

S U S T A I N A B L E N O R T H A M P T O N

Comprehensive Plan (2021)



INCLUDES

Sustainable Northampton Comprehensive Plan (2008 amended to 2021)

Pedestrian and Bicycle Plan (2017)

Open Space, Recreation and Multi Use Plan (2018)

Climate Resilience & Regeneration Plan (2021)

Sustainable Northampton Comprehensive Plan (amended through 2021)

Adopted and amended by the Northampton Planning Board in accordance with Mass General Law C.41, Section 81D)

Sustainable Northampton Plan first adopted January 2008
Endorsed City Council, Transportation & Parking Commission, Youth Commission

Pedestrian & Bicycle Comprehensive Plan adopted January 2017
Endorsed City Council and Transportation & Parking Commission

Open Space, Recreation, and Multiuse Plan Adopted June 2018
Endorsed or Adoted Agriculture Commission, City Council, Conservation Commission, Historical Commission, Parks and Recreation Commissions, and Transportation and Parking Commission

Climate Resilience and Regeneration Plan, January 2021
Endorsed City Council, Energy & Sustainability Commission

Sustainable Northampton Plan amended November 18, 2021

- Merge all plans together
- Deleted overlap
- Deleted strategies and actions done
- Deleted metrix replaced by other measurements
- Prepare document for planned 202 Heritage update)
- Prepare document for future overall plan update

Acknowledgements

We acknowledge that Northampton is built upon and benefited from the extensive contributions, assistance, and traditional land stewardship of Indigenous and First Peoples, including the Nipmuc and Pocumtuc Nations, who have inhabited this landscape since time immemorial. Our continued prosperity is dependent upon acknowledging and learning from its rich intertwined history, and we acknowledge the role of the Stockbridge-Munsee Band of Mohican Indians in this work.

Thank you to the hundreds of community members who provided input at public workshops, meetings and hearings, stakeholder interviews, and paper and on-line platforms. These contributions shaped and were critical to the vision, framework, and strategies in this plan. We also want to acknowledge and thank:

Office of Planning and Sustainability project management and coordination

Wayne Feiden FAICP, director and project manager; Carolyn Misch AICP, assistant director, Keith Benoit, Teresa Brockriedge, Sarah LaValley AICP, James Thompson, Nathan Chung.

City of Northampton support

Mayor David J. Narkewicz; Building Dept (Louis Hasbrouke), Central Services (Chris Mason and David Pomerantz) Forbes Library (Lisa Downing); Health Department (Meridith O'Leary and Jenny Meyer); Lilly Library (Adam Novak); Mayor's Office (Alan Wolf), Police Department (Jody Kasper); Public Works (Donna LaScaleia, Maggie Chen, Doug McDonald and David Veleta); Parks and Recreation (Ann-Marie Moggio), Senior Services (Marie Westburg),

Arts Council, City Council, Conservation Commission, Disabilities Commission, Historical Commission, Housing Partnership, Planning Board, Recreation Commission, Transportaton and Parking Commission, TPC Bicycle and Pedestrian Subcommittee, Tree Commission, Youth Commission, Zoning Board of Appeals.

Community participants

Broad Brook Coalition Friends of Northampton Trails, Grow Food

Northampton, Smith Vocational Agricultural School, Northampton Neighbors, Way Finders, ServiceNet, Northampton Survival Center, Highland Valley Elder Services, Community Legal Aid, Valley Community Development, The Literacy Project, Pioneer Valley Habitat for Humanity, Northampton Housing Authority, Mass Fair Housing, Northampton Community Arts Trust, Center for Human Development, Northampton Youth Commission, Northampton High School Environmental Club, Greater Northampton Chamber of Commerce, UMass Clean Energy Extension, Healthy Hampshire/Collaborative for Educational Services, Pioneer Valley Planning Commission., Smith College; UMass School of Earth & Sustainability; Mothers Out Front and Climate Action Now; Mill River Greenway Initiative; Climate Action Now; Abundance Farm, Unitarian Society; Leeds Civic Association, Cooley Dickinson Hospital, National Grid, Western Massachusetts Network to End Homelessness, Pioneer Valley Transportation Authority; Coca-Cola, Bay State Village Association, Center for Ecological Technology, Center for the Arts..

Project Funding

City of Northampton, Massachusetts Municipal Vulnerability Program,

Massachusetts Planning Assistance Grant, Massachusetts Department of Public Health/Centers for Disease Control, Partners for Places.

Consultant Teams

Alta Planning and Design, Cecil Group, Linnean Solutions, Kim Lundgren Associates, Fuss & O'Neill, Watson Active, and, for InDesign layout, Jones Whitsett Architects



Table of Contents

PART 1: Sustainable Northampton

The Approach.....	1
The Vision	2
The Guiding Principles.....	3
Land Use Map.....	4
The Elements, Actions	6
Land Use and Development	7
Environment.....	10
Economic Development	12
Arts and Culture	16
Heritage Resources	17
Housing.....	18
Infrastructure and Capital Resources	20
Transportation.....	21
Municipal Governance and Financial Stability	24
Education	25
Social Equity	27
Potential Regulatory Actions	28

PART 2: Resilience and Regeneration Plan

Executive Summary and Introduction.....	30
Climate Change in Northampton	34
Pathways for Action.....	43
Action Plan: Resilience and Regeneration Strategies.....	56
A Plan Crafted by Northampton.....	83

Table of Contents

PART 3: Open Space, Recreation, and Multi-Use Trail Plan

Plan Summary	90
Introduction	91
Community Setting.....	92
Environmental Inventory and Analysis	104
Conservation and Recreation Inventory.....	119
Community Vision	180
Analysis of Needs	181
Goals and Objectives.....	183
Seven-Year Action Plan	187
Public Comments.....	197
References.....	198
ADA Self-Evaluation Report.....	199

PART 4: Pedestrian and Bicycle Plan

Executive Summary	226
Existing Conditions	236
Recommendations	275



PART 1
Sustainable Northampton



The Approach



Downtown is a critical part of Northampton's identity, sense of place, and economy

Northampton has developed a vision for its future as well the goals, principles and strategies required to support and implement that vision. *Sustainable Northampton*, is a comprehensive plan that seeks to ensure the city can continue to meet its current and ongoing environmental, social and economic needs without compromising the future for succeeding generations.

The Sustainable Northampton Plan was designed, in part, to fulfill the requirements of Massachusetts General Law Chapter 41, Section 81 D, for the development of municipal comprehensive or master plans. The comprehensive plan is designed to provide a basis for decision-making regarding the long-term physical development of the municipality and requires Planning Board approval. Likewise, one purpose of the Zoning Act (Massachusetts General Law Chapter 40A) and zoning adopted by communities is to encourage the most appropriate use of land, including consideration of the recommendations in the comprehensive plan.

Finite resources, coupled with a significant desire to better support a diverse and sustainable community, require the city to make choices about how best to use its natural, social, economic, and human resources. City residents and elected officials recognize that these choices are local decisions that will impact the natural environment, the community, and quality of life. This vision is intended to guide Northampton's role locally, regionally, and globally.

Sustainable Northampton commits the city to becoming a model community for sustainable policies and practices.

The Vision



The Northampton that its residents and visitors love today is partly a product of confluences of geography, climate and larger New England settlement patterns. But equally important in shaping our community have been the choices made by its leaders and citizens in years past – conscious decisions about when to invest in industry and commerce, where to encourage housing, how to harness and protect natural resources, how to create jobs, how to develop an educated citizenry, how to welcome and support diversity, how to provide for artistic and cultural enrichment.

The residents of Northampton have an opportunity to provide shape and values to the way Northampton will grow and change in the years ahead. We have the option of letting momentum and inertia shape our future, resting on our laurels and our numerous “Best Of” rankings. We also have the option of critically examining what works about Northampton and what could be improved, consciously shaping a future that takes into account the reality of limited resources.

This comprehensive plan, the *Sustainable Northampton Plan*, represents a decision by its citizens to choose the second option – to grow and change with a full understanding of this generation’s responsibility to leave behind a community that will not compromise the ability of future generations to meet their needs. This means learning to be smarter about how we use our resources, creatively thinking about patterns of consumption and usage.

In crafting a vision that will impact the natural environment and quality of life at many levels, this plan is driven by concepts of social equity, economic and cultural vitality, and environmental security. Bringing these concepts alive will require a commitment by Northampton’s citizens to:

Leadership – locally and regionally - in the advancement of sustainable practices that manage land use for long-term benefits, reduce dependency on nonrenewable fuels, reduce consumption of resources without offsetting benefits, and improve our impact on the environment.

Inclusiveness, tolerance and civic-mindedness by embracing diversity and encouraging full participation in community conversations.

Vibrancy as a city that supports the arts, non-profit organizations, higher education and businesses in an atmosphere that allows growth and prosperity while at the same time conserving our heritage, natural resources, and history. We will build on and celebrate our uniqueness as a community and maintain the quality of life.

This vision of sustainability, and these commitments to ourselves and to future generations, will be achieved by following a set of Guiding Principles and enacting specific strategies and actions.

The Paradise pond landscape was originally designed by the firm of Frederick Law Olmstead. Northampton’s heritage landscapes are a critical part of its history.

The Guiding Principles



Community connectivity is part of building social resilience

Support a diverse and integrated community where all residents have the opportunity to excel on a social, economic, and academic level and to lead healthy, independent and successful lives;

Act as a part of a broader region through the resources connecting us beyond our municipal borders, such as watersheds, rivers, roads, economy, culture, or common goals;

Build resilience and regeneration to address our climate crisis, while improving energy efficiency in city buildings and programs, reduce greenhouse gas emissions, and encourage conservation and use of alternative and renewable energy sources throughout the community;

Support a wide variety of housing types that increase rental and homeownership units to create and preserve a range of affordability and choice in housing options;

Support artists and the arts, local culture, history, and education at all levels as vital to a successful, well-balanced community;

Connect municipal capital improvements directly to the goals of Sustainable Northampton;

Adopt land use patterns that maintain a mix of urban and rural areas; concentrate development in neighborhood, village, and commercial centers supported by adequate infrastructure, including public transit; promote energy efficiency; and protect environmental, open space, and agricultural resources.

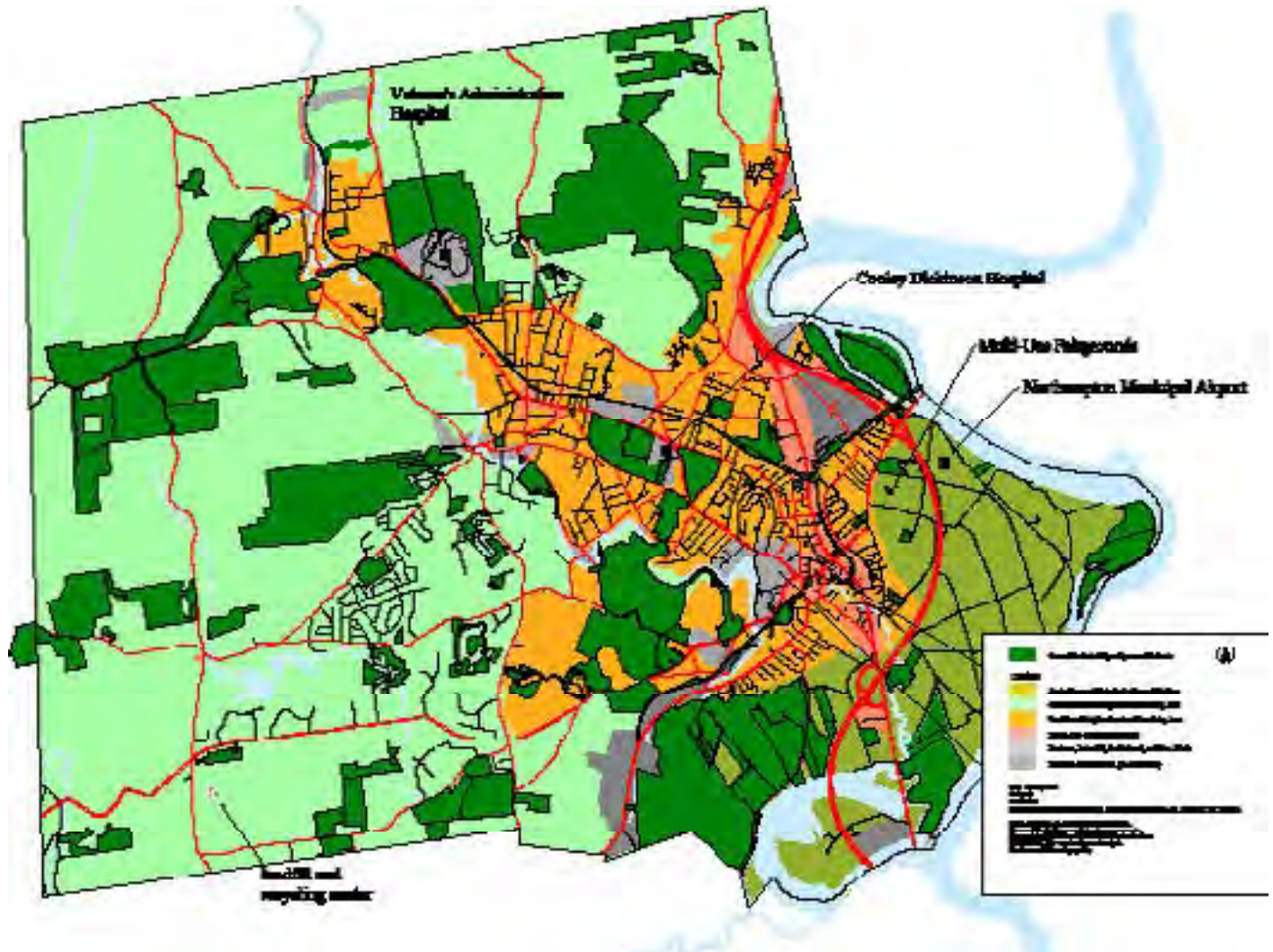
Recognize and foster the unique history, character and function of each residential, commercial, mixed use, and open space neighborhood.

Recognize that a diverse and vibrant economy is integral to a successful community and support business and job development that contribute to the community and the city's long-term sustainability;

Make the city increasingly more walkable, bikeable, and transit-oriented; Improve citizens' lives through continuous, high quality education; and,

Operate the city as a democratic enterprise that is responsive and responsible to the fiscal, economic, social, and environmental interests of its citizens.

Land Use Map



The Land Use Map is proposed to provide the City with a basis for making consistent decisions on capital investments and land use into the future. The Land Use Map is adopted with this document. The Map may be amended over time to ensure consistency and to provide a measurement of success in the completion of Sustainable Northampton.

The Land Use Map is not a prescriptive regulatory document such as the Zoning Map, which requires conformance for land use and development. The Land Use Map provides broad guidance for making decisions on all city actions: programs, land use decisions, regulations, and capital expenditures. Zoning Map amendments may be anticipated as one method of implementing the Land Use Map and this Plan. The Future Land Use Map must be flexible, but with

consistent use it will result in an accumulation of decisions that support the City goals.

The Land Use Map shows

- Concentration of traditional development in the historically denser areas of Downtown, Florence and Leeds;
- Low-density development in the watersheds. This plan will allow transfer of development rights into the higher density areas;
- Expansion of land for commercial/economic development;
- Areas for continued preservation of agriculture and related uses.

Land Use Areas

The following are descriptions of the areas shown on the *Land Use Map*.

Agriculture and Historically Compatible

Uses This is primarily highly productive agriculture land within the floodplain of Connecticut River and includes rich wildlife and flora resources and historical commercial and residential uses. In this area, expansion of existing buildings and uses is encouraged, acquisition of land in floodplain forests and within the 10 year floodplain is prioritized, but generally new non-agricultural development is discouraged.

Conservation Development and Sending Zone

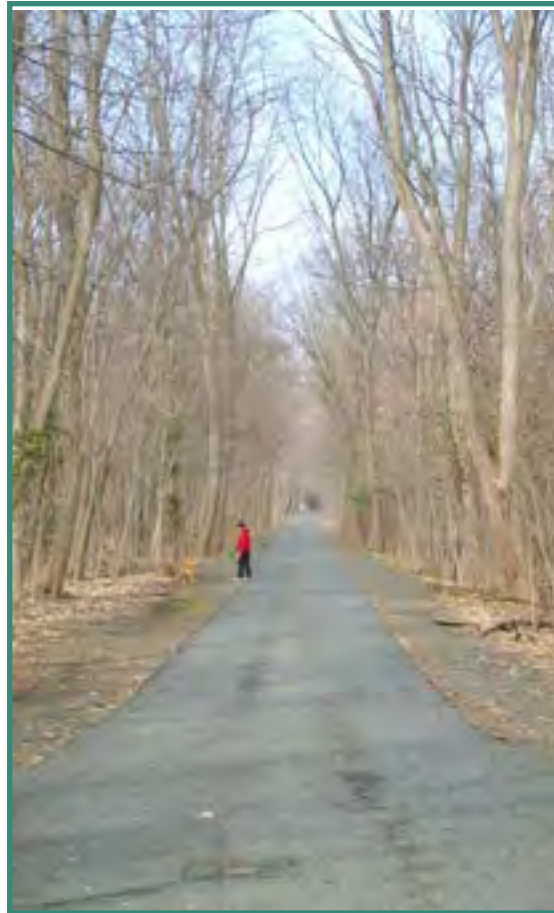
These are outlying areas that generally have moderate to severe environmental limitations, including water supply areas, large intact forest ecosystems, rich wildlife and flora resources, and critical scenic resources. In these areas, conservation of land is prioritized. Many areas are appropriate for context sensitive development and open space residential development designed to be compatible with conservation purposes.

Traditional Neighborhood and Receiving

Zone These are currently the most developed areas with planned expansion of developable area to accommodate expected demand for new growth. These areas can accommodate the vast majority of new smart growth residential development, but only with design standards to ensure that new development does not degrade the quality of existing neighborhoods and mitigates traffic.

Mixed-Use Commercial Center These are the current and proposed commercial areas. In all of these areas housing is strongly encouraged, but only above the first floor. Mixed uses within the district and often within buildings, is strongly encouraged.

Business, Industrial, Institutional, and Live-Work These are the areas that include traditional mill buildings along the Mill River



and other business and industrial areas which are appropriate for mixed use. Residential use should be allowed only as part of live-work and artists space, where the primary use is business but business owners and workers may live on the premises.

Business and Industrial These are the traditional industrial/research/business park sites that should be preserved for business and industrial uses not compatible with residential uses.

The Elements, Actions & Measures of Success

The following section includes the Goals, Objectives and Actions proposed to accomplish this Vision:

- Land Use and Development Environment
- Economic Development
- Arts and Culture
- Heritage Resources
- Housing
- Infrastructure and Capital Resources
- Transportation
- Municipal Governance and Financial Stability
- Education
- Social Equity

Each element includes the following sections:

Goals

The goals are based on the result of the public input process and form the foundation of the plan;

Objectives

More specific ideals by which each goal will be achieved;

Strategies and Actions

Steps that are to be taken, with the responsible party identified.

Part 2, 3 and 4 provide the details of our Climate Resilience and Regeneration, Open Space, Recreation, and Multi Use Trails, and Pedestrian and Bicycle planning.

Land Use & Development

Goal LU-1: Direct changes and improvements in accordance with the Land Use Map

Objectives

1. Use the downtown and more densely developed areas to build high and medium density housing (12 to 65 units/acre; see Density Study prepared by the Office of Planning and Development for illustrations).
2. Encourage mixed-use development in both residential and commercial areas such as Florence center, Village of Leeds, Bay State, Hospital Hill.
3. Encourage infill development of vacant and underutilized land in and around downtown and in existing denser developed areas.
4. Match the pace of new housing development with the growth in capacities of public

infrastructure, public safety, public health, and school services.

5. Locate housing within walking distances along safe paths, or with bicycle access, to and from neighborhood commercial areas, parks and recreation, schools, and public transportation.

Strategies & Actions

Compare the City land use policies against the Open Space and Recreation Plan recommendations to identify priority open space areas and resources that should be preserved.

Provide an option for mediation in site plan reviews to address neighborhood concerns.



Goal LU-2: Create and preserve high quality, built environments in the downtown and village centers

Objectives

1. Add parks, greenspace and appropriate agriculture on city-owned land or on larger infill development parcels where possible.
2. Identify the major gateways into downtown and outline necessary improvements.
3. Encourage the preservation of historically or architecturally significant buildings.
4. Encourage well-designed and desired development to occur in downtown and other more densely developed locations or in targeted growth zones.
5. Define and support a critical mass of retail, cultural, and office space.
6. Reinforce downtown as a regional city center with its continuation as a vibrant mix of commercial, civic and cultural uses.
7. Ensure the downtown and village centers are universally accessible.

Strategies & Actions

Add regular funding to the capital budget for more public benches, cigarette disposal receptacles, trash cans, restrooms, and garden spaces downtown and in village centers, consistent with adopted streetscape plans.

Ask for the participation of the local merchants and neighborhood residents in maintaining these facilities.

Define an area standard and criteria for required green/open space within the highest density commercial and village centers.

Draft and adopt design criteria for roads, signage and landscape that will enhance gateways to downtown and village centers and create a welcoming entry into each section of the City.

Develop a public signage and wayfinding program that increases visibility of public road

signs, and ensures that private signs conform to downtown and village aesthetics and design criteria.

Continue to increase the amount of public open space for community gardens, (where the soils and microclimate are appropriate for gardening) to eliminate waiting list for community garden plots.

Continue to improve streetscape design standards for street trees and streetscape.

Review accessibility on all public streets and continue program to upgrade and convert to universally accessible public space.

Goal LU-3: Maintain a distinction between rural areas, residential neighborhoods, and urban areas

Objectives

1. Housing projects that are built in rural areas should be cluster development types, leaving more open land, with designs that allow for a variety of housing options.
2. Preserve the character of rural areas through preservation of large undeveloped tracts, vistas, and farmland.
3. Ensure a wide variety of living options to allow market-based choices.
4. Implement ideas for maximizing density on small lots.
5. Preserve a diversity of housing types that define the historic development of the neighborhood.
6. Create Northampton neighborhoods, that provide pedestrian scales, connections to goods and services, and connections to multiple modes of travel.
7. Ensure that zoning and land use regulations encourage mixed-use, multi-family development projects that are in keeping with high quality design and character.

8. Ensure that expansion of commercial parcels into residential areas coincides with road infrastructure improvements and improve neighborhood character.

Strategies & Actions

Where cluster ordinance does not provide the optimum designs, adopt revised cluster regulations.

Evaluate appropriate reuse of large institutional properties and consider redevelopment for mixed-use centers

Encourage development of neighborhood organizations and support their participation in the planning of their areas.

Establish public policies that prioritize maintaining public infrastructure in neighborhoods mixed with affordable housing.

Determine and extend public infrastructure improvements; water, roads, and sewer, to encourage the appropriate types of housing.

Goal LU-4: Preserve and encourage agricultural uses in

Objectives

1. Maintain the primarily open and agricultural nature of the Meadows as it exists, with no new residential lots and no significant increase in residential density.
2. Continue to allow flooding of the Meadows for restoration of the soils for farming, and preserve the floodplain storage capacity of the Meadows.
3. Support the economic viability of farming

within the City, through allocation of resources and infrastructure investments.

Strategies & Actions

Monitor the trends of farmland utilization and production.

Work with Agriculture Commission to identify additional parcels of land for agriculture protection and agri-businesses.



Street Trees

Street trees should be planted at 20' to 35' depending on location. Trees planted along travel ways can reduce vehicle emissions by removing sulphur dioxide and reducing particulates by up to 75%. A single full-grown (beech) tree can provide equivalent cooling as five room air conditioners and will supply enough oxygen for ten people.

Environment

See Part 2: Climate Resilience & Regeneration Plan, the City's climate action plan, for all climate related environmental issues and **Part 3:** Open Space, Recreation, and Multi-Use Plan for all open space related environmental issues

Goal EEC-1: Protect valuable and sensitive ecological resources (land, air, water, habitat, plants and animals)

Objectives

1. Prioritize and preserve quality wetlands by encouraging development in densely populated areas and in clusters.
 2. Protect and conserve water supplies (drinking, surface, groundwater, recharge areas, aquifers) and continue to enforce groundwater protection regulations.
 3. Conserve wetlands with programs to ensure no net loss of total wetlands (existing area of approximately 3,000 acres).
 4. Preserve floodplains for flood storage and, where appropriate, habitat values.
 5. Preserve existing forests, floodplains, wetlands, and agricultural soils of high ecological value.
 6. Protect rare and endangered plants and animals and important wildlife corridors.
 7. Improve the quality and appearance of the public water supply.
 8. Recognize that the protection of environmental resources will improve the quality of life and the value of property in the City.
 9. Minimize the loss of tree canopy throughout the City and increase tree canopy in urbanized areas to maintain a higher quality environment in all areas.
2. Encourage and enforce low impact development designs.
 3. Develop an inventory of roadways and facilities in environmentally sensitive areas and reduce the use of sand, salts or other de-icing chemicals for their maintenance.
 4. When in use, store road salt and de-icing chemicals in safe and environmentally sound locations and structures to prevent accidental pollution/contamination.
 5. Include 'low impact' and National Pollution Discharge Elimination System (NPDES) drainage improvements concurrently with any pavement management program or project.
 6. Reuse brownfield sites.
 7. Conserving the supply of potable water for actual or anticipated shortages and when deemed necessary for health, welfare or safety.
 8. Ensure City programs for improvement are equally distributed throughout all neighborhoods, consistent with need and cost.
 9. Reduce use of toxic substances being released in the environment, including pesticides, herbicides, high VOC paints, and other listed toxic materials.

Goal EEC-2: Minimize the impacts of infrastructure systems on environmental resources

Objectives

1. Implement regulations that include measures for soil erosion and sediment control.

Goal EEC-3: Safeguard and improve the quality of the City's surface waters to ensure use for safe public swimming, recreational fishing activities, boating, and drinking

Objectives

1. Ensure landside land alterations do not adversely impact surface waters.
2. Ensure waterfront property owners comply with regulations and upgrade environmental control equipment.



3. Ensure safe, high quality, recreational waters are available to all residents.
4. Protect quality of backup drinking water supply located in City reservoir.

Strategies & Actions

Create a volunteer water-quality monitoring group under the auspices of the Conservation Commission to monitor long-term trends of water quality changes in areas not monitored by the Department of Public Works

Pursue a long-term plan to improve the health of Northampton's rivers, streams, brooks, wetlands and open water bodies by taking actions that address water quality.

Goal EEC-4: Reduce light pollution

Objectives

1. Control the impact of light pollution in all new development projects.
2. Provide adequate but low impact lighting in business zones, the downtown and village centers.

Strategies & Actions

Enforce the Dark Sky Ordinance. Update the language to be responsive to changes in lighting technology and Dark Sky guiding principles

Goal EEC-5: Develop strategies to protect the City from the impacts of natural hazards.

Objectives

1. Site new development outside of high hazard natural areas, such as floodways.
2. Reduce the public costs of infrastructure maintenance in high hazard areas.
3. Consistently apply strategies to all neighborhoods and areas.
4. Encourage passive survivability standards of new structures to increase survival of natural disasters for all public and private buildings.

Economic Development

Goal ED-1: Ensure vibrant and distinctive downtown, commercial, and village centers

Objectives

1. Encourage business and job growth in urban and commercial/industrial center.
2. Improve physical access to commercial centers.
3. Provide adequate transportation and parking options to enable successful visits to these centers.
4. Preserve/enhance the public services and amenities that draw people downtown and ensure that they are safe, pedestrian friendly, and welcoming to the diversity of Northampton residents.

Strategies & Actions

Support infill development in downtown and commercial/industrial zones:

- Provide regulations and financial incentives that would encourage conversion of public and private surface parking lots to mixed development with parking structures,
- Allow taller structures [$>$ five stories];
- Encourage or require shared parking.

Monitor and seek solutions to social problems affecting business environment in downtown, particularly panhandling and drug use.

Provide road and transit improvements to support business development in areas identified for commercial and mixed- use growth. See Transportation Section for details.

Develop a mechanism to support downtown management, marketing, and maintenance such as a Business Improvement District and develop revenue sources for marketing.

Reinvigorate the retail sector:

- Monitor retail sales trends, occupancy, and turnover rates



- Create and monitor affordable commercial space
- Develop a marketing strategy to reposition downtown as a retail hub and grow market share

Encourage placement of State regional facilities, such as courts and State offices, in the City especially downtown.

Pursue the development of a year-round public market for agricultural, arts, crafts, and locally made products.

Goal ED-2: Provide long-term economic sustainability, security, and opportunity

Objectives

1. Preserve and expand the commercial and industrial land inventory and the commercial/ industrial tax base.
2. Encourage and support sustainable business development and practices.
3. Encourage a versatile, diverse, and sustainable business and employment base.
4. Encourage business development for job creation and retention, and living wages that support the cost of living in the City.

Strategies & Actions

Reinvigorate the manufacturing base – both traditional (plastics, machining) and higher



technology. Determine what regional and statewide resources can be used to support manufacturing and provide information to manufacturers. Actively seek state funds for workplace, language, and skills training in the workplace.

Develop key existing and emerging industry sectors with growth potential that build on Northampton's strengths including: publishing, software, medical/science/bio technology, higher education, advanced technology manufacturing, creative economy, green businesses, and tourism/retail.

Use the Capital Improvement program to build public infrastructure needed to support business development in areas targeted for business growth (broadband, sewer, water, drainage, transit, roadway, and parking).

Re-establish the Business Outreach and Retention Program to visit businesses in each sector on a regular basis.

Support institutional and non-profit businesses that are major employers, provide livable wages, provide important public benefit, and act as a catalyst for secondary economic activity (e.g., education, health care, Fairgrounds, and cultural organizations).

Responsible Agencies: Mayor's Office of Economic Development, Schools, Institutions, Chamber of Commerce, Office of Planning and Development

Create business and educational collaborations and support innovation and technology transfer and commercialization to grow local businesses

and to retain creativity, entrepreneurship, and educated workforce from colleges and vocational schools in the region.

Responsible Agencies: Mayor's Office of Economic Development, Schools, Local Institutions, Chamber of Commerce

Create collaborations with colleges to market Northampton as an attractive place to locate alumni businesses and to develop long-term strategies for shared economic benefits.

Support business development and business practices that enhance the sustainability of the community including, but not limited to, agriculture green business, energy efficiency, and climate protection.

Focus on business development that supports job creation, job opportunities, and higher than average wages for all Northampton residents.

Focus on retaining and growing existing businesses and jobs. Develop a marketing campaign to attract compatible and desirable businesses and increase visibility for Northampton in regional and national markets, highlight quality of life assets as a competitive advantage.

Seek opportunities to ensure that commercial and industrial property in the City remains affordable to a diverse range of businesses.

Research and provide model sustainable business practices as a resource for the business community.

Support entrepreneurship with business and financial assistance and targeted financial incentives where appropriate.

Encourage and support locally owned and operated businesses and "buy local" campaigns.

Provide entrepreneurial training and start-up business assistance, especially for low-income and limited English speaking residents.

Address ESL, literacy, adult basic education, and social equity needs of the workforce, especially



immigrant workers, and provide programs in community and workplace locations.

Support workforce development and training that is responsive to industry and worker trends and needs.

Responsible Agencies: Mayor's Office of Economic Development, Chamber of Commerce, School Department, Institutions, Regional Employment Board

Support job creation, job training and career ladder opportunities for youth, unemployed, under-employed, under-educated and limited English speakers.

Develop key parcels to create a range of available sites and projects (e.g., Northampton State Hospital, Rt. 10 Business Park, King Street).

Support cleanup and redevelopment of brownfield sites and underutilized commercial/ industrial buildings including, Wire Works, Magnat, Cutlery, Pro Corp., Hill & Dale Mall, and Three County Fairground.

Prevent loss of commercial/industrial land from rezoning to residential use. Exclude residential uses, in industrial districts to prevent conflicting land uses and to maximize industrial inventory, but task the Rezoning Committee to consider exclusions and special circumstances.

Goal ED-3: Support a thriving cultural and creative economy

Support joint marketing campaigns between cultural, retail, and hospitality sectors.

Create a comprehensive database of businesses and organizations in the Northampton creative economy to determine the local asset base and monitor status. Develop linkages between related enterprises.

Goal ED-4: Provide a positive business environment

Objectives

- 1.** Invest in infrastructure to support desired business development in areas targeted for business growth (e.g., broadband technology, sewer, water, drainage, roadway, parking, and transit).
- 2.** Maintain an appropriate level of environmental and community protection while balancing the impacts of regulation on businesses and major employers and the economic health of the community.
- 3.** Provide a streamlined and transparent permitting process.
- 4.** Support a strong partnership with the Northampton Chamber of Commerce, Village business associations and other regional groups to brand Northampton as a positive business environment.
- 5.** Create a competitive business environment in the City to enable business investment to occur for all levels of businesses, from start-up to corporation.
- 6.** Foster communication and understanding between businesses, government, and residential uses; and recognize business as an integral part of a sustainable community.
- 7.** Provide leadership for local and regional economic development collaborations.

Strategies & Actions

Continue and expand regional economic development collaborations to leverage strengths and effectiveness locally and regionally; i.e. Pioneer

Valley Connect, Plan for Progress, Economic Development Partners, Chamber of Commerce, surrounding communities.

Objectives

1. Increase the availability of affordable studio, live-work, performance, and rehearsal space to retain artists, cultural organizations, and businesses in Northampton.
2. Develop cross connections between various sectors within the creative economy, such as artists, designers, museums, and new technologies, to strengthen the overall vitality.
3. Facilitate greater communication and collaboration among cultural organizations, artists, the business community, non-profit organizations and City government.

Strategies & Actions

Preserve and develop affordable arts and performance venues in the City by:

- Creating an inventory of present spaces, evaluating their long-term viability.
- Surveying local artists to determine demand and ability to pay for spaces.
- Identifying possible venues, promote as part of downtown redevelopment projects, and seek possible funding sources. Support and provide incentives to create affordable live/work and studio space.

Link creative businesses to business and financial assistance programs.

Support joint marketing campaigns between cultural, retail, and hospitality sectors.

Create a comprehensive database of businesses and organizations in the Northampton creative economy to determine the local asset base and monitor status. Develop linkages between related enterprises.

Goal ED-4: Provide a positive business environment

Objectives

1. Invest in infrastructure to support desired business development in areas targeted for business growth (e.g., broadband technology, sewer, water, drainage, roadway, parking, and transit).
2. Maintain an appropriate level of environmental and community protection while balancing the impacts of regulation on businesses and major employers and the economic health of the community.
3. Provide a streamlined and transparent permitting process.
4. Support a strong partnership with the Northampton Chamber of Commerce, Village business associations and other regional groups to brand Northampton as a positive business environment.
5. Create a competitive business environment in the City to enable business investment to occur for all levels of businesses, from start-up to corporation.
6. Foster communication and understanding between businesses, government, and residential uses; and recognize business as an integral part of a sustainable community.
7. Provide leadership for local and regional economic development collaborations.

Strategies & Actions

Continue and expand regional economic development collaborations to leverage strengths and effectiveness locally and regionally; i.e. Pioneer Valley Connect, Plan for Progress, Economic Development Partners, Chamber of Commerce, surrounding communities.

Arts and Culture

Goal AC-1: Provide quality arts and cultural resources as a vital part of the community

Objectives

1. Develop greater coordination between municipal, business, and cultural entities on all matters related to arts, culture, and the creative economy to strengthen the overall vitality of the community.
2. Maintain and increase public and private support for the arts, and cultural organizations and facilities including the Arts Council, the Academy of Music and the Center for the Arts.
3. Build on partnerships with Smith College, and other non-profit organizations, to increase arts and cultural opportunities, resources and collaboration.
4. Expand the presence of public art in desired locations.
5. Maintain and increase arts instruction/enrichment to be valued as an integral part of every child's education in the public school system.
6. Assist city arts organizations in an effort to establish a collaborative system for addressing issues related to the expansion of local cultural venues and activities.

Strategies & Actions

Preserve and enhance arts education programming in public schools.

Expand existing community arts calendar and create a comprehensive website and box office in coordination with arts, municipal, and tourism entities.

Goal AC-2: Support artists in the community

Objectives

1. Provide affordable living, office, presentation, performance, and rehearsal space for artists and cultural organizations in the City.
2. Create an expanded base of business and other community financial support for artists, cultural organizations, and cultural resources.



City-owned Howard Tower Clock in the First Churches and Art bench coordinated by the arts council..

3. Support artists and/or arts organizations that advocate for the arts community and/or provide information and services to the arts community.
4. Encourage the involvement of the cultural community in City planning and decision-making related to quality design, public art, and policies affecting the cultural community.

Strategies & Actions

Support and provide incentives for the private development of affordable live-work and studio space.

Identify possible arts venues and seek to provide incentives for private development of venues as part of downtown redevelopment projects.

Seek revenue sources for facilities, operating, and marketing to promote long-term sustainability of cultural organizations.

Improve zoning to support artist live/work space as an allowable home occupation.

Improve communication between non-profit cultural organizations and the business community related to fund-raising efforts.

Investigate and pursue options for coordinating, funding and maintaining public and performance art.

Heritage Resources

Goal HR-1: Protect and preserve the City's heritage resources

Objectives

1. Identify, document and evaluate the heritage resources.
2. Educate and inform decision makers and the community about heritage resources.
3. Protect the heritage resources from degradation or destruction by public or private actions or inactions.
4. Adopt and act on preservation programs that:
 - Employ a sound basis in field survey and archival research,
 - Provide economic and technical assistance to the extent feasible,
 - Are coordinated with other community policies and ordinances, and
 - Operate with sound and explicit standards, guidelines, criteria, and administrative procedures.

Strategies & Actions

Conduct field and archival surveys to locate, document, and evaluate unrecorded heritage resources, as well as to update information on resources identified in past studies or surveys.

Increase the level of public participation in heritage resource identification and preservation, including involvement with local schools and colleges.

Inform the community about heritage resources with displays, markers, publications, and public presentations undertaken cooperatively with concerned community organizations and the media.

Provide training opportunities for City officials, boards, and staff to increase awareness of heritage resources and preservation programs.

Promote and encourage the protection and preservation of significant heritage resources by listing eligible properties on the National Register of Historic Places.



Encourage private landowners to establish historic preservation restrictions and open space/conservation easements by working with the city, local non-profit land trusts, or state/national entities authorized to hold easements for the purpose of heritage resource preservation.

Provide information to decision makers and the community on loans, grants, tax advantages, and other financial incentives that may be available from federal, state, non-profit, and private sources to property owners for the restoration or rehabilitation of heritage resources in private or public ownership.

Acquire significant heritage resources, when feasible, to be incorporated into the City's public areas or park system for purposes of resource protection as well as public education and enjoyment.

Protect the City's historic and architecturally significant neighborhoods and areas by maintaining current local historic and design review districts, design guidelines, and administrative procedures, as well as establishing additional such districts as appropriate.

Protect the City's heritage resources from degradation or destruction by public or private actions or inactions by maintaining the City's demolition delay ordinance and by working with affected property owners to identify, within the mandated timeframe, feasible and appropriate alternatives to demolition.

Housing

Goal H-1: Create new housing

Objectives

1. Provide developers with options that allow them to build at higher densities in return for creating more affordable housing units.
2. Adopt regulations to increase the number of projects involving mixed-income housing that result in housing affordable to all ranges of income, especially in the downtown area.
3. Look beyond traditional marketplace models to create affordable housing options.
4. Utilize green and sustainable design funding opportunities for affordable housing.
5. Create incentives for private housing developers to act on housing program goals.
6. Create new home ownership opportunities for households with incomes below 120% of the area median income Area Median Income [AMI].
7. Create rental housing options especially for households with income at or below 60% of AMI.
9. Expand the range of options for detached housing, such as cottage housing development to increase density in designated locations.
10. Assess the demand for, and availability of, housing for all sectors of the City's population and respond with appropriate strategies, including:
 - Housing that meets the needs of special populations, particularly the disabled
 - Housing that meets of the needs of elderly residents who are not eligible for public housing

Strategies & Actions

Advance options to increase production of affordable housing, including zoning incentives (e.g. TDR, inclusionary zoning) and gap funding.

Develop a list of innovative funding mechanisms to keep the costs of housing affordable, and provide it to all housing developers.

Create rental units affordable especially to households with incomes at or below 60% of AMI.

Create ownership units affordable to households with incomes between 80% and 120% of AMI.

Create ownership units affordable to households with incomes at or below 80% of AMI.

Research existing zoning and identify suitable locations for development of new Single Room Occupancy (SRO) units.

Increase numbers of SRO units, especially enhanced SROs.

Make city funding available for the "local match" funding needed by affordable housing developers.

Lobby at state level to increase funding for green development in housing production programs.

Develop a community education program to promote these goals.

Work with financial institutions to offer financing incentives to enable an increased use of sustainable technology by city residents and businesses, such as green mortgages.

Work with Valley CDC to continue to support first-time homebuyer programs and post-purchase education.

Determine if there are any regulatory changes that would facilitate the development of

NOTE: See also the City's Housing Needs Assessment and Unlocking Opportunity, the City's impediment to housing analysis

affordable live-work space to attract and retain artists (and start-up businesses) in the City.

Goal H-2: Preserve and sustain existing affordable housing

Objectives

- 1.** Preserve existing rental housing stock to facilitate availability and price stability.
- 2.** Create a climate of support, within all departments of City government, for landlords who are participating, or who could participate, in a partnership to preserve “market-rate affordable” units as rental units.
- 3.** Identify the present affordable housing at risk (e.g. “expiring use” and rentals that might be converted to condominiums) and work with property owners and others to identify and secure funding sources to preserve the units as affordable.
- 4.** Sustain and improve existing SRO units.
- 5.** Develop ways to sustain and build the Affordable Housing Trust Fund.
- 6.** Sustain and expand housing rehabilitation programs.

Strategies & Actions

Define a city policy, and appropriate actions, and identify a representative to work with owners/managers of existing units to preserve affordability

Responsible Agencies: Office of Planning and Development, Mayor’s Office, Housing Partnership

Target housing rehabilitation programs to coincide with neighborhood revitalization efforts

Responsible Agencies: Office of Planning and Development, Planning Board

Research and identify a new administrator for housing rehabilitation programs

Responsible Agencies: Office of Planning and Development Office, Housing Partnership

Goal H-3: Work to end homelessness

Objectives

- 1.** Increase focus on prevention to decrease the numbers of those becoming homeless
- 2.** Increase the supply of affordable, supportive housing to quickly re-house those who do become homeless
- 3.** Broaden the community dialogue, beyond the social services community, regarding root causes of homelessness and possible solutions
- 4.** Articulate services currently available for food and shelter, identify service gaps, fill those gaps

Strategies & Actions

Work with the Greater Northampton Chamber of Commerce, and the Regional Employment Boards to address economic development and poverty issues.

Infrastructure and Capital Resources

Goal IC-1: Ensure the capital improvement program is coordinated with Sustainable Northampton plan goals and objectives

Objectives

1. Continue the five-year strategic plan for capital improvements.
2. Align the yearly review process for the capital program with other City plans.
3. Establish capital and infrastructure improvement programs that match with planned development areas.
4. Extend or provide infrastructure improvement projects to support development projects that meet City goals.
5. Coordinate the annual review with an analysis of cost effectiveness.
6. Ensure that the capital improvement plan is developed and implemented in a consistent and transparent fashion to meet the most pressing needs across the City.
7. Maintain and increase general fund allocation to support planned future capital projects from 2.1% yearly to 5% yearly.

Strategies & Actions

Develop capital improvements requests to identify and prioritize sustainability improvements that support this plan and economic development.

Goal IC-2: Program and utilize public buildings for maximum efficiency and availability

Objectives

1. Establish a collaborative administration of city buildings and facilities to maximize utilization of space, improve operational efficiencies, and ensure a transparent process for public use of public facilities.

Goal IC-3: Upgrade the City's aging stormwater management system

Objectives

1. Develop and implement a plan to repair and replace aging infrastructure throughout the City.
2. Include 'low impact' and National Pollution Discharge Elimination System drainage improvements concurrently with any pavement management program or project.
3. Invest in stormwater management improvements.
4. Ensure investments in stormwater are distributed by comparable infrastructure needs.



Jobs-Housing Balance

Choices for job and housing locations are closely linked to the resulting impact on the transportation system for journeys to work. Ideally, if the right housing and jobs choices are available, and people can choose to both live and work in one area, congestion could be relieved and the community would achieve a jobs-housing balance. Other benefits would accrue to household budgets from reduced travel costs.

Transportation

See Part 4: Pedestrian and Bicycle Plan



Goal T-1: Ensure the safe and efficient transportation of goods and people by motor vehicles, bicycle, foot, and any other means

Objectives

1. Maintain an efficient transportation system.
2. Maintain a transportation system that reduces air pollution and minimizes congestion.
3. Ensure that environmental impacts are considered and adverse effects are minimized on all transportation projects.
4. Reduce use of single occupancy vehicles.
5. Ensure that safety is a primary goal in transportation improvements, systems, and operations, both to reduce crashes and to ensure that both vehicular and non-vehicular modes of traffic are safe and attractive to all users on all roads.
6. Participate in regional efforts to improve utilization of intelligent transportation systems.
7. Ensure that the needs of transit services, bicycle, pedestrian, and wheelchairs are considered and addressed in the design, construction, and management of every project affecting the transportation system. See also OS-4

The following considerations enhance pedestrian safety to encourage walkability, and should be included in all intersection studies and designs:

- Intersection improvements should ensure the safety of pedestrians and cyclists and should be carefully weighed against any loss of green space and tree canopy, any increase in stormwater runoff, and any detrimental impacts on neighborhoods.
- When designing for truck movements (such as specified by MassHighway), avoid excessively wide intersections through the use of appropriate.
- Include an analysis of the suitability of roundabouts and mini-roundabouts during the preliminary engineering analysis for all intersections being considered for significant reconstruction, realignment, signalization, and four-way stops. Roundabouts are the favored intersection treatment for safety, efficiency, and environmental reasons, when appropriate.
- Ensure that all new and existing traffic signals incorporate audible pedestrian signals. Create a prioritized list of existing traffic signals where pedestrian signals are desired. Installation of pedestrian signals shall be made as funding becomes available. delays for both drivers and pedestrians.

Examine all unsafe intersections, areas of excessive speeds, and areas where neighborhoods

perceive a loss of quality of life to consider possible traffic calming efforts.

Add wheelchair ramps and pavement markings necessary to make all sidewalks accessible for people with mobility disabilities.

Educate the public and enforce requirements to ensure the safety of sidewalks, including existing requirements that affect property owners abutting sidewalks. Some of these requirements include: clearing snow from sidewalks after a storm, with a priority on sidewalks in commercial areas and along arterial and collector streets (Section 19-19, Northampton Code of Ordinances); and controlling brush from growing over sidewalks or blocking visibility at intersections.

When funds become available, prepare a sign inventory and implement a plan to bring signage and crosswalks into conformance with the Manual of Uniform Traffic Control Devices (MUTCD). Signage related to marked crosswalks is the first priority.

Goal T-2: Improve circulation system to accommodate development and encourage bicycle and pedestrian transit

Objectives

1. Ensure that all new privately built streets include sidewalks, consistent with the Northampton Subdivision Regulations. When feasible and practical, concrete sidewalks on two sides of a street are most desirable.
2. Calm traffic to preserve pedestrian safety and encourage pedestrian activity in neighborhoods and villages.
3. Ensure that economic development goals are considered and balanced with other City goals in all transportation objectives, decisions, and improvements
5. Upgrade transportation and public utilities to facilitate expansion of the commercial/industrial site inventory in identified growth areas



6. Ensure pedestrian, bicycle, non-motorized travel, and transit are addressed in every development project.

Avoid creating cul-de-sacs and dead ends when possible and instead create a network of streets. Dead end streets, while desirable to some residents, add significantly to the delivery of city services and increases traffic flows to other local streets. Design streets to avoid creating new high-speed short cuts through residential neighborhoods.

Incorporate reasonable steps to reduce peak-hour single-occupancy vehicle trips for new projects. Transportation demand management (TDM) techniques will be tailored to suit individual project needs, user needs, and the overall feasibility of the project while addressing City TDM goals. This may include:

- Capital improvements (e.g., sidewalks, bicycle lanes, non-motorized trails and connections, bus stops, car pool parking);
- Incentives for low-impact transportation (e.g., transit, car pooling, cycling, and walking) along with reduced incentives for single-occupancy vehicles (e.g., below-cost employee parking);
- Policies to redistribute traffic impacts (e.g., set employee hours to avoid peak hour commutes);
- Support for private, shared vehicle services.



Goal T-3: Improve and expand public transit

Objectives

1. Leverage regional collaborations to increase funding for provision of public transit services, including shuttles where appropriate.
2. Consider transportation associations that include memberships of local businesses and government to support public transit.
3. Develop Transit Oriented Development guidelines with incentives.
4. Encourage increased use of transit options.
5. Provide reasonable options for public transit based on need, cost, and funding.
6. Develop a public transit plan in cooperation with the PVTA and PVPC to expand and enhance the transit system to the level that it is economically viable and supported by ridership.

Strategies & Actions

Develop plan for snow and ice removal at major bus stops in the city.

Ensure higher visibility and better information about public transit routes and stops thru the use of bus stop signs, transfer signs and transit maps. Ensure that bus schedules and maps posted at bus stops are accessible to disabled riders.

Continue to work with Pioneer Valley Transit Authority and Pioneer Valley Planning Commission to consider a centralized public transit or multi-modal facility in Northampton.

Promote the use of special event shuttles to connect parking on the edge of downtown with downtown special events when appropriate.

Municipal Governance & Financial Stability



Goal MG-1: Diversify revenue streams to support municipal operations

Objectives

1. Match land use changes and improvements with diversified revenue potential.
2. Lead regional and statewide effort to increase authority for municipalities to develop and implement non-property tax local revenue sources.
3. Develop revenue streams in an equitable and consistent manner for all populations in the City.
4. Encourage Payment in Lieu of Taxes (PILOT) from tax-exempt uses.

Strategies & Action

Identify properties and blocks that are appropriate for redevelopment to improve the tax base.

Goal MG-2: Minimize the adverse municipal fiscal impacts of development

Objectives

1. Include considerations for the overall environmental impact of the project in determining whether it is “paying its fair share towards public infrastructure.”

2. Recognize and provide incentives for the benefits of development projects that support social and economic goals.

Goal MG-3: Maximize use and return on targeted tax incentives and other state programs to support the City’s economic goals

Objectives

1. Consider state programs for District Increment Financing (DIF), Tax Increment Financing (TIF), 40R/40S, and Expedited Permitting, as a means to encourage appropriate development through tax incentives and reimbursement programs.

Strategies & Action

Review and consider new or additional application of DIF, c. 40R/40S, TIF and similar programs aimed at improving local projects and City tax roles.

Education

Goal E-1: Promote and support high achievement by each student in a safe, healthy secure environment and enable each student to become a critical thinker and socially responsible citizen in a global society

Objectives

1. Provide safe, secure, clean and accessible school facilities.
2. Improve student assessment scores for all students.
3. Ensure high quality staff, and continuance of curriculum revision and review for Pre-K through 12th grade.
4. Ensure equal access to education to all Northampton Public School (NPS) students and levels of excellence within each school in the NPS.
5. Create a school system that is respectful and welcoming of the diverse members of the community and integrating them into the school culture.

Goal E-2: Educate students in an integrated program in the art and science of agriculture and other technical careers, and provide experiential learning opportunities that will enable students to function proficiently

Objectives

1. Use the programs to educate students on the environmental and land use implications of the particular career field.
2. Model an attitude of personal, professional, and institutional excellence.
3. Continually develop curricula that nurture students' self-esteem and inspire them to strive to reach their full potential.
4. Foster an understanding of the value of education so that students become lifelong learners.
5. Respect the diversity of our multi-cultural society by recognizing and affirming the inherent worth and dignity of all people.



6. Encourage non-traditional career path choices by actively working to eliminate racial, cultural, and gender biases.

Goal E-3: Ensure quality education and academic achievement for all segments of the community

Objectives

1. Provide public education in local and community issues.
2. Support public education, from Pre-K through 12th grade.
3. Encourage continuum of education and adult education as integral to the community education system and support life long learning opportunities; e.g., GED, Adult Basic Education, ESOL, and other advancement programs.
4. Encourage educational programs that generate a sense of citizenship.
5. Work on local, state, and federal level to advocate for early education for all.



Goal E-3: In partnership with parents, guardians and the Northampton community promote and support high achievement by each student in a safe, healthy secure environment.

Objectives

1. Provide global, regional, and local perspectives.
2. Maintain excellence in all schools.
3. Continue to work in partnership with businesses and community organizations, such as the Northampton Educational Fund, the Northampton Chamber of Commerce, and the Volunteers in Northampton Schools to meet the diverse educational needs of children.

Goal E-4: Promote the local library system

Objectives

1. Create a welcoming, responsive, and satisfying experience for library users.
2. The needs and interests of the community will guide the development and improvement of library services.
3. The community's awareness of library services and resources will be strengthened.

Social Equity

Goal SE-1: Invest in all segments of the community to retain a population with a diverse demographic and income levels

Objectives

1. Ensure a safe and secure environment for all.
2. Improve housing affordability to retain a diversity of residents.
3. Reach out to marginalized populations to ensure all feel welcome in the City.
4. Ensure civic and physical accessibility for all.
5. Ensure safe, equitable workplaces and housing for all workers, including undocumented residents.
6. Promote an environment of tolerance, diversity, and fairness in public schools so all children and families feel valued.

Strategies & Actions

Increase active involvement of community policing and resources at densely developed housing complexes, downtown, and Florence and encourage collaboration between community police and community/tenant organizations to increase empowerment and reduce crime including drug dealing.

Create an environment of tolerance, diversity, and fairness in public schools so all children and families feel welcome, and continue to provide anti-racism/anti-discrimination education and anti-violence prevention training for school staff and students, in partnership with community groups.

(P) Assist property maintenance at public and private low-income housing properties.

Develop and include leadership from groups supporting social/cultural diversity.

Develop an on-going relationship between municipal government/leadership and the immigrant community, e.g. visits by Mayor and other municipal leaders and staff to classrooms and informal community outreach sessions.

Partner with community groups to assist with

voter outreach and community participation to encourage greater involvement in the public conversation and the formal public hearing and decision-making process.

Goal SE-2: Ensure high quality and affordable health care for all children

Objectives

1. Work with School department and providers to raise the excellence of all care provided to children, infants and toddlers.
2. Work on local, state, and federal level to advocate for health care for all.

Goal SE-3: Ensure high quality and affordable housing and care for the elderly

Objectives

1. Site elderly housing in mixed use projects that match this plan's land use goals.
2. Encourage participation in health maintenance programs that may reduce the costs of health care for the participating individuals.
3. Work with Commonwealth and providers to raise the excellence of all care provided to elders.

Goal SE-4: Ensure environmental justice in all Northampton neighborhoods

Objectives

1. Ensure equal and adequate protection from environmental and health hazards.
2. Provide prompt and appropriate mitigation of environmental hazards to improve land values.
3. Ensure equal access to the public decision-making process.

Strategies & Actions

Identify polluted and high quality environmental sites in each neighborhood and proceed to create a balance where public funding and programs can be implemented.

Potential Regulatory Actions

There is no particular order or priority to the list.

A. Consider form-based codes, point based smart growth project evaluation system, and new and revised design guidelines and performance standards to improve development reviews and the quality of projects.

B. Revise Transfer of Development Rights zoning to add incentives and design standards:

- Consistency with Sustainable Northampton Land Use Plan;
- Mandate design standards for any increased density under this provision;
- Include dimensional changes to frontage, lot size, open space;

C. Adopt impact regulations and performance standards to limit housing development in the City's rural and low development areas

D. Modify zoning to better encourage mixed-use development and include incentives to encourage businesses of similar types to group into "character districts" along King Street. Change design and dimensional criteria in the zoning regulations to encourage conversion of commercial strips at the eastern edge of downtown to look more like the central business district and place a highway/auto-oriented commercial overlay and a separate traditional design overlay, as appropriate, on sections of King Street.

E. Create incentives in the site plan approval process for negotiations between neighbors and developers for projects in residential neighborhoods, especially for projects that only effect immediate neighborhood.

F. Implement form-based code for dense residential uses, at least in urban core areas, with the potential to later expand to other uses and areas:

- Use as minimum design standards/ form-based coding for any increased density or decrease frontage;

- Encourage single family homes in Urban Residential zoning districts by significantly reducing minimum frontage/lot width, for projects meeting form-based coding;
- Require same standards for townhouses and multifamily housing above single-family home density.

G. Simplify Site Plan and Special Permit criteria as appropriate, using smart growth point based system to approve appropriate special permits and site plan approvals, making permitting more predictable, reducing permit review time, and allowing some reviews to be moved to staff level reviews. Create design standards and change criteria from fitting in with neighborhood to more concrete compliance with design standards.

H. Streamline permits by moving limited Site Plan permits to planning office administrative reviews for permits where the rules can be clearly spelled out, including common driveway permits, side lot access, and expanded parking for lots that meet all zoning requirements, and other areas as appropriate.

I. Integrate energy efficiency and conservation into local land use planning.

J. Consider options for live/work space in industrial buildings and, for preserving large complexes and multistory buildings, allowing a percentage of floor areas for residential uses,

K. Consider design guidelines or other land use standards to maximize solar access (availability of sunlight to provide solar space heating, electricity and hot water).



PART 2
Resilience & Regeneration Plan



Executive Summary & Introduction

The Plan: A Commitment

In 2018, Mayor Narkewicz committed the City of Northampton to becoming a net carbon neutral city by 2050. City Council endorsed this goal in 2018.

We commit to a city that will thrive, even with climate change. We will take the following actions:

- Become a net carbon neutral city by 2050.
- Ensure that city government buildings and operations are net carbon neutral by 2030.
- Ensure that community carbon emissions, building on Smith College's commitment to be net carbon neutral by 2030, will be 50% lower by 2030 and 75% lower by 2040.
- Incorporate climate resilience and regeneration into all future city plans and capital improvement planning.
- Incorporate equity, is a cross cutting need, into every climate action.
- Address energy sources, building energy, transportation, land use, food systems, waste systems, trees and forests, carbon sequestration, and waste; recognizing that the first steps in carbon neutralization are conservation and reducing demands (e.g., energy, transport, materials).
- Commit that our top priority needs to be the high impact practices that are most effective at achieving these commitments.
- Become a more resilient city to address the climate change that is coming. This will range from physical features (e.g., stormwater and storms), to social investments to supporting our communities on the frontline of climate change.
- Develop a biennial resilience & regeneration action plan that includes an annual and long term carbon budget.
- Ensure coordinated response across all of city government.

The city's commitment to reduce its carbon footprint will come from changes in city operations inside and outside the city (e.g., its purchasing power and management of city watershed lands), our community's energy footprint, and community-wide direct carbon emissions (scopes 1 and 2). In addition, we will reduce community consumption that results in carbon emissions elsewhere in the world (scope 3).



What do we mean by Resilience and Regeneration?

Resilience: Increasing the capacity of our city to better anticipate, adapt, and thrive in a changing climate no matter what kinds of acute shocks and chronic stresses we experience. *Climate adaptation* is part of the city's resilience effort.

Regeneration: Reducing our city's contribution to climate change, while renewing the health of natural and human systems damaged by climate change, and growing the vitality of people, the economy, and ecosystems for the future. *Climate mitigation* is part of the city's regeneration effort.

The Plan: A Road-map

This plan is both a commitment and a road-map. It signifies our dedication to mitigating climate change and the actions we need to build an increasingly resilient and regenerative future. It is a plan for simultaneously reducing our greenhouse gas emissions, building our capacity to adapt to stresses, and improving our healthy ecosystems, inclusive communities, and ensuring all Northampton residents can thrive.

Our goals and actions are ambitious, necessary, and achievable. This plan outlines the path to that goal—transitioning from fossil fuels to renewable energy sources, increasing energy efficiency, and creating systems for consuming fewer resources while enhancing our quality of life.

In 2018, Mayor Narkewicz committed the City of Northampton to being carbon neutral by 2050. This plan is the next step.

We commit to:

Creating and updating specific action plans needed to move forward.

Bringing climate resilience and regeneration into the conversation on every significant city action (regulatory, investment, legislative, budgetary).

We are already feeling the effects of climate change, globally and locally. More frequent higher temperatures, storm intensity, drought risk, and flooding, will increasingly take a toll on our infrastructure, ecosystems, agriculture, and health.

