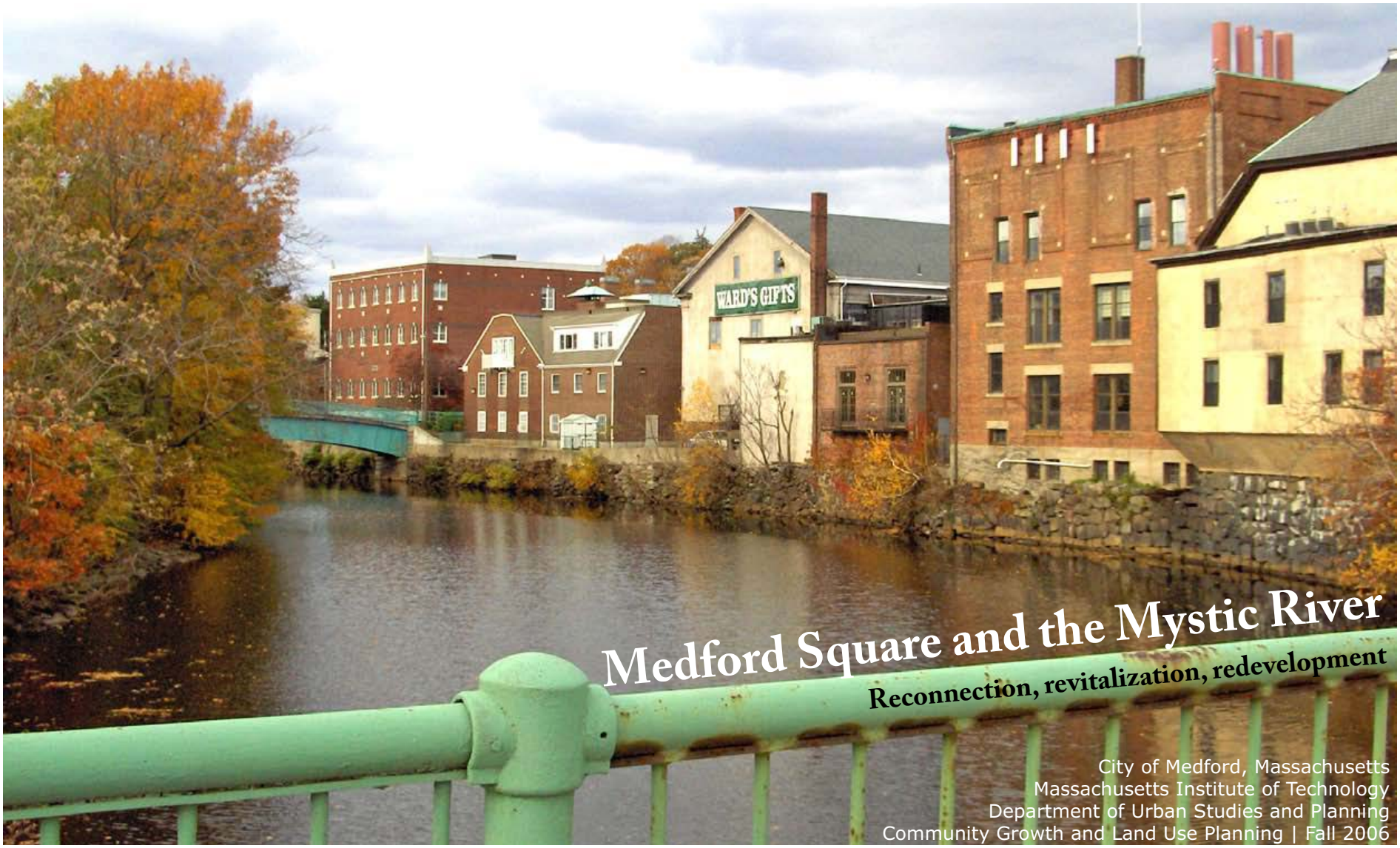

Medford Square and the Mystic River

Reconnection, revitalization, redevelopment

City of Medford, Massachusetts
Massachusetts Institute of Technology
Department of Urban Studies and Planning
Community Growth and Land Use Planning | Fall 2006

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Acknowledgements

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Executive Summary

The MIT team looked at strategic areas in Medford Square and along the Mystic River. Both local and regional in scope, this report recommends ways in which Medford can revitalize its great assets.

Mystic River Greenway

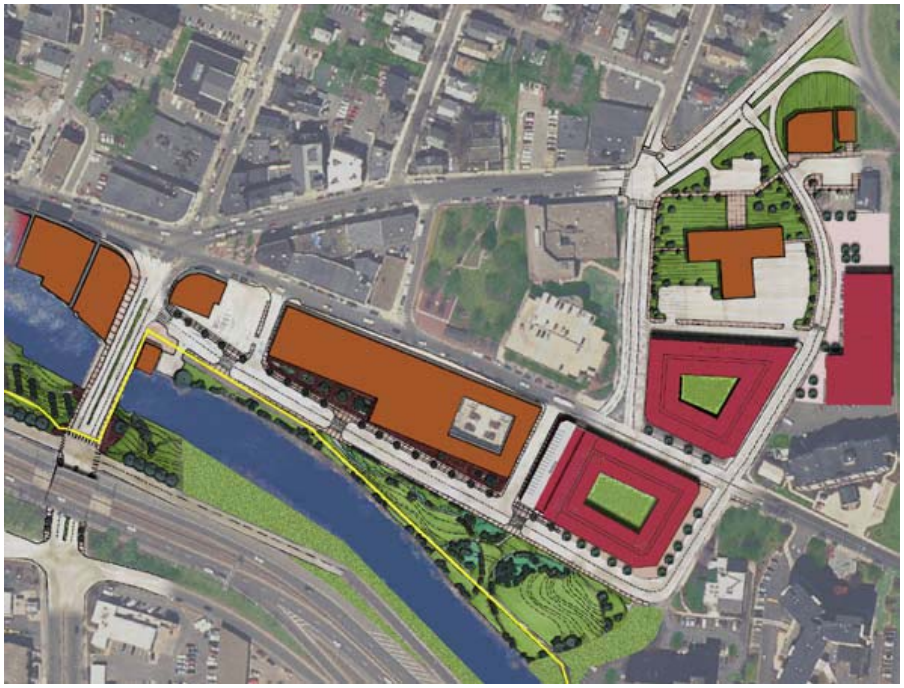
With the many waterfront assets found in Medford, a regional greenway system would draw Medford residents and visitors to and along the river, attracted by new connectivity and activities. The Mystic River Greenway will run from the Alewife Brook Greenway to Station Landing/Wellington Station. The proposed path runs through land owned by the City of Medford and the MA Department of Conservation and Recreation (DCR); as such, the City will have to further cultivate a strong working relationship with DCR. The greenway provides an opportunity to improve the ecological health of the river, create opportunities for passive and active recreation along its banks, and to involve residents, businesses and institutions in shaping the greenway. To facilitate these outcomes, the City should initiate the formation of the Mystic River Greenway Committee to catalyze the formation of a public-private partnership.

Transportation and Streetscape

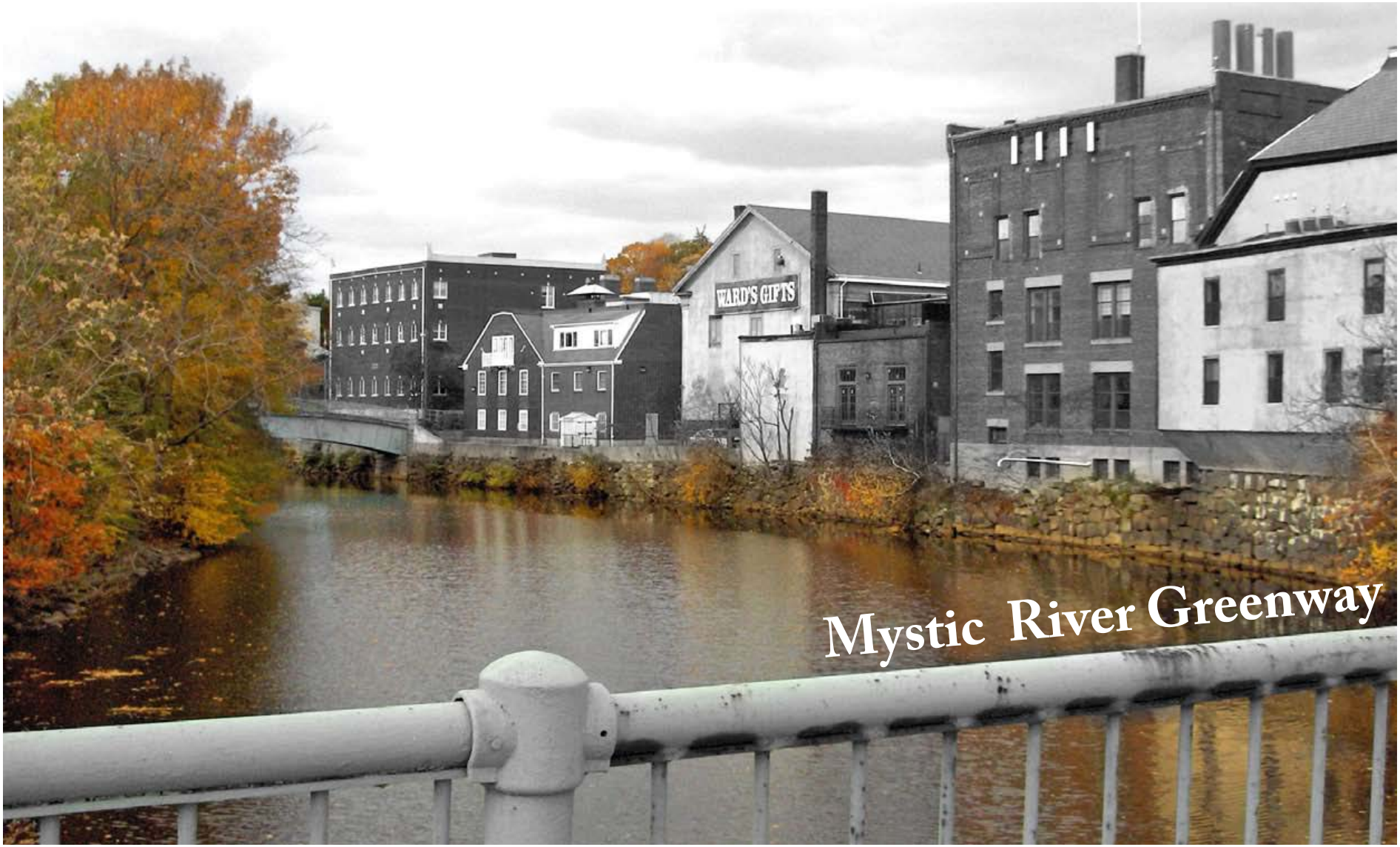
Several recommended key transportation and street design interventions in downtown Medford strive to address the following goals: connect neighborhoods to the Square, enable access to the Mystic River, improve the pedestrian environment, and reorient the road network to local use. The following areas were selected as key intervention points for the City of Medford as they represent existing transportation infrastructure with the biggest problems but also the highest potential for improvement: Clippership Drive, the area around Main Street at Route 16 or the "South Gateway" and the area near the rotary and Salem Street or the "Northeast Gateway". For each of these sites specific recommendations are provided that address the road network and streetscape to ensure a effective pedestrian and vehicle environment, and offer design elements which can improve the image of Medford and highlight its history.

Redevelopment

Currently the City of Medford owns three parcels on the eastern edge of the Square that are ripe with development potential. With an established zoning overlay district, these parcels will create new opportunities to retain the original character while enhancing the retail and economic climate. Development fostered within the Square will honor and respects the City's historic past, while forging opportunities for a viable and progressive future. Development scenarios and a model RFP will serve as a guide for the City in attracting developers to these parcels and providing information on the amount of revenue and public benefit that can be expected. The implementation of a Medford "Main Streets" program will strengthen existing businesses and attract new investment to the Square, linking together physical and economic development.



The proposed interventions for Medford Square and Clippership Drive



Mystic River Greenway

Introduction

The riverfront open space group was tasked with developing a plan to capitalize on the assets of the Mystic River in Medford. While a number of prior reports have suggested ways to improve the Mystic River, this report synthesizes previous ideas into a practical solution: a regional Mystic River Greenway.

The Mystic River Greenway, complete with a continuous multi-use path, will meet transportation and recreational needs of local residents, visitors, and regional commuters alike. The greenway will also create opportunities to restore the river to a healthier state and encourage both active and passive recreational uses such as biking, walking, picnicking, canoeing, relaxation and enjoyment of views.

Creating a vibrant greenway will be nearly impossible without joint collaboration of citizens, the City of Medford, and the Commonwealth's Department of Conservation and Recreation (DCR). The City should take an active role in facilitating this collaborative effort.

While the Mystic River currently lacks the allure to draw people to the waterfront, the recommendations outlined in this section are designed to address this challenge by establishing a unique identity and amenities for the Mystic River.

Goals

- Connect transit nodes, residential neighborhoods, recreational amenities, and business districts to the river.
- Create a vibrant mix of uses and activities along the river.
- Engage residents, businesses, and institutions in shaping and building the greenway.
- Convey a unique identity that reflects the local character, the history, and the environment.
- Restore and maintain the river's ecological integrity as a regional resource.

Objectives

- Establish high priority links to the river.
- Locate priority sites for views, uses and river access along the Mystic.
- Identify models for community partnership and non-profit collaboration.
- Improve signage related to way-finding, history, and environmental stewardship.
- Select opportunities for improving water quality, creating wildlife habitat, and diversifying the landscape.

Recommendations

- Collaborate with DCR on Mystic River Master Plan planning process.
- Cultivate a productive working relationship with DCR.
- Form a Medford Greenway Committee to:
  - Ensure local participation in the master plan process.
  - Investigate funding sources.
  - Develop a public-private partnership organization.

Connections

Re-establishing physical, psychological, and social connections is an overarching goal of the Mystic River Greenway. The Greenway would physically reconnect businesses, transportation hubs, and neighborhoods, psychologically reconnect residents to nature, and socially reconnect the City of Medford, community groups, DCR, and other institutions.

Planning with DCR

As the map at right indicates, DCR controls a majority of land along the Mystic River. Therefore, it is important that the City cultivate and strengthen its relationship with DCR in order to implement the suggestions made in this report.

Currently, DCR is creating a Mystic River Master Plan with the first phase to be completed by June 2007. This provides an immediate opportunity for the City to work with DCR and advocate for desired changes along the greenway.

Auburn Street to Winthrop Street
This grassy area is an underutilized recreational asset that connects adjacent neighborhoods as well as an ecologically rich western gateway to the greenway that can draw people toward Medford Square.

Auburn Street to Cradock Bridge
Improved circulation, stronger visual connections to the river, and a steady increase of public uses will integrate the Greenway and Medford Square into a unified, multi-use community asset.

Cradock Bridge to I-93
Clippership Park will extend the civic life of the Square to the river. A DCR easement along the senior housing properties enables the path to continue towards I-93, with a bike lane along Riverside Avenue serving as a short term connection.

Connections

Land Ownership

City of Medford

DCR

Path

The Mystic River Greenway

A continuous, ADA-accessible, 10-ft wide multipurpose recreation and commuter path will enable residents and visitors to travel from the Alewife MBTA station, along the Alewife Brook Greenway, through Medford Square, to the Wellington MBTA station.

However, an active greenway needs more than just a path. It requires signage, ecological restoration, neighborhood input, opening of views, and opportunities for both active and passive recreation.

The Greenway has been divided into several geographic areas described on pages 12-17. Each area will have specific recommendations for interventions with great potential for ensuring a successful greenway project.

I-93 to Yacht Club
A bike lane along Riverside Avenue and a path under the highway and around the Yacht Club will provide a direct connection from Medford Square to Riverbend Park and the Medford Public School Campus.

Riverbend Park
New directional signage throughout the park will help guide users through this tremendous community asset filled with both passive and active recreational uses.

Mystic River Reservation
This ecologically diverse public park will serve as a critical connector between Medford Square and the Wellington MBTA station. It also provides spectacular river views and a natural setting for passive recreation.

Community Partnerships

Public-Private Partnerships

Designing, building, and maintaining the Mystic Greenway will be a multi-jurisdictional task. The City of Medford will not be able to complete the task on its own; the formation of partnerships is a necessary element in achieving the desired goals.

The City should work with citizens to investigate the development of a public-private entity charged with oversight of the Mystic River Greenway. The structure would be a non-profit with a private board and representation from the involved jurisdictions. Interested parties could include:

- Cities of Medford, Everett, Somerville, etc.
- Massachusetts Department of Conservation and Recreation (DCR)
- Representatives of local community groups interested in working on the water
- Tufts University, Medford Chamber of Commerce, other local institutions, etc.

