoning Map
- 2013 Zoning Districts for Cambridge
- 2008 Zoning Map of Watertown
- 2010 Zoning Map of Newton
- 2012 Land Use Map of Newton
- 2008 Land Use Map for the Town of Brookline
- 2012 Zoning Map for the Town of Dedham
- 2002 Town of Milton Zoning Districts
- City of Quincy Zoning Map

Appendix B

OPEN SPACE PLANS OF NEIGHBORING COMMUNITIES

The documents below were reviewed for this Open Space Plan, for potential park partners, programs, planning and projects.

Town of Winthrop

Winthrop's *2014–2021 Open Space and Recreation Plan* has the following goals, which include coordinating its recreation and open space planning with adjacent communities.

1. Protect and enhance the quality and integrity of all conservation land and open space for public use and enjoyment.
2. Provide ample recreational opportunities for all residents.
3. Preserve the scenic quality of the town.
4. Promote public awareness of conservation and recreation, use of recreation areas and programs offered.
5. Coordinate Winthrop's recreation and open space planning activities with those of neighboring communities, as well as regional, state and federal activities.
6. Protect coastal areas.
7. Protect wildlife and wild plants to preserve the diversity and health of natural community ecosystems.
8. Promote cooperation between boards with jurisdiction over open space and recreational areas and work towards implementation.
9. Develop a walking and biking network linking public open space, and civic and commercial resources.

City of Revere

Revere's *2010–2017 Open Space Plan* has the following goals, which include developing partnerships and regional collaboration to maximize limited resources and develop regional open spaces.

1. Provide recreational opportunities for residents of all ages and abilities.
2. Protect and preserve Revere's natural resources.
3. Develop facilities and programs that promote fitness and health.
4. Improve stewardship of the parks.
5. Develop partnerships and engage in regional collaboration to maximize limited resources and develop regional open spaces.
6. Ensure that the plan includes environmental justice and equity.

City of Chelsea

Chelsea's *2010–2016 Open Space Plan* has the following goals:

1. Provide active and passive recreational and fitness opportunities suited to Chelsea's urban population. Provide a full range

of recreational opportunities appropriate to citywide and neighborhood recreation needs and age groups.

2. Take advantage of Chelsea's environmental, historic, and scenic resources. New and existing parks should enrich the experience of residents.
3. Integrate the open space system into the city fabric. There is a relationship between open spaces and surrounding residential, commercial, and industrial areas. Open space should tie neighborhoods together, provide buffers against incompatible uses, and add value to surrounding properties.

City of Everett

Everett's *2010–2017 Open Space Plan* has the following goals, which include to establish community and regional partnerships.

1. Maintain, enhance, and maximize the utility and quality of recreation areas.
2. Establish community and regional partnerships to expand open space and recreational assets to residents and coordinate recreational programs to improve citizen participation.
3. Support Energize Everett, a city-wide wellness program.
4. Implement the recommendations of the 2003 Everett Waterfront Assessment and the Lower Mystic River Corridor Strategy.

City of Somerville

Somerville's *2008–2013 Open Space Plan* has the following goals:

1. Renovate existing parks and open spaces to improve the condition of Somerville's recreational areas and ensure attractive, safe, and accessible public lands.
2. Acquire more land to expand Somerville's total open space acreage and ensure open space in every neighborhood.
3. Analyze and improve access for persons with disabilities to parks and open space, as part of ongoing ADA compliance.
4. Increase tree canopy and green spaces to improve urban health, promote sustainability, and reduce the heat-island effect.
5. Increase Off-Leash Recreational Area and skate boarding opportunities throughout the city, and create a new skate park.
6. Raise the bar for sustainable design and building practices in parks and open spaces.
7. Reduce brownfields and convert to more desirable uses.

The 2011 *City of Somerville Comprehensive Plan Technical Report #5* notes that public and private open space constitutes approximately 6.75% of the total city land area. Of this, only 112 acres are protected in perpetuity. The report notes that Somerville residents have access to regional open space, the closest of which is primarily owned by the DCR.

City of Cambridge

Cambridge's 2009–2016 Open Space Plan has the following goals:

1. Increase the amount of usable public open space in Cambridge.
2. Improve the quality and variety of parks and playgrounds.
3. Protect reservation and natural resources in the city.
4. Ensure that Cambridge's parks and open spaces are well-maintained, attractive, clean, and free of hazards and pests, and that park equipment and features remain in good repair.
5. Support a robust recreational program.
6. Work to improve the quality of streets and sidewalks in the city.
7. Increase trails and multi-use paths for pedestrians and bicycles.
8. Ensure that the public has information about the availability of different open space and recreational resources in the city.
9. Engage in planning initiatives that advance the creation, understanding and implementation of open space priorities.

Town of Watertown

Watertown's most recent Open Space Plan dated 2005–2010 was extended, and expired in October 2013. The open space goals in the Town's 2013 *Comprehensive Plan* follow:

1. Identify opportunities to create new parks in underserved neighborhoods, while improving accessibility and the overall condition of Watertown's recreational resources.
2. Preserve, protect, and enhance publicly owned conservation, passive, and active open space.
3. Encourage private land owners to preserve open space.
4. Create new opportunities for recreational access along the Charles River.
5. Promote active and healthy lifestyles.

City of Newton

Newton's *Recreation and Open Space Plan 2013–19* has these goals:

To recognize, preserve, and maintain the City's important natural assets and resources.

1. To ensure an adequate amount, variety, and distribution of open space for both public benefit and biodiversity.
2. To integrate compatible recreation and conservation uses.
3. To explore the action necessary to protect and preserve large open spaces remaining, including the golf courses and other significant parcels owned by institutions and private entities.
4. To undergird the City's capacity for stewardship of its open space.

Town of Brookline

The 2010 *Open Space and Recreation Plan* for the Town of Brookline includes a comprehensive set of goals and priorities. Most relevant to this Open Space Plan is the goal to encourage regional planning,

including devising management strategies that address current environmental challenges including climate change and non-native invasive species.

A second goal that applies to Boston is to communicate with staff and/or environmental advocates in neighboring communities to form strategies to strengthen connections between green spaces.

Other categories include "resource protection" which includes goals for unprotected open space, green corridors, wetlands, watersheds, green infrastructure, habitat and wildlife, parks and recreation, and urban forests. The category of "meeting community goals" addresses recreation, education, outreach and advocacy, and financing of open space initiatives. The category of "creating management goals" includes goals to facilitate better municipal coordination, comply with storm water regulations, and create public-private partnerships.