Those impacts are not equally felt. The greatest effects are on communities at the frontline of climate change (e.g., the homeless, populations of color, low income residents, farmers, those in low lying areas). All of the systems we rely on—whether those are wastewater systems, food systems, or social service systems—must effectively adapt to these new stresses.

Our vision is to reduce our impact of climate change on the environment and on our communities. We need to renew the health of ecosystems and communities that have been and will be compromised by climate change. In all our work, we must create stronger, healthier, and more equitable systems.

Every action we take has the capacity to achieve multiple community benefits. Consequently,



How does this fit into other plans?

The Resilience and Regeneration Plan builds on a legacy of city sustainability and resilience planning. The framework here will contribute to future planning and other amendments to the Sustainable Northampton Comprehensive Plan.

All city plans must advance resilience and regeneration around a wide variety of stresses and shocks (e.g., economic and housing), not just the climate change.

This plan defines a recommended approach. Except for its role as one of the Zoning Special Permit criteria, it has no legal teeth. The power comes from building a consensus vision.

we've worked to identify research and experience based strategies, and ways to expand the impact of these strategies. This will not only help meet Northampton's resilience and regeneration goals, but it will also encourage regional collaboration, greater economic and cultural vitality, and greater equity through opportunities and resources here in Northampton.

We acknowledge our limits as a small city and that our regeneration and mitigation efforts amount to nothing absent concerted and stepped up state, federal, and international actions. Northampton needs to move forward as aggressively as we can, as we collectively work towards limiting global climate warming to 1.5 degrees Celcius

above pre-industrial levels (the accepted target used by the Intergovernmental Panel on Climate Change, 2018, and others). If the state and federal government provide more tools, we should be working towards 2030 climate neutrality.

With our limited tools and financial resources, we must:

- Focus on high impact practices, the most impactful resilience and regeneration actions.
- Focus on the practices that provide us with the highest resilience and regeneration Return on Investment (ROI).

Northampton Resilience and Regeneration Framework



FIGURE 1. Northampton Climate Resilience and Regeneration Framework. In developing strategies that will help us reach our regeneration and resilience goals, we also look for opportunities to increase economic and cultural vitality, equity, and regional collaboration.

Building on Past Success

Northampton is committed to being one of the most sustainable communities in the nation. We are proud to have been the first city to receive a 5-STAR rating under the former STAR Communities Rating System for sustainable communities and the highest Commonwealth Capital score under the former Massachusetts Smart Growth scoring. We are now a LEED for Cities

and earmarked for the future demonstrate how we've been both forward-looking and forward-moving in reaching those goals. Nevertheless, there is much more to do. The Northampton Climate Resilience and Regeneration Plan intends to build on that momentum, integrating actions already underway, and laying out next steps for legislation, decision-making, implementation, and tracking progress over both the short- and long-term.

Reaching carbon neutrality by 2050 is a challenge and an opportunity for Northampton. It will require action at individual, city, and regional scales.

and Communities certified community and use that system to track and improve upon our progress.

We created a vision for a sustainable community in our 2008 Sustainable Northampton Comprehensive Plan. Since then we have up-zoned our core commercial, residential, and industrial/office districts to encourage walkable and bikable development patterns; adopted the energy stretch code; invested in solar PV capacity; hired an energy coordinator; ramped up energy efficiency in municipal buildings; doubled the amount of our protected conservation land; restored natural systems and revitalized new open spaces; designed resilient stormwater systems with natural systems; invested in public art; implemented the ValleyBike regional bike share program; improved bicycle and pedestrian accommodations and complete streets; planted over 1,000 shade trees; and invested millions in social equity, to name but a few of the many efforts.

Our dedication to track and reduce city-wide greenhouse gas emissions supports our commitment to the Global Covenant of Mayors for Climate and Energy—and now our pledge to be carbon neutral by 2050. This commitment can be seen throughout Northampton's governing bodies including the City Council and Planning Department (see Appendix for a list of City Council resolutions on environmental issues). These investments in the past, present,

Summary of Resilience & Regeneration Strategies

Reaching carbon neutrality by 2050 is a challenge and an opportunity for Northampton. It will require action at individual, city, and regional scales. We have identified a set of strategies, ranging from policies, regulatory changes, and capital improvement projects, to new programs and advocacy that will move us towards a more resilient and regenerative Northampton.

How are the strategies organized?

Northampton is tracking its progress using the new US Green Building Council (USGBC) rating system LEED for Cities and Communities. This replaced the former STAR Communities program. The Resilience and Regeneration strategies are broken down by the categories defined in the rating system to help us track how our actions help us make progress.

Time-frame Notations

Short-term = less than 1 year

Mid-term = one to 3 years

Long-term = over 3 years

\$\$ = Capital cost (\$1-5M)
\$\$\$ = Planning/policy program implementation (\$25-250k)

Cost Notations

\$ = Capital cost (<\$1M)
\$\$ = Planning/policy/program implementation (<\$25k)

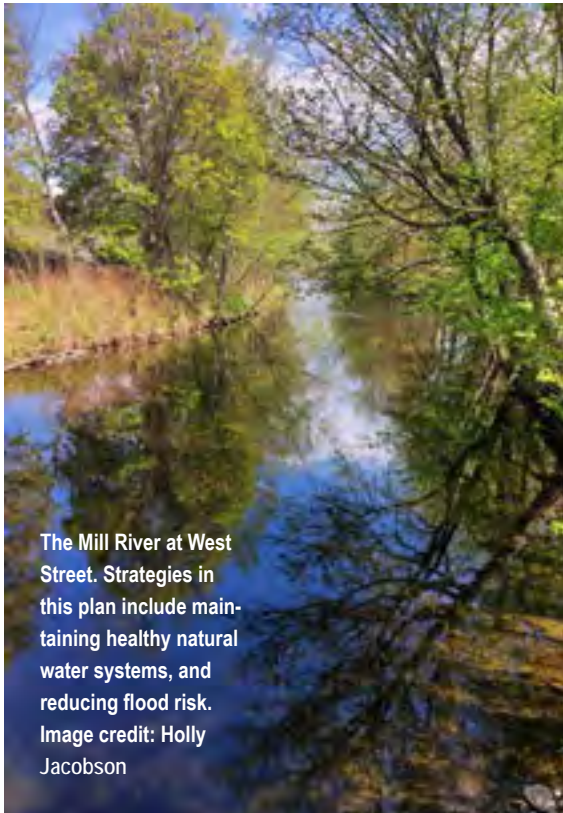
\$\$\$ = Capital cost (>\$5M)
\$\$\$\$ = Planning/policy/program implementation (>\$250k)

Climate Change in Northampton

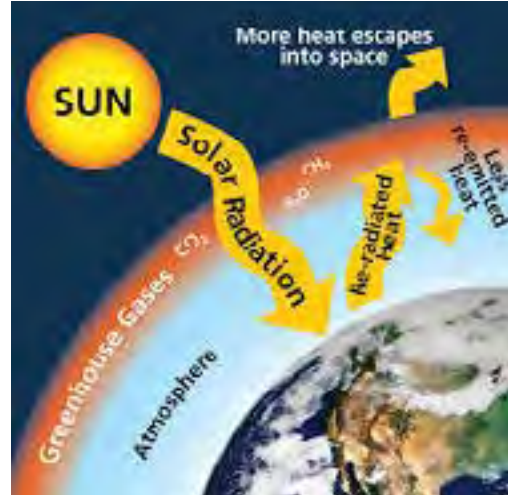
Why is the Climate Changing?

The fossil fuels we use for generating electricity, heating our homes and workplaces, growing the food we eat, and fueling our cars, as well as trash breaking down in landfills release greenhouse gases (GHGs) into the atmosphere. Naturally occurring greenhouse gases are important for regulating the Earth's temperature and keeping it warm enough for life on this planet.

Since the industrial revolution, however, human activity such as burning fossil fuels, converting our forests to farms and human development, and producing waste has caused much larger quantities of greenhouse gases (particularly carbon dioxide and methane) to be released into the atmosphere than is sustainable. The amount of carbon dioxide has increased 100 times faster in the last 60 years than previous natural increases! This large increase in greenhouse gases is causing global temperatures to rise and is disrupting our climate patterns, causing more extreme weather events.



[A]



[B]

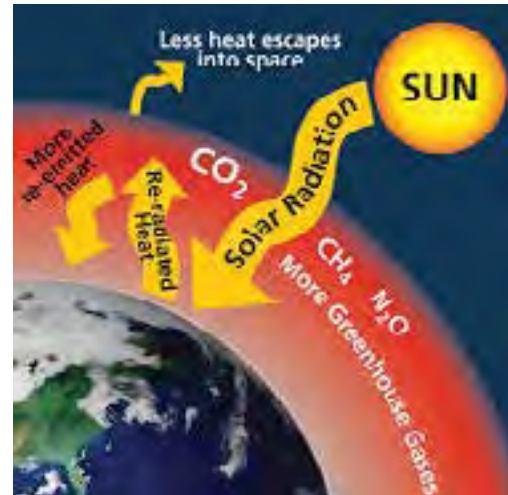


FIGURE 3. This image depicts the greenhouse gas effect that changing our climate. While greenhouse gases in the atmosphere are important for trapping heat from the sun (image [A]), too much greenhouse gas changes Earth's climate (image [B]). (Image credit: Will Elder, National Park Service)

Changes in Global Surface Temperatures and CO₂ in the Atmosphere

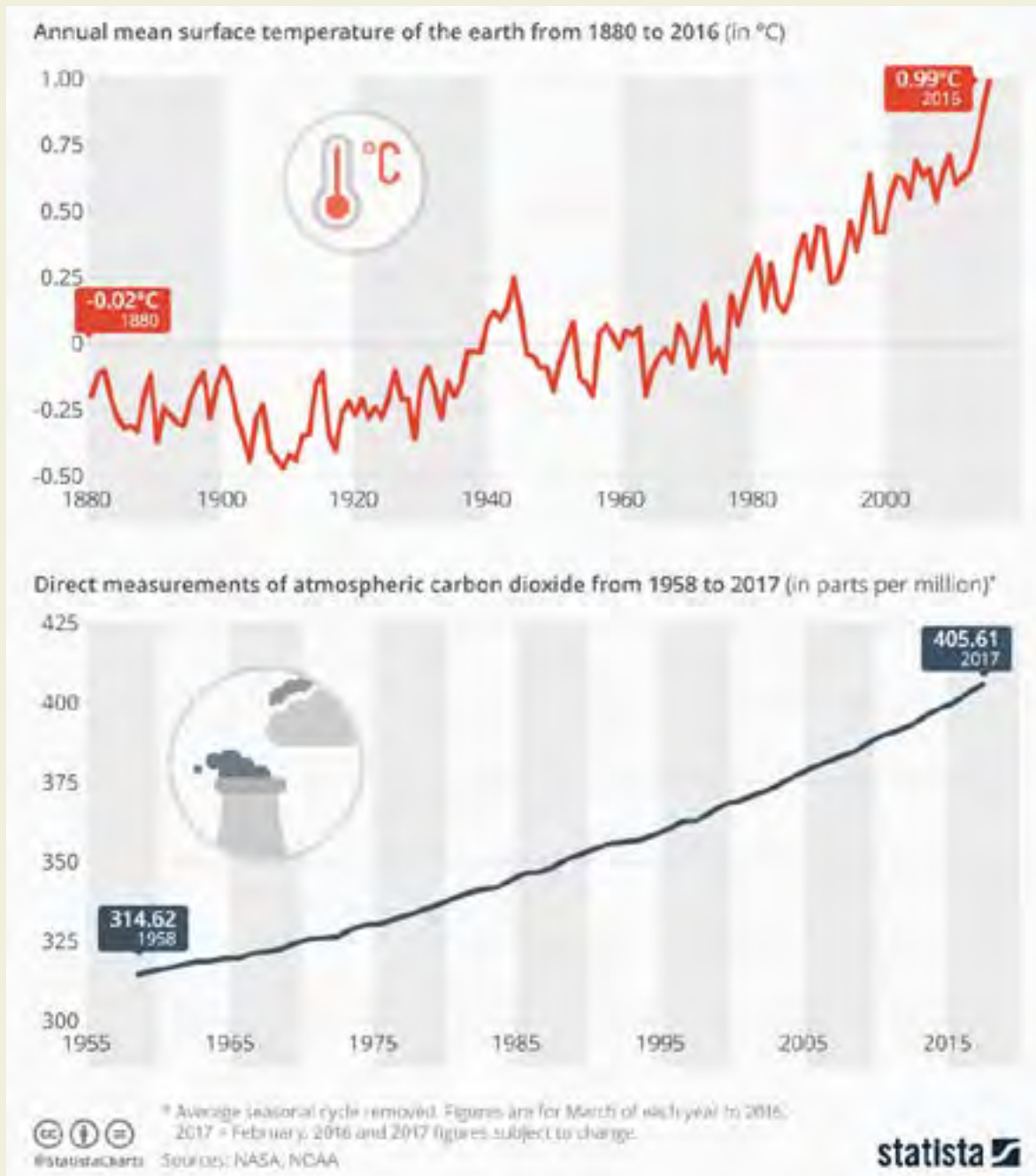


FIGURE 4. Change in the annual mean surface temperature of the earth from 1880 to 2016 (top) and change in the carbon dioxide concentrations in the atmosphere from 1958 to 2017 (bottom).

(Image credit: Martin Armstrong, Statista) See: www.statista.com/chart/8471/co2-levels-and-global-warming

A Changing Climate & Future Projections

Climate Change in Northampton

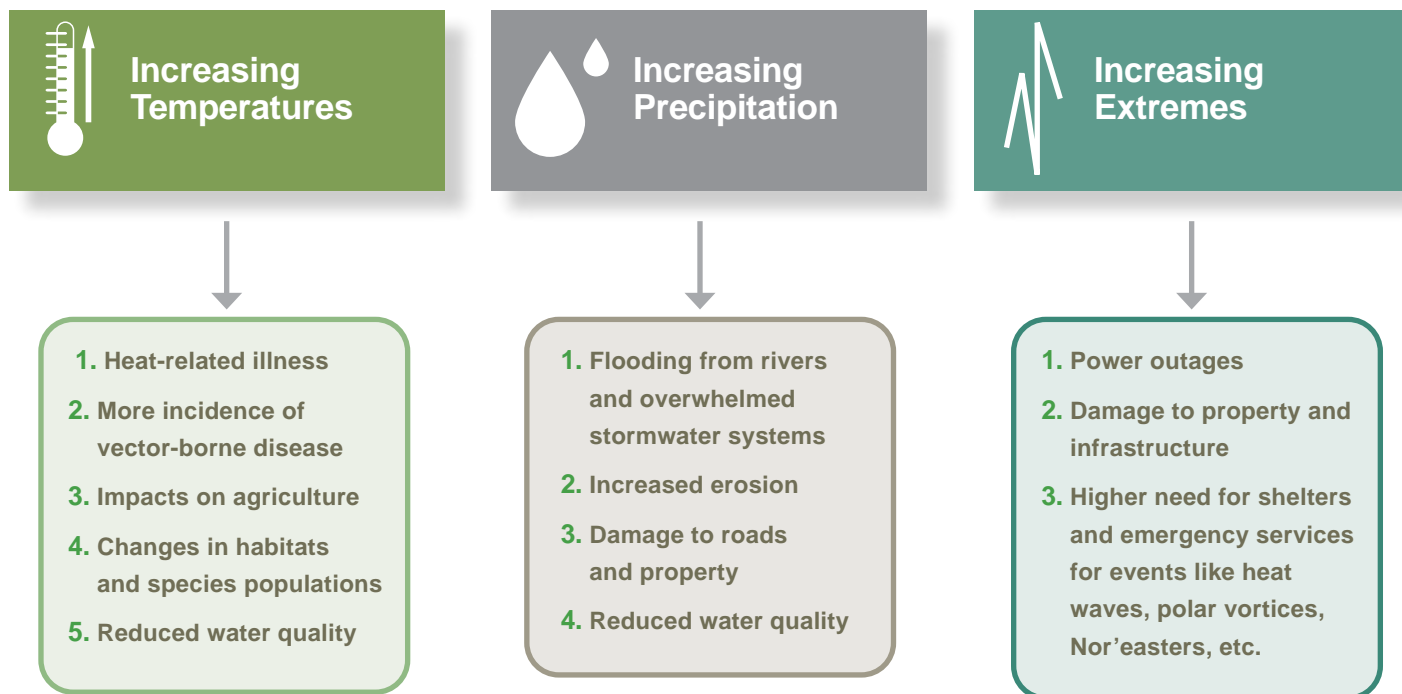
As a result of climate change, Northampton is experiencing increasing mean temperatures and more intense storms. These changes are taking a toll on our infrastructure, ecosystems, and health, including more frequent flood events, wear and tear on our roads, spread of new invasive species, disruptions to farming, and increasing vector-borne disease. Even if we can achieve significant reductions in greenhouse gas emissions globally, even if we can become net carbon neutral, feedback loops will continue and we will see and experience the intensifying impact of these changes within the next thirty years and even more so by the end of the century.

Changes in Temperature

Annual temperatures in the Northeast have been warming 0.5°F per decade on average since 1970, with winter temperatures increasing even faster at 1.3°F per decade (Massachusetts EOEEA/ Department of Energy Resources (EEA). (2017). Resilient MA: Climate Change Clearinghouse for the Commonwealth. Retrieved from <http://resilientma.org/>.) In Western Massachusetts, specifically, average annual temperatures have increased 1.9°F since 1970 (Climate Central. (2019). "US Warming by State." Retrieved from www.climatecentral.org/gallery/maps/us-warming-by-state, using Springfield, MA data).

Based on downscaled climate projections, average temperatures for the Connecticut River Basin are expected to increase 3–6°F by 2050 and 4–11°F by the end of the century (Downscaled climate projections by the Northeast Climate Science Center at

FIGURE 5. Key indicators of climate change in Northampton (solid boxes) and some of the potential impacts we are likely to see from those changes (dashed boxes). (Icon credit: André Luiz and Baaboo designs from the Noun Project)



UMass-Amherst. Accessed from Massachusetts Climate Change Projections, Massachusetts EOEEA/Department of Energy Resources, 2017.

With these changes in temperature we will see more days with extreme heat and fewer days below freezing. From 1970–2000, the Connecticut River Basin had an average of roughly 6 days with maximum temperatures of 90°F each year, a number which is expected to increase to 16–42 days by 2050. Likewise, by 2050 the Connecticut

River Basin is likely to have 19–37 fewer days where temperatures dip below 32°F each year.

Along with potential impacts to the city's agriculture, air quality, and the health of our water supplies, these temperature increases are already showing effects on our ecosystems by degrading the health and longevity of tree species that are accustomed to colder climates, contributing to pest outbreaks, and facilitating the spread of invasive species. Insects, including tick species that carry Lyme

Maximum Summer Temperatures for Northampton, MA



FIGURE 6. Summer temperatures (average maximum daily temperatures for June – August) have been increasing over the past several decades. They are expected to continue to increase through the end of the century. The current average maximum temperature in the summer (around 83°F), may increase to nearly 95°F by 2100. The red line shows business-as-usual if we continue to emit greenhouse gases globally at the same rate. The blue line shows temperature change projections with significant greenhouse gas emissions reductions. Historical simulations (1980-2005) and projections (2006-2099) in seasonal averages of maximum daily temperature from a 29-member, high resolution (4 km) statistically downscaled Coupled Model Intercomparison Project (CMIP5) ensemble mean lower (RCP 4.5 W - thick blue line) and higher (RCP 8.5 - thick red line) representative concentration pathway (RCP) emission scenarios. Red and blue lines for the period 1980-2005 are identical. The light blue (light red) shading represent the highest and lowest values from the 29 different model RCP 4.5 (RCP 8.5) simulations for each year. Graph from Elizabeth Burakowski and Cameron Wake, Earth System Research Center/EOS, U. of New Hampshire.

disease, are less likely to die off in the winter with higher winter temperatures, leading to higher breeding rates. Northampton has seen increasing rates of Lyme disease cases and increases in mosquito and other vector-borne disease.

With increasing average temperatures, Northampton will see more extended heat waves, which produce more challenges than the occasional hotter day.

Extreme heat, humidity, and sustained heat waves cause heat-related illness, particularly for people with compromised immune systems, asthma, or without access to air conditioning. We recognize and need to address how climate change disproportionately affects some community members (frontline communities) more than others (climate justice).

Minimum Winter Temperatures for Northampton, MA



FIGURE 7. Winter temperatures (average minimum daily temperatures for December - February) have been increasing over the past several decades, and are expected to continue to increase through the end of the century. The average winter minimum temperature (approximately 18°F) may increase to nearly 28°F by 2100. The red line shows a “business-as-usual” case if we continue to emit greenhouse gases globally at the same rate. The blue line shows temperature change projections with significant greenhouse gas emissions reductions. Historical simulations (1980-2005) and future projections (2006-2099) in seasonal averages of minimum daily temperature from a 29-member, high resolution (4 km) statistically downscaled Coupled Model Intercomparison Project (CMIP5) ensemble mean lower (RCP 4.5 W - thick blue line) and higher (RCP 8.5 - thick red line) representative concentration pathway (RCP) emission scenarios. Red and blue lines for the period 1980-2005 are identical. The light blue (light red) shading represent the highest and lowest values from the 29 different model RCP 4.5 (RCP 8.5) simulations for each year. Graph from Elizabeth Burakowski and Cameron Wake, Earth System Research Center/EOS, U. of New Hampshire.

Changes in Precipitation

Average annual rainfall has increased by nearly ten percent in the Northeast since 1970 (Massachusetts Climate Change Clearinghouse. (2017). "Changes in Precipitation," from http://resilientma.org/changes/changes-in-precipitation#fn_1). The intensity of downpours has also increased significantly. Between 1958 and 2010, the Northeast experienced a 70% increase in the precipitation that fell in "very heavy events," the heaviest 1% of all daily events (Horton, R., Yohe, G., Easterling, W., Kates, R., Ruth, M., Sussman, E., Whelchel, A., Wolfe, D., & Lipschultz, F. (2014) Ch. 16: Northeast. "Climate Change Impacts in the United States." *The Third National*

Climate Assessment. J. M. Melillo, Terese Richmond, and G. W. Yohe, Eds. U.S. Global Change Research Program, 16-1-11).

With these major storms, Northampton faces three types of flood risk: 1) Riverine flooding from the Connecticut River, Mill River, Manhan River, Parsons Brook, and unnamed streams; 2) Localized flooding when infiltration and the stormwater system reaches maximum capacity; and 3) Downtown flooding if floodwaters over-top the levee or if the levee or Hockanum Road pump station fail. Much of the easterly portion of the city is within the floodplain of the Connecticut River. The flood control system, which was built in the

Annual Mean Flow for the Mill River (USGS Site 1171500)

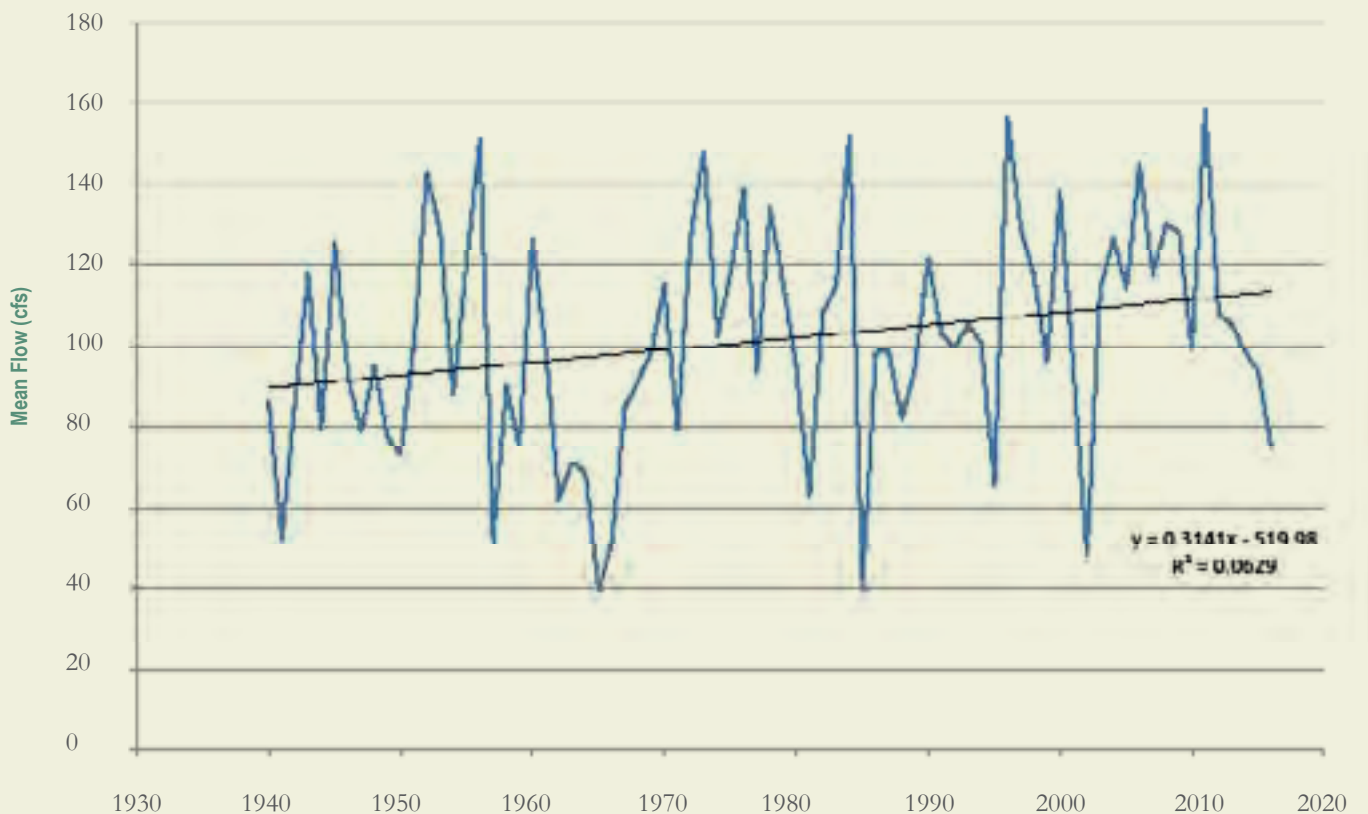


FIGURE 8. Historic annual mean flow for the Mill River (USGS Site 1171500)

1940s after two major floods in the 1930s damaged much of the city, affords the downtown protection from major floods. The system was designed, however, to protect against a maximum predicted flood level in the 1940s, with additional freeboard of two to five feet along the earthen levees and concrete walls. Although this is a conservative design, it may not be sufficient for the higher intensity storms expected with climate change.

More frequent high-intensity rain events will surpass the capacity of the city's aging culvert and stormwater systems, causing more localized flooding. Without updated infrastructure design standards and new strategies for infiltrating and

storing water, flooding is likely to increasingly impact roads, buildings, and communities.

The flood control systems for the Connecticut and Mill Rivers were designed and constructed by the US Army Corps of Engineers to protect the city from flooding. Areas within the city that would flood without the levee structures are considered to be a levee-protected zone according to FEMA. FEMA is currently updating their floodplain mapping, a process that currently includes the City's obtaining engineering certification of the levee system. This FEMA map modernization and city certification is anticipated to be complete in 2025.

Annual Peak Flows for the Mill River (USGS Site 1171500)

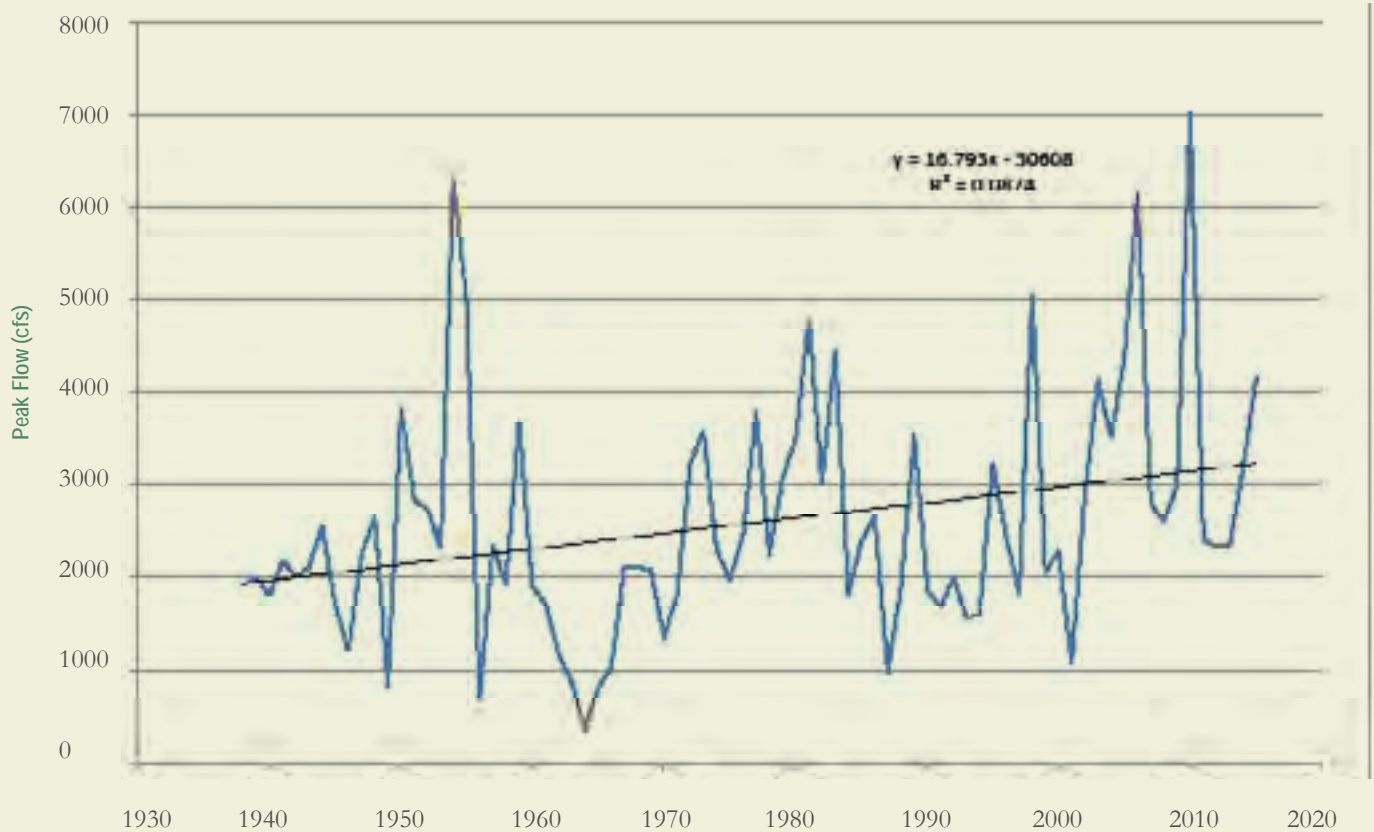


FIGURE 9. Historic annual peak flow for the Mill River (USGS Site 1171500)

Variability and Extremes

Climate change will bring average higher temperatures and more precipitation. That shift, however, will not result in steady weather patterns. In the Northeast we expect greater variability and more extreme weather. This may include longer periods of drought, more severe hurricanes, heavier snowstorms, or polar vortices.

Despite our city's robust water supply, longer periods of dry weather may impact the quantity

and quality of that supply. In 2016, Massachusetts issued a drought declaration in which the Connecticut River Region reached "warning" status. Although Northampton had implemented water restrictions in years past, this level of drought demonstrates the need for further water use conservations as we continue to see the effects of climate change. In particular, the vast majority of Northampton's farmland is not irrigated, making the city's agriculture especially vulnerable to drought.

Annual Average Precipitation for Northampton, MA



FIGURE 10. Average annual precipitation has been increasing over the past several decades, and is expected to continue to increase through the end of the century. The red line shows a "business-as-usual" case if we continue to emit greenhouse gases globally at the same rate. The blue line shows projections for the change in annual precipitation with significant greenhouse gas emissions reductions.

Historical simulations (1980-2005) and future projections (2006-2099) in annual averages of total precipitation from a 29-member, high resolution (4 km) statistically downscaled Coupled Model Intercomparison Project (CMIP5) ensemble mean lower (RCP 4.5 W - thick blue line) and higher (RCP 8.5 - thick red line) representative concentration pathway (RCP) emission scenarios. Red and blue lines for the period 1980-2005 are identical. The light blue (light red) shading represent the highest and lowest values from the 29 different model RCP 4.5 (RCP 8.5) simulations for each year. Graph from Elizabeth Burakowski and Cameron Wake, Earth System Research Center/EOS, University of New Hampshire.



Community members and staff discussed the potential impacts from climate hazards (e.g., rising temperatures, increased precipitation, floods, droughts, and more intense storms) at several workshops. [See the Community Resilience Building Workshop Summary of Findings \(2018, amended 2020\)](#)

The City must increase the resiliency of the city's systems to address extreme storm events that can bring power outages, interruptions in transportation, heavier reliance on homeless and emergency shelters, and business and service closures.

Equity Disparities & Frontline Communities

Some of our residents, generally those with the least resources, will be disproportionately hit by climate change (frontline or climate justice communities).

Some individuals can drive away and stay in a hotel when a major storm is threatened. Some can afford to purchase air conditioning or swim in a pool when it is hot. Some can afford higher water rates. Some can purchase more robust housing.

Some cannot. The frontline communities for climate change tend to be the communities who are already facing chronic stress. They are often low income, populations of color, homeless, under employed, those with disabilities, and many other existing situations that add to the day-to-day challenge.

For example:

- The 1% of the population that is experiencing homelessness and others under the most severe chronic stress
- The 15% of the population below the poverty line
- The 40% of the population that is housing-burdened and under chronic stress
- Populations of color who may be suffering from structural racism
- Elderly and health compromised residents
- Persons with disabilities

During periods of acute stress (extreme storm events, natural and human-made disasters, and pandemics) 100% of the population is at much greater risk from climate change.

Pathways for Action



Carbon Neutrality Goals

The City of Northampton is committed to net carbon neutrality by 2050, city buildings and operations to net carbon neutrality by 2030, and community carbon emissions to a 50% reduction by 2030 and a 75% reduction by 2040. This commitment is aided by Smith College's commitment to be net carbon neutral by 2030.

The city and its commercial, industrial, institutional, and residential partners need to ensure greenhouse gas emissions are reduced to as close to zero as possible and any remaining emissions are covered by offsets or sequestration, while incorporating climate resilience and regeneration into all future city plans and capital improvement planning. Addressing energy sources, building energy, transportation, land use, food systems, waste systems, trees and forests, carbon sequestration, and consumption, while acknowledging that the most effective carbon neutralization strategy is always conservation and reducing demands (e.g., energy, transport, materials).

Northampton coordinates ValleyBike share for the Pioneer Valley, as part of its strategy for low carbon transportation. Image credit: Planning and Sustainability

Guiding Principles

Our guiding principles shape all of our planning. A resilient and regenerative community requires investments in projects and programs and adjusting the way we plan, develop policies, and implement those policies. We must consider the potential for Resilience and Regeneration outcomes in every investment we make.

We cannot be a resilient and regenerative city without being an equitable city. Equity, along with resilience and regeneration, is our third guiding principle for planning and implementation. We must recognize and reconcile injustice, ensure equitable access to resources and opportunities, and have an inclusive planning and decision-making process.

Likewise, Economic and Cultural Vitality is integral to making Northampton strong, healthy, and vibrant. We must support local businesses, jobs and skill-training, and nurture a creative economy.

Northampton is one city nested within our region and state. We must accelerate adoption of resilience and regeneration practices by working collectively across the Pioneer Valley, Massachusetts, and even at broader scales. Thus, we seek Regional Collaboration as a guiding principle to exchange insight and plan collectively with other communities, particularly in addressing global climate change.

Northampton 2016 Community Greenhouse Gas Emissions by Sector

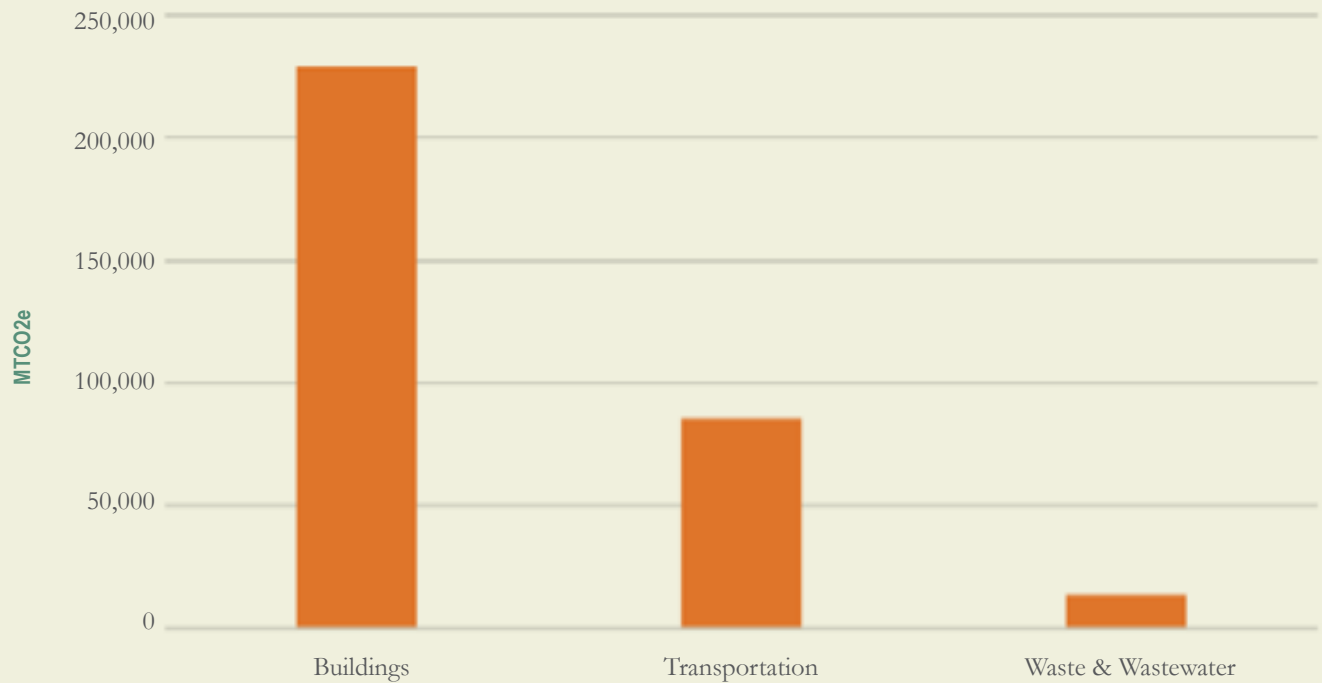


FIGURE 11. Northampton's 2016 community GHG emissions by sector. Commercial and residential buildings account for 70% of the GHG emissions in Northampton.

Greenhouse Gas Emissions Inventory

We inventoried the major sources of Northampton's Greenhouse Gas emissions. To allow comparisons with our peer cities, the GHG inventory followed the Global Protocol for Community-Scale Greenhouse Gas Emissions (GPC), an international accounting protocol. The following chart shows the inventory, by sector.

Emissions totaled approximately 329,140 MTCO2e in 2016. That is the same amount of emissions that roughly 70,000 gasoline-powered cars release in one year. Commercial and residential buildings account for 70% of community GHG emissions. Transportation accounts for 26%. Waste and wastewater treatment account for 4%.

Figure 12, below, shows more detailed information about where our community greenhouse gas emissions are coming from. The 52% of emissions labeled "commercial and multi-family

buildings" includes emissions from all commercial and institutional properties in Northampton, including municipal facilities, multi-family housing, Smith College, and Cooley Dickinson Hospital. The energy we use in private homes makes up 18% of

Greenhouse Gas Emissions

We focus primarily on Scope 1 and 2 emissions, but some of our actions will address Scope 3.

Scope 1 Direct Emissions (e.g., fuel combustion on-site, vehicle emissions, gas line leaks, within the city), with related offsets

Scope 2 Indirect Emissions from off-site production of city electricity use

Scope 3 Other Indirect Emissions beyond control, such as the global footprint of products consumed in the city

our community emissions. Data related to energy use and emissions from industrial buildings and processes and from agriculture, specifically, was unavailable and therefore is not included in this analysis. The assessment indicates, however, that building energy use presents a significant opportunity for targeting emissions reductions.

Another area of opportunity for targeting emissions reductions is in “on-road transport,” which makes up 26% of our community’s emissions. These emissions include both gas and diesel-powered vehicles used for commercial and personal use. Meanwhile, “water and wastewater treatment and discharge” accounts for 3% of our total emissions, and includes emissions from electricity use and other emissions at the water and wastewater treatment plants and throughout the entire system. While “solid waste disposal” emissions are low at 1% this is an important and common area to address as the actions we take

What is MTCO₂e?

MTCO₂e is an abbreviation for “metric tons of carbon dioxide equivalent.” GHG inventories look at several types of greenhouse gases, each of which has a different capacity for trapping heat. Because humans produce more carbon dioxide (CO₂) than any other GHG, emissions of GHGs are counted based on how each GHGs heat trapping capacity compares to that of CO₂. This is called the CO₂ equivalent (CO₂e). At a community scale, GHGs are measured in metric tons of CO₂e (MTCO₂e).

to reduce the amount of material sent to the a sanitary landfill or incinerator can have other benefits, e.g., reducing our material consumption and the energy use associated with the production, packaging, and transportation of products.

Though solid waste appears to only account for 1% of all GHG emissions in these figures, in reality, the carbon footprint from this sector is much larger. This disparity is due to the GHG emissions produced

Northampton 2016 Community Greenhouse Gas Emissions by Sub-Sector

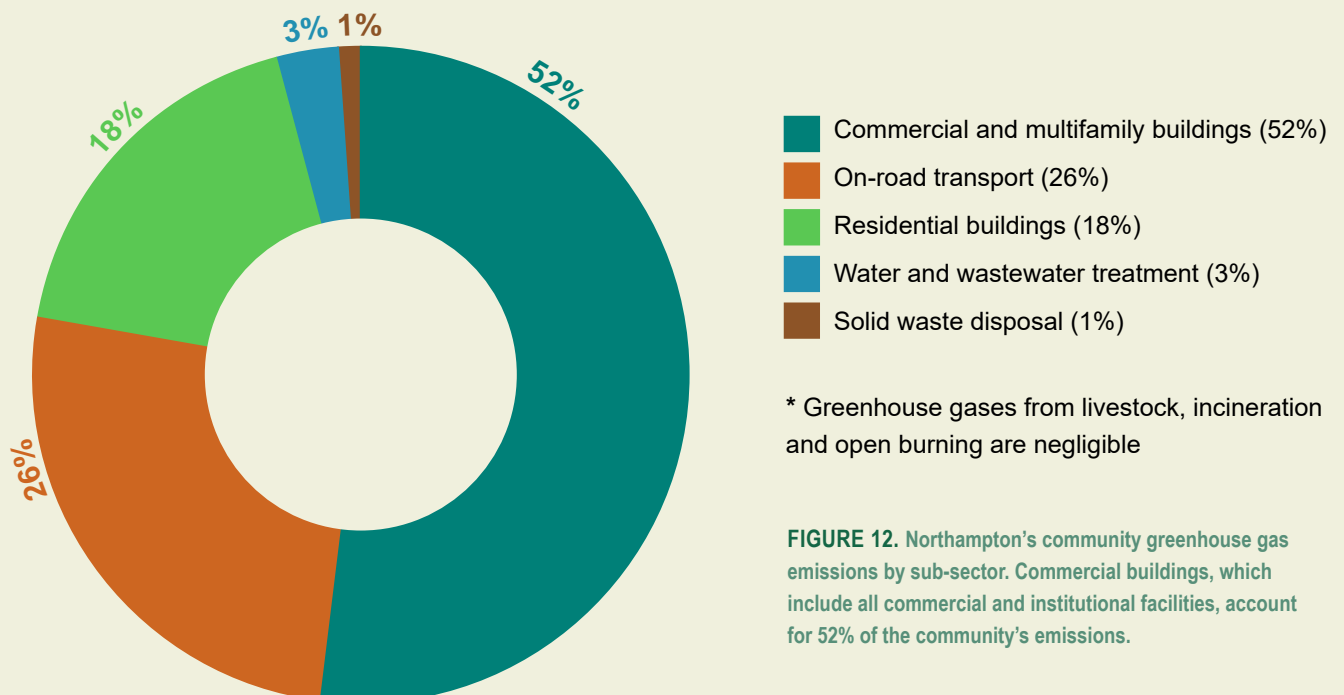


FIGURE 12. Northampton’s community greenhouse gas emissions by sub-sector. Commercial buildings, which include all commercial and institutional facilities, account for 52% of the community’s emissions.

through the production, packaging, and shipping of products that eventually become solid waste within the Northampton community. Though Northampton does not include these emissions within its inventory as they are accounted for by the communities generating and transporting these products, it is important to understand how our communities' consumption and waste practices ultimately contribute to a global network of large-scale emitters.

Burning fossil fuels is the main source of greenhouse gas emissions globally. In Northampton,

Mobile versus stationary sources

Mobile sources refers to the energy used for transport activities like driving a car.

Stationary sources refers to the electricity, oil, and natural gas used in our buildings, including homes, schools, and offices.

Northampton 2016 Community Greenhouse Gas Emissions by Fuel Type

Sector	Greenhouse Gases Emissions (MTCO ₂ e)					Total
	Stationary Energy			Mobile Energy		
	#2 Fuel Oil	Natural Gas	Electricity	Gasoline	Diesel	
Buildings	13,620	128,770	58,070	-	-	200,460
On-road transportation	-	-	-	56,740	29,060	85,800
Water	-	-	500	-	-	500
Wastewater	-	-	680	-	-	680
<i>Total</i>	<i>13,620</i>	<i>128,770</i>	<i>59,250</i>	<i>56,740</i>	<i>29,060</i>	<i>287,440</i>

FIGURE 13. Northampton's greenhouse gas emissions (MTCO₂e) by fuel source and sector.

emissions from fossil fuels account for 87% of Northampton's total inventory. Figure 13 provides total emissions by fuel source and use. Natural gas used in heating buildings and water is the primary source of emissions from stationary sources. Mobile source emissions from gasoline are nearly double that of diesel fuel.

Though natural gas is often reported to have a lower carbon footprint than oil and coal, when gas leakage is included natural gas is still an extremely high emitter of GHG emissions relative to renewable energy sources. Investments in natural gas supplies and distribution are not compatible with the city's net zero carbon goal. New investments in natural gas create additional stranded assets in the long-term. Northampton will continue to use existing natural gas pipelines while transitioning away from a dependency on oil and coal to renewable energy sources.

Moving Forward

Greenhouse gas emissions are a primary indicator for a more sustainable and resilient future. To ensure we are constantly moving toward our goal of carbon neutrality, it will be essential for the city to develop a streamlined process to collect energy use and emissions data for ongoing tracking and reporting purposes. There is also a strong need to improve the quality and availability of the data based on shifts in priorities and market transformations. For example, through Community Choice Aggregation, Northampton will gain access to some electric utility data that previously was challenging to come by. It will be critical to have a system in place for identifying what our current and future data needs might be and ensuring that we are equipped to store, manage, and utilize that data to tell the story of our path to carbon neutrality.

Our Path to a Carbon-Neutral & Regenerative City

Regeneration Pathways

The Carbon Neutral Pathway Analysis quantifies the impact of a the pathways that have the potential to yield the greatest reductions and for which data was readily available. The city needs a comprehensive approach to reducing emissions that prioritizes conservation and efficiency, electrification of energy use, transportation mode shifts, and changes in land use. We recognize that many of the strategies within these pathways may result in higher short-term costs. We must protect, however, the many members of our community would be disproportionately burdened by these cost increases. Equity is a primary lens for this plan and needs to be part of all implementation efforts.

The Carbon Neutral Pathway Analysis assessed the reduction potential of the first six of the following pathways, although the vehicle emissions standards pathway is at the federal and state levels. These pathways, and the others not analyzed, should be pursued simultaneously and presented in no particular order. They tackle the sectors that make up the majority of Northampton's GHG emissions - buildings, transportation, and electricity generation.

All of the pathways are reflected in the strategies in Section Four.

PATHWAY 1

Reduce Energy Demand- Efficiency and Conservation

Reducing energy use, from buildings, transportation, consumption, and all other energy users is always the most effective way to reduce greenhouse gas emissions.

Within the city's footprint, increasing building energy efficiency is the most cost-effective way to reduce greenhouse gas emissions and, at the same time, retain more money within the city. This requires a variety of actions, including a much stronger energy stretch code, zoning

incentives, public investment in city buildings, energy benchmarking and disclosure, planting of street trees to reduce heat island effects, and right-sizing new construction to avoid over-building.

Regulations can range from incentives, technical assistance, energy performance standards for new buildings to a benchmarking and disclosure requirements for existing buildings meeting certain thresholds, to assess and disclose their energy use and other performance indicators. The latter action creates market incentives to improve building performance (typically achieving between 2-11% energy reductions annually). (US Environmental Protection Agency (2012) "Benchmarking and Energy Savings."

The city is leading by example, currently examining HVAC systems in city buildings with a plan for the city to achieve its city operations carbon neutral target by 2030.

Reducing consumption and moving to a zero waste framework, where waste generation is dramatically reduced becomes a resource instead of a waste (e.g., composting of materials) has a relatively small effect on local greenhouse gas emissions (Scope 1 and 2 emissions). Those steps, however, have a dramatic effect on the long footprint that Northampton has on the entire world (Scope 3 emissions) because GHG emissions to make and ship products to Northampton can be reduced. These actions will take place both within the city and, through its management of public land and purchasing power, outside of the city.

PATHWAY 2

Electricity from Renewable / Low-Carbon Sources

This pathway calls for transforming Northampton's electricity supply as a climate change mitigation mechanism. To achieve zero carbon electricity, all fossil fuel generation sources must be replaced by renewables, with any remaining generation "neutralized" with

carbon offsets or carbon credits. Northampton has advanced this pathway by encouraging private and municipal solar (including relevant zoning, three commercial scale and many smaller scale solar PV installations, and past participation in MassCEC's Solarize Mass Program). Per capita solar capacity through this program grew eight times faster in Northampton than the statewide average. Because conservation and energy demand reduction are usually more cost-effective than switching to renewables, Northampton is actively pursued both strategies. Efficient distributed energy and distributed energy storage (batteries or other storage mechanisms), on both city and private facilities and land, are critical to this effort.

PATHWAY 3

Electric Vehicle Deployment

Encouraging the shift toward electric vehicles (EVs) can significantly reduce GHG emissions and improve air quality in Northampton, even with today's electricity mix. Increasing the adoption of electric vehicles requires:

- Converting more of the city fleet to electric vehicles.
- Continuously expanding EV charging infrastructure.
- Informing the public on state and federal EV incentives.

Northampton is already making progress in this area with 60 EV charging station ports within 9 miles of the city, with many more private ones installed by local businesses and residents.

PATHWAY 4

Net Zero Energy Buildings

A Net Zero Energy (NZE) building produces enough renewable energy to meet its own annual energy consumption requirements.

Typically, such buildings are highly energy efficient and leverage passive solar to minimize the renewable energy requirements. This requires a combination of state building code reforms, local zoning and other incentives, and the City leading by example by ensuring that all new and existing municipal and school buildings are built and rehabilitated to Net Zero Energy. Requiring all new and major redevelopment to meet these aggressive requirements can go a long way toward reducing greenhouse gas emissions in our new and existing buildings sector.

PATHWAY 5

Electrification of Thermal Loads

Switching from traditional heating systems to newer air-source and ground-source heat pumps can reduce energy demand and eliminate or dramatically reduce on-site fossil fuel consumption, and switch the energy source to electricity, which will eventually be served by 100% renewable sources. The increased performance and energy efficiency of air-source heat pumps (ASHPs) and ground-source heat pumps manufactured for cold weather climates today is a result of technical, manufacturing, and installation advances.

The first run of the HeatSmart Northampton ASHP program helped 54 homeowners around Northampton make the switch to ASHPs. The city has already joined others in the community in using more efficient, but capital-intensive, ground-source heat pumps at its Senior Center. Smith College is exploring switching its entire thermal load to ground-source heat pumps as part of its own efforts to be carbon neutral by 2030. The city is beginning the necessary energy studies to ensure that it electrifies its thermal (heating and cooling) systems in its public buildings as boilers and heating systems fail and/or require major upgrades.

PATHWAY 6

CAFE and Other Vehicle Standards

The federal Corporate Average Fuel Economy (CAFE) standards, first enacted in 1975, set the minimum average fuel performance of the cars and light trucks sold in the United States. CAFE standards have resulted in more efficient (higher miles per gallon) passenger vehicles on the road. Separately, the US Environmental Protection Agency (EPA) greenhouse gas tailpipe emissions regulations also apply to all vehicles, working in coordination with CAFE and truck standards toward more efficient, less polluting vehicles. Even with the 2020 federal attempts to rollback some of these standards, fuel efficiency and per vehicle emissions will continue to improve, especially with the increase in electric vehicles.

PATHWAY 7

Transportation Mode Shift

Mode shift is moving trips from single occupancy motor vehicles (SOV) to alternative transportation options. The most cost effective ways are to provide more sustainable options, walking, bicycling, and public transit, and providing land use options to reduce the number and length of necessary trips. These sustainable forms of transportation reduce greenhouse gas emissions, and bring social equity, community cohesion, and health benefits by providing more affordable transportation methods, better access to goods and services for residents without cars or who cannot drive, and avenues for healthy outdoor activity.

Northampton has made the use of sustainable transportation modes increasingly feasible for residents by investing in shared use paths; complete streets with shade trees that are welcoming to walkers, cyclists, and transit users; and launching ValleyBike, the regional electric-assist bike share program. Northampton must further expand walking, bicycling, bike share, car share, and public transportation improvements to reduce GHG emissions and increase equitable access. Because a trip avoided is even better than a mode shift, the Land Use Patterns pathway below is critical.

PATHWAY 8

Land Use Patterns

Northampton's land use patterns play a key role in our pathway towards a carbon neutral and regenerative city. Compact development connected to multi-modal transit (e.g., bus routes and ValleyBike), trail networks, and in close proximity to amenities, encourages walking, biking, and bus use; reduces vehicle miles traveled; and encourages more efficient land and resource use through green infrastructure. Development review, zoning, planning, and infrastructure investments can all encourage an increase in the percentage of residents living within walking distance of downtown and commercial and village centers. Along with focusing on people over vehicles, encouraging a diversity of housing types; and installing community amenities (e.g., bike lanes, sidewalks, and parks), siting solar power systems, often with battery storage, on public and private land to offset energy needs, this pathway reduces GHG emission reductions.

PATHWAY 9

Carbon Sequestration and Offsets

Planting and retaining trees, especially street trees, and maximizing carbon storage in trees and soils is critical to reducing atmospheric carbon. Soils represent the Earth's largest reservoir of terrestrial carbon, storing more carbon than vegetation and the atmosphere combined. Rural and urban forests provide carbon sequestration and offset benefits through forest management activities including the re-establishment of forests, retaining existing forests, increased street trees, and sustainable forest management practices.

While enhancing carbon sequestration has a relatively minimal impact on offsetting the city's current level of greenhouse gas emissions, these practices become critical as the city's emissions approach zero. Furthermore, understanding that the current healthy soils and forests in the

city store an immense amount of carbon further justifies land preservation efforts. Offsets are a critical part of ensuring that city operations are carbon neutral by 2030.

intimate knowledge of possibilities, highlighting the carbon footprint and offsets of all city operations and creating capital and operating budgets of allowable carbon emissions may be the most effective way to incentivize future reductions.

PATHWAY 10

Carbon Budgeting and City Operations

The city's effort to achieve carbon neutrality for city buildings and operations cuts across all of the above pathways. In addition, because city department heads and operation managers have more

Cost of Carbon Budgets & Offsets

Carbon offsets and mitigation need to be valued for aligning carbon budgets with fiscal budgets. For planning purposes, some literature assumes carbon pricing at around \$100/ton, reflecting the value of efficiency measures in New England (e.g, see: www.synapse-energy.com/sites/default/files/AESC-2018-17-080.pdf).



Pathways Greenhouse Gas Reduction

Northampton's goal of carbon neutrality means that our emissions in 2050 will equal zero metric tons of carbon dioxide equivalent (MTCO_{2e}). Our consultants analyzed the above Pathways 1 through 6 for their GHG emissions reduction potential in low-case, mid-case, and high-case scenarios.

The low-case emissions reduction scenario is the status quo scenario. The mid-case scenario

is more aggressive actions, achievable with continued effort, support, and focus on reducing emissions. Neither scenario is sufficient to achieve Northampton's goals.

The high-case scenario is market transformation, exemplary achievement, and remarkable progress by the year 2030 in each pathway area.

The model, while only an estimate, provide guidance as we move towards carbon neutrality.

Northampton's committed goals are more aggressive than even the high case scenario. This requires:

1. Additional pathways to be modeled as more information and resources becomes available
2. Significant financial and political investments
3. Acceptance of the trade-offs with other public policy goals

Emissions Reduction Potential of Analyzed Pathways (#1 - 6)

Pathway	Low	%	Mid	%	High	%
1. Renewable / Low-Carbon Electricity	13,564	4.1%	19,086	5.8%	24,609	7.5%
2. Electric Vehicle Deployment	5,927	1.8%	12,281	3.7%	25,418	7.7%
3. Energy Benchmarking and Disclosure	9,061	2.8%	13,710	4.2%	18,861	5.7%
4. Net Zero Energy New Buildings	5,656	1.7%	11,313	3.4%	22,625	6.9%
5. Electrification of Thermal Loads	3,831	1.2%	7,931	2.4%	12,301	3.7%
6. CAFE & Other Vehicle Standards	12,320	3.7%	19,069	5.8%	28,455	8.6%
Total	50,359	15.3%	83,390	25.3%	132,269	40.1%

FIGURE 14. Reduction potential in MTCO_{2e} of each analyzed pathway under three scenarios (low-case, mid-case, and high-case scenarios) in 2030. Percentages indicate the percent reduction in emissions by 2030, aiming for 100% reduction by 2050.

Northampton High-Case Greenhouse Gas Emissions Projection

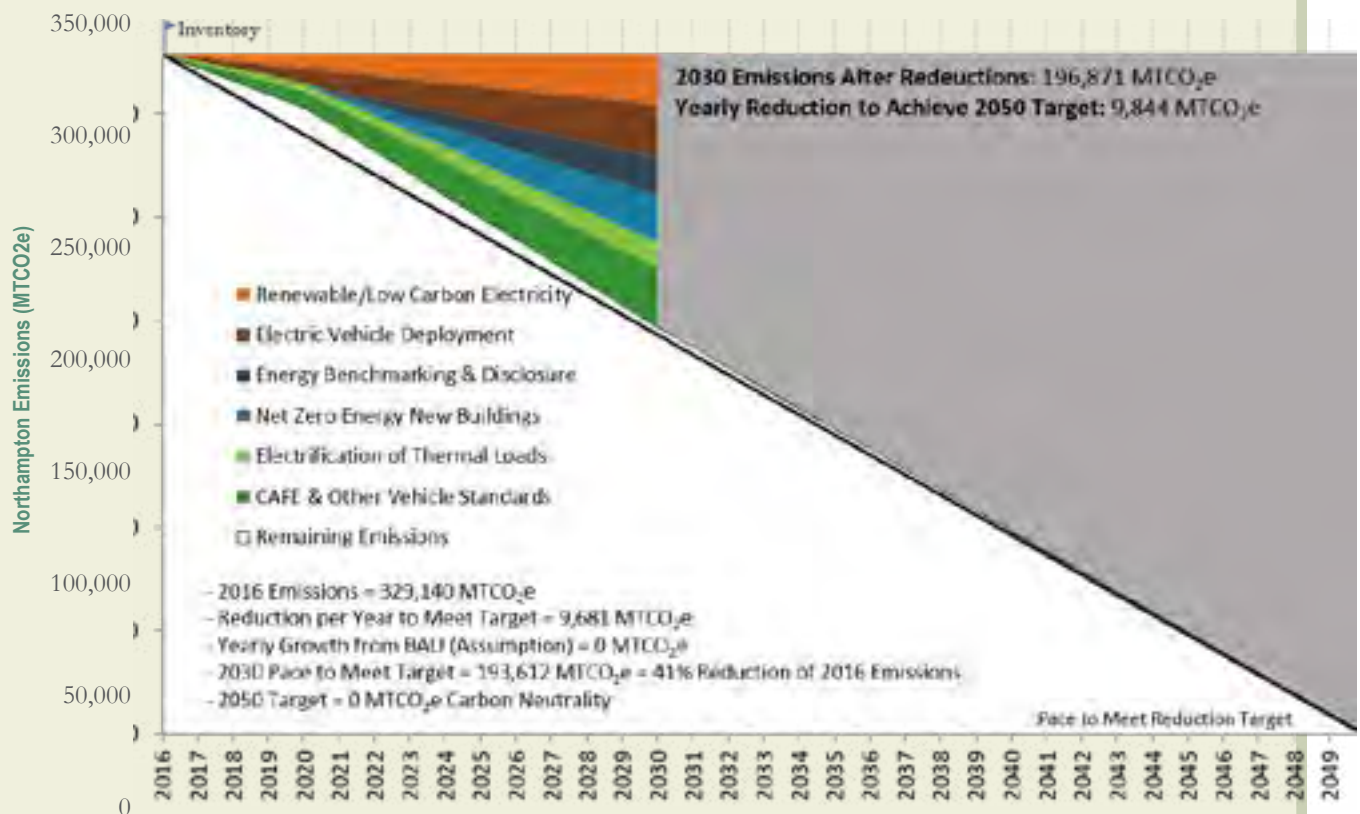


FIGURE 15. Greenhouse gas reduction potential of SIX selected pathways under a high-case scenario. The thick black represents a straight line to the 2050 carbon neutrality. Each wedge represents a reduction pathways emission reduction potential. The other three pathways and other actions are needed to achieve the City's more aggressive carbon neutrality commitments.