This organization would begin with a Medford Greenway Citizens Committee, with representation and support from the City. The committee would facilitate community visioning processes, fundraise, and cultivate the relationships necessary to make the Greenway a reality.

Case Study: Emerald Necklace Conservancy

Across the Charles River in Boston and Brookline, the Emerald Necklace Conservancy has been working with municipal and state owners to maintain and program the park system known as the Emerald Necklace for nearly ten years.

Designed by Frederick Law Olmsted, the Emerald Necklace consists of over 1,000 acres of parkland, stretching over 5 miles. Various parts of the system are owned by Boston, Brookline, and the Commonwealth of Massachusetts.

The Conservancy's mission is "... to protect, restore, maintain and promote the landscape, waterways and parkways of the Emerald Necklace park system as special places for people to visit and enjoy."

The Conservancy has a strong working relationship with the three governmental bodies that have jurisdiction in the Emerald Necklace. They provide volunteers and training programs to ensure that the planning and maintenance of the system is consistent throughout.

The Conservancy has a private board with ex officio members from the respective governmental agencies.

Lessons for Medford:

- Advantage of a public-private non-profit:
  - Ability to raise money from government and private sources
  - Responsibility for development and maintenance of the Greenway shared among jurisdictions
  - Expansion of Medford's capacity to develop and maintain the Greenway
- The move from creating a Conservancy to legal incorporation took two years. Medford should begin discussions with the relevant parties now while continuing forward with short term improvement plans.
- The Emerald Necklace has an established identity; the Mystic River Greenway would have to create an identity for itself. Having an organization devoted to the creation, planning and maintenance of the Greenway would facilitate this effort.

Community Partnerships

Local Projects

The City has sponsored a waterfront Adopt-a-Site program in the past. This program has not been as successful as originally envisioned. However, there are precedents which suggest such a program could work in Medford and elsewhere.

For example, the Friends of the Mystic River have organized volunteers to tackle the Japanese Knotweed problem along the Mystic River. This invasive species is extremely difficult to manage, and needs regular treatment. The group received permission from DCR to bring volunteers to correctly address it. Projects such as this one, where local partners work with the responsible agency, could be a model for future efforts along the river.

While these partnerships take time to create, the results are worth the effort in dispersion of maintenance and ownership of the amenities along the River.

Community Groups

For Medford residents to take ownership of the Greenway, they must be involved in the process of creating it. Locations where it will make sense for community groups to propose and maintain uses, such as the successful community garden found in the Riverbend Park, are identified along the greenway path.

In conjunction with the creation of the Mystic River Greenway Committee, the City should ramp up its outreach to interested community members and organizations. The Greenway Committee will expand the City's ability to conduct this outreach. Such a committee can capitalize on the work of organizations such as those listed below:

- Mystic River Watershed Alliance
- Friends of the Mystic River
- Chamber of Commerce
- Cultural institutions, such as Springstep and Chevalier Theater

Tufts University

Many opportunities exist to strengthen the relationship between Tufts and the City of Medford. The relationship between the Mayor and the University President should be further cultivated. The City should:

- Create opportunities for community service projects. In 2005, Tufts students painted the Condon Shell as a community project. Similar service projects along the Greenway will draw Tufts students down to the water for recreation and academic activities.
- Reach out to campus groups - environmental, outdoor activities, service - to build awareness of Medford's assets among Tufts students.
- Work with Tufts and the MBTA to investigate a better route for the #96 bus connecting Tufts to Medford Square.

Meadow Glen Mall

While owned by DCR, the Mystic River Reservation is a major community asset adjacent to the Meadow Glen Mall. Relatively simple steps can be taken to improve the visibility of this park from the mall, including moving the park entrance sign, clearing brush, and opening up the views to the park.

The City should investigate partnering with the mall management, particularly on parking needs. A potential deal for a peak demand parking system at the Mall could make it much easier for visitors to access the parks.

Creating the connection from the Mall to the Mystic River Reservation and MacDonald Park will increase the Greenway's visibility and create an access point for new users to discover other parts of Medford.

Signage

Opportunity

Improving signage along the Mystic River Greenway in Medford is essential for ensuring an enjoyable outdoor experience for both local residents and visitors to the area. While it is true that the DCR owns much of the land along the riverfront in Medford, DCR's development of the Mystic River Master Plan this year provides a perfect opportunity for the City to influence the location and content of signage along the greenway in Medford. In addition, the City's ownership of Mystic Riverbend Park, as well as the land along Clippership Drive, present further opportunities to improve open space signage in Medford.

Directional signage such as the one above helps users navigate along the greenway and to other attractions nearby.

Purpose

Signage in Medford's riverfront open space should not only aid users in finding their way along the greenway and to surrounding destinations of interest, but should also create a consciousness of surrounding ecological features, spark interest in learning more about the area's history, and instill a sense of stewardship. Signage can take many forms, ranging from the more traditional text, pictures, and symbols, to public art and furniture that communicate valuable information.

Navigation

Maps and directional signs help visitors and residents determine which path to follow along the greenway or how to get to Medford Square, Tufts University, and other desired destinations. Signs and symbols can also inform people which section of the greenway they have arrived at, or of a particular area of interest.

Education

Interpretive signage, including text, images, symbols, and public art, can educate those who pass along the greenway about Medford's history of rum making and clipper ships, a blue heron's habitat, or an ecological restoration project. Interpretive displays can be integrated with local school curriculum in order to expand the classroom experience to the outdoors.

Stewardship

Signs can influence the way residents and visitors interact with the environment by reminding them not to feed birds, to throw their trash away, or to refrain from fishing near a combined sewer overflow area.

Signage such as the sticker on this garbage receptacle encourages stewardship of the park among users.

"Imagine, if you can, a city which did not communicate, which gave no clue as to where you were or what was inside, or who else was there – you have constructed a nightmare."

– Kevin Lynch, *Signs in the City*

Signage

Recommendations

The following are suggestions for developing an integrated signage program for the Mystic River Greenway:

Coordinate with DCR

DCR has significant experience in implementing signage systems in their parks. Coordinating with DCR will ensure that users receive a consistent message on both City and DCR-owned parcels.

The sign above ensures that Spanish-speaking users of this park understand park rules.

Consider all users

Creating an effective signage system necessitates identifying the likely users of the greenway, their interests, where they make navigational decisions, and where they stop to appreciate views. Categories of users to keep in mind include: walkers, bikers, joggers, rollerbladers, motorists (along roads adjacent to open space), those who are in wheelchairs or pushing baby carriages, people of all ages and ethnicities, and nighttime versus daytime users.

Develop a unique image

It is important for the greenway to have a unique and identifiable image associated with it, be it a logo or style applied to all signage. Any branding should be coordinated with DCR to ensure consistency.

Design with maintenance in mind

Signage should be located, designed, and constructed, keeping in mind the potential for vandalism, fading, flooding, and erosion. The City should also advocate for the use of locally available and environmentally sensitive materials.

Engage but do not overwhelm

Signage should be kept simple to avoid confusing and frustrating users of the greenway. Provide only useful information, and keep interpretive information clear and concise, referring interested readers to sources of more information (such as websites, brochures, or nearby museums).

Houston's wayfinding system incorporates public art such as these mosaic benches created by local artists to depict the history of early rice farms in the area.

Involve residents and local institutions

Involving residents and community groups in the design and construction of an open space signage system improves goodwill in the community, increases the likelihood that the greenway signage will be both useful and informative for a variety of users, and enables the City to leverage outside material and financial resources. Specialized groups, including the Mystic River Watershed Association and the Medford Historical Society can create an inventory of natural and historic highlights for use in interpretive signage. Other groups to consider include Friends of the Mystic River, Tufts students, schoolchildren, the Chamber of Commerce, teachers, and the West Medford Open Studios or other arts groups.

Ecology

Restoring the Mystic River's ecological health is critical to creating a low-maintenance greenway with a diverse mix of uses, landscapes, and habitats. A clean, safe, and accessible river will be a tremendous community asset that adds economic value to adjacent properties, and recreational, educational, and ecological value to the entire city.

Design for people, wildlife and natural processes
Engage a multi-disciplinarian team of designers, planners, engineers, natural historians, hydrologists, geologists, ecologists, and botanists throughout planning, design, and construction. Project managers should become familiar with the river's ecological condition to effectively collaborate with scientific professionals.

Reduce maintenance through design
Ecologically functional, naturalistic landscapes usually require less long-term maintenance and upkeep than heavily manicured parkland. DCR favors "self-sustaining" designs and may be willing to maintain non-DCR waterfront parcels in exchange for conservation easements.

Act locally and regionally
Actions throughout the watershed impact localized restoration efforts, so regional planning and coordination is critical. DCR, the Mystic River Watershed Association, and the Metropolitan Area Planning Council may be able to coordinate these efforts.

Widen and restore riverbank
Much of the river's edge is defined by rip rap – large stones preventing riverbank erosion. Rip rap inhibits wildlife habitat and vegetative buffer growth. The existing vegetation is often overgrown, (blocking views) and too thin to buffer pollutants or serve as habitat. Re-vegetating the river bank with 25-foot wide strips of non-invasive, low-maintenance species will:

- Prevent erosion and sedimentation by naturally stabilizing the riverbank
- Filter oil, sediments, excess nutrients, and other pollutants from storm water
- Help maintain sufficient water bound oxygen to breakdown nutrients, prevent bacterial and algae growth, and support aquatic life
- Moderate flooding
- Create habitat for riparian and terrestrial wildlife

Anchored fiber rolls add an extra level of erosion protection from powerboat wakes. Riverbank restorations already exist at Riverbend Park and west of the ball fields along Route 16.

Restore wetland habitat
Few wetlands remain of the Mystic's once vast tidal marsh system. Restoring wetlands in identified locations can prevent flooding, attract wildlife, increase landscape diversity along the river, and prevent toxic chemicals, oils, bacteria, nutrients, and sediment from contaminating the river near Combined Sewer Outflows (CSOs). Established wetlands require little maintenance, provide many educational opportunities, and can reconnect the region to its own natural history.

Riverbank restoration has already begun at points along the Mystic River waterfront. Proper planting can retain clear views to the river.

Reduce mown lawn
The existing waterfront contains expanses of mown lawn – a landscape that requires intensive maintenance, reduces biodiversity, and is generally ineffective at filtering storm water pollutants. Some portions of lawn may be converted to woodlands or meadows that can reduce mowing and maintenance costs, filter air and storm water pollution from adjacent roadways, and add to the place-defining landscape diversity of the greenway.

Meadows may be mowed at varying frequencies and planted with a range of species depending on the desired use, height, and character. For example, Springtime Wildflower Meadows promote wildflower growth with short groundcover appropriate for many uses such as picnicking and play, while Summer Meadows consist of taller grasses better suited for wildlife habitat. Distinct grass zones should be clearly marked for both maintenance and public education purposes.

Ecology

Meadows of different heights reduce the need to mow, diversify the landscape, and can accomodate varying uses.

Open views to the river
Establishing visual and physical connections with the water is critical to bringing the river back into the civic consciousness. Plantings within the 25-foot vegetated buffer should be designed to enable clear views to the river. In some locations, vegetation may be trimmed to provide water access. In other locations, vegetative screens may be desired to block traffic induced noise and air pollution.

Control invasive species
Phragmites, Japanese Knotweed, Oriental Bittersweet, and Norway Maple are invasive species commonly found along Mystic River. While some invasive species may be visually appealing and provide habitat for migratory wildlife, they typically reduce biodiversity by displacing native plants that provide food and cover to native mammals, birds, and insects. They may also interfere with achieving other goals; for example, Phragmites can grow up to 14 feet and impair views into the river. Invasive species removal and maintenance is an important part of the riverbank restoration process. DCR's Lakes and Ponds program offers numerous resources for invasive species control.

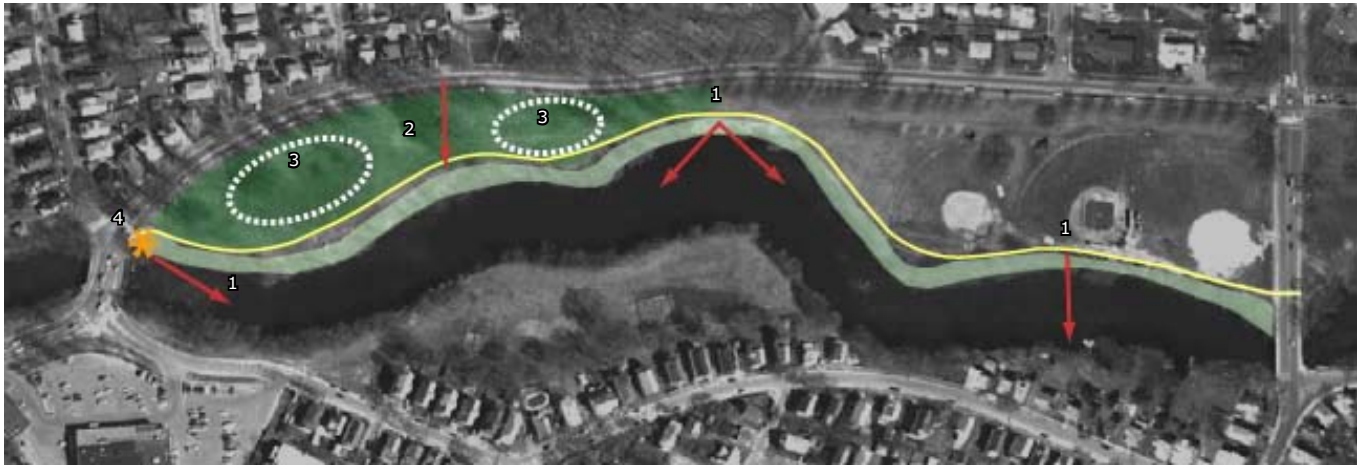
Utilize ecologically functional, educational and artistic interventions
Areas such as Medford Square and Clippership Drive are conducive to a more formal, engineered design aesthetic that accommodates a range of high-traffic civic activities. These high intensity zones present opportunities for artistic and educational elements which also serve as ecological interventions and help define a strong sense of place. Examples include stormwater filtration runnels and cascades, rainwater cisterns and collection basins, bio-inlets, and gutter filters.

Involve and educate
Increasing river stewardship requires education and community involvement. Displays illustrating the river's natural history and ecological processes are valuable, but community clean-up days, "Adopt-a-Site" programs, and the involvement of local schools, businesses, and organizations in the greenway's design, programming, and upkeep are also critical. The Medford Public Schools, in particular those adjacent to the greenway, should capitalize on their proximity by integrating locally-oriented historical and environmentally-based curricula and activities.

Bio-inlets filter surface run-off before it enters the storm sewer.

These cascades in Seattle offer artistic and educational value while filtering pollutants from stormwater.

Interventions



Restore Riverbank and Views: Clearing overgrown brush and establishing a vegetated buffer zone will help control erosion, filter stormwater pollutants, and retain views into the river. 1

Establish Meadow Habitat: A large expanse of mown lawn may be converted to a meadow that reduces maintenance costs, attracts wildlife, and diversifies the landscape character of the Greenway. 2

Select Neighborhood Uses: Community process determines appropriate uses, such as community gardens, playgrounds, and picnic areas to draw residents and activate the waterfront. 3

Incorporate Signage: It is important to signal the entrance to the Medford section of the Mystic River Greenway and use directional signage to provide guidance toward Medford Square. 4

Interventions

Establish Wetlands: Wetlands at this Combined Sewer Overflow (CSO) create wildlife habitat, enable natural stormwater filtration, moderate flooding, and serve as an educational tool. 5

Redesign Parking and Construct Canoe Launch: A more compact parking configuration establishes a closer relationship between the Greenway and Medford Square. The parking lot provides access to the Condon Shell, a new public canoe launch, and small community boathouse. 6

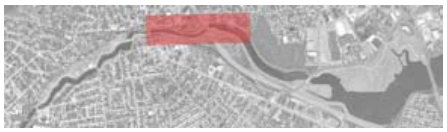
Strengthen Pedestrian Connection to Southern Neighborhoods: Establishing a formal gateway in this underutilized space will enhance the physical and psychological connections between Medford Square and the neighborhoods to its south. 7

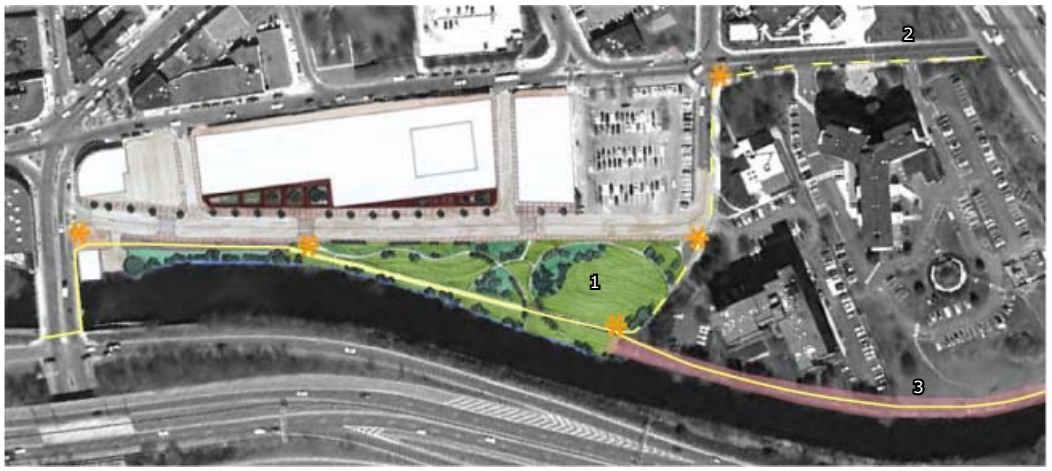
Utilize Alleys: Existing alleyways are an untapped asset that can draw the presence of the river into the Square. Interventions may include educational public art that filters stormwater. 8

Emphasize Historic Views: Medford Square's historic facade along the River is a unique regional asset that should be preserved and branded as a central element of Medford's identify. The parkland opposite the façade is appropriate for passive recreation that utilizes these views. 9

A boardwalk along this facade may not be economically or environmentally feasible. Better opportunities for civic and commercial interaction between Medford Square and the River exist along Clippership Drive.