Town of Dedham

Dedham's 2010 *Open Space and Recreation Plan* notes that "Open space planning does not stop at a town's boundaries. Coordination with neighboring communities will be important for Dedham to achieve its Open Space and Recreation Goals and Objectives."

1. Protect the Town's biological diversity, watersheds and ecosystems.
2. Promote sound environmental management of open spaces.
3. Encourage development that protects open space systems and enhances natural resources.
4. Provide recreation facilities and programs that serve the Town's needs.
5. Provide universal access to recreation properties and programs.
6. Support Town efforts to protect and manage open space.
7. Coordinate and support protection of private open space.

One of the action items applicable to Boston's Open Space Plan is to coordinate with neighboring towns to create contiguous natural areas. Another action is to design a greenway system that connects open space and recreation lands and links to neighboring communities. Another action is to meet with neighboring towns to coordinate open space acquisition and management along the borders and waterways.

Town of Milton

Milton's 2013 Master Plan has the following open space actions:

Natural and Cultural Resources – An inventory and assessment of the town's natural resources, their condition and functional significance. This element identifies particularly sensitive and "at-risk" areas as well as potential or known sources of resource degradation that may warrant special attention. This element should identify and assess management and regulatory approaches to ensure that new development preserves natural resources to the extent possible and considers traditional development patterns and historic resources.

Open Space and Recreation – A quantitative and qualitative inventory of open space and recreational facilities that identifies strategies for advancing community open space and recreation goals. This element should identify the contributions of private open space to community character and quality of life and assess potential impacts of a reduction of this resource; and consider the impacts of shifts in demographics on the need for open space and recreation facilities and programs.

City of Quincy

Quincy's 2012–2018 *Open Space and Recreation Plan* has these goals:

1. Identify funding sources for open and recreational spaces.
2. Identify and protect available and useful open space parcels.
3. Maintain and upgrade conservation lands, parks, and recreational facilities, including downtown pocket parks.
4. Encourage public access to waterfront areas.
5. Expand recreational opportunities to reflect Quincy's diversity.
6. Offer education on park resources and educational programs.
7. Make open and recreational spaces more accessible to people.
8. Investigating new recreational opportunities that reflect Quincy's diverse ethnic populations.

References

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- Town of Brookline, *2010 Open Space and Recreation Plan*
- Town of Dedham, *2010 Open Space and Recreation Plan*
- Town of Milton, *2013 Master Plan*
- City of Quincy, *2012–2018 Open Space and Recreation Plan*

Appendix C

REGIONAL WATERSHED PLANNING EFFORTS

Regional watershed planning efforts include those of the Boston Harbor Watershed, the Mystic River Watershed Association, the Charles River Watershed Association, and the Neponset River Watershed Association.

The documents below were reviewed for applicability to this Open Space Plan, for potential partnerships, programs, planning and projects.

Mass Bays Program

The Massachusetts Bays Program is a cooperative venture of the Massachusetts Executive Office of Energy and Environmental Affairs, the Massachusetts Office of Coastal Zone Management, and the U.S. Environmental Protection Agency. The Mass Bays Program for the Metro Boston Region has the following goals:

- Develop habitat specific restoration targets for Boston Harbor.
- Protect and restore eelgrass habitat.
- Restore degraded salt marsh and protect salt marsh habitat.
- Protect and restore diadromous fish habitat.
- Prepare for and understand the impacts to estuarine habitats from climate change.

Comprehensive Conservation and Management Plan

The Massachusetts Bays Program completed the *Comprehensive Conservation and Management Plan (CCMP)* in 1996 and updated it in 2003. This plan includes steps to restore and protect the Massachusetts Bays ecosystem, and addresses the following areas that are potentially relevant to Boston's Open Space Plan:

- Protecting and Enhancing Coastal Habitat
- Enhancing Public Access and the Working Waterfront
- Planning for a Shifting Shoreline
- Managing Local Land Use and Growth

Priorities for the Boston Harbor Watershed

The Boston Indicators Project notes that the cleanup of Boston Harbor began in the mid-1980s in response to a law suit by the Conservation Law Foundation. It took more than a decade and almost \$4 billion to complete. The Office of Water Policy at EOEEA lists the following priorities for the Boston Harbor Watershed:

- Expand watershed association, citizen monitoring programs, and the remediation/enforcement of water quality problems;
- Continue stream flow assessment and water supply planning in the Neponset and Weir River Watersheds and work to resolve flood control issues in the Mystic River Watershed;
- Evaluate current land use and the possibility of future development within the watershed;
- Restore sensitive habitat areas by managing dams to allow for fish passage, restoring wetlands, improving the health of the harbor, and controlling invasive species of aquatic plants; and
- Reduce/eliminate sewer overflows and extreme fecal coliform and nutrient levels.

Boston Harbor Watersheds 2004–2009 Action Plan

The Boston Harbor Watersheds 2004–2009 Action Plan includes the individual action plans for the Boston Inner Harbor Watershed, and the watersheds of the Neponset, Fore Back and Weir Rivers. The recommendations in the plan were intended to protect or restore the water quality, watershed hydrology and water supply, physical habitat and open space and outdoor recreation.

The document provides action plans specific to each watershed, as well as priorities common to all of the watersheds serving Boston Harbor: Sewer System Maintenance, Improvements, and Extensions; Stormwater Management and Groundwater Recharge; Septic Management; Management of Landscaped Areas; Water Supply and Stream flows; Riverine Habitat; Public Access to Waterways; Watershed Assessment; and Boating Initiatives.

Open space planning can influence many of the above priorities. However, the following recommendations are highlighted because of public access to waterways.

The Boston Harbor Watersheds 2004–2009 Action Plan notes that public access to navigable and potentially swimmable waters is limited in these watersheds. Public access along the shore is also very limited. Recommended actions for State and Municipal Governments related to open space include the following:

- Expand public walkways and parks on public and private property through Chapter 91 licensing and other incentives;
- Develop shoreline access plans at a parcel level of detail;
- Expand public amenities, handicapped access, and public programs on waterfronts;
- Connect waterfront walkways to transit and other public lands;
- Prepare an inventory of potential boat launch and canoe launch sites and an action plan for their development;
- Expand the number of public boat ramps, canoe launching areas, water shuttles and other water-related activities; and
- Restore amenities and water quality at public beaches.

Greening Boston's Infrastructure

Boston Water and Sewer Commission (BWSC) was required to minimize the discharge of sewage and other pollutants into the water bodies in and around Boston, as a result of a consent decree between the EPA and BWSC in 2005. This settlement led to the incorporation of green infrastructure, low impact development, and other controls to help reduce discharges into the rivers and improve the health of Boston Harbor.