Our Path to Climate Adaptation & a Resilient City

Resilience Pathways

We are pursuing pathways to adapt to climate change and increase our resilience. These strategies cross our built, natural, and social systems, and overlap with our a carbon neutrality and regeneration efforts.

PATHWAY 1

Northampton Designs with Nature for Stormwater

With climate change increasing annual precipitation and the frequency of intense storms, Northampton needs to improve how we direct, infiltrate, and store stormwater. This includes updating design standards for stormwater infrastructure and stormwater management—particularly ones that use natural systems (e.g., existing mature trees, new plantings, healthy soil systems, water storage, wetlands preservation and enhancement, collectively part of green infrastructure) to absorb and store water. Northampton Designs with Nature is an effort to assess potential sites for green infrastructure projects to improve stormwater infiltration, reduce the risk of localized flooding, and advance this approach more broadly. Green infrastructure bring co-benefits, such as reduced heat island effect, healthier wildlife habitat, enhanced carbon sequestration, and new recreational opportunities. These design principles can support new implement blue-green infrastructure (natural systems with rivers, streams, ponds, wetlands, and vegetation) to infiltrate stormwater, reduce runoff volumes and peak flows, and provide additional stormwater storage within public rights-of-way and open space (e.g., the Rocky Hill Greenway - Pine Grove golf course restoration, the Route 66 Ice Pond restoration, and the Elm Street Brook watershed Low Impact Development Best Management Practices).

PATHWAY 2

Resilient Building and Energy Systems

This pathway calls for retrofits, upgrades, and new construction of buildings and energy systems that can better withstand floods, heat waves, or extreme storms. The development of micro-grids and distributed energy systems with battery storage, particularly to power emergency services, will provide backup power alternatives if the grid fails. In the case that portions of the city do lose power, buildings with greater “passive survivability” will help keep occupants safe. “Passive survivability” refers to the ability of a building to maintain critical conditions—such as staying warm enough in the winter to keep occupants well—even during extended loss of power, heating fuel, or water. Encouraging resilient building retrofits and design standards, ranging from increased freeboard heights, continuous insulation, renewable and redundant energy sources and battery storage, and minimum R-values or air-tightness levels, can all contribute to the resilience of buildings and their occupants, and in many cases, increase energy efficiency as well.

PATHWAY 3

Healthy and Resilient Natural Ecosystems

Healthy natural ecosystems play a significant role in infiltrating stormwater, improving air quality, keeping temperatures cooler on hot days, sustaining healthy food systems, and contributing to the overall resilience of Northampton. Consequently, this pathway calls for preserving and planting street shade trees, restoring natural ecosystems whenever feasible, monitoring ecosystems to ensure their health, as well as developing adaptive management methods to support ecosystems in adapting to changing climate conditions. This scope includes monitoring natural water systems to address changes in water quality due to climate change as well as implementing new park, forestland, and farmland soil management practices to enhance soil health. It will also include

developing city strategies for expanding an urban tree canopy and ensuring resilient tree and forest populations, such as ongoing monitoring protocols, selective harvesting, adaptive species planting, and invasive species removal in tandem with a public campaign to help raise awareness around addressing vulnerabilities in tree stocks and ecosystems to invasive species, pests, and local climate changes.

PATHWAY 4

Resilient and Connected Landscapes

This pathway calls for the continuation of open space preservation efforts, acquisition of land that will experience more frequent flooding with climate change, and the prioritization of protecting land for the long-term migration of wildlife and plants that is critical for healthy ecosystems to thrive with climate change. Priorities for land protection include areas denoted in the Nature Conservancy’s map of Resilient and Connected Landscapes that are in the “Resilient with Confirmed Diversity, Climate Flow Zones, or Climate Corridor mapped areas.” The City should discourage development (e.g., residential and solar PV) in this relatively narrow band along the western edge of the City, except in existing developed areas. Open space preservation efforts should also prioritize these areas, as the city has done for a number of years. Future development should not occur within any mapped areas that are defined by the city, state, or federal government as areas of resilient and connected landscapes with confirmed diversity or determined to be important climate corridors for climate resiliency.

PATHWAY 4

Healthy and Equitable Communities

This pathway calls for both strengthening resources and services that support health and wellbeing, as well as creating spaces and processes for building stronger relationships between neighbors, organizations, businesses,

and the city. Resilience research shows that stronger social bonds with one’s community and neighbors leads to a more resilient community. Likewise, inequity—whether seen through income, education, access to resources, access to decision-making, among other avenues—continues to prohibit collective community resilience. This pathway includes safeguarding and improving the health of food systems and food security for all residents; creating accessible recreational areas with an expanded urban canopy where all residents can cool off in high heat; encouraging community conversations and neighborhood-driven initiatives around climate adaptation; and ensuring that diverse voices play a role in shaping Northampton’s future.

PATHWAY 5

Knowledge and Skills for Addressing Climate Change

This pathway focuses on enhancing education, skills development, and job training in areas that will build awareness and knowledge around climate change and support climate mitigation and adaptation action. One avenue includes developing a climate curriculum, co-produced with youth and students, in Northampton public schools that addresses resilience and regeneration. Smith Vocational and Agricultural School is both suited to hands-on education in this area and to development of demonstration installations. The curriculum would systematically build on new topics over the course of a K-12 education, preparing youth for understanding the impacts of climate change as well as equipping them to be leaders in climate action. pathway also includes encouraging job training or career development programs in fields that will enhance the local economy and simultaneously support Northampton in reaching its resilience and regeneration goals.

New and existing community partners the city would expand resilience and regeneration skills development programs in tandem with demonstration projects or other municipal efforts.



Turning unloved pavement into beloved public spaces creates a more walkable city.

IMAGE CREDIT: PLANNING AND SUSTAINABILITY

These could include job training or career development, e.g., as green infrastructure installation and maintenance; permaculture, regenerative, and resilient agricultural practices; urban forestry; clean energy and energy efficiency technologies.

PATHWAY 6

Hazard Mitigation and Emergency Preparedness

A number of strategies can support Northampton in preparedness, response, and recovery from a climate shock, particularly over the time-frame immediately preceding, during, and after

a hazard. For flood events, these strategies include ongoing evaluations and upgrades to the city's flood control infrastructure; encouraging residents to invest in flood insurance; as well as delineating floodplain boundaries, evacuation routes, and/or flood-safe buildings with signs or other markers. For floods as well as other types of emergencies including severe storms, power outages, and periods of high heat, Northampton can add to its already robust multi-pronged strategy for various levels of resilience-based communication, including emergency alerts, regular notifications (e.g., parking bans), and ongoing public education and outreach on a variety of climate change topics.

Framework for Resilience & Regeneration

RESILIENCE

Adaptive Capacity

Increase the capacity of systems to withstand climate hazards, and adapting standards and practices to better respond.

Strong & Healthy Communities

Build community, social networks and social cohesion. Reduce the vulnerability of Frontline Communities (i.e., those with the least ability to withstand climate change). Increase community health and safety.

Climate-Smart Action

Develop the community's ability to make decisions that prepare us for climate change through education and collaboration.

EQUITY

Distributional Equity

Reduce disparities in access to resources as well as educational and economic opportunity, and mitigate exposure to hazards for those who face disproportionate harm.

Procedural Equity

Include diverse and non-traditional stakeholders in decision-making and in the measurement of project success, and ensure transparency in the development of programs or projects.

Structural Equity

Recognize and change structural forces of inequity, including developing pathways for more diverse and representative leadership and addressing institutional racism.

Inter-generational Equity

Address the needs of those not yet involved in or empowered to participate in the decision making process, or even alive today.

Cultural Equity

Value all cultures equally

REGENERATION

Nature as Model

Use water wisely, enhance soil health, draw carbon from the atmosphere, maintain comfortable air temperatures, and improve air quality.

Respect Resource Limits

Reduce consumption, mitigate greenhouse gas emissions, and reuse, re-purpose, and up-cycle materials.

Stewardship

Preserve healthy habitats, manage non-native species and disease vectors, and improve environmental education.

ECONOMIC & CULTURAL VITALITY

Conscious Economic Exchange

Create stronger local and inclusive economies by increasing the number of jobs that pay a living wage and sourcing materials and labor locally.

Forward-Looking Economy

Strengthen job-related skills training, diversify the economy and supporting entrepreneurial activity, and encourage diverse workforces.

Creative & Cultural Value

Support the creative economy, local agriculture, and other industries with local cultural significance in Northampton.

REGIONAL

Collaborative Learning

Create platforms for sharing insight between communities. Develop tools, processes, or frameworks that replicate success.

Interdependence

Work with neighboring communities to share resources, develop economies of scale, and create complimentary or aligned approaches.

Nested Systems

Work at the regional, watershed, and ecosystem scales. Make local changes that impact regional systems.



RESILIENCE & REGENERATION STRATEGIES

Northampton started to track its progress using the US Green Building Council (USGBC) rating system LEED for Cities and Communities, which replaced the former STAR Communities program. LEED for Cities is a third party rating system designed to help communities compare themselves to a norm and to peer communities and promote honest reporting and minimize green-washing. The Resilience and Regeneration strategies are broken down by the categories defined in the rating system to allow us to better track our progress.

ALL CATEGORIES 1

Integrate resilience & regeneration principles into the development of all city and public school outreach, projects, plans, budgets, and processes

Systematically apply the Resilience and Regeneration Framework to the development of city projects, programs, and plans. The framework helps to integrate resilience and regeneration thinking into work across departments, ensures investments and planning supports Northampton's resilience and regeneration goals, and amplifies the potential of the city's work in creating co-benefits. Most specifically, develop specific internal policies to:

- **Set** a long term and annual City of Northampton carbon budget. Such a budget would establish allowed carbon emissions allocated to each city department to integrate carbon reduction as part of each city department's core mission.
- **Evaluate** the impact of all proposed city capital improvement projects on greenhouse gas emissions to understand how projects may hinder or advance progress towards the city's goal of being net-zero by 2050 and city operations being net-zero by 2030.
- **Integrate** climate change projections into all future capital projects, ensuring new infrastructure can withstand current and projected impacts.
- **Use** socio-economic data, integrate an equity-based prioritization factor in the process for capital improvements project selection that adds priority to projects that will benefit neighborhoods with higher proportions of people with low incomes, people of color, or people living with physical or mental disabilities.
- **Ensure** that the next revision to the Sustainable Northampton Comprehensive Plan incorporates the Resilience and Regeneration Plan as a key unifying theme.
- **Include** resilience and regeneration principles as a cross-cutting strategy (in addition to specific strategies that follow) in all city education and outreach efforts.
- **Provide** adequate City staff, resources, and commitment to achieve these targets.
- **Create** a biennial action plan with specific actions, metrics, and political consensus to move forward.
- **Integrate** education and curriculum on climate resilience and regeneration in public schools, with students co-producing such curriculum. Foster a culture of ecological stewardship, resource conservation, and climate preparedness.
- **Focus** on high impact practices that provide the greatest resilience and regeneration Return on Investment (ROI), that is the least cost (financial and other burdens) to achieve success.

Type: Policy

Lead: Mayor's Office; Planning & Sustainability, Central Services, Public Works; School Department; Smith Voc; Youth Commission

Time-frame: Short-term launch - Ongoing process

Cost: \$\$\$

ENERGY 1

RENEWABLE & RESILIENT ENERGY SUPPLY

ENERGY 1A

Launch a regional entity to coordinate regional strategies, including a Community Choice Aggregation 3.0 (CCA 3.0) Program for electricity aggregation

Electricity is 20% of our energy load. It will grow as we electrify our energy sources.

Northampton, with Mayoral and City Council (2020) approval, is working with Amherst and Pelham (with the hope that more communities will join in the future) to create a regional Joint Powers Entity for regional renewable and resilient energy supplies.

A key first step is forming a Community Choice Aggregation program to become the default electricity provider and aggregate demand with GHG reducing electricity supply systems.

Northampton received a \$75,000 grant from the Urban Sustainability Directors Network (USDN) in 2019 to explore a new model for Community Choice Aggregation, CCA 3.0 optimized around greenhouse gas reductions. The resulting bulk purchasing power can allow a contract with an electricity supplier with the goal of greening the energy supply and, eventually, providing the energy storage needed for load shifting to reduce peak energy periods. This program would automatically enroll residents, unless they opt out, and would include a commitment to purchasing power from locally-produced distributed energy sources and gaining access to affordable renewable energy sources for low-income residents. This work would also have a strong focus on reducing GHG emissions.

Program goals also include incorporating energy storage and other tactics to reshape the load profile to reduce peak energy periods. Implementing CCA 3.0 as a region will reduce our collective reliance on fossil fuels, encourage the expansion of local renewable energy sources, and amplify our ability to transition to a cleaner, more efficient energy supply.

- **Formalize** a Joint Powers Entity dedicated to GHG reductions.
- **Apply** for state approval of its CCA.
- **Arrange** for a broker (in the near term) and potentially a staff or consultant model in the long term for its CCA.
- **Develop** an aggregation business plan optimizing GHG reductions.
- **Secure** a competitive supplier.
- **Engage** and educate community members.
- **Partner** with community groups (e.g., Community Action and their home weatherization program).

Type: Program

Lead: Central Services - Energy; Planning and Sustainability

Time-frame: Mid-term Planning underway

Cost: \$\$

ENERGY 1B

Procure more renewable energy projects on city property and through city partnerships

The City's goal is to enable an annual electricity output from renewable electricity projects that matches or exceeds municipal and public-school electric usage and maximizes the use of renewable-thermal technologies in municipal and school buildings.

Northampton has a regulatory structure and open space and pilot agreements to encourage in renewable energy systems on both public and private land (e.g., 3.3 MW solar array atop the closed Glendale Road landfill and a total of 10 MW of private sector solar arrays at Ryan Road and Park Hill Road). The City has installed smaller solar-electric, solar hot water, solar air pre-heat, geothermal and air-source heat pump systems on city and school properties. Two municipal buildings, the James House and the Senior Center, are completely heated and cooled by renewable-thermal systems: air-source heat pumps and a geothermal system respectively.

- **Continue** to install renewable energy projects and lead by example on city and school properties (e.g., photovoltaic canopies over parking lots, energy storage to shave peak demand). Ground-mounted installations are most cost effective, but building and parking lot canopy installations are an important part of the mix.
- **Establish** capital improvement plans to reduce the thermal load and replace fossil fuel heating with renewable thermal systems in public buildings.
- **Expand** public-private partnerships for renewables on private property.
- **When feasible**, use local contractors to install these projects and create

educational opportunities (e.g., the 106 kW city-owned solar-electric array on the Smith Vocational and Agricultural High School is used for the school's renewable energy coursework.

- **Maintain** the current zoning prohibition on commercial photovoltaic where intact forests are most critical for climate resilience, and addresses the trade-off between the installation of PV systems and the ecological and carbon impacts.

Type: Capital Improvement

Lead: Central Services - Energy; Planning for regulatory aspects

Time-frame: Mid-term (Typical implementation takes 1-3 years)

Cost: \$\$

ENERGY 1C

Continue building out distributed energy resources for critical services

Northampton received two grants through the MA Department of Energy Resources, Community Clean Energy Resiliency Initiative, for critical services distributed: 1) Installation of a 20-kilowatt, canopy-style array with battery storage on the Fire Department parking lot on Carlon Drive, and 2) A micro-grid to service Cooley Dickinson Hospital, the Department of Public Works headquarters, and the Hampshire County emergency shelter at Smith Vocational and Agricultural High School to improve their ability to maintain operations during power failures. These investments follow an internal study begun in 2012 that assessed the resilience of the city's electrical grid.

Continue to identify opportunities and move forward with the development of distributed energy resources in Northampton, focusing on

redundant systems and hybrid energy storage systems, to ensure that critical services (and potentially business centers) can continue to operate during a climate hazard and serve vulnerable populations. Perform public outreach and awareness of such distributed energy services to build support.

Type: Capital Improvement

Lead: Central Services - Energy; New CCA 3.0

Time-frame: Mid-term for the development of the current micro-grid project; Ongoing for continued opportunities

Cost: \$\$\$

ENERGY 2

ENERGY EFFICIENCY & HIGH PERFORMANCE BUILDINGS

ENERGY 2A

Encourage the real estate market to place greater value on building energy features, including deep energy retrofits and zero energy new buildings

Require, by ordinance, that building owners of large buildings report energy use through utility bill disclosure. For smaller buildings, establish an incentive program for voluntary utility cost disclosure targeted to home owners and tenants. Phase in mandatory disclosure for all building types.

Work with local lenders, appraisers, realtors, and the Multiple Listing Service (MLS) to encourage greater valuation and transparency of building energy features by mandating listing of attained energy performance credentials including verified Home Energy Rating System (HERS rating). Tools and initiatives to further promote energy performance consideration in building valuation:

- **Mandate** building energy assessments at time of sale.
- **Popularize** Property Assessed Clean Energy (PACE) financing for existing buildings.
- **Develop** local Green Financing and streamline EEM/EIMs (FHA's Energy Efficiency/Improvement Mortgages) to enable and encourage home buyers to invest in energy upgrades at time of purchase or major renovation.
- **Lead** by example by disclosing municipal school building energy consumption and targets for reduction.

Type: Policy & Program

Lead: Central Services - Energy

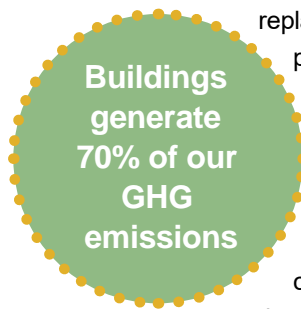
Time-frame: Mid-term (1-3 years)

Cost: \$\$

ENERGY 2B

Expand program for building electrification to convert from oil and natural gas heat to heat pumps or other electric sources

Expand efforts to encourage building energy retrofits and building electrification, including replacing on-site fossil-fuel powered heat with far more efficient electrically powered heat pumps (mini-splits and centralized heat pumps) for residential, commercial, and institutional buildings



- **Establish** strong partnerships with ratepayer supported programs (Mass Clean Energy Center and MassSave) and financing programs (PACE, future CCA 3.0, potentially CDBG Housing Rehab).
- **Focus** on ease of participation and incentives.
- **Subsidize** the cost of heat pumps in affordable housing and low-income households.
- **Consider** ground source heat pumps for large commercial and institutional installations' thermal loads, although they are generally not cost-effective for small scale installations. The city uses ground source heat pumps for the Senior Center and Smith College is assessing ground source heat pumps.
- **Prepare** to end fossil fuel combustion in all City buildings. The first step, currently underway, is to create capital improvement plans to improve building envelopes and ventilation systems, and decarbonize all thermal loads (heating, cooling, and hot water)

Type: Program

Lead: Central Services - Energy

Time-frame: Short-term

Cost: \$ without financial incentives;
\$\$-\$\$\$ with financial incentives

ENERGY 2C

Apply Resilience and Regeneration point system in site plan review process

Apply a Resilience and Regeneration point system in site plan approvals to encourage lower transportation needs, higher passive survivability, no on-site fossil-fuel combustion, net-zero energy buildings, and walkable zoning densities in urban core areas.

Developers earn points for adopting specific resilience and regeneration measures, with a minimum point requirement. Points can be awarded for prescriptive (a list of approaches) and performance-based approaches to reduce carbon emissions and/or improve site and building resilience. For example, minimum HER ratings, net-energy zero, passive house, passive survivability, increased free-board heights, continuous insulation, renewable and redundant energy sources and battery storage, minimum R-values or air-tightness levels, among other measures. Certification systems such as PHIUS's Passive House Standard and USGBC's Resilience Pilot Credits and/or Reli Rating System could be drawn from in the development of the point system. All included measures should enhance the resilience of the city's building stock and/or contribute to lowering the city's GHG emissions.

Type: Policy

Lead: Central Services - Energy

Time-frame: Mid-term to develop and implement the policy

Cost: \$

ENERGY 2D

Require that all new buildings are built to Net Zero Energy standards and advocate for higher Building Code standards

Work with other Massachusetts communities to advocate for higher resilience and regeneration standards in the Massachusetts Building Code and in the International Building Code (IBC) on which the Massachusetts Building Code is based. To the extent allowed under the state building code and local zoning authority, require all new buildings to meet high performance standards and be verified as Zero Energy ready. Consider DOE Zero Energy Ready Home (ZERH), Passive House Institute United States (PHIUS+) standards. A Zero Energy building has comparatively very low energy loads and is highly energy efficient. With a robust building enclosure and right sized mechanical systems prioritized, renewable energy is produced or procured to offset what the building uses on an annual basis. Zero Energy building standards should be required and market transformation incentivized through the following actions:

- **Advocate** for an updated Massachusetts Building Code Stretch Energy Code, if not a base building code, that requires Zero Energy performance.
- **Ensure** the city leads by example by ensuring all new municipal buildings and feasible major renovations meet Zero Energy building standards.
- **Consider** retrofit and renovation regulation and incentives to achieve high performance building certifications for existing buildings.
- **Advocate** for expansion of zero energy and passive house utility incentives through the Massachusetts Energy Efficiency Advisory Council.

- **Advocate** for legislative updates to revise utility cost-effectiveness metrics to value carbon reductions with expanded Mass Save programs.
- **Plant** shade trees to reduce heat gains in buildings.

Type: Policy & Advocacy
Lead: Central Services - Energy; Planning & Sustainability
Time-frame: Medium-term
Cost: \$

ENERGY 2E

Encourage resilience and regeneration building and site improvements

Promote resilient and regenerative building and site improvements that property owners can make to protect properties and people against flooding, extreme weather, and heat waves. Work with existing federal, state, and local programs to expand access to and encourage use of educational and financial tools and resources, including working with utilities and existing community organizations to make these tools and resources financially and culturally accessible to all residents:

- **Promote** clean technology education and adoption programs that increase buildings' ability to support occupants during times of stress such as long-term power outages or heat waves, including energy efficient and high-performance building improvements.
- **Promote** on-site battery power backup systems, as the technology becomes cost-effective, ideally coupled with on-site renewable electricity.

- **Advocate** to the Massachusetts Energy Efficiency Advisory Council that the Mass Save utility incentive programs expand current Passive House incentive programs to include all residential building types, new and existing.
- **Plant** shade trees to reduce energy demand and heat islands.
- **Implement** a "One Cool Room" program to support residents whose health is vulnerable to heat waves to establish access to at least one room at their residence that is cooled by a high efficiency cooling technology such as an air-source heat pump.
- To the extent reasonably achievable, **encourage** lighting plans that ensure that all lights have a clear purpose, are directed only to where needed, are no brighter than necessary, are used only when it is useful, and use warmer color lights available.

Type: Program
Lead: Planning & Sustainability; Central Services -Energy
Time-frame: Short-term for campaign development; Ongoing for continued promotion
Cost: \$

ENERGY 2F

Accelerate community adoption of energy efficient & high-performance building improvements with a focus on more equitable access

Advance increased energy efficiency and installation of solar-electric (PV), solar-hot water, heat pumps, energy recovery ventilation and other high-performance building technologies. Because the city has no direct control over building improvements in the private sector, partnering with organizations that offer assistance such as free building assessments, weatherizations of 1-4 unit homes, guidance for small businesses, and bulk purchasing of renewable energy and high performance building technologies. Support residents of all income-levels and backgrounds and businesses of all sizes.

Build on the success of past outreach programs such as Solarize Northampton, which led to installation of 0.5+ megawatt of solar electric, HeatSmart Northampton, which raised awareness of minisplit air source heat pumps, and the city's utility-funded partnership with the Center for EcoTechnology, which helps small businesses access utility energy efficiency assistance programs). Future efforts could include:

- **Establish** staff within the planned regional Joint Powers Entity (JPE) to run marketing campaigns and collaborate with a JPE-run intermunicipal CCA 3.0 program.
- **Coordinate** and partner for energy investments through Property Assessed Clean Energy (PACE), CDBG Housing Rehabilitation, a CCA 3.0 program, rate-payer supported programs (e.g., Massachusetts Clean Energy Center and the MassSave program), and other partners (e.g., Community Action Pioneer Valley and the Center for EcoTechnology).

- **Identify** barriers to entry for energy efficiency efforts and identify gaps in who participates. Create programs that will create more equitable access to renewable energy and high-performance building technologies for low-income residents, communities of color, and historically underserved and underrepresented populations. Co-develop, with underserved stakeholders, programs that are culturally competent, effective, and address structural barriers. Develop more effective ways to provide resources to low and moderate income residents, businesses, and nonprofits, preferably in partnership with existing local programs. For example, partnering with Community Action Pioneer Valley home weatherization program and the city's housing rehabilitation program could bundle new renewable energy systems.
- **Focus** on ease of participation (reduce time and effort) and bundling of incentives.
- **Identify** subsidies for the cost of high-performance technologies in affordable housing and low-income households.
- **Promote** potential use of ground source heat pumps for large commercial and institutional installations, which are generally only cost-effective for large scale installations (e.g., the city uses ground source heat pumps for Senior Center heating and cooling, and Smith College is assessing ground source heat pumps for the thermal load of the campus).
- **Develop** municipal programs to encourage landlords to improve energy efficiency and incorporate clean energy technologies into their housing units.
- **Encourage** rental listing agencies



to highlight sustainable and resilient features of housing units in advertisements.

- **Explore** introducing a building energy assessment and/or supplying educational materials to building owners and developers at key decision points, such as at the home point-of-sale or during building permitting.
- **Identify** potential residential technologies or measures that can enable renters to participate in energy efficiency, such as Wi-Fi enabled smart thermostats.

- **Survey** landlords to identify unanticipated barriers to investments in high performance building improvements, such as a lack of access to long-term tenant's apartments, and pilot new outreach and assistance programs aimed at overcoming identified barriers.

Type: Program and Policy
Lead: Central Services-Energy
Time-frame: Long Term
Cost: \$\$\$

ENERGY 3

CARBON SEQUESTRATION

ENERGY 3A

Adopt city open space management practices for soil carbon storage

Adjust or adopt new municipal landscaping and parkland management practices to enhance the city's soil carbon storage. (The city has already eliminated its use of synthetic nitrogen fertilizers on city recreation areas.) Organic amendments, in particular, can amplify the carbon storage capacity of soils. Best Management Practices for post-development soil amendments recommend the application of 7.5cm of compost for landscape beds, and 4.5cm for turf grass, with compost containing 22% carbon and 2% nitrogen. One-time applications of such amendments have shown to increase average carbon sequestration by 0.22 metric tons per hectare per year.

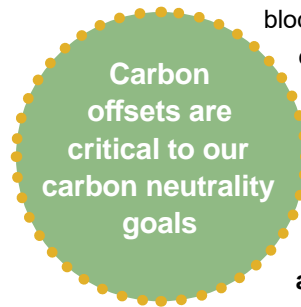
Additional landscaping and parkland management strategies to enhance soil carbon storage could include: emphasizing native perennials in plantings and using annuals to fill gaps; minimizing the use of pavement and unproductive mulch; eliminating synthetic nitrogen fertilizers on public and private school athletic fields; incorporating nitrogen-fixing trees and perennials into the landscape; mowing, cutting back, and/or heavily mulching over weeds instead of pulling; and using biological and mechanical controls when possible, while limiting herbicides to areas where so far there are not effective alternatives for curbing the growth of invasive plants (e.g., Japanese Knotweed). These strategies for enhancing soil health also support stormwater infiltration.

Type: Program
Lead: School Dept, Central Services, city land managers
Time-frame: Short-term for new management practices
Cost: \$\$

ENERGY 3B

Protect, grow, and enhance the city's forestland and public lands and their capacity to store carbon

Continue the city's efforts to conserve forestland in the city and in the City's drinking watersheds and aquifers outside the city, particularly large



blocks of mature and contiguous forestland and urban tree cover. Continue open space acquisition, per the **Northampton Open Space, Recreation, and Multi-Use Trail**

Plan and drinking watershed management strategies. Identify opportunities to replant cleared areas with diverse native species in the conservation and watershed areas. Add public and equitably distributed urban tree canopy to serve historically underrepresented populations and those more at risk to heat waves.

Tree cover, from shade trees and larger tracts:

- **Adds** shade, cooler summers, and reduced heat island effect, alleviating air conditioning loads
- **Increases** stormwater infiltration, conserves water supplies, and reduces erosion
- **Sequesters** carbon
- Improves air quality, reduces noise pollution, decreases wind speed, and reduces glare
- **Makes** Northampton more walkable, a more sustainable and resilient transportation practice
- **Enhances** ecosystem and habitat creation

This work is needed in tandem with the city's existing anti-gentrification and anti-displacement measures to ensure that, as green space is protected the city continues to help create entry level lots and expanding affordable housing.

Adopt public land management practices that prioritize carbon sequestration, such as long-term carbon sequestration and storage planning in forest stewardship plans and education programs for the adoption of similar practices on private land. Protecting and enhancing the diversity of tree species within the city's forests will also increase forest stability, resilience, and long-term benefits for carbon storage.

Identify sites that should be kept out of permanently protected open space to reserve the ability to install solar photo-voltaic, as the city did at the two newest solar PV installation at Ryan Road and at the Park Hill Road extension.

Explore recommendations of the **Massachusetts Healthy Soils Action Plan**, including improving farming, forestry and lawn care practices to reduce erosion, improve production, increase carbon sequestration and storage, and better withstand intensive weather events and droughts. Strategies include the application of organic matter or bio-solids (e.g., sludge, compost, wood chip mulches, or biochar) on the forest floor and strategic organic matter to build soil organic matter, maximize forest biomass, prevent erosion, and increase carbon sequestration and storage capacity.

Calculate carbon credits, using accepted guidelines, for carbon sequestration, but retire the credits so they can be used to count toward carbon offsets.

Type: Program
Lead: Planning & Sustainability; Public Works
Time-frame: Ongoing
Cost: \$

ENERGY 3C

Support education and training in regenerative agriculture, agroforestry, silvopasture, and urban forestry

Identify opportunities to support education and training in regenerative agriculture, agroforestry (the integration of trees in agricultural areas), silvopasture (the integration of trees and livestock grazing), urban forestry, and biochar application for interested farmers. These approaches aim to minimize soil disturbance, enhance site biodiversity, maintain microbial communities to support soil health, and add to crop diversification. Trees planted along riverbanks (riparian buffers) and as windbreaks stabilize soils, prevent erosion, improve water quality, and retain carbon in the ground. Benefits can include increased landscape drought resilience.

All three practices—regenerative agriculture, agroforestry, and silvopasture— increase carbon sequestration potential of agricultural lands by 0.6 MTCO_{2e}, 1.3 MTCO_{2e}, and 4.8 MTCO_{2e} per hectare per year, respectively. Likewise, biochar application to agricultural lands has shown to amplify crop productivity while simultaneously amplifying the long-term storage of carbon. Consider peer-to-peer learning models through collaboration with local and regional farming initiatives with the explicit goal of developing contextually-specific practices for enhancing carbon sequestration and storage. Use such collaborations as a platform for identifying adjustments to municipal policies or systems, such as aligning lease lengths with harvest rotations for longer-term perennial plantings, which can further facilitate adoption of regenerative agriculture practices.

Type: Program
Lead: Planning & Sustainability
Time-frame: Mid-term
Cost: \$\$ - \$\$\$



ENERGY 3D

Establish Greenhouse Gas Emissions Offset Community Fund

Establish a voluntary local fund for those who want to offset their greenhouse gas emissions. Residents and businesses could track their emissions through a community-endorsed tool and pay into the fund depending on their footprint. This fund would build on the city's pilot gasoline carbon offset receipts, which currently add support to ValleyBike. It would provide funding for community mitigation/sequestration projects.

Equity can be enhanced by working with and prioritizing investments to neighborhoods historically under-served and underrepresented populations.

Type: Program

Lead: Planning & Sustainability

Time-frame: Mid-term

Cost: \$

WATER 1

STORMWATER MANAGEMENT

WATER 1A

Establish new design storm intensities & rainfall distributions

Examine the new design storm intensities and rainfall distributions when the Massachusetts Stormwater Handbook is updated (circa 2021-2022) to address climate change. The new standards will likely be based on the upper confidence interval of the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 to represent current precipitation conditions, plus or minus some factor to address climate change. This approach will produce higher design storms than the current standard (SCS- Technical Paper-40 with RCS Type III regional rainfall distribution).

- The City may want to go beyond the state standards.
- For example a 20% increase in design rainfall intensity is consistent with climate change projections for extreme precipitation in a 50- to 100-year planning horizon, based on a 50-year design life for storm drainage infrastructure, and the 50-100 year useful life.
- Alternatively, rainfall distributions can be based upon updated, site-specific rainfall data.

Figure 16. 24-hour duration design storm (at City Hall)

Return Period	NOAA Atlas 141	IF increased by 20%
1 year	2.46" (2.53" NRCC value)	3.04" (NRCC)
2 years	3.08"	3.70"
10 years	4.93"	5.92"
25 years	6.09"	7.31"
50 years	6.99"	8.39"
100 years	7.88"	9.46"
500 years	11.3"	13.56"

Type: Program
Lead: Public Works, Planning for zoning and subdivision regs.
Time-frame: Short-term
Cost: \$



WATER 1B

Raise requirements for closed drainage systems

Consider requiring new and replacement closed drainage systems (city and private) to be designed for 10-year storm events, 25-year storm events at critical facilities. DPW could waive the requirement in specific situations (e.g., when localized pipe upgrades may affect downstream undersized pipes). In addition, the impacts of overland flow during flood conditions should be studied in the design of closed drainage systems, as surface flow is a significant component of overall flow during flood events within the city.

Update the city's stormwater management standards for new development and redevelopment sites consistent with the Massachusetts Stormwater Handbook when it is revised (circa 2021-2022), meet the post-construction stormwater management provisions of the MS4 General Permit, and allow for off-site mitigation.

Type: Policy
Lead: Public Works for stormwater; Planning & Sustainability for zoning and subdivision regulations
Time-frame: Mid-term
Cost: \$

WATER 1C

Produce nature-based and green infrastructure plans and implementation projects

Build on the Northampton Designs with Nature concept of nature-based solutions to identify a range of green infrastructure solutions to

improve stormwater retention, detention, and infiltration, expand urban shade tree canopies, and a wide range of co-benefits (e.g., reduced heat island effect, healthier wildlife habitat, enhanced carbon sequestration, and new recreational opportunities).

The kind of projects that are relevant include:

- The restoration of the Pine Grove Golf Course, now part of the Rocky Hill Greenway, to restore its natural hydrology (Phase I completed in 2020).
- Green infrastructure in the Elm Street Brook watershed (building on the work of a Smith College Picker Engineering evaluation)
- Flood control improvements at the Route 66 Ice Pond (currently under consideration by FEMA for funding)
- Various urban tree and other shade tree canopy planting plans.

Type: Capital Planning
Lead: Planning & Sustainability and Public Works
Time-frame: Short-term
Cost: \$\$\$

WATER 1D

Increase stormwater system conveyance capacity and storage through blue-green-gray infrastructure

Upgrade aging storm drainage infrastructure with larger-capacity pipes as pipes are replaced to provide additional in-line conveyance capacity and storage. Simultaneously look for complementary opportunities to implement blue-green infrastructure to infiltrate stormwater, reduce runoff volumes and peak flows, and

provide additional storage capacity within public rights-of-way and open space. Support the development of green infrastructure systems by defining appropriate native plant species to be used in all projects.

Apply Northampton Designs with Nature design principles to the design and implementation of green infrastructure projects, including identifying and prioritizing projects that can have the greatest impact on reducing stress on the stormwater infrastructure system, mitigating flood risk and damage, improving healthy ecosystems and water quality, reducing the heat island effect, and enhancing the community's accessibility to green space. Integrate environmental justice in identifying locations for green infrastructure installation or resilient infrastructure upgrades that will benefit neighborhoods with higher proportions of people with low incomes, people of color, or people living with disabilities. Include those communities in the design and evaluation.

Expand planned projects to have a larger focus on blue-green infrastructure, including an education component on the importance of these design features. If the city continues to consider daylighting portions of the downtown Historic Mill River, consider the potential to provide additional flood storage within the daylighted area to better protect other areas behind the levee from flooding. Given the significant capital cost of these upgrades, the city should take a system-wide approach to planning and implementation, including comprehensive storm drainage system modeling.

Type: Capital Improvement
Lead: Public Works and Planning & Sustainability
Time-frame: Ongoing
Cost: \$\$\$

WATER 2

WATER SUPPLY

WATER 2A

Research long term water supply needs in light of climate change

Establish a framework for long-term planning of city's public potable water systems, including water quality and quantity monitoring and modeling. Proactive city and regional long-term planning may identify whether new or alternative water supplies are required beyond the city's existing three active reservoirs and two wells. DPW's Drought Management Plan (2021) will help advance this planning and mitigation.

Water supply is a long term risk, but one that requires a very long planning period

Continue Public Works existing water supply watershed land preservation and management efforts for source protection. Continue to ensure that the amount of water withdrawn equals, on a medium term average, the amount of water entering the system through precipitation and water flow (i.e., no "mining" of groundwater).

Work with the Pioneer Valley Planning Commission to advance data collection and strategy development related to the impacts of climate change on water quality to a regional scale.

Type: Program
Lead: Public Works
Time-frame: Mid-term to long-term
Cost: \$\$\$

WASTE 1

WASTE REDUCTION

WASTE 1A

Increase community waste diversion by creating and implementing a zero-waste strategy

Adopt a zero-waste framework to reduce the generation of waste and maximize material reuse. Depending on resources and consensus, actions might include, for example:

- **Build** on DPW's waste reduction efforts to raise awareness and foster a culture of repair and reuse by supporting community initiatives (e.g., repair cafes, the ReCenter Swap Shop, durable material exchanges, textile swap events and recycling, and other similar initiatives).

- **Build** on the City's existing buy recycled content to lead by example and ensure municipal entities use sustainable product purchasing practices (e.g., minimum recycled content criteria; preference for locally grown and manufactured materials, including food and compost; incentives for purchasing up-cycled and used goods and furniture).
- **Educate** the community and business owners about wasted food prevention strategies, encouraging food rescue, and the practice and benefits of co-composting leaf and yard waste with food scraps. Encourage all public events (e.g. fairs, festivals, concerts) to provide receptacles for source separation of trash, recyclables, and organics.

Solid waste is 1% of our GHG emissions. Our supply chain (Scope 3) dwarfs our Scope 1 and 2 GHG emissions.

- **Consider** requiring commercial and residential participation in composting, private haulers to provide organics collection, and generators to utilize curbside service or to arrange their own composting.
- **Explore** options for establishing a local commercial compost facility to reduce organics transportation impacts, and to keep the benefits of compost in the community.
- **Eliminate** petroleum-based, single-use products through phasing out single-use plastics. The city will work toward strict use of reusable service-ware for eat-in dining, and toward requiring biodegradable, compostable or recyclable packaging and service-ware for takeout. Food service entities will be encouraged to provide accessories, such as flatware, straws, and condiments only upon request, and the city shall support third-party efforts to launch or provide a reusable takeout container service for food businesses.
- **Reduce** construction and demolition waste by ensuring that strong recycling and reuse requirements are met for all building-related permits. Explore policies or incentives that would mandate or encourage property owners and contractors to choose deconstruction instead of demolition (e.g., requiring deconstruction for projects over a designated square footage, setting recycling and reuse thresholds, accelerating permitting providing subsidies for the difference in cost between demolition and deconstruction).

Type: Policy
Lead: DPW recycling coordinator, City Council for regulations
Time-frame: Medium term
Cost: \$\$

WASTE 1B

Establish comprehensive food waste prevention, donations, and composing programs in schools and large institutions

A comprehensive food management program to address wasted food in public schools will reduce the solid waste stream, address local food insecurity, value the cafeteria as a classroom, and leverage the power of school children to serve as ambassadors of best practices. A campaign could include, for example:

- **Training** cafeteria staff
- **Using** share tables and establishing partnerships with food rescue organizations.
- **Maximize** use of durable trays and serviceware, basic source-separation equipment (e.g., additional receptacles), and organics hauling services.
- **Encourage** on-site composting and gardening programs in schools for demonstration and educational purposes.
- **Develop** educational programming and signage templates.

Type: Policy
Lead: School Department with community support
Time-frame: Medium term
Cost: \$

TRANSPORTATION/LAND USE 1

LOW CARBON & EQUITABLE TRANSPORTATION

Transportation is 26% of our GHG emissions. Land use is a portion of the 70% of building GHG emissions

TRANSPORTATION/LAND USE 1A

Advance equitable transportation access

Ensure that transportation opportunities are available, safe, and desirable for all. This includes sidewalks, bike lanes, crosswalks, street trees, bike share (micro-mobility) and other investments.

- Transportation options with the lowest carbon footprint and the highest equity should have the lowest cost to end users.
- **Expand** equitable access transportation to address gaps for people with low incomes, communities of color, and individuals with disabilities. Access can refer to physical proximity of stations/stops/bike racks, frequency and location of network routes, level of safety, languages offered in announcements or posted information, affordability, and other barriers to use.
- **Consider** the balance between transit-dependent services for users who do not have other options and choice-ridership which generate the highest ridership and benefits all users. Create strategies to reduce cultural barriers to users of all income levels in public transportation.
- **Promote** access to short-term car rental and car sharing, especially electric vehicle fleets.
- **Encourage** shared parking initiatives, parking cash-outs and decoupling parking costs from the cost of housing.

Type: Policy
Lead: Planning & Sustainability and Public Works
Time-frame: Long term
Cost: \$\$\$

TRANSPORTATION/LAND USE 1B

Expand bicycling options, including the ValleyBike share program

Promote bicycling as a safe, efficient, inexpensive low-carbon travel option. Expand our multi-use path network and its connections to the roads and sidewalks. Ensure that the trail is available for year-round use. Advance bicycle education at safety village and schools.

Celebrate our shared use path network through a marketing campaign focused on green tourism, in collaboration with local business associations.

Expand ValleyBike, the regional electric-assist bike share program in collaboration with Amherst, Chicopee, Holyoke, South Hadley, Springfield, West Springfield, UMass, and the Pioneer Valley Planning Commission. Northampton currently coordinates the program in the eight communities, but is exploring structures to move management to a regional level. Expand the winter use of the program during fair winter weather.

Continue to add new locations in urban and denser residential areas throughout the region. Continue ValleyBike outreach and the equitable access membership program.

Type: Capital Improvement & Program
Lead: Planning & Sustainability and Friends of Northampton Trails for bicycle education
Time-frame: Mid-term
Cost: \$\$

TRANSPORTATION/LAND USE 1C

Foster transition to electric vehicles (EV)

Encourage residents and commuters to switch from fossil fuel powered vehicles to electric vehicles (EVs). EVs are more efficient than traditional cars and will become even cleaner as Northampton's electricity is greened. Equity is a key consideration as EVs currently require higher up-front costs, a challenge for many buyers, but lower operating for consumers. To make a city-wide transition to EVs, the city would:

- **Help** message efforts to increase awareness of EVs and their benefits.
- **Incentivize** EV charging infrastructure for major new construction projects.
- **Adopt** an EV purchasing policy for the city fleet that requires the city to purchase or lease EVs, building on the current fuel-efficient vehicle procurement policy.
- **Work** to install more public charging stations in all city parking lots and

encourage public or private stations in commercial areas and dense residential and mixed use neighborhoods. Charge for electricity at public charging stations to create market incentive for private charging stations.

- **Explore** state, federal or other subsidies to support up-front cost for shared use electric vehicles for low-income residents.
- **Explore** electric bus fleet to replace current public transportation buses and school buses as electric buses become affordable and/or as department's carbon budgets require offsets.
- **Track** the market for when the technology eventually allows alternatives to fossil fuel powered heavy vehicles (DPW and fire equipment).
- **Address** the equipment and training needs to maintain a city EV fleet.

Type: Policy & Program

Lead: Central Services- Energy

Time-frame: Mid-term

Cost: \$\$ to \$\$\$



TRANSPORTATION/LAND USE 2

EFFICIENT LAND USE

TRANSPORTATION/LAND USE 2A

Encourage dense, mixed-use, and transit-oriented development. The lowest carbon form of transportation is to avoid trips

Incentivize development and redevelopment that cluster multi-modal transit, mixed-use amenities, and a variety of housing types to ensure healthy, vibrant neighborhoods:

- **Focus** community planning and regulations on serving people over serving vehicles (e.g., allow new development to contribute to active transportation infrastructure rather than parking).
- **Work** with regional partners to advocate for improvements in the regional public transit system.
- **Increase** the percentage of the population living within walking distance of downtown, Florence Center, Bay State, Leeds, Village Hill, and King Street.
- **Encourage** housing diversity, smaller residential units that are efficient with resources, expanded units on developed lots, and new housing development that with affordable units.
- **Install** community amenities (e.g., bike lanes, sidewalks, and public space) in areas that will optimize walking.
- **Consider** an urban growth boundary (Farms Forests and Recreation zoning) that limits development outside of areas that are appropriate for development.
- **Provide** park, recreation, streetscape, and other amenities to make walking desirable.

Type: Policy
Lead: Planning & Sustainability
Time-frame: Mid-term
Cost: \$\$



TRANSPORTATION/LAND USE 2B

Protect land critical for the long-term migration of wildlife and plants due to climate change

These areas that are critical for healthy ecosystems to thrive even with climate change include areas denoted in the Nature Conservancy's map of Resilient and Connected Landscapes that are in the "Resilient with Confirmed Diversity, Climate Flow Zones, or Climate Corridor mapped areas."

Continue existing strategies in these sensitive areas:

- **Discourage** or prohibit land use development and solar photo-voltaic development in forested areas.
- **Prioritize** open space preservation efforts.
- **Prohibit** or severely limit future development within any mapped areas that are defined by the city, state or federal government as areas of resilient and connected landscapes with confirmed diversity, or determined to be important climate corridors for climate resiliency.

Type: Policy
Lead: Planning & Sustainability
Time-frame: Mid-term
Cost: \$\$

EQUITY

INCLUSIVE, PROSPEROUS & ENGAGED COMMUNITIES

EQUITY 1A

Support Climate Champions and Strong and Healthy Neighborhoods Programs

Support Climate Champions and Strong and Healthy Neighborhood Program to raise awareness and understanding about climate risk, adaptation, mitigation strategies, and enhance social resilience. Train local leaders and residents on climate change risks, adaptation and mitigation strategies, communication strategies, and engage their own personal and professional circles. Seek residents who can collectively engage a broad range of Northampton community members. Reach out to youth groups and student associations to help prepare youth for future careers in climate risk response and to empower a younger generation.



Support efforts by civic and neighborhood groups to connect with residents, businesses, and others to assess and strengthen social resilience and connectivity, and to strengthen community health and resilience. For example, check on neighbors in climate hazards; host neighborhood barbecues; hold community service events; launch a community preparedness campaign; create an art show to highlight stories about climate change. Ensure conversations are held in culturally sensitive ways.

Type: Program

Lead: Senior Services (Aging Friendly Community); Health; Central Services-Energy; Youth Commission

Time-frame: Medium term and ongoing

Cost: \$

EQUITY 1B

Partner with community organizations for inclusive planning

Equity cuts across all aspects of this plan.

Community partner organizations are critical to this work. (E.g., those supporting this plan, community and resilience hub partners, and other community organizations that serve diverse communities in Northampton.)

Conduct outreach sessions by attending community meetings or functions hosted by the partner organizations to reach community groups at familiar and accessible venues. Build the capacity of the partners to share information about climate risk and adaptation strategies with community members, and to relay to city staff the concerns, experiences, and insight of community members. Use this outreach process to ensure that communities that may

disproportionately experience the impacts from climate change directly shape strategies to enhance city resilience.

The Massachusetts Department of Health grant to the Collaborative for Education Services to foster inclusion and empowerment can advance this work.

Type: Program

Lead: Central Services-Energy; Planning & Sustainability

Time-frame: Ongoing

Cost: \$



EQUITY 1C

Support workforce development in resilience and regeneration solutions

Support job training to support the economy and simultaneously help reach its resilience and regeneration goals. In partnership with new and existing community partners (e.g., Smith Vocational and Agricultural High School, Valley Community Development Corporation, Center for EcoTechnology) expand resilience and regeneration skills development programs in tandem with demonstration projects or other municipal efforts. This could include:

Job training/career development in nature-based resilience and regeneration solutions (e.g., green infrastructure installation and maintenance; permaculture, regenerative, and resilient agricultural practices; and climate-resilient street tree care). Perennial plantings in the floodplain, for example, could be coordinated by the Smith Vocational and Agricultural High School horticulture program, simultaneously fostering career development, generating a new harvest crop for farmers, reducing erosion, and creating pathways to increase local food production and food security.



Job training/career development in clean energy or energy efficiency technologies. Such a program could include, for example, training HVAC and building technicians on energy efficient building systems, distributed energy systems, and passive house standards, in conjunction with the roll out of municipal campaigns to encourage residents to pursue building retrofits.

Type: Program

Lead: Mayor's Economic Development Coordinator

Time-frame: Long-term

Cost: \$\$ - \$\$\$

HEALTH & SAFETY 1

LAND USE

HEALTH & SAFETY 1A

Mitigate heat by expanding cooling opportunities at open space and streetscapes

Increase free recreation opportunities that can be used to cool off during high heat days or heat waves. This may include increasing public access to swimming areas, splash pads, or pocket parks with quality shade and vegetation. Ensure some affordable or free access to water.

Prioritize the installation of street trees, tree planting, and pocket parks in under-served neighborhoods (environmental justice areas), high traffic corridors, retail districts, parking lots, walking and biking corridors, bus stops and at community centers such as schools and health facilities.

Expanding the urban shade tree canopy reduces the heat island effect and provides shade to Northampton communities.

Type: Capital Improvement
Lead: Parks and Recreation; Public Works
Time-frame: Mid-term
Cost: \$\$

HEALTH & SAFETY 1B

Amend zoning and subdivision regulations for stringent flood and fluvial erosion control

Consider zoning and subdivision amendments to:

- **Amend** zoning to increase free-board requirements for new construction or substantial improvement within the flood zone, to the extent it can be done consistently with the state building code, with a minimum 1-foot free-board for residential, commercial, industrial and public buildings, and a 2-foot free-board requirement for critical facilities. Continue to ban new residential housing (except replacement of existing units) in the 500-year (0.02% annual chance) flood zone.
- **Require** new critical facilities be outside the 500-year floodplain with continuous non-inundated access during a 500-year flood.
- **Prohibit** enlarging or extending a nonconforming use when located in a special flood hazard area and ensure property owners to redevelop and/or reconstruct nonconforming structures using more flood-resilient techniques.



- **Ensure** street and parking lot design standards reduce impervious surfaces and remove barriers to the use of Low Impact Development (LID), consistent with the City’s MS4 permit.
- **Update** open space residential development (cluster) standards to focus on conservation development and change the review from special permit to site plan approval.
- **Adopt** fluvial erosion hazard zoning along rivers and streams to limit or prohibit development in fluvial erosion hazard areas.

Type: Policy
Lead: Planning & Sustainability
Time-frame: Mid-term
Cost: \$\$

HEALTH & SAFETY 1C

Continue land acquisition for flood management

The city has been acquiring land in the floodplain in order to reserve land with high flood risk, as well as land near the floodplain to serve as stormwater storage before the water reaches the floodplain. Continue land acquisition for ongoing flood management in accordance with the Northampton Open Space, Recreation, and Multiuse Trail Plan. Consider home buyouts in locations with high vulnerability to flooding.

Type: Program
Lead: Planning & Sustainability
Time-frame: Ongoing
Cost: \$ - \$\$\$



HEALTH & SAFETY 1D

Assess tree, forest ecosystem, agriculture, and food systems for resilience

Seek opportunities to build on Public Works assessment of water supply watershed forests and the Urban Forestry Commission/Tree Warden street tree inventories to conduct citywide assessments of trees, forest ecosystems agriculture, and food systems resilience when remote sensing technology supports such assessment at low cost.

- **Develop** selective harvesting, adaptive species planting, invasive species removal, and improvements to soil health to address vulnerabilities.
- **Emphasize** strategies that will simultaneously support carbon accumulation in forest biomass and soils, such as organic amendments and enhancing species diversity in tree stands.
- **Partner** in a Northampton or regional food systems and farming resilience plan (e.g., with Communities Involved in Sustainable Agriculture, Grow Food Northampton, Pioneer Valley Food Security Plan, Healthy Hampshire, Food Security Council, Agriculture Commission, and Pioneer Valley Planning Commission).
- **Identify** the climate vulnerabilities that Northampton farms and forests will face from increased heat, flooding, and extreme weather.
- **Identify** strategies to enhance the resilience of local small-scale food production and distribution.
- **Identify** regional food security solutions.

Type: Assessment /Plan

Lead: Public Works for watershed land, Planning & Sustainability for agriculture, greenways, Urban Forestry Commission for tree assessments

Time-frame: Medium-term

Cost: \$\$

HEALTH & SAFETY 1E

Prepare for vector and water-borne diseases

Build on the City's health assessment of climate change (Human Impact Partners, contracted by Planning & Sustainability) and vector-borne disease monitoring led by the Northampton Health Department and Massachusetts Department of Health to identify future climate change related vector and water-borne disease risks.

Strategies might include:

1. More aggressive removal of tires and other debris that hosts mosquitoes
2. Mosquito larvicide treatments
3. Municipal land management practices
4. Hunting regulations
5. Permaculture practices

Potentially enhanced water quality monitoring, (fecal coliform and/or benthic organisms) at Musante Beach, the Mill River, and the Connecticut River Greenway

Type: Assessment & Program

Lead: Health; Planning & Sustainability

Time-frame: Medium-term and ongoing

Cost: \$\$

HEALTH & SAFETY 2

HAZARD MITIGATION

HEALTH & SAFETY 2A

Assess and upgrade flood control infrastructure. Earn FEMA accreditation of the flood control levees

Maintain existing inspections and oversight programs for repair, maintenance, and upgrades of flood control infrastructure, and strengthen drills and inspections as needed.

FEMA has commenced a process to modernize the Flood Insurance Rate Maps (FIRMs), the first update since 1978. This process might potentially result in an increase in the elevation and area of the mapped floodplain. The City is assessing its flood control levees, potentially making needed improvements, to earn FEMA accreditation.

In 2019, the City completed an evaluation the flood control pump station needs and selected upgrades are underway.

Type: Capital Improvement
Lead: Public Works
Time-frame: Ongoing
Cost: \$\$ - \$\$\$

- Develop a Energy and Sustainability Commission public education campaign on a variety of climate change topics.
- Develop a messaging strategy that uses the city's web page and social media in a more coordinated and engaging way, and that enhances accessibility for the public to climate risk
- Support communities who may not be regularly connected to city activities.
- Promote the purchase of flood insurance through the National Flood Insurance Program (NFIP), even for those located outside of the regulatory floodplain.
- Continue existing involvement in the FEMA Community Rating System (CRS) program which provides discounts for flood insurance and makes it slightly more affordable.

Type: Program
Lead: Planning & Sustainability; Dispatch; Energy and Sustainability; Central Services-Energy
Time-frame: Short-term for strategy development; Ongoing for its implementation
Cost: \$

HEALTH & SAFETY 2B

Enhance accessibility to hazard and climate change risk information

Implement a multi-pronged hazard and resilience-based communication

- Dispatch emergency alerts, evacuation routes, warning systems, emergency responses.

HEALTH & SAFETY 2C

Develop a Northampton Community Resilience Hub

Develop a Community Resilience Hub, a downtown physical facility with a coordinated program for frontline communities and all residents who face chronic and acute stress due to disasters, pandemics, climate change, and other social and economic challenges. It will serve the 1% (people experiencing homelessness and those under severe

chronic stress), the 15% (below the poverty line), the 40% (housing-burdened and under chronic stress) and the 100% (those at risk of acute stress, e.g., major storm), by providing access to resource, strong networks, and building social resilience.

Coordinate the Hub and its offerings with the needs and opportunities of shelters and schools to safely house people during extended periods of extreme heat, extreme weather, flooding events, and pandemics to create a coordinated response to such event, in conjunction with the Hampshire County Emergency Sheltering Plan.

The Community Resilience Hub should be the dependable place for people to go for resources in emergencies, with continuous power, heating and cooling supported by power storage and energy islanding, information, phone charging, mental and physical health care, food and water, and/or other services.

Type: Capital Improvement
Lead: Planning & Sustainability; Mayor; Community Action Pioneer Valley
Time-frame: Mid-term
Cost: \$\$\$



A Plan Crafted by Northampton

Northampton's Climate Resilience and Regeneration planning (2018-2020 with a pause during COVID) brought city staff, the project team, residents, businesses, and organizations together to:

1. Assess vulnerabilities and strengths to climate change hazards;
2. Update the inventory of the city's greenhouse gas emissions;
3. Generate a framework for resilience and regeneration actions;
4. Develop strategies to move Northampton forward in reaching our resilience and regeneration goals.



Goals for Inclusive Planning

We aim to create a resilient, regenerative, and carbon neutral community through collaboration and collective action. Climate change will affect some members of our community disproportionately, and taking action will be easier for some people more than others. A robust and implementable plan required a planning process that's inclusive of everyone in the community—especially those that have been traditionally underrepresented in city planning processes.

The city's goal was to connect with diverse community members and stakeholders throughout the development of this plan, including voices that have traditionally been under-represented in community conversations (e.g., low income individuals, people experiencing homelessness, youth, seniors, businesses, and Hispanic/Latinx communities). To connect with these groups, the project team collaborated with partner organizations and community leaders that work within these communities—such as Northampton Neighbors, Northampton Survival Center, ServiceNet, among many others. Twenty-two such organizations and community leaders participated process.

Workshops, Trainings, In-Person Activities, & On-Line Surveys

A. Stakeholder workshops (2018)

The city convened a group of stakeholders—city staff across many departments, representatives from partner organizations, and community members who play key roles in mitigation and adaptation efforts in the city—to participate in a series of stakeholder workshops.

The first set of workshops focused on identifying infrastructural, social, and environmental vulnerabilities to climate change hazards, strengths within the city that can help Northampton adapt, and actions the city can take to increase its resilience. The second workshop focused on generating ideas for the plan around how to reduce community greenhouse gas emissions. The third workshop on the Climate Resilience and Regeneration Framework and a list of potential actions for the

plan. The stakeholder group analyzed the actions and identified ways to refine them and improve their impact using the Framework.

B. Public workshops (2018)

Over the course of three public workshops, more than 170 community members joined the conversation to discuss ideas for the Climate Resilience and Regeneration Plan. The first workshop included community-led conversations around the following questions: 1) What effects of climate change make you most concerned? 2) What makes Northampton communities strong and what could make them stronger? 3) What guiding principles do we want to follow when developing strategies for climate resilience and regeneration? These guiding principles helped to create our framework.

The second public workshop included round-robin table discussions on ways the city and community members could work together to reduce greenhouse gas emissions across various sectors. The third workshop included round robin table discussions about how a set of draft actions could be improved to achieve greater “co-benefits”—that is, to meet community goals such as equity, economic and cultural vitality, and regional collaboration.