Interventions





Highlight History: The revitalization of Clippership Drive presents an opportunity to integrate the Medford Historical Society into the life of the square. The City should consider providing space for MHS in the redevelopment of the Clippership Drive parcels. 1

Create Clippership Park: The realignment of Clippership Drive creates space for a 1.5-acre park, complete with walking and biking paths, areas for passive recreation, restored riverfront views, and activities such as markets and festivals.

The City should consider granting a conservation easement to DCR to permanently preserve the open space. The guarantee of a conservation easement to DCR may enable the City to leverage state funding. 1

Include Environmental Public Art: Public art can serve the dual purpose of filtering stormwater and providing an educational opportunity at the park as shown in the image to the right. 1

Interventions

Short Term Solution: Striping a bike lane along Riverside Avenue (left) will create a viable short term connection from Riverbend Park along Freedom Way and Riverside Avenue to Medford Square and the new Clippership Park. In both solutions, directional signage must be present at all key decision points on the path. 2

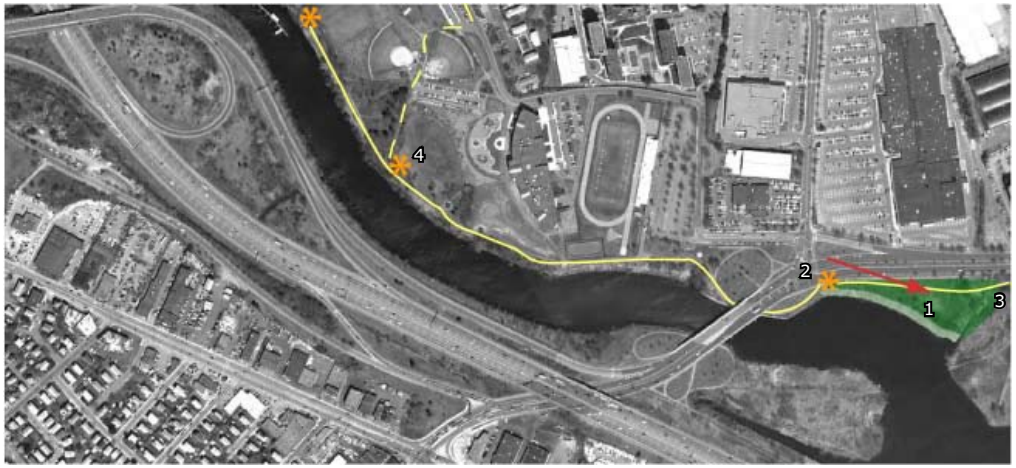
Long Term Solution: By using the existing DCR easement along the MHA and senior housing properties adjacent to Clippership Drive (top right), the path can easily be extended to the I-93 underpass. 3

A formal, lighted pathway under I-93 can be built, similar to the path under Route 16 (middle right). 4

The DCR property to the east of I-93 is currently overgrown. By cleaning up the area and clearing views, the space can function as a natural meadow while leaving space to continue the path. 5

At this point the path will connect to Ship Avenue along a striped bike lane and sidewalk. The path will continue along the DCR-owned Yacht Club site and connect to Riverbend Park (bottom right). 6

Interventions



Create Meadow (far left): To reduce maintenance, attract wildlife, and filter stormwater, the area across from Meadow Glen Mall should be formed into a natural meadow. 1

Move Signage (far left): Moving the Mystic River Reservation sign to this location will draw in visitors from the mall and drivers along the Mystic Valley Parkway. 2

Thin Brush (left): Thinning trees and brush between the meadow and the reservation will establish views and draw people into this park. 3

Improve Signage: Improved directional signage will help residents and visitors navigate the greenway and the rest of Medford. 4

Interventions

Establish Views: Open views to reveal sight lines to the river, Route 28 bridge, and the Boston skyline. 1

Restore Dock: The existing dock may be repaired. Re-installing benches, adding a railing and signage enhances the users' experience and draws visitors to boat and fish on the river. 2

Remove Invasive Species: Phragmites are pervasive along the riverbank in MacDonald Park. Removing them will permit better views to the river and promotes the growth of native plants. 3

Extend Across Route 28: A more responsive pedestrian signal and increased signage will help ease the Route 28 crossing to Station Landing and the Wellington MBTA station. 4

Next Steps & Funding

Next Steps

The City of Medford should:

- Reach out to DCR to voice their input into the Mystic River Master Plan. These conversations should be the beginning of an ongoing dialogue and partnership concerning the Mystic River Greenway through Medford.
- Bring together interested stakeholders to form the Mystic River Greenway Committee. Stakeholders should include citizens, municipal officials (from multiple agencies), institutions, businesses, and community groups.
- Once the Committee exists, use it to seek funding, facilitate community input into greenway development, and investigate the formalization of the Committee into a public-private non-profit.
- Seek funding and a contractor to create a signage plan for the City as a whole. Continue dialogue with DCR throughout signage development process to ensure compatibility in different areas of the City.
- For interventions under the City's purview, such as striping bike lanes and some of the meadow/wetlands restoration, allocate resources to complete as soon as possible.

Funding

Greenway projects require assembling a combination of financial resources from local, state, and federal funds, revenue-generating programs, and monetary and in-kind contributions from the private sector. Strong partnerships aid fundraising for greenway projects since other stakeholders can leverage funding that the City cannot access. The City should form a greenway committee that investigates potential funding sources for the design, construction, and maintenance of the greenway. The following is a sampling of potential funding sources the City and its partners can pursue.

Federal and State Government

Greenway-related projects can be financed in part by a number of state and federal agencies with grant programs including:

- US Department of Housing and Urban Development - Community Development Block Grant Program
- Environmental Protection Agency New England - Healthy Communities Grant Program
- Massachusetts Executive Office of Transportation - Transportation Enhancements Program
- Massachusetts Executive Office of Environmental Affairs - Land and Water Conservation Fund and Urban Self-Help Program
- Massachusetts Department of Conservation and Recreation - Urban and Community Forestry Challenge Grants, Recreational Trails Grants Program, Conservation Trust, Urban and Community Forestry Challenge Grants, and Greenways and Trails Demonstration Grants Program
- National Endowment for the Arts - Design Grants
- Massachusetts Historical Commission - Survey and Planning Grant Program

Local Government

Depending on the strength of resident and the City commitment to the greenway, funding could come from a bond referendum, capital improvement plan, or adoption of the Community Preservation Act, which allows communities in Massachusetts to levy a real estate tax surcharge up to 3% to fund open space. In addition, greenway projects can be funded in part through exaction or linkage agreements with developers. However, as the redevelopment section indicates, the real estate market in Medford may not be strong enough to enable such negotiations with developers at this time.

Foundations and Corporations

Many local, state, and national philanthropic organizations provide grant funding for greenway projects related to ecological restoration, historic preservation, and the health and well-being of residents. For example, the national Bikes Belong Coalition provides up to $10,000 for bike facility, capacity, and education projects.

Corporations also fund greenway projects through grant programs, cash contributions, volunteer labor, materials, and equipment. An inventory of corporations in Medford and their giving policies would identify ways to secure such resources.

Revenue Generating Programs and In-Kind Donations

Many greenway projects receive funds from naming programs or 'buy-a-foot' programs in which interested parties donate the cost of construction per linear foot or an amenity such as a bench or picnic table. Other revenue generating activities include farmer's market or other special event fees or concession fees from concerts or ball games.

Small ecological restoration, public art, and on-going maintenance projects can benefit from volunteer labor and/or donated materials from Tufts students, youth groups, neighbors, local businesses, or the Student Conservation Association (SCA) Massachusetts Parks AmeriCorps Program.

The future of the Mystic River Greenway

Transportation and Streetscape

Introduction

From its early days as a shipbuilding center, to the railroad spur that connected to Boston, to the modern age of interstate highways, Medford Square has been shaped by transportation. Transportation infrastructure surrounds Medford Square, and reflects not only great physical and psychological challenges to vitality, but also areas of tremendous opportunity.

Goals

- Connect the neighborhoods to the south and east to the Square.
- Enable better access to the Mystic River from the Square by opening up land near the riverbanks.
- Improve the pedestrian environment.
- Reorient the existing road network to more local uses.

Objectives

- Focus improvements on the only three major "gateways" into the area, creating continuous pedestrian and bike paths, and more direct connections to Clippership Drive.
- Open up land on both sides of the Mystic River.
- Widen sidewalks, narrow streets, and establish continuous paths.
- Calm but accommodate car traffic.
- Disperse the heavy through traffic throughout the Square.
- Encourage Medford Square as a destination, rather than a bypass.

Recommendations

- Realign Clippership Drive as a local street to support vibrant new development and riverfront access.
- Create uninterrupted pedestrian paths to the Square from east of I-93, Main Street, and along the river.
- Relocate the Route 16 on- and off-ramps closer to the highway, and construct a new park on the south bank of the Mystic River.
- Rehabilitate Main Street and Cradock Bridge to make this entrance to Medford Square more inviting.
- Adjust the circulation pattern of the streets to create direct connections to the riverfront and fewer one-way roads.
- Formalize and reconfigure the parking lot and road around City Hall.
- Adopt street design guidelines to establish a uniform feel in the Square.

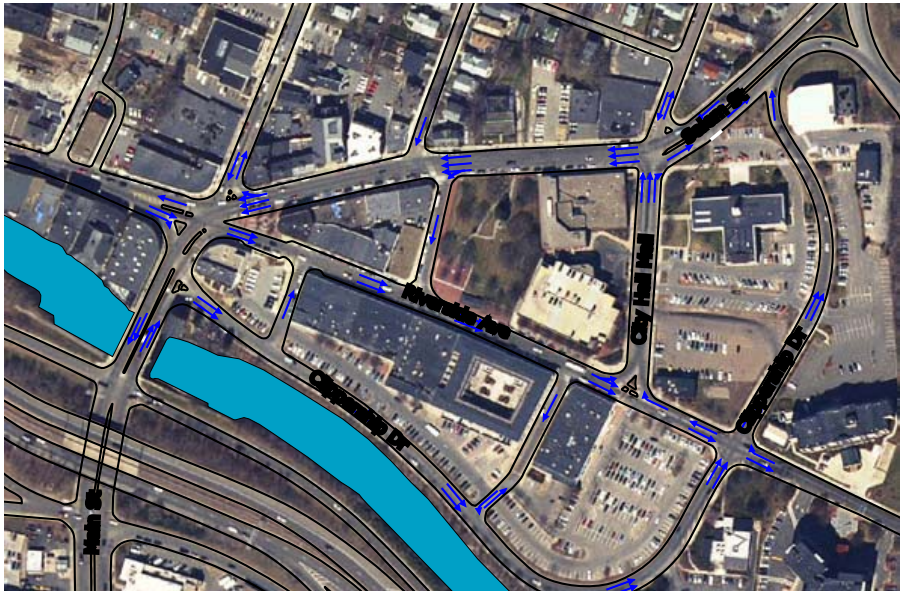
Existing Conditions

Vehicle Access to Medford Square

On the one hand, Medford Square enjoys unprecedented access by road, which provides excellent visibility, a large customer base to businesses, and economic opportunities to residents. The equivalent of over two lanes of interstate highway passes through the heart of Medford Square at rush hour. On the other hand, the roadway infrastructure that provides this accessibility is a serious physical and psychological barrier to the future revitalization of Medford Square. The elevated highways of I-93 and Route 16 cut off the Square to the south and east, make pedestrian access difficult, and obstruct better use of the south bank of the Mystic River.

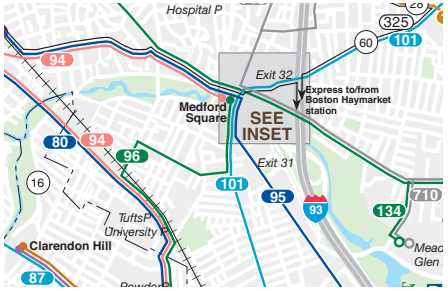
Furthermore, the particular configuration of these major highways means that many cars use Medford Square as a shortcut between I-93 and Route 16. This creates very large volumes of through traffic, which Medford Square accommodates but does not benefit from.

Medford must find ways to make its existing road network more flexible, and reorient it to local use with calmer traffic, rather than fast-moving through traffic.



Above: Major streets and current lane directionality in Medford Square. Many of these streets carry multi-lane, one-way traffic, and prioritize fast-moving through traffic over pedestrians and users of the square.

Right: Entering Medford Square from Main Street. Clippership Drive is clearly denoted as a bypass road to access I-93.



MBTA bus routes that cross Medford Square.

Transit Access to Medford Square

Although Medford Square lacks a permanent rail connection, it enjoys good access by bus routes connecting the Square to nearby neighborhoods and the greater Boston area. These include local routes to Davis Square, Sullivan Square, and Red and Orange line MBTA rail stations, as well as a few express routes to downtown Boston via I-93. Because of these favorable conditions, this report does not make any major recommendations for improving public transit access to Medford Square. However, Medford should anticipate the demand that future development in the Square may have on transit systems, and the opportunities and challenges that a proposed multi-modal transportation hub may present.

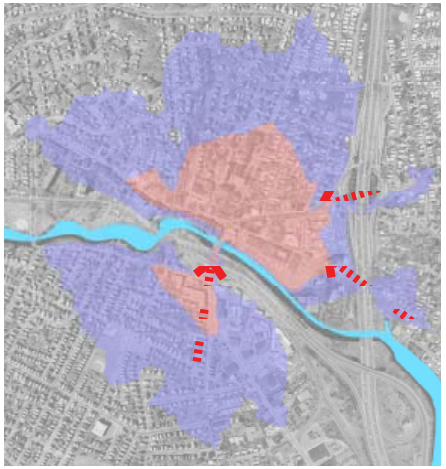
Pedestrian Access to Medford Square

Medford Square suffers from a lack of safe, attractive pedestrian connections to its surrounding neighborhoods. While neighborhoods to the north and west blend easily with the Square, Route 16, the Mystic River, and I-93 present significant barriers to neighborhoods south and east of the square.

Because access to Medford Square from these sides is limited to only three points of entry, this report focuses on those "gateways" in detail. Indeed, the only ways to cross Routes 16 and 93 into the Square are via Main Street, Riverside Avenue, or Salem Street and the I-93 rotary. The map at right shows the locations reachable by a 5- and 10-minute walk from the heart of Medford Square, highlighting the importance of these gateways.

The majority of people entering Medford Square pass through one of the gateways, and the experience strongly influences their perception of the place. These entry points signal a boundary between the urban, town-center feel of the Square and the surrounding areas.

In their current state, however, these gateways feel unsafe, neglected, and disconnected from Medford Square. A lack of lighting, sidewalk space, pedestrian amenities, landscaping, and traffic calming make these spaces uninviting to pedestrians. However, each gateway also sits near underutilized open space and lovely views of the Square or the Mystic River, and has great potential to give travelers a sense of arriving at a destination.



Walking distances from Medford Square.

5 minutes 10 minutes

Red arrows indicate points of entry to the square.

Above: Route 16 underpass, when approaching Medford Square from the south.
Below left: Attempts at traffic calming on Clippership Drive, near senior housing.
Below right: I-93 rotary crossing, approaching Medford Square from the east.

Directionality

Crucial to making Medford Square a more desirable destination is to make it an easier place to get around. However, the surrounding regional transportation infrastructure poses physical challenges and contributes heavy traffic to the Square.