Chelsea Creek Waterfront Study and Plan

The 2005 *Chelsea Creek Waterfront Study* examined the development potential of key areas along Chelsea Creek and Mill Creek. The study found that the head of Chelsea Creek offers an opportunity to create a system of publicly accessible open spaces. The study concluded that public access should be a critical component of future planning efforts. The 2007 *Chelsea Creek Waterfront Plan* acknowledges that open space and public access to the creek are limited. One goal was to suggest public access linkages that do not conflict with water-dependent uses.

Mystic River Watershed Assessment and Action Plan

The Mystic River Watershed Association released the *Mystic River Assessment and Action Plan* in 2006 which looked at environmental and recreational resources and preservation needs. Priorities relevant to the Boston Open Space Plan include:

- 3.1 Investigate opportunities to use the Blue Cities criteria developed by the Charles River Watershed Association for redevelopment that improves watershed functioning.
- 3.3 Develop consensus Smart Growth principles for projects in urban areas that consider the need to reclaim open space, repair inadequate sewer infrastructure, control flooding, and address traffic and other community concerns.
- 3.4 Support improvement of relevant municipal ordinances and zoning to promote smart growth. Catalog current municipal ordinances in the watershed. Compile model ordinances.
- 3.5 Develop a plan for parks and pedestrian/bike paths for the Lower Watershed that identifies all on-going waterfront redevelopment and planning, and identifies areas where coordination among plans would enhance the value.
- 3.7 Implement critical next steps from previous planning efforts.
- 3.9 Investigate options for improving public access in Designated Port Areas, consistent with regulations and security.
- 4.5 Continue efforts to complete key links in the pedestrian paths and bikeways throughout the watershed, in concert with regional efforts to enhance the network of paths. High priorities for action include the Bike to the Sea path, pedestrian and bike access through the MBTA property near Sullivan Square, the Chelsea Creek Riverway, the East Boston Greenway, extension of the paths along the Mystic River, the Charles River/Minuteman Connector, River and connecting to the Boston Harbor Walk through Charlestown.
- 4.7 Identify locations for improved public canoe and kayak access.

Mystic River Corridor Strategy

EPA New England gave the Mystic River a grade of D for water quality in 2007 because it met bacterial standards for swimming 52% of the time and boating standards 67% of the time. The EPA then began an initiative to improve the water quality in the Mystic River watershed.

MAPC initiated the *Mystic River Corridor Strategy* in 2008, including six cities on the Lower Mystic River. The vision is a waterfront that serves as a vibrant area for residents to use and enjoy. This will be achieved by improving existing open space on the river, developing new open space, and connecting spaces by a trail network. The *Mystic River Corridor Strategy* includes ideas relevant to this Open Space Plan:

- 1A: MAPC and the six cities will advocate for the completion of the open space system, with a focus on eleven high priority open space initiatives.
- 3E: MAPC and the six cities will work to complete the gaps in the multi-use path system along the Mystic.

- MAPC and the six cities will work to further multi-use path projects already identified in Strategy #1.
- MAPC and the six cities will work with DCR to ensure that the Mystic River Master Plan and subsequent capital improvements will ensure a complete path system.

4C2: MAPC and the six cities will work with DCR to expand its master plan to all land owned by DCR along the Mystic and its tributaries and to ensure that there is sufficient funding for capital improvements and maintenance activities.

The Lower Mystic River Corridor Strategy

The Lower Mystic River Corridor Strategy was prepared for the cities of Boston, Chelsea, Everett, Malden, Medford and Somerville by MAPC in 2009. The vision is that the waterfront serves as a vibrant area where residents live, work and play. This vision will be achieved through improving access to open space along the river, and connecting those spaces with a trail network that makes the river easily accessible by foot, bike, transit and water shuttles. The strategies from that plan that are relevant to the City of Boston's Open Space Plan are as follows:

- 1: Acquire, protect, enhance and link regionally significant open space parcels [the BRA did not identify any parcels for inclusion on this list due to the difficulties of implementing open space projects within the Designated Port Areas. Open space projects may be identified in the future as further work is done on the DPA]
 - MAPC and the cities will work cooperatively to advocate for the completion of the open space system with a focus on the high priority open space initiatives listed in the plan.
 - MAPC will work with the six cities to ensure that city open space plans fully address Mystic issues as identified in this strategy.
- 2: Enhance and encourage sustainable development and redevelopment within the Corridor
 - A. Guide development to follow a unified set of principles
 - B. Advance sustainable development projects within the corridor
 - C. Explore development and open space opportunities in Designated Port Areas
- 3: Improve access to and along the river through the development of water transportation, public transit, roadway improvements, and bicycle and pedestrian accommodations.
 - MAPC and the six cities will work cooperatively to advocate for the completion of sixteen high priority transportation projects.
 - MAPC and the six cities will work to support regional water transportation initiatives.
 - MAPC will work with the cities and neighborhood groups to improve transit and pedestrian access to the Mystic River.

- MAPC and the six cities will continue to work with the Mystic Valley Active and Safe Transportation Network (Mystic VAST-NET) on action items that are complementary to the Corridor Strategy.
- MAPC and the six cities will work to complete the gaps in the multi-use path system along the Mystic River.

Mystic River Master Plan

The Mystic River Master Plan was completed by the DCR in 2009. The study area includes the Mystic River Reservation and encompasses approximately 370 acres. The master plan focuses on improvements to the Mystic River Reservation, including creation of a connected trail system along its length. The plan sets the following goals:

- MAPC
- Restore river banks and edges to promote both increased recreational use and the river's ecological health.
- Develop a continuous multi-use pathway system along both banks of the Mystic River.
- Determine areas most suitable/desirable for recreation, education and preservation.
- Protect and enhance wildlife habitat by improving natural areas.
- Increase opportunities for water-related activities, including fishing and non-motorized boating.
- Strengthen the open space network with links to adjacent public open space and neighborhoods
- Develop guidelines for management and operation of park land.

Mystic River Active Transportation Initiative/2010 Active Transportation

Boston joined with Somerville, Chelsea, Everett, Malden and Medford, and the MAPC and DCR, as well as numerous non-profits, to create a coalition focused on active transportation along the Mystic River. Specific goals of the initiative include:

1. Create safe routes to transit and "Trails to Transit" programs.
2. Create a trail network for bicyclists along the lower river.
3. Improve waterfront access in order to support revitalization of adjoining neighborhoods and business areas.
4. Establish an urban river ring linking the Charles River, Alewife Brook and the Mystic River.
5. Connect to statewide and national trail systems.
6. Realization of health benefits of bicycle and pedestrian transportation within the Mystic River Communities.