C. Partner organizations training (2018)

The project consultants hosted a training for the plan’s Partner Organizations. Participants discussed the chronic and daily stresses felt by many Northampton community members, and how these stresses may be exacerbated by climate change. Participants developed work plans for engaging their constituents in conversations around climate change, adaptation, and preparedness, and were provided with a survey and other materials to support those conversations.

D. Other in-person activities (2018-2019)

Residents also provided their input through:

- Interviews with individuals experiencing homelessness to understand their experiences and thoughts;
- Presentation to the Greater Northampton Chamber of Commerce to engage the business community;
- Preparedness workshop at the Literacy Project, an organization that provides classes for adults completing their high school education and preparing for the workforce;
- Pop-up table at the Northampton Survival Center, an organization that provides food to low-income individuals;
- Focus group with the Northampton Youth Commission and another with the Northampton High School Environmental Club to gather youth input and perspectives.



Left: Workshop participants discuss flood vulnerability. Portions of Northampton’s downtown are at risk of flooding if flood control levees fail. (Image: Jean Palma)



Middle: Public workshop discussing ways to reduce greenhouse gas emissions; left: Preparedness workshop at the Literacy Project.



E. Online platforms (2018-2019)

The project team distributed two surveys through the city's electronic mailing lists, social media, and through Partner Organizations to gather additional input. The first survey asked residents about the climate change related hazards they had already experienced and their understandings of resilience and sustainability. The team also launched an on-line interactive survey. This tool allowed participants to select areas they were most interested in (e.g., climate and energy or health and safety), answer a series of questions about their thoughts and behaviors related to these areas, and prioritize potential actions to include in the Climate Resilience and Regeneration Plan.

F. Energy and Sustainability Commission (2020)

The Commission, with deeply engaged climate change activists, critiqued the plan, read multiple revisions, and eventually unanimously endorsed the penultimate draft that went to the Planning Board for a formal public hearing and adoption.

Moving Forward

Through these in-person and on-line opportunities, over 650 community members provided ideas and input for the development of this Climate Resilience and Regeneration Plan. In addition, numerous public and stakeholder comments and numerous committee conversations informed the plan.

The strategies in this plan outline ways to continue the conversation and avenues for community action and collaboration. The city continues to seek ways to include more diverse voices in shaping Northampton's future, and looks forward to working together in implementing this plan for a more resilient and regenerative Northampton.

After the initial public process, the forum moved to the Energy and Sustainability Commission (for plan endorsement), the Planning Board and a public board public hearing (for plan adoption), and to City Council (for plan endorsement). Each step included public input.



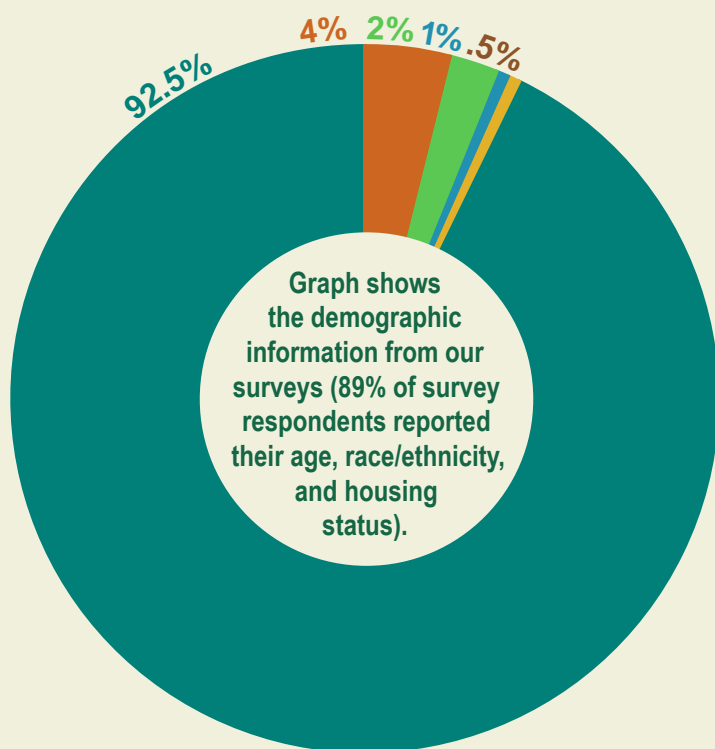
Clockwise: Stakeholder workshop discussing climate vulnerability; Public workshop discussing how strategies can achieve wide community benefits; Focus group with the Northampton Youth Commission

Stories from our community

Liz had been in Northampton for 37 years at the time of our interview. She has three sons and a daughter and is very artistic, preferring to spend her time singing and drawing. In terms of climate change, she has seen the weather change over the years, including an increase in the intensity of rain events. She mentioned how much she enjoyed an arts festival that occurred recently where the city blocked part of downtown to traffic. She said without cars the air was cleaner and safety was improved. She sees real value in pedestrian-only zones.

Jason has been in Northampton since 2013. At the time of our interview, he was living in a tent. To prepare for extreme events he makes sure to tie everything down. During cold weather, he wears as much warm clothing as possible. Since he does not have family to stay with, he relies on shelters that are often full, especially the “dry” shelter that he prefers. He notes the need for more shelters and outreach.

RACE/ETHNICITY

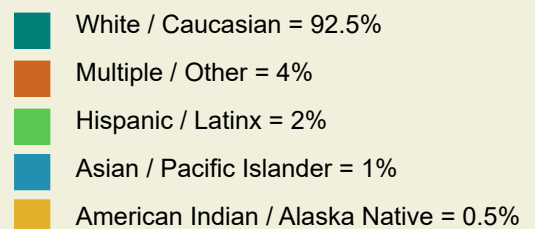


Total survey participants

160 participants in survey 1

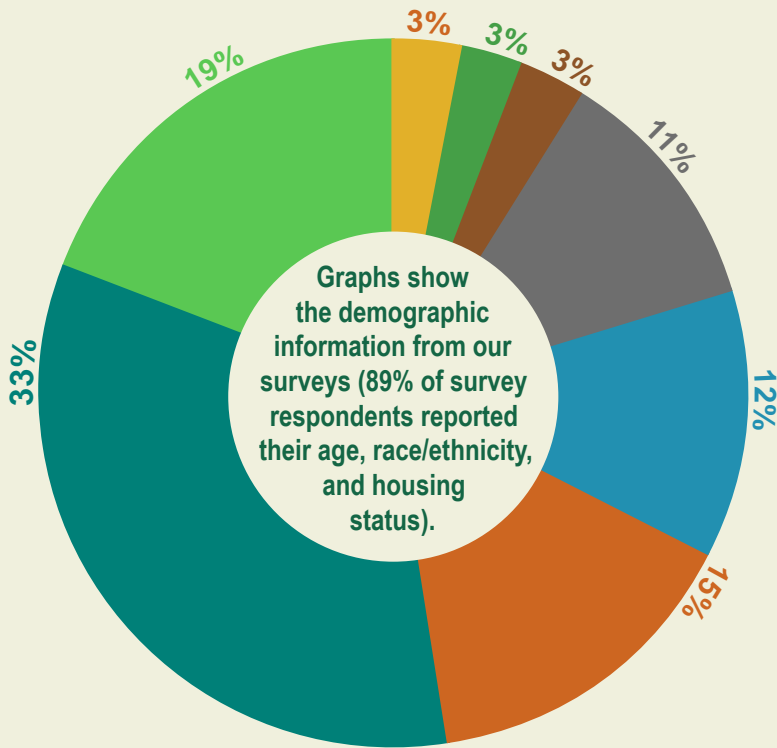
116 participants in survey 2

The surveys reached people from a range of demographics. The majority of respondents, however, were white, over the age of 65, and own a home. Many of the in-person activities were designed to expand the city's reach to different demographics. Increasing minority representation in city planning processes remains a strong city goal.

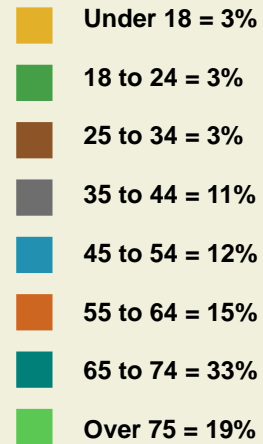


Survey respondents by race and/or ethnicity. Minority representation was strong, given the community demographics, but not as strong as the city would like. Increasing minority representation remains a strong city goal.

AGE

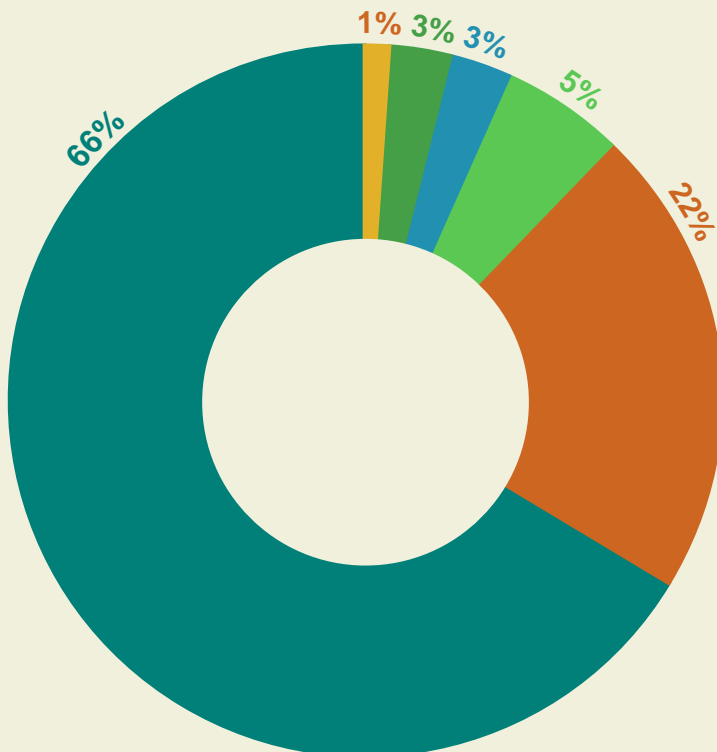


Age

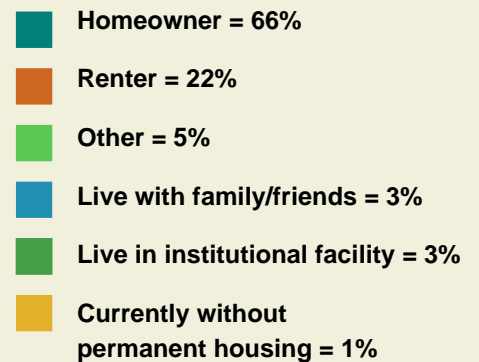


Survey respondents by age. While all age groups were represented, the majority of respondents were over age 65.

HOUSING STATUS



Housing Status



Survey respondents by housing status. While a variety of housing statuses were represented, the majority of respondents were homeowners.

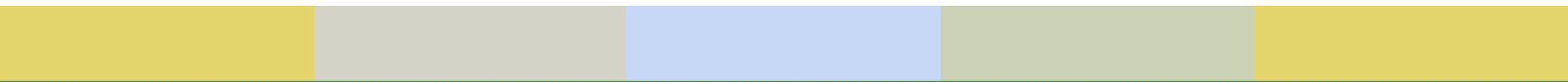


Northampton City Hall (left)
Main and Pleasant Streets (below)
1936 flood. (Image: Forbes Library)



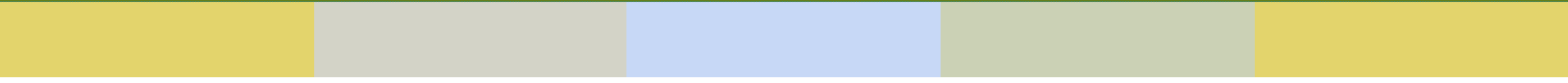
RELATED DOCUMENTS

- A. Mayor’s Executive Order for Carbon Neutrality by 2050
- B. Mayor’s Executive Order: Greenhouse Gas Impacts of HVAC Improvement Projects
- C. City Council Resolution Opposing the Expansion of Gas Infrastructure and Calling for Increased Development and Implementation of Renewable and Clean Energy Sources (Resolution R-18.170)
- D. City Council Resolution in Support of 100 Percent Renewable Energy (Resolution R-18.003)
- E. City Council Resolution Calling on the Massachusetts Legislature to Establish Carbon Pollution Pricing to Curb Climate Change
- F. City Council Resolution Opposing Provisions of H.3854 that would reduce the state’s net metering incentives
- G. City Council Resolution for Transparency and Public Representation Regarding Natural Gas Infrastructure (Resolution 15.451)
- H. Full Climate Resilience and Regeneration Framework
- I. Full Greenhouse Gas Inventory
- J. Full Carbon Neutral Pathway Analysis
- K. Full Infrastructure Resilience Memo
- L. Full Carbon Sequestration Memo
- M. Northampton’s Community Resilience Building Summary Report (2018 updated 2020)
- N. The Nature Conservancy’s Resilient and Connected Landscapes Map



PART 3

Open Space, Recreation & Multi-Use Trail Plan



Plan Summary

Resilience & Regeneration Strategies The Open Space, Recreation and Multi-Use Trail Plan

is Northampton's vision and its blueprint for using its resources to meet the City's open space, agriculture, conservation, multi-use trail, parks, and recreation needs. The plan builds on extensive citizen and board participation, the city's comprehensive plan, and analysis of city resources.

Northampton aims to be one of the most sustainable and resilient communities in the Commonwealth and the nation. In the context of this plan, sustainability and resilience includes protecting valuable habitat, restoring natural systems, and creating passive and active recreation opportunities. It also means encouraging housing and economic development in the appropriate places while avoiding sprawl. Most importantly, we want to create opportunities for all of our residents.

Our 12 point action plan is:

- Manage conservation lands to preserve natural systems and be user friendly.
- Preserve the city's most ecologically valuable areas.
- Open space to serve people.
- Preserve farmland.
- Support agricultural operations to ensure farmers thrive on our farmland.
- Ensure adequate land for parks and active recreation.
- Improve parks and recreation areas to serve active recreation needs.
- Maintain existing parks and recreation areas.
- Develop multi-use trails for easy public access.
- Convert unloved pavement to beloved parks.
- Honor history in the landscape.
- Improve public awareness of all of these resources.



Introduction

STATEMENT OF PURPOSE

Northampton is blessed with an exceptional wealth of scenic, natural, cultural, and recreational resources. The city and our public and private partners help us make the most of these resources.

There is unmet demand, however, for open space, parks, recreation, and multi-use trails for public use, health, and appreciation. We can meet these demands by carefully husbanding and expanding our ecological, cultural, and recreational resources.

The plan is both specific, to guide decision-making, and flexible, to respond to new opportunities.

The City's permanent protection and wise stewardship of its natural, cultural, and recreational resources are intrinsically important and essential to the community's quality of life, long-term economic health, resiliency, and sustainability.

This plan meets the Open Space and Recreation Plan requirements of the LAND/PARC Act and is an element of the *Sustainable Northampton Comprehensive Plan*. Our plan endorsers include the primary stewards of open space, the Conservation Commission, Agriculture Commission, Parks and Recreation Commission, Historical Commission, and Transportation and Parking Commissions. The Planning Board adopted the Plan in accordance with Massachusetts General Laws, Chapter 41, §81D.

PARTICIPATORY PLANNING

This plan builds on eight earlier Open Space, Conservation and Recreation Plans, most recently the 2011-2018 plan, and other plans, including the **Sustainable Northampton Comprehensive Plan**.

The plan was developed with extensive public and board participation. This included two formal public workshops and one rolling field workshop, a wikimapping interactive mapping website, and twelve public meetings of each of the boards who adopted or endorsed the plan.

Enhanced outreach was provided to Environmental Justice neighborhoods for one of the public forums.

The Office of Planning & Sustainability, the Department of Parks and Recreation, and other city agencies and boards are charged with implementing the plan.

Community Setting

REGIONAL CONTEXT

Northampton, Massachusetts, is 36.1 square miles of land and water. It is approximately mid-way between Connecticut and Vermont and between Albany and Boston.

Northampton is within the Connecticut River watershed, on the west side of the river. It is in the valley between that ancient waterway and the hills to the west. The Connecticut River floodplain has rich, fertile soils and a deep agricultural history. Adjacent to that floodplain is the relatively flat glacial outwash, proglacial lake lustrian clays, and glacial tills, which underlies much of the historic residential, commercial, and industrial development in downtown Northampton, downtown Florence and the older residential neighborhoods. Further west, the elevation rises and the soil thins out, and with steeper hills composed of bedrock-dominated glacial till.

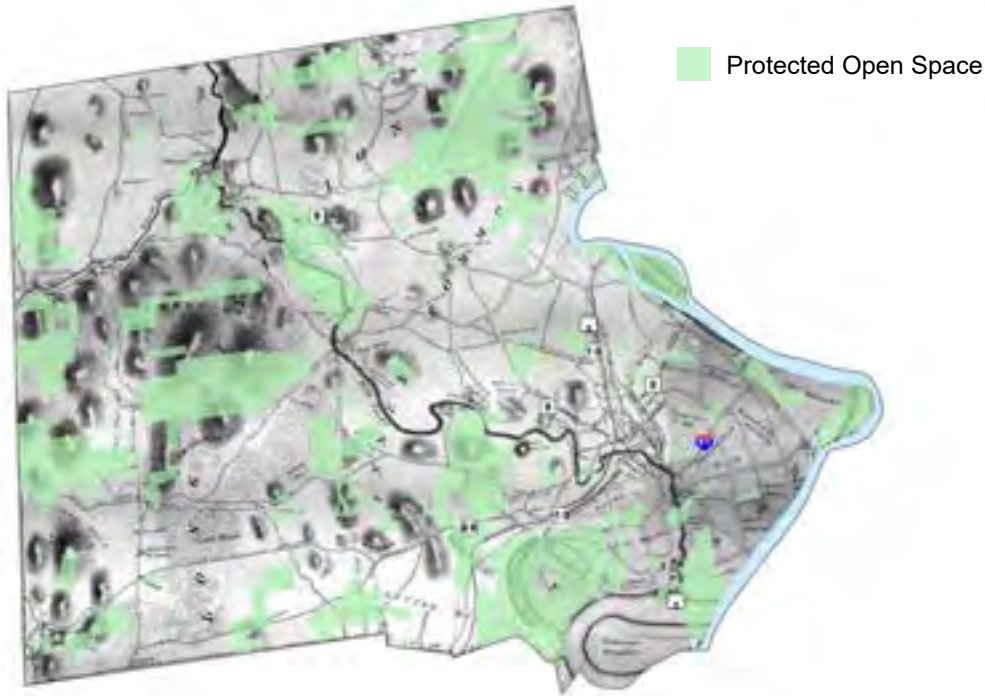
The 11,000 square mile Connecticut River Watershed is the largest river ecosystem in New England. It spans four states, including

Vermont, New Hampshire, Massachusetts, and Connecticut. The river is Northampton's eastern border. The many brooks and streams that flow through Northampton eventually find their way to the Connecticut River.

The 410 mile long Connecticut River drops 2,400 feet from its source to the sea. The watershed is approximately 80% forested, 12% agricultural, 3% percent developed, and 5% wetlands and surface waters. The Connecticut River Watershed was designated the "Silvio O. Conte National Fish and Wildlife Refuge" by an act of Congress in 1991, the first refuge of its kind, encompassing an entire watershed ecosystem. The Connecticut River also received special attention in 1998 when it became one of only 14 rivers in the US designated as a National Heritage River.

Northampton's natural neighbors are the Connecticut River and surrounding picturesque hills. Its political neighbors are Westhampton to the west, Williamsburg to the north, Hatfield to the northeast, Hadley to the east, and Easthampton to the south.





Northampton's primary water supply is from surface water reservoirs in the towns of Conway, Williamsburg, and Hatfield and groundwater in Northampton. Much of Hatfield's drinking water aquifer is located in Northampton, which Northampton regulates and protects.

Contiguous forestland land open space in Northampton and nearby conserves water supplies, prevents flooding, improves water quality, allows natural migration for flora and fauna. Open space add to the quality of life in the community and passive and active recreation opportunities. Northampton and its abutting communities contains many very large forests on relatively pristine lands that cross political borders. These contiguous blocks of land allow climate change induced migrations and prevents isolating flora and fauna.

The map of open space in a regional context shows the open space holdings within Northampton and the surrounding communities (from MassGIS).

Northampton has worked with Easthampton, Williamsburg, Hatfield, and Westhampton, as well as numerous federal, state, and non-profit organizations on joint open space and multiuse trail acquisitions and improvements.

SOCIOECONOMIC CONTEXT

Northampton's lifestyle is rich in recreation, cultural, artistic, academic, and business opportunities. Northampton features one of the most vibrant downtown centers in New England and was named "Number One Best Small Arts Town in America" by author John Villani. It was also recognized as one of the top 25 Arts Destinations in the nation by American Style magazine. The National Trust named it as one of the Dozen Destinations of Distinction for Historic Preservation.

Four village centers provide focal points for residential areas while the downtown is alive during the days and evenings. The City offers a wide selection of retail, services, restaurants, music and arts venues, coffee, and hospitality, including the only municipally owned theater in the state and the new Arts Trust facility. All of this activity provides a perfect atmosphere for casual strolling along the tree-lined streetscape.

The City also offers strong municipal programs in education, recreation, public safety, and

public works. As the first city in the country to receive the STAR Communities Five Star rating for sustainability, Northampton is known for its sustainability and resiliency efforts

Northampton’s strong and diverse economic base consisting of a mixture of traditional machine shop operations and newer innovative ones. It also has a large institutional base, which includes a VA medical center, a Cooley Dickinson Hospital, and Smith College. It is also strongly influenced by the nearby Amherst College, Hampshire College, Mount Holyoke College, and the University of Massachusetts, Amherst.

The quality of life in Northampton contributes to its strong economic base with strong manufacturing, technology, and service sectors. The local labor force is diverse, well educated, and highly skilled.

Northampton’s downtown is especially strong, during both the day and the night. It thrived when many similarly sized downtowns around the US have suffered. Downtown is the cultural and shopping hub of Hampshire County and attracts tourists, visitors, and residents from far and near. Main Street retail and upper floor vacancy rates remain low, with mixed and diverse uses.

While downtown Northampton remains the most defined urban center in the county, it has a smaller market share of total county retail spending now than in the past and a smaller market share of non-restaurant/non-hospitality retail spending. Per capita retail and restaurants sales for Northampton are significantly above those sales for Hampshire County and for the Springfield Metropolitan Statistical Area.

Vibrant service, commercial, and institutional sectors are also found in the City’s villages of Florence, Leeds, Baystate, and Village Hill.

Florence village has an especially hearty commercial and residential hub. It is center of business and culture for many City residents and the surrounding hill towns. It is one of the most livable places in the Pioneer Valley. Retail

Demographic and Housing Data

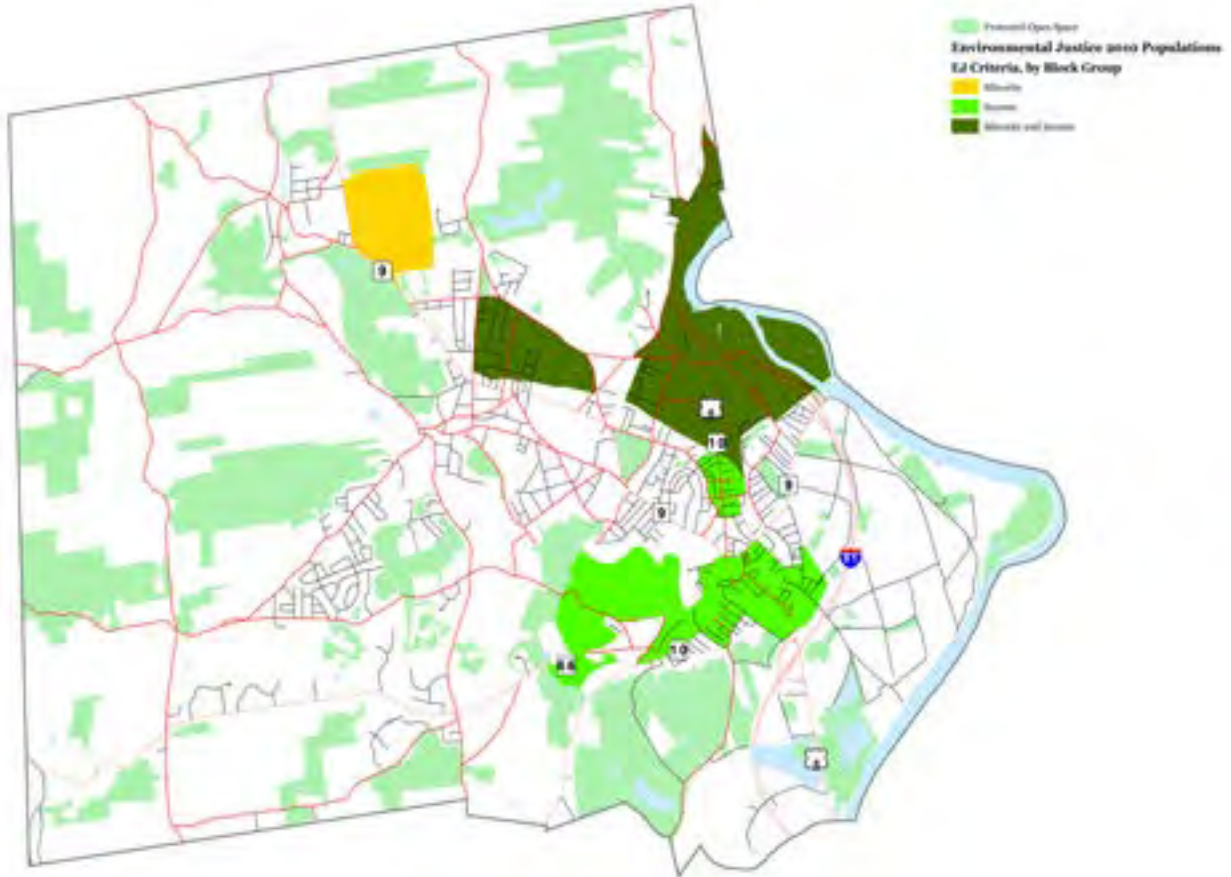
Demographic Indicator	In Northampton
Population 2000	28,968
Population 2010	28,549
Population 2014 (estimate)	28,637
White population (2014)	86.2%
Black/African American population (2014)	2.9%
Asian population (2014)	6.6%
Other population (2014)	4.3%
Latino/Hispanic (any race) (2014)	7.6%
Northampton workers working in Northampton	50.0%
Northampton workers commuting out of City	50.0%
Educational attainment 4 or more years of college	55.7%
Persons below poverty level	14.6
Housing units-owner occupied	56%
Housing units-renter occupied	44%
Housing with subsidies	12%
—Pioneer Valley Planning Commission “Community Profile” and “Data Portal” 2015	

businesses serve primarily local, while other commercial uses serve a much larger market area. Florence fills a critical economic and social niche not provided in higher rent downtown Northampton or in highway strip commercial areas. Florence village complements, rather than competes, with other commercial areas.

ENVIRONMENTAL JUSTICE

Environmental justice populations (low income and/or minority status) are traditionally underserved by recreation opportunities. Low-income families tend to conglomerate in urban areas while upper income groups exist in suburban or rural areas. Northampton has worked to ensure environmental justice.

Northampton environmental justice populations are all within easy walking distance of open space (see map below). Northampton has three recreation areas in its urban core area, which serve concentrations of poverty even in neighborhoods that are not formally EJ areas. The biggest challenge, however, is that access to



open space does not necessarily mean access to specific culturally appropriate recreation needs. In addition, sidewalk availability and high traffic can create isolation.

When planning for new parks, recreation areas, or multiuse paths, Northampton considers environmental justice. Future projects will ideally take cultural uniqueness into account as well, providing locations for specific activity within open spaces.

NORTHAMPTON HISTORY

For thousands of years, Native Americans camped and fished along the rich floodplains of the Connecticut River in the Pioneer Valley.

Northampton’s Puritan founders were drawn to the area more by accounts of abundant tillable land and ease of trade with the Native Americans than by the religious concerns that characterized their eastern Massachusetts brethren. In May

1653, 24 persons petitioned the General Court for permission to plant, possess, and inhabit the land called “Nonotuck.” Northampton was settled in 1654 on a low rise above the rich meadowlands by the Connecticut River. Relations between settlers and Native Americans, though initially cooperative, became increasingly strained, culminating in King Philip’s War in 1675.

Northampton grew as a trade and marketing center in the 18th century. The ministry of Jonathan Edwards, whose preaching sparked the religious revivals of the Great Awakening in the 1740s, quickened religious fervor. The Revolutionary War produced heroes like General Seth Pomeroy. The economic upheavals in the wake of the war moved Daniel Shays and his followers into open rebellion on the eve of the Constitutional Convention. A delegate to the Convention, Caleb Strong became Massachusetts’s first senator and an 11-term governor.

In the early 19th century, great hopes were raised by the prospect of the Northampton-New Haven

Canal. The canal, however, failed after a short time with the coming of the railroad. Other industries grew and prospered, including the utopian community of the Northampton Association, which combined radical abolitionism with a communally owned and operated silk mill. Sojourner Truth was, at one time, a member of that community which included William Lloyd Garrison and Frederick Douglass among its circle of supporters. Other reformers included Sylvester Graham, diet and health food enthusiast and inventor of the Graham cracker, and abolitionist Lydia Maria Child.

19th century Northampton drew visitors like Timothy Dwight, the Marquis de Lafayette, Henry James, and Ralph Waldo Emerson. Artists like Thomas Cole thought the environs of Northampton to be the epitome of the “picturesque,” the middle landscape between the sordid city and wild nature.

Northampton was the site of a number of schools and educational institutions. George Bancroft established the Round Hill School in 1823, and Smith College opened its doors in 1871. Author George Washington Cable founded the Home Culture Clubs in 1892, and the Hill Institute sponsored one of the nation’s earliest kindergartens. The Northampton Law School sent one of its students, Franklin Pierce, on to the Presidency. Northampton was also the home of Calvin Coolidge, who became President in 1923.

The 19th century diva, Jenny Lind, dubbed Northampton “paradise of America” after a long stay here. Ever since, Northampton has kept its moniker, “Paradise City.”

Northampton’s streets follow, essentially, the same paths that were laid out in the 17th century, and there are a number of surviving 18th century structures in Northampton. Downtown retains much of its 19th century character. The modest fortunes of local merchants and industrialists financed numerous Victorian mansions and picturesque cottages as well as the commercial blocks in the Downtown Historic District. Pomeroy

Terrace (1850-1885) and Elm Street (1860-1920), both located at the edge of downtown, have Gothic Revival, Italianate, Second Empire, Queen Anne, and Colonial Revival Styles, part of the city’s diverse architectural heritage.

Northampton’s economy has changed significantly since the end of World War II. The industrial component of the economy, once the linchpin, has receded. In its place, the commercial and service sectors of the economy have grown.

The City’s economy was once heavily dependent on two major institutions, the former Northampton State Hospital and the U.S. Veterans Affairs Medical Center. The Northampton State Hospital closed in 1994 and the Veterans Medical Center is now a smaller part of Northampton’s economy. Smith College, however, has remained stable in employment and economic importance, with a growing physical plant. The University of Massachusetts at Amherst, the largest employer of Northampton residents, remains strong.

For an artist, a gourmand, a bicyclist, or a parent, the City just might be paradise. Authors of numerous magazine articles and books have named Northampton one of the best places in the country to raise children, ride bicycles, eat out in restaurants, and make a life as an artist. While many might quibble with Northampton’s self embrace of “the best place” in which to raise a child or “the best small arts town,” no one can argue that Northampton is rich in offerings.

POPULATION

Northampton has a population of approximately 29,000 people, with a population density of 840 people per square mile. The population has remained stable since 1950.

With the all female Smith College, there are significantly more college age women than men. From ages of 25 to 65, there is approximately the same number of men as women. After age 65,

Population distribution within the city

Area	Population	% of City Population
City of Northampton	28,549	100%
Live within one mile of center of downtown	11,235	39%
Live within one-half mile of center of downtown	5,674	20%
Live in or abutting Central Business District	935	3%
Live within one mile of Florence Village	5,106	18%
Live within one-half mile of Florence Village	3,327	12%
—2010 US Census and 2015 City Census		

women outnumber men, because of significantly higher male mortality rates age 65 and over.

The Age-Sex Distribution graph, or population pyramid, shows that Northampton, like many regions of the country, has an aging population. There are significantly fewer people per age range in the ranges less than 19 years versus the ranges between 20 and 44.

Although Northampton's overall population has been stable for 70 years, a dramatic decrease in family size and the decrease in institutionalized populations at the State Hospital and the VA Medical Center has created a corresponding increase in the number of households and, therefore, the number of housing units. While this trend exists in most US communities, it has been especially sharp in Northampton and much of the last 50 years of residential development.

Northampton has high migration rates of people moving into and out of the city, but those migrations are well balanced. College-age students contribute to the population turnover, but there is also a significant amount of turnover at other age levels. This turnover contributes to the vibrancy of Northampton and has not created any loss of stability or residents' commitment to their neighborhoods.

Northampton's unemployment is consistently lower than the Commonwealth as a whole, even during the 2007-2010 Great Recession. The largest employment sector is the service sector, which includes health care and education, and is larger than the statewide average. The next highest is retail and trade, although this represents a decline over the past decade. The percentages of people who are self-employed, work from home, and are

part-time is larger than the state-wide average.

Half of employed Northampton residents work in the city. Most residents who commute out of the city commute to Amherst and Hampden County. Northampton residents fill slightly over half of the available jobs in Northampton (U.S. Census Bureau, Journey-to-Work).

Over half the population lives within walking distance of downtown or Florence village, which is high for a small city. This population, with a wide variety of incomes, may be the most important factor in supporting a healthy downtown. This population provides a base of customers for downtown businesses and helps provide the vibrancy that is critical to the health of downtown. It also generates a need for a variety of housing types and opportunities.

Population Density



Historical Patterns (1800–2010)



DEVELOPMENT PATTERNS

Northampton terrain ranges from the flat Mill River and Connecticut River floodplains to the its western and northern hills. The hills are covered with shallow ledge, soils, and topography poorly suited for development. Most development in Northampton occurred between the floodplain and the steeper hills.

Although Northampton looks “built-out” from many of the roads, the majority of the City’s land area has not been developed. 25% of the city is permanent open space and additional land has floodplains and wetlands, so the actual developable land is significant less.

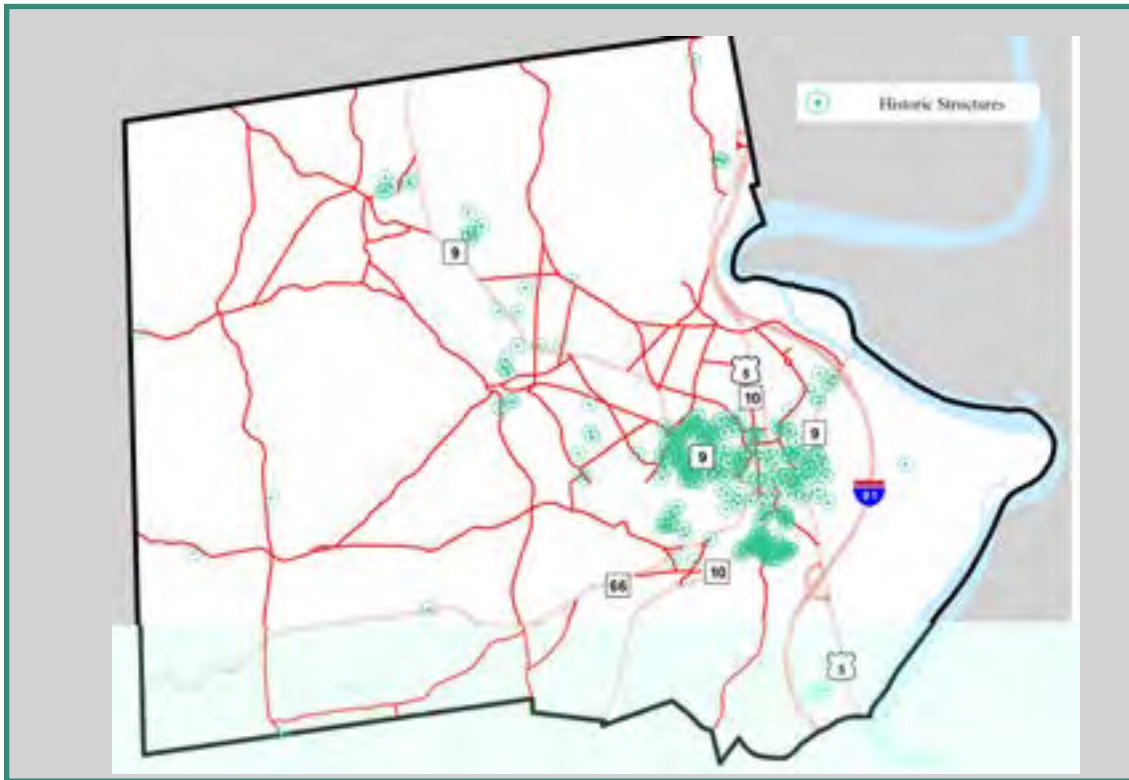
Most of the City’s historic development occurred in a corridor along the Mill River and other level areas of the city northeast of the Mill River. Downtown Northampton, Bay State, Florence, and Leeds are all located within one mile of the

Historic Mill River (in 1939 the Mill River was diverted from downtown to control floods). Starting in the 1950s, development expended to suburban areas in the southwestern quarter of the city

Transportation

Northampton is located in the center of the Pioneer Valley. The Massachusetts Turnpike (I-90) connects the region to Boston and Albany. Interstate 91 provides access to Hartford and

Historic & Archeological Resources



Brattleboro. The principal highways are Interstate 91, US Routes 5 and 10, which run north-south, and Interstate Route 90, which runs east-west. Amtrak stops in Northampton once a day, soon to increase to three times a day, in each direction, connecting to Vermont, Springfield, New Haven, and New York. Pan Am freight rail service is available. Pioneer Valley Transit Authority (PVTA) provides fixed route and para-transit service to the region. The Franklin Transit Authority also provides a bus service from Greenfield to Northampton. Peter Pan provides inter-urban in all directions.

Northampton Airport is a general aviation airport one mile southeast of downtown Northampton. It has a 3,506-foot by 50-foot asphalt runway. The airport has been in operation since 1929.

Northampton has 150+/- miles of paved streets, 15 miles of gravel streets, 70 miles of sidewalks and crosswalks, 20 bridges, and 11 miles of multi-use trails.

The percent of workers walking or bicycling to work is higher than the state as a whole, but the percent of people using transit is lower than the state average.

Water Supply Systems

Northampton's drinking water comes from three surface water reservoirs outside of Northampton and a drinking water aquifer within the city. The system draws filtered water from the reservoirs.

Reservoir water is treated at a water treatment plant (built in 2008) in Williamsburg. Additional treatment comes from decentralized chlorination and corrosion control facilities.

The City of Northampton supplies approximately 1.25 billion gallons of water to the residents per year. On average, the City supplied 3.4 million gallons of water each day, with a maximum peak of 4.8 million gallons. On large water withdrawal days, water is drawn from the two wells located in Florence. Northampton has approximately 150 miles of water pipes, 1,200 fire hydrants, and 8,000 water meters.

The Department of Environmental Protection Source Water Assessment Program Report reviewed the watershed lands and aquifer protection zones. The largest threats to the water supply identified in the report were from residential fuel storage and large scale commercial uses.

The Department of Public Work protects and monitors the water supply and watershed land and acquire additional lands to preserve current and future water supplies.

Wastewater Systems

The Northampton Wastewater Treatment Plant (built 1973, expanded 1998) can treat 8.6 million gallon per day. It serves most of Northampton and 425 people in the Williamsburg, including institutional, commercial and industrial users.

The treatment plant was built in 1973 and expanded in 1998. Wastewater receives preliminary treatment, primary treatment, secondary treatment, and disinfection.

Wastewater is discharged to Connecticut River via outfall pipe. Sludge is treated on-site and then trucked outside of Northampton for final disposal.

The facility accepts industrial wastewater from significant industrial and institutional users (e.g., Coca Cola, Cooley-Dickinson Hospital, Smith College, and the Veterans Affairs Medical Center).

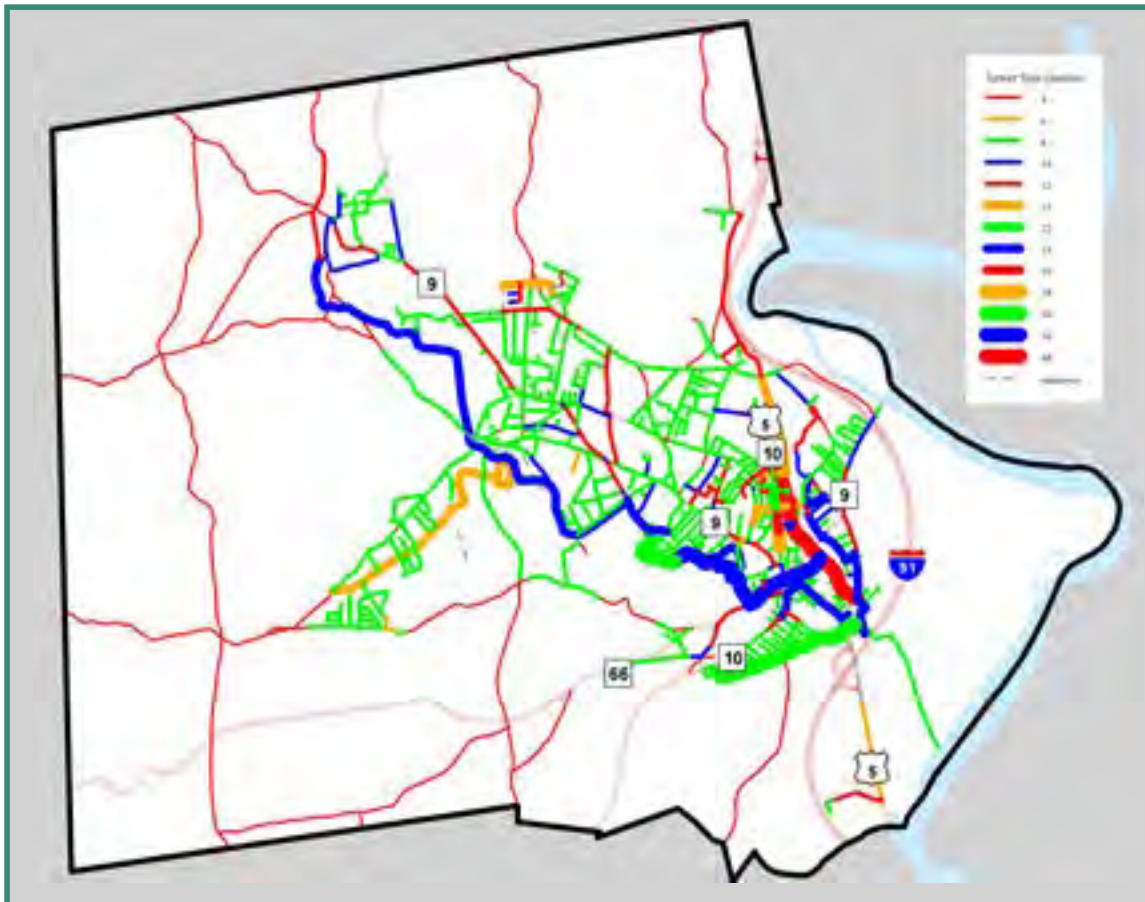
The city has 100+/- miles of sanitary sewer pipes.

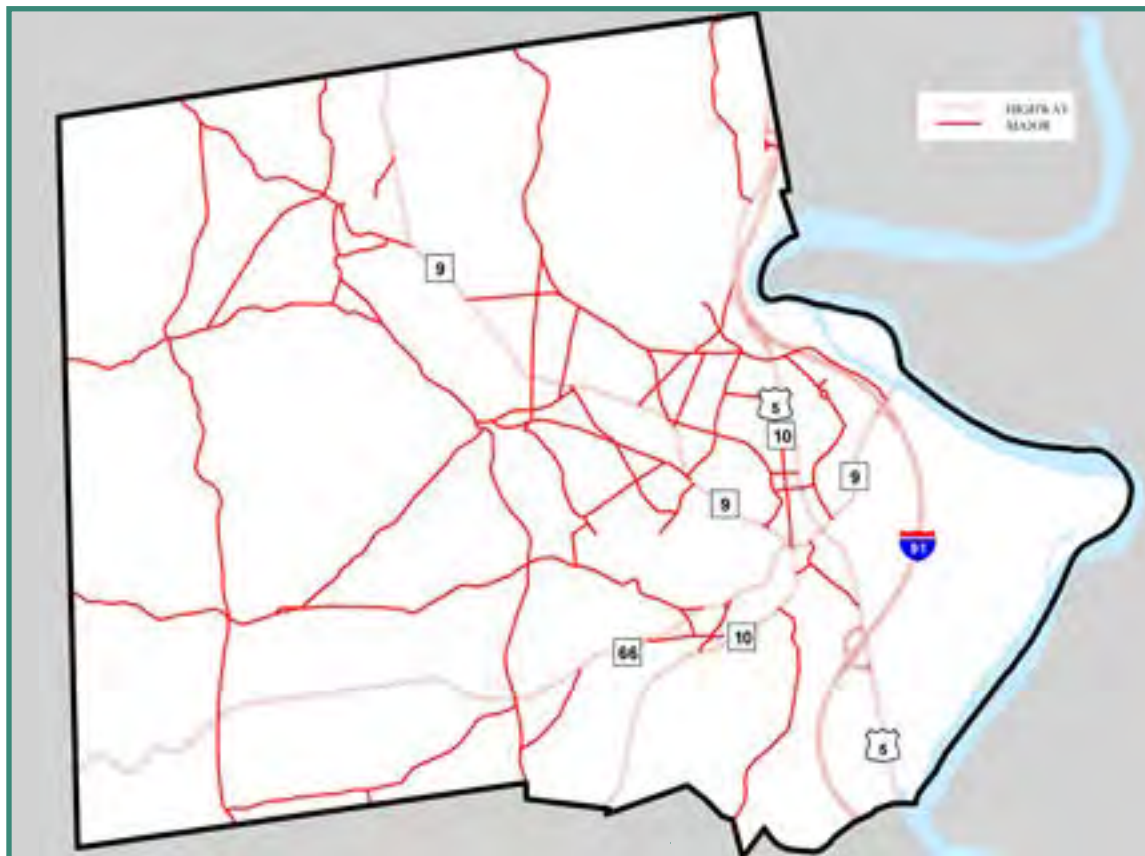
Development Constraints

Geography and infrastructure systems constrain large-scale commercial, industrial, and residential expansion.

Upgrading and extending water and sewer lines outside of the currently developed areas to proposed locations for commercial or light development may not be feasible due to the high costs and limited available sites. Upgrades of existing water and sewer lines may encourage infill development for greater concentrations of commercial, industrial, and large scale residential uses near current village center areas.

Wastewater Treatment





Development Patterns

Almost all development in Northampton is located outside of the Connecticut River floodplain. During the last four decades, the agricultural economy of Massachusetts has declined, resulting in the loss of some marginal farms, both on and off the floodplain. Northampton is seeing a small increase in the number of small farms but a decrease in acreage currently being farmed.

Since World War II, many rural areas have been transformed to suburban residential development. Commercial development has spread from the original Northampton-Florence-Leeds corridor to include highway commercial on King Street. Industrial uses in the Northampton-Florence-Leeds corridor and along the Mill River have shrunk. The single largest industrial concentration is in the Northampton Industrial Park.

Northampton has a strong sense of community and place. The development pattern has been shaped by the strength of the urban centers of Northampton and Florence, the King Street shopping areas, the strong character of the residential neighborhoods. The existence of large tracts of public and quasi-public land, including the Northampton State Hospital/Village Hill, Smith College, Arcadia Wildlife Sanctuary, Smith Vocational and Agricultural School, Look Memorial Park, Northampton Reservoir watershed lands, and the VA Medical Center has also been influential.

Land Use Controls

Zoning and land use controls promote the City's economic, environmental, and social health. Environmentally focused zoning includes:

- 1. Open Space Residential** Allows predominately residential development to be clustered on a portion of a property, with a majority of a site preserved as open space.

2. Planned Village District Creates a mixed-use village at the former Northampton State Hospital.

3. Special Conservancy and Watershed Protection Districts

Protects against flood hazards by prohibiting new residential development in the 500-year floodplain, while allowing redevelopment of existing buildings and uses.

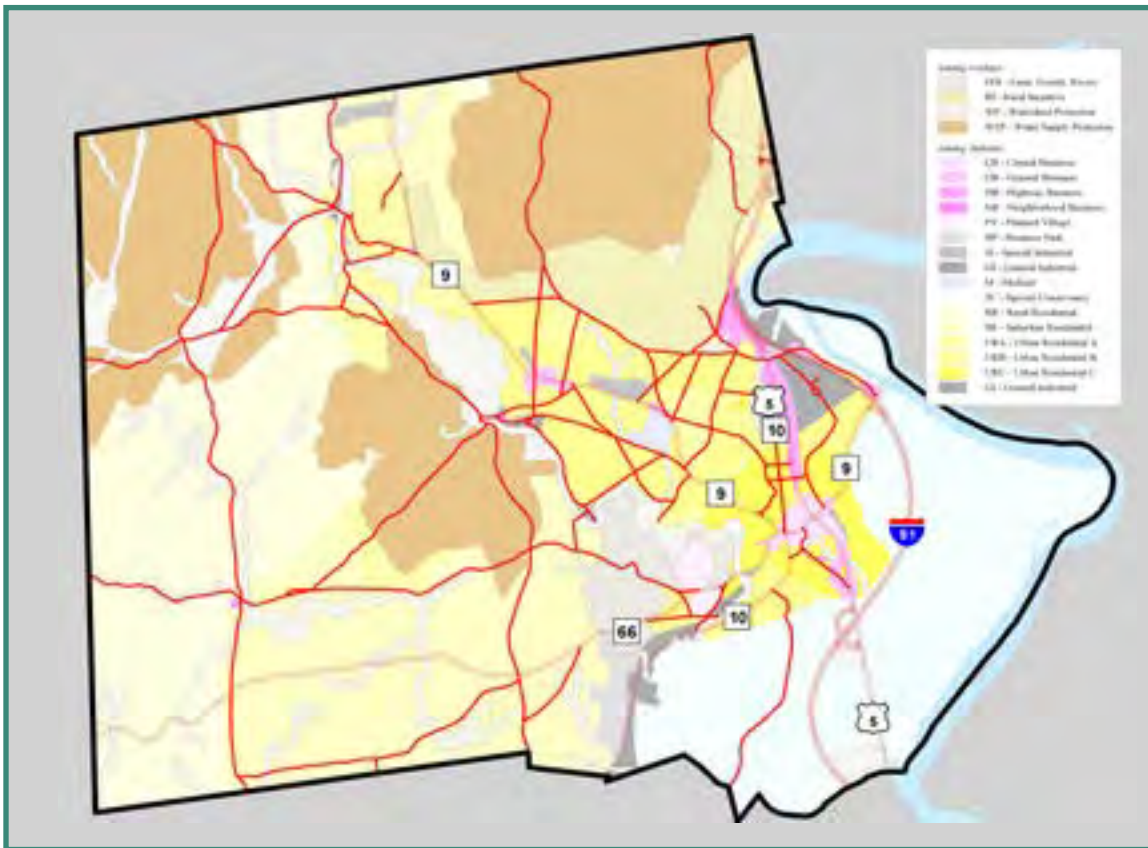
4. Water Supply Protection District

Protects public drinking water from any inconsistent use or development.

5. Farms, Forests and Rivers Allows virtually no development. Primarily for permanently protected open space.

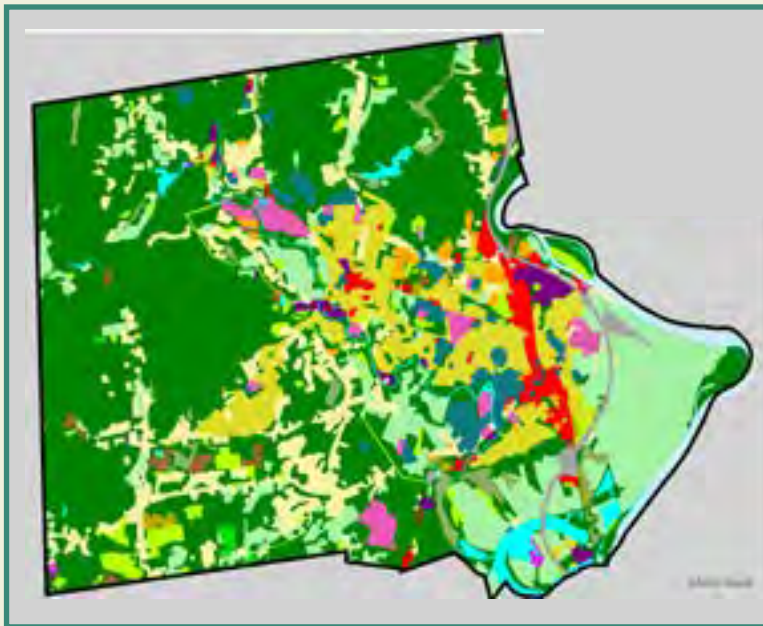
Northampton has approximately 5,000 acres of land that could, in theory, be developed.

Overview of Zoning



LAND USE

Northampton Land Use (MassGIS)	1985 Acres	1999 Acres
Non-protected Forests	12,306	11,607
Non-protected Agricultural Lands	3,385	3,176
Developed Land	1,264	1,177
Residential Land	3,414	4,236
Water/Recreational/Open land	2,478	2,652



Land Use: 1999



Land Use: 2005



Environmental Inventory and Analysis

TOPOGRAPHY, GEOLOGY, SOILS

Topography

Northampton's land is a three part geological story.

- 1 The alluvial/ lacustrine floodplain, including 3,000 +/- acres of farmland along the Connecticut River.
- 2 Deep, flat glacial outwash and proglacial lacustrine former lake bed, underlying much of Baystate, Florence, and downtown.
- 3 Rolling glacial till in Leeds and in much of the suburban areas of the city, along with the steeply sloping bedrock-dominated glacial till in the hills on the north and western ends.

Elevations range from 99 feet mean sea level (MSL) at the Connecticut River to 890 feet MSL on the western hills. Mount Tom and Mount Holyoke, running in a unique east-west oriented boomerang shape, are southeast of Northampton. These mountains define the northerly limit of the Springfield-Chicopee-Holyoke metropolitan area and help define Northampton and Hampshire County.

Geology

Geologically, Northampton is the result of millions of years of geologic history: upheavals of the earth's crust and volcanics and the sculpting power of water, ice, and wind. This physical base has determined the distribution of water bodies, soils and vegetation and settlement patterns.

The movement of the earth's plates have formed mountains that generally run northerly to southerly. The pressure of mountain building folded the earth, created faults, and produced layers of metamorphosed rock. Collision stress also melted large areas of rock, which cooled and

hardened into the granites that are found in the area. Preceding the collisions, lines of volcanoes sometimes formed.

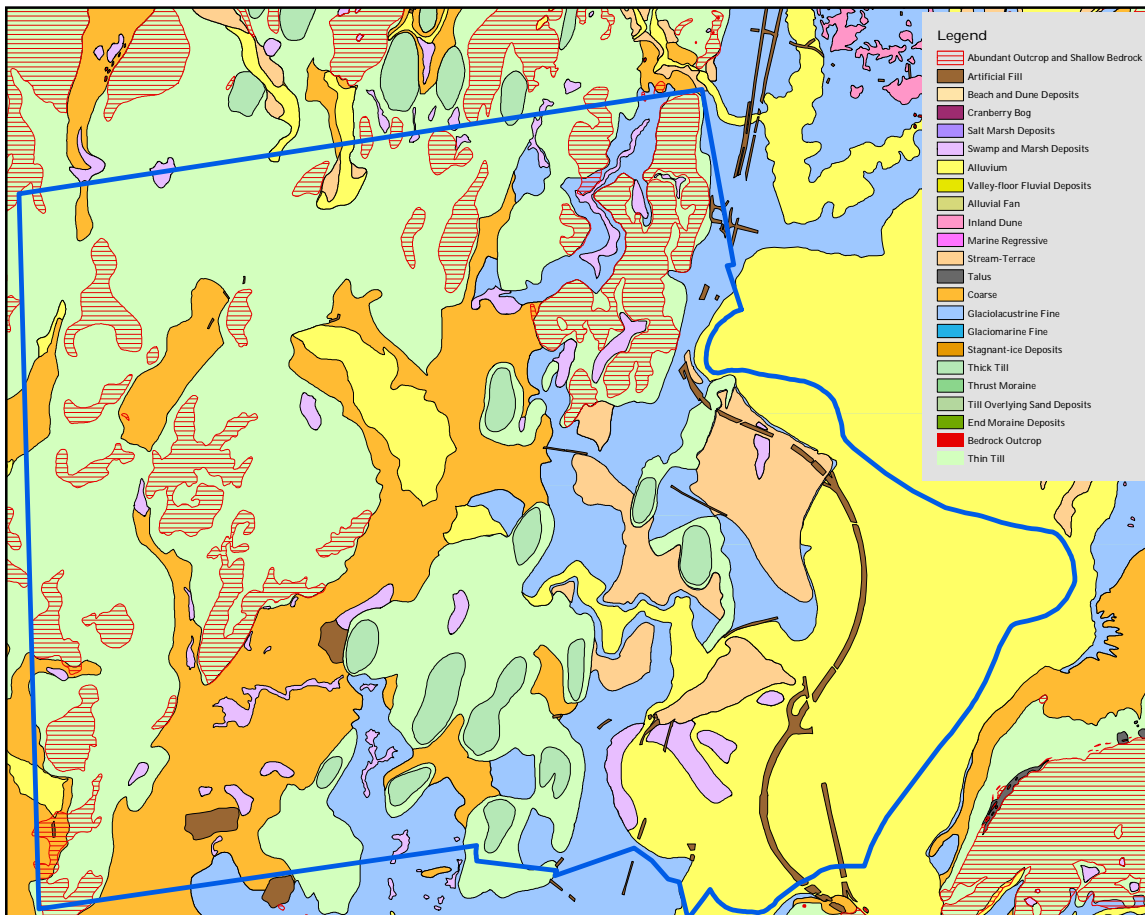
The Connecticut River Valley was one of many smaller rifts to develop. Streams flowing into the river from higher areas brought alluvium, including gravels, sand, and silt. At the time, the area that is now Northampton was located south of the equator. The Dinosaur era had begun, and the footprints of these giant reptiles are still visible in the rock formed from sediments deposited on the valley floor millions of years ago.

By the close of the Dinosaur age, eastern United States, including Northampton, was part of a large featureless plain, known as the peneplain. It had been leveled through erosion, with the exception of a few higher, resistant areas. Today, these granite mountaintops, called monadnocks, are still the high points in this region (e.g., Mt. Wachusett, Mt. Greylock, and Mt. Monadnock).

As the peneplain eroded, the less resistant rock eroded to form low-lying areas, while bands of schist remained to form upland ridges. By this time, the Connecticut Valley had been filled with sediment while streams that would become the Deerfield, Westfield, and Farmington Rivers continued to meander eastward.

A long period of relative quiet in geologic terms followed the Dinosaur era. Then, as the Rocky Mountains were forming in the west eight million years ago, the eastern peneplain shifted upward a thousand feet. As a result of the new, steeper topography, stream flow accelerated, carving deep valleys into the plain. Today, the visible remnants of the peneplain are the area's schist-bearing hilltops, all at about the same 1,000-foot elevation.

Mountain building, flowing water, and wind roughly shaped the land. Then the great glacial advances would shape the remaining peneplain into its current topography. Approximately two million years ago, accumulated snow and ice in glaciers to the far north began advancing under their own weight. A series of glaciations or "ice



ages” followed, eroding mountains and displacing huge amounts of rock and sediment. The final advance, known as the Wisconsin Glacial Period, completely covered New England before it began to recede about 13,000 years ago. This last glacier scoured and polished the land into its current form, leaving layers of soil and rock we see today.

The glacier picked up, mixed, disintegrated, transported, and deposited material in its retreat. Material deposited by the ice is known as glacial till. Material transported by water, separated by size and deposited in layers is called stratified drift. The glacier left gravel and sand deposits in the lowlands and along stream terraces. Where deposits were left along hillsides, they formed kame terraces and eskers. Kames are short hills, ridges, or mounds of stratified drift, and eskers are long narrow ridges or mounds of sand, gravel, and boulders.