Vehicle access to Medford Square is currently quite good, with major roadways entering the square from all directions. Salem Street, Riverside Avenue, Main Street, and High Street bring regional traffic to the square, while I-93 and Route 16 connect the Square to the greater Boston region. Transit access by MBTA bus is also good.

The street network in Medford Square, particularly to the east of Main Street, is made up of entirely one-way roads. While this makes the act of driving easier, one-way multiple-lane roads widen the travel lanes, increase traffic speeds, and detract from the pedestrian environment. Furthermore, one-way roads limit path choice (the number of routes between two points) in the Square, making navigation confusing.

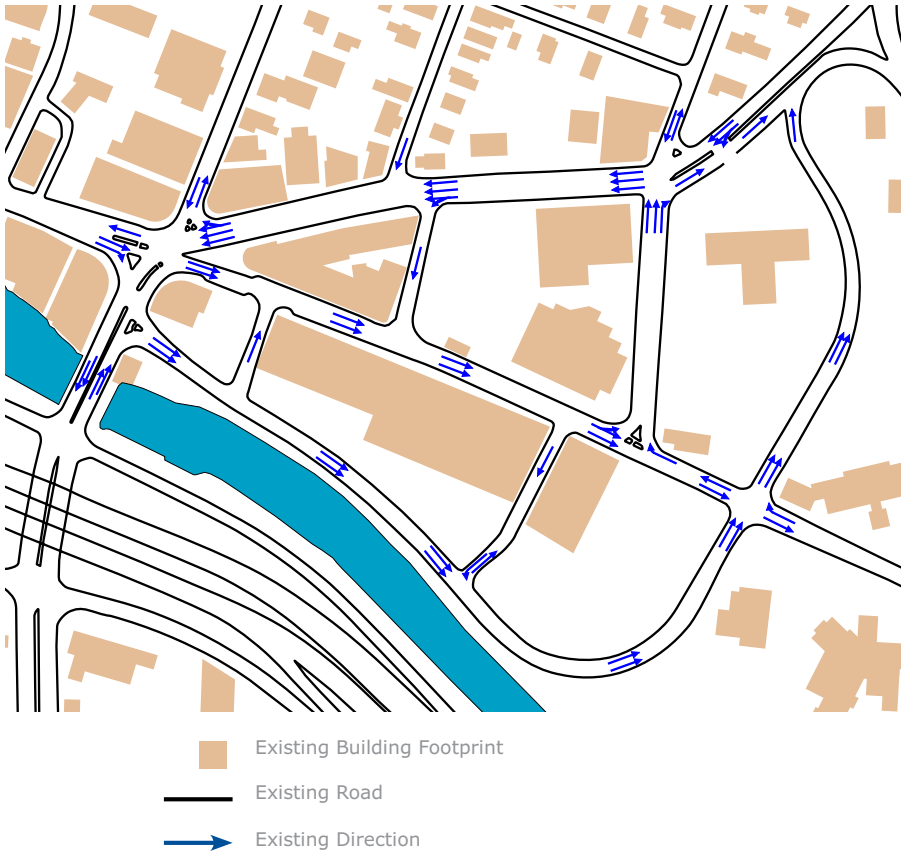
Because Clippership Drive is a direct path between Route 16 to Route 60 or I-93, it is mainly used by through traffic, rather than people using the Square or riverfront.

Objectives

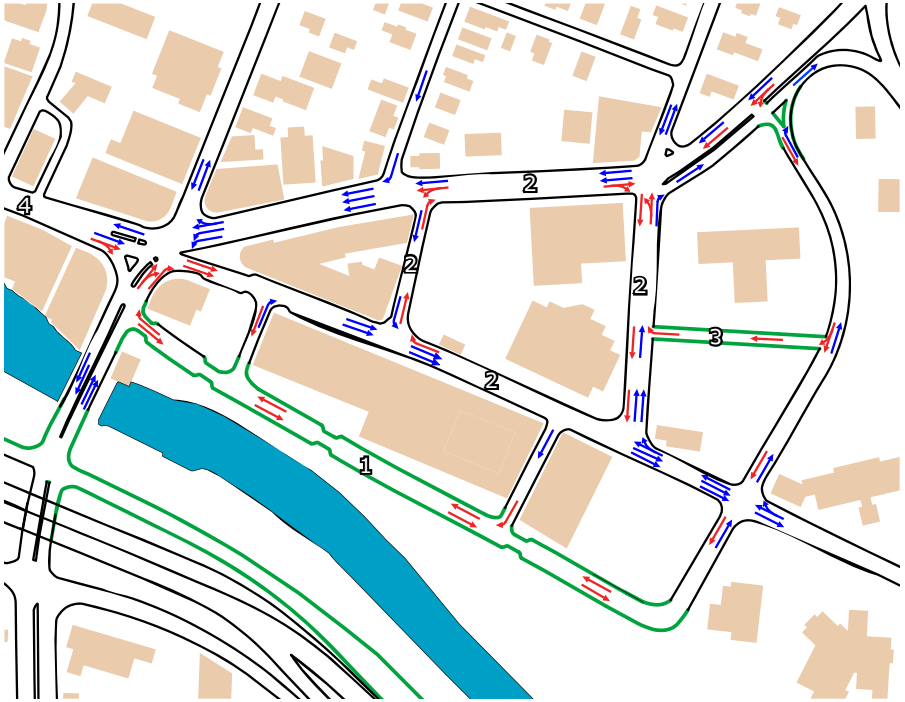
The purpose of altering the directions of traffic on the streets in Medford Square is to increase access to the proposed new development and waterfront to the south and east, reorient the road network to local uses, and to disperse the heavy rush-hour through traffic across the Square.

Three policy decisions guide the new directionality of the street network:

1. Clippership Drive should be a two-way street, in keeping with its changed identity and role in the Square;
2. The roads around the proposed new development, including Clippership Drive, should be easy to reach via multiple paths; and
3. Streets should be two-way whenever possible.



Directionality



Existing Building Footprint
Existing Road
Existing Direction
Proposed New Road
Proposed New Direction

Two limiting factors are the particular characteristics of the five-way intersection at the heart of Medford Square, and the heavy traffic flows from south-to-north in the morning and north-to-south in the evening peaks. It would be very difficult for the traffic light to accommodate two-way flows on Riverside Avenue and Salem Street entering that central intersection, and any reduction in capacity on those peak flows could result in spillover traffic jams elsewhere.

Recommendations

- Make the entire length of the new Clippership Drive a two-way street, in keeping with its changed identity from a high-speed, pedestrian-unfriendly bypass road to a local street serving the new development and Clippership Park and integrated into the street grid. This will also allow for significant on-street parking to help mitigate the effects of removing some existing parking lots, and reassures an incoming developer that they are developing parcels on a well-trafficked local road, not an extended quasi-highway ramp. 1
- Permit two-way traffic on City Hall Mall, River Street, Salem Street, and Riverside Avenue to the east of River Street. 2
- Formalize a new road to the south of City Hall. This road will be a one-way travel lane in order to keep an appropriate width that retains existing parking and does not reduce the amount of developable land on the adjacent parcel. This street will serve as an alternative to a left-hand turn from Clippership Drive onto Salem Street. 3
- Allow two lanes of travel on High Street eastbound to continue through the five-way intersection and onto Riverside Avenue. This will reduce the severe congestion on High Street eastbound, which hurts businesses, especially in the evening rush hour. 4

Below: Excessive traffic on High Street eastbound during afternoon rush hour

South Gateway

The South Gateway encompasses the area around Main Street from Route 16 in the south to the intersection of River Street, Salem Street, High Street and Main Street in the north, and is comprised of three distinct parts:

- Route 16 Underpass
- Cradock Bridge
- Route 16 On- and Off-Ramps

This area serves as the main vehicle and pedestrian access point from the southern part of the City of Medford to Medford Square. The complex road and traffic conditions have created barriers for people trying to access the Square and have diminished the image and identity of this important gateway.

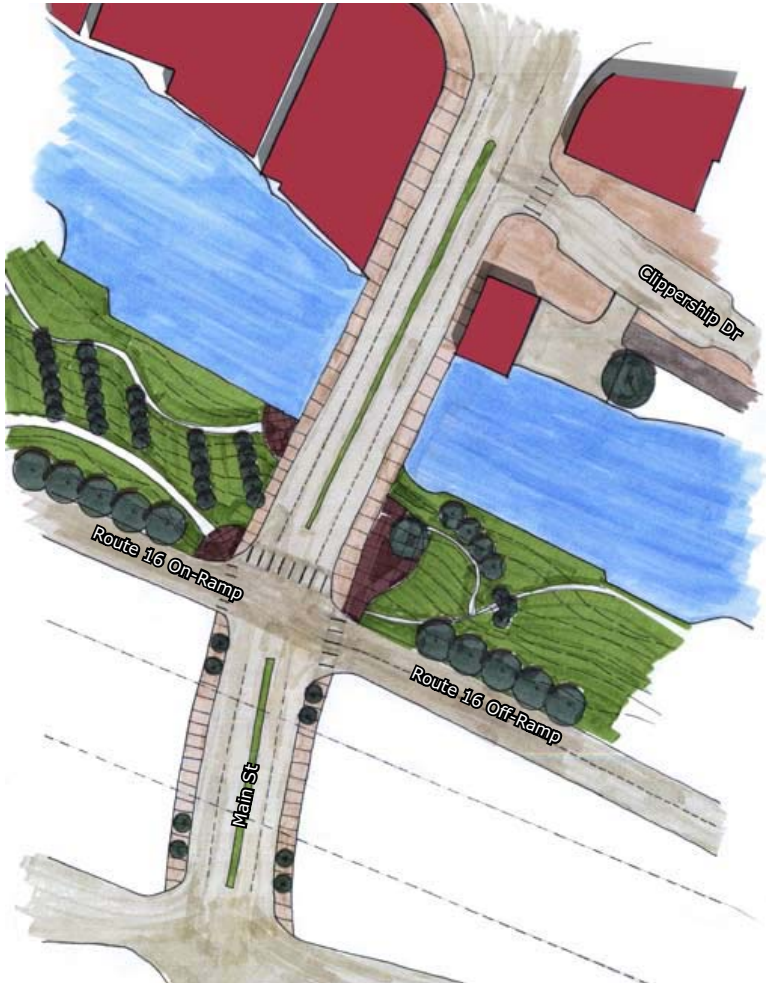
As such, this area has huge potential for establishing a more pedestrian friendly environment and for creating a sense of arrival and identity for historic Medford Square.

The South Gateway's proximity to the Mystic River waterfront is another important asset that could be enhanced. The area along the south bank of the Mystic River offers great possibilities for the development of new open and recreational space as well as for improving access and views to the Mystic River.

Above top: South Gateway location, Route 16 to the south.

Above bottom: Photo looking south down Main Street.

Right: Plan drawing of proposed interventions at South Gateway.



South Gateway

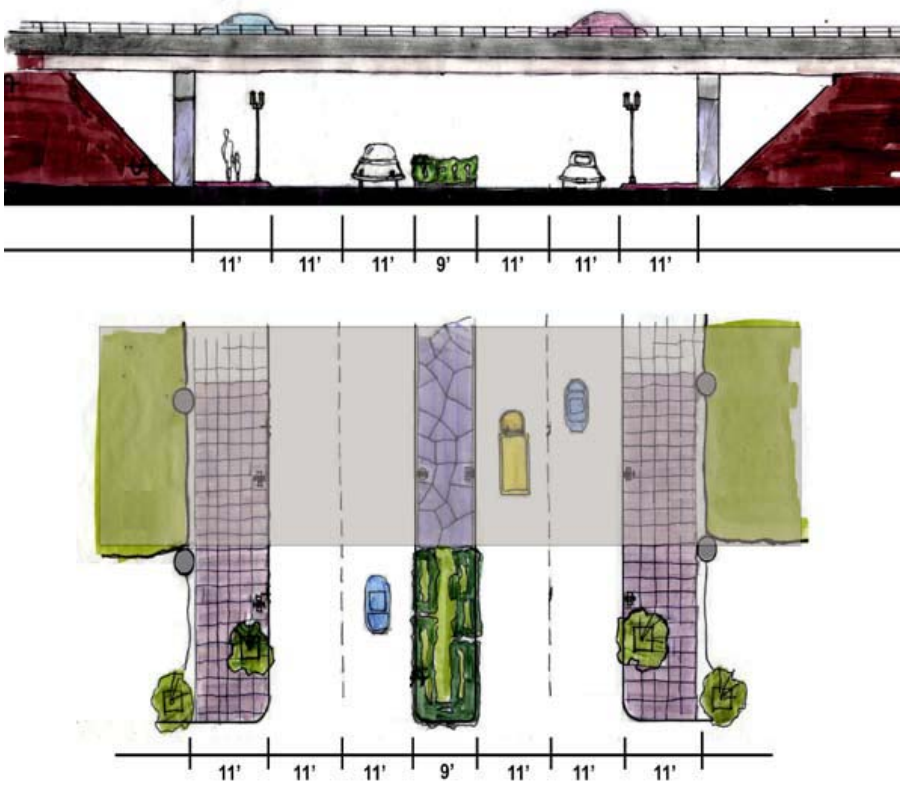
Route 16 Underpass

Currently, the Route 16 underpass is a significant physical and psychological barrier between the area south of the highway and Medford Square.

The area under Route 16 is very pedestrian-unfriendly and dangerous. Much of the space is designated for car use, and vehicles tend to move quickly and erratically as there are no pavement markings to designate lanes.

The space is dark even during daytime, giving the area an unsafe feeling, and there is a general lack of amenities such as landscaping and lighting.

Due to the lack of signage, it is difficult to tell when approaching from the south that historic Medford Square is only about 100 yards away.



Left: Photo of Route 16 at Main Street looking north towards Medford Square.
Above top: Section of Route 16 underpass looking north.
Above bottom: Plan for the Route 16 underpass area along Main Street.
Right: Rendering of Route 16 underpass with the implementation of recommendations.

Recommendations

A number of relatively minor design interventions can greatly enhance this area, extending the urban character of Medford Square south along Main Street.

- Widen sidewalks from six feet to 11 feet and pave with a material such as brick.
- Install street lamps and lighting under the overpass to brighten the area.
- Narrow the existing traffic lanes from 15 feet to 11 feet to narrow vehicle views and calm traffic.
- Demarcate lanes to hinder erratic driving.
- Widen the median to nine feet, and enhance landscaping.
- Install signage that highlights nearby Medford Square and the City of Medford.

South Gateway

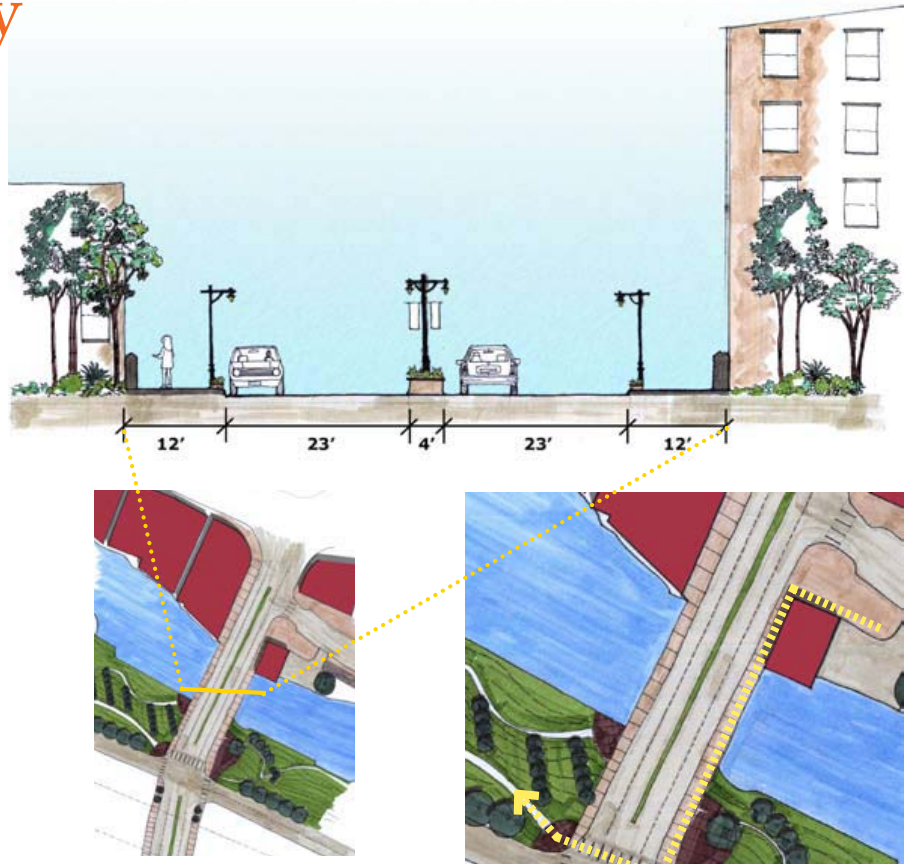
Cradock Bridge

Cradock Bridge is a primary vehicle and pedestrian entrance to Medford Square. It also provides wonderful views of the river and the historic riverfront façades of Medford Square. As such, this is a key area for strengthening the image of the City of Medford and connecting to nearby Medford Square.