Clean Charles River Initiative

The Charles River historically suffered from pollution due to sewage and industrial wastes. The *Clean Charles River Initiative* was launched in 1995 by the EPA in conjunction with federal, state and local agencies, citizens, nonprofit groups and private institutions. It established the goal of making the lower Charles River "fishable" and "swimmable" from Watertown to Boston Harbor.

Since 1995, the initiative has achieved significant improvements in the water quality. In 1995, the river met boating standards 39 percent of the time, and swimming standards 19 percent of the time. In 2006, the lower Charles achieved boating standards 90 percent of the time, and swimming standards 62 percent of the time. This recovery is due to innovative storm water management and water-sensitive development.

In 2011, the Thiess International Riverprize was awarded to the Charles River Watershed Association for its management of the Charles River, now one of the cleanest urban waterways in the world. The \$350,000 award is the most prestigious river prize in the world.

Neponset River Watershed Action Plan

The *Neponset River Watershed Action Plan* augments the *Common Action Plan for All Boston Harbor South Watersheds in the Boston Harbor Watersheds 2004–2009 Action Plan*. The actions are mainly about water quality. The issue of public access to waterways includes one action item for State Government that may have applicability to the City of Boston's Open Space Plan – that is the recommendation to develop a new open space needs and opportunities plan for the watershed as a whole.

References

- Comprehensive Conservation and Management Plan of the Massachusetts Bays Program*
- EEOEA's Priorities for the Boston Harbor Watershed*
- 2004–2008 Boston Harbor Watershed Water Quality Assessment Report*
- Boston Harbor Watersheds 2004–2009 Action Plan*
- Greening Boston's Infrastructure*
- 2002–2006 Charles River Watershed Water Quality Assessment Report*
- Clean Charles River Initiative*
- Chelsea Creek Waterfront Study and Plan*
- The Lower Mystic River Corridor Strategy*
- Mystic River Watershed Assessment and Action Plan*
- Mystic River Corridor Strategy*
- Mystic River Master Plan*
- Mystic River Active Transportation Initiative*
- Neponset River Watershed Action Plan*

Appendix D

REGIONAL AND MUNICIPAL PLANNING INITIATIVES

Below is a review of Federal, State, Regional, and Municipal planning initiatives that inform the creation of the City of Boston's Open Space Plan. The documents below were reviewed for applicability to this Open Space Plan, for potential partnerships, programs, planning and projects.

America's Great Outdoors: A Promise to Future Generations (AGO)

The Obama Administration's *America's Great Outdoors: A Promise to Future Generations* (AGO) was produced in February 2011. Particularly applicable to Boston is a goal to "create and enhance a new generation of safe, clean, accessible great urban parks and community green spaces."

Recommendation 6.1 – Establish the Great Urban Parks and Community Green Spaces initiative by targeting increased funding for the National Park Service's Land and Water Conservation Fund to leverage investment in new and enhanced urban parks and community green spaces.

Action Item 6.1b – Increase the number of urban parks and community green spaces by working with partners to develop criteria within the LWCF program for new urban parks and green spaces. Project criteria should include, but not be limited to:

- demonstrated need for and benefits of the project;
- alignment within a strategic conservation plan;
- partnerships, collaboration, leverage, and community support;
- demonstrated sustainability and stewardship of the project;
- demonstrated plan to provide for safe and accessible routes;
- maximized employment opportunities for young people that connect them to the outdoors;
- multiple benefits, such as ecosystem connectivity, flood control, economic revitalization, heritage tourism, and recreation;
- opportunities for outdoor education, and place-based learning.

State Comprehensive Outdoor Recreation Plan (SCORP)

The *State Comprehensive Outdoor Recreation Plan* (SCORP) presents the available recreational resources and needs in the state. It is prepared by the Executive Office of Energy and Environmental Affairs (EEA) and is used as a basis to distribute federal Land and Water Conservation Funds (LWCF) and state Parkland Acquisitions and Renovations for Communities (PARC) funding to projects that will fulfill the state's recreational needs.

The City of Boston must have a current Open Space Plan in order to be eligible to apply for LWCF funds through a competitive process. Eligible projects include the acquisition of conservation or recreation land, the development of a new park, or the renovation of an existing park.

When conservation land or parkland receives LWCF funding, it is protected in perpetuity under Section 6(f)(3) of the LWCF Act and Article 97 of the Massachusetts State Constitution. This

means that the land cannot be converted to non-conservation or recreation use without the approval of the National Park Service (NPS) and the state legislature.

The NPS and the EEA also require that land be provided in compensation for the converted parcel. This is to ensure that the land remains a recreational resource to the public in perpetuity.

The AGO called for the guidelines for SCORPs to align with AGO priorities. A recommendation of the AGO was that more emphasis should be placed on developing or renovating spaces that are closer to where people live, work, and play. This is also a priority of the LWCF, and the 2012 SCORP.

The 2012 Massachusetts SCORP has the following goals that will meet the needs of residents and the goals of the federal AGO:

1. Increase the availability of all types of trails for recreation.
2. Increase the availability of water-based recreation.
3. Invest in recreation and conservation areas that are close to home.
4. Invest in racially, economically, and age diverse neighborhoods given their projected increase in participation in outdoor recreation.

Statewide Land Conservation Plan

The *Statewide Land Conservation Plan* was a comprehensive planning effort completed in 2002 that identified priority areas for conservation based on biodiversity, ecological habitat, water resources, working farms and forests, greenways and outdoor recreation sites, and urban parks. Now outdated, it forms the basis of plans that inform this document.

Areas of Critical Environmental Concern

The Massachusetts Department of Conservation and Recreation (DCR) administers the Areas of Critical Environmental Concern (ACEC) program in order to identify, inventory, and ensure stewardship of outstanding natural resource areas. The city of Boston contains portions of three ACECs—Rumney Marshes, Neponset Estuary, and Fowl Meadow/Ponkapoag Bog.

BioMap 2

BioMap 2: Conserving the Biodiversity of Massachusetts in a Changing World (2012) is a product of the Massachusetts Department of Fish and Game and The Nature Conservancy. It is intended to create a plan to protect the state's biodiversity in the context of climate change. Protection and stewardship of core habitat and critical natural landscape is essential to safeguard the diversity of species and their habitats, ecosystems, and resilient natural landscapes. In Boston, the Species of Conservation Concern, Priority and Exemplary Natural Communities are:

- Insects: Orange Sallow Moth
- Amphibians: Northern Leopard Frog, Blue-spotted Salamander
- Fishes: Threespine Stickleback
- Birds: Upland Sandpiper, Least Bittern, Black-crowned Night-heron, Snowy Egret, Common Tern, Least Tern, Barn Owl, Grasshopper Sparrow, Vesper Sparrow
- Plants: Long's Bulrush

The BioMap2 document identifies areas for protection of identified species. There are 2,341 acres of Core Habitat in Boston, of which 1,108 acres are protected. There are 540 acres of Critical Natural Landscape in Boston, of which 401 acres are protected. In broad terms, these areas include Stony Brook Reservation, the entirety of Logan Airport, and many of the Boston Harbor Islands.