During the end of the last ice age, a great inland lake, Lake Hitchcock, formed in the

Connecticut River Valley. Fed by streams melting from the receding glacier, the lake covered an area approximately 150 miles long and 12 miles wide, from St. Johnsbury, Vermont to Rocky Hill, Connecticut. Streams deposited sand and gravel in deltas as they entered the lake, while silts and clays were carried into deeper waters and deposited.

Soils

Soil is the layer of unconsolidated minerals and organic material. Soil scientists classify soils by their characteristics, including topography; physical properties including soil structure, particle size, stoniness, and depth of bedrock; drainage or permeability to water, depth to the water table, and susceptibility to flooding; behavior or engineering properties; and biological characteristics such as presence of organic matter and fertility. Soils are classified and grouped into common associations, or soil types.



The US Dept. of Agriculture Natural Resource Conservation Service lists three generalized soil types for Northampton:

1. Hadley-Winooski-Limerick

Association Deep, nearly level, well-drained, moderately well drained, and poorly drained, loamy soils formed in alluvial material; on floodplains, including much of city’s Connecticut River floodplain and most of its prime agricultural soils.

2. Hinckley-Merrimac-Windsor

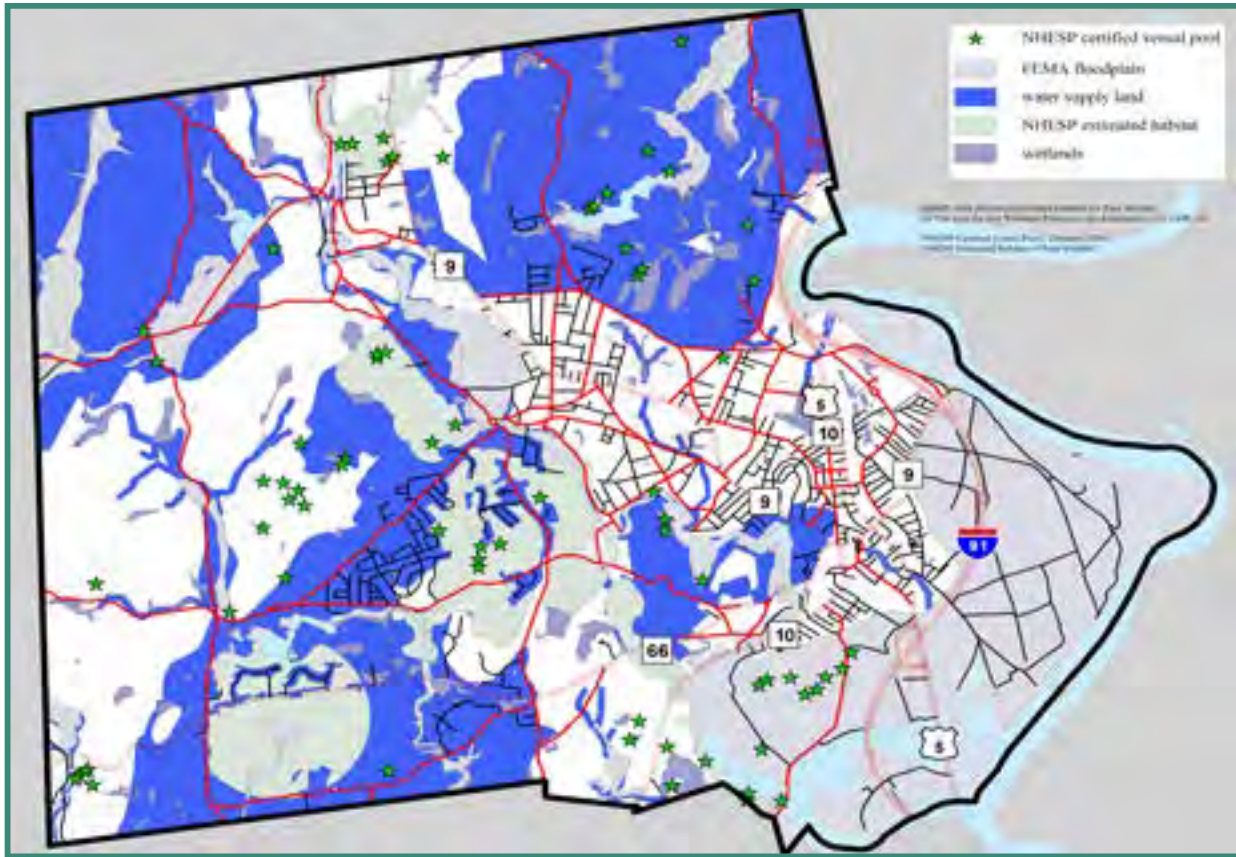
Association Deep nearly level to steep, excessively drained and somewhat excessively drained, sandy and loamy soils formed in outwash deposits; on outwash plains. Includes most of downtown Northampton and Florence and the level to rolling terraces parallel to the Connecticut River.

3. Charlton-Paxton-Woodbridge

Association Deep, level to steep, well and moderately well drained, loamy soils formed in glacial till; on uplands. Includes much of the residential areas of town and Northampton’s western hills. They are the most common upland soils found in Massachusetts and were developed on glacial till.

LANDSCAPE CHARACTER

Northampton has a diverse and unique landscape. The City consists of densely developed urban areas, open farmland, forested hills, numerous streams, wetlands, and an abundance of wildlife patches, corridors, and matrices. The Connecticut River floodplain contains much of the City’s prime agricultural lands, the Meadows. The steep forested uplands on the western part of the city cover about one-third of the City.



WATER RESOURCES

Watersheds

Northampton is rich in water resources, including brooks, streams, ponds, vernal pools, wetlands, and aquifers (see the Water Resources Map).

Most of the City of Northampton lies in the Connecticut River Watershed. The Connecticut River has a “Class B” water quality designation from the New Hampshire-Vermont border to Holyoke and is classified as a warm water fishery. Class B waters should provide suitable habitat for fish and other wildlife and should support primary contact recreational activities such as fishing and swimming. The water should also be suitable for irrigation and other agricultural uses. The classification of rivers in Massachusetts represent the state’s goal for each river.

The Connecticut River still has some contamination from PCBs, chlorine, heavy metals, erosion, and storm water runoff. These

pollutants come from both point sources, like wastewater treatment plants and manufacturing plants, and non-point sources, including improperly operating septic systems, and farm and stormwater runoff.

Although never as polluted as the section of the river below the Holyoke Dam, the water quality in the Connecticut River in Northampton has improved since the Clean Water Act (1972). Improved sewage treatment plants, expansion of areas served by sanitary sewers, and the ending of combined sanitary and storm water sewers (CSOs), have combined to improve water quality in the Connecticut River and Mill River. Northampton’s Hockanum Road wastewater treatment plant was upgraded to secondary treatment in the early 1980s and currently services almost 90% of Northampton’s population. Improving the quality of stormwater runoff is a work in progress, with some major success stories and much left to be done.

Flood Hazard Areas

The 100-year floodplain (1% chance of flooding in a given year) and 500-year floodplain (0.2% chance of flooding in a given year) have been mapped based on historical rainfall and flooding, but do not take climate change into account. The floodplain includes floodway and flood fringe. The floodway is the channel of a river or stream and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water elevation more than one foot. Construction on floodways creates significant risk to structures from flood depths and velocities of floodwaters. Northampton zoning prohibits structures in these areas.

The flood fringe is the area of the floodplain lying outside of the floodway but subject to periodic inundation from flooding. Northampton's zoning severe limits development in the FEMA 500 year floodplain, as a surrogate for the 100 year floodplain with climate change.

Floodplain and floodway boundaries are delineated on FEMA's Flood Insurance Rate Maps (FIRMs). In Northampton, the 500-year floodplain does not generally extend significantly beyond the 100-year flood area. Major floods, such as those caused by heavy rains from hurricanes, and localized spot flooding can exceed the 100- and 500-year flood levels. In addition, many small streams are not mapped for their flood hazard on FEMA maps, but are estimated in Northampton's zoning.

Northampton can experience flooding in any part of the City, even outside of the floodplain. With sufficient rain, almost any area will experience at least pockets of surface flooding or overland flooding. Overland flooding in rural areas can result in erosion, washouts, road damage, loss of crops, and septic system back-ups. Heavy rain in the more urbanized parts of the City with extensive paved and impervious surfaces can easily overwhelm stormwater facilities resulting in localized flooding and basement damage. Stormwater flooding also contributes to water pollution by carrying silt, oil, fertilizers, pesticides,

and waste into streams, rivers, and lakes.

The following table represents existing flood mitigation strategies in Northampton.

Wetlands

Wetlands are transitional areas where land-based and water-based ecosystems overlap. Inland wetlands are commonly referred to as swamps, marshes, and bogs. Wetlands are places where the water table is at or near the surface or the land is covered by shallow water.

Historically, wetlands were drained, filled and "improved" for more productive uses. Over the past century, scientists have recognized that wetlands perform a variety of extremely important ecological functions. They absorb runoff and prevent flooding. Wetland vegetation stabilizes stream banks, preventing erosion, and trap sediments that are transported by runoff. Wetland plants absorb nutrients, such as nitrogen and phosphorus, which would be harmful if they entered lakes, ponds, rivers, and streams. They also absorb heavy metals and other pollution. Wetlands are extremely productive, providing food and habitat for fish and wildlife. Many plants, invertebrates, amphibians, reptiles, and fish depend on wetlands to survive. Wetlands also have economic significance related to their ecological functions. It is far more cost-effective to maintain wetlands than build treatment facilities to manage stormwater and purify drinking water, and wetlands are essential to supporting lucrative outdoor recreation industries including hunting, fishing, and bird-watching.

The Massachusetts Wetlands Protection Act is designed to protect eight "interests" related to their function: public and private water supply, ground water supply, flood control, storm damage of pollution, and protection of land containing shellfish, fisheries, and wildlife habitat. The law defines and protects wetland resource areas, including banks of rivers, lakes, ponds, and streams; wetlands bordering the banks; land under rivers, lakes, and ponds; land subject to

flooding; and riverfront areas within 200 feet of any stream that runs all year. The Northampton Conservation Commission administers both the state Wetlands Protection Act and the Northampton Wetlands Protection Ordinance.

Many, but certainly not all, of Northampton’s wetlands are mapped by the National Wetlands Inventory and local supplemental data extracted from wetlands protection filings (see the Water Resources Map).

Vernal Pools

Vernal pools are temporary bodies of fresh water that provide critical breeding habitat for many vertebrate and invertebrate wildlife species. They are defined as “basin depressions where water is confined and persists for at least two months during the spring and early summer of most years, and where reproducing populations of fish do not survive.” Vernal pools may be very shallow, holding only five or six inches of water, or they may be quite deep. They range in size from fewer than 100 square feet to several acres (Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife, *Massachusetts Aerial Photo Survey of Potential Vernal Pools*, Spring 2001). Vernal pools are found across the landscape, anywhere that small woodland depressions, swales, or kettle holes collect spring runoff or intercept seasonal high groundwater and along rivers in the floodplain. Many species of amphibians and vertebrates are completely dependent on vernal pools to reproduce. Loss of vernal pools can endanger entire populations of these species.

The state’s Natural Heritage and Endangered Species Program (NHESP) has predicted the location of vernal pools statewide based on interpretation of aerial photographs. This probably misses smaller pools. The NHESP has identified approximately 60 potential vernal pools throughout Northampton with several clusters especially in the northwestern part of town. According to NHESP, clusters indicate a particularly good habitat for species. Also, with clusters, there are

Northampton Water Resources	Acres
Water bodies (rivers, streams, ponds)	1,200 +/-
Floodplain (100 year flood)	4,800 +/-
Wetlands (swamps, marshes)	3,000 +/-
Water supply watersheds & Aquifers	5,000 +/-
Note: Some resources are in more than one category	

alternate habitats if something happens to one pool, and slightly different conditions in each may provide different habitats for species dependent upon the pools.

NHESP also certifies vernal pools when they receive evidence on the presence of certain breeding amphibians that depend on vernal pools. Certified vernal pools are protected by the Massachusetts and Northampton Wetlands regulations. Northampton has 74 Certified Vernal Pools.

Aquifers & Recharge Areas

Aquifers are composed of water-bearing soil and minerals, which may be either unconsolidated (soil-like) deposits or consolidated rocks. Consolidated rocks, also known as bedrock, consist of rock and mineral particles that have been welded together by heat and pressure or chemical reaction. Water flows through fractures, pores, and other openings. Unconsolidated deposits consist of material from the disintegrated consolidated rocks. Water flows through openings between particles.

As water travels through the cracks and openings in rock and soil, it passes through the unsaturated zone, in which both air and water fill the spaces between soil particles. Below the unsaturated layer, water fills all spaces in the saturated zone, the groundwater. The upper surface of the groundwater is called the water table.

Groundwater travel and speed is determined by the properties of the aquifer materials and the aquifer’s width, depth and composition. This information helps determine how best to extract the water for use and determine how contaminants will flow in the aquifer.

Aquifers are unconfined or confined. The top of an unconfined aquifer is identified by the water table. Above the water table, in the unsaturated zone, interconnected pore spaces are open to the atmosphere. Precipitation recharges the groundwater percolating to the water table. Confined aquifers are sandwiched between two impermeable layers. Northampton public wells and many private wells tap unconfined aquifers. Wells in confined aquifers are artesian wells.

The Northampton Aquifer has three delineated Zone II recharge areas. A Zone II is that area of an aquifer that contributes to a well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at approved yield with no recharge from precipitation). The Zone II areas are located in the southwestern section of the City and the northeastern section of the City. Threats to the Zone II recharge areas can include contamination from residential use, roadways, hazardous materials, oil contamination, and agricultural uses.

VEGETATION

Northampton has diverse natural habitats that support a variety of plants and animals. Approximately 50 percent of Northampton is covered by a mixed deciduous forest, including oak, maple, and beech, with smaller coniferous forests, including spruce, pine, and hemlock. Several thousand more acres of land are in agriculture, abandoned fields, and wet meadows.

In 1993 and then again in 2014, Planning & Sustainability hired a naturalist to do an ecological assessment of conservation properties, and some other key parcels. This report, *Rediscovering Northampton, The Natural History of City-Owned Conservation Areas*, provides data for land management and land acquisition decisions. Major findings have been incorporated into this plan.

Unfortunately, certain non-native invasive plants are threatening natural habitats. These plants can take over part of the indigenous habitat and decrease the ecological value for native animals.

Public Shade Trees

Public shade trees are highly valued and can substantially to the economic and ecological values of those neighborhoods. The City's Tree Committee and the City's Tree Warden, work to protect and expand shade trees.

City trees in parks, cemeteries and public spaces are generally protected with the same care as public shade trees, but are not subject to the jurisdiction of the Massachusetts Public Shade Tree Law (M.G.L. Chapter 87).

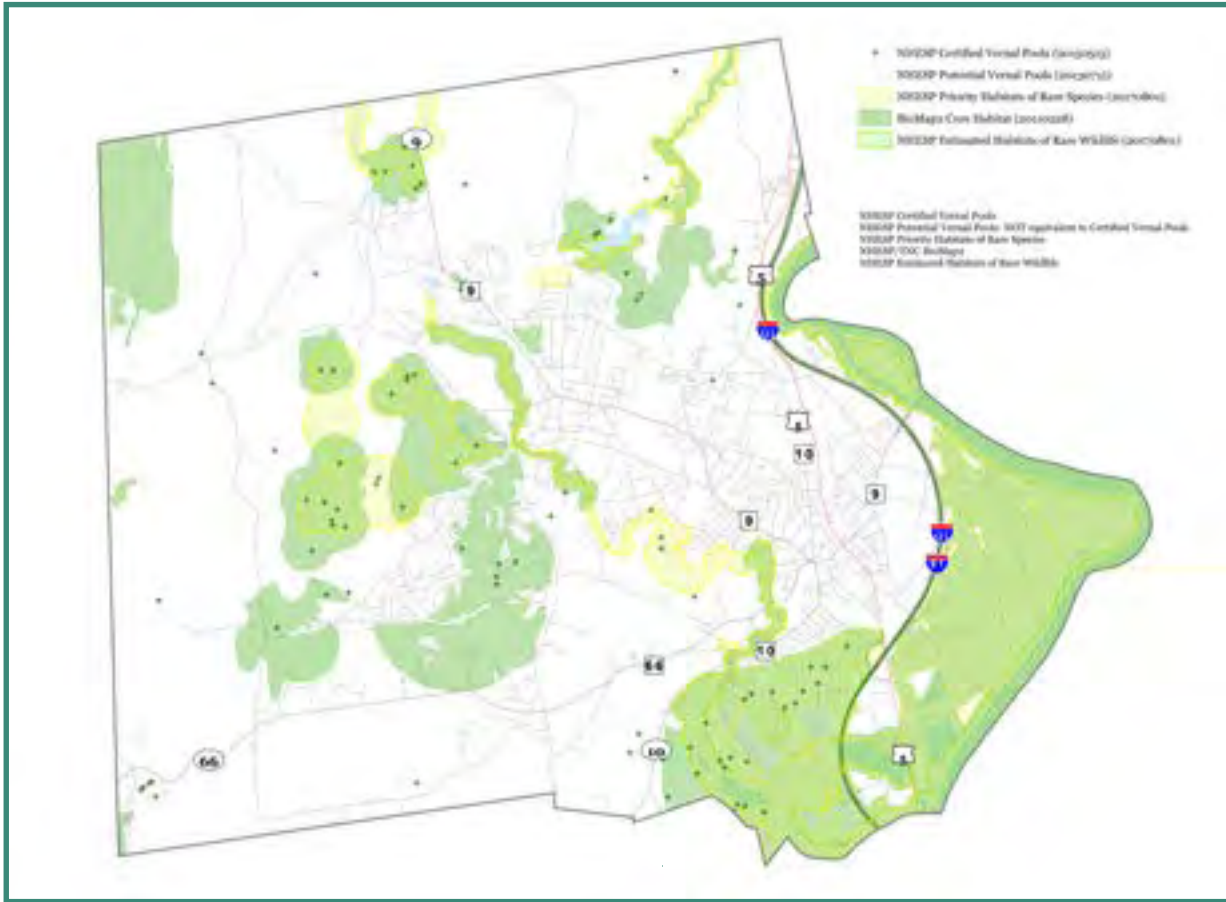
Forests

Plants moderate temperatures, store carbon, and provide shelter, food, and habitat for other plants and animals. Natural communities are interacting groups of plants and animals that share a common environment and occur together in different places on the landscape. The City generally focuses on protecting natural communities, rather than focusing on individual species.

Forests are one of the City's most important renewable natural resources. The City's forests are diverse, including unusual communities such as major river floodplain forests.

Floodplain Forest

Major-River Floodplain forests occur along large rivers such as the Connecticut River. Soils are predominantly sandy loams without a very minimal surface organic layer. Flooding occurs regularly is often intense. The dominant species of this floodplain forest is the silver maple (*Acer saccharinum*), with lesser amounts of cottonwood (*Populus deltoides*). American elm (*Ulmus americana*) and/or slippery elm (*Ulmus rubra*) can be found in the subcanopy. Shrubs are lacking and the herbaceous layer primarily consists of stinging nettles (*Laportea canadensis*). Ostrich fern (*Matteuccia struthiopteris*) also occurs and whitegrass (*Leersia virginica*) is found in small amounts. Riverbank floodplain forests have similar species, but cottonwood, sycamore (*Platanus occidentalis*), and American ash (*Fraxinus americana*) are also present in the canopy. Box elder



(*Acer negundo*), staghorn sumac (*Rhus typhina*), bittersweet (*Celastrus orbiculata*), riverbank grape (*Vitis riparia*), and Virginia creeper *Parthenocissus quinquefolia* are also present.

Floodplain forests are insect-rich habitats that attract many species of songbirds. Raptors such as bald eagles and red-shouldered hawks also use riverbank trees as perch sites. Wood ducks and hooded mergansers are found along the shady edges of the riverbanks, as are Eastern comma butterflies and several species of dragonflies. Floodplain forests also provide sheltered riverside corridors for deer and migratory songbirds. Many state protected rare animal species use the floodplain forest as an important component of their habitat.

Rare, Threatened, & Endangered Plant Species

- Vascular Plant *Lygodium palmatum*
Climbing Fern SC
- Vascular Plant *Ophioglossum pusillum*

Adder’s-tongue Fern T

- Vascular Plant *Panicum philadelphicum*
Philadelphia Panic-grass SC
- Vascular Plant *Eragrostis frankii* Frank’s
Lovegrass SC
- Vascular Plant *Eleocharis diandra*
Wright’s Spike-rush E
- Vascular Plant *Eleocharis intermedia*
Intermediate Spike-sedge T
- Vascular Plant *Carex typhina* Cat-tail
Sedge T
- Vascular Plant *Carex bushii* Bush’s
Sedge E
- Vascular Plant *Arisaema dracontium*
Green Dragon T
- Vascular Plant *Salix exigua* Sandbar
Willow T
- Vascular Plant *Waldsteinia fragarioides*
Barren Strawberry SC

FISHERIES & WILDLIFE

Deer, bear, and other mammals thrive in the woodland and forest edge, especially in the northern and western sides of Northampton. Game birds, such as pheasants, native grouse, woodcock, and turkey are also present in large numbers, along with raccoons, muskrats, and fox. For several years, there have been increases in the numbers of otter, opossum, and beaver. Arcadia Wildlife Sanctuary, which conducts detailed biological assessments and bird counts, has counted upwards of 200 species of birds in or passing through the sanctuary, including the Bald Eagle, Redtail Hawk, and Screech Owl.

Northampton's lakes, rivers, and streams support a variety of fish, including trout, salmon, bass, pickerel, northern pike, shad, and walleye. The Connecticut River, the Ox-Bow, and the Mill River in the Arcadia Wildlife Sanctuary are especially significant aquatic habitats.

Northampton wildlife habitat is not as productive as it once was; wetlands were filled prior to federal, state and local wetlands protection programs, development has fragmented habitat, and non-native species have been introduced.

Wildlife Corridors

Rediscovering Northampton and other data sources have helped identify key wildlife corridors and are represented in this plan's acquisition targets.

The short version of wildlife corridors can be summarized in an exercise we often with the community. Take a map of Northampton. Draw a 200' corridor in blue along every stream and river in the city. Then add connecting lines between all of the major conservation areas in the city. These maps will cover the vast majority of the wildlife corridors in the city. The City prioritizes all wildlife corridors, not only the ones used by charismatic large game species that spark the public's imagination.

Rare, Threatened, & Endangered Species

We have identified many species that are rare or of special concern ("SC"), threatened ("T"), or endangered ("E") in Northampton. This information is considered in permitting, planning, and open space preservation efforts:

- Amphibian *Ambystoma jeffersonianum* Jefferson Salamander SC
- Amphibian *Ambystoma opacum* Marbled Salamander T
- Amphibian *Scaphiopus holbrookii* Eastern Spadefoot T
- Beetle *Cicindela duodecimguttata* Twelve-spotted Tiger Beetle SC
- Bird *Botaurus lentiginosus* American Bittern E
- Bird *Ixobrychus exilis* Least Bittern E
- Bird *Haliaeetus leucocephalus* Bald Eagle E
- Bird *Accipiter striatus* Sharp-shinned Hawk SC
- Bird *Vermivora chrysoptera* Golden-winged Warbler E
- Bird *Poocetes gramineus* Vesper Sparrow T
- Bird *Ammodramus savannarum* Grasshopper Sparrow T
- Bird *Ammodramus henslowii* Henslow's Sparrow E
- Butterfly/Moth *Satyrion favonius* Oak Hairstreak SC
- Dragonfly/Damselfly *Gomphus ventricosus* Skillet Clubtail SC
- Dragonfly/Damselfly *Gomphus abbreviatus* Spine-crowned Clubtail E
- Dragonfly/Damselfly *Ophiogomphus aspersus* Brook Snaketail SC
- Dragonfly/Damselfly *Aeshna mutata* Spatterdock Darner SC

- Dragonfly/Damselfly *Boyeria grafiana* Ocellated Darner SC
- Dragonfly/Damselfly *Neurocordulia yamaskanensis* Stygian Shadowdragon SC
- Dragonfly/Damselfly *Stylurus amnicola* Riverine Clubtail E
- Dragonfly/Damselfly *Stylurus scudderi* Zebra Clubtail SC
- Dragonfly/Damselfly *Stylurus spiniceps* A Clubtail Dragonfly T
- Fish *Acipenser brevirostrum* Shortnose Sturgeon E E
- Fish *Hybognathus regius* Eastern Silvery Minnow SC
- Fish *Catostomus catostomus* Longnose Sucker SC
- Fish *Lota lota* Burbot SC
- Mussel *Alasmidonta heterodon* Dwarf Wedgemussel E E
- Mussel *Alasmidonta undulata* Triangle Floater SC
- Mussel *Lampsilis cariosa* Yellow Lampmussel E
- Mussel *Ligumia nasuta* Eastern Pondmussel SC
- Mussel *Strophitus undulatus* Creeper SC
- Reptile *Glyptemys insculpta* Wood Turtle SC
- Reptile *Terrapene carolina* Eastern Box Turtle SC
- Snail *Ferrissia walkeri* Walker's Limpet SC

SCENIC RESOURCES & UNIQUE ENVIRONMENTS

Building on the Dept. of Conservation and Recreation Scenic Landscape Inventory the City has identified significant scenic resources and unique environments. These resources include notable viewsheds, or vistas, from roads, water bodies, protected open space, and historic

districts. Archaeological sites are not specifically identified to protect them. They are primarily concentrated on the Connecticut River and, to a lesser extent, on the Mill River.

Some development with little sensitivity to the community's views has obscured some scenic views. As farmland is abandoned, closed forests are replacing formerly pastoral views.

Scenic Landscapes

Cultural and historic areas and areas with unique geology (see below) provide important local scenery. Community members identify the following as the most scenic landscapes in Northampton:

- **The Northampton Meadows**, in essence the 3,000 acre floodplain of the Connecticut River, and all other pastoral and agricultural views in the city.
- **Vistas of Mt. Tom & the Holyoke Range**, the Saw Mill Hills and the Mineral Hills.
- **Vistas of any water bodies** (e.g., Connecticut River, Mill River, Manhan River, Oxbow, City reservoir system and streams).

Cultural & Historical Areas

The Northampton State Hospital

The Northampton State Hospital (NSH) and its burial ground are on the National Register of Historic Places. The *Preservation Guidelines for Municipally Owned Historic Burial Grounds and Cemeteries* (Dept. of Environmental Management Historic Cemeteries Preservation Initiative, 2000) provides additional details on the NHS cemetery:

The Northampton Lunatic Asylum (1858) was the state's second state hospital. It was co-founded by Dorothea Dix, who led the reform movement for more humane treatment of the "insane." She found the mentally ill people were often chained or caged in basements and attics and beaten or otherwise mistreated. She successfully campaigned for state asylums with more humane methods (Brown 1998).

Unique and Scenic Features in Northampton



The NSH burial ground was in use from 1858 until 1921. At least 181 patients who were not claimed for burial were buried there. An additional 413 burials of state hospital patients are poorly documented, and at least some of them were probably also buried on-site.

The cemetery location was described as “what used to be the hospital cemetery which borders on Mill River and runs up towards the spring in the back of the barn” (Superintendent’s Report, 1933). This matches the oral history from DMH groundskeepers.

The burial ground is accessed by dirt roads that run from Burts Pit Road to the Mill River. It is an open field with no gravestones, paths, entranceways, or fences indicating the locations of graves or the boundaries of the cemetery. It does contain a monument installed by the

Northampton Historic Commission in 2017.

There is also an unmarked gravestone in woods to the north of the field. A cobblestone-covered north-south mound marks the grave with a small upright gravestone at the south end that is flat on the north side but is not engraved. A bit to the west, another north-south cobblestone-covered mound that might also be a grave although it lacked a gravestone.

Archaeological reconnaissance of the site confirmed the burial ground’s location. Squarish soil deflations were found extending in two to three fairly straight, nearly north-south rows from the woods on the south edge of the field northerly along the top of the hill. Further, very distinctive squarish to rectangular patches of very green mound cover about one inch high were found where the taller straw-colored hay

in the rest of the field did not grow. The long axis of the patches of low green vegetation extended roughly east to west, which is the traditional direction for Christian burials. Further, the patches were roughly formed rows running north-south as is typical in Christian cemeteries.

There is little indication of underground disturbance in the pattern of deflations and patches of low green vegetation, except that some vegetation patches were no longer or shorter than a typical adult burial would be. Historic tilling of the field may have caused some disturbance of the vegetation patches. A 1916 map labels the burial ground parcel as "Tillage" (Davis 1916). Alan Scott reported in 2000 that groundskeeper Bud Warnock said he planted corn in the field c. 1943. Mr. Warnock had heard that the field was a cemetery from his father and uncle who were groundskeepers in the 1920s. Since the 1950s, the parcel has changed hands between various state departments and, at one point in the 1950s, was used for instruction in haying by the University of Massachusetts agricultural department.

Historic Northampton

Historic Northampton is a collection of 50,000 objects and three historic buildings. It is a repository of Northampton and Connecticut Valley history from the Pre-Contact era to the present. The three contiguous historic houses are on their original sites at the edge of downtown Northampton. The grounds are part of an original Northampton home lot laid out in 1654.

The Damon House (1813), built by architect, Isaac Damon, contains Historic Northampton's administrative offices and a Federal era parlor, featuring Damon family furnishings and period artifacts. A modern structure, added in 1987, houses the museum and exhibition area. It features changing exhibits and a permanent installation, A Place Called Paradise: The Making of Northampton, Massachusetts, chronicling Northampton history.

The Parsons House (1730) affords an overview of Colonial domestic architecture with its interior walls exposed to reveal evolving structural and decorative changes over more than two and a half centuries.

The Shepherd House (1796) contains artifacts and furnishings from many generations, including exotic souvenirs from the turn-of-the-century travels of Thomas and Edith Shepherd and reflects one family's changing tastes and values.

Historic Northampton's collections attract historians and scholars of New England material culture from around the world. The museum's collection includes more than 10,000 photographs, documents, and manuscripts from the 17th to the 20th centuries, fine art, furniture, ceramics, glass, metals, toys, tools and implements, and an important collection of textiles and costumes.

Smith College Museum of Art

The Smith College Museum of Art is housed in the spectacular and renovated (2003) Brown Fine Arts Center (designed by Polshek Partnership).

The Calvin Coolidge Presidential Library and Museum

The Calvin Coolidge Presidential Library and Museum documents the private life of Calvin Coolidge (1872-1933), beginning with his birth and formative years in Vermont, his student days at Amherst College, and his years as a lawyer in Northampton. Exhibits and manuscripts cover his political career from Northampton to Boston to the White House, his post-presidential years back in Northampton resident, and the life of Grace Goodhue Coolidge (1879-1957).

Areas of Critical Environmental Concern

Areas of Critical Environmental Concern are places that receive special recognition because of the quality, uniqueness, and significance of their natural and cultural resources. They are

community nominated and then designated by the Secretary of Environmental and Energy Affairs. There are no ACECs in Northampton.

Unusual Geologic Features

Mount Holyoke & Mount Tom Ranges

Northampton's many special geologic features include: glacial outwash plains and deltas (i.e. sandplains/pitch pine habitats), drumlins, ravines, woodlands on glacial tills, and rocky uplands.

Mt. Holyoke/Mt. Tom Range, just outside of the city to the east and south help define the city and form the city's backdrop. They formed 200 million years ago when lava flowed from the valley floor, cooled, and was upended. More recently, glaciers left their signature, scouring the ridges' jagged edges smooth in some places, exposing bedrock, or depositing till, sand, clay, or muck in others. Since the early days, settlers used all but the sheerest inclines for woodlots and pastures. Now mostly wooded, the ridge's steep slopes and east-west orientation create a number of forest types, including birch-beech-hemlock on the north side and oak-hickory on the south. Thickets, streams, ponds, and wetlands add to the diversity.

The Range runs east to west for 20 miles across the Connecticut River Valley, rising up to 900 feet from the valley floor. They are laced with hiking trails including the Metacomet-Monadnock Trail, which runs the length of the Range and is a National Recreational Trail. Mt. Holyoke borders Hadley, South Hadley, Amherst, Granby, and Belchertown to the east of the Connecticut River and rises again to the west of the river as Mt. Tom, bordering Northampton, Holyoke, and Easthampton. The Mt. Holyoke and Mt. Tom Range were named one of 10 'Last Chance Landscapes,' defined as natural wonders with pending threats and potential solutions by the National Scenic Organization (2000).

A MINERAL HISTORY

Turkey Hill Quarry has unique exposures of bedrock. The quarrying operations uncovered a glacially smoothed surface with folded

metamorphic rocks intruded by Williamsburg Granodiorite, an igneous rock. Area geologists study this unusual natural feature and incorporate it into classroom teaching.

The Galena Mines section of Mineral Hills Conservation Area preserves historic Galena (a lead containing mineral) mine shafts that were used by local farmers until the mid-19th century when imported bullets replaced local mining.

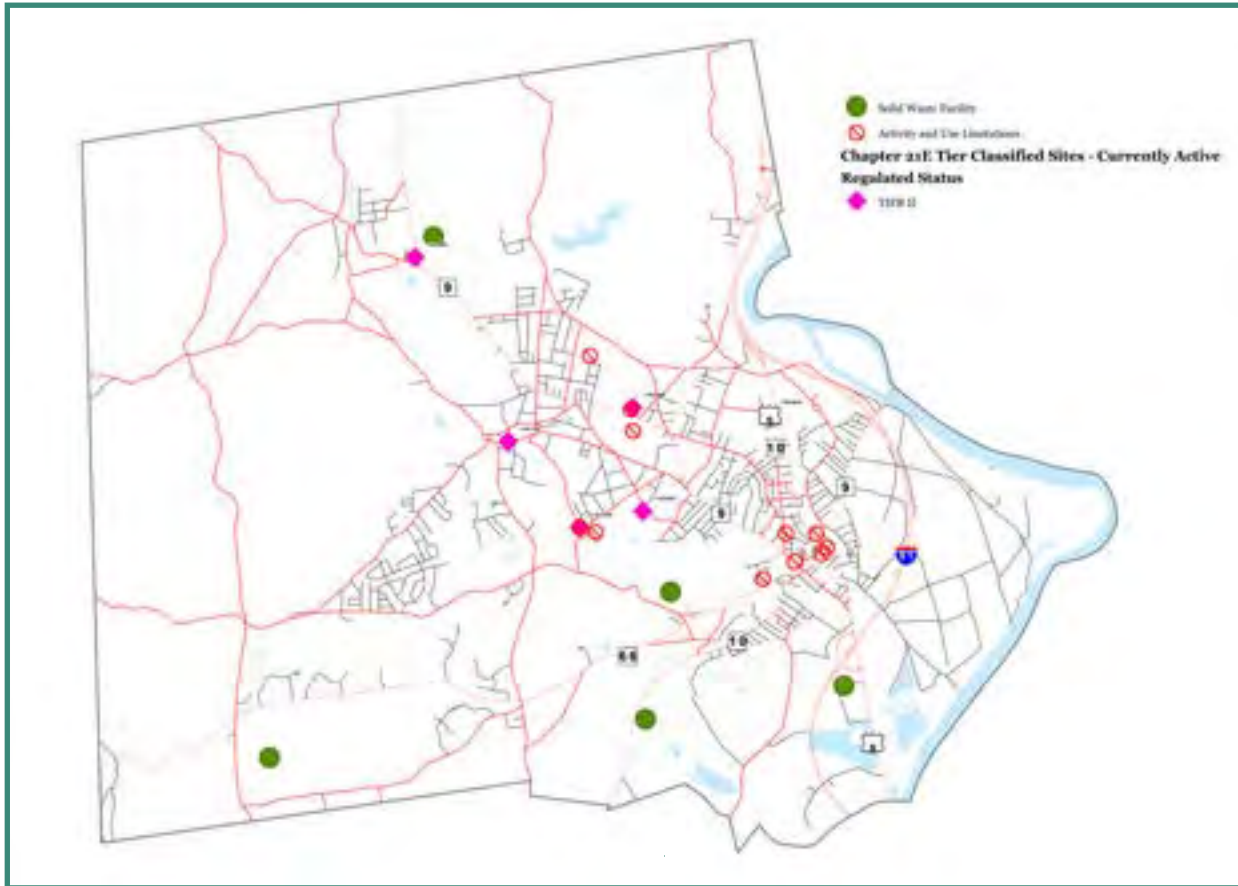
ENVIRONMENTAL CHALLENGES

Northampton has many sensitive ecological resources, especially water resources (e.g., wetlands, streams, floodplain, and aquifers and watersheds). Some of the richest wildlife habitat is at some risk, and some surface water and wetland resources have been degraded, especially from new suburban development.

Over the past 60 years, our approach to the environment, separation of combined sanitary and storm sewers, construction and expansion of the wastewater treatment plant and pretreatment facilities, lined landfills, wetlands regulations, erosion control standards, improved forest management practices, and our newer focus on reducing city and community energy uses and carbon dioxide emissions have all softened the impacts of development on ecological resources. Air pollution continues to present a local health hazard (especially summer ground level ozone).

Non-Point Source Pollution, Erosion & Sedimentation & Flooding

Non-point source pollution from contaminated runoff (e.g., stormwater that picks up contaminants from septic systems, soil erosion, roadway salt and sand, leaking underground storage tanks, agricultural runoff, and excessive lawn chemicals). Government and private actions have focused on reducing man-made



pollutants, designing and building to reduce the likelihood of picking up contaminants, and providing opportunity for removal of contaminants that enter stormwater, groundwater, and surface water.

Erosion occurs when soil is exposed to fast moving water and gets carried away by that water. The problem is especially acute from unprotected soil during construction and some agricultural operations. Sedimentation is when the speed of the water slows down and drops its sediment load, typically in lakes and slower water bodies.

Keeping storm drains that connect to our lakes, streams, and rivers clear of debris, minimizing lawn chemicals and roadway sand and salt, controlling soil erosion, enforcing city stormwater and erosion control ordinances, ensuring good septic system use and management, and educating residents about the issues and their role are all critical.

Stormwater, erosion and sedimentation are controlled through four coordinated regulatory programs:

- **City stormwater permits** for projects that will disturb one acre or more.
- **Federal clean water act permits** for projects that will disturb one acre or more or is within a water body or wetland.
- **Wetlands permits** for projects within 100' of a wetlands, 200' of a river, or on any floodplain.
- **Planning Board site plan approval** for any project over 2,000 square feet.

The City has approximately 4,000 acres of FEMA mapped floodplains with some of the strictest floodplain regulations in the state (no new buildings are allowed in most of the 500-year floodplain) property. These areas suffer

from periodic flooding but at least such flooding is predictable using the FEMA maps. Other areas outside of the mapped floodplains have localized flooding from natural sources aggravated by obsolete infrastructure.

Hazardous Waste

Massachusetts General Law, C. 21E and the Massachusetts Contingency Plan regulations regulate the release and clean up of hazardous materials. Potentially Responsible Parties (PRPs) hire Licensed Site Professionals (LSPs) to oversee most cleanups, with limited DEP oversight. Releases, cleanup, tier classification, institutional controls (“activities and use limitations”) must be reported to DEP. DEP also has emergency response capability, ability to monitor sensitive projects, and audits both cleanups and AULs.

As a post-industrial city, Northampton has its share of historic releases of hazardous materials in various states of cleanup, monitoring, and institutional controls (AUL).

Solid Waste Sites

Northampton’s former regional solid waste landfill opened in 1969 and closed in 2013. The landfill is lined with a leachate collection system with a methane to electricity conversion system and solar photovoltaics on the closed landfill. The City has aggressive recycling and composting programs.

Development Impacts

Much new development in Northampton is “smart growth,” reusing previously developed land within the historic core of Northampton with few environmental impacts. Suburban projects in undeveloped greenfields usually create more habitat and farmland loss, emit more carbon dioxide, generate more traffic, and consume more energy than urban infill projects.

Forestry Impacts

Northampton has few large scale forestry operations. More common small forest cutting

projects support sustainable working landscapes with minimal environmental impacts. Some poor forestry operations, however, reduce wildlife habitat and lead to erosion and sedimentation.

Environmental Equity

The City seeks equitable sharing of its open space and recreation resources by all populations, especially those that have historically been underserved (i.e., environmental justice populations). This issue is discussed and analyzed in detail in Chapter 3, Community Settings. The key finding is that Northampton has equitable sharing of open space and recreation resources, but additional recreation opportunities are necessary to serve diverse cultures with different sport backgrounds.

UNIQUE COMMUNITY CONCERNS

This plan was developed with extensive community participation, as described earlier. Urban neighborhoods needs must be addressed consistent with the City’s goal of making urban neighborhoods more desirable, and thus reducing pressure for suburban and rural development.

There was strong support for conserving farmland, tree-lined streets, significant open space parcels, access to water, community gardens, better access to the cemetery, and ensuring new development is well planned and has open space.

Conservation & Recreation Inventory

Northampton open space includes farms, forests, parks, recreation areas and multi-use trails under public, non-profit and private ownership and management. Open space provides wildlife and plant habitat, agricultural and forest products, watershed and groundwater protection, flood control, scenic landscapes, heritage resources, public access, and recreation.

Protected open space is planned to remain in perpetuity. The land can be owned by a land trust, city, state or federal conservation or recreation agency or by less-than fee conservation or agricultural restrictions or easements.

Conservation Restrictions (CRs) and Agriculture Preservation Restrictions (APRs) are legally binding agreements between a landowner and a public or non-profit holder. The landowner agrees to forfeit some or all development rights in the land to protect certain conservation and/or agricultural interests. Northampton's CRs and APRs all run in perpetuity.

Land can only be removed from an APR, a conservation restriction, or city or state conservation or park control with a roll call by two thirds of the State Legislature (Article 97, Amendments to the Massachusetts Constitution). The legislature has, however, voted to release this protection at the request of local communities

for some school and public projects not related to resource protection.

Land owned by municipal water supply providers and other non-park, recreation commission, or conservation commission agencies typically has some protection from development, but this protection is not permanent if there are no restrictions and the land was not purchased for park purposes (thereby subject to Article 97).

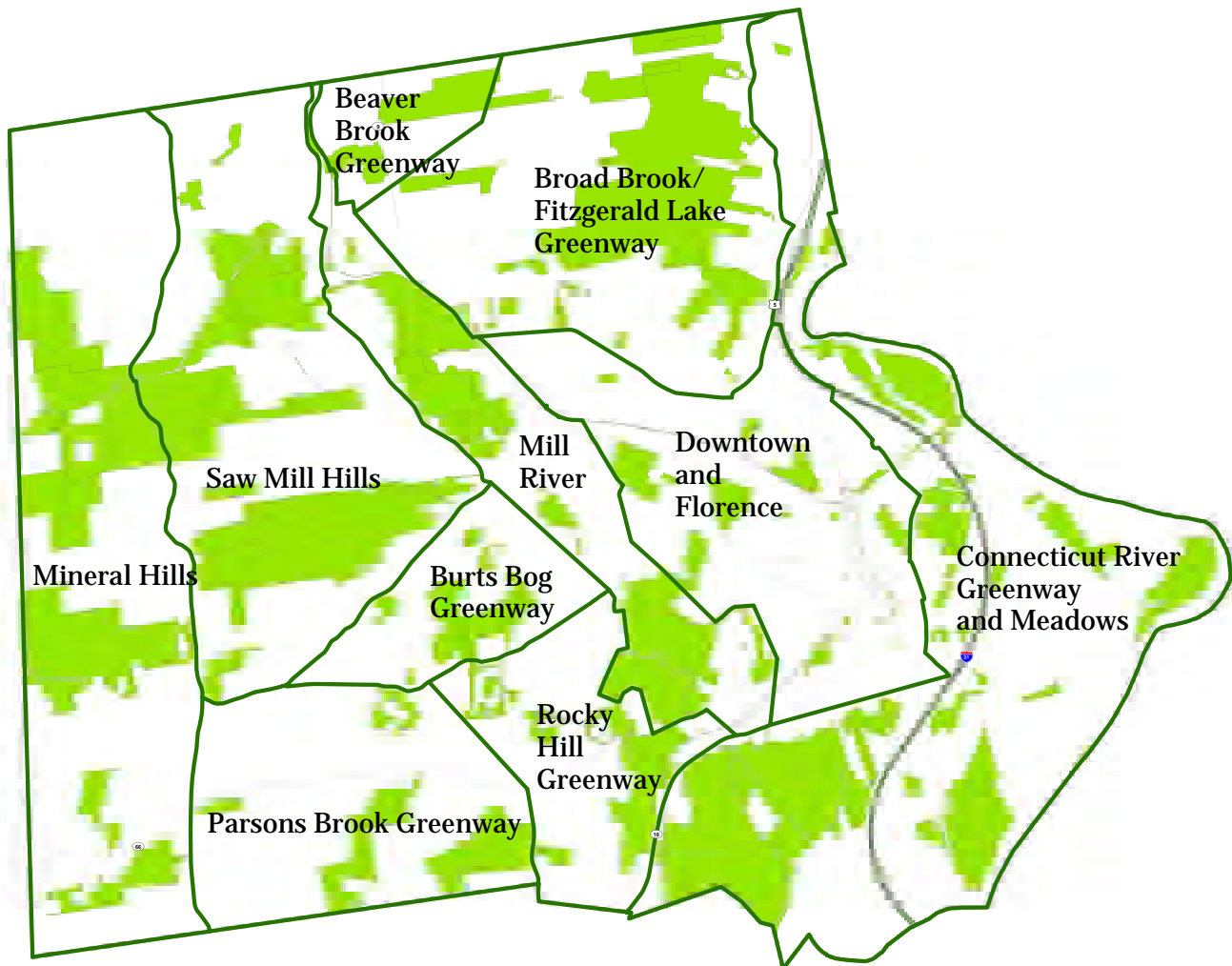
Unless there is a legal restriction attached to the deed or if the deed reads that the land was acquired expressly for water supply protection, the level of protection afforded these types of parcels varies. Often, the City would be required to show the Massachusetts Dept. of Environmental Protection just cause for converting the use of the land.

Property owners can voluntarily enroll eligible land in the Massachusetts Chapter 61 current use taxation programs. "Chapter lands" offers landowners reduced property taxes in return for maintaining land in productive forestry (Chapter 61), agricultural (61A) or recreation (61B) for a period of time. Public benefits include conservation, recreation, forestry and farming. The City has a 120-day right of first refusal to purchase the land when Chapter land is proposed for conversion to non-Chapter use.

Type of Permanently Protected Open Space	Acres	% of City 2018
Agricultural	780	
Managed for ecological values (conservation and CRs)	4,008	
City Parks and Recreation	350	
Northampton Water Supply	493	
Northampton Parks and Recreation	350	
TOTAL	6,023	

Source: Northampton GIS

The total is less than the sum because of land in two categories



PERMANENTLY PROTECTED

CR#	Grantor	Holder	Acres	Name/Comments
CR# 1	Smith College	Mass Audubon Society		Arcadia Wildlife Sanctuary
CR# 2-8				Cancelled
CR#9	Mass Audubon Society	Pascommuck Cons. Trust Inc.	10.0	Arcadia Wildlife Sanctuary
CR#10	Commonwealth MA (DAR)	City	37.0	Adjacent & part of APR
CR#11	Millbank II Condominium	City	0.9	Historic Mill River
CR#12	Lathrop Community, Inc.	Conservation Commission	13.5	Broad Brook/Boggy Meadow
CR#13	Gothic St Develop. Partners.	Recreation Commission	0.15	Common law easement
CR#14	Armand & Rosel LaPalme	City	88.0	Cancelled, (APR instead)
CR#15	Nancy Hughes	Conservation Commission	3.6	Broad Brook/Coles Meadow
CR#16	City of Northampton	Broad Brook Coalition	5.5	Braod Brook
CR#17	City of Northampton	Mass Audubon Society	38.0	LC 970010110
CR#18	City	Celico Partnership	11.7	
CR#19	Edward Sheldon III	Broad Brook Coalition	10.0	Recreation area
CR#20	Massachusetts (DCAM)	Conservation Commission	8.1	Meadows, Atwood Dr
CR#21	Elaine G. Boettcher	Conservation Commission	2.2	Protect wetland & wildlife
CR#22	City of Northampton	Mass Audubon Society	66.1	Meadows/Arcadia
CR#23	Schramm, Primm, Russin, Gray, & Peppard	Conservation Commission	23.0	Park Hill Rd, Parsons Brook, adjacent to APR
CR#24	Millbank II Condominium Trust	Conservation Commission	0.3	400' Mill River allow river restoration and trail
CR#25	Lathrop Community, Inc	Conservation Commission	11.2	Park Hill/Parsons Brook
CR#26	Sabra Partnership	Conservation Commission	3.1	Broad Brook/trail access
CR#27	TCB Hospital Hill, LLC	Conservation Commission	3.2	State Hospital/Village Hill
CR#28	Oak Ridge Road, LLC	Conservation Commission	38.0	The Oaks
CR#29	Joseph Kielec	Broad Brook Coalition		Sheldon Field addition
CR#30	Tofino Association, Inc.	Conservation Commission	10.3	Rocky Hill Cluster
CR#31	Seven Bravo Two, LLC	Conservation Commission	0.8	Conn. River, Airport
CR#32	Stephen & Heidi Robinson	Conservation Commission	4.5	Broad Brook/Coles Meadow Road
CR#33	Bridge Road, LLC	Recreation Commission/ Conservation Commission	4.6	Bear Hill subdivision
CR#34	Sweet Meadow Properties	Conservation Commission	1.3	Reservoir Road
CR#35	John & Diane Clapp	Conservation Commission	20.0	Mineral Hills/Chesterfield Road
CR#36	Patrick Melnick (Beaver Brook)	Conservation Commission	41.0	Beaver Brook
CR#37	Clarke School, Hinckley & James	Conservation Commission	0.4	Round Hill
CR#38	Miriam Clapp	Conservation Commission	57.9	Mineral Hills
CR#39	Benjamin G. James & Oona Mia Coy	Conservation Commission	1.8	Meadows/Venturers Field Road

PERMANENTLY PROTECTED

CR#	Grantor	Holder	Acres	Name/Comments
CR#40	John & Diane Clapp	Conservation Commission	35.7	Mineral Hills
CR#41	John & Diane Clapp	Conservation Commission	11.1	Mineral Hill addition
CR#42	Jane Hill	Conservation Commission	9.8	Roberts Meadows
CR#43	Benjamin G. James & Oona Mia Coy	Conservation Commission	3.6	Meadows/Venturers Field Road
CR#44	Guyett & Anderson	Nonotuck/N'hampton BPW	168.4	Priority wildlife habitat
CR#45	Joseph & Kira Jewitt	Conservation Commission	5.6	Parsons Brook, Westhampton Rd
CR#46	Robert Zimmerman	Conservation Commission	36.0	Broad Brook/N. Farms
CR# 47	Conservation Commission	Kestrel Land Trust		Turkey Hill (Skibiski)
CR# 48	Moses Miller	Conservation Commission	0.6	Mill River, Leeds
CR# 49	Conservation Commission	Kestrel Land Trust	369	Saw Mill & Mineral Hills, Broad Brook Greenway, Mill River Greenway
CR# 50	Parsons Brook/Burke	Conservation Commission	19	Parsons Brook/Park Hill
CR#51	City of Northampton	Friends of Northampton Recreation	24	Florence Recreation Fields
CR#52	City of Northampton	Friends of Northampton Recreation	6.08	Connecticut River Greenway riverfront park
CR#53	City of Northampton	Meadows City Conservation Coalition	14.8	Montview Ave, Pomeroy Terrace, Damon Road
CR#54	City of Northampton	Mass. Audubon Society	49	Rocky Hill Greenway
CR#55	Dostal	City of Northampton	1.138	Parsons Brook, Westhampton Rd
CR# 56	City of Northampton	Kestrel Land Trust		Saw Mill Hills
CR# 57	Hampshire COG	City of Northampton		Main Street, Historic Courthouse Lawn
CR# 58	City of Northampton	Kestrel Land Trust		Beaver Brook/Broad Brook Greenway
CR# 59	Hospital Hill Development	City of Northampton		Morningside, Beech Tree and Oak Parks
CR# 60	City of Northampton	Kestrel Land Trust		Burts Bog
CR# 61	City of Northampton	Mass. Audubon Society		Rocky Hill Greenway - Goldfarb
CR# 62	City of Northampton	Mass. Audubon Society		Rocky Hill Greenway - O'Brien

Inventory of Permanent Open Space Summary (listed alphabetically) • See full entries below for details • Grants & funding in entries below • ALL have permanent protection; No additional protection needed.	Use (public access on all EXCEPT private & water)	Owner & manager (if different)	Acres	Condition	Recreation potential	Zoning
408 Bridge Road	conservation	Cons. Com.	<1	good	poor	residential
64 Gothic Street	park	Private, Cons. Com. oversight	<1	good	poor	residential
Agnes Fox Playground	recreation	Rec. Com.	2	good	excellent	residential
Arcadia Wildlife Sanctuary	conservation	Mass Audubon	47	good	fair	floodplain
Arcanum Field Recreation Area	recreation	Rec. Com.	9	good	fair	residential
Barrett St. Marsh Conservation Area	conservation	Cons. Com.	26	good	fair	FFR
Bear Hill Recreation Area	recreation	Rec. Com.	3	poor	excellent	residential
Beaver Brook Greenway	conservation	Cons. Com.	48	good	fair	FFR
Broad Brook/Fitzgerald Lake Greenway	conservation	Cons. Com.	746+	good	boating excellent	FFR
Brookwood Marsh	conservation	Cons. Com.	22	good	fair	FFR
Burts Pit Road CR	conservation	Private, Cons. Com oversight	2	good	poor	residential
Childs Park	park	Child's Park Association	40	excellent	fair	residential
Clarke School CR	conservation	Private, Cons. Com oversight	<1	excellent	poor	residential
Community Gardens	agriculture	Cons. Com.	8	good	fair	FFR
Connecticut River Greenway	conservation	Cons. Com.	142	good	excellent	FFR
David Musante Beach	recreation	Rec. Com.	11	good	excellent	residential
Edmund J. Lampron Memorial Park	park	City	1	good	excellent	residential
First Churches Park	park	City	<1	good	excellent	CBD
Florence Conservation Area	conservation	Cons. Com.	4	good	excellent	FFR
Florence Recreation Fields	recreation	Rec. Com.	24	poor	excellent	residential
Halligan and Daley Historic Site	park	Rec. Com.	<1	good	fair	PV
Hospital Hill CR	conservation	Smith College, Cons. Com. oversight	20	good	fair	FFR
Look Memorial Park	park	City	140	good	excellent	residential
Maines Field Recreation Area	recreation	Rec. Com.	21	poor	excellent	residential
Manhan Conservation Area	conservation	Cons. Com.	1	good	poor	FFR
Manhan Rail Trail	recreation	City	6	excellent	fair	residential

Inventory of Permanent Open Space Summary (listed alphabetically) • See full entries below for details • Grants & funding in entries below • ALL have permanent protection; No additional protection needed.	Use (public access on all EXCEPT private & water)	Owner & manager (if different)	Acres	Condition	Recreation potential	Zoning
Marble Brook Conservation Restriction	conservation	Private, Cons. Com oversight	169	good	poor	FFR
Mary Browns Dingle	conservation	Cons. Com.	2	good	poor	FFR
Meadows Conservation Area	conservation	Cons. Com.	134	good	poor	FFR
Mill River Greenway	conservation	Cons. Com.	181	good	excellent	FFR
Mineral Hills Conservation Area	conservation	Cons. Com.	384	good	fair	FFR
Northampton State Hospital Agriculture Lands	agriculture	MA DAR	200	good	fair	FFR
Northampton Water Supply	water supply	City Water	505	good	fair	WSP
Norwottuck Rail Trail	recreation	City	25	excellent	fair	residential
Oaks Subdivision	conservation	Private, Cons. Com oversight	33	good	excellent	residential
Park Hill Road Restrictions (CR and APR)	agriculture	Private, Cons. Com oversight	262	good	poor	residential
Parsons Brook Conservation Area	conservation	Cons. Com.	28	good	fair	FFR
Pulaski Park	park	City	1	poor	excellent	CDB
Rainbow Beach	conservation	MA DFW	81	good	poor	floodplain
Rainbow Beach Cons Area	conservation	Cons. Com.	16	good	poor	floodplain
Ray Ellerbrook Recreation Field	recreation	Rec. Com.	14.4	good	fair	FFR
Ridge Conservation Area	conservation	Cons. Com.	36	good	excellent	FFR
Roberts Meadow Conservation Area	conservation	Private, Cons. Com oversight	22	good	poor	FFR
Rocky Hill Greenway (includes Ice Pond)	conservation	Cons. Com.	73	good	excellent for trail	FFR & BP
Sawmill Hills Conservation Area	conservation	Cons. Com.	564	good	excellent	FFR
Sheldon Field Recreation Area	recreation	Rec. Com.	13	poor	excellent	floodplain
Silvio O. Conte National Fish and Wildlife Refuge	conservation	US F&WS	210	good	poor	floodplain
State Hospital Agricultural Land	agriculture	MA DAR	331	fair	excellent	FFR
Trinity Row Park	park	City	<1	good	poor	GB
Veterans Field Recreation Area	recreation	Rec. Com.	9	good	excellent	residential
West Farms Conservation Area	conservation	Cons. Com.	12	good	fair	FFR
West Farms Recreation Area	recreation	Rec. Com.	<1	good	fair	residential

A. CONSERVATION & AGRICULTURE—PUBLIC & NON-PROFIT

The lands in this section are as close to permanently protected as possible. Municipal and state fee and less than fee interests listed here all require, in accordance with Article 97 of the Amendments to the Massachusetts Constitution, a two-thirds roll call vote of the state legislature. This section includes fee interests and less than fee interests held by federal, state, municipal, and non-profit conservation groups.

ARCADIA WILDLIFE SANCTUARY

650 ACRES

Ownership: Massachusetts Audubon Society

Location: Connecticut River Ox-Bow

Acquisition History			
Date	Book, page or other	Description	Acres
	B12, p44	45-67	
11/1/1966	B1497, p25	45-10	
9/13/1968	B1538, p277	52-01	
5/17/1974	B1772, p199	45-10; 45-63; 45-65 (bridle path)	
4/17/1979	B2091, p126	38D-75	
1/14/1982	B2260, p100	45-10	
4/13/1986	B1880, p241	38D-75	
6/23/1988	B3199, p238	38D-75	
4/13/1986	B1880, p241	38D-73	
12/31/1987	B3114, p29	38D-77	
12/31/1987	B3114, p29	38D-70	
1/6/1988	B3316, p1	38D-70	
12/31/1987	B3114, p29	45-10	
1/23/2004	B7662, p85	From Mitchell G. Watras, Jr for \$218,725	

Description: Arcadia Wildlife Sanctuary has varied habitats, wetlands, and the last mile of the Mill River before it connects with the Connecticut River Oxbow. Arcadia offers environmental education, hiking (five+ miles of trails). It receives heavy use throughout the year. The former Easthampton Trolley Line was donated by Smith College to Mass. Audubon and is now part of Arcadia (Conservation Restriction on trolley line merged with fee ownership). Conservation Restriction on Map ID 38D, Parcel 70 held by Pascommuck Conservation Trust).

BARRETT STREET MARSH

24.7 ACRES

Ownership: City/Conservation Commission

Location: Barrett St. & bicycle path

Partners: Formerly Barrett Brook Advisory Committee, currently none.

Acquisition History			
Date	Book, page or other	Description	Acres
12/21/1976	B1939, p321	Transfer from City	
12/29/1978	B2075, p28	Private donations	
2/8/1990	B3518, p204 & 206	Land swap	
2/8/1990	PB165, p70		
12/31/1993	PB176, p133		
2/9/1994	B4420, p243	Donation in settlement of lawsuit of Carlon Dr.	4.978
2/10/1998	B5309, p206	Right of Way Easement from Carlon Dr.	

Permit history:

Date	Permit History
1990/1991	Walkway permits (wetlands & building)
	Wetlands 246-114, Stop & Shop's responsibility to clean up trash

Description: This meadow and wetland serve as important stormwater detention and filtration facilities, provides wildlife habitat, and provides nature viewing in an urban environment. The site is surrounded by heavily developed residential and commercial properties. A city drainage easement runs through the site. The area includes a right-of-way from Carlon Drive.