Currently, however, the area is in poor condition and pedestrian unfriendly. Similar to the area under Route 16, traffic is erratic due to a lack of lane markings.

With a few design interventions that address pedestrian amenities, traffic flows, and street design, this area has the potential to be transformed into a beautiful gateway.

Above: Photo looking east at the intersection of Main Street and Route 16 off-ramp.



Above top: Section drawing of Cradock Bridge looking north.
Above bottom: Plan drawing of proposed interventions at the South Gateway.

Above: Plan drawing showing the route of the proposed regional bike path.

Objectives

- Improve local and regional connections: local pedestrian access and regional bike traffic.
- Enhance access and views to the Mystic River.
- Increase pedestrian safety by calming vehicle traffic and improving pedestrian amenities.
- Continue the urban feel of Medford Square south down Main Street.
- Strengthen the identity of the South Gateway and nearby Medford Square.

Recommendations

- Widen the sidewalk along the eastern portion of the bridge to 12 feet in order to accommodate both pedestrians and bicyclists.
- Install lighting and landscaping along the edge of the sidewalk to enhance the overall environment and provide a buffer between pedestrians and cars.
- Enhance the existing median with landscaping, lighting and signage to create a sense of arrival into Medford Square.
- Narrow vehicle lanes to 11 feet and demarcate lanes to calm traffic.
- Connect the bridge and open space by creating a transitional space that highlights the regional bike path and pedestrian path.

South Gateway

Route 16 On- and Off-Ramps

The location of the on- and off-ramps to Route 16 at Main Street has resulted in the creation of a sizable area of underutilized space between the ramps and the highway.

Currently, there are two narrow strips of park space between the on- and off-ramps to Route 16 and the water's edge. As such, this space is unsuitable for any active uses and is only occupied by few trees and shrubs.

Given Route 16's proximity to the Mystic River waterfront and Medford Square, this area presents a great opportunity for creating more open and recreational space for the City of Medford.

Photo looking east at the Route 16 off-ramp.

Aerial photo of the current configuration of Route 16 on and off ramps.

Objectives

- Open up land next to the Mystic River to provide space for both passive and active recreation.
- Enhance access and views to the Mystic River and historic building facades.

Recommendations

- Realign the on- and off-ramps closer to Route 16.
- Move the existing Main Street crosswalk closer to Cradock Bridge.
- Construct a pedestrian path along the riverbank.
- Accommodate the regional bike path.
- Create a new multipurpose park.

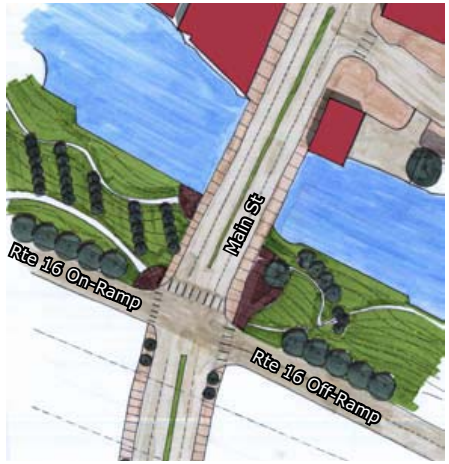
Rendering of the realigned Route 16 on- and off-ramps and proposed open space.

Open Space

The open space created by realignment of the on and off ramps would be designed to serve various uses.

The park east of Cradock Bridge would include a paved area where people could sit, relax and enjoy the riverfront. The park west of the bridge would serve more active uses by providing a pedestrian path and accommodating a regional bike path.

Larger trees alongside the on- and off-ramps will help buffer traffic noise. The placement of smaller trees closer to river will provide shade while ensuring that views of the river and historical buildings are not blocked.



Above top: Plan showing newly created open space.
Above bottom: View of the Mystic River from Cradock Bridge.

Northeast Gateway

The Northeast Gateway encompasses the area around the intersection of Salem Street and Clippership Drive, and includes the sidewalks and parking lots next to Springstep and City Hall.

This area serves as the main access point to and from I-93, as well as cars and pedestrians from Medford neighborhoods to the northeast. Traffic here is heavy at peak hours, and few pedestrians brave crossing the busy streets or rotary underpass.

Cars entering from the rotary enjoy a striking view of Springstep and City Hall as they enter Medford Square. However, the one-way road network forces cars to loop around the entire square if they wish to access the south, east, or riverfront areas. Some drivers use the available left turn into the north City Hall parking lot to cut across to areas in the south. This creates flow in a place where it is inappropriate and dangerous.

Pedestrians must also cross multiple roads (rotary on-ramps, Clippership Drive, City Hall parking lot connector) to reach City Hall and the rest of the square. There is no defined path for them to follow, discouraging active street life despite the existing open space and views to the Square.

Above top: Northeast Gateway location, near City Hall and I-93 rotary.

Above bottom: View from Springstep towards City Hall.

Right: Plan drawing of recommended changes to the Northeast Gateway, with continuous pedestrian path in yellow, and new one-way road in red.

Northeast Gateway

Objectives

- Capitalize on views of distinctive buildings like City Hall and Springstep, and create easy pedestrian access to them.
- Create direct access from the I-93 rotary down to the riverfront and new development to the southeast. Take advantage of Clippership Drive, which is now a two-way street that leads to the riverfront.
- Create a continuous pedestrian path across the rotary to the front of City Hall.
- Eliminate through traffic in City Hall parking lots.

Above: Paths to the riverfront and east parcels. Cutting across the parking lot is obsolete with a two-way Clippership Drive.

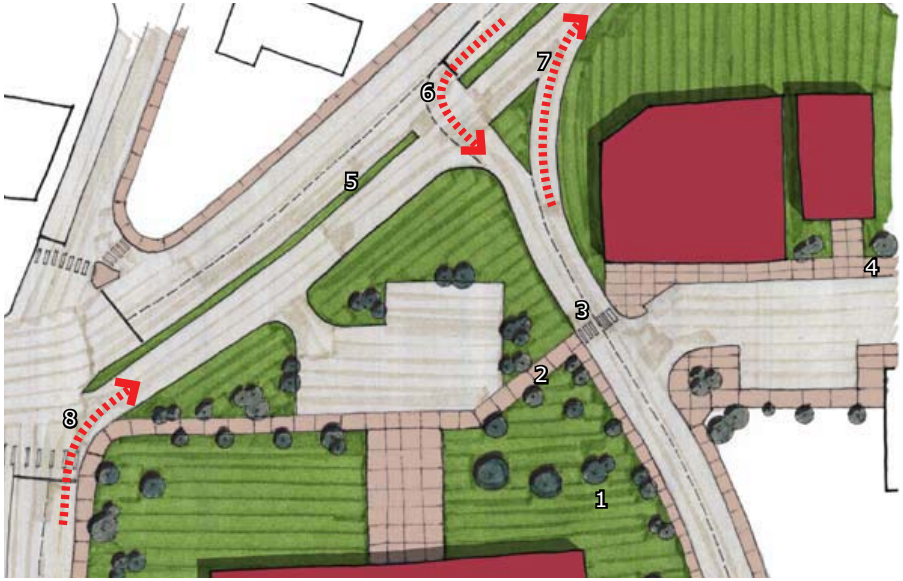
Recommendations

Redesign the pedestrian approach to Medford Square:

- Separate the north and south City Hall parking lots, and convert their internal connecting road into open space. 1
- Realign the sidewalk in front of City Hall, angling it directly towards Springstep. 2
- Continue this path with a crosswalk on Clippership Drive, leading directly to pavement in front of Springstep. 3
- Widen the sidewalk by Springstep and extend it to the rotary sidewalk crossing. 4
- Add signage and lighting to protect pedestrians crossing rotary traffic under I-93.

Redesign the intersection of Clippership Drive and Salem Street:

- Mark Salem Street west with two lanes, one clearly defined as left-turn-only.
- Move the gap in the Salem Street median back to halfway between City Hall Mall and the rotary, where Clippership meets Salem. 5
- Allow a left turn off Salem Street westbound onto Clippership southbound. 6
- Continue to allow a shallow right turn off Clippership northbound to the rotary. 7
- Do not allow right turns on red lights for cars turning from City Hall Mall onto Salem Street. This will create a gap in Salem Street eastbound traffic, allowing a regular flow of left turns here without adding a traffic signal light. 8
- Do not allow a left turn off Clippership Drive northbound onto Salem Street westbound. Drivers should use the rotary to access westbound Salem St. This is unchanged from current turning options.
- Create a new one-way, westbound road south of City Hall to make up for lack of east-west connectivity. Drivers and several bus routes already use this empty space in the parking lot as a way to cut across these roads (see opposite page).



Recommended changes to street design in Northeast Gateway area.

Clippership Drive

Clippership Drive reflects the best opportunity to revitalize Medford Square. Currently an auto-oriented bypass road, it could become a pedestrian-friendly, lively local street right along the Mystic River. By realigning the road, creating a new riverside park, and developing adjacent parcels, the Clippership Drive area has the highest potential to bring Medford Square back to the Mystic River.

Clippership Drive is currently a high-speed one-way bypass road, which connects the Main Street gateway with Salem Street and the I-93 rotary via two eastbound lanes.

At the north side of Clippership Drive sits existing retail with back-side entrances facing the road, and several parking lots south of City Hall and between the road and existing retail. This space is not well utilized and the walking environment is unfriendly.

For most of the length of Clippership Drive, guardrails and fences restrict crossing from north to south and towards the water's edge. Indeed, there are no crosswalks across Clippership Drive. Overgrown vegetation obscures views of the river. It is difficult for vehicles and pedestrians alike on this road to tell they are within 20 feet of the Mystic River.

Existing Conditions - Road Lanes

Existing Conditions - Sidewalk

Existing Conditions - Northbound Section

Objectives

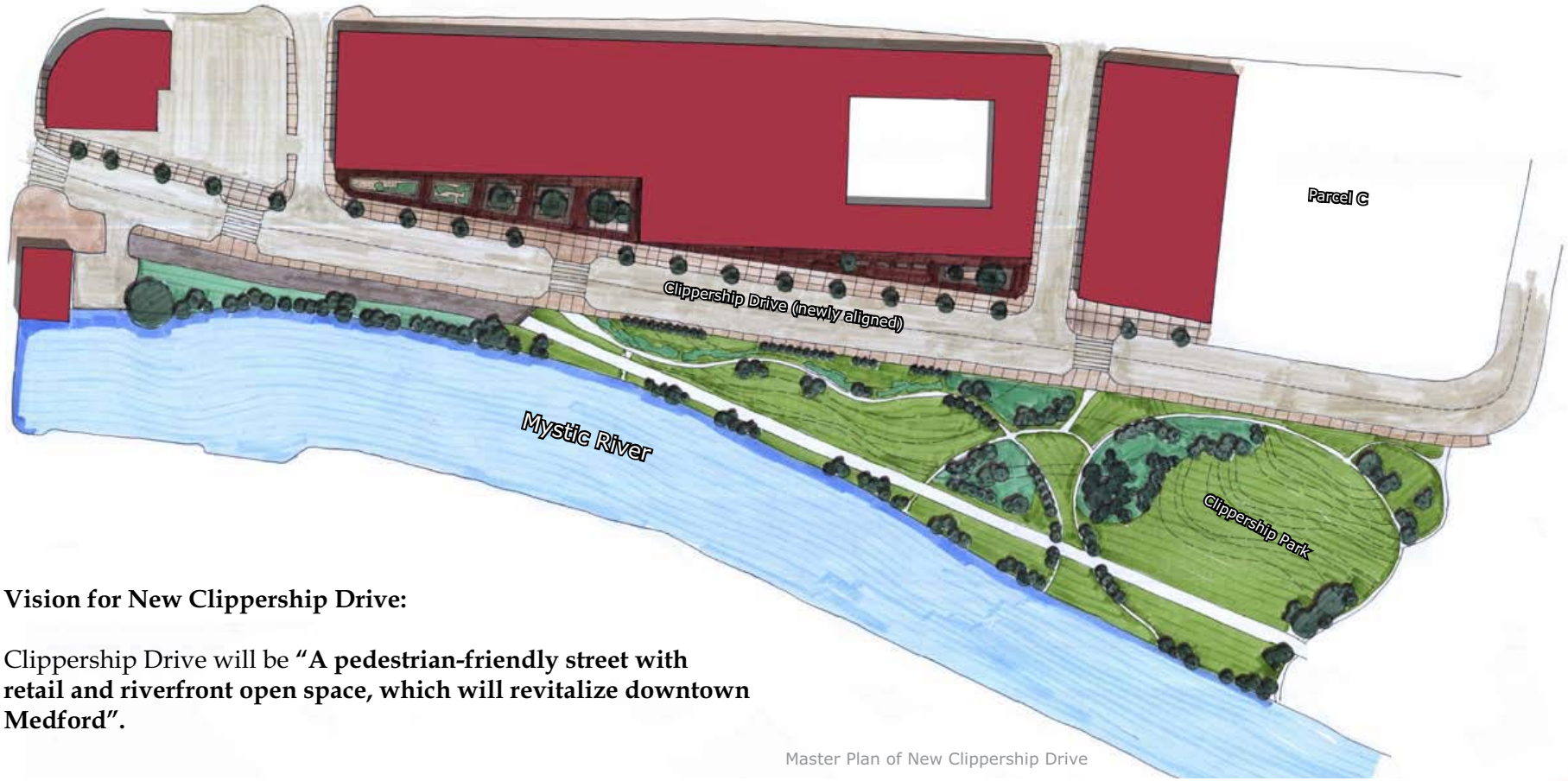
Clippership Drive is the only place within Medford Square that has high development potential with ideal proximity to the Mystic River. The area suffers from many existing problems, but it also has great potential for improvement and can help facilitate the revitalization of Medford Square.

- Change the perception of Clippership Drive from a bypass road to a local street that is as much an integral part of Medford Square.
- Create riverfront open space.
- Enable new development and street life oriented to the river.

Recommendations

- Realign Clippership Drive closer to the existing retail space. Encourage stores and activities to open out south towards this new street and the newly-created riverfront.
- Arrange for an easement or purchase on a privately-owned parcel to allow for a straight Clippership Drive to become part of the Square's street grid.
- Make Clippership Drive a two-way road, with one lane for each direction.
- Construct on-street parking on both sides of the road.
- Establish a very wide new sidewalk (between 15 and 25 feet) on the north side of the road. On the south side, a six-foot sidewalk is recommended.
- Build a new Clippership Park on the land made available by this realignment.

Clippership Drive



Vision for New Clippership Drive:

Clippership Drive will be **"A pedestrian-friendly street with retail and riverfront open space, which will revitalize downtown Medford".**

Master Plan of New Clippership Drive

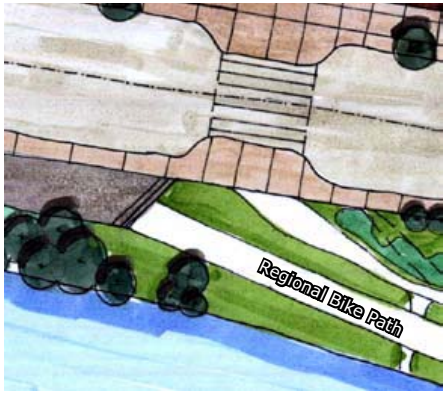
Clippership Drive

Streetscape Improvements

Plaza
There will be new plazas between the existing retail spaces and the sidewalk facing the river. Marked by different pavement type from the sidewalk, they will contain benches, trees and shrubs in raised beds, and street lamps. These plazas will provide a good place for outdoor cafes and views to the river. It will activate the existing retail which is currently not well utilized.

Clippership Plaza

Sidewalk and Bike Path
Continuous and safe sidewalks are critical to creating a friendly and sustainable pedestrian network in the city. The design of this sidewalk considers the existing retail and the new Clippership Park. The regional bike path will pass through Clippership Park and merge with the sidewalk at the mid-block crosswalk.

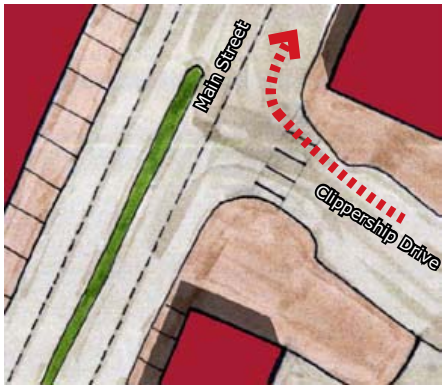


Sidewalk and Bicycle Path

Bulbout Crosswalk
There will be three new crosswalks across the new Clippership Drive combined with a bulbed-out curb line. Two will be located at street intersections, and one at a mid-block location. A bulbout (shown at right) eliminates the parking lanes near the crosswalk, making it easier for cars to see pedestrians and shortening the crosswalk distance. These crosswalks will provide better and safer linkages from the Square to the new Clippership Park and the Mystic River.