Massachusetts Coastal and Estuarine Land Conservation Plan

The Massachusetts Coastal and Estuarine Land Conservation Plan was prepared in 2007 by the Massachusetts Office of Coastal Zone Management and its partners. This plan complies with federal requirements for funding for the protection of important coastal and estuarine areas that have significant conservation, recreation, ecological, historical, or aesthetic values, or that are threatened by conversion from their natural or recreational state to other uses.

Priority is given to lands that can be effectively managed and protected and that have significant ecological value. The following attributes were used to help identify priorities for Massachusetts:

- shoreline environments,
- coastline environments within a 2,000-foot buffer of the shore,
- state identified "core habitats" for rare species,
- large relatively undisturbed natural habitats, and
- buffer zones along fresh surface waters and trails/greenways.

MassDOT's Capital Investment Plan for FY2014–FY2018

MassDOT's Capital Investment Plan for FY2014–FY2018 outlines how the state will spend about \$12.4 billion over the next five years as investment in public transit, bike paths, paratransit, roads, bridges, airports and railroads. The plan seeks to fund investments that will enhance mobility, improve safety, stimulate economic growth and protect the environment. The plan acknowledges that the Big Dig crowded out most other projects outside of Boston. The plan recognizes that regional equity is critical, and improvements will be made that consider residents with no or limited access to public transit and decent roads. The specifics of this plan are discussed later in this section.

Commonwealth Connections

Commonwealth Connections (2002) is a greenway and conservation initiative of DCR, the National Park Service, and over fifty trail and land conservation agencies and non-profit organizations. The initiative was designed to create "a coordinated greenway and trail network that will help conserve important resources, provide recreation and alternative transportation opportunities close to where people live, and connect communities throughout Massachusetts."

The goals of the initiative specific to Boston include:

- protecting water quality, natural resources, and recreational opportunities along the Charles, Mystic, and Neponset Rivers;
- creating a network of interconnecting bicycle paths and trails through Boston and its suburbs;
- completing the Bay Circuit Trail;
- creating the HarborWalk and the East Boston Greenway;
- creating a multi-use greenway from Boston to the Berkshires along the route of the Massachusetts Central Rail Trail; and
- completing the Boston section of the East Coast Greenway.

Massachusetts Bicycle Transportation Plan

The *Massachusetts Bicycle Transportation Plan* was prepared for the Commonwealth of Massachusetts Executive Office of Transportation in September 2008. The plan seeks to improve conditions for bicycling in Massachusetts by identifying and prioritizing improvements to existing infrastructure and by promoting supportive policies.

Paths to a Sustainable Region

The Boston Region Metropolitan Planning Organization (MPO) created a long range transportation plan called *Paths to a Sustainable Region* to consider changes through 2035. This plan's "Vision for the Environment" is that human and environmental health is considered in transportation decision-making.

Environmental factors that the MPO reviews during its project selection process include Areas of Critical Environmental Concern, Wetlands, Water Supply Areas, Protected Open Space (levels of protection: perpetuity, limited, term-limited, and none) and Natural Heritage and Endangered Species Program Priority Habitats.

The transportation project design process is intended to avoid or minimize negative impacts to wetlands, soil, water, and other environmental resources. Context-sensitive design principles are to be implemented to protect communities' cultural, historic, and scenic resources, community cohesiveness, quality of life, and aesthetic environments. Transportation agencies will work with environmental and cultural resource agencies to achieve the following policies:

- Improve transportation in areas of existing development, which will reduce pressure to develop green fields.
- Protect community character and cultural resources.
- Protect natural resources by planning early to avoid or mitigate impacts on storm water or groundwater and on other resources.
- Protect public health by reducing air pollutants. Avoid funding projects that increase exposure of at-risk populations.
- Promote a context-sensitive design philosophy.

The Boston Region's Pedestrian Transportation Plan

MAPC's 2010 *Boston Region Pedestrian Transportation Plan* addresses the importance of walking, describes existing pedestrian infrastructure in the region, and recommends policies to facilitate walking as a convenient, practical and safe mode of transportation.

The specific action item regarding Greenways is relevant to this open space plan: "Communities should consider developing a mapped and signed pedestrian route system that combines sidewalks on low traffic streets, paths, and scenic or recreational facilities that makes these transportation corridors ideal for walking. Communities should work together to connect their respective walkways and pathways and strive to keep this type of pedestrian route system separate from vehicles."

Sustainable Development Principles

The Patrick Administration released a set of Sustainable Development Principles that guide the creation and implementation of state agency policies and programs, as well as investments in land and infrastructure. Municipalities are also asked to modify their planning, regulatory, and funding actions to achieve consistency with the principles.

Principle #4 is relevant to Boston's Open Space Plan: Protect Land and Ecosystems. Protect and restore environmentally sensitive lands, natural resources, agricultural lands, critical habitats, wetlands and water resources, and cultural and historic landscapes. Increase the quantity, quality and accessibility of open spaces and recreational opportunities.

Smart Growth Principles

The MAPC adopted Smart Growth Principles in 2003. Many of these principles are related to the provision of open space. The most specific are as follows:

- Promote distinctive, attractive communities with a strong sense of place
- Preserve open space, farmland and critical environmental resources.
- Take advantage of compact development design and create walkable neighborhoods.
- Promote economic development in ways that produce jobs, strengthen low and moderate income communities and protect the natural environment.
- Promote more transportation choices through the appropriate development of land.

Health Needs Assessment of People with Disabilities in Massachusetts

The *Health Needs Assessment of People with Disabilities in Massachusetts 2013* was conducted by the UMass Medical School and the Massachusetts Department of Public Health in order to present comprehensive information about the unmet health needs and priorities of the disability community in Massachusetts. The report concludes that this population is more likely to experience poor physical and mental health, compared to individuals without disabilities in Massachusetts.

Relevant to this Open Space Plan, 45% of the respondents rated the ability to locate an accessible gym as a "Big Problem." Though not specifically stated, the issue of locating accessible gyms could relate to the ability to find other accessible amenities for physical activity, such as playgrounds and parks.

A Profile of Health among Persons with Disabilities in Massachusetts

A Profile of Health among Persons with Disabilities in Massachusetts 2008–2011 was compiled by the Massachusetts Department of Public Health. The report presents information on middle and high school students and adults with disabilities, and their socio-economic characteristics, health risk behaviors, health care, quality of life, and health status.