A 600-foot (375' Trap Rock Gravel/stone dust & 200' wooden boardwalk completed in 1992) wheelchair accessible walkway extends from the bikeway into the marsh. The Commission, Smith Vocational School, and volunteers built the boardwalk. The Jackson Street Parent Teacher Organization and the Community Development Block Grant provided the materials.

The City manages the property to allow beaver activity while preventing flooding. Beaver deceiver pipes have been installed on several successive beaver dams, the most recent in 2010 (CPA funding).

History: Barrett Street Marsh was originally part of a larger wetland system. In the early nineteenth century it was used for agricultural purposes. Ditches were put in place to dewater the marsh. In 1905 Northampton sewer commissioners diverted the flow of King Street Brook away from "the mouth of the State Street River." The Brook was diverted into what is known today as Barrett Street Marsh.

The history of the Barrett Street Marsh is well documented and shows that the entire area has been highly altered since the early 1800s, when transportation corridors began to be established nearby and development spread northward from the center of Northampton. The area now known as the Barrett Street Marsh was originally part of a much larger wetland system that extended to the east, having been severed from the larger system by development. Reportedly, the Barrett Street Marsh was used as agricultural land from the early 19th century, having been dewatered by a system of drainage ditches that were dug throughout the low-lying area.

The Hampshire and Hampden Canal (reorganized as the New Haven and Northampton Canal) was built through the Barrett Street Marsh (1829-1847). The canal changed the area drainage patterns and gave Northampton a permanent liability to maintain the waterway (something that does not

happen from a natural flowing stream). This led to a lawsuit against the City for lack of maintenance over 180 years after the canal was abandoned (referred to in liability circles as a long liability tail). Human-built drainage was developed on the site to allow much of the site to be used as farmland. Portions of the site were farmed until the early to mid 1960s.



The main flowage into the marsh is a perennial stream known as King Street Brook that consists of drainage from the Round Hill/Prospect Street area. The brook enters the southern-most point of the marsh, through a culvert under the bike trail that runs along an abandoned railroad embankment. Until the early 1900s, King Street Brook did not flow into the Barrett Street Marsh but instead flowed in a more southeasterly direction towards State Street and the center of Northampton. As recorded at the Hampshire County Registry of Deeds (Book 596, Page 375), in 1905 the Northampton Sewer Commissioners voted to divert the flow of King Street Brook away from “the mouth of the State Street sewer,” for the purposes of “public health and convenience”. The brook was to be diverted to the “center of an old ditch” which then existed northeast of the railroad embankment and presumably ran through what is now known as the Barrett Street marsh. The City proceeded with the taking of a strip of land almost 1,800 feet long and 15 to 25 feet in width to encompass the old ditch and hence the brook along its diverted course to the Connecticut River. The ditch was thereafter known as the King Street Brook Diversion. Also in 1905, the City was granted an easement from the New York, New Haven, and Hartford Railroad Company to construct “a box culvert four feet deep by four feet wide suitable for carrying through the waters now running in King Street Brook, so-called” (HCRD, Bk 597, pg 202), which is the now-existing culvert under the bike trail.

The character of the King Street Brook Diversion was thus established almost one hundred years ago. The configuration of the ditches within the Barrett Street Marsh at the time of the diversion is not known. Anecdotal information indicates that the marsh area was used for agricultural purposes into at least the 1970s. Aerial photographs from the 1960s and '70s clearly show the ongoing agricultural use and the diversion channel in its original (1905) location with a geometric array of ditches leading to the diversion from many areas of the marsh. In a photograph taken on April 20, 1971, the water within the diversion appears to be 8-10 feet in width, and the most upgradient half of the diversion channel within Barrett Street marsh appears to have been recently maintained prior to the photograph being taken.

Coincident with the advent of restrictive environmental regulations and changing attitudes regarding the value of wetland areas, maintenance of the diversion channel and system of ditches waned in the 1970s, and use of the land for agriculture altogether ceased over twenty years ago. The date of the last maintenance dredging of the King Street Brook Diversion is not known. While records of ditch construction and effectiveness are not available, considerable evolution of the marsh's hydrology has taken place in the recent past since the ditches were last maintained.

BROAD BROOK-FITZGERALD LAKE GREENWAY
Includes Beaver Brook and all related Conservation Restrictions

1,055 ACRES

Ownership: City/Conservation Commission (land under CR is privately owned)

Location: N. Farms Rd, Coles Meadow Rd, Morningside Dr., Marian St, Boggy Meadow Rd, Haydenville Rd (Rt 9).

Acquisition History			
Date	Book, page or other	Description	Acres
5/20/1977	B1951, p261	Fitzgerald Lake: Self-help (\$72,825) & City (\$72,826), Land & Water Conservation Fund covenants in 1993	152
	B1993, p11	R-O-W to dam (NO longer valid)	
3/13/1989	B3344, p284	Dorothy Burke donation- N. Farms Rd	
5/8/1990	B3557, p148; PB166, p52	Pines Edge: comprehensive permit cluster donation	15.89
3/25/1991	B3696, p9	CR, Lathrop (permit condition)	14
1/28/1993	B4138, p271	Richard Abuza bargain sale: Bargain discount (\$33,200), Land & Water (\$37,500) & City (\$5,000)	86
6/10/1993	B4223, p145	John A. Cimek: City (\$25,000), BBC (\$5,250) w/Land & Water Conservation Fund covenants	38
10/13/1994	B4570, p294, 298, 300, 302	New England Telephone release, donation	
11/30/1994	B4595, P134	Cooke's Pasture: City (\$39,540), self-help (\$112,200), BBC (\$26,000), Wharton Trust (\$5,000) & Sweet Water Trust (\$10,000). Commonwealth Land Title w/City Clerk	161.1
12/18/1994	B2521, p1	Marian St: self-help w/34% match from neighbors	11.85
12/4/1995	B4785, p150	Conservation easement, Anciporch (held by USFS)	36
12/20/1995	B4796, p38	Wharburton: purchase	5.5
2/9/1996	B4822, p184 PB179, p98	Nancy Hughes: donation required by cluster. Lawers Title Insurance Corp policy 136-00-110653 w/City Clerk	8.876
2/20/1996	B4826, p170	Conservation Restriction to BBC. Commonwealth Land Title insurance on underlying title 165-686836 on file with City Clerk	
5/9/1996	B4880, p192 & 203 PB179, p235	Nancy Hughes CR, required by cluster special permit	3.481
4/30/1998	B5360, p15	Swayze: Broad Brook Coalition (\$2,000); Wharton Trust (\$6,000) & City (closing costs),. First American Title insurance 20301162, w/City Clerk	10
12/19/2000	B6090, p202	Helen Kabat donation north of lake	17
1/15/2001	B6100, p313 & 320	Finn, "friendly" taking, City (\$2,000), BBC (\$10,000)	15
1/22/2001	Land Court B18, p107	Paasch Flag Lot, donation required by flag lot permit; & temporary right-of-way to Coles Meadow Rd	3.074
6/19/2001	B6250, p72	Vaughn, "friendly" taking, BBC (\$15,000)	17
	Land Court B17, p208	Mortgage release	
	Land Court B18, p107		
11/27/2002	B6908, p173	Stoddard family donation, friendly taking	7.5
3/17/2003	B7097, p156	Confirmatory deed donation from Anita Stoddard Packar, Laurence Stoddard, George Barrett, Ruth B. Drury, Peter Hehey, Jason Charlton, & Monica Doyle Lynch; BBC (\$500)	

Acquisition History			
Date	Book, page or other	Description	Acres
6/10/2003	B7253, p94	Sabra Pedestrian Easement ROW & CR	3
8/22/2003	B7407, p172 (and p201)	Conservation Restriction (and related mortgage subordination) as special permit condition	
10/5/2004	B8013, p326	Morin purchase, BBC (\$3,560), City (\$1,040)	5.75
2/4/2005	B8155, p50 and p56 PB152, p36	Lathrop, boundary line agreement (and partial bank release)	
5/18/2005	Decision B8181, p292;B205, p11;Eminent Domain Order of Taking B8265, p80	Michalski/Stewart section (\$17,000 of which \$15,000 from Broad Brook Coalition-- all to pay off back taxes)	33.5
1/4/2006	B8579, p1 PB208, p91	CR #32, Robinson donation for waived right-of-first-refusal	8.54
11/6/2006	B8953, p349	Bereska Taking, ID 2-12	8.1
12/4/2006	B8967, p324	Confirmatory deed	
8/28/2006	B8854, p77	Unknown/Porter section, eminent domain of tax title	8.8
	B8688, p315B8688, p320	Private William Adams Memorial	
6/29/2007	B9035, p312B9182, p5	Dryzgula friendly taking, north of lake	3.6
1/17/2008	B9383, p58	Sullivan purchase (\$103,000 in back taxes)	3.9
9/9/2009	B9961, p111 (deed) B9948, p228 (permits) PB221, p77	N. King Street (was part of 360 N. King) (\$75,000: \$20,000 CPA & \$10,000 BBC) Special Permit and Survey First American Title insurance policy, 5600050443	12.08
	B9182, p5	Laverdiere confirmatory deed	
1/27/2010	B10085, p232 (deed) B10085, p239 (agreement)	Beaver Brook: McLoughlin, Watson, Culver(s) (\$550,000: \$364,000 LAND, \$10,000 BBC & \$364,000 CPA w/soft costs)--First American Title MAEOe-560057116 AND #5011400-0123453e Beaver Brook: LAND Agreement and conditions	102
9/26/2013	B11476, p237 (agreement)	Beaver Brook: USF&WS NAWCA notice of grant	
6/30/2010	B10221, p100	Zimmerman CR (\$18,000 CPA)	36
7/12/2010	B10230, p205	Humphreys Morningside Dr. deed restriction only: used as trade land for 2012 Sullivan purchase.	0.5
12/09/2011	B10745, p134		
12/09/2011	B10745, p128	Sullivan purchase, Morningside Drive	1.0
2/15/2012	B10813, p1	Forest Legacy/Laizer-subject to USFS forest legacy conservation easement (\$13,000 CPA + \$7,000 BBC)	36
3/3/2011	B10493, p304 PB224, p81	Girl Scouts (I) (\$23,000, \$20,000 CPA and \$4,000 BBC with soft costs). Girl Scouts retain easement for environmental education.	23
3/13/2012	B10839, p254 PB226, p66	Girl Scouts (II) (\$13,000 CPA, \$4,000 BBC). Girl Scouts reserve easement for environmental education. City reserves the right to grant right of way and timber easement to Smith Vocational and Agriculture School.	17

Acquisition History			
Date	Book, page or other	Description	Acres
7/23/2012	B10983, p43	Sullivan purchase: tax title redemption (1 acre)	
2/25/2013	PB229, p6 (excluded land) B11228, p282 (deed) B11228, p295 (agreement) CATIC OP 03259656 MA	Broad Brook Gap/Kubosiak (total: \$496,628. LAND, CPA, \$14,000 BBC). Cross access easements CATIC owners Title Insurance Policy/certificate of title USFWS NAWCA Notice of Grant Requirements	81
12/09/2013	B11539 p298		
10/7/2013	B11488, p202 (deed)	Rothenberg-Wolpine (\$10,800 purchase plus soft costs- \$3,000 BBC & \$11,000 CPA)	9
3/24/2014	B11604, p230 (affidavit) B11604, p240 (taking- 5 A) B11604, p247 (release- 5 A) B11604, p255 (taking-12 A) B11604, p262 (release-12 A)	18 acres (\$24,000, \$4,000 BBC, remainder CPA) Gleason 5 acres (was Map ID 7-21 N. Farms Rd) Gleason 5 acres (was Map ID 7-21 N. Farms Rd) Gleason 13 acres (was Map ID 8-47, N. Farms Rd) Gleason 13 acres (was Map ID 8-47, N. Farms Rd)	18
12/29/2014	B11838, p255	McKown purchase	12.1
6/12/2015	PB234, p71	Survey-- Derouin	25.0
8/03/2015	B12024, p342	Derouin deed (was portion 17B-003)	
8/14/2015	B12036, p208	Vollinger (\$21,400=\$4,300 BBC, \$17,100 CPA)	17.76
11/27/2013	PB231, p17 & 18	Vollinger survey	
8/20/2015	B235, p15	Broad Brook Greenway-- survey entire area	
1/30/2017	B12540, p265 PB240, p5	Randall purchase Randall purchase survey	20
9/25/2017	B12756, p100	Rakhmanov, North Farms Road	0.5

Partners: Memorandum of Agreement w/Broad Brook Coalition (BBC) for joint management (last amended 2010). BBC conducts routine maintenance of conservation area, including boardwalk maintenance, trail maintenance, & dam brush clearance.

Permits: Wetlands: 246-224 (trails & dam, expired with maintenance allowed); 246-149 (road, certificate issued); 246-322 (accessible trail and parking lot); 246-325 (herbicide on dam); Cookes Pasture (expired).

Trails: Lake Trail, Hillside Trail, Old Telephone Line Trail, Boggy Meadow Rd, Cooke's Pasture Trail, Marian St Trail, & Halfway Brook Trail

Improvements: Parking lot & paved trail from parking lot to Broad Brook completed in 1996 for \$19,977 (\$3,500 from MA Lakes & Ponds Grant; \$16,477 from CDBG Handicap Access)

Dam: Dam & access road to dam reconstructed in 1999 for \$305,967 (\$199,288 state self-help funds & \$136,000 City funds). Last dam inspection report 11.2013.

Public Info: Fitzgerald Lake Conservation sign and other information have been installed at North Farms Rd and Cook Ave. Self-guided nature trail brochures are available at trail off of North Farms Rd.

Wildlife: Otter & extensive number of turtles have been seen in lake. There is large amount of beaver activity in northern and eastern sections of conservation area. Great blue herons & winter wrens rely on site for critical habitat. Several rare species have been identified in wetlands bordering Lake & in Cookes Pasture. Elderberry Longhorn, or Elder Borer (*Desmocerus palliates*, large, showy, black & yellow beetle) and Wood Turtle (*Clemmys insculpta*) are two of state-listed species that have been identified at FLCA. Several vernal pools exist in conservation area.

ESA: Phase I ES at Beaver Brook by O'Reilly Talbot and Okun, with witnessing of removal of oil tank. No problems. The seller demolished two homes on the property prior to the City taking title.

The 40-acre Fitzgerald Lake, created by an earthen dam that dams Broad Broad. It is surrounded by pine, hemlock, hardwood forest uplands, wooded wetlands, and meadows. Its wet and rocky setting offers excellent hiking trails, nature study, fishing, canoeing, and skating. It is one of the most diverse and richest ecological resources in Northampton, with rare plant and animal species.

The Beaver Brook/Broad Brook section includes Broad Brook along Route 9 on the west side of the property and the headwaters of Broad Brook on the east side. The Forest Stewardship Plan (prepared 2010) included in the management plan section of this plan provides more detail on the property.

A wheelchair accessible path from the parking lot to Fitzgerald Lake (120 feet of asphalt path, 360 feet of boardwalk, 60 feet of gravel, and a boardwalk dock/platform) was installed in 1993.

The Fitzgerald Lake Dam is classified as a low hazard dam, The City reconstructed the dam spillway in 1998.

The former telephone right-of-way on the property, (quitclaimed in 1994) is now a trail.

The Lathrop Conservation Restriction (no public access) protects sensitive stream and riparian environments.

The Robinson CR preserves Hatfield's water supply and Fitzgerald Lake area wildlife habitat. The parcel is landlocked, but the CR grants the City a right for defined walking trails on the property if the City ever acquires rights for a trail to the edge of the property.

The Anciporch property on the east side of Boggy Meadow is owned by the city with a conservation easement held by the USFS. This parcel is outside of the Broad Brook watershed but contains the headwaters of a stream that has caused serious flooding in the past and contains a large productive wetland.

The Zimmerman CR is on the west side of Broad Brook and does not include public access.

The Broad Brook Gap/Kubosiak parcel, "supports seven different habitat types, including one of the most unusual swamp forests in Northampton, a marsh that contains a small great blue heron rookery, and some of the best black bear habitat in the Commonwealth. In addition, it includes a stretch of Broad Brook that is immediately upstream from known habitat for three state-listed freshwater mussels, including the Federally Endangered Dwarf Wedgemussel." (Laurie Sanders)

The Conservation Commission approved Broad Brook Coalition's Management Plan and a Memorandum of Understanding by which BBC carries out day-to-day management. (see www.Northamptonma.gov/plan).

A Forest Stewardship Plan for the 102.4 acre Beaver Brook/Broad Brook Greenway was completed in 2012 by Michael Mauri, identifies a large wetlands complex adjacent to Route 9/Haydenville Road, the headwaters of Broad Brook, and significant stands of mature red oak and affiliated hardwoods, hemlock

in the eastern section, and a mix of white pine, hemlock, and black locust in the western section. Because of the stream and wetlands, there is no realistic access to most of the forest from Haydenville Road. The area was farmed until approximately WWII, and barbed wire fences and stone walls occur throughout the property. Two dilapidated farmhouses along Route 9 were torn down just prior to purchase. The area adjacent to the road is dominated by non-native invasive species, black locust, Japanese Knotweed and bittersweet. The full plan is available at www.Northamptonmag.gov/plan, under public file cabinet).

Early Broad Brook Conservation

David Dill, Jr. (BBC Newsletter, Spring 1994)

BY EARLY 1684, 30 years after the founding of Northampton, the growing shortage of forest products was becoming a crisis. There was squabbling over the use of forest land in common areas outside the town center where almost everyone lived. Homes, many with two fireplaces, required a great cordage of wood for cooking and heating, and there was increasing demand for turpentine and fence poles. Up to then, settlers had been free to cut wood and tap pines on common land two or three miles away. Probably

the most accessible supply came from the dense hardwood and white pine of the Broad Brook drainage area.

First, the town hired surveyors to lay out major subdivisions of the common lands. In 1685 the Broad Brook was surveyed and became the boundary between the Inner Commons and the outlying Long Division. Conservation measures followed; by 1698, cutting down trees under nine inches was a punishable by fines - half of which went to informers.

Two years later the town banned the barking, boxing or bleeding of any pine within three miles of the meeting house (or to just beyond Broad Brook), under penalty of one shilling per tree. By 1707 sterner enforcement seemed advisable, and inspectors were named to check each cartload of wood headed for the center.

Finally, the 1737 town meeting approved a regulation to curb the woodcutter's carelessness. Anyone setting fire in the woods within three miles of the town was to be fined twenty shillings.

Calamity at Broad Brook

Extracted from article by David B. Dill, Jr. (BBC Newsletter, Spring 1997)

JANUARY 7, 1780, four Northampton hunters, Seth Lyman, Sr., Major Jonathan Allen, John King, and Daniel Pomeroy, rode out from the Center, snowshoes tied to their saddles, with nothing more than the expectation of bringing home a side of venison for the family table.

The men turned off the Hourse Mountain Road at Broad Brook, tied up their mounts, and on snowshoes plunged into the swamp (now under

Fitzgerald Lake), an environment well known for its abundance of deer. Snow lay three feet deep, favorable for deer hunting, but visibility worsened as snow fell steadily. A shot rang out. King and Pomeroy hustled over to find Seth Lyman standing over the mortally wounded major, the accidental victim of Lyman's musket ball.

One of the men rode posthaste to the Center, where the news, of course, created a great excitement.

Many townspeople arrived in sleighs to watch as the rescuers brought out the dying major in a litter and loaded him in a sled for the ride to his home. Feelings continued to run high in town, for Major Allen was highly regarded as decorated veteran of the Revolution and now as a first class finishing carpenter. Some suspected Seth Lyman shot Allen deliberately, out of bad feeling, but he was acquitted in the April term of the Supreme Court.

Broad Brook Greenway Cultural History

(adopted from Peter Rowe)

THE USE AND DISTRIBUTION of the lands purchased from the Nonotuck natives in 1654 were among the first concerns of the early Northampton settlers. Home lots were chosen freely to afford easy access to the principal attraction of the settlement: the fertile meadows along the Connecticut River. These were divided according to the size and wealth of the family. The uplands, including the Broad Brook watershed, apparently were undistributed and were known as “the commons,” whereby individuals had proprietary rights to use the land as they needed.

Following conflicts over shortages of forest products, the unclaimed land was surveyed and divided into two major subdivisions in 1684. Broad Brook became part of the northern boundary between the Inner Commons (for crops and pasture) and the outlying upland Long Division (mostly woodlots). Over the years, as the fertility of the meadows deteriorated and a wheat rust reduced the grain yield, some upland holdings were awarded to Proprietors in lieu of lands in meadows, or to newcomers. The remaining undivided commons and the “pine lands” were either pasture ground or restricted woodlots.

Dissatisfaction with the original distribution of lands flared up from time to time, with the proprietors calling for legal help from Connecticut in 1715. The source of discontent was chiefly the inequality of land holdings and the fact that individual plots were scattered around town making for a more laborious and inefficient farming system. Gradually claims

were consolidated and the town surrendered its rights to the lands to individual Proprietors.

By 1728, Colonel Timothy Dwight had acquired most of the 350 acres of land north of Bridge Road. Dwellings were on Bridge Road (#340 today) and there was a sawmill on Broad Brook behind Fortification Hill. Various owners followed and in 1935, it became the Harold K. Fitzgerald farm. On land near our North Farms parking area a recreation hall was built where dances were held in the 1950s for the workers at the Corticelli Silk Mill.

In 1965, preparatory to a planned single-family home condominium housing project, he constructed a dam on Broad Brook, creating the 40-acre lake. A neighborhood group formed in opposition to development in the area, led by Frank Olbris, who called the group the Broad Brook Coalition. Mr. Fitzgerald abandoned the project after wetlands restrictions proved too burdensome.

In 1977 Mr. Fitzgerald sold the northerly 152 acres of his land, including the lake, to the City for \$145,651.

Cooke’s Pasture consists of parcels consolidated into a farm by Dr. Edward E. Denniston in 1859. He had attached to his medical practice a hydropathic institute on grounds now occupied by the Cooley Dickinson Hospital. To provide his patients with a good diet, he added to his kitchen garden the eight parcels of land he called “Broad Brook Pasture.” Dr.

Denniston cleared the land, built a causeway across Broad Brook, and erected a barn to house chickens and turkeys. Part of the cellar wall of that barn still can be seen 450 feet north of the old bridge.

After 1885, the farm was owned and operated by Francis Cooke and his sons, who gave it the name “Broad Brook Farm;” the farm was sold in 1927 to John Pollard. The Pollard dairy cows and barns were located on Jackson Street, and only beef cattle were kept out on Cooke’s Pasture, with a cattle-holding pen just inside the gate on Boggy Meadow Road.

In the 1950s Cooke’s Pasture was cleared, with wet fringes around the open field. At the edges were stands of white pine and red maple. In the late 1960’s the cattle operations ceased. In 1987, the Pollard family sold the land to the Northampton Land Partnership who planned a housing development. In 1994 the City, with the help of Broad Brook Coalition, purchased 147.5 acres of Cooke’s Pasture for conservation land.

The land along Boggy Meadow Road saw a variety of activities: during World War II, there were field maneuvers by National Guard units from Springfield on Cooke’s Pasture and there are remains of old trenches; there was once a Boy Scout camping ground in a grassy area off Boggy Meadow Road. In the 1950’s, the Mondegas Park recreation hall was established by the Corticelli Silk business for its workers on land near where a saw mill had once operated

BURTS BOG GREENWAY**28.3 ACRES****Ownership:** City care and custody of Conservation Commission**Location:** Ellington Rd, Crestview Dr, Sandy Hill Rd, Brookwood Dr., Indian Hill, & Florence Rd

Acquisition History			
Date	Book, page or other	Description	Acres
3/21/1990	B3536, p85 & 95	Deed for Brookwood Marsh (for abatement of back taxes)	15
9/12/1986	PB141, p18	Indian Hill survey	7.065
3/22/1990	B3535, p234	Indian Hill deed (via donation cluster project)	
7/25/1994	B4521, p248 B4521, p259 B4531, p302 B4539, p153	Deed for Brookwood Marsh, Gutowski donation	5
1992	B3994, p162	Waterline easement for Brookwood Marsh	
11/14/2014	B11801, p238	Virginia Hayseen donation	1.288
	B p	Deed for 2017 Burts Bog purchase	114.76
	PB239, p59	Burts Bog Survey	
10/26/2017	B12785, p256	Release from Stone Ridge Pond covenants	

This parcel provides critical wetland habitat and filtration of pollutants. It also protects the City's drinking water aquifer (Zone III) and rich beaver activity.

Burt's Pit: The Gutowski's donated rich wetlands and the original "Burt's Pit," formerly owned by the Northampton State Hospital and used for mining peat and other organic material for their gardens.

Brookwood Marsh: Norman Keedy d/b/a KV Homes was developing the land at the time the Massachusetts Wetlands Protection Act passed, when his development was shut down by the City. In 1990, the City acquired the 16 acre Brookwood Marsh, with a deed in lieu of foreclosure for back taxes, to preserve and restore critical wetlands habitat. A portion of the land was filled in the 1970s when Ellington and Crestview were built, prior to the adoption of the MA-WPA. In 2001, the City restored an acre of wetlands by removal of fill material and relocating a beaver dam further away from the surrounding residential homes. In 2005, the city released 16,000 Galerucella beetles in the northern section of the marsh to control invasive non-native and low wildlife value Purple loosestrife. In 2014 the protected area was expanded with Virginia Hayseen's donation.

Indian Hill: contains an attractive stream and protects the City's drinking water aquifer Zone 3.

MARY BROWN'S DINGLE**1.56 ACRES****Ownership:** City/Conservation Commission**Location:** Glendale Ave, between Franklin St & Crescent St**Partners:** None

Acquisition History			
Date	Book, page or other	Description	Acres
11/17/1983	B2407, p270	Donation from Mary Brown	1.56

Description: This area serves as a natural open space and bird habitat in a residential neighborhood. A City storm sewer easement runs through the middle of this area. Some fill from abutting properties has altered this area.

MARY BROWN'S DINGLE**1.56 ACRES**

Ownership: City/Conservation Commission
Location: Glendale Ave, between Franklin St & Crescent St
Partners: None

Acquisition History			
Date	Book, page or other	Description	Acres
11/17/1983	B2407, p270	Donation from Mary Brown	1.56

Description: This area serves as a natural open space and bird habitat in a residential neighborhood. A City storm sewer easement runs through the middle of this area. Some fill from abutting properties has altered this area.

CHILDS PARK**40 ACRES**

Ownership: Childs Park Foundation, Inc.
Location: Between Elm Street, North Elm Street, Woodlawn, and Prospect

Acquisition History			
Date	Book, page or other	Description	Acres
10/5/1952	B1103, p147	Estate of Annie H. Childs	40

Donated through the will of Annie H. Childs, to remain forever "as a public park and a place of rest and quiet recreation."

CLARK STREET WELL/AQUIFER AREA**8.18 ACRES**

Ownership: City, Department of Public Works (water supply area)

CONNECTICUT RIVER GREENWAY (INCLUDES CR 142 ACRES

Ownership: City/Conservation Commission (primarily)
City/Recreation Commission (6.08 acres at riverfront park)
CR owned by City, land is private (part of airport)
Location: Hatfield Rd, Damon Rd and River Road, Connecticut River

Acquisition History			
Date	Book, page or other	Description	Acres
4/30/1981	B2220, p339 PB234, p14	James H. Elwell section: Deed (\$65,350; LAND \$52,280; & LWCF \$6,500) Survey	100
7/5/2005	B8332, p130 B8322, p148 B8332, p162 PB29 & 204, p83	Boundary line agreement Seven Bravo Two CR on Ct. River Subordination agreement	3.82
4/01/2011	PB224, p97 B10516, p307	Survey Ct River Greenway at Hatfield town line 50% interest in land on Hatfield/Northampton town line (\$8,000 CPA, \$4,000 from donations)	20
11/5/2012	B11105, p274	Hatfield Road expansion	6.5
5/31/2013	PB229, p40 B11332, p214 B11930, p1	Survey Connecticut River Greenway riverfront park Deed to Conservation Commission (Lane donation) Conservation Restriction (CR#53)	4.97

Signage: Land & Water Conservation Fund sign at Damon Road

Partners: Expired Memorandum of Agreement with DCR for joint management at Elwell

Description: Seven Bravo Two CR: abuts the Connecticut River and the CR allows a dock.

Elwell: 60-acre Elwell Island and 40 acres of adjacent riverfront land. The island provides habitat for endangered floodplain plants and animals. The eastern edge of the island has a beach and is heavily used by motor boaters (with some unauthorized camping). A local farmer, in accordance with a Farm Use License, utilizes approximately 15.5 acres of prime farmland on the mainland. The farmland has been organic since 2006. This property is managed in cooperation with the Department of Conservation and Recreation with a joint management agreement in conjunction with the adjacent Greenways State Park.

Elwell Island has been growing from river sedimentation (accretion) at a faster rate than it has been eroding for over a century. According to the Daily Hampshire Gazette (7/24/1980), "In the early 1780s, what now is Elwell Island was nothing more than a sandbar. Then, in 1830, Levi Elwell...plant[ed] rocks and willow shoots on the sandbar... By 1904, the sandbar had grown to an island of 24 acres, and Levi's grandson, James Elwell, began farming the island, using a cable ferry to get his crops and equipment back and forth to the mainland."

In 1982, scientists estimated that the island grew 9.7' to 18.2' per year from 1884 to 1939 and 12.3' per year from 1939 to 1977. The island is now larger than its official 60 acres. New layers of silt are added each year, creating an extremely lush interior, but one in which trees have a difficult time colonizing.

Hatfield: The Greenway also includes a 50% interest in land recently acquired on the Northampton/Hatfield town line. The city is currently working on acquiring the remaining 50% interest.

The two existing Greenway holdings will eventually be the anchor for a Connecticut River Greenway rail trail extending from Damon Road to Elm Court in Hatfield.

Greenway Park: Lane Construction donated the land along the river in two parts, part to conservation and part to recreation which now includes the community boathouse.

CONTE FISH & WILDLIFE NATIONAL REFUGE

230.38 ACRES

Ownership: USA, managed by USF&W

Location: Hockanum Rd, Mt. Tom Rd/Route 5

Acquisition History			
Date	Book, page or other	Description	Acres
11/28/2006	B8961, p348	Parcel 4 (Hockanum Rd), donation from Joseph M. McNerney	19.52
2008	B9429, p236	Taking to City, donation	
11/16/2006		Site assessment by OTO	
6/19/2008	B9518, p66	Deed to USA (\$25,000)	
10/19/2007	B9299, p242	Parcel 19B.1 (Hockanum Rd), includes 16.0 acres transfer from City to Valley Land Fund (\$25,000)	197
	B5738, p221	Sheldon CR to Broad Brook Coalition	
8/17/2007	B9238, p229	Parcel 4a, taking to City (\$13,860)	13.86
6/19/2008	B9518, p62	Deed to USA (\$19,000)	
10/8/2008	B9615, p174	Parcel 4b (\$9,000)	
10/9/2008	B9616, p97	Confirmatory deed from Wodicka (\$9,000)	
		Eventual sale to USA Conte expected in 2009	

Description: The Mill River fueled manufacturing during the industrial revolution. In 1936 and 1938, back-to-back floods turned the city streets into canals and caused a large amount of water damage. The U.S. Army Corps of Engineers took on a major flood control project from 1939 to 1940, cutting off the flow of the Mill River through downtown.

FLORENCE CONSERVATION AREA

4.9 ACRES

Ownership: City/Conservation Commission
Location: Garfield Ave.
Partners: None

Acquisition History			
Date	Book, page or other	Description	Acres
12/15/2005	B8557, p106	Montgomery friendly taking	
3/1/2006	B8632, p77	Montgomery confirmatory deed	
1/4/2010	B10067, p301; PB 222, p10-11	Deed from City to Northampton Conservation, part of settlement for former landfill & limited development project. Commission and supporting plans	4.097
3/15/2013	PB229, p23	revised survey with 2013 expansion of conservation area	0.4
6/12/2013	B11345, p226	Deed for 2013 expansion of conservation area	

Description: DPW has a permanent right and responsibility to maintain the cap on the former landfill at the northerly end of Garfield Avenue, beyond the last home on the road. This limited development project includes the old landfill, five Habitat for Humanity affordable houses, and one market rate house lot.

The City purchased the parcel as a settlement of litigation around a former landfill on the site. The dump was privately owned in an old quarry, but in the early twentieth century the City allowed dumping on the site. With all responsible parties gone, the city was the only remaining potentially responsible party.

KESTREL CONSERVATION RESTRICTIONS

639 ACRES

Ownership: City/Conservation Commission
Location: Broad Brook Greenway, Mill River Greenway, Mineral Hills, Saw Mill Hills

Acquisition History			
Date	Book, page or other	Description	Acres
4/19/2013	B11287, p206	CR on land purchased with CPA fund (catchup)	639

The Kestrel Conservation Restrictions are on existing Northampton Conservation Commission property and provide an additional layer of protection. These do NOT create any new open space not already listed in other entries. The CRs are also mentioned in each of the conservation areas that they are part of.

See also baselines of all conservation lands so protected

MARBLE BROOK GREENWAY CR 168 ACRES

Ownership: Private (Guyette and Anderson)
CRs: by City though Board of Public Works

Acquisition History			
Date	Book, page or other	Description	Acres
04/14/2010	B10147, p238	CR to Nonotuck Land Fund (\$134,720 CPA)	168
04/14/2010	B10147, p255	CR to City Board of Public Works	

MEADOWS CONSERVATION AREA & CRS & APRS

248 ACRES

Ownership: City/Conservation Commission
CRs: by Conservation Commission, land privately owned
APRs: by Commonwealth/City and by City alone
Mass Audubon Society Conservation Restriction on 103 acres

Location: **Manhan Rail Trail Buffer: Easthampton Road/Route 10**
Emerald Necklace: Crosspath Rd and Venturers' Field Rd
Montview Avenue section: Montview Ave and Venturers Field Road
Bleiman Donation: Manhan Rd, & Potash Rd.
Massachusetts Audubon: Old Springfield Road
Atwood Drive: Atwood Drive
Jasinski APR: Cross Path, Hockanum, Hunts, Rainbow, and Young Rainbow Roads
Russell APR: Fair Street Extension
Baye APR: Kings Highway

Acquisition History			
Date	Book, page or other	Description	Acres
6/24/1966	PB69, p1	Plan "Manhan Meadow Lots" w/"R.H. Clapp Meadow Lot"	
4/3/1997	B5115, p113 B5115, p127 Ticor Title Insurance	Deed--Sparko: Self Help (\$84,480) and Mass Audubon (\$43,520) CR- Sparko gives Mass Audubon management rights 22-2620-106-00000151 on file w/City Clerk	38
9/22/1999	B5796, p82	CR retained by City when city surplused land	8.019
11/18/1999	B5842, p281	\$1,000 by eminent domain	0.79
2/5/2001	B6120, p19	Deed-Kossakowski, 3 acres w/right-of-way	3
	PB188, p1 First American Title Insurance	Plans 100367887 on file w/City Clerk	
3/24/2000	B5905, p298 PB186, p131 First American Title Insurance	Montview donation Survey 20329816 on file w/City Clerk	3.246
5/5/2015	B11930, p1	Consevation Restriction (CR#53)	
4/6/2001	B6167, p282 B6192, p112 B6192, p112	Taking: Burt Confirmatory Deed-- Burt CR-- Burt, gives Mass Audubon management rights	65
8/15/2007	B9234, p324 B9234, p339 PB215, p317	CR at Montview/Venturers Field Road (Town Farm) Access easement (trade for CR) Survey of Montview/Venturers Field Rd CR	2
2/23/2009	B9712, p317	Venturers Field Road CR, north of dike, e of road	3.56
2/6/2012	B10804, p160	Agreement for Dike Road closure	
2/10/2012	B10808, p294	50% interest in land (Naumowicz owns 50%)	20

Acquisition History			
Date	Book, page or other	Description	Acres
10/3/2012	PB228, p14	Survey old Hampshire County jail farm on Venturers Field Road as hoped for future conservation land subject	
10/11/2012	B11076, p1	Jasinski Agriculture Preservation Restriction	81.6
5/8/2012	B9801, p177	Rogers Farm- given as partial consideration for APR	
8/5/2013	PB230, p21	Survey Rogers Farm, now part of APR	
11/7/2012	PB 228, p48	survey of Pomery Terrace state land coming to city	6.6
5/21/2013	B11318, p267	Release deed from state (no consideration)	
5/5/2015	B11930, p1	Conservation Restriction (CR#53)	
6/27/2014	B11679, p177	Russell Agriculture Preservation Restriction (w/state)	8.6
	B11679, p198	Co-Holders Agreement (City/State)	
9/22/2015	B12075, p43	Baye Agriculture Preservation Restriction	7

Partners: MassAudubon: MassAudubon has full management rights under the Burt CR.
Commonwealth of Mass: Russell is co-held with MA DAR, who is the lead.

Description: Most of Meadows Conservation Area (and related CRs) is within the 100-year flood plain of the Connecticut River, much of it with sensitive wetlands and prime farmland.

Jasinski APR: 81.6 acre local (not co-held with state) in three corners of the Meadows. Includes affirmative obligation for the landowner to ensure that the land is farmed.

Russell APR: 8.6 acres of farmland in state APR on Fair Street extension.

Manhan buffer: Protects the viewshed of the Manhan Rail Trail and a small portion of the New Haven and Northampton Canal.

Northampton Dike at Pomeroy: 6.6 acres from the state off Northampton dike.

Purcell and Budah-- Agreement to discontinue Dike Road- This agreement reduces the risk of trash being dumped and allows an eventual expansion of the conservation area.

Historic Mill River Greenway (Naumowicz/Gonski): 20 acres owned 50% by city and 50% by Naumowicz. Goal is to purchase Naumowicz interest in land and merge three parcels into the adjacent Bleiman parcel. Property contains rich wetlands, vernal pools and floodplain forest. Except for maintenance, no improvements planned.

The MassAudubon Partnership: 103 acres were purchased by the City to preserve grassland bird habitat. Massachusetts Audubon Society at Arcadia holds a Conservation Restriction and is responsible for day-to-day management of the property. Arcadia census data for the grassland nesting species shows an increase in the numbers of Bobolinks and Savannah sparrows since the property was purchased. Peter Vickery, the Massachusetts Audubon ornithologist who manages its grassland bird project, reports that the Sparko piece provides good Meadowlark habitat. Mass. Audubon will be watching over the next several years to see if this or the other grassland species are able to establish themselves.

Arcadia is also conducting butterfly surveys. Butterflies appear to be less plentiful on these hayfields than expected. Arcadia is allowing their field on the north side and abutting the Sparko parcel to grow milkweed to encourage butterflies.

While flood plain forests are rare, Arcadia will manage the hayfields (and eventually other Massachusetts Audubon fields in Northampton now under cultivation) for grassland species. While other areas of the sanctuary have been allowed to grow up into brush, these fields are very wet and

are better not cultivated and some “weedy” areas provide food and shelter for migrating species particularly in the fall. Arcadia’s ecological management goal is to encourage native diversity.

The hayfield is primarily non-native agricultural plants that have been cultivated for hay production. The “fields” may not appear the way a skilled farmer would be accustomed to seeing them or the way our aesthetic sense might expect to see them. The land in the meadows, owned and/or managed by Audubon, is increasingly being used by wildlife. Hay cutting is delayed until the birds complete their nesting cycle. The hay is not a prime sweet crop. Some bird species require thinner grasses for nesting sites. Arcadia staff will not feed the land to produce a more abundant crop of hay. Bare spots are just fine. Plants going to seed may be great for migrating species.

The City of Northampton reserves the right to treat this area for mosquitoes.

MILL RIVER GREENWAY AND RELATED CRS 612 ACRES
Includes Leeds, Bean/Allard APR, Florence Community Gardens, Beaver Brook, Northampton State Hospital, and Bleiman

Ownership: **Fee interests conservation areas: City/Conservation Commission**
Fee interest Bean/Allard APR and Community Gardens: Grow Food Northampton
Fee interests NSH: Mass. Dept. of Ag Resources, MassDevelopment, Smith College
Other Fee interests Valley Community Development Corp. and Housing Authority
APR: City and Mass. Dept. Ag. Resources
CR and Easement on non-city land (NSH, Beaver Brook, Smith College): City
NSH Management, 25 year lease, renewable 3 times to Smith Vocational School
Private-- Leeds CR

Location: **Mill River and historic Mill River from Haydenville town line to Arcadia Wildlife Sanctuary (Leeds, Florence, Bay State, NSH, downtown)**

Acquisition History			
Date	Book, page or other	Description	Acres
6/19/1975	B1837, p222	Florence: donation by Vistron corporation	5.1
10/20/1975	B1855, p121	Right of way on private greenway off Ward Ave 31C-11	
1983	Mass Session Laws Chap. 568	Acts of 1983 ordered land protected and APR/CR	
1800s		NSH land to commonwealth in 1800's	
1984		Care & Control NSH Ag. Land to Mass. DAR	
7/14/1989	B3407, p304PB162, p67	Bay State: donation by James Graham, Yankee Hill	
9/13/1989	PB163, p46 & 47	Survey of NSH agriculture land	
4/3/1990	PB163, p48	Survey of Historic Mill River Greenway	
4/3/1990	B3541, p87	Donation parcel along Historic Mill River greenway	0.3
5/15/1990	B3561, p285	APR and ROW on entire NSH agriculture land except Parcel D	273.9
5/15/1990	B3568, p153	37 acre CR & public ROW on drumlin & along river (overlaps with APR)	

Acquisition History			
Date	Book, page or other	Description	Acres
12/31/1997	PB183, p1	Survey of former Northampton State Hospital	
	B5900, p26	Smith College Conservation and ROW Easement	20.1
9/17/1999	PB 185, p156 (plan)	Bay State: donation Cutlery Building Associations	
2/4/2000	B5879, p156 (deed)		1.73
	B2163, p236	Bay State: sewer easement	
3/29/2000	B5898, p39	Survey of CR on Mill River north of Village Hill	
3/29/2000	B5898, p39	CR on Mill River north of Village Hill	8.1
3/29/2001	PB186, p230	Leeds: donation by Myette	0.1
	Mortgage Release B6158, p40	Leeds: mortgage release	
12/3/2002	PB194, p63	Survey of Historic Mill River Greenway	
12/3/2002	B6914, p135 & 137	Historic Mill River Greenway	
12/10/2002	B6925, p302	Fee interest Mill River Parcel to Hospital Hill LLC	
3/16/2004	B7720, p130	Historical Mill River: Steven Berlin-Chavez and Reginal Chavez-Berlin donation	1.44
8/28/2006	B8854, p82	Historical Mill River: eminent domain of tax title parcel	0.4
10/17/2006	B8915, p106	Easement: Housing Authority West Street/Mill River (condition of 7/20/06 permit, 10/16/06 NHA vote)	
4/26/2007	B9109, p58	Beaver Brook CR acquired through permit condition	40.95
2/9/2009	PB220, p26	Survey of Beaver Brook section	
8/24/2009	B9942, p188	Rita and Bruce Bleiman donation, with covenant to maintain field	9.95
	PB221, p67	Plans-Bleiman	
12/11/2009	B10047, p233 and 237	Beaver Brook: Fee ownership + rail trail ROW. (Condition of permit.) Overlaps with Beaver Brook CR	25.44
4/28/2010	B10160, p233	Mill River Greenway, Bean Farm (donation related to permit condition)	1.184
4/30/2010	B10164, p119 B8314, p46 PB222, p124	Mill River Greenway, Leeds from Roman Catholic Church (\$35,000 CPA & Rail Trail funding) which includes a rail trail (previous easement from Mass Electric)	4.051
8/10/2010	B10258, p240	Mill River Greenway, Bean Farm (donation related to permit condition)	3.532
10/26/2010	B10347, p195 B10297, p347	Mill River Leeds, Tacy deed in lieu of tax foreclosure, with City reserving right to develop rail trail access Tax title redemption	1.37
12/1/2010	PB 224, p49	Survey of Bean Allard farms, including Mill River Greenway, related APR, and Florence Fields Recreation	
12/1/2010	B10392, p337 B10393, p23	Bean Farm and Allard Farm to Trust for Public Land	
12/13/2010	B10406, p222 #5011400-0082046e	Mill River Greenway Bean/Allard (CPA \$236,000). Grantees retain easement for three 15' rights-of-way to Mill River. City granted easement for 20' pedestrian access from Florence Fields to Mill River Greenway First American Title Insurance to City Clerk	35.04
12/13/2010	B10406, p259	Bean/Allard Grow Food Northampton APR (NOT fee)	121.02

Acquisition History			
Date	Book, page or other	Description	Acres
12/13/2010	B10406, p289 #5011400-0082185e	Bean/Allard Grow Food APR Co-Holders Agreement First American Title Insurance on APR (to City Clerk)	
3/1/2011	B10492, p215 5011400-01234504e	Lease (198 years) from Grow Food Northampton for organic community gardens and Mill River Greenway (land all part of the Bean Allard APR above) . First American Title Insurance (to City Clerk)	17.405
6/28/2011	B10585, p100 B10585, p99	Deed Gaustad by Ward Ave parcel "O" related affidavit	0.1
4/23/2012	B10880, p196 B10918, p119 B10977, p342	Order of Taking- Chatfield, Leeds section (0.6 acres) related tax redemption realted sale of land to Miller	
7/17/2012	B10978, p1	Conservation Restriction #48- Miller, Leeds	0.6
2/21/2007	B9046, p28	State Hospital Parcel D: care and control to DAR	36.338
8/28/2013	B11442, p250	State Hospital Parcel D: Trail Easement	
8/28/2013	B11442, p254	State Hospital- Parcel D: Agricultural preservation restriction with option to purchase at agricultural value	
8/01/2014	B11714, p264	Historic Mill River at Dike Road (Atwood)	0.75
9/22/2015	B12075, p65	Historic Mill River at Manhan Road (Ksieniewicz)	3.31
4/06/2018	B12919, p 239	Lyman - Ward Avenue Trail Access Easement	0.95

Partners: **Historic Mill River at Dike Road and Manhan Road: Mass. Audubon Society**
Bay State Section—informal w/Baystate Village Association
Leeds—Informal w/Leeds Civic Association
Florence Community Gardens-- Grow Food Northampton

Other Data: "Inventory of Mill River Corridor Discharge Sources" Environmental Science Seminar, Smith College, 1999 and "Mill River Revitalization Plan," Landscape Planning Studio, U. Mass, 1999.

Description: (see also entry under Norwottuck rail trail) The Mill River was once indispensable to the establishment of manufacturing in Northampton. The river is one of the unifying themes historic settlements along the river, Leeds, Florence, Bay State, Northampton State Hospital, and downtown. The Mill River Greenway is discontinuous but the name reflects the goal of an eventual continuous greenway from the Haydenville town line to the Oxbow.

Historic Mill River: In 1936 and in 1938 back-to-back tropical storms flooded much of downtown, causing a large amount of damage. The US Army Corps of Engineers (1939-1940) built a major flood control project to cut off the flow of the Mill River through downtown. The Historic Mill River, including the by-pass channel, is a degraded waterway in an urban setting, with impediments to fish passage and degraded instream habitat. Diversion of flow through the by-pass channel, construction of a dam and drop structure, and development along the banks of the former riverbed harmed fisheries. The City has worked with the Corps of Engineers to evaluate alternatives to restore a riverine migratory corridor to the historic Mill River and:

- Restore a riverine migratory corridor and open up high value habitat to aquatic species.
- Restore flow to the historic river channel, thereby recreating aquatic habitat.
- Enhance or restore riparian buffers.
- Increase recreational use of the river and increase public access to the river.
- Provide aesthetic improvement to the historic river channel.

The city has been acquiring land along the Historic Corridor. A right-of-way and conservation restriction was granted for the historic Mill River frontage adjoining Mill Bank condominiums. Title to the original CR and easement were lost by foreclosure, but a new CR was granted in 2002.

Leeds and Beaver Brook: Beaver Brook land contains rare species habitat. See also rail trail easement under rail trail entry and conservation restriction under conservation restrictions entry.

Florence: The former Allard and Bean Farms have all been permanently protected. Most of the floodplain forest is now part of the Mill River Greenway. Fellow travelers from the same transaction created the 24 acre Florence Recreation Fields and the Grow Food farm, owned by Grow Food Northampton with the City and state coholding an Agricultural preservation restriction. The City also holds a 198 lease on 17 acres for a Florence Community Gardens (with the land managed by GFN).

Bay State: From north to south, the Vistron is a small isolated parcel on the Mill River with an intensive amount of invasives. Bay State is a small but very accessible parcel just south of Maines Field. It does not contain any portion of the old raceway, where some debris was dumped by the former cutlery. Yankee Hill is a steep hillside between the Mill River and the permanently protected agricultural lands at the former State Hospital land.

Northampton State Hospital: The NSH agriculture land property has agricultural preservation restriction (APR) with a conservation easement and public right-of-way within 100 feet of Mill River and south of Burts Pit Road on the “drumlin” above 265 feet mean sea level. Northampton holds and enforces these restrictions. A rich wetland complex exists near the Mill River. Ground-nesting birds, including the Grasshopper Sparrow (listed as a special concern), nest in the spring and summer on the drumlin.

The fields/woods edge provides excellent Bluebird habitat. Controlled August-September burns of the drumlin to maintain habitat and control multi-flora rose were effectively done in the 1990s, avoiding ground-nesting birds. Smith Vocation should be careful not to overgraze this area. Cattle or sheep should be rotated through this area, or another area should be used during the nesting season. Bunch grasses should be maintained at 4”-12”.

Woody vegetation along the hillsides, particularly the multi-flora rose, should be repeatedly cut and removed from the site or introduce appropriate grazers (e.g., goats, Scottish Highland cattle).

ROW and conservation easements/restrictions have been placed on the land along the river north of Village Hill (MassDevelopment) and on Hospital Hill (Smith College sledding hill). In addition, the Northampton Housing Authority granted an easement along the Mill River at West Street and there are deed restrictions providing right-of-way exist in some of the properties along the east side of the Mill River between Federal Street and the Smith College campus.

Historic Mill River Greenway (Bleiman): 9.95 acres on the corners of Potash Rd. and Dike Rd. The site is in the floodplain with a mixture of wet and dry soils, floodplain forest, a portion of the former Historic Mill River which is now a certified vernal pool, and 5 acres of fields, of which only 1 is very productive. The City has an obligation to maintain the 5 acre field in an open condition. Site limitations include: (1) Vernal pool; (2) All floodplain; (3) No water supply; (4) No electricity; (5) Security limitations; (6) Mosquito heaven; (7) some heavy wet soils.

Soils include: Hadley Silt Loam (1.8 acres, 36% of field) is a well-drained flood plain soil, with slopes 0-3%. Land Capability Class is a measure of the appropriateness of a soil type for particular activities, including agriculture. Hadley land capability class is 1, highly suited for agricultural use.

Winooski Silt Loam (2.9 acres, 57% of field) is a moderately well drained floodplain soil, with slopes 0-3%. The land capability class is 2w, suitable for agriculture but with less than perfect drainage and may retain spring moisture longer than other soils, such as the Hadley Silt Loam.

Limerick Silt Loam (0.3 acres, 7% of field) is a poorly drained flood plain soil, slopes 0-3%, and groundwater within 18" of the surface. The land is capability class 3w, indicating that it is less than suitable for agriculture. Much of the floodplain forest is also wet Limerick Soils.

Access is currently limited to two overgrown entry points in the hedgerow. There is no signage upon approaching or entering the site, no designated parking, and no designated location for delivery of materials (such as compost) or supplies (such as farm tools and implements being delivered or retrieved). Existing access patterns consist of a grassy field road around the exterior of the field, running past each of the access points and along the inside of the hedgerow. Abutting roads and the surrounding woods and wetlands are frequent dumping sites.

Agricultural Use Analysis for Bleiman

The land could be used for grazing or hay, propagation garden, or perennial planting (e.g., nuts, coppice, silvopasture, fruits, vegetables, herbs, medicinal & wild plants). Long-term plantings mitigate the water constraints on site. In this case, it becomes essential that user maintain a longer term lease appropriate to the harvest timing of the crop, since the yields are not immediate.

Not Recommended Uses: community gardens (frequent flooding), CSA or farm stand (bad access), or farm incubator (wet, flooding, access).

Regenerative Practices

Regenerative soil management practices balance nutrient cycles to conserve water and nutrients, increase soil organic matter, sequester carbon, and meet crop needs with site resources or with recaptured resources present locally. These practices also limit erosion and minimize impact on native ecosystems.

It is recommended that site stewards/users map nutrient cycles (water, carbon, nitrogen, phosphorus) as they relate to the site, and develop regenerative, closed-loop, self-sustaining cycles. What sources of water, organic matter, nitrogen, phosphorus, are available? Can you design closed loop systems that take advantage of these resources? Can you include recaptured organic matter present locally (such as leaves from landscapers), or captured water on site?

In particular, regenerative issues point to the possibilities of whole farm systems with interconnected parts. For example, the Compost Utilization Trial (CUT) at Rodale Institute demonstrated that the use of composted manure with crop rotations in organic systems can result in carbon sequestration of up to 2,000 lbs/ac/year, a greater sequestration than side-by-side comparisons to non-manure compost or chemical fertilizers. Carbon sequestration is associated with the increase in stable soil organic matter (which is mostly carbon). This shows that incorporation of animals and crops into a whole farm system is one example of a regenerative loop that outperforms other options.

Synergistic uses are strongly recommended. Mutually supportive uses are an important component of regenerative agriculture. Single, monocultural uses do not demonstrate long term stability, or other self-sustaining characteristics of regenerative systems.

Cover Cropping

For land not being actively farmed, establishing a nitrogen fixing cover crop is a recommended. Plowing and sowing the cover crop may take place anytime between April and August.

Red clover, a short lived perennial, is recommended. Red clover prefers heavy, fertile soils of near-neutral pH. It can handle less-than-perfect drainage, acid soils and clays. It can even tolerate wet soil conditions but not prolonged flooding. Nitrogen yield averages are 100-110lb/acre per season.

Red clover seed rates are 11-14 lbs per acre. To establish red clover in the spring, because it is slow growing at first, and liable to leave the field at risk to weed growth, it is recommended that a nurse crop of oats at 1.5-2 bushes per acre be seeded with it. Clover inoculants should be mixed with the seed (unless clover has been grown in the field in the previous 3 years).

In the Northeast it is generally planted in spring and allowed to grow for a full year before incorporation. This allows one or more hay cuts or mowing before incorporation as a green manure. The clover should be mowed two or so times over the course of the season, at flowering (before seeding), to prevent developing clover seed as a field weed.¹

Recommended Conditions of License

- Stable or increasing soil organic matter, up to a 10% soil organic matter maximum.
- Stable or increasing soil nutrient levels.
- Adherence to the current NOP Organic Standards.
- Maintain covered (not bare) soil at all times via the use of crops, cover crops, or mulch. Excluding possible 6 week at-a-time maximum pre-crop soil prep and/or summer bare fallow.
- Management of plants so they do not set seeds in the field. Including but not limited to: vegetable crops, pasture species, annual and perennial weeds, hedgerows and weedy field edges. Excluding those plants explicitly managed for seed saving purposes.
- Maintenance of the tree line, including the edge running along Potash Rd, which borders the driest and highest quality agricultural soil on site. However, possibly excluding wet edges and edges abutting the vernal pool area.

The Northampton State Hospital burial ground is protected from development by a permanent agricultural-use restriction. The field should not be plowed to avoid disturbing the soil deflations and patches of low vegetation that are the only marks of the locations of the graves. A detailed inventory of the site was done in Preservation Guidelines for Municipally Owned Historic Burial Grounds and Cemeteries, with specific information about this site.

A 1958 bench and surrounding bushes were the first memorial commemorating the field as a burial ground and are an important part of the history of the cemetery. M.G..L. Chapter 272, Section 73 of the Massachusetts Laws and Regulations Protecting Burial Grounds require preservation of the bench or the bushes because they were built as a memorial. The Historical Commission installed a new plaque and bench in 2017.

Plaques could be mounted the bench stone supports to honor both the cemetery (1858-1921) with its 181 confirmed burials, and 413 potential burials, and past memorial efforts. The plaque could also note at least two burials in the woods across the road to the north and that the boundaries of the cemetery have not been determined. It is important to preserve the present knowledge about the cemetery.

Any new memorial must avoid disturbing any graves in the cemetery. It is possible to erect a completely above ground dry-laid stone monument such as a stone cairn that would not disturb the ground with a foundation. However, a memorial plaque could not be mounted on this unmortared monument. Because any mortared monument would require a foundation, its design would need to be reviewed by the Massachusetts Historical Commission, which would require an archaeological survey and/ or excavation to mitigate the impact of the foundation excavation on the burial ground. Erecting a sign would involve the least amount of excavation and archaeological investigation to prevent disturbance to burials. Any memorial be placed near the road to minimize disturbance to burials.

It is strongly recommended that haying be conducted only when the ground is completely dry. The Department of Agricultural Resources agreed to draw up such a regulation for Smith Vocational School.

Further archaeological reconnaissance and subsurface testing (e.g., resistivity testing) could identify the boundaries of the cemetery and map the soil deflations and vegetation indicating burials. Further archaeological reconnaissance in the area might also locate small-unmarked gravestones of the types Mr. Mielke found on the burial ground in his childhood.

MINERAL HILLS CONSERVATION AREA AND CR _____ ACRES

Ownership: City/Conservation Commission
Conservation Restriction: Private land, CR Joint Northampton and Westhampton
Location: West side Sylvester Rd, north side Turkey Hill, north & south side CR: Turkey Hill Road on Westhampton side of town line

Acquisition History			
Date	Book, page or other	Description	Acres
10/12/1994	B4570, p97	LaPalme, bargain sale, City & neighborhood donations	85
4/7/1994	Title Insurance Policy	Filed w/City Clerk	
9/30/1994	PB177, p164 & 167	Sylvester Rd	
	B4570, p87 and p93	Sylvester Road driveway for LaPalme limited development: wetlands permit and special permit for reduction of frontage development	
	B4570, p102	Right-of-way to building lots	
12/27/1994	B4607, p172	APR	
		Drainage & utility easements of record	
12/11/2003	B7616, p103	Turkey Hill cluster	2.2
	PB198, p23	Survey of Mineral Hills	
		Disclosures filed DSPO	
	PB211, p12	Survey for Turkey Hill Rd parcel south of Turkey Hill	
	B8486, p310	Boundary line agreement with right-of-way to Cowles from Cowls property to Turkey Hill Road for logging.	
1/12/2007	B9009, p36 subject to easement: B8486, P310	Turkey Hill \$685,000 (Self-help, City, Wharton Trust, Highland Communities Initiative, & \$200,000 in community fundraising). Cowles retains easement for logging access. Deed in limits trails and access adjacent to Lots 2 & 3 on plans.	120
	First American Title Insurance Company	102758222	

Acquisition History			
Date	Book, page or other	Description	Acres
	B9013, p31	Walking easement between Turkey Hill section & LaPalme section	
	B9013, p35	Mortgage subordinations	
		Authorization in City Council resolution recorded w/ Turkey Hill section	
12/26/2006	B8990, p33	CR in Westhampton- joint ownership Westhampton (primary enforcer) and Northampton (backup role)	29.4
	PB147, p58	Plans--CR and Turkey Hill	
2/9/2009	B9700, p64	Turkey Hill Rd, Bosworth purchase	15
5/9/2008		Kohl survey purchase	
6/4/2008	Warranty Deed, B9503, p293 PB218, p38 Subject to: B5842, p161 B9503, p296 (agreement) First American Title	Kohl purchase, LAND (\$470,000), CPA (\$350,000), City (\$15,000), community donations (\$134,000) Chambers, "in-holding" house, reserves the right to maintain and repair ponds and dam and cut trees to preserve their easterly view. LAND agreement Title insurance for Kohl addition, 106544301	60.6 + 11.53 CR
7/18/2008	B9547, p40	Wilhelm/Mineral Hills Trust	15.1
3/10/2009	PB220, p46	Survey of all of Mineral Hills (since updated by survey below)	
5/31/2011	B10559, p138	Skibiski purchase, Turkey Hill Road	32.1
5/31/2011	First American Title	Title insurance for Skibiski 5011400-0158781e	
11/17/2011	B10722, p81	Conservation Restriction #47 on Skibiski purchase to Kestrel Land Trust	
2/14/2012	B10812, p162 B10812, p167 (agreement)	Jedoron Realty Inc purchase, \$131,400, LAND and CPA 364 Turkey Hill Road LAND Project Agreement for Jedoron and Sarafin	5.8221
2/14/2012	First American Title: 5011400-0284580e, on file with City Clerk	Title insurance for Jedoron title certificate from Elaine Reall, City Solicitor	
4/27/2012	B10885, p240	Sarfin purchase, Chesterfield Road LAND and CPA	90.394

Acquisition History			
Date	Book, page or other	Description	Acres
2/14/2012	B10812, p162 B10812, p167 (agreement)	Jedoron Realty Inc purchase, \$131,400, LAND and CPA 364 Turkey Hill Road LAND Project Agreement for Jedoron and Sarafin	5.8221
2/14/2012	First American Title: 5011400-0284580e, on file with City Clerk	Title insurance for Jedoron title certificate from Elaine Reall, City Solicitor	
4/27/2012	B10885, p240	Sarfin purchase, Chesterfield Road LAND and CPA	90.394
4/27/2012	CATIC: OP 03154477 MA, on file with City Clerk	Title Insurance for Sarafin-- title certificate from Alan Seewald, City Solicitor	
6/25/2012	B10951, p43	Discontinuance of Turkey Hill Road within cons. area	3.8
7/13/2012	PB227, p82	Survey of all of Mineral Hills	

Acquisition History			
Date	Book, page or other	Description	Acres
6/28/2017	B12666, p41	Fierst purchase	31.58
	PB239, p57	Fierst purchase survey	
2/14/2018	B12880, p44	William Walker/Galena purchase	7.968

Description: A diverse piece of conservation property consisting of wooded uplands, wetlands, and a small field in active agriculture. A small parking lot is on the Sylvester Road side of the parcel.