Bulbout Crosswalk

Intersection Reconfiguration
The intersection of Clippership Drive and Main Street will be reconfigured to better incorporate the regional bicycle path and allow a new right turn from Clippership Drive westbound onto Main Street northbound. The crosswalk will be integrated with the new bulbout curbline, and the existing pedestrian island will be eliminated.



Clippership Drive and Main Street Intersection

Clippership Drive

Clippership Park Design

Open Space
With the realignment of Clippership Drive, a new riverfront open space along the Mystic River will be created as a gathering place for the residents in Medford and surrounding communities. Terracing on this slope will provide a landscaped natural seating area in the park, with sloping views down from Clippership Drive to the river. This park amenity will attract residents and visitors alike and increase the value of existing and new development in Medford Square.

Clippership Park Terrace

Regional Bike Path
Within Clippership Park, a 12-foot multi-use path along the river will continue the regional bike path along the Mystic River Greenway from Wellington to Alewife. In addition, several five-foot pedestrian paths will connect people on the Clippership Drive sidewalk to different areas of the park.

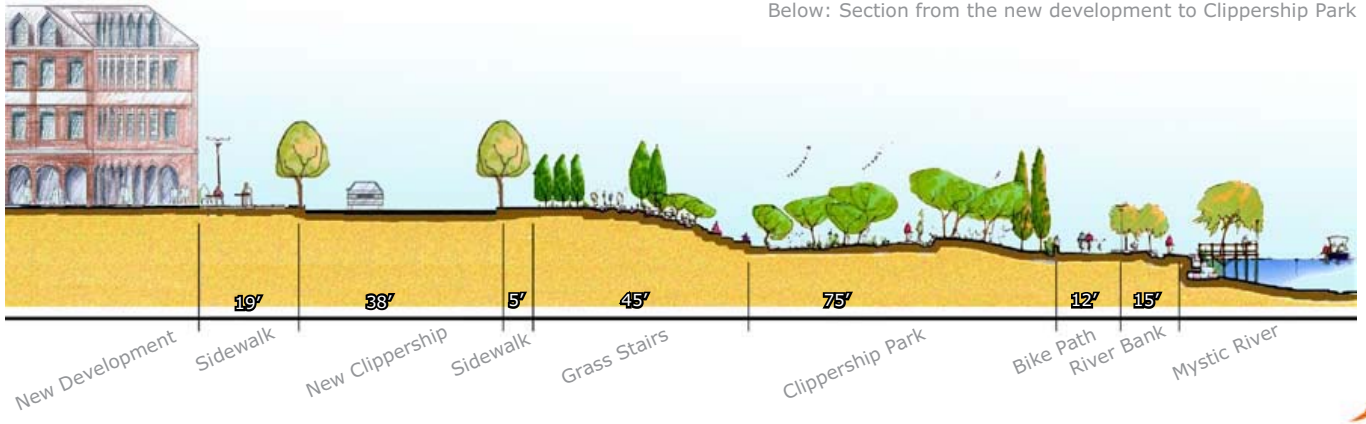
Various types of native plants can be considered at different locations of the park to ensure a harmonious landscaped setting.

Bike and Pedestrian Paths

View Corridor and Connection
Both visual and physical linkages are important to connect the Square with the nearby riverfront.

Several key view corridors are proposed to ensure that people in the Square are aware of their proximity to Mystic River riverfront and the new open space. People at the existing retail will be able to easily approach the open space via the new crosswalks across Clippership Drive, using the pedestrian path through Clippership Park to step down to the banks of the Mystic River.

Below: Section from the new development to Clippership Park



Street Design Guidelines

Objectives

Streetscape interventions in downtown Medford Square should strive to meet the following goals:

- Reflect the historic character of Medford Square.
- Ensure a safe and friendly walking environment.
- Design at a human scale.
- Address the needs of the disabled/ elderly.
- Provide convenient and enjoyable connections to the Mystic River.
- Ensure that design is coherent across the City of Medford.

Pedestrian Environment

Medford Square should be a safe, clean, accessible and interesting pedestrian environment.

The design and scale of pedestrian walkways should reflect adjacent land uses and traffic conditions. To facilitate easy circulation and access on foot, pedestrian crossings should be located at major intersections and mid-block crossing should be considered on longer blocks. Bulbouts and textured paving should be used at busy crossings as tools to promote pedestrian safety.

Sidewalk width should adequately accommodate pedestrian flows, street furniture, street trees and landscaping, and provide a buffer between pedestrians and cars.

Pavement surfaces should be visually attractive and interesting. High-quality, climate appropriate, and porous pavement surfaces, such as patterned blocks, brick paving or stone finish, should be used as accents.

Landscaping (Soft and Hard)

Tree and shrub species should be chosen with regard to their visual effect and seasonal color and should be appropriate for the climate of Medford.

The scale and type of landscaping should reflect the uses and activities of the area. Development near the Mystic River should consider the use of native non-invasive species.

Street Furniture Amenities

High quality street furniture, lighting and signage should be provided to complement the historical character of this area.

Amenities such as public art, wayfinding signs, and banners should be encouraged to create a unique and engaging environment.

Design Inspirations

Street Pavement and Crosswalk Design

Sidewalk Paving and Curb Cuts

Street Lighting

Budget

These recommended interventions will come at a price. At right is a preliminary, conservative estimate of costs.

First Steps
Some of these improvements consist of smaller, cheaper projects the City of Medford could advance quickly and claim relatively easy successes. For example, the improvements to the Main Street gateway, including Craddock Bridge and the Route 16 underpass, could cost well under a million dollars and bring dramatic, symbolic changes to the pedestrian environment in the Square. Restriping travel lanes are also small, discrete projects with good "bang for the buck."

Long-Term Goals
The two most ambitious and powerful elements of these transportation interventions are the construction of new roads and sidewalks in Clippership Drive, and the relocated Route 16 on- and off-ramps. The least costly items are pedestrian improvements, such as sidewalks, crosswalks, and lights.

Potential Funding Sources
It is important to keep this price tag in perspective. The City of Medford received only about $270,000 in Chapter 90 state funds in fiscal year 2007, and its municipal budget is very constrained. It is clear that other funding sources are needed. While a wide range of funding sources exist, below are the programs which reflect the best options for the City of Medford.

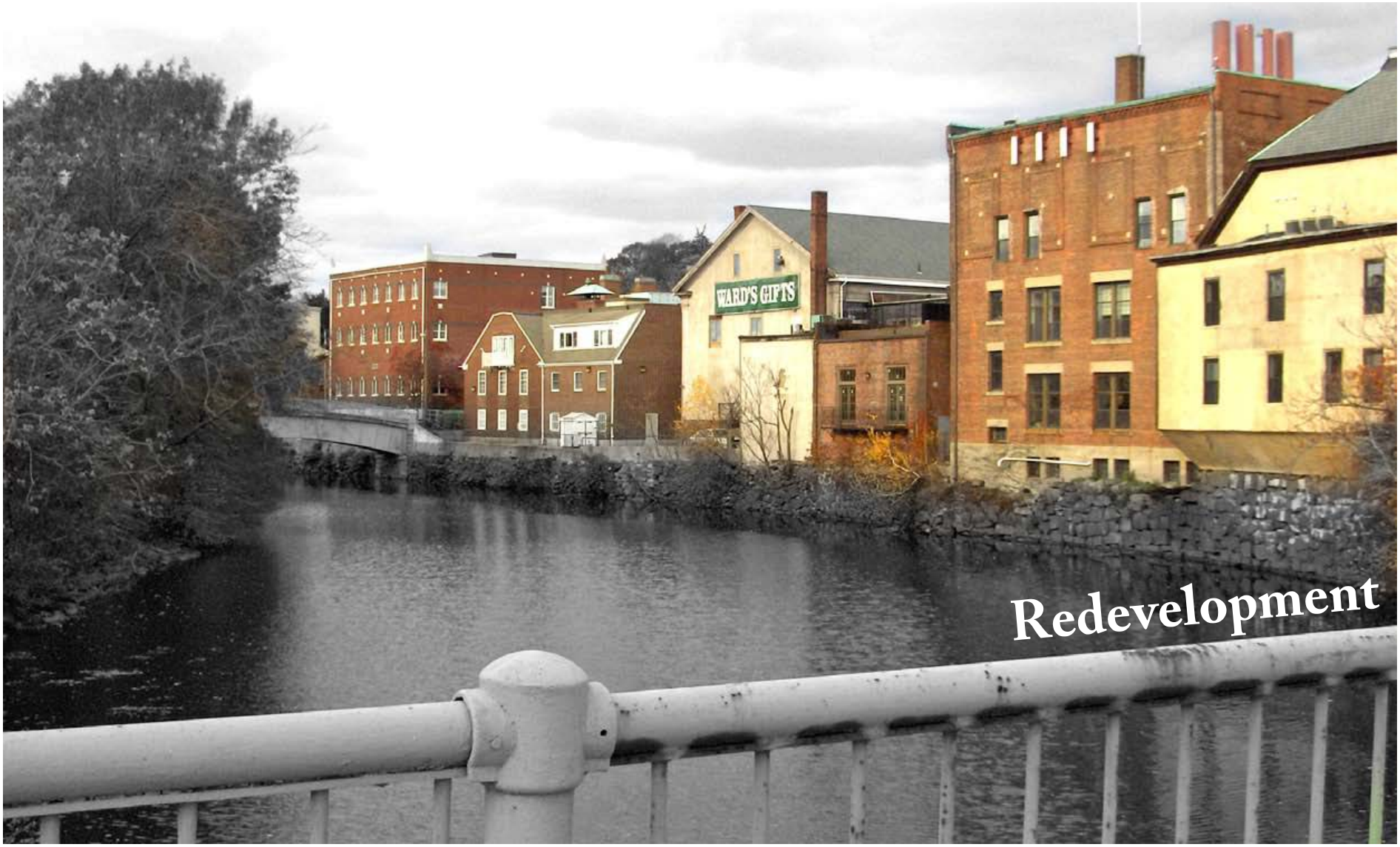
Massachusetts Public Works Economic Development Program, administered by the Executive Office of Transportation, is a source of state funds for which the Clippership Drive improvements would be a competitive candidate for sustainable development, downtown revitalization, and other criteria.

The U.S. federal funding legislation, SAFETEA-LU, sets aside a fixed percentage of its expenditures for Transportation Enhancements, for which the Medford Square gateways would be good candidates. In addition, Section 5309 of this bill includes a $1.7 million earmark for a park-and-ride facility for Medford Square under, which could be leveraged for future development in conjunction with a sponsoring agency such as the MBTA.

As Medford offers for development its three city-owned parcels, some construction elements could be assumed by private developers. However, a developers' ability to shoulder these costs will largely depend on the value of the development, and it is unlikely that developers can be expected to take on significant portions of these improvements in the near future.

Cost Item		Approximate Amount
1. Northeast Gateway		$260,000
1.1 Repave Salem Street	$190,000	
1.2 Sidewalks, crosswalks, and pedestrian lights	$40,000	
1.3 Improvements east of City Hall	$30,000	
2. South Gateway		$2,430,000
2.1 Cradock Bridge improvements	$410,000	
2.2 Route 16 underpass improvements	$150,000	
2.3 Relocate Route 16 On/Off Ramps	$1,870,000	
3. Clippership Drive (Main St. to Riverside Ave.)		$1,475,000
3.1 Full-depth construction of new road alignment	$720,000	
3.2 Sidewalks, crosswalks, and pedestrian lights	$190,000	
3.3 Pedestrian amenities (plazas, etc.)	$150,000	
3.4 Parcel or easement acquisition	$415,000	
4. Design and engineering		$310,000
5. Project administration		$210,000
6. Force account (police, detours, town staff, etc.)		$625,000
7. Overall project contingency (20% of total)		$1,100,000
8. Total Transportation Improvements		**$6,380,000**

Several notes of caution should be applied to this preliminary cost estimate: these figures are based on average construction costs only, and do not consider project phasing, or utility work. The estimate assumes only minimal levels of town support for construction detours, and road shutdowns, etc. are assumed. Construction on busy city streets is always a more complicated endeavor.



Redevelopment

Introduction

Founded in 1630 and established in 1892, the City of Medford boasts a rich historical heritage that includes shipbuilding and brick manufacturing. While the City has strived to preserve its historic character, modern day physical and economic development has negatively altered some of the original landscape. Requirements for parking have created large areas of surface lots that are aesthetically displeasing, and the Mystic River - once the hub of activity - is currently inaccessible and out of view from most of the Square.

The City currently owns three parcels on the eastern edge of the Square. The development of these parcels will create new opportunities to retain the original character while enhancing the retail and economic climate. The realignment of Clippership Drive will also allow a direct link between physical development and open space - restoring the riverfront to its original vibrancy and central activity.

Previous plans have addressed redevelopment in a broad context, but this report will provide the City with concrete implementation strategies that can ensure Medford achieves the type of development it desires.

Goal

- Foster development within Medford Square that honors and respects the historic past, while forging opportunities for a viable and progressive future.

Objectives

- Formulate a regulatory framework that establishes preferred guidelines for future development.
- Assess the viability of redevelopment on city-owned parcels and highlight the trade-offs involved in achieving the type of development the Medford community wants.
- Devise a program that ensures sustained economic development by strengthening existing retail and attracting new investment to the future retail market.

Recommendations

- Create a **Zoning Overlay District** that will serve as a regulatory framework that establishes rules for form and function, and guidelines for future development.
- Reference the **Model RFP** as a guide for attracting developers to the City owned parcels.
- Utilize **Development Scenarios** to assess the viability of development and the amount of revenue and public benefit the City can expect.
- Implement Medford **"Main Streets"** program to strengthen existing businesses and attract new investment resulting from development.

Zoning Overlay

Introduction

The creation of a zoning overlay within Medford Square will unify the east and west sides of the district by creating a consistent set of requirements for form and function. Simultaneously, it will allow for appropriate diversity by varying requirements for building heights, setbacks, and uses based on their unique location within the Square.

The flexibility of the zoning overlay allows for change, while preserving the existing character of the Square as it grows. A zoning overlay is a simple and efficient tool that can be added over existing zoning to create additional requirements that better clarify regulations, physical form, and ensure appropriate use or function.

These updated regulations within the Overlay District will encourage more active streetfronts, while enhancing the physical environment and protecting the unique historical character of Medford Square.

Existing Zoning

The majority of parcels within the Medford Square district fall under the C-1 zoning category. A zoning overlay would address the issues that currently exist under this zoning category:

Dimensional Standards: 15 foot minimum setbacks pull buildings away from the street, while 65 foot maximum height allows for building heights that are excessively tall or inappropriate for certain areas of the Square

Allowed Uses: Although the C-1 zoning district allows an admirable variety of uses, these uses are general rather than specific enough to promote the most active uses along the first floor of buildings or along the Square's major streets.

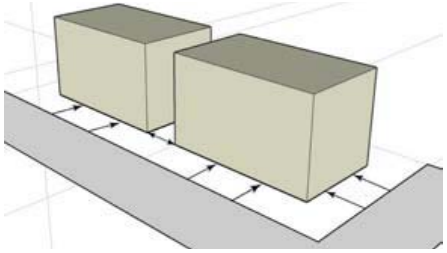
Unit size: Large minimum unit sizes, particularly for units on the first and second floors of multi-family buildings, prevent the type of residential real estate product demanded by the market that would seek to locate to Medford Square.

Parking: The current minimum residential parking requirement creates an excess of surface/garage parking that makes redevelopment less financially-feasible and encourages a downtown punctured by parking lots.

Excessive parking standards that put supply above demand can detract from the physical form and visual appeal of a downtown area.

A zoning overlay is added over existing zoning to create a set of requirements that seek to protect the character of Medford Square, while unifying the east and west sides into a cohesive, vibrant, mixed-use center.

Encouraging more active retail uses in first-floor locations will contribute to more active streetscapes.



Dimensional standards pull buildings away from the street and detract from the public realm.