The report concludes that Massachusetts residents with disabilities are more likely to have: excess weight, reduced physical activity, chronic conditions such as diabetes, heart disease and stroke, and poor emotional and physical health. The report reveals the need for public health efforts to improve the health of people with disabilities. The report calls for health and disability professionals across Massachusetts to improve the health status and overall well-being of Massachusetts residents with disabilities.

Metro North Land Use Priority Plan

The Metro North Land Use Priority Plan is a regional planning study that is currently underway. It is a collaboration of the Metropolitan Area Planning Council, the Executive Office of Housing and Economic Development, the Executive Office of Energy and Environmental Affairs, MassDOT, municipal officials, local planners, and local and regional stakeholders. It includes nine municipalities: Boston (East Boston and Charlestown), Chelsea, Everett, Malden, Medford, Melrose, Revere, Somerville, and Winthrop.

The plan will identify appropriate locations for open space, housing and job growth. It will recommend the infrastructure, zoning and permitting necessary to help advance the goals of the plan. MAPC worked with each community's staff to identify key locations that could meet these needs, and compiled a list of Regionally-Significant priority areas. The state agencies are currently in the process of determining which sites will make the list of state Priority Development Areas and Preservation Areas.

Metropolitan Area Planning Council (MAPC)

Boston is one of 101 municipalities that are served by the Metropolitan Area Planning Council (MAPC). The Metropolitan Area Planning Council (MAPC) is the regional land use planning agency for the Boston Metropolitan Planning Organization (MPO). MAPC provides a forum for state and local leaders to address issues of regional concern and collaborate in the development of comprehensive plans and recommendations in areas of population and employment, transportation, economic development, regional growth and the environment. MAPC works to achieve smart growth results through implementation of its land use plan, *MetroFuture*.

The Inner Core Committee

Boston is a member of the MAPC's Inner Core Committee (ICC), made up of high density cities of Boston, Cambridge, Somerville, Revere, Everett, and Chelsea as well as more residential streetcar suburbs inside Route 128. The ICC meets regularly to discuss matters of regional interest. Regional open space was discussed on April 7, 2010.

MetroFuture

MetroFuture is the land use plan created by the MAPC in 2008 for Greater Boston. Below are the goals of the *MetroFuture* plan that are applicable to this Open Space Plan:

Goal 3

Brownfields and other polluted sites will be cleaned up and re-used for parks or development. Metro Boston is the location of 28 Superfund sites in Massachusetts. *MetroFuture* prioritizes the remediation of sites that pollute the environment and have negative impacts on neighboring real estate.

Goal 3 Objectives include the following:

- Existing 21E or Superfund sites will be remediated by 2020.
- New 21E or Superfund sites will be remediated within 10 years.

Goal 12

Communities will work together to plan for growth and share resources. A stronger regional identity will grow from increased communication and coordination across municipal boundaries. Through planning, joint services, and revenue sharing, cities and towns will be more efficient and protective of infrastructure and the environment.

Goal 12 Objectives include the following:

- The region will have an increasing number of inter-municipal planning efforts such as regional open space, economic development, public safety, or housing plans.

Goal 23

All neighborhoods will have access to safe and well-maintained parks, community gardens, and appropriate play spaces for children and youth. Even as density increases, *MetroFuture* will protect and enhance access to open space. The region will... focus on areas currently underserved by open space and in compact growth areas. More residents will have access to nearby parks and community gardens, including seniors living in compact development in suburban town centers.

Goal 23 Objectives include the following:

- No more than 20% of the region's households will have limited access to open space (<50 acres per 1,000 people, at the TAZ level)
- The acreage of community gardens in urban areas will increase.
- Reported crimes in public parks will decrease.

Goal 25

Most residents will build regular physical activity into their daily lives. *MetroFuture* will enable residents to be more active, through clustered land use and improved bicycle and pedestrian connections. Complete sidewalk networks would allow more students to walk to nearby schools. The region would have completed 200 miles of off-road multi-use trails, and residents would use this network for commuting and recreation. Seniors who live in new housing near city and town centers will be able to stay active by walking to nearby shops and services.

Goal 25 Objectives include the following:

- All public and private schools will be accessible by sidewalk for children living within one mile.
- An increasing proportion of adults will have at least one 30-minute session of physical activity per week, across all Community Types.

Goal 62

The region's rivers, streams, lakes, and ponds will have sufficient clean water to support healthy populations of native fish and other species, as well as recreational uses.

Goal 62 Objectives include the following:

- Fewer of the region's waterways will be impaired due to pollution.
- 100% of combined sewer lines in the region will be separated and 100% of CSO outfall points will be closed.
- Stream flow levels measured by USGS gauges will be comparable to historical stream flow patterns.
- There will be zero violations of safe swimming standards in the region's rivers, lakes, and beaches.

Goal 63

The ecological condition of wetlands will improve, and fewer wetlands will be lost. The Metro Boston area has over 250,000 acres of wetlands, 32% of which contain rare or endangered species. Nearly 40% of the region's wetlands are not permanently protected.

Goal 63 Objectives include the following:

- There will be no net loss of wetland acreage.

Goal 64

The region will retain its biodiversity, and will have healthy populations of native plants and animals, and fewer invasive species. *MetroFuture* directs growth away from areas designated as "core" and "supporting" habitat for rare and endangered species. The region's open space network would allow for more movement of wildlife.

Goal 64 Objectives include the following:

- There will be no loss of core habitat for rare and endangered species.

Goal 65

A robust network of protected open spaces, farms, parks, and greenways will provide wildlife habitat, ecological benefits, recreational opportunities, and scenic beauty. Compact growth and more coordinated land acquisition would ensure that the region's important open spaces are not lost, and will be joined in a network. This will allow for corridors for animal use and migration, and recreation.

Goal 65 Objectives include the following:

- 139,000 acres of developable land identified as a high priority by the State Land Conservation Plan will be permanently protected.

The State of Equity in Metro Boston

The State of Equity in Metro Boston (2011) is the first in a series of indicator reports that will monitor the region's progress towards achieving goals set out by the *MetroFuture* plan. Equity-related goals are highlighted first, because meeting them is crucial to achieving a vibrant region.

The *MetroFuture* goals evaluated for the equity report include Goal #23: All neighborhoods will have adequate access to safe and well-maintained parks, community gardens, and appropriate play spaces for children and youth. This will help meet Goal #25: that the region's residents build more physical activity into their lives.