The Mineral Hills Conservation Area is one of Northampton’s natural resource gems. The undeveloped, contiguous woodland contains numerous important habitat areas, supports a wide diversity of wildlife species and provides a variety of recreation opportunities for the citizens of Northampton. Furthermore, the natural amenities in this area have attracted and inspired many past and present and have become a part of the City of Northampton’s cultural fabric. Famous writer and Northampton native Brian Kitley aptly captures the spirit of the conservation land in his journal 1852: The Sage of Mineral Hill:

...Northampton below from Mineral Hill is as remote as the Northwest Passage. We live on what we find, the dog and me-service berries in June, tart strawberries, carrots that taste of metal. What is any man’s discourse to me, if I am not sensible of something in it as steady and cheery as the creak of crickets? In it the woods must be relieved against the sky. Men tire me when I am not constantly greeted and refreshed as by the flux of sparkling streams. Surely joy is the condition of life.

The 30 acre purchase from Skibiski in 2011 on Turkey Hill Road on the border with Westhampton makes the conservation area continuous from Sylvester Road to Westhampton. This section of land includes the High Street Walking Club trail from Turkey Hill Road to Skibiski Summit, marked by Michael Mauri using a Forest Stewardship implementation grant and built by the Friends of Mineral Hills management partner. This project also included installation of an aluminum boardwalk to provide access to the trail network from the Sylvester Road parking lot.

All of the outer property boundaries of the Mineral Hills Conservation Area were blazed in 2011 by Northeast Survey, with all property corners photographed and the photos on the City’s public file cabinet website. This work was done with Forest Stewardship implementation grant funds as well.

In 2012 , the city acquired the Mineral Hills Bookends, using a LAND grant and CPA funds, to purchase land from Sarafin on Chesterfield Road and from Jendoron on Turkey Hill Road. City Council then discontinued the portion of Turkey Hill Road going through the middle of the conservation area.

The Mineral Hills Conservation Area consists of a forested landscape ripe with natural resources. The diverse forest matrix provides a complex environment of interacting plant and wildlife biodiversity. Babbling brooks flow from the hilltops to the wetlands below and vernal pools can be found teeming with life during the spring and fall.

In 2010, professional forester Michael Mauri completed a forest stewardship plan, (funding: forest stewardship grant). The full plan is available at the city’s website (www.northamptonma.gov/plan, in the public file cabinet) that contains an overview of forest types and recommendations.

PARSON'S BROOK GREENWAY, PARK HILL APR/CR 275 ACRES

Ownership: Greenway Fee: City through the Conservation Commission (West Farms)
Title under APRs and CRs: Private—no public access

Protection: Lathrop, Gray/Peppard, Burke, & Jewett/Pinkham—Conservation restrictions, City
Kidder & Micka—Agricultural protection restrictions, jointly by City & Massachusetts DAR

Location: Parsons Brook, the Plantation, Park Hill Rd, Westhampton Rd, & Florence Rd

Acquisition History			
Date	Book, page or other	Description	Acres
2/16/1979	Plan Book 110, p65-66	Survey of Towne Conservation Easement-- Whittier Street and Westhampton Road	15+
2/16/1979	Book 2082, p84	Conservation Easement, Towne	
		APR, Adams by Department of Agricultural Resources	72
3/3/1986	B2685, p193 & 196	APR, Kidder	47
3/23/1990	B3535, p323	Kidder	
8/5/1998	B5449, p275	APR, Valley Land Fund (VLF) & City (\$450,500)	38
6/24/2000	B5964, p254	Assignment VLF to Depart. of Agricultural Resources (\$408,450 share of original consideration)	
12/22/2000	B6093, p296	APR, Gray/Peppard (donation)	30
	PB187, p253	Survey, Gray/Peppard	
	B6093, p305	Mortgage, Gray/Peppard	
	B6093, p317	Restrictions, APR & Deed to Gray/Peppard	
1/5/2001	B6100, p298	Gray/Peppard, deed & mortgage release, \$225,000	
2/1/2001	B6119, p264	APR, Assignment of co-holding to Department of Agricultural Resources	
	B6117, p265	Affidavit & appraisal	
12/20/2001	B6472, p277	CR, Gray/Peppard, et al (donation)	23.203
	PB190, p114	Survey, Gray/Peppard, et al	
6/20/2002	B6703, p294	City Council Order (accept donation)	
07/02/2002	B9415, p180	Cluster permit right-of-way	
03/10/2008			
2/4/2005	B8155, p57	Lathrop, (by boundary line agreement elsewhere)	11.215
	PB204, p22	Survey, Lathrop	
4/21/2010	PB10153, p116	CR #45, Jewett and Pinkham (permit condition)	5.722
5/6/2013	B11304, p298	CR #50, Burke (\$9,500 CPA)	19.5
5/5/2015	B11930, p24	CR#55 Dostal	1.138

Small conservation area with opportunity for walking trails and includes frontage on Parsons Brook just upstream from a series of conservation restrictions and agriculture preservation restrictions that stretch from Parsons Brook and into Easthampton.

RAINBOW BEACH/SHEPARD'S ISLAND

101 ACRES

Ownership: City Rainbow Beach: City/Conservation Commission
State Rainbow Beach and Shepard's Island: Mass. Division of Fisheries and Wildlife

Location: Rainbow Rd, Connecticut River

Partners: Memorandum of Agreement with the Division of Fisheries and Wildlife.

Acquisition History			
Date	Book, page or other	Description	Acres
4/11/1974	B1766, p44	State Shepard's Island, parcel 33-30	15
7/28/1977	B1966, p321	City Rainbow Beach (Self-Help funds)	55
7/19/1989	B3410, p194 PB159, p97	State Rainbow Beach, parcel 33-33 Survey	30.87

State Rainbow Beach (northerly section of the Rainbow Beach complex): It is managed primarily for endangered species by the Natural Heritage and Endangered Species Program. Slowly eroding away.

City Rainbow Beach (middle section with most of the beach): Managed with a cooperative agreement with the MA Division of Fisheries and Wildlife. The site is primarily river bottomland hardwoods and a narrow beach area of river sediment deposits. This area is located along the Connecticut River and receives heavy summer use (swimming and unauthorized camping) by boaters. This floodplain forest and beach provide habitat for endangered plant and animal species. The City parcel had mean accretion (deposition minus erosion) of 15 to 18 square feet per year (Anderson, A. 1973. Vegetation Patterns and Fluvial Processes on a Connecticut River point bar. BA Thesis, Amherst College; Doherty, A. Jr., 1974. Stratigraphy and Geomorphology of the Rainbow Beach Point Bar, BA Thesis, Amherst College).

State Shepard's Island (Former island, now a peninsula, on south side of complex): Wildlife habitat. The Division of Fisheries and Wildlife gated Young Rainbow Road (c. 1991, with private property owner permission) to prevent illegal use of the area.

RESERVOIR COMPLEX

Ownership: City, Department of Public Works

Location: Various hill towns

Parcels include the reservoirs and much of the watershed lands. It is a site with future potential.

ROBERTS HILL WATERSHED CONSERVATION AREA & CR

22.3 ACRES

Ownership: City/Conservation Commission
CR owned by City, land privately owned

Location: Kennedy Rd and Audubon Road, Leeds

Acquisition History			
Date	Book, page or other	Description	Acres
11/19/2004	B8068, p162	Deed-Lot 2, Kennedy Rd (donation)	12.56
11/12/2004	B8062, p89	Deed Lot 4, Kenneydy Rd (permit condition)	
	PB 202, p24	Survey of Lot 2 and 4, Kennedy Road	
3/2/2009	PB220, p63	Survey of Hill Audubon Road CR	
3/2/2009	B9773, p30	Hill CR on Audubon Road (donated as permit condition)	9.75

Partners: Leeds Civic Association (informal arrangement)

Includes uplands, wetlands, and a tributary of the Leeds Reservoir.

ROBERTS RESERVOIR

57 ACRES

Ownership: City, Department of Public Works
Location: Upper Leeds and Roberts Meadow Reservoirs and watershed
Description: Includes two off-line emergency reservoirs and watershed.

ROCKY HILL GREENWAY

_____ ACRES

Ownership: Rocky Hill Cohousing Conservation Restriction owned by Co-Housing
 Ice Pond Conservation Restrictions owned by individual lot owners (see also trail easement)
 Remainder Rocky Hill Greenway all owned by Conservation Commission
Protection: Rocky Hill and Ice Pond CRs city held. CR on land east of Route 66
 MassAudubon held.
Location: Florence Rd, Ice Pond Drive, Rocky Hill Rd (Rte 66), Easthampton Rd (Rte 10)

Acquisition History			
Date	Book, page or other	Description	Acres
10/20/2003	B7534, p333	Rocky Hill Greenway at Ice Pond	22.3
11/18/2003	B7583, p183	Ice Pond Conservation Restriction	3.2
11/29/2004	B8082, p261	Rocky Hill CoHousing Conservation Restriction	10.27
2/18/2005	B8166, p227	Conservation deed restriction on lot 8	
10/24/2014	B11784, p194	Rocky Hill Greenway (Hewes purchase)	47.6
4/1/2015	B11902, p245	CR #54 to Mass Audubon Society	
5/12/2015	PB 234, p46	Rocky Hill Greenway (survey) DSM Title Insurance (OX-09453575)	
1/12/2018	B12587, p13 PB240, p70 B12905, p265	Goldfarb/Wilson Realty Goldfarb/Wilson Realty Survey Goldfarb/Wilson Realty CR to MassAudubon	48.74
4/6/2018	B12919, p275 B12919, p279	O'Brien purchase O'Brien Conservation Restriction to MassAudubon	2.73

Abuts: Pathways Cohousing trail easement
 Rocky Hill and Ice Pond Conservation Restrictions at Rocky Hill Greenway at Ice Pond were a condition of cluster approvals. Ice Pond Discontinuous holdings fill some of the gaps in the abutting Rocky Hill Greenway, with public rights to cross property, and the city with rights to build trails without restriction.

SAW MILL HILLS CONSERVATION AREA (includes Roberts Hill) ___ ACRES

Ownership: City/Conservation Commission
Location: Avis Circle, Ryan Rd, Spring St, Chesterfield Rd, Mill River, Old Shepherd Rd, South Main St, Dimock Rd, Reservoir Rd, Sylvester Rd, Kennedy Rd, & Leeds
Partners: Saw Mill Hills Informal “Friends of the Saw Mill Hills”
 Roberts Hill: Leeds Civic

Acquisition History			
Date	Book, page or other	Description	Acres
10/20/1995	B4759, p148	Saw Mill Hills Avis Circle (cluster open space)	23.96
	Laywers Title Insurance	Avis Circle Owner's policy, #13600110645	
11/28/1995	B4781, p109	Saw Mill Hills: Towne purchase mortgage release	
7/13/1995	PB178, 223	Saw Mill Hills Plan	
2/9/1996	B4822, p182	Saw Mill Hills Agreement	
1/5/2000	PB186, p97	Plan- Saw Mill Hills	
3/13/2000	B5899, p311	Saw Mill Hills Donation with Avis Circle subdivision	16.103
5/26/2000	First American Title Insurance	Owner's policy, #20325612	
		Saw Mill Hills Cluster permit (Sienkiewicz 88 acres plus right-of-way)	
6/9/2000	PB187, p25	Plan--Saw Mill Hills	
7/7/2000	B5979, p75	Order of Taking: Saw Mill Hills/Ryan Rd Sienkiewicz limited development purchase (\$15,000 City & \$5,000 Wharton Trust)	88
	B5945, p231	Cluster permit	
7/14/2000	B5984, p206	Confirmatory deed: Saw Mill Hills: Sienkiewicz	
7/14/2000	B5984, p203	Confirmatory deed: Saw Mill Hills Ryan Rd ROW	
12/2001	B6137, p308	Hawthorne taking Saw Mill Hills	44.742
3/21/2002	B6641, p1 & 11	Curran taking Saw Mill Hills	
12/27/2006	B8991, p221	Off Ryan Rd, Blobel Section- Saw Mill Hills	22
	B8991, p226	\$17,600-- Saw Mill Hills	
1/15/2000	B5864, p246	Chesterfield Road, New Harmony donation	28.079
8/1/2000	Land Court B18, p65	New Harmony donation- Saw Mill Hills	3.93
3/29/2006	B4851, p252	Easement, right-of-way, donation in lieu of c. 61B right-of-first-refusal- Saw Mill Hills/Roberts Hill link	
12/2001	B6492, p1	Golden Drive, Donovan taking Saw Mill Hills	13
1/4/2002	B6491, p334B6576, p83	Fungaroli taking Saw Mill Hills	18.74
11/23/2004	B8075, p165	Boyle donation Saw Mill Hills	17
2/9/2007	B9035, p317	Sylvester Road, Jeep-Eater/Phone Line Parcel	55
1/23/2009	B9686, p204	Sylvester Rd, Ryan Rd, Mielke purchase	11.144
5/8/2009	B9801, p183	Houle purchase (\$11,804 taking) Saw Mill Hills	17
9/1/2009	B9953, p187	Justin West purchase (\$18,000) Saw Mill Hills	18
	PB221, p34	Plans-Justin West, Saw Mill Hills	
2/26/1976	B1840, p162B1874, p21	Roberts Hill, self-help, City (1976), land swap (1981)	96
3/15/1977	B1939, p323	Roberts Hill	
3/31/1982	B2265, p190 (except for B2217, p99)	Roberts Hill Chesterfield Road land swap	
	PB171, p51	Plans: Roberts Hill	
11/4/1991	B3821, p50	Roberts Hill Overlook, eminent domain (1991)	8.128
	PB172, p32	Plans: Roberts Hill Overlook	

Acquisition History			
Date	Book, page or other	Description	Acres
6/1/1992	B3963, p250	Roberts Hill Trail to Reservoir Road (Escrow Ledger Land Acquisition Account), bargain sale acquisition (5/29/1992)	0.6
	PB173, p119	Roberts Hill Plans	
	PB221, p93	Survey of Roberts Hill CR	
5/27/2011	B10558, p237 and p243 also PB157, p93	Sawmill Hills Realty Trust deed-in-lieu of tax title foreclosure and purchase for back taxes with CPA funds (two deeds). Includes pedestrian easement from Gregory Lane.	22
1/15/2014	PB 231, p49	Survey of Szymanski purchase	58.216
1/21/2014	B11570, p146	Szymanski purchase (\$232,864: \$170,000 CPA, donations, small grants)	
3/20/2015	B11891, p346 PB193, p72 OX-09591252 (2015-630)	Donald B. and Mary B. Reutener purchase Survey (was Map ID 28-007) Old Republic Title Insurance	49.960
7/7/2015	B11994, p99 (deed)	Steidler purchase, stream Dimock to Spring St.	3.0
3/2/2017	B12564, p322 PB238, p102	Williams purchase, Roberts Hill Williams purchase survey	20.67

Description: Includes wooded land within Zone II and III of the City's drinking water aquifer, and containing rich vernal pools and the summit swamps. Rights-of-way to Avis Circle and Ryan Road provide access to trails through the Saw Mill Hills. The right-of-way from Chesterfield Road provides access to a detached section of Saw Mill Hills Conservation Area. A right-of-way from Spring Street provides additional access. A Forest Stewardship Plan has been prepared for a portion of this area (see management section).

Blobel section: Key portion of wildlife corridor connecting Saw Mill Hills with Parsons Brook and with Mineral Hills. DPW holds a reservation from Article 97 that allows them to develop a water tank on the property on not more than five acres of the site within the next couple of years if they repay the Conservation Fund all of the funds used to purchase the parcel.

Reutener purchase: Property owner retains lifetime estate for garden, lawn, and sugarshack. City decommissioned and sealed the drilled well on the property on 5/18/2015 (Henshaw, Inc) to prevent groundwater contamination.

Saw Mill Forest Stewardship Plan (www.northamptonma.gov/plan, public file cabinet):

Recreation-Stand 1 has an open understory, frequent rock outcrops, and rolling terrain. The parcel is well suited to recreational activities such as hiking, snowshoeing and cross-country skiing.

Recreation-Stand 2 has a view from atop the steep embankment and the likelihood of seeing wildlife is high, so a trail on the property should skirt along the edge.

Recreation-Stand 3 is the approximate route of the 20' wide right-of-way at the end of Avis Circle. Stand locations are shown on the map included in the Forest Stewardship Plan.

Wildlife-Stand 1 has an abundant acorn crop that supports wildlife. Some thinning of suppressed trees would increase the acorn production and improve the long-term health of residual trees. However, the low value of the trees to be removed as firewood would probably preclude this type of work, unless it was incidental to projects on adjacent lands.

Wildlife-Stand 2 has a good example of natural and rapid regrowth replacing the early successional stage of forest growth, consisting of seedlings, sprouts and shrubs, with pole-sized trees. This is good for timber growing, but it is bad for species that depend on this type of ephemeral habitat. Revisiting this stand every five years to cut back all trees (shrubs can be left) is the best way to maintain a young forest habitat.

Forestry-Stand 1 has white pines in the midstory that could be developed by thinning, as described above, but also by removing a greater number of trees. The same economic restrictions would likely apply. Ideally, the pine trees would be professionally pruned following the thinning to grow pine of the highest value. If the opportunity arises, it might be worth growing pine in this fashion on about five acres, more by way of demonstration than a serious timber growing operation.

Forestry-Stand 2 is a productive site well suited to growing timber, but its small size makes this unfeasible. This area should be controlled for invasive exotic shrubs. Successful control usually involves pulling (for smaller shrubs), or cutting and applying herbicide to the remains.

Roberts Hill should remain closed to vehicles (the driveway in was closed circa 1990).

The Roberts Hill section includes a large wooded hill includes cliffs with spectacular views overlooking the Leeds Reservoir (Roberts Hill Overlook, purchased 1991), large amounts of upland forest, and frontage on the Mill River, Water Street, Main Street, Chesterfield Road, and Reservoir Road. It has two small ponds, a stream and a diverse forest. It provides a linkage between the Leeds Reservoir Watershed and swimming area and the Mill River and Look Memorial Park. In 1986, the area was selectively cut to promote and create preferred wildlife habitats. There are several foot trails on the property. The use of the area is moderate. Snowmobiles are permitted only on marked trails approved for use by the Conservation Commission.

Howard's Ice Pond Dam (DCR No. 2-8-214-8) is classified by the DCR Office of Dam Safety as a "low hazard" dam. The City repaired the dam and spillways in 1999 (Bob Menzone, Sons & Grandson), using City funds and Department of Conservation and Recreation Lakes and Ponds funds. The Department of Conservation and Recreation awarded \$8,000 in grant funds and the City of Northampton paid the remaining \$8,700. A total of \$13,500 was used for construction and the remaining \$3,200 was used for design, inspection and permits (Tighe & Bond). On January 14, 2004, the Office of Dam Safety determined that the dam is no longer under DCR jurisdiction under MGL C. 253 s 44-48, as amended in 2002, meaning that there are no on-going reporting requirements, as long as the dam continues to be properly maintained.

The Saw Mill Hills include a perpetual easement for pedestrian access from Gregory Lane across Parcel A to land owned by City. (See Plan Bk 157 p93 and b3284 p230 for deed). City should work to record two confirmatory deeds to correct deed reference (currently incorrectly states page 227 when it should be page 230) in two grant deeds from Saw Mill Hills Realty Trust to the City. City will also include in confirmatory deeds "together with perpetual easement for pedestrian access as described in deed 3284 page 230" to clarify that the pedestrian access is included in the portion conveyed to the City by Saw Mill Hills Realty Trust.

SPRING STREET WELL/AQUIFER AREA**31.56 ACRES****Ownership:** City, Department of Public Works**Location:** Spring Street

Acquisition History			
Date	Book, page or other	Description	Acres
6/19/1952	PB40, p65		
10/15/1952	PB41, p55		
11/6/1990	PB168, p106		
12/31/1990	B3667, p67	As well as previous takings and purchases	
1991		Disclosure	

Parcels include the Spring Street wellhead and much of the Department of Environmental Protection aquifer Zone I. It also contains a small part of Zone II. The parcel serves as water supply protection.

WEST FARMS/THE RIDGE CONSERVATION AREAS**55.4 ACRES****Ownership:** City/Conservation Commission**Location:** Off Glendale Rd, Westhampton Rd (Rt 66), Ridge View Rd, & Drury Ln

Taking purchase as part of limited development/landfill buffer; paid by CDBG (affordable housing and cluster related open spaces) and Landfill enterprise (landfill buffer)

Partners: None

Acquisition History			
Date	Book, page or other	Description	Acres
3/2/2001	B6137, p317	West Farms/Route 66 initial taking	
3/2/2001	B6137, p327	West Farms initial confirmatory deed	
		West Farms market rate lot sold (City retains one lot)	
4/8/2003	B7133, p23	Comprehensive permit	
4/8/2003	PB195, p98		
5/23/2003	B7241, p206	West Farms Surplus parcel to Nancy L. Kingsley	
6/2/2003	B7231, p15	West Farms Surplus parcel to Leona V. Pakutinski	
6/2/2003	B7231, p19	West Farms Surplus parcel to Maris and Peter Ludwig	
6/2/2003	B7231, p1	West Farms Surplus parcel to Donald & Norma Sadusky	
6/23/2003	B7271, p216	West Farms transfer to the Conservation Commission	
6/27/2003	B7282, p237	West Farms Surplus parcel to Darleen/Edward LaFond	
7/28/2003	B7347, p320	West Farms affordable housing to Habitat for Humanity with septic system easement	
5/25/2005	B8273, p166	West Farms recreation parcel to Recreation Commission	
5/31/2005	B8281, p88	Deed-The Ridge, as condition of subdivision approval	
	PB205, p71-86, 205	Plans-The Ridge	
	PB205, p75-77	Plans- The Ridge Survey of conservation area	
12/9/2005	B8550, p220	City Council resolution authorizing transfer	

Description: West Farms is undeveloped land with a simple trail from Glendale Road to the Recreation Area off Route 66.

The Ridge section of West Farms includes walking trails that will eventually be linked to abutting property. Developer is responsible for building the trails with the City through the Office of Planning and

Development, retaining the right to extend the trail to the easterly property boundary. Subject to City of Northampton, holding the right to build multi-use trail across the property (which is consistent with the City Transportation Plan).

BEAR HILL RECREATION AREA

12.76 ACRES

Ownership: Bridge Road LLC

Location: Bridge Rd on west side of JFK Middle School

Acquisition History			
Date	Book, page or other	Description	Acres
7/12/2006	B8791, p28	Related to permit condition for Bear Hill	12.76
	PB211, p51		

Common space CR held by the Conservation Commission (7.039 acres)
 Active recreation managed and controlled by the Recreation Commission (5.721 acres).
 Property provides recreation field, sledding hill, and undisturbed natural space. It surrounds the Bear Hill Estates housing project.

BURTS BOG EASEMENTS AND RESTRICTIONS

2.26 ACRES

Ownership: Fee: Private

CR: Conservation Commission

Location: Off Woods Rd & Burts Pit Rd and Between Dunphy Dr & Westhampton Rd.

Acquisition History			
Date	Book, page or other	Description	Acres
7/12/2000		CR off Woods Road and Burts Pit Rd retained by City when parcel surplus by city.	2.16
6/9/2003	B7245, p275	Right of way easement for trail from Dunphy Drive to Westhampton Rd (permit condition 4/30/2003)	0.1
	PB196, p10	Survey of Right-of-Way	

MINERAL HILLS/MARBLE BROOK CONS. RESTRICTIONS 292.8 ACRES

Ownership: Private: John & Diana Clapp (55.79 acres); Miriam L. Clapp (57.922 acres); Joanne Bessett (11.11 acres); Christine & George Guyette, Elizabeth & Garry Anderson (168 acres)

Protection: Clapp & Bessett CR City of Northampton through Conservation Commission
 Guyette & Anderson CR: City of Northampton through Board of Public Works

Location: Chesterfield Rd & Turkey Hill Rd

Acquisition History			
Date	Book, page or other	Description	Acres
12/11/2006	B8976, p111	John & Diana Clapp—consideration \$18,000 (\$10,185 Nonotuck Land Fund, \$7,815 City for Chapter 61 tax Rollback)	20
	B8976, p128	Mortgage subordination of John & Diana Clapp	
	PB215, p82	Survey of John & Diana Clapp CR	

Acquisition History			
Date	Book, page or other	Description	Acres
8/17/2007	B9237, p297	CR #40, \$27,500 Nonotuck Land Fund, \$4,000 City of Northampton	35.79
	B9237, p312	Mortgage subordination of John & Diana Clapp	
6/27/2007	B9177, p253	Miriam L. Clapp—\$52,129 from contributions & previous grants on hand	57.922
	B5454, p218	Fee interest in parcel remains w/Miriam Clapp	
6/4/2008	B9503, p298 (deed) PB218, p38 (survey) B9503, p296 (agreement)	Kohl CR--\$40,000 (self-help & CPA) Kohl Survey Kohl self-help agreement	
4/14/2010	B10147, p238	Christine & George Guyette, Elizabeth & Garry Anderson to Nonotuck Land Fund—consideration \$134,720 (\$118,600 from Community Preservation Act)	
4/14/2010	B10147, p255	Assignment of Guyette/Anderson CR to City of Northampton Board of Public Works	

Public access is allowed freely on the Miriam Clapp CR. Very limited public access is allowed by the John and Diane Clapp CR. Conservation Commission regulations should prohibit public access on the John and Dianne Clapp CR because public access on the Miriam Clapp CR has less impact on farming and on the Clapp family. The Marble Brook (Guyette/Anderson) conservation restriction is north of Chesterfield Road No public access. Nonotuck Land Fund reserves right to lead public hikes.

THE OAKS CONSERVATION RESTRICTION & RIGHT OF WAY 30.28 ACRES

Ownership: Private

Protection: Easement, City of Northampton

Location: Burts Pit Road

Acquisition History			
Date	Book, page or other	Description	Acres
8/3/2007	B9222, p337	CR	
8/3/2007	B9222, p355	Mortgage subordination	

Public access allowed. The City has right to develop walking trails anywhere in conservation restriction. The City also has the rights to develop a bike path within the trail easement area. Please see the Conservation Restriction for more information.

ROUND HILL CONSERVATION RESTRICTION 0.34 ACRES

Ownership: Private

Protection: Conservation restriction

Location: Round Hill Road

Acquisition History			
Date	Book, page or other	Description	Acres
8/15/2007	B9234, p343	Conservation Restriction (15,000 sq. ft.)	0.34
	PB214, p7	Plans for Conservation Restriction	

B: PARKS AND RECREATION—PUBLIC

Properties acquired for park and recreation purposes are considered permanently protected properties. They can be sold with City Council and, in accordance with Article 97 of the Constitution of the Commonwealth of Massachusetts, state legislature approval. Some of the recreation areas listed below may have been purchased for non-recreation uses and then converted to recreation areas. These areas would not have the protection provided by Article 97 of the Constitution.

AGNES FOX FIELD RECREATION AREA

1.61 ACRES

Ownership: City
Management: Recreation Commission
Maintenance: DPW, Recreation Division
Location: State St, Church St

Acquisition History			
Date	Book, page or other	Description	Acres
5/17/1995	B1195, p81	Deed from Bishop of Roman Catholic Church. Reverts to Church if no longer used for recreation.	

Equipment: Grassed play area, basketball court, restroom building, playground equipment
 The grassed play area covers a large part of the site. This area is heavily used by local residents.

AQUATIC & FAMILY CENTER

Ownership: Northampton School Department
Management: Recreation Commission
Location: JFK Middle School, Bridge Road
Equipment: Public Indoor pool, tennis courts, basketball

ARCANUM FIELD RECREATION AREA

8.49 ACRES

Ownership: City
Management: Recreation Commission
Maintenance: DPW, Recreation Division
Location: Bridge Rd, N. Farms Rd, & Mountain St

Acquisition History			
Date	Book, page or other	Description	Acres
7/25/1957	B1252, p404	Deed Urban self-help project agreement	8.49

Equipment: 2 ball diamonds, soccer field, field house, all-purpose paved area used for basketball, street hockey, soccer, dances, playground equipment, Safety Village.

Arcanum is a heavily used year-round recreational area.

CHILDS PARK

30 ACRES

Ownership: Childs Park Foundation, Inc.

Location: North Elm St, Woodlawn Ave, Prospect St

Acquisition History			
Date	Book, page or other	Description	Acres
1951	B1103, p147	Privately owned. Protected by Will of Anne E. Childs	

Description: This heavily used park is located adjacent to the Northampton High School and a densely populated residential areas It is beautifully landscaped (forest, trees, shrubs, flowers, rose garden, open areas, and has a scenic drive winding through it. There are no picnic or garbage facilities at this site. Except for running, most active sports are prohibited..

CHILDS CITY PARK

Ownership: City of Northampton

Location: Elm St & North Elm St (near Northampton High School)

Acquisition History			
Date	Book, page or other	Description	Acres
		Will of Annie Childs, Article Fifth	
8/21/2008		City Council Resolution on management of park	
1948	Probate Court	Will of Anne E. Childs requiring triangle remain a park	

Small, triangle shaped island between High School and Elm Street across Elm Street from Childs Park.

COMMUNITY GARDENS, NORTHAMPTON STATE HOSPITAL

8.086 ACRES

Ownership: City (acquired by Parks & Recreation, subject to Article 97)

Management: Northampton Recreation Commission

Maintenance: DPW, Recreation Division

Location: Burts Pit Rd

Acquisition History			
Date	Book, page or other	Description	Acres
1994	Ch. 86 & 307	The acts of 1994, Parcel G, Northampton State Hospital	
12/9/1998	B5558, p13 PB183, p1	Parcel G, Northampton State Hospital	

Heavily used community garden without prime agricultural soils, but soils have been worked as gardens for many years, first as part of State Hospital and then as a community garden. Commonwealth retained right-of-way easement across the gardens in a location approved by the City.

CONNECTICUT RIVER GREENWAY/CITY RIVERFRONT PARK 6.08 ACRES

Ownership: City of Northampton, Recreation Commission

Location: Damon Rd

Acquisition History			
Date	Book, page or other	Description	Acres
11/7/2012	B11109, p177	Site plan approval for boathouse and riverfront park	
4/2/2013	PB229, p40	Survey Connecticut River Greenway riverfront park	
5/31/2013	B11332, p194	Lease Lane to Northampton Community Rowing	
5/31/2013	B11332, p206	Deed to Recreation Commission	6.08
5/31/2013	B11332, p211	PARC Agreement (\$400,000 improvement grant)	
5/5/2015	B11921, p212	CR #52 to Friends of Northampton Recreation	

CONNECTICUT RIVER GREENWAY/ELWELL STATE PARK 3.2 ACRES

Ownership: Massachusetts Department of Conservation Resources

Location: Damon Rd, Bates St, & Woodmont Rd

Acquisition History			
Date	Book, page or other	Description	Acres
8/30/37	B926, p285	Parcel 25A-16	0.872
9/18/1978	B2055, p145	Parcel 25A-14	1.347
1/12/1968	PB92, p64	Survey of what became Elwell State Park	
3/25/1985	B2546, p132	Parcel 25A-168,	0.055
12/22/1987	B3109, p88	Land lease Hampshire County to Commonwealth of Massachusetts	
9/15/1988	B3255, p311	Parcel 25A-17, order of taking of parcel land situated on corner of Bridge St and Damon Rd	0
6/18/1992		City Council approval of state eminent domain: Cichy	0.5

Boathouse, wheelchair accessible dock on the Connecticut River, parking lot, access to the Norwottuck Rail Trail, and access to the Trail's most spectacular feature, the bridge across the Connecticut River.

FLORENCE FIELDS RECREATION AREA 24.4 ACRES

Ownership: Fee: City of Northampton, through the Recreation Commission

Location: Meadow Street, Florence

Acquisition History			
Date	Book, page or other	Description	Acres
12/1/2010	PB224, p49	Survey of Florence Fields Recreation Area and entire Bean Allard Mill River Greenway	
12/13/2010	B10406, p229	Trust for Public Land \$560,000--CPA 34%, PARC 66%	24.4
12/13/2010	B10406, p235	PARC Agreement for Florence Fields	
12/13/2010	#5011400-0082159e	First American Title insurance (to City Clerk)	
5/5/2015	B11930, p45	CR#51 to Friends of Northampton Recreation	
2/3/2012	B10802, P52 and 56	Planning Board and Wetlands Permits	
2/16/2012	B10815, P131	PARC Agreement for Florence Fields Phase II	

GOTHIC STREET POCKET PARK 0.15 ACRES**Ownership:** Fee: Gothic Street Condominium Association**Easement:** Northampton Recreation Commission**Location:** Gothic St

Acquisition History			
Date	Book, page or other	Description	Acres
1/27/1993	B4137, p116	CR	
	Doc #93-02065		
		Special permit to Gothic St Development Partnership	

Recreation Easement allows public to pass through as well as passive recreation during daylight hours. Recreation Commission has no responsibilities except enforcement.

**HALLIGAN-DALEY HISTORICAL PARK,
NORTHAMPTON STATE HOSPITAL****0.5 ACRES****Ownership:** Northampton Recreation Commission (subject to Article 97)**Maintenance:** DPW, Recreation Division, & St. Patrick's Association**Location:** Prince St, Rt 66

Acquisition History			
Date	Book, page or other	Description	Acres
1994		Acts of 1994	
12/9/1998	B5558, p19		

EDMOND J. LAMPRON MEMORIAL PARK**1.2 ACRES****Ownership:** City through its Parks and Recreation Commission**Maintenance:** DPW**Location:** Bridge Street

Acquisition History			
Date	Book, page or other	Description	Acres
12/23/2014	B11834, p65	Deed from city (original grant of land from founding of Northampton)	1.2

A small, triangle located in front of the Bridge Street School and heavily used by those students. Playground developed on the site in 2014-2015 with an Our Common Backyard grant. The park also contains several monuments and a gateway to Northampton sign.

LOOK PARK**157 ACRES****Ownership:** City (acquired for Parks & Recreation, subject to Article 97)**Management/Maintenance:** Trustees of Frank Newhall Look Memorial Park**Location:** Rt 9, Mill River

Acquisition History			
Date	Book, page or other	Description	Acres
6/4/1928	B846, p532	Original grant (donated by Fannie Burr Look)	
11/20/1973	B1745, p309	Mahony expansion of Look Park (by City)	
7/18/1983	B2368, p.83	Rail Road right-of-way (by Trustees of Look Park)	

Funding: Core park donated with endowment
 Federal Land & Water Conservation Fund: Look Park Comfort Station, Look Park Improvements Phase I & II, therefore protected by FLWCF Act 6(f)

Mrs. Fannie Burr Look donation of Look Park included the land, development funds. and a maintenance trust fund. The beautiful large park is maintained under the guidance of trustees. Facilities include natural land and water areas; picnicking facilities; six tennis courts; play fields for baseball, volleyball, football, softball, basketball and shuffleboard; train rides; food stands; marked trails; paddle boats; cross-country skiing; ice-skating; band concerts; and theater productions. This area receives very heavy regional recreational use.

The Garden House at Look Park, the former pool building built in 1930 in the Mission style, accommodates public and private parties, meetings, and community events.

MAIN STREET STREETScape PARK .05 ACRES (2,328 SQ. FT)

Ownership: City
Easement: First Church of Christ in Northampton (for area in front of church)
Maintenance: First Church for Easement I, City for art kiosk
Location: Main St at Main St & Center St intersection

Acquisition History			
Date	Book, page or other	Description	Acres
12/27/2002	PB195, p26	Boundary Line Agreement Plan	
10/9/2003	B7562, p117	First Church Boundary Line Agreement	
9/10/2004	B7983, p205	First Church Boundary Line Agreement (II)	
	PB202, p21	First Church Boundary Agreement Plan	

This small but heavily used park includes the City’s art kiosk installation and a lawn in front of the First Churches, which is maintained by the Church but for which the public has the right to use.

MAINE’S FIELD RECREATION AREA 14.47 ACRES

Ownership: City
Management: Recreation Commission
Maintenance: DPW
Location: Riverside Dr, Bay State

Acquisition History			
Date	Book, page or other	Description	Acres
	B778, p177		

Equipment: Lighted ball diamond, two sand volleyball courts, restroom building, storage building, pavilion with tables, paved parking, & playground equipment

The recreation area borders the Mill River and his subject to periodic heavy floods. It receives extremely heavy spring, summer, and fall usage by residents citywide.

DAVID B. MUSANTE, JR. BEACH AT LOWER ROBERTS RESERVOIR **7.46 ACRES**

Ownership: City
Maintenance: City-DPW, Water Division
Location: Reservoir Rd

Acquisition history:

Funding: City (\$62,000 capital improvements), CDBG for handicap accessibility (\$10,000), PARC (1989: \$152,800), & Federal Land & Water Conservation Funds (1988: beach, reservoir, & dam improvements--\$200,000)---Property subject to FLWCF Act 6(f)

The former water supply reservoir was converted to a recreation area (1991) with a swimming area, beach, picnic area, parking lot, and restrooms. A trail into Saw Mill Hills Conservation Area-Roberts Hill starts from this recreation area.

PULASKI PARK **1.5 ACRES**

Ownership: City of Northampton
Maintenance: DPW
Location: Main St, New South St

Acquisition History			
Date	Book, page or other	Description	Acres
1893	B457, p21-25	Deed Edward H.R. Lyman with reversion clause	
1905	PB593, p51	Plan	
1906	B603, p319	Deed J.B. O'Donnell	
8/22/1906	PB593, p33	Plan	
1908	B632, p333-335 & 429	Deed Edward H.R. Lyman	
2016		City to park purposes	

Pulaski Park is effectively Northampton’s downtown commons type park, with memorials, benches, and paths.

History: In 1904, Main Street City Park. In 1906, Aldermen authorized purchase of Holley and Prindle properties and took the land in fee as a public park (with community contributions of over \$27,000). The property owners protested the taking in 1907, with those claims settled in 1908.

In 1907, \$4,963 was transferred to Park Commissioners for development of Main Street Park and architect Joseph Gabringer of New York selected for park plans. He designed the park to provide a perspective and an appearance of being much larger, with the walks are laid out with that intention. At intervals, beside curved walks, concrete seats will be placed in shrubbery where users are practically shut off dense shrubbery, hence undisturbed. Later in 1907, work started on the park and the Prindle House was moved.

In 1908, the estate of Edward H.R.Lyman transferred of land in rear of Academy of Music, with the condition that the land be devoted exclusively for public park or revert to heirs of Edward H. R. Lyman.

In 1911, the Prindle property was purchased.

Various efforts to convert the park happened over the years. In 1934 there was a letter opposing taking Main Street Public Park for high school site. In 1954 there was opposition to taking any part of Park for off-street parking. In 1958, there were letters to Gazette opposing plan of taking part of Main Street City Park for off-street parking. In 1958, plans for off-street parking withdrawn at City Council Meeting.

The park was renovated in 1976 for \$47,200, based on a design by Huntley Associates.

In 2015-2017, the park was totally renovated and expanded to the Roundhouse Parking Lot, based on plans by Stephen Simpson Associates.

SHELDON FIELD RECREATION AREA

21.986 ACRES

Ownership: City of Northampton, Parks & Recreation Commission (subject to three CRs)

Protection: Conservation Restrictions (three): Meadow City Conservation Coalition (2013)

Maintenance: DPW, Recreation Division

Location: Bridge St, Old Ferry Rd

Facilities: Four ball diamonds, two basketball courts/overflow parking, restroom, playground and joint recreation/park-and-ride parking w/bicycle lockers.

Acquisition History			
Date	Book, page or other	Description	Acres
	B601, p132	Historical F Field record	
	B1034, p521	Former lease, interests merged w/purchase	
7/15/1999	PB200, p40	Survey plan	10.16
	B5738, p233	Sheldon deed	
	B5738, p221	Sheldon CR to Broad Brook Coalition (BBC)	
7/12/2013	B11382, p12	Assigned to Meadows City Conservation Coalition	
10/28/2004	B8042, p203-204	Kielec Deed	2.688
	B8042, p190	Kielec CR to BBC (Life Estate Release)	
7/12/2013	B11382, p9	Assigned to Meadows City Conservation Coalition	
5/9/2008	PB217, p101; PB218, p37	Jasinski donation survey	1.654
5/12/2008	B9482, p193	Jasinski deed, consideration being a farm lease	
/2012	B10953, p257	Jasinski deed (II), consideration being a farm lease Jasinski II CR to Meadows City Conservation Coalition	4.8
	B12529, p53 PB50, p67	Bobala deed	4.467
12/06/17	PB 241, p11	Survey of all of Sheldon Field	

RAY ELLERBROOK FIELDS

13.375 ACRES

Ownership: City of Northampton, Parks and Recreation Commission

Maintenance: DPW, Recreation Division

Location: Burts Pit Road

Facilities: Multiuse fields, softball

Acquisition History			
Date	Book, page or other	Description	Acres
12/09/1998	B5558, p19	Deed to City (general municipal uses)	15.494
11/22/2013	PB231, p15	Survey of Ellerbrook Field	13.375
12/18/2013	B11547 p342	Deed to Recreation Commission	

TRINITY ROW**0.5 ACRES**

Ownership: City of Northampton
Maintenance: City of Northampton DPW
Location: Main Street, Florence
Acquisition history: Small pocket park with benches

SOJURNER TRUTH MONUMENT**0.3 ACRES**

Ownership: City of Northampton
Location: Park and Pine Street, Florence
Acquisition history:
Description: Monument

VETERANS MEMORIAL FIELD RECREATION AREA**7.84 ACRES**

Ownership: City of Northampton, Parks & Recreation Commission
Location: Clark Ave. & West Street
Facilities: Skateboard park (2007), basketball, baseball (2013), restroom, parking.

Acquisition History			
Date	Book, page or other	Description	Acres
		License w/Mass Electric for access from West Street	
	B982, p91		
	B1034, p320		
	B1036, p478-480		
		Land & Water Conservation Fund agreement	

D: RAIL TRAILS & RELATED

Northampton Multiuse Trail Segments		
Trail	Trail segment	Miles
MassCentral Rail Trail (Norwottuck)	S. Main Street, Williamsburg, to town line	0.1
	Haydenville town line to Grove Ave spur, Leeds	0.631
	Grove Ave spur, Leeds	0.130
	Grove Ave spur to Florence Street, Leeds	0.409
	Florence St to Bridge Rd roundabout	1.398
	Bridge Rd roundabout to N. Maple St., Florence	0.675
	N. Maple St., to Hatfield Street	0.963
	Hatfield St. to Jackson Street	0.478
	Jackson Street to King Street/Railroad tracks	0.680
DCR Mass Central Rail Trail/Norwottuck	Railroad tracks to Hadley town line	0.902
New Haven & Northampton Canal Line (Manhan Trail)	Railroad tracks/King Street to Main Street	0.630
	Main Street to New South Street	0.590
	New South Street to Earle/Grove	0.838
	Earle/Grove to Easthampton Road/Route 10	0.871
	Easthampton Road to Easthampton town line	1.050
Hospital Hill spur	Manhan trail to Hospital Hill (not including sidewalks)	0.400
	The Beaches park sidewalk and multiuse trail easements	0.1
Rocky Hill Greenway (Ice Pond spur)	Ice Pond to Rocky Hill (not including sidewalks)	0.290
Total Northampton multiuse trails		10.94

NEW HAVEN & NORTHAMPTON CANAL LINE (MANHAN) 3.4 MILES

Ownership: National Grid (all except downtown)-- city owns easement
 Northampton Parks & Recreation Commission (Nagle walkway 2.5 acres)
 City of Northampton (NSH Parcel on Earle St)
 Commonwealth of Massachusetts (Registry of Deeds)- city owns easement acquired when land was owned by Hampshire County

Location: King St (near State St) to Main St (downtown section)
 Main St to Old South St (Nagle section)
 Roundhouse parking lot (downtown)
 New South to box culvert south of Earle St (NSH B4)
 Registry of Deeds off ramp
 Hebert Avenue (future ramp)

Acquisition History			
Date	Book, page or other	Description	Meters
6/28/1985	B2582, p243	Nagle Walkway (2.5 acres)	
	B134, p96	Plan	
	B2634, p331	Project Agreement	
	PB167, p121-1213	Survey	

Acquisition History			
Date	Book, page or other	Description	Meters
5/15/1990	B3561, p271 PB166, p89	Nagle Walkway: Parking lot right-of-way easement to Housing Associates (Hampton Court) w/ requirement they maintain the walkway from Pleasant Street west to the parking lot.	
5/15/1990	B3561, p27 B3561, p279	Nagle Walkway: Easement to Gleason Brothers/ Heldon Trust w/ requirement they maintain park in front of Gleasons. Unclear effect of reconstructed rail trail on maintenance obligations. Easement to National Grid for transformer on northwest corner of the property (Pleasant and Gleason building corner)	
7/5/1991	B3752, p31 PB171, p36	Nagle Walkway: Easement to Tom Masters with requirement they maintain area adjacent to restaurant and clear snow to Main Street.	
7/5/1991	P3572, p35	Nagle Walkway transferred to Recreation Commission	
11/27/1991	B3834, p265	Nagle Walkway: Easement from Union Square Realty Trust--Depot	
2/4/2004	B6682, p292 B7675, p182	Nagle Walkway: Special Permit and Master Deed for Strong Block. Required to keep the paved path from Main Street to Union Station and the steps to Main Street and to Strong Avenue clear of snow.	
6/27/1997	B5144, p152	Donation from Hampshire County (Registry of Deeds)	
12/9/1998	B5558, p19	NSH Earle St parcel (22,839 SF for parking lot, reverts to Commonwealth if not used for transportation)	
3/9/2002	PB191, p83-110	State St. to Easthampton	
5/31/2002	B6661, p92	Downtown	
2/4/2004	B7675, p182	Master deed of Strong Block—Strong Block responsible for some maintenance of trail	
8/11/2005	B8388, p8	Earle/Grove taking from National Grid, O'Connell Oil, Bay State Gas Company	

Acquisition History			
Date	Book, page or other	Description	Meters
10/26/2005	B8492, p105	Earle/Grove confirmatory deed from O'Connell Oil	
10/26/2005	B8942, p108	Earle/Grove sewer easement under Manhan Trail to O'Connell Oil	
11/7/2006	B8940, p175	Searle's Confirmatory Deed (\$3,895.50)	
5/15/2007	B9128, p260	King Street \$1,085 taking	44.48
8/17/2007	B9238, p237	Housing Authority to City (portion of Round House parking lot & related land for Manhan Rail Trail)	
5/6/2008	B9476, p49	Long/Fisher Deed at Route 10 (\$3,300)	
5/13/2009	B9806, p150	Taking south of Earle St to Easthampton town line	
5/13/2009	B9806, p157	Confirmatory deed \$1.00 Mass Electric (CPA funded check #282898)	
5/13/2009	B9806, p162	Confirmatory deed from Frank N. Fournier	
5/13/2009	B9806, p165	Surplus land to New England Power	
5/13/2009	B9808, p170	Easement Reservation for rail trail	
6/15/2009	B9591, p33	Confirmatory deed from Massachusetts Audubon	
5/27/2010	B10186, p159	Bike path and access ramp completed	
9/21/2011	B10662, p320	Deed northwest corner Hebert/South for future ramp	0.03

The former Hampshire and Hampden Canal (reorganized as the New Haven and Northampton Canal) was abandoned in 1847 and much of the right-of-way was redeveloped as a railroad. The Manhan Rail Trail follows this historic right of way from a point mid-way between Earle Street and Route 10 to a point midway between Route 10.

The Manhan Rail Trail from Earle Street to the Easthampton City line includes \$100,000 of Community Preservation Act assistance (\$1.00 for right-of-way from MA Electric and remainder for design and local construction costs).

Strong Block Condominium is responsible for maintaining paved paths and snow removal from Main Street to Union Station, including the stairs from Main Street and Strong Avenue, and not encroaching on the park behind the building.

Includes corner northwest corner Hebert and South as part of future Hebert Ave. Access Ramp.

The portion of the Manhan Rail Trail from Hampton Avenue parking lot to Main Street on the former railroad right-of-way is the Nagle Walkway, owned by the Northampton Recreation Commission. This section was purchased with PARC funds and the PARC sign is required.

Site is adjacent to the Historic Mill River for the walkway's western end. A small park east of Pleasant Street is maintained by the Gleasons in return for a right-of-way across the park to their building. The Strong Block is responsible for snow clearance from the Depot parking lot to Main Street.

ROCKY HILL GREENWAY (ICE POND SPUR) 48,529 SQUARE FEET

Ownership: Pathways CoHousing Condominiums & Rocky Hill CoHousing Condominiums (fee)

Right-of-way: Northampton Conservation Commission

Location: Rocky Hill CoHousing (Florence Road) & Pathways CoHousing (Ice Pond)

Acquisition History			
Date	Book, page or other	Description	Feet
8/5/2004	B7962, p177	Pathways CoHousing (Ice Pond), Order of Taking	24,529
10/14/2004	B8023, p144	Confirmatory deed	
11/29/2004	B8082, p258	Rocky Hill (Florence Rd)	24,000
11/29/2004	B8082, p274	Rocky Hill subordination	

This parcel is 0.6 miles long and serves as a right-of-way for the portion of the bike path that connects Florence Road, Rocky Hill CoHousing, Pathways CoHousing, Ice Pond Drive, and Route 66.

HOSPITAL HILL SPUR SQUARE FEET

Ownership: Hospital Hill LLC (Village Hill) and Smith College (hospital hill): Fee

Right-of-Way: City through Cons. Commission: hospital hill & outside of Village Hill
City: Beaches Park and inside of Village Hill

Location: Manhan Rail Trail spur on east side of Earle Street to Olander Drive & within Village Hill

Acquisition History			
Date	Book, page or other	Description	Feet
8/20/2012	B11014, p250	Right-of-way Olander to Smith College Hospital Hill to Conservation Commission	
8/28/2012	B 11023, p105	592 linear feet right-of-way on Smith College's Hospital Hill	18,700 sq. ft,
8/28/2013	B11441, p258	Sidewalk and multiuse trail easements across Beaches Park in Village Hill-- TO CITY	

MASS CENTRAL RAIL TRAIL (NORWOTTUCK)(CITY) 8 ACRES/5 MILES

Ownership: Mass Electric; City of Northampton (Jackson St ramp); WJG Realty Trust (Stop & Shop); Coolidge Northampton, LLC (Walgreens); Beaver Brook Nominee Trust (spur to Grove Ave, Leeds)

Right-of-way: City of Northampton

Location: State St to Bridge Rd (Francis P. Ryan section), Bridge Rd to Williamsburg Town Line (Leeds section), Grove Ave to railroad bed (Grove Ave/Beaver Brook spur), State St to King St (Stop & Shop easement), King St to railroad (Walgreens easement), Haydenville Road (VAMC access easement to trail)

Acquisition History			
Date	Book, page or other	Description	Acres
5/3/1982	B2274, p282	Francis P. Ryan section	
5/22/2009	PB220, p91	Jackson St ramp	
5/22/2009	PB220, p89-90	Related Safe Routes to School	
5/27/2009	B9823, p35	Jackson St ramp, taking Mass Electric	
5/27/2009	B9823, p35	Jackson St ramp, taking Polachek	
6/9/2009	B9843, p331	Jackson St ramp, confirmatory deed Polachek	

Acquisition History			
Date	Book, page or other	Description	Acres
2004	PB200, p27	Leeds section	
6/23/2005	B8314, p46	Taking Leeds (Mass Electric)	
5/13/2009	B9806, p180 & 183	Confirmatory, Mass Electric	
5/22/2009	PB220, p92	Route 9/Bridge Roundabout & bicycle access	
6/2/2009	B9833, p202	Confirmatory, Francis & Linda Sweeney	
4/6/2007	B9109, p48	Beaver Brook to Grove Ave right-of-way	
	LC7, p70	Land Court certified of title 713, Stop & Shop spur	
8/14/2008	PB219, p23	Walgreens spur	
10/1/2008	B9610, p210	Walgreens spur (as traffic mitigation)	
7/8/2009	PB221, p13	Rail trail by Megan O'Brien property	
	PB223, p50	Survey of Farkas Property, Williamsburg	
7/2/2010	B10225, p180	Deed from Laurie Farkas, Williamsburg	
10/8/2010	B 10329, p 57 & 62	Farkas property to Williamsburg. City retains easement	
1/23/2013	B11197, p159	VAMC easement for 75 year park-and-ride lot; connects to trail with access ramp at VAMC	
12/13/2013	PB231, p29 B11574, p20	Survey easement S. Main Street, Williamsburg spur Easement to Northampton and Williamsburg	
7/30/2014	B11708, p19 PB 232, p40	Easement from Pan Am Railways for rail trail underpass	

The Norwottuck Rail Trail through the Jackson Street ramp includes Community Preservation Act assistance (\$4,000.00) for right-of-way from Massachusetts Electric and the remainder for design, soft costs, and non-participating construction costs.

NORWOTTUCK/MASS CENTRAL RAIL TRAIL (STATE)**6 ACRES****Ownership: Massachusetts Department of Conservation Resources****Location: Damon Rd**

Acquisition History			
Date	Book, page or other	Description	Acres
2/6/1985	B2546, p132	Parcel 25A-166	6.01
2/6/1985	B2546, p132	Parcel 25A-167	0

The Norwottuck Rail Trail extends from Woodmont Road in Northampton to Amherst. It provides a major recreation and transportation route from non-motorized vehicles, especially for those in wheel-chairs and for pedestrians. It links to the UMass bikeway in Amherst and will eventually link to the Northampton rail trail network.

VA MEDICAL CENTER PARK-AND-RIDE LOT**3.165 ACRES****Ownership: USA through the Veterans Administration****Location: Haydenville Road/Route 9**

Acquisition History			
Date	Book, page or other	Description	Acres
1/23/2013	B11197, p159	75 year easement for park-and-ride lot, including access from lot to Nowottuck/Mass Central Rail Trail	3.175

The Park-and-Ride Lot serves as one of the largest no-cost parking along the Norwottuck/MassCentral Rail Trail and includes access to the rail trail with a pedestrian phase crossing Route 9.

5.2: NON-PERMANENTLY PROTECTED

BRIDGE STREET ELEMENTARY SCHOOL

Ownership: City

Management: School Department

Location:

Equipment: Outdoor: basketball court, some swings

Facilities: Limited outdoor recreational and playground facilities.

ELLERBROOK RECREATION AREA, 15.49 ACRES

Ownership: City of Northampton (acquired for general City use)

Location: Burts Pit Road and Route 66

Acquisition History			
Date	Book, page or other	Description	Acres
1994	Chapters 86 & 307	Acts of 1994 (known as Parcel C)	
12/9/1998	B5558, p19	Transfer documents to City	15.49

Two softball fields and one soccer field. The property is not dedicated to recreation use and could be converted to other uses (e.g., future elementary school site and/or fire sub-station) if those are ever needed to accommodate new growth in this area of the town.

CLEAR FALLS RECREATION CENTER

73 ACRES

Ownership: Private (use by membership only)

Location: Drury Lane

Located in the extreme southwest corner of Northampton, this recreation area offers swimming, picnicking, and nature trails for hiking. It also has a field house, snack bar, and picnicking shelters. With a moderate level of use, this area attracts residents from throughout the region. As of 2005, the property was currently on the market for sale.

DRIVING RANGE

Ownership: Private

Location: Haydenville Rd

A practice driving range for golf, this facility receives medium summer use by residents throughout the region. It also has a snack bar. As a commercial facility, a fee is required for admission.

ROBERT K. FINN RYAN ROAD SCHOOL

18.2 ACRES

Ownership: City

Management: School Department (building use), Recreation Department (field use)

Location: Ryan Rd

Equipment: Outdoor: playground, five ball diamonds, soccer field, skating area; Indoor: gymnasium with six basketball hoops, four volleyball nets; locker rooms w/shower facilities; Bike racks, drinking water, first aid facilities

Both indoor and outdoor facilities are available on this 15-acre school site that receives medium-heavy, year-round school, neighborhood, and citywide use. The rear wooded area could be utilized for some form of outdoor recreation or nature education.

FLORENCE COMMUNITY CENTER (former Florence Grammar School) 2.5 ACRES

Ownership: City
Management: School Department, leased to Property Committee
Location:
Equipment: **Outdoor:** limited playground, blacktop play area

This former grammar school (closed in 1992) is now a City alternative high school with some of the inside space serving as a community center.

HAMPSHIRE YMCA 4.3 ACRES

Ownership: YMCA (use by membership or fees)
Location: Massasoit St

This facility is utilized on a region-wide basis. It offers racquetball, basketball, volleyball, and swimming (two pools). It has a sauna, steam room, and fitness center. It is used heavily year-round.

KEYES FIELD

Ownership: Florence Savings Bank
Location: Keyes St at Northampton Bike Path

Acquisition History			
Date	Book, page or other	Description	Acres
3/8/2000	B5906, p326	Declaration of Open Space Restriction	

This field is protected by the covenants, “as open space with reasonable access to the public for passive use and enjoyment under reasonable conditions.”

JACKSON STREET SCHOOL 7.2 ACRES

Ownership: City
Management: School Department (building use), Recreation Department (field use)
Location:

Equipment: **Outdoor:** extensive playground equipment, two ball diamonds, one soccer/football field, one touch football field, two basketball courts; **Indoor:** gymnasium with six basketball hoops, gymnastics equipment, bleachers for 175 people; Parking, bike racks, showers, drinking water, supervision, first aid facilities

This elementary school site offers both indoor and outdoor recreational facilities that are heavily used by the school and the neighborhood. The site also offers the City’s first “adventure playground” (wooden play apparatus), constructed by volunteers. The wooded area on site could possibly provide outdoor education or nature study activities.

JFK MIDDLE SCHOOL 15 ACRES

Ownership: City
Management: School Department (building use), Recreation Department (field use)
Location: Florence St, Leeds

Equipment: **Outdoor:** two ball diamonds, three soccer fields, football field; **Indoor:** pool, gymnasium, six basketball hoops, two volleyball nets; Bike racks, showers, drinking water

Heavily used primarily by the school, this site contains both indoor and outdoor facilities. The facilities are in generally good condition; however, recurring problems with neighbors have limited the use of this site.

LEEDS MEMORIAL

1.6 ACRES

Ownership: City

Maintenance: DPW

Location: Florence St, opposite Leeds School

A small, grassed area, this site contains memorials. It is used by Leeds residents. This park has a memorial, but it is not appropriate for additional memorials. However, benches would increase its potential for use.

LEEDS SCHOOL

9.3 ACRES

Ownership: City

Management: School Department (building use), Recreation Department (field use)

Location: Florence St, Leeds

Equipment: **Outdoor:** playground, ball diamond, skating area, soccer field; **Indoor:** gymnasium with two basketball hoops, two volleyball nets, pull-up bars; auditorium; Parking, bike racks, supervision, first aid facilities

This 9.3-acre site contains both indoor and outdoor recreational facilities. It is used year-round by the school, local neighborhoods, and residents city-wide. This site is large enough to be redesigned to accommodate other types of field layouts, although some site work would be necessary due to sloping terrain.