Zoning Overlay

Model Zoning Overlay District

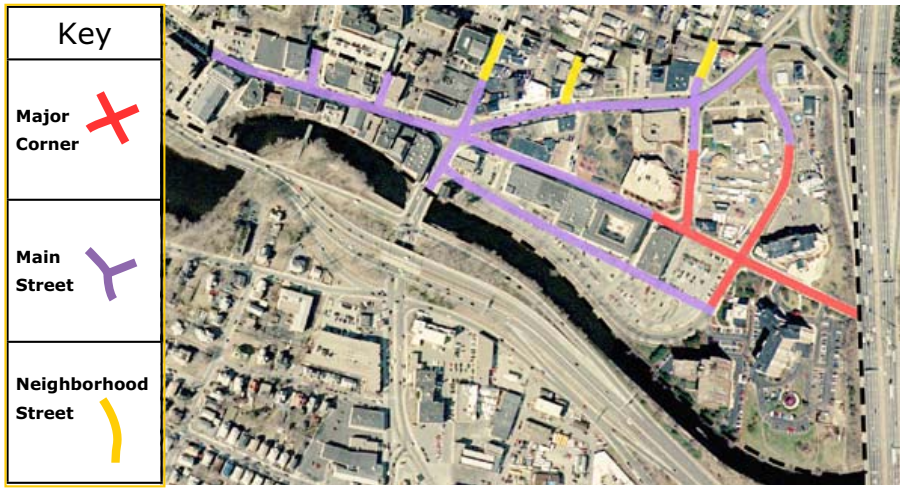
Below is a general framework for a model Zoning Overlay District for Medford Square. The framework couples the conventional zoning overlay with a "form-based" approach. The framework is unique in its ability to connect key development principles with different dimensional and use requirements for different areas of the Square, thus respecting existing building patterns while providing opportunities for change where appropriate. The new zoning is presented in a simplified, graphical format, allowing it to function as a flexible tool for both communicating and implementing the vision for Medford Square. It is intended to serve as a source of inspiration, organization, and a method of facilitation as Medford moves ahead with its revitalization and redevelopment efforts.

* ***Primary Retail*** *encourages the highest amount of walk- through traffic. Examples include coffee shop, eatery, flower shop, book store or stationary store.*

* ***Secondary Retail*** *encourages less walk-through traffic. Examples include health club, beauty salon, or laundry service.*

Site Type	Front Setback	Side Setback	Rear Setback	Height	Step down	Lot/unit width	Parking	Uses*	Precedent Picture
Major Corner	No setback allowed OR façade built to no less than 75% of streetline; 5ft max setback for 25% of frontage	None required	Where no street or alley access, 25ft minimum setback	35ft minimum; 65ft maximum (3-6 stories)	When within 100ft of Main St site, Neighborhood St site or other zoning district, maximum height is 45ft	No more than 150ft contiguous	1.4 spaces/unit; retail parking 1 space/350 SF	1st floor: Primary Retail required; Secondary Retail by special permit; Upper floors: Residential & Secondary Retail	
Main Street	No setback allowed OR façade built to no less than 75% of streetline; 5ft max setback for 25% of frontage	None required unless shared with Neighborhood Street site or other zoning district	Where no street or alley acess, 12ft minimum setback	35ft minimum; 45ft maximum (3-4 stories)	When within 40ft of Neighborhood Street or other zoning district, maximum height is 35 ft	15ft minimum, 30ft maximum; max of 7 units or 150 ft contiguous	1.4 spaces/unit; retail parking 1 space/350 SF	1st floor: Primary or Secondary Retail required; Secondary Retail by special permit; Upper floors: Residential or Secondary Retail	
Neighborhood Street	5ft mimimum; 15ft maximum	10ft mimimum; 15ft maximum	15ft maximum	35ft maximum	N/A	N/A	2.0 spaces/unit; retail parking 1 space/350 SF	1st floor: Residential or Secondary Retail by special permit; 1st floor live-work units allowed	

Zoning Overlay



Each color corresponds to a building type along the streets. The dimensional standards for color create a particular building type appropriate for that area of the Square.

Major Features of Zoning Overlay

Buildings

- Buildings are built to the street edge, continuing the existing development pattern and forming a consistent wall that defines the streetscape.
- Regular interruptions along building wall provide continued visual interest and improved pedestrian circulation.

Retail

- A diverse mix of retail uses creates a destination for residents and visitors, enlivens the street, and strengthens the overall economic base.
- Primary Retail that attracts a high amount of walk-through traffic is encouraged on the first-floor in key areas.
- Secondary Retail that attracts less walk-through traffic is encouraged on second floors and/or along minor streets.
- All retail uses remain as flexible as possible, encouraging rather than restricting or dictating uses so that retail space in Medford Square can adapt to market changes.

Historic Structures

- Historic structure and facades are a critical element to the identity of Medford Square.
- Structures and facades identified by the Historical Commission shall be subject to the provisions set forth in the Medford Zoning Ordinance, Chapter 48, Historical Preservation.
- Historic structures and facades may be redeveloped under the Zoning Overlay and shall not be subject to the dimensional standards for their particular site.

Parking

- The residential parking requirement is reduced from 2.0 spaces/unit to 1.4 spaces/unit. This reduction will provide residents and visitors with sufficient access to business and services without overwhelming or detracting from the coherence and character of Medford Square.

Recommended Guidelines for Building Appearance

The following provide a basic level of guidance to ensure new development adds appropriately to the public realm.

Materials

- Façade design should be complementary to a building's original materials and adjacent buildings.
- Brick and stone convey permanence and are encouraged above other types of materials.

Fenestration

- For commercial facades, a minimum of 60% of a storefront between 3 ft and 8 ft above grade should be transparent glass.
- Windows should be used to display products and services, and maximize visibility into storefronts.
- Window transparency should be retained whenever possible.

Articulation to Building Walls

- Limit number of exterior colors to provide a clear design intent.
- In addition to visual breaks in the façade required by zoning, any blank wall, if visible from a public way, should be softened by incorporating elements such as signage, murals, or public art.

Zoning Overlay

Recommended Guidelines for Parking Appearance

In addition to lowering the residential parking requirement, attention to qualitative aspects of parking is necessary to ensure that surface lots and garages do not detract from the coherence and character of the area. Like the Building Appearance Guidelines, these guidelines should be incorporated into any development process in Medford Square.

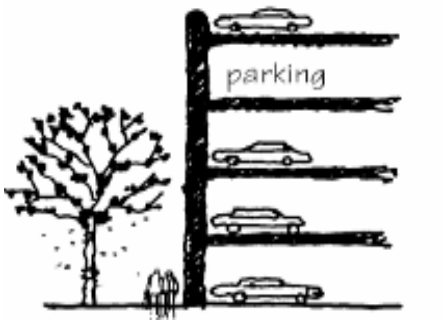
Surface Lots

- A minimum of 20% tree coverage is required to be equally distributed over the surface of the lot. No more than 50% of trees located along the perimeter of the parking area may count towards shading requirements.
- Encourage pervious surfaces/pavers to reduce stormwater runoff and improve drainage.
- Placement of surface lots at the rear or within the courtyard of buildings is preferred.
- A minimum standard of a 5 ft visual buffer such as a wall, fence, or vegetative screen is required for all surface lots that front the street or a public open space.

Parking Structures

- Retail is encouraged on the first floor of parking garages to foster an active street presence and a visually attractive street edge.
- Parking garages should complement their surroundings through use of similar building materials and landscaping along the building edge and at entrances.

Preferred: parking wrapped with retail



Less Appropriate: stand-alone parking

Well-designed buffers are an attractive technique for hiding suface lots from view.

This garage in Staunton, VA is attractively designed and uses materials similar to surrounding structures to blend in with the character of nearby façade.

The garage is safe and well-lit during night time hours of operation.

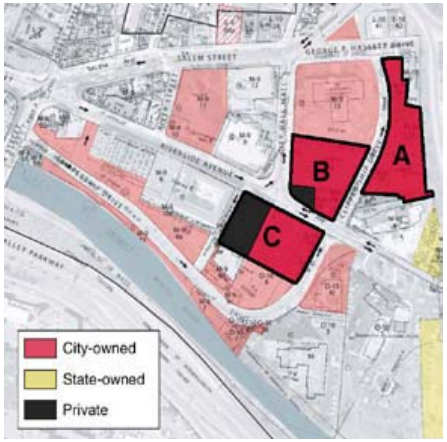
Development Scenarios

Introduction

The Medford Square Zoning Overlay district will ensure that development throughout Medford Square is in keeping with the unique character that currently exists. Development scenarios follow which utilize the principles outlined in the zoning overlay and apply them to the three city-owned parcels that have the potential for development.

City-Owned Sites

The three city-owned parcels located on the eastern edge of Medford Square together comprise a sizeable area of land.



Potential development sites

Site A is adjacent to I-93 and lies to the east of City Hall. It is composed of one city-owned parcel totalling 26,550 sf.

Site B lies to the south of City Hall and is comprised of one city-owned parcel and one private parcel, with a total of 65,000 sf.

Finally, Site C is adjacent to Clippership Drive and encompasses one city-owned parcel and one private parcel totalling 65,000 sf. This lot area reflects the square footage that would be available assuming previous recommendations are implemented - namely the realignment of Clippership Drive and the construction of Clippership Park.

Scenario Objectives

The development scenarios aim to provide a measurement of the physical and financial feasibility of development, highlighting the constraints, opportunities, and trade-offs. Additionally, these scenarios provide guidance on what the City may expect in terms of building massing and program (i.e. the quantity of residential units, retail, and parking spaces within a development). The scenarios also provide the City with a clearer idea of the public benefits (such as Clippership Park) that it may expect from a private developer. Finally, the development scenarios will project the amount of land revenue that could be gained from each site.

Programmatic Massing

Contextualized Massing

Assumptions

As with the assumption that available square footage reflects the realigned Clippership Drive and the construction of Clippership Park, additional physical and fiscal assumptions were made in order to build the financial model.

For simplicity, all residential units were analyzed as condominiums, so as to avoid a complicated discounted cash flow rental analysis. While the condo market in the Greater Boston area is currently experiencing increasing vacancy rates, new development in the surrounding area suggest condos may likely be feasible for Medford Square by the time these units became available on the market; however, in order to be conservative market rate sales prices on the condos were only estimated at $360 per sf, for an average of $424,000 per condo.

The full set of assumptions can be seen on the set of financial proformas for each site on pages 46-48.

Parking

Even utilizing the parking reduction standard outlined in the zoning overlay district and replacing only the percentage of utilized parking spaces one-to-one, parking burdens remain the driver of development feasibility and played a large role in the assumptions of each site. This is due largely to the high development costs of parking construction, which averages $7,500 for a single space in a surface lot and $20,000 per space for a garage structure.

Parking replacement

Relevant Site	Label	Current #	% Being Dev't	AM Use	PM Use	Max Usage	Replacement
Site A Total	A	134	100%	26.1%	24.6%	26.1%	**35**
Site B Total	B	123	70%	78.9%	60.2%	78.9%	**68**
Site C Total							**121**
Site C	C1	73	50%	61.6%	75.3%	75.3%	27
Site C	C2	210	100%	44.3%	41.0%	44.3%	93
TOTAL		**283**					**223**

The site map at left shows the amount of parking currently available in the development area. The amount of replacement parking was calculated by taking the current number of parking spaces and multiplying by the percentage of the lot to be redeveloped. This amount was then multiplied by the maximum usage percentage of the greater of AM or PM use. This figure then determined the amount of replacement parking needed, rather than replacing all spaces one-to-one regardless of their utilization. Even so, parking requirements make the feasibility of development challenging.

While the realignment and development of the Clippership Drive area will remove some currently existing parking spaces within surface lots, it will also add roughly 100 new on-street parking spaces to accommodate new retail and residential development on Parcel C.

The chart at right shows that the amount of parking spaces removed can be equally replaced; however, phased development will be difficult because most replacement parking from Site B and Site C will be developed on Site A.

New on-street parking inventory

	Site A	Site B	Site C	Total
Needed				
Replacement	35	68	120	223
Retail	76	82	92	250
Residential	0	171	150	321
Total	**111**	**321**	**362**	**794**
Provided				
Clippership	0	0	100	100
Surface	29	45	20	94
Garage	324	132	144	600
Total	**353**	**177**	**264**	**794**

New on-street parking inventory

Site A

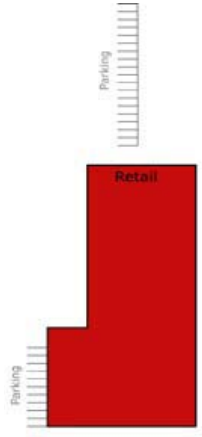
Given its adjacency to I-93, AmeriSuites, and the Medford Housing Authority buildings, Site A is well suited for a larger structure.

Retail

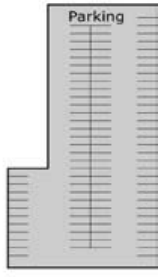
The site is oddly configured but can fit a single retail space of 26,550 net sf. Potential retailers who require this amount of floor space, parking, and demographic context include Whole Foods, Trader Joe's, Gap, Old Navy, and other similar anchor stores. These types of tenants would attract shoppers from the broader region with positive spillover effects on the existing and new retail in the rest of the Square.

Parking

Surface parking could accommodate 20 spaces with a full garage above the retail. The garage would have four levels of parking with 324 total spaces. Note that the site can easily accommodate additional parking floors if needed. Indeed, this garage could utilize the federal "intermodal transit facility" earmark of approximately $1,700,000 by adding additional parking above.



Ground Floor



Upper Floors

Harvard Square - Retail with parking above

Development Program						
Structure Type	*Units*	*BRs*	*NSF/unit*	*GSF/unit*	*GSF*	*Efficiency*
Residential						
Multi-family condo	-	-	1,176	1,384	-	85%
Retail						
Total SF				26,550	29,500	90%
Parking				Total Provided		
Surface				29		
Garage				324		
Full under				-		
Total				353		

Cost Assumptions		
Unit Type		**$ / SF**
Four-story Multi-family	$	150
Retail	$	120
Parking		**$ / Space**
Surface	$	7,500
Structured	$	20,000
Full Under	$	35,000

Revenue Assumptions				
Residential	**Sale Price**	**Size**		**$ / SF**
Unit type				
Multifamily	$ 423,360	1,176	$	360
Affordable	$ 200,000	1,176	$	170
Retail $/SF/Yr. NNN			$	25
Parking $/space/day		148	$	8

Proforma - Part 1			
INCOME			
Residential			
Market Rate	$	-	
Affordable	$	-	15%
Cost of Sales (@ 5%)	$	-	
Total	$	-	
Retail			
Stabilized Gross Income	$	663,750	
less Vacancy (@ 5%)	$	(33,188)	
Total	$	630,563	
Cap rate		9.00%	
Capitalized value	$	7,006,250	
Parking			
Stabilized Gross Income	$	432,160	
less Vacancy (@ 25%)	$	(108,040)	
Total	$	324,120	
Cap rate		11%	
Capitalized value	$	2,946,545	
Total	$	9,952,795	

Proforma - Part 2			
DEVELOPMENT COSTS			
Hard Costs			
Building	$	3,540,000	
Parking	$	6,697,500	
Landscaping	$	-	
Environmental Remed	$	200,000	
Contingency (@ 5%)	$	521,875	
Total	$	10,959,375	
Soft Costs (@ 15% HC)	$	1,643,906	
Developer Op Ex. Carry	$	-	$7500/u/yr for 1/2 year
Developer HOA Dues Carry	$	-	$300/u/m for 1/2 year
Total Dev't Cost	$	12,603,281	
NOI	$	(2,650,486)	
Developer Return (@ 15%)	$	1,890,492	
RESIDUAL LAND PRICE	$	(4,540,978)	

Site B

South of City Hall and fronting three main streets, Site B could accomodate ground floor retail, parking underground, and housing above.

Retail

The net retail/office space on the ground floor totals 28,800 sf which could serve approximately 4-8 retail tenants and 4-7 office/services tenants. The former would be restaurants, cafes, specialty shops, and other unique enlivening retail while the latter, facing City Hall, would service tenants such as lawyers, accountants, brokers, and other professional businesses in need of prime street frontage. Facing these tenants, in the rear of the site, would be 45 surface parking spaces.

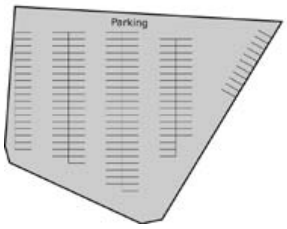
Parking

A fully ventilated underground parking garage for 132 cars will be located under the ground floor retail.

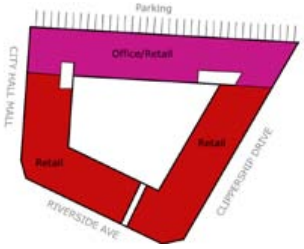
Chicago - Mixed-use infill development

Housing

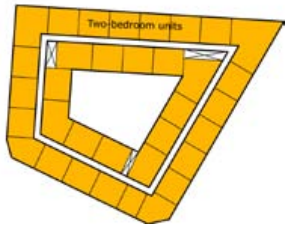
With a double loaded corridor configuration above retail, Site B allows for 122 residential units. Units are assumed to be 2-bed/2-bath, totaling approximately 1,100 sf each. In reality, there would likely be larger variety in unit size dependent upon a market analysis.