The State of Equity in Metro Boston notes that low quality or inadequate access to open space impacts the region negatively in terms of health care costs related to a lack of physical activity, increased driving to get to recreation areas, and disparities in property values, which are higher near recreational areas or open space vistas. Disparities in open space resources can also limit recreational options for residents. Areas with excellent open space acreage nearby are more likely to also offer diversity of open spaces, giving residents options of quiet parks, playgrounds, sports fields, community gardens, and more.

The State of Equity in Metro Boston notes that physical access to open space is not the only factor to consider when looking at a child's ability to play. Other factors include safety of the equipment in a playground, and of the neighborhood in which it is situated.

When local researchers found that neighborhoods with the highest concentrations of youth had the largest number of playgrounds, but offered the least safe playground equipment. Areas with higher concentrations of Black/African American residents, higher rates of youth poverty, and higher percentages of residents without high school degrees were also much more likely to have playgrounds with unsafe equipment than were areas with richer, Whiter, more highly educated populations.

Boston Complete Streets Initiative

The City of Boston has developed the *Complete Streets Initiative*, which requires that green infrastructure be incorporated into street designs. Green infrastructure includes greenscapes, such as trees, shrubs, grasses and other landscape plantings, as well as rain gardens and vegetative swales, in filtration basins, and paving materials and permeable surfaces.

Mayor Walsh's Transition Team Report 2014

Mayor Martin J. Walsh's Energy, Environment, and Open Space Transition Committee discussed and solicited input from Boston residents, businesses and other groups.

A focus of the Transition Report was #2 Public Open Space: Protect and expand parks, beaches and other open space areas for recreation and enjoyment. The intent is to reinvent and restructure Boston's parks and open spaces for 21st century living by:

1. Making Boston a world leader in the quality, scope, and innovation of its public open spaces;
2. Utilizing all outdoor resources—city and state owned parks, bikeways, streets and sidewalks, playgrounds and

- schoolyards, transportation corridors, community gardens, plazas, vacant lots, green roofs, institutional and commercial open spaces, urban wilds, and the Harbor, HarborWalk, islands and public beaches in East Boston, South Boston, and Dorchester—to bring a wide range of outdoor opportunities and experiences to all Bostonians; and
3. Increasing investment in our parks and open space planning, programming, operations, and capital needs through all possible funding avenues.

The recommendations below are relevant to this Open Space Plan:

- Fully utilize the Mayor’s existing tools to improve the quality of Boston parks and open spaces.
- Pass the Community Preservation Act.
- Simplify procedures for turning vacant DND and BRA (Boston Redevelopment Authority) lots into open space. The current system is unwieldy and non-transparent.
- Create a special Boston Public Schools schoolyard maintenance fund.
- Eliminate bureaucratic barriers to make it easier for park partners to bring resources, maintenance, and capital improvements to Boston’s open spaces, parks and beaches.
- Make the 2014 Open Space Plan a specific, action-oriented document to drive future parks and open space creation and restoration.

Quick and Visible Improvements:

- Bring park permitting online.
- Focus park capital improvements in areas with high levels of income disparities and chronic disease.
- Recycling in Parks
- Promote Urban Farming.
- Make full use of City Hall Plaza to lessen the impact of big events on parks, especially the Boston Common and Franklin Park.

Ensure new open spaces will be built in the future: While development pressures are cyclical, recent experience demonstrates how quickly a neighborhood (e.g., the Seaport) can change in a boom economy. Immediate plans should be undertaken for:

- a. The Waterfront: Commission a group of city planning and design experts, independent of the BRA, to recommend optimal open space and active recreational uses of the few remaining undeveloped waterfront parcels, especially in the Seaport, East Boston, North End, and the Harbor Islands, and to protect view corridors to the harbor in these areas.
- b. Allston Projects: Harvard expansion and Mass. Pike relocation: Develop a comprehensive plan and implementation strategy, including government funding and Harvard’s promised Public Realm Flexible Fund, for open spaces related to I-90 improvements and Harvard expansion (e.g., Rena Park, Smith Field, and the grove of trees at the Charlesview development site).

- c. Fairmount Line Corridor: Plan new open spaces in Dorchester, Mattapan, and Hyde Park; host a competition to create outdoor “living rooms” as destinations for neighbors and transit riders.
4. Continue and accelerate major park and open space improvement projects, including but not limited to:
 - The South Bay Harbor Trail: This project connects Roxbury with the waterfront which is 40% complete, with 100% of the design completed and all funds allocated.
 - Muddy River Phase II: Advocate for continued full federal funding of Phase 2 of the Muddy River restoration project in the Fenway.
 - East Boston Greenway: Complete the final section to Constitution Beach.

Invest a minimum of 1% of the city budget (currently at .7%) for parks and open space to properly fund operations, innovative planning, and capital projects.

- Make parks more livable. Install fountains in every park. Add lighting and play fountain where feasible. Build bathroom facilities in parks. Add bike racks.
- Community Gardens: Commit to support and expand gardens through Parks Department staff and funding. Hire a community garden liaison.
- Urban Wilds: Provide maintenance, capital and program resources to realize the potential of these unique areas.

Work with other levels of government to fully realize the potential of parks, such as:

- Department of Conservation and Recreation parks
- Harbor Island Parks
- Rose Kennedy Greenway
- Charles River Underpasses

Tackle Big Ideas, Projects and Improvements:

- Uncover Charlesgate, the connection between the Emerald Necklace and the Esplanade.
- Keep building and add to linear parks like Harborwalk and the Neponset River Greenways.
- Hire dedicated park managers for the largest, most populous parks. Craft management plans for individual city parks.

Environmental Justice

- Establish neighborhood green standards and report card: Create standards and scorecards to ensure equitable access for every neighborhood to green assets: gardens, parks, trees, bike paths, etc.

Boston Indicators Project

The Boston Indicators Project notes that the city is among the most vulnerable in the US to climate change and rising seas. Models of ice-free status in the Arctic by 2050 are being revised to project open seas in a decade. Projections are for a 7 foot rise in sea level in a century. The Northeast coast is at a disproportionate risk compared to other coasts in the nation and world.

Boston's Climate Action Plan

The City of Boston's 2007 Executive Order on Climate Action calls for the City to have a climate action plan that is updated every three years. The Climate Action Plan serves as Boston's blueprint for reaching its goals of reducing greenhouse gas emissions 25% by 2020 and 80% by 2050, and making sure the city is prepared for climate change impacts.

A 2014 update to the Climate Action Plan is currently being developed and will create a climate preparedness plan, re-evaluate strategies, and measure progress.

Sparking the Climate Revolution 2010

Sparking Boston's Climate Revolution contains recommendations for reducing Boston's contribution to climate change, addressing changes that can't be avoided, and engaging the entire community. The document states that Boston should continue to strengthen its existing programs for green stormwater management and infiltration, in particular by protecting and, wherever possible, expanding green infrastructure, including parks, urban wilds, wetlands, and green roofs that can aid storm water management.

A Climate of Progress

In 2011, the City of Boston released *A Climate of Progress*, which called for meeting the goal of 25% reduction in greenhouse gas emission by 2020. The document calls for this Open Space Plan to include an explicit analysis of climate change risks and appropriate responses. It notes that the BPRD is concerned with the health of trees and urban ecosystems under its jurisdiction and calls for this Open Space Plan to include climate change considerations, including heat and rainfall patterns into the selection of tree species and other vegetation.

Stormwater Best Management Practices

The Boston Water and Sewer Commission produced the *Stormwater Best Management Practices (BMP) Proposal and Guidance Document* in January 2014. Relevant to this Open Space Plan, this document calls for Green Infrastructure that uses storm water runoff management practices to mimic the natural hydrologic cycle. Site planning includes reducing the amount of directly-connected impervious areas, fitting the proposed improvements to the site terrain, preserving and using the natural drainage systems, and replicating pre-development hydrology. The Commission is currently working on the implementation of demonstration projects at Audubon Circle (Beacon Street/Park Drive area), Central Square in East Boston, and City Hall Plaza.

Health of Boston Report 2012-2013

The *Health of Boston Report 2012–2013: A Neighborhood Focus* by the Boston Public Health Commission provides statistical data on select health conditions, risk behaviors, and social determinants of health for Boston. This report does not make recommendations, but does provide extensive information on health factors that should be consulted in creating policy and determining areas of need for the provision of parks.

This report does not look into open space and green space in depth. But it does note that one of the most important determinants of health is the physical environment in which one lives,

works and plays. The report observes that resources that promote health are distributed unevenly across Boston, and follow patterns of racial segregation and poverty concentration. An inequitable distribution of resources, together with residential segregation, results in people of color often living in neighborhoods where there is less access to conditions and opportunities that promote health—including open space and green space.

Boston Public Health Commission Development Review Priorities

The Boston Public Health Commission (BPHC) created development review priorities in 2013. These include the following objectives pertinent to this Open Space Plan.

- Ensure that all residents have access to public spaces. Include access to open and green space, parks and recreation facilities. Ensure equitable access to active and passive recreational spaces. Improving connections to public and open spaces improves equitable access to these resources. Children who live shorter distances to parks tend to be more active.
- Design parks, open spaces, and recreational facilities to complement the cultural preferences of the local population, to accommodate a range of activities and age groups and to support social connection. People of different ages have different health needs, and people from different backgrounds and ethnic groups have different physical activity preferences and attitudes toward nature. Involving people in the planning stages also gives them a sense of ownership in their park.

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 Mayor Walsh's Transition Team Report 2014

Appendix E

METADATA FOR THE MAPS IN SECTIONS 7.2.1 TO 7.2.16

“Metadata” is “data about data,” per Wikipedia. In this case we describe here where we found the data that underlies the 10 maps we used in each of the neighborhood chapters in Section 7.2, Community Open Space and Recreation.

Map 1, Population Density

Persons per Unit Area, displayed by census block, based on U.S. Census, 2010.

Map 2, Environmental Justice (EJ) Populations

U.S. Census block groups that represent areas with high minority ($\geq 25\%$ of block group total population), non-English speaking ($\geq 25\%$ of block group total households have no member over age 14 who speak English very well), and/or low-income populations (block groups where median household income was $\leq \$40,673$ [65.49% of the 2010 Massachusetts median household income]). Data in this map was compiled from the American Community Survey (ACS) 2006-2010 5 year estimates tables by MassGIS (2012). Shading variation shows number of EJ population criteria met by a particular block group. Letters shown within block groups indicate which criteria that block group meets; M = Minority criterion; I = Income criterion; E = English Linguistic Isolation.

Map 3, Need Score by Census Block Groups

Using a model that factors in population density, population under age 18, population over age 69, and the three EJ criteria of high minority population, low-income population, and linguistically isolated households, variation in park need is displayed by color shading. Only the three classes with the highest scores out of a seven-class scale are shown, in yellow, orange, and red.

Map 4, Open Space by Type

Displays public open spaces regardless of ownership by land use-oriented types. Non-public open space is not distinguished by type on this map.

Map 5, Open Space by Ownership

Displays public open spaces by general classes of ownership. For example, a Boston Department of Neighborhood Development open space is classed as owned by the City of Boston, as are open spaces under the jurisdiction of the Parks and Recreation Department, the Boston Conservation Commission, the Boston Redevelopment Authority, and so on, except where noted in the map legend. Non-public open space is not distinguished by owner on this map.

Map 6, Open Space by Protection Status

Protected open spaces are those which are held by public agencies for park, recreation, and conservation purposes, either in fee or by a deed restriction, or by some other legal means that would make conversion to a non-open space use extremely difficult.

Map 7, Play Areas and Water Spray Features

Areas with features designed for use by children ages 2–12 and areas with water spray features. Some are located on public school property. All non-school features are found on public property.

Map 8, Fields and Courts

Locations of athletic fields (baseball type fields, football and or soccer fields, multi-use athletic fields) and courts (basketball, street hockey, and tennis) on public property, including public schools.

Map 9, Community Facilities

Locations of community facilities that typically have users who may also use open space and recreational facilities. Legend is self-explanatory, except “Community Centers” refers to such facilities operated by the Boston Centers for Youth and Families, a municipal agency in the Human Services Cabinet of the City of Boston.

Map 10, Park Service Areas

Displays the park service areas of parks and open spaces denoted in the legend “Publicly Accessible Open Space.” Areas served by one or more such parks are denoted by a shade of green shown in the legend. The size of the service area based on the size of the park or open space, as described in the introduction to Section 7.2, Community Open Space and Recreation. The distance is developed using a “network” mapping program that imitates pedestrian movements, rather than the simple linear (“as the crow flies”) distances around each property that ignores obstacles such as railroad corridors, interstate highways, non-gridded street networks, etc. that pose barriers to pedestrian movement. “Other Open Space” do not have service areas shown on this map.

Map 11, Park Equity: Park Service Areas and Need Scores

Displays both the Park Service Areas (as shown in Map 10) and the Need Scores (as shown on Map 3) on the same map. Areas being served by few or no parks, yet with higher need scores as shown in yellow, orange, and red, have those need score colors more clearly displayed. Such areas of higher need not well served by parks and open space have less park equity than areas with equal or lower need which are better served by parks and open spaces.