Underground Parking



Ground Floor Retail



Upper Floors

Development Program						
Structure Type	*Units*	*BRs*	*NSF/unit*	*GSF/unit*	*GSF*	*Efficiency*
Residential						
Multi-family condo	122	244	1,176	1,384	168,791	85%
Retail						
Total SF				28,800	32,000	90%
Parking				Total Provided		
Surface				45		
Garage				-		
Full under				132		
Total				177		

Cost Assumptions		
Unit Type		**$ / SF**
Four-story Multi-family	$	150
Retail	$	120
Parking		**$ / Space**
Surface	$	7,500
Structured	$	20,000
Full Under	$	35,000

Revenue Assumptions				
Residential	**Sale Price**	**Size**		**$ / SF**
Unit type				
Multifamily	$ 423,360	1,176	$	360
Affordable	$ 200,000	1,176	$	170
Retail $/SF/Yr. NNN			$	25

Proforma - Part 1		
INCOME		
Residential		
Market Rate	$ 43,902,432	
Affordable	$ 3,660,000	15%
Cost of Sales (@ 5%)	$ (2,378,122)	
Total	$ 45,184,310	
Retail		
Stabilized Gross Income	$ 720,000	
less Vacancy (@ 5%)	$ (36,000)	
Total	$ 684,000	
Cap rate	9.00%	
Capitalized value	$ 7,600,000	
Total	$ 52,784,310	

Proforma - Part 2		
DEVELOPMENT COSTS		
Hard Costs		
Building	$ 29,158,588	
Parking	$ 4,957,500	
Landscaping	$ 150,000	
Environmental Remed	$ 200,000	
Contingency (@ 5%)	$ 1,723,304	
Total	$ 36,189,393	
Soft Costs (@ 18% HC)	$ 6,514,091	
Developer Op Ex. Carry	$ 457,500	$7500/u/yr for 1/2 year
Developer HOA Dues Carry	$ 219,600	$300/u/m for 1/2 year
Total Dev't Cost	$ 43,380,583	
NOI	$ 9,403,727	
Developer Return (@ 15%)	$ 6,507,087	
RESIDUAL LAND PRICE	$ 2,896,640	

LAND COSTS	SF	%
Private Parcel Land SF	4,500	7%
City Owned Land SF	60,500	93%
Total	65,000	100%
Prices	$	$/SF
Pro Rata Price - Private	$ 200,537	$45
Pro Rata Price - City Owned	$ 2,696,103	$45
Total	$ 2,896,640	$45
RESIDUAL LAND PRICE	**$ 2,696,103**	

Site C

After the realignment of Clippership Drive and the acquisition of the adjacent private parcel, Site C totals 65,000 sf, ideal for a mix of retail, parking, and residential.

Retail

With 32,000 sf of leasable retail space, Site C can accomodate 9-15 retail tenants. Like Site B, these could be restaurants, cafes, specialty stores, and the like.

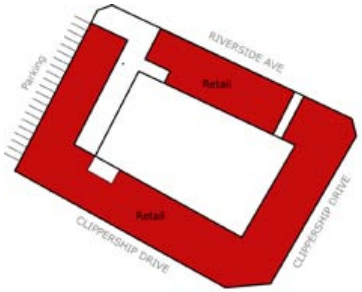
Parking

To provide enough parking on-site for residential units as well as for retail, there could be a small garage on the northwest corner of the site for 144 cars and surface parking for 20 cars, accessed through the alley.

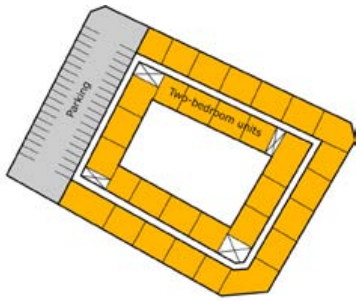
Residential

The building could support thirty-one residential units per floor for three floors, and fourteen units on the northeast corner as the building steps up to six stories. As such, the model assumes 107 total residential units.

Example: mixed-use infill development



Ground Floor



Upper Floors

Development Program						
Structure Type	*Units*	*BRs*	*NSF/unit*	*GSF/unit*	*GSF*	*Efficiency*
Residential						
Multi-family condo	107	214	1,176	1,384	148,038	85%
Retail						
Total SF				32,198	35,775	90%
Parking				Total Provided		
Surface				20		
Garage				144		
Full under				-		
Total				164		

Cost Assumptions		
Unit Type		**$ / SF**
Four-story Multi-family	$	150
Retail	$	120
Parking		**$ / Space**
Surface	$	7,500
Structured	$	20,000
Full Under	$	35,000

Revenue Assumptions				
Residential	**Sale Price**	**Size**		**$ / SF**
Unit type				
Multifamily	$ 423,360	1,176	$	360
Affordable	$ 200,000	1,176	$	170
Retail $/SF/Yr. NNN			$	25

Proforma - Part 1		
INCOME		
Residential		
Market Rate	$ 38,504,592	
Affordable	$ 3,210,000	15%
Cost of Sales (@ 5%)	$ (2,085,730)	
Total	$ 39,628,862	
Retail		
Stabilized Gross Income	$ 804,938	
less Vacancy (@ 5%)	$ (40,247)	
Total	$ 764,691	
Cap rate	9.00%	
Capitalized value	$ 8,496,563	
Total	$ 48,125,425	

Proforma - Part 2		
DEVELOPMENT COSTS		
Hard Costs		
Building	$ 26,498,647	
Parking	$ 3,030,000	
Landscaping	$ 150,000	
Environmental Remed	$ 200,000	
Contingency (@ 5%)	$ 1,493,932	
Total	$ 31,372,579	
Soft Costs (@ 18% HC)	$ 5,647,064	
Developer Op Ex. Carry	$ 401,250	$7500/u/yr for 1/2 year
Developer HOA Dues Carry	$ 192,600	$300/u/m for 1/2 year
Total Dev't Cost	$ 37,613,494	
NOI	$ 10,511,931	
Developer Return (@ 15%)	$ 5,642,024	
RESIDUAL LAND PRICE	$ 4,869,907	

LAND COSTS	SF	%
Private Parcel Land SF	20,000	31%
City Owned Land SF	45,000	69%
Total	65,000	100%
Prices	$	$/SF
Pro Rata Price - Private	$ 1,498,433	$75
Pro Rata Price - City Owned	$ 3,371,474	$75
Total	$ 4,869,907	$75
Clippership Park	$ 1,000,000	
RESIDUAL LAND PRICE	**$ 2,371,474**	

Scenario Results

Feasibility

The development scenarios show that high quality, context sensitive development that incorporates zoning overlay guidelines is possible in Medford Square. However, the ability to attract developers to such a sizeable project will largely depend on the lowering of parking requirements.

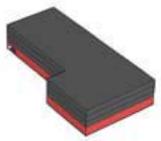
The interdependent nature of the financial viability of the three sites does not easily lend itself to phased development. If, however, the City decides to pursue a phased development approach, a single developer could be designated for all sites, allowing parking to be moved between sites during construction. In any case, if viewed as a whole, the three sites create more options for the City, allowing for high quality design and programmatic efficiencies.

Expectations

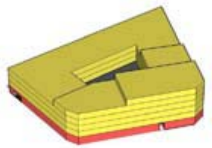
The City should not expect high land revenues from the development and sale of these parcels, unless market conditions improve, other funds are found, or taller buildings are permitted. Additional funds for development could potentially come from the state's 40R program for transit oriented development. The parking facility on Site A may be able to utilize a pre-existing federal allocation for Medford. The assumption of a 15 percent before-tax developer return on total assets could probably also be negotiated down. Indeed, such a return would produce a higher after-tax internal rate of return. Lastly, the City could decide to allow taller buildings and use the extra income to increase the residual land price or achieve other public benefits.

	Site A	Site B	Site C	Total
Building Height	4 stories	4-6 stories	4-6 stories	**-**
Residential units	-	122	107	**229**
Rentable retail	26,550	28,800	32,198	**87,548**
Parking spaces	353	177	164	**694**
TDC	$ 12,603,281	$ 43,380,583	$ 37,613,494	**$ 93,597,358**
NOI	$ (2,650,486)	$ 9,403,727	$ 10,511,931	**$ 17,265,172**
Land Residual	**$ (4,540,978)**	**$ 2,696,103**	**$ 2,371,474**	**$ 526,599**

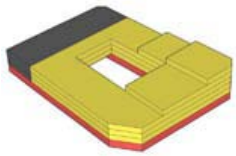
Summary table



Site A: Axonometric



Site B: Axonometric



Site C: Axonometric

	Site A	Site B	Site C	Total
Residential				
Tax Rate	9.11	9.11	9.11	9.11
Value	$ -	$ 51,649,920	$ 45,299,520	$ 96,949,440
Revenue (Levy)	$ -	$ 470,531	$ 412,679	$ 883,209
Commercial				
Tax Rate	19.31	19.31	19.31	19.31
Value	$ 7,006,250	$ 7,600,000	$ 8,496,563	$ 23,102,813
Revenue (Levy)	$ 135,291	$ 146,756	$ 164,069	$ 446,115
Total Prop. Tax Revenue	**$ 135,291**	**$ 617,287**	**$ 576,747**	**$ 1,329,325**

New property tax projections

Despite the high cost of parking, each new marginal residential unit would produce around $200,000 in additional revenue.

Although land revenues are limited, the City can expect other benefits such as increased property values, real estate tax revenue, new affordable housing, new residents to promote retail, additional square footage for retail development, and roughly 1.5 acres of riverfront open space. As shown in the property tax projections table at left, the City could expect as much as $1.3 million in new tax revenue from the three sites alone, not counting other positive externalities.

Model RFP

A model Request For Proposal (RFP) has been produced as a separate document attached to this report and can serve as a reference guide to help the City attract developers to the three city-owned parcels. Through the RFP the City is also positioned to require contributions to its Medford Main Streets Program, which will be discussed further in the upcoming section.

Medford Square "Main Streets"

Introduction

As shown in the previous development scenarios, new development within Medford Square will provide benefits to the City of Medford such as increased property values, real estate tax revenue, new affordable housing, open space, and additional square footage for retail development. It is important to remember, however, that while new development is crucial to the successful revitalization of Medford Square, sole reliance on new development and new retail tenants is potentially treacherous considering the current investment climate.

From the developer's point of view, Medford may be perceived as a weaker geographic market with higher risks entailed in development. This perception may act to further depress the limited revenue or land residual the City can expect to receive from the sale of the three city-owned parcels. A preemptive effort that seeks to create a more positive retail climate and investment image of Medford Square is likely to lower the level of risk perceived by developers, resulting in development proposals that add greater value to the Medford community.

Existing businesses are a critical part of the revitalization process. The "Main Streets" program is recommended for Medford Square as a tool that can be used to retain and improve local businesses in the Square while attracting outside investment. In this way, the Main Streets program adequately addresses both sides of the revitalization equation.

Above: Medford's historic character makes it ideal for a Main Streets District
Below: Guiford, CT Downtown

What is a Main Streets District?

The Main Streets model was developed by the National Trust for Historic Preservation in the 1970s, and has since been applied in over 1600 urban, small city, and small town districts across the country.

Main Streets is a model for improving the economic, social, and physical environments of traditional downtown business districts like Medford Square by leveraging local assets. Main Streets takes a collaborative approach to economic development and presses for incremental improvements coupled with a long-term investment vision to yield big gains in the future. A Medford Square Main Streets could help to link physical development and economic development in the Square.

There are currently almost 25 Main Streets districts in Northeastern Massachusetts, including Somerville, Beverly, Salem, Boston (19 separate districts) and Lawrence. While the size, goals, and experiences of each district differs widely, on average Main Streets organizations report $9.5 million in new investment, 49 building improvement projects, 32 net new businesses, and 129 net new jobs. A survey of successful programs also reports a significant decrease in average vacancy rates from 21% to 5%.

Organizational Structure

Main Streets districts typically operate with one or two professional staff members, thereby requiring only modest budgets of between $50,000 and $100,000 a year.

An executive director staffs committee meetings, provides professional support and advice, and carries out the day-to-day operations of the organization.

Volunteers serve as the lifeblood of the organization, while a non-remunerated board of directors has responsibility for strategic guidance. The board is often comprised of business leaders and the community at large. Liaisons from government or other institutions serve as allies. In Medford Square, the Chamber of Commerce and Salem Street Business Association can serve as potential allies, offering valuable capacity and complementary functions. These existing groups should be invited to play an integral part in structuring a Medford Square Main Streets organization.

Medford Square "Main Streets"

Implementation

Four core committees are charged with implementation, and their respective duties are as follows:

- **Design:** This committee designs standards to create a cohesive, attractive district and retain architectural features of historical significance.
- **Economic Restructuring:** This committee focuses on improvement of the retail mix to yield a more viable commercial district while retaining and building existing businesses.
- **Marketing and Promotion:** The focus of this committee is on enhancing the district's image as an attractive environment in which to do business.
- **Organization:** This committee ensures effective functioning, funding, and capacity building of the organization.

Additional committees can be formed to address particular issues of local concern or tailored to the specific needs of the district.

Why Main Streets in Medford

In addition to its clear status as a traditional, downtown district, the Square has successful small businesses, committed citizens, and a responsive government. Medford Square is a viable business district and community, but it is currently not functioning at its full potential. A Main Streets program could serve as the civic machinery that is needed to help balance and shape the changes that will occur via the new development envisioned for the municipally-owned parcels.

Church Street in Burlington, VT

Steps to Starting a Medford Square Main Streets Program

Step 1
Establish a "working group" to explore whether the Main Streets model is truly appropriate for the Square and whether the capacity and commitment needed to run such an organization is present.

Step 2
Better understand and gain confidence in the potential of the Main Streets approach by interacting with existing Main Streets groups in northeastern Massachusetts.

Step 3
A comprehensive stakeholder mapping must be performed to determine the projected level of participation, amount of support and commitment, human/ organizational capacity, and potential funding sources.

Step 4
Incorporate Medford Square Main Streets as a 501(c)(3) non-profit, tax-exempt corporation and establish by-laws.

Step 5
Recruit board members and committee members and hire an executive director.

Above top: South Boston, VA
Above bottom: Virginia Main Streets District

Medford Square "Main Streets"

Funding a Main Streets Program

While all of the start-up agenda requires multiple complex steps, budgeting and fundraising are often the most difficult.

Each Main Streets district has a different scope of services and is funded differently, reflecting local and regional differences. Most have multiple funding sources, including one or two primary revenue streams or donors and several minor or irregular sources. Possible funding sources for a Medford Square Main Streets District include:

- **City of Medford**: Many Main Streets districts receive modest funding from their host municipality during the initial years of operation ($40,000 - $100,000 per year). This contribution is often leveraged with other funds and volunteerism to create a greater impact than similar sums channeled directly through the city.
- **Community Development Block Grant (CDBG)**: A modest appropriation from the City's Community Development Block Grants might be feasible. These funds are typically used by Main Streets organizations to cover operating expenses.
- **Linkage:** As one of the few municipalities in Massachusetts with a linkage ordinance, Medford might be able to use linkage monies as a funding source for Main Streets.
- **Foundation Grants:** Several foundations such as The Boston Foundation, Hyams Foundation, Boston Globe Foundation, and Bank of America Foundation have funded local Main Streets groups in the past.
- **Corporate Buddy:** A "corporate buddy" can provide managerial expertise and a stable financial contribution on the order of $10,000 per year. Typically, the buddy is a larger corporation or institution with deep roots in the community. A number of local banks (Century in particular), Tufts University, and Harvard Vanguard might be candidates for this role.
- **Business Improvement District (BID):** In a BID, property owners within a defined district agree to accept a small yearly assessment to provide essential services to the district. BIDs can function as a major revenue source for an established Main Streets district.
- **Memberships:** Memberships for businesses can be offered and priced on a sliding scale. Memberships are often linked to a "rewards" or "frequent buyer" club.
- **Events:** Special events like raffles and festivals can help generate revenue and broad enthusiasm for the organization.

Sources and Appendices

Sources

Columbia Pike Special Revitalization District Form Based Code, Arlington County, VA, 2002

Hellmund, Paul Cawood and Daniel Somers Smith. Designing greenways : sustainable landscapes for nature and people. Washington: Island Press, 2006.

Medford Square Master Plan, Sasaki Associates, June 2005.

Medford Square Master Plan: Technical Appendix. Sasaki Associates, June 2005.

Zoning Ordinance (Chapter 94, Revised Ordinances), City of Medford, MA. Adopted 2001.

Zoning and Land Use Bylaws for NAS South Weymouth (as Approved by the Corporation, May 5, 2005), South Shore Tri-Town Development Corporation, South Weymouth, MA, 2005.

Appendices

Under separate cover.

Appendices include:

A. Regional Traffic Model Results
B. Medford Square Transportation Improvements Budget
C. Model RFP for development parcels