NORTHAMPTON COMMUNITY MUSIC CENTER (former South St. School)

Ownership: City

Management: Northampton Community Music Center

Location: Florence St, Leeds

This former elementary school is now used by the Music Center for music education. The parcel includes a small tot lot and access from South Street to the adjoining Veterans Field Recreation Area.

NORTHAMPTON COUNTRY CLUB

Ownership: Private

Location: Main St, Leeds

This private golf club offers its members a nine-hole golf course, swimming pool, and clubhouse. The establishment receives medium use during the golfing season by residents throughout the region.

NORTHAMPTON HIGH SCHOOL 23 ACRES

Ownership: City

Management: School Department (building use), Recreation Department (field use)

Location:

Equipment: **Outdoor:** playground, two storage buildings, three ball diamonds, soccer field, field, hockey field, two grassed gym fields, track, lacrosse field, bleachers, concession stand; **Indoor:** gymnasium, universal gym, bleachers, basketball hoops, auditorium

This large school site offers both indoor and outdoor recreational facilities. It is used heavily by the school (physical education and interscholastic sports) and by residents citywide. Outdoor facilities are used very heavily in the spring, summer, and fall, depending on the sport season. Ramps and special toilet facilities are available for the handicapped. A small triangular, grassed area is located directly across from the High School. It serves as an informal park, although there are no facilities.

NORTHAMPTON REVOLVER CLUB 34.3 ACRES

Ownership: Northampton Revolver Club, Inc

Location: Ryan Rd

The Club offers indoor and outdoor target shooting facilities to members from throughout the region.

OXBOW MARINA 56.1 ACRES

Ownership: Private

Location: Island Rd, CT; Oxbow River

The Marina is a commercial facility, offering boat rentals, storage, and mooring facilities; tennis, swimming, and horseshoes. Utilized on a region wide basis, this facility receives heavy summer use. Fees are charged. The Marina allows one of Northampton's soccer leagues to use their fields during the summer.

PEOPLES INSTITUTE 1.5 ACRES

Ownership: Peoples Institute

Location: Gothic Street

This facility offers arts and crafts classes, educational programs, and summer day camps for elementary age children. The facility includes a dance floor and an outdoor pool. Fees are charged.

PINE GROVE GOLF COURSE 132.3 ACRES

Ownership: Private

Location: Old Wilson Rd

With an 18-hole golf course and field house, this facility is open to members as well as non-members for a fee. Level of use is medium to heavy throughout the golf season. It also offers cross-country skiing in the winter. The facility has a regional-use population.

SMITH COLLEGE MILL RIVER, PARADISE POND, ARBORETUM, & ATHLETIC FIELDS

Ownership: Smith College

Location: Smith College, Mill River, West St

This recreational area is part of the Smith College campus and receives heavy use by both students and area residents (with permission). Facilities include playfields, track and field, tennis courts, rowboats, and ice-skating. It includes a heavily used foot trail from Paradise Pond to the northern edge of Smith College, along Mill River. The trail then continues to Ward Avenue and Federal Street.

SMITH SCHOOL V.A. PARCEL/FORESTRY STUDIES 182.1 ACRES

Ownership: City/Smith Vocational School

Location: Haydenville Rd

Acquisition History			
Date	Book, page or other	Description	Acres
3/4/1958	B1267, p217		
4/30/1987	B2961, p193		

The Smith Vocational School for Forestry Studies uses this large wooded site. The site contains an informal trail that could be used to link to a proposed northern corridor trail. It also contains land that could allow an extension of that trail to Route 9. It has been suggested in the past that part of this property be used for a future high school site and some of it for affordable housing. Others have indicated a desire to keep this as permanent open space for use by the Smith School.

SMITH VOCATIONAL & AGRICULTURAL HIGH SCHOOL 78.9 ACRES

Ownership: City/ Trustees of Smith Vocational School
 Recreation Department manages tennis courts and fields
Location: Locust St

Acquisition History			
Date	Book, page or other	Description	Acres
12/22/1845	Box 249, #2	Will of Oliver Smith	
12/22/1905	B601, p287	Deed	

Equipment: Outdoor: eight tennis courts, soccer field, two ball fields (in construction by students);
Indoor: gymnasium, universal gym, six basketball hoops

This site contains the Smith Vocational School, the original core farm, tennis courts, and recreation fields. It also contains a public farm trail.

This site is used heavily by the school for physical education classes and interscholastic sports and by residents citywide throughout the school year. With a two-acre field area and indoor facility, it offers both outdoor and indoor recreational activities. There are handicap accessible facilities. There is also a large wetland on the south side of the property. The land immediately west of the developed part of the Smith Vocational School campus is currently used for agriculture (primarily grazing land with a farm trail constructed in 1993).

SOUTH MAIN STREET AND BERKSHIRE TERRACE

Ownership: City
Maintenance: DPW
Location:

This is a small, grassed corner lot with no facilities.

TRINITY ROW

0.5 ACRES

Ownership: City
Maintenance: DPW
Location: Florence

This is an ornamental, open space street park, containing a foundation and various memorials. This site receives light, year-round, local neighborhood use. Benches could increase its potential for use.

TRI-COUNTY FAIRGROUNDS

42 ACRES

Ownership: Hampshire, Franklin, & Hampden Agricultural Society
Location: Old Ferry Rd, Fair Rd, Bridge St

The Fairgrounds receive heavily regional use during the fair and racing season. This facility contains an exhibition area, race track (horse), baseball field, playfields, picnic area, and a field house.

FORMER VERNON STREET SCHOOL

Ownership: City
Management:
Location:
Equipment:

This is a former school that includes playground equipment used by the surrounding neighborhoods.

VFW MEMORIAL

Ownership: City

Location: Center of Florence

A small park with a fountain and memorial. It is lightly used by Florence residents.

5.3: PRESERVATION RESTRICTIONS

ACADEMY OF MUSIC, MAIN STREET

Acquisition History			
Date	Book, page or other	Description	Acres
10/10/1986	B2826, p49	City owned property, MHC holds PR	

DAVID RUGGLES CENTER, 225 NONOTUCK ST.

Acquisition History			
Date	Book, page or other	Description	Acres
8/28/2009	B9948, p215	Committee for Northampton owned property, City/MHC held CR (\$15,000 CPA funds)	

FLORENCE GRAMMER SCHOOL, 140 PINE ST.

Ownership: Forty Main Street, Inc

Protection: Preservation Restriction Agreement (local agreement not MGL 184) to City of Northampton, through Historical Commission

Acquisition History			
Date	Book, page or other	Description	Acres
8/22/2013	B11434, p84	Condition of institutional zoning incentive	

HATFIELD STREET SCHOOL, 52 HATFIELD ST.

Ownership: Private

Protection: Preservation Restriction Agreement (City has right to enforce)

Acquisition History			
Date	Book, page or other	Description	Acres
10/22/2002	B6843, p211		

HAMPSHIRE COUNTY COURTHOUSE, 99 MAIN ST.

Ownership: Hampshire Council of Governments

Protection: Preservation Restriction Agreement (MHC has right to enforce)

Acquisition History			
Date	Book, page or other	Description	Acres
10/02/2011	B10674, p212	Five year PR to 10/3/2016	

HISTORIC NORTHAMPTON, 46, 58 & 66 BRIDGE ST.

Ownership: Northampton Historical Society d/b/a Historic Northampton

Protection: Preservation Restriction Agreement (City has right to enforce)

Acquisition History			
Date	Book, page or other	Description	Acres
03/06/2015	B11882, p301	Preservation Restriction held by City of Northampton	

THE MANSE, 54 PROSPECT ST. THE MANSE, 54 PROSPECT ST.

Ownership: Private

Protection: Preservation Restriction Agreement (Stewards of the Manse has right to enforce)

Acquisition History			
Date	Book, page or other	Description	Acres
	B3198, p91	Preservation Restriction held by Stewards of the Manse	

MASONIC STREET FIRE STATION, 60 MASONIC ST.

Ownership: Private (Media Education Foundation)

Protection: Preservation Restriction Agreement (City has right to enforce)

Acquisition History			
Date	Book, page or other	Description	Acres
6/28/2002	B6696, P48	Deed with City retained Preservation Restriction	
4/10/2007	B9093, P205	Reference to Preservation Restriction	
7/25/2002	B6724, P42	Reference to Preservation Restriction- back building	

WEST FARMS CHAPEL, WEST FARMS ROAD

Ownership: Private

Protection: Preservation Restriction Agreement (City has right to enforce)

Acquisition History			
Date	Book, page or other	Description	Acres
6/29/1987	B3007, p250-252	Historic preservation restriction	

5.4: OTHER AGREEMENTS & EASEMENTS

Acquisition History and Development Agreement conditions			
Date	Book, page or other	Description of Development Agreement	
9/9/2004	B7982, p197 200-206 King Street	Be compatible with residential neighborhood: No pornographic uses; New buildings will be a minimum of 2 stories; Upper floors only be used for housing; all for as long as zoning is GB or HB.	
3/4/2005	Agreement: B8180, p119	Developer PAID \$150,000 for design N.King/Hatfield intersection. Rezoned to HB for River Valley Market.	

Acquisition History and Drainage Easements			
Date	Book, page or other	Description	
10/10/2007	B9291, p7	Site plan decision	
12/14/2007	B9349, p103 Microcal, 22 Industrial Dr. E	Drainage Easement to City (Board of Public Works)	
7/11/2006	B8802, p131 MGM Real Estate, North St. by Norwottuck Rail Trail	Drainage Easement to City (Cons. Com)	

CONSERVATION AREA SIGNAGE STANDARDS

Use area names listed in the OSRP plan. Where areas are within greenways or larger conservation groupings, the overall area should be listed in front of the specific title (example: Meadows Conservation Area, Montview Section). Signs should be located at trailheads where applicable; facing the nearest roadway in a central location if the area has no trails.

1. Signs are local Black Locust (prefer) or FSC-certified ipe, 48 inches in length, 6 inches high, and 1 inch deep, with tropical oil finish. Signs should be sanded prior to application of finish. Letters are 2.75 inches in height, routed to a depth of 1/16 inch, with a ¼ inch thickness. Fonts do not include serifs. Letters are finished with pigmented encaustic epoxy fill in an off white color.
2. Signs must also include a 4.5 inch diameter circle, routed to a depth of 1/16 inch following the sign name, for placement of appropriate metal logos of the city and its partners.
3. Install signs on 8 foot lengths of pressure treated “4x4,” painted brown, set four feet into the ground and firmly backfilled. Sign posts are set 3 feet six inches measured on center. Signs are installed 4 inches from the top of the posts. Signs are rear-mounted, with no hardware installed through the face of the sign.

MULTI-USE TRAILS



6 Community Vision

This plan builds on earlier Open Space, Recreation, and Multiuse Trail Plans (1975, 1980, 1985, 1989, 1994, 2000, 2005, and 2011) and the Sustainable Northampton Comprehensive Plan (2008).

OPEN SPACE, RECREATION, & MULTIUSE TRAIL GOALS

Northampton is endowed with a diverse natural and cultural environment, which provides scenic vistas, opportunity for passive and active recreation, and a wide variety of plant and animal habitats, including habitats for rare and endangered species. Northampton residents want to preserve and enhance these resources, but they also acknowledge that resources are limited and that open space and recreation goals are sometimes in conflict with other community goals.

Major goals are to:

- **Manage** conservation lands to preserve natural systems and be user friendly
- **Preserve** the city's most ecologically valuable areas
- **Open** space to serve people
- **Preserve** farmland
- **Support** agricultural operations to ensure farmers for farmland
- **Ensure** adequate land for active recreation
- **Improve** parks and recreation areas to serve active recreation needs
- **Maintain** existing parks and recreation areas
- **Develop** multi-use trails for easy public access
- **Convert** unloved pavement to beloved parks
- **Honor** history in the landscape
- **Improve** public awareness of all of these resources

7 Analysis of Needs

RESOURCE PROTECTION, COMMUNITY, & MANAGEMENT NEEDS

For three decades, Northampton and its partners have protected over 0.5% of the city annually as open space. Over 25% of the City is now (2018) permanently protected open space.

During numerous public forums, the City heard citizen open space and recreation hopes and aspirations. Adopting and endorsing boards and their staff have addressed this public process and past plans by identifying the following needs:

1. Provide recreation opportunities throughout the city, and especially revitalizing and expanding tired recreation areas.
2. Link and expand existing open space to provide passive recreation, wildlife movement between natural habitats, and climate changed induced migrations.
3. Protect of vistas and viewsheds.
4. Protect of a range of critical and natural plant and animal habitats, including wetlands, rare and endangered species habitat, and riparian lands along the Connecticut, Mill, and Manhan Rivers and other rivers and streams.
5. Preserve of open space parcels that help define Northampton's character, including parcels at city entrances and gateways.
6. Protect of farmland, forestland, and the rural character of outlying areas.
7. Protect Northampton, Easthampton, and Hatfield drinking water supply watershed and aquifer lands.
8. Provide access to open space resources especially for environmental justice populations/low and moderate income areas.
9. Ensure development is sensitive to ecological resources, vistas, and open space.
10. Serve the needs of those with disabilities in public open space.
11. Ensure fish and informal swimming opportunities throughout the City.
12. Protect Smith Vocational agricultural and forestry lands, including some of the oldest trees in the city at the former at the Veterans Administration Medical Center.
13. Protect of key parcels in the last remaining large undeveloped areas of town – Broad Brook and Beaver Brook Watersheds, Parsons Brook Greenway, Marble Brook Greenway, Saw Mill Hills, Mineral Hills, and the Meadows.
14. Provide a wider diversity of recreation facilities, especially indoor facilities.
15. Better maintain recreational areas.
16. Develop more multi-use trails and bicycle linkages of all kinds to provide access to active and passive recreation, create healthy lifestyles and provide alternatives to single-occupancy vehicles.

2017 STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN (SCORP)

The Massachusetts Executive Office of Energy and Environmental Affairs **Statewide Comprehensive Outdoor Recreation Plan (SCORP)** identifies critical recreation needs, based on available facilities, current and future demand, and user surveys. This profile of needs are used by communities for planning and when applying for grants under the Land and Water Conservation Fund and state LAND and PARC programs.

Regional needs are useful as indicators, not specific and absolute predictors. The intent was not to create a set of imperatives but to supply communities with statewide and regional data that should be considered and perhaps modified by particular local needs.

At both the state and the regional level, the SCORP identifies unmet needs for trail-based activities, especially non-motorized uses such as walking, bicycling, and cross-country skiing, various types of field sports, and water-based activities, especially swimming.

As part of our focus on environmental justice populations, we also note difference in needs among ethnic groups, especially specific needs around field sports and active recreation. Given our increased focus on how recreation can encourage a healthy lifestyle, this focus on active recreation is especially important.

Finally, we noted the slightly different needs for people with disabilities. Northampton has made enormous progress in creating accessible playground structures and multi-use trails, but we continue to seek to address all passive and recreation needs.

These needs, and the entire SCORP, was considered in creating this plan. In addition, the SCORP is consulted for every city LAND and PARC grant application.

RECREATION & CONSERVATION NEEDS

With limited resources, maintenance of existing municipal facilities has become a challenge. We are exploring new partnerships with leagues and user groups to address the challenges.

1. Maintain existing facilities.
2. Continue to cooperate with Look Park and non-municipal recreation providers to meet Northampton's recreation needs.
3. Meet the special recreation needs of the elderly, environmental justice populations, and those with disabilities.

NORTHAMPTON RESOURCE PROTECTION NEEDS

To address significant threats to natural resources, plant and animal habitats, and the environmental health of the City, especially from climate change, the city needs to:

1. Protect critical habitats and link open space.
2. Protect critical and productive habitats, including wetlands, rare and endangered species habitats, wildlife corridors, and riparian corridors.
3. Protect a range of natural habitat types, including riparian (riverfront) habitat, farmland, forest, and vernal pools.
4. Protect Northampton, Easthampton and Hatfield's drinking water supply watershed and aquifer land.
5. Work with partners to ensure protection of resources that cross political boundaries by working with partners.

8 Goals & Objectives

The following are policies, objectives, and actions that were adopted by the Northampton Planning Board and endorsed by City Council and other boards as part of the City's primary planning document, Sustainable Northampton Comprehensive Plan. These goals and public sentiment generally were determined from an extensive public participation process. A survey was sent to every residential address in the city as part of the annual City Census and evaluated those results. The city held dozens of public sessions and several public forums, including one specifically targeted for environmental justice populations and used three separate outside consultants (AIA SDAT, Walt Cudnohufsky, and the Cecil Group) to ensure that the city accurately judged community values and goals.

All of these goals shown (below) have major or minor impacts on open-space and recreation. Sustainable Northampton has other goals and objectives that are not relevant and are not repeated here.

LAND USE & DEVELOPMENT

Goal LU-1: Direct changes and improvements in accordance with the Future Land Use Map

1. Before developing rural areas, and after allowing for green space within densely developed areas, encourage infill development of vacant and under utilized land in and around downtown and in existing denser developed areas. This includes places such as village centers or areas that are currently zoned and targeted for development, such as the Business Park.
2. Locate housing within walking distances along safe paths, or with bicycle access, to and from neighborhood commercial areas, parks and recreation, schools, and public transportation.

Goal LU-2: Create and preserve high quality, built environments in the downtown and village centers

1. Add parks, greenspace and appropriate agriculture on city-owned land or on larger infill development parcels where possible, to keep urban and village centers attractive.
2. Encourage and create incentives to enable well-designed and desired development to occur in downtown and other more densely developed locations

or in targeted growth zones. These incentives should also work to maintain the distinctions and historic precedents that define those areas.

3. Define and support a critical mass of retail, cultural, and office space.

Goal LU-3: Maintain a distinction between rural areas, residential neighborhoods, and urban areas

1. Housing projects that are built in rural areas should be cluster development types, leaving more open land, with designs that allow for a variety of housing options.
2. Preserve the character of rural areas through preservation of large undeveloped tracts, vistas, and farmland.
4. Implement ideas for maximizing density on small lots.
6. Create Northampton neighborhoods that provide pedestrian scales, connections to goods and services, and connections to multiple modes of travel.
7. Ensure that zoning and land use regulations encourage mixed-use, multi-family development projects that are in keeping with high quality design and a character that transitions into the surrounding neighborhood.
8. Ensure that expansion of commercial

parcels into residential areas coincides with road infrastructure improvements that enhance the value of the abutting residential uses and improve neighborhood character.

Goal LU-4: Preserve and encourage agricultural uses in designated areas, such as the Meadows

1. Maintain the primarily open and agricultural nature of the Meadows as it exists, with no new residential lots and no significant increase in residential density.
2. Continue to allow flooding of the Meadows for restoration of the soils for farming, and preserve the floodplain storage capacity of the Meadows as a means to prevent other areas and neighborhoods from flooding.
3. Support the economic viability of farming within the City, preserving scenic, ecological, and environmental benefits for the City as whole. The City should support farming through allocation of resources and infrastructure investments.

ENERGY, ENVIRONMENT & CLIMATE PROTECTION

Goal EEC-1: Reduce community's and City's energy demand and natural resource consumption

The City's objectives emphasize education and promotion of "green" policies. Actions will be taken to promote awareness on both public and private levels including increases in energy efficiency, encouragement of green development, use of energy from renewable sources, a campaign for the purchase of local goods, waste management reform, and the reconstitution of a Transportation Commission. Waste management, transportation, and locally produced products relate directly to the open space

plan as reforms in these areas will reduce impact on and enhance surrounding landscape.

Goal EEC-2: Reduce emissions of greenhouse gases (GHG)

Positive effects on open space will be realized through reforms in transportation, future land use concerning vehicular traffic, and public awareness of strategies for lessening emissions.

Goal EEC-3: Protect valuable and sensitive ecological resources (land, air, water, habitat, plants, & animals)

1. Prioritize and preserve quality wetlands by encouraging development in densely populated areas and in clusters.
2. Protect and conserve water supplies (drinking, surface, groundwater, recharge areas, aquifers) and continue to enforce groundwater protection regulations.
3. Conserve wetlands with programs to ensure no net loss of total wetlands (existing area of approximately 3,000 acres).
4. Preserve floodplains for flood storage and, where appropriate, habitat values.
5. Preserve existing forests, floodplains, wetlands, and agricultural soils of high ecological value.
6. Protect rare and endangered plants and animals and important wildlife corridors.
7. Improve the quality and appearance of the public water supply.
8. Recognize that the protection of environmental resources will improve the quality of life and the value of property in the City.
9. Minimize the loss of tree canopy throughout the City and increase tree canopy in urbanized areas to maintain a higher quality environment in all areas.

Goal EEC-4: Minimize the impacts of infrastructure systems on environmental resources

1. Implement regulations that include measures for soil erosion and sediment control.
2. Encourage and enforce low impact development designs.
3. Develop an inventory of roadways and facilities in environmentally sensitive areas and reduce the use of sand, salts or other de-icing chemicals for their maintenance.
4. Reuse brownfield sites.

Goal EEC-5: Safeguard and improve the quality of the City's surface waters to ensure use for safe public swimming, recreational fishing activities, boating, and drinking

1. Ensure landside land alterations do not adversely impact surface waters.
2. Ensure waterfront property owners comply with regulations and upgrade environmental controls.
3. Ensure safe, high quality, recreational waters are available to all residents.
4. Protect quality of backup drinking water supply located in City reservoir.

OPEN SPACE & RECREATION

Goal OS-1: Maximize use of the City's open space and recreation areas

1. Determine carrying capacity of facilities and match it with population growth and demographics.
2. Maximize use of recreational space with affordable and quality programs for youth.
3. Make capital improvements and enhance maintenance of recreation facilities.

4. Provide open space and recreation opportunities for individuals of all ages, socioeconomic levels, and physical abilities now and for future generations.

Goal OS-2: Expand open space and recreation areas

1. Acquire land for recreation, conservation and open space needs, preservation of plant and animal habitat, protection of scenic vistas, public enjoyment, and to enhance the character and sustainability of the community.
2. Preserve and expand City holdings of open space and wild lands, as well as open land in developed areas, including densely developed areas.
3. Use open space and recreation to ensure that the urban and village centers are attractive places to live, work, and visit.
4. Make more natural areas available for public use as long as watershed land access does not threaten water supplies.
5. Acquire land and build facilities to meet the needs for adult and youth athletic and recreation and school teams.

Goal OS-3: Preserve natural and cultural resources and the environment

1. Preserve the character of rural areas, farms, forests, and rivers.
2. Manage conservation properties to restore plant and animal habitats.
3. Preserve the environment and cultural and natural resources through land and easements and regulation changes.
4. Protect important ecological resources, including surface and groundwater resources, plant communities, and wildlife habitat.
5. Preserve ecological linkages and wildlife corridors, especially water-based linkages.

6. Have the City lead in protecting architectural and cultural history.

7. Consistently apply the criteria for preservation of the environment and resources across all neighborhoods and areas.

Goal OS-4: Provide open space connections between public spaces

1. Identify 'greenway' and 'blueway' connections that could provide pedestrian, bicycle, and boat access between open space areas.

2. Use the connections to also link business areas where they can support the pedestrian/biking connections.

3. Improve connections to open spaces for all individuals so they are universally accessible. Operate with sound and explicit standards, guidelines, criteria, and administrative procedures.

HERITAGE & HISTORIC RESOURCES

Goal HR-1: Protect and preserve the City's heritage resources

1. Educate and inform decision makers and the community about heritage resources.

2. Protect the heritage resources from degradation or destruction by public or private actions or inactions.

Goal H-1: Create new housing

1. Provide developers with options that allow them to build at higher densities in return for creating more affordable housing units.

2. Utilize green and sustainable design funding opportunities for affordable housing.

3. Expand the range of options for detached housing, such as cottage housing development to increase density in designated locations.

9 Seven-Year Action Plan

The City, through the boards adopting and endorsing this plan, has identified the following actions to address the goals and needs outlined in this plan. This action plan includes actions that would be desirable over the next seven years.

All actions are consistent with the City's commitment to fully comply with Title IX, Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and the Massachusetts Architectural Access Board.

PRIORITIZING OBJECTIVES

Primary Objectives

Plans and needs evolve over time. These objectives help staff and the boards establish priorities.

The primary conservation objectives are protecting natural resources, creating greenway networks and linkages of open spaces and trails, and maintaining the City's landscape and character. Conservation evaluative criteria:

- Agricultural features such as open fields, prime agricultural soils, scenic views of agricultural property, active agricultural use, historical agricultural uses, and agricultural structures.
- Location of the parcel in relationship to other protected land.
- Ability to contribute to needed civic space near village centers or recreational areas.
- Ability to serve environmental justice populations or under-served areas.
- Proximity to sensitive environmental resources, including drinking water sources, wetlands, ponds, lakes, streams, steep slopes, unique geological features, significant vegetative and wildlife habitat or wildlife corridors (especially for rare or endangered species).

The primary recreation objectives are protecting community health and character, providing

high quality recreation opportunities, especially for underserved areas and populations, and improving accessibility to recreation. Recreation evaluative criteria:

- Opportunities for new or expanded connections to existing trail networks for alternative transportation, walking, hiking, biking, cross-country skiing, and other recreational opportunities.
- Public access to water, including recreational access to the waterfront.
- Opportunity for a safe, usable, and accessible park and recreation space.
- Opportunity for affordable and accessible spectator and participatory events.

Secondary Objectives

Landowners, land trusts, developers, and other partners may approach the City with conservation or recreation opportunities that have not been identified as primary objectives. These opportunities can be incorporated into life estates, bargain sales, charitable donations, and large-scale developments. These projects may have regional significance: provide access to special or unique natural and cultural resources; have potential as multi-use corridors; provide recreational opportunities and access to amenities or destinations (e.g., parks, downtown and villages, and schools); enhance an area that encompasses a unique or representative biologic community; or have local support (e.g., project is as a priority on a strategic plan).

SEVEN-YEAR ACTION PLAN

The Action Plan builds on the 12 goals identified in the Community Vision (outlined earlier).

1 Manage Conservation Land to Preserve Natural Systems and be User-Friendly

Resources: All of these items are to be coordinated by Planning staff, funded with city ordinary maintenance and staff time, volunteer labor, Conservation fund endowment income, grants and fund-raising, and community preservation funds.

Timing: On-going over entire plan period.

Actions

1. Planning staff to implement management plans, including Fitzgerald Lake Dam, and maintain all conservation areas for habitat improvement and for visitors, including those with disabilities. Planning staff is authorized to maintain these areas consistent with the plan. Maintain trails, facilities, and improvements, walk property boundaries annually, and develop and work with volunteers and management partners. When possible, restore natural systems.

2. More agriculture on conservation land. Staff, with policy input from the Agriculture Commission, is authorized to license and lease agriculture fields in conservation areas and to expand agriculture when possible. These include (but are not limited to): five parcels within the Connecticut River Greenway/Meadows (Damon Road, Potash/Manhan, Cross Path, Montview Avenue, and Former Jail Farm), Mineral Hills (Sylvester Road), and Broad Brook Greenway (Linseed Road)

3. Aggressive invasive removal with a volunteer component when exotics and non-native invasive plants compete with local plants and degrade animal habitat. Planning staff will coordinate along volunteer and other land management partners.

4. Develop a ONE Northampton trail that encircles the city, building on existing trails, adding trails where there are gaps, with a good treadway, consistent signing. ONE Northampton

should be an easily identifiable trail and attract more people for long walks.

5. Make accessibility improvements

on conservation land, both improving existing accessible boardwalks and trails and adding new accessible trails, benches, and picnic tables.

2 Preserve the City's Most Ecologically Valuable Areas

As of 2018, 25% of Northampton, of which about 20% includes some of the most ecologically valuable land, has been preserved. Preservation efforts should continue, prioritized on ecological values and on contribution to the City's broader land use goals. Land preservation may be done by Conservation Commission ownership of land (fee-simple), or of conservation restrictions and agriculture preservation restrictions (less-than-fee). Ownership is generally prioritized because it provides management rights and appropriate public access, but less-than-fee preservation is appropriate in many cases, especially when useful to preserve working lands.

Resources to fund: LAND, Land and Water Conservation Fund, and other federal, state, and foundation grants, Community Preservation Act funds, city funds, and community fund-raising.

Timing: On-going over entire plan period.

Actions

1. Analyze fiscal impacts of open space, evaluating the marginal costs of providing services, the financial benefits and costs of open space, and the overall costs and benefits.

2. Ensure new building lots are developed to prevent open space from

3. Strengthen partnerships for improved efficacy, including Kestrel Land Trust (most areas), Mass Audubon Society (Rocky Hill and

portions of the Meadows), and Meadows City Conservation Coalition (Ward 3 Meadows and Connecticut River Greenway) for coordinated fund-raising and land preservation and with the partner holding conservation restrictions, at no cost to the city, on City conservation areas.

4 Preserve ecologically valuable land and fill gaps between protected land, including but not limited to:

Beaver Brook Greenway expansion, especially land near the brook. This includes valuable ecologically land behind the Roman Catholic cemetery.

Broad Brook-Fitzgerald Lake Greenway expansion, especially along the brook, extending the conservation area and filling gaps between conservation area units.

Mill River and Historic Mill River Greenway, along the entire length of the Mill River, including the Historic Mill River through downtown Northampton, key tributaries, and the Northampton State Hospital area adjacent to the river. This is the historical industrial and population heart of the city and one of the most valuable ecological resources in the city.

Saw Mill Hills and Mineral Hills, including Marble Brook and the Glendale Road area expand preservation along these two ranges, which extend from Williamsburg to Easthampton. Connecting all of the gaps and missing teeth, acquiring all of the ridge and the vernal pools and buffers to the vernal pools is the top priority.

Parsons Brook Greenway, including West Farms and Park Hill Road. Preserve land to provide ecological and human connection between protected land at the Saw Mill and Mineral Hills to Easthampton along Parsons Brook and the nearby farm and woodland. These seemingly disparate parcels of conservation and restricted land are connected ecologically and can be better connected along waterways (for wildlife) and high points (for human trails).

Rocky Hill Greenway including the corridor from the existing Rocky Hill Greenway at Routes 10 and 66, to the Burts Bog Greenway.

Connecticut River Greenway and Meadows Conservation Area, including the corridor along the Connecticut River and the adjacent floodplain. This includes the greenway from the Coolidge Bridge to Hatfield, the area immediately adjacent to existing protected holdings at the Conte National Fish and Wildlife Preserve and the Aracadia Wildlife Sanctuary. Preservation should include agriculture preservation restrictions of privately owned farmland.

3 Open Space to Serve People

Conservation is primarily about preserving natural systems, but providing opportunities for users, in parks, recreation areas, and even in conservation areas to the extent those opportunities do not significantly degrade natural systems, is critical.

Resources to fund: Grants, city staff time, in-kind resources, volunteer efforts.

Timing: On-going over entire plan period.

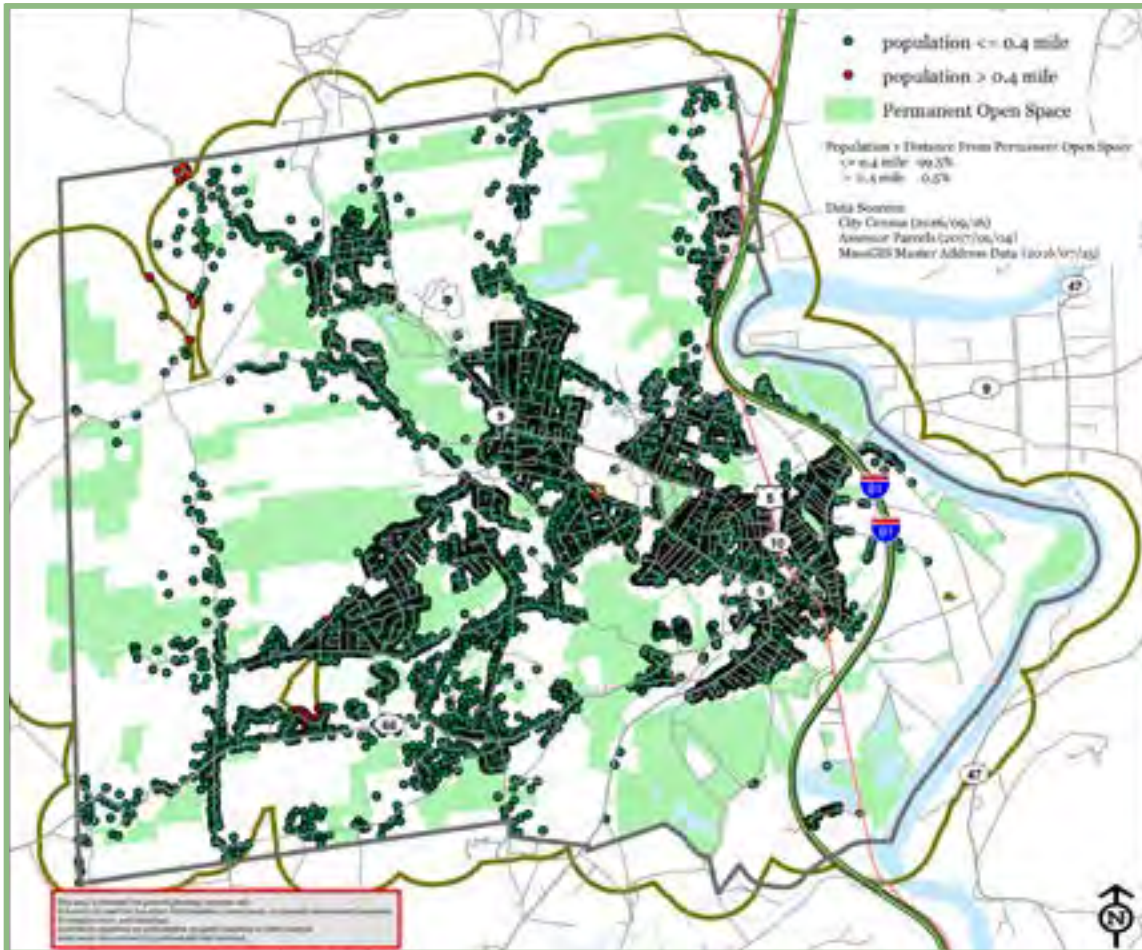
Actions

1. Ensure open space within walking distance of all urban neighborhoods. This provides access for the public, promotes nature appreciation, active and passive recreation, and improved public health. This is a critical part of the city's equity goals.

2. Focus on serving environmental justice populations. In addition to providing open space within walking distance, concentrations of low income populations without access to cars also need culturally appropriate sports and community gardens within walking distance of their need or, when bike share is available, within biking distance.

3. Develop new partnerships, whether for trail improvements or potential green burials on conservation land. These opportunities serve a wider variety of stakeholders, lower city costs,

Open Space in Walking Distance



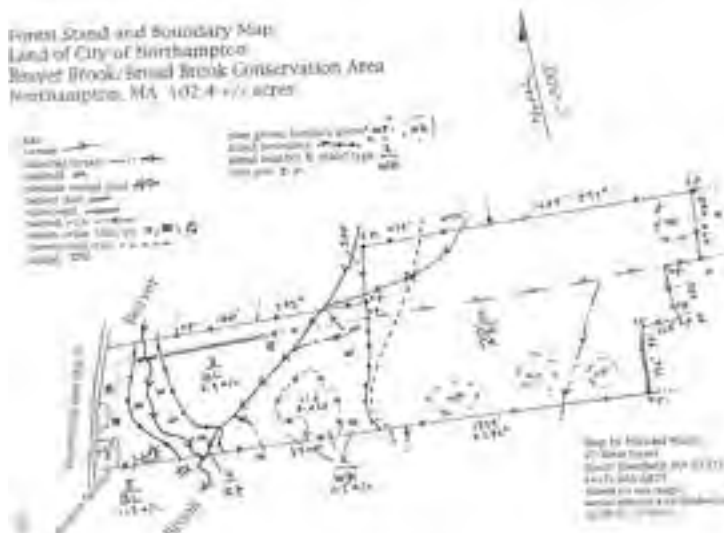
provide new opportunities, and build social connection to open space.

4. Allow snowmobile use on Burgy Bullets and Turkey Hill Road IF management partners are available. Both areas have long and uninterrupted history of snowmobile use. The Burgy Bullets do a superb stewardship job and trail should remain open as long as this stewardship continues. Turkey Hill Road suffers from more abuse. This trail on the road should only remain open if a responsible steward takes responsibility for maintaining the trail and keeping users on it.

5. Maintain the “Jeep Eater” jeep trail and extend it easterly, while managing to protect conservation values. This trail predates city ownership by decades and is generally well stewarded. The trail should remain open as long as the stewardship continues if the stewards can get keep users on the rocky trail and not into nearby wet areas. The city should acquire the portion of the trail on private land east of

the current conservation land to expand and husband the trail and protect the land.

6. The Conservation Commission should discuss the hunting framework in future public hearings. During the public conversation on this plan, the issue of expanding



hunting opportunities on conservation land was the only subject where no consensus or compromise emerged. As a result, the plan makes no recommendation about hunting and the issue remains with the Conservation Commission, which is charged with regulation the use of conservation land. Hunting is currently allowed at Rainbow Beach and bow hunting is allowed at Beaver Brook Greenway. Hunters, their families, friends, and supporters have advocated for more hunting opportunities, advocating that all residents should have the opportunity to use conservation areas in non-destructive ways. Hunting opponents have strongly opposed any new hunting, raising issues of safety, noise, and use conflicts.

When the Conservation Commission takes this up, they might want to consider the following as they work on a framework:

- Hunting is not appropriate in areas with high visitation and near dense residential areas, including for example Burts Bog, Broad Brook-Fitzgerald Lake, Mill River Greenway, Mineral Hills, Parsons Brook and Saw Mill Hills.
- The community is perception is polarized more than any other issue in this plan with disagreement on even basic facts (how noisy is hunting in terms of number of shots fired, is hunting consistent with conservation, does inclusiveness mean that hunters should have opportunities within the city, and should a majority of non-hunters be able to preclude hunting opportunities).
- Issues of enforceability, safety, noise, compatibility of uses, maintenance, and alternative uses that are inconsistent with hunting are all legitimate for discussion.
- In discussing the issues, the Conservation Commission can ignore this plan, set geographic limits on where hunting is or is not allowed, set seasonal limits (e.g.,

deer season only hunting), set species limits (e.g., hunt only non-predators), and hunting methods (e.g., limit some areas to bow hunting).

4 Preserve Farmland

Farmland should be generally be preserved in Northampton, especially the rich fertile soil in and adjacent to our floodplains. This effort is critical to our local economy, our history and values, and to provide a healthy living environment.

Resources to fund: Massachusetts APR program, LAND and Land and Water Conservation Fund and other federal, state, and foundation grants, Community Preservation Act funds, and city funds.

Timing: On-going over entire plan period.

Actions

1. **Meadows and other areas**, especially with prime agricultural soils, needs state and local agricultural preservation restrictions (APRs). Most of the farmland at greatest risk of development in Northampton has already been lost to development or is already permanently preserved. There are a few farms left that could be developed. The greater risk is farmland going fallow or being converted to other uses. The City should work with the farmers, the Massachusetts APR program, and local resources for local APRs to preserve as much farmland as possible.

2. **City farmland ownership** is appropriate as part of larger conservation areas and community gardens, but otherwise the ideal if private farmland with APRs. Farmland is best left in private ownership (farmer or farming non-governmental organization). When farmland is included in larger portions of conservation land, however, the city should still preserve this farmland and then lease it to farmers for productive use.

The city has established two large community gardens that mostly serve the city, but there is still demand for small community gardens near



environmental justice and urban neighborhoods to serve those neighborhoods without requiring access to a car to drive to an existing community garden.

3. Restore Hampshire County Jail Farm.

This newly acquired (2018) should be restored to farming outside of the wetlands and used for a community gardens or leased to farmers.

5 Support Agricultural Operations to Ensure Farmer for Farmland

Ensuring that farming is a viable occupation is as important as preserving farmland to encourage locally grown and healthy food. The state has been helpful through their farm viability program and the City has helped by adjusting rents at our farmland to meet current market conditions. The Keep Farming planning process identified some of the issues and opportunities.

Resources to fund: Community Preservation funds, community fund-raising, and state, federal and foundation grant funds.

Timing: On-going, with the Agriculture Commission.

1. Supporting farming operations, including no-till that sometimes requires herbicides.

The city adopted a right-to-farm ordinance that acknowledges farmers right to continue to farm and not be limited in generally accepted farming practices. In addition, no-till agriculture creates far less soil erosion and loss of carbon sequestration in soil than traditional plowing, that exposes more soil to the elements.

2. Improve Meadows security. From dogs to off road vehicles, farmers have suffered abuse. A grand compromise, better security, no public nighttime use, might lead to a grand compromise of opening up some of the private roads to public walking and use.

3. View tree farms as a kind of agriculture, with working landscapes one of the best ways to generate local income and protect open space.

4. Explore photo-voltaic as opportunity to supplemental farm income, if it can be done without creating any incentives for converting prime farmland to non-farm uses or extending power lines into the Meadows where none currently exist.

6 Ensure Adequate Land for Active Recreation

Land for active recreation is critical to helping create healthy lifestyles. The recent purchase of the 24 acre Florence Fields Recreation Area and the Connecticut River Greenway Riverfront Park brings the city closer to the land base necessary to meet its future recreation needs.

Resources to fund: PARC, Land and Water Conservation Fund and other federal, state, and foundation grants, Community Preservation funds, city funds, community fund-raising, limited development dividends.

Timing: As opportunities arise.

1. Fill in gaps at Sheldon Field and explore some recreation uses at Oak Street parcel. There is some land available adjacent to Sheldon Field that should be added to Sheldon Field. Some is currently owned by the City and leased to a farmer and some is currently privately held. A small amount of land would allow this area to reach the critical mass to serve multiple recreation needs. Oak Street is a surplus city school site that could be used for BMX riding and recreation, as well as none recreation uses.

2. Serve environmental justice populations, including playgrounds. There may be some local opportunities, such as the recent playground added at Lampron Park, for additional facilities in the city's most urban and environmental justice areas.

3. Move rail trail easement to fee ownership for PARC grants. Much of the city's railtrails are owned by the city by easement. This serves almost every city need but does not allow the city to access PARC grants for railtrail projects.

7 Improve Parks and Recreation Areas to Serve Active Recreation Needs

The City has slowly been rehabilitating and adding fields (the new Florence Fields and Connecticut River Greenway, parking at Sheldon Field, and redeveloping Veterans' Field and Arcanum Field. Recreation needs are still not completely met, however.

Resources to fund: PARC, Land and Water Conservation Fund and other federal, state and foundation grants, Community Preservation funds, city funds, and community fund-raising.

Timing: On-going over term of the plan.

1. Implement next phases of Florence Recreation Fields and Connecticut River Greenway Riverfront Park. Both properties have been built in the last few years and have become the heaviest used recreation areas in the city. Neither project, however, is completely done and more work is required to fully implement the vision and promise of these areas.

2. Accessibility improvements to provide more opportunities, from accessible benches to walkways to bathrooms.



3. Rehabilitate and expand recreation opportunities at Sheldon Field, Maines Field, Ellerbrook Field, Bear Hill Soccer Field, and Mulberry/Leeds Park

These recreation areas all are loved, but are ready for rehabilitation, upgrading, and expansion.

- **Sheldon Field** has relatively new basketball courts, but the field is aging and needs a major rehabilitation and expansion.
- **Maines Field** is ready for a major overhaul.
- **Ray Ellerbrook Fields** has opportunities for creation of additional fields.

4. Explore future dog park and playground needs. Both a dog park and playground represent partially unmet needs for the city.

8 Maintain Existing Parks and Recreation Areas.

1. Work with the new Friends of Northampton Parks and Recreation to fund and draw attention to recreation needs.

2. Consider winter sports needs, such as parking for cross country ski use and other opportunities.

9 Develop Multi-Use Trails for Easy Public Access.

Northampton is increasingly becoming the mecca for multi-use trail users. With the doubling of the length of rail trails in Northampton in 2009-2010 and the slow but steady growth since then, the city has become the hub for a rail trail system that will eventually extend from Northampton north to Turners Falls, east to Boston, and south to New Haven.

The trails having been serving recreation uses for many years, but with the growth in the network they are now increasingly being used for all uses, including journey to work, play, and shopping.

This decreases, even if only marginally, vehicular traffic, improves healthy lifestyles, and creates a transportation route far less expensive to tax payers than roads and highways.

The City's objective is to make 75% of the city easily accessible to trail systems. This would be done through additional trails, improved access to neighborhoods as multi-use spurs, standalone "short-cuts," and bicycle lanes for that last mile.

Resources to fund: LAND, Land and Water Conservation Fund, and other federal, state, and foundation grants, Community Preservation funds, city funds, Northampton Bikes Endowment Fund, n grants, community fund-raising, and limited development dividends.

Timing: On-going over entire plan period

1. Develop bike infrastructure to connect to multiuse trails, including ValleyBike Share, connecting bike lanes and tracks, bike repair and storage, and repaving State and Bridge Streets. None of these are multi-use trails, but they are the feeders and the infrastructure needed to build bike culture and make the trails a success.

2. Major trail expansions, Rocky Hill Greenway (the top priority), MassCentral connection to Williamsburg, Damon Road Multiuse Trail, and the Connecticut River Greenway.

The Rocky Hill Greenway is the City's top multiuse trail priority, connecting the existing multiuse trail network with the largest neighborhood in the City currently unserved by multiuse trails. In order of priority: 1) Rocky Hill Greenway through Burts Bog is critical to connect the neighborhood and provide access to the conservation area, 2) Rocky Hill Greenway from the New Haven and Northampton Canal Greenway, which is currently under design and an approved MassDOT project, and 3) the remaining gap between these projects and the already completed section of the Rocky Hill Greenway.

The next priority is **the Connecticut River Greenway trail** to Hatfield, from Damon Road or 1.3 miles from River Run Access Road to Elm Court in Hatfield would dramatically open up

multi-use trail opportunities. It would connect a new town to the growing rail trail network and provide easy access to Hatfield's safe back roads for Northampton bicyclists. It would also be a spectacular trail with great Connecticut River vistas and it would be anchored by the south by the new greenway community boathouse park and on the north by the Connecticut River Greenway parcel with frontage on the river.

3. Major new access points at Edwards Square, Burts Pit Drumlin, Hotel Bridge access, Florence Street, Hebert Access, and Riverbank Access. Although these projects do not create a lot of multiuse trail mileage, they are critical to serve residents and new areas. In all of these areas, existing trails go near unserved neighborhoods, but lack of trail access prevents those neighborhoods from benefiting from trails.

4. Other easier access points at Blackberry Lane and at other locations along the trail. Blackberry will provide relatively low cost new access to a dense neighborhood, Jackson Street, and the largest environmental justice neighborhood in the city. Other access point are

possible as neighborhoods have a chance to weigh in and as desire lines (where people walk even without a trail) develop.

10 Convert Unloved Pavement to Beloved Parks

Building on the success of the City Hall curb extension, the Roundhouse parklet, the Amber Lane parklet, and the Pleasant Street parklet, and the city's portable parklet kit, the city is considering more urban parklet opportunities.

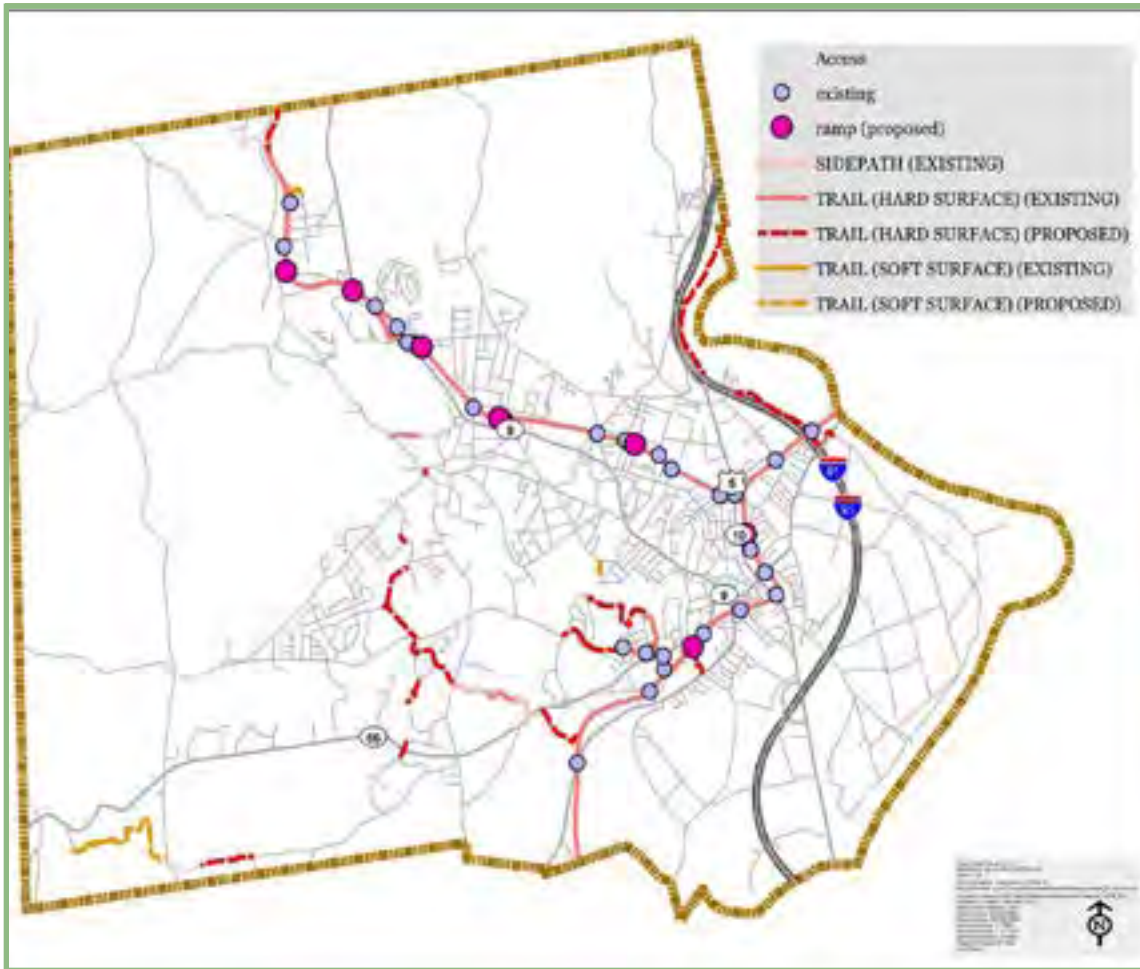
1. **Create additional downtown parklets** and pavement to parks.
2. **Create marked trails** connecting public and private parks
3. **Explore easement** to protect walking shortcuts.

11 Honor History in the Landscapes

Northampton has a rich 355 year history that is honored in written histories and building preservation. There has been less emphasis, however, on the living and outdoor landscapes,



Multi-Use Trail Expansion



especially cemeteries, historically significant landscapes, and historical farms and other working landscapes.

1. Preserve historic cemeteries, both those subject to Article 97 (Northampton State Hospital) and those not. Bridge Street Cemetery is the city's oldest European-focused cemetery and should be listed on the National Register, either by itself or as part of an expanded downtown register district.

2. Develop historic mine site, the Galena Mine in the Mineral Hills. The Galena Mine includes interesting mineral and mine shafts.

3. Add historic interpretation for Mill River and other historic sites, probably in partnership with Leeds Civic Association and the Mill River Initiative.

4. Develop heritage landscape histories to bring the history alive for users.

12 Improved Public Awareness

It is important to improve public awareness of open space, recreation, and multi-use trail opportunities. We have a responsibility to ensure that the public is aware of resources in the community.

1. Expand bicycle rack and infrastructure program to raise public awareness.

2. Improve web information resources

3. Mark all open space property boundaries.

10 Public Comments

The Open Space, Recreation, and Multi-Use Trail Plan was written in an iterative process and comments were incorporated into the plan. All comments were either incorporated, or compromises were found, or, in the case of hunting on conservation land, concerns were noted so that they are part of the public agenda moving forward.

The hunting public record is many dozens of pages. We have entered it into our Public File Cabinet website so that it can inform future public conversations.

No other written comments outside of hunting were received. Written comments from the Broad Brook Coalition and numerous emails were submitted. Written and oral hunting comments were widely varied:

- Many hunters and supporters wanted more areas to hunt and a better sense of being included in their own communities. Feeling included came up almost as often as wanting specific hunting opportunities. Shotgun hunters reported that bow hunting doesn't meet their needs. Hunters reported benefits of reduced tick populations and deer starvation from hunting.
- Those opposed to expanding where hunting is allowed focused on incompatibility of hunting and non-hunting, human and dog safety, noise within conservations and nearby neighborhoods, disrespectful hunters shooting at signs, incompatibility with conservation and ecological goals, and opposition to hunting in specific areas.

In partnership with the City, the **Friends of Northampton Trails and Greenway** conducted a survey of community desires for multi-use trail improvements. The major findings are:

- There is a desire for more trail access points, with some wanting access at every street (especially improved access at

Blackberry Lane, Florence Village, North Street, and Hebert Ave)

- There is a desire for better trail maintenance, especially repairing root problems/bumps along the trail and more aggressive cutting of vegetation along the trail.

The final state approval of this plan will be bound into the final plan on the next page.

11 References

Massachusetts Statewide Comprehensive Outdoor Recreation Plan (SCORP)

Ryan, R., D. Bacon et al. The Connecticut River Watershed Action Plan for the Massachusetts Section of the Watershed. 2002.

MassGIS statewide GIS and related attribute data.

The following are attached
by reference:



“Americans With Disabilities Act (ADA) Transition Plan, City of Northampton,”

“Rediscovering Northampton, The Natural History of City-Owned Conservation Areas,” 1993

“Sustainable Northampton Comprehensive Plan”

“Broad Brook Coalition’s Management Plan for the Fitzgerald Lake Conservation Area”

City of Northampton Code of Ordinances

A ADA Self-Evaluation Report

The City of Northampton's goal is to increase handicap accessibility at park, recreation, and conservation lands. In the short term, the goal is to increase the variety of accessible facilities and to provide disabled populations with the same range of recreational opportunities available to the general population. It is Northampton's goal to fully comply with Section 504 of the Rehabilitation Act of 1973, as amended, as well as the Americans with Disabilities Act and the Massachusetts Architectural Access Board standards.

The ADA Access Self-Evaluation document was drafted by the Office of Planning and Development with the assistance of the Mayor's Committee on Disabilities, the Recreation Commission, and the Conservation Commission. The Committee on Disabilities, an organization representing and including people with disabilities, provided input. The Committee on Disabilities is charged with studying the needs of individuals with disabilities in the community in relation to housing, employment, public assembly, transportation, education, health, recreation and other relevant matters, and is an active advocate for the integration of people with disabilities in all phases of community life.

PART I: Administrative Requirements

Designation of an ADA Coordinator:

The Director of the Northampton Council on Aging is designated by Ordinance as the Director of the Northampton Council on Aging. The ADA Coordinator also serves as the staff support to the Northampton Committee on Disabilities.

Grievance Procedures: Northampton has a single grievance procedure that provides for "prompt and equitable resolution of complaints alleging any violation of state and federal laws protecting individuals from discrimination." The complete Non-Discrimination and Grievance Procedure can be found below.

Public Notification Requirement: In accordance with ADA and 504 requirements, Northampton notifies the public of its non-discrimination policies, and all job advertisements include an EOE clause. The City's full non-discrimination policy is part of its Grievance Procedures, and can be provided in alternative formats.

PART II: Program Accessibility

Facility Inventory: A facility inventory of all areas under the control of the recreation department and Conservation Commission is provided in Table A1 below.

Transition Plan: The City completed a full ADA transition plan in 1992, updated in 1995. Although the City is working to improve handicap accessibility, additional steps are needed to make all park, recreation, and conservation facilities accessible to people with disabilities.

All of the goals for ADA improvements identified in the 2011-2018 Open Space and Recreation Plan have been implemented

The goals are established for the next seven years have been incorporated into the plan, namely add accessibility improvements in parks, recreation areas and conservation areas

ADA INVENTORY

CONSERVATION AREAS

FACILITY INVENTORY

ACTIVITY	EQUIPMENT	NOTES	LOCATION											
			Beard St. (North)	Beard Street (South)	Plymouth Lake (N. Shore N.E.)	Plymouth Lake (S. Shore S.W.)	Beaver Brook (North Brook)	CT River Greenway	See Mill (N. Shore N.E.)	See Mill (S. Shore S.W.)	See Mill (N. Shore N.E.)	See Mill (S. Shore S.W.)	See Mill (N. Shore N.E.)	See Mill (S. Shore S.W.)
Picnic Facilities	N/A		None		N/A	N/A	N/A	"	N/A			N/A	N/A	
Trails		Surface material	Paved - asphalt (20')		Paved, asphalt (20')	Mixed (20')	Mixed (20')	Paved (20')	Mixed (20')			Mixed (20')	Mixed (20')	
		Direction	2'		2'	2' min	2' min	2' min	2' min	Same as (20')		Same as (20')	2' min	
		Bank	None		N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	
Swimming Facilities	N/A		N/A		N/A	N/A	N/A	N/A			N/A	N/A		
Play Areas (not listed)	N/A		N/A		N/A	N/A	N/A	N/A			N/A	N/A		
Game Areas	N/A		N/A		N/A	N/A	N/A	N/A			N/A	N/A		
Picnic Facilities & Rest Decks	Access Benches	Located adjacent to accessible paths	N/A		N/A	N/A	N/A	"	N/A			N/A	N/A	
	Top of picnic table	Area next to table, not covered, no deck chairs or tables	N/A		N/A	N/A	N/A	"	N/A			N/A	N/A	
Programming & Services	Information available to alternative users, i.e. the visually impaired		N/A		See sign on board	N/A	N/A	N/A	N/A			N/A	N/A	
	Places to request interpretive services, i.e. sign language interpreters for speeches		N/A		None	N/A	N/A	N/A	N/A			N/A	N/A	

PARAMS:

Specification for Accessible Spots	LOCATION											
	Beard St. (North)	Beard Street (South)	Plymouth Lake (N. Shore N.E.)	Plymouth Lake (S. Shore S.W.)	Beaver Brook (North Brook)	CT River Greenway	See Mill (N. Shore N.E.)	See Mill (S. Shore S.W.)	See Mill (N. Shore N.E.)	See Mill (S. Shore S.W.)	See Mill (N. Shore N.E.)	See Mill (S. Shore S.W.)
Number of open/accessible spaces	None		"	None	None	"	1			None	None	
Access to space located directly to accessible entrance	Yes		"	No	No	"	"			Yes	No	
Where spaces cannot be located within 200 ft of accessible entrance, sign-off memo is provided within 100 ft	No		"		No	"	"					
Minimum width of 33 ft includes 5 ft space plus 3 ft access aisle	N/A		"	N/A	N/A	"	No			N/A	N/A	
Van space - minimum of 1 van space for every accessible space, 20' wide plus 2' clearance	No		None	None	None	"	None			None	None	
Sign with full symbol of accessibility at each space or pair of spaces, min. 2 ft. x 3 ft. to top	Yes		"	No	No	"	"			Yes	No	
Sign minimum 3 ft. maximum 8 ft. to top of sign	N/A		"	N/A	N/A	"	"			N/A	N/A	
Surface evenly paved or hard-packed (no gravel)	N/A		"	Yes, uneven paved	N/A	"	None with					
Surface slope less than 1:20, 2%	N/A		"		N/A	"						
Vertical clearance (overhead) at each space or pair of spaces, 7' sidewalk (curb) 6' overhead	N/A		"		N/A	Yes	"					
Ground min. width of 4 ft, including coping plate, no coping not to exceed 1-1/2" & textured or painted yellow	N/A		"		N/A	No	"					

ADA INVENTORY

CONSERVATION AREAS

RAMP

Specification	LOCATION												
	Barrett St. Church	First United Church	Highland Lake (St. Anne's Pk.)	Highland Lake (Cedar Ave.)	Green Brook/Grand Brook Community	CT River Greenway	State Hill Hills (Polio Center Pk.)	State Hill Hills (St. Anne's Pk.)	State Hill Hills (John Chubb)	Mineral Hills (St. Anne's Pk.)	Mineral Hills (Trinity Hill Pk.)	Mineral Hills (St. Anne's Pk.)	Ice Pond (North of Ct.)
Slope maximum 4:12	Y			N/A	N/A	N/A	N/A			N/A	N/A		
Minimum width 4 ft. incl. curb and base	Y			N/A	N/A	N/A	N/A			N/A	N/A		
Handrails on both sides if ramp is longer than 6 ft.	Y		No	N/A	N/A	N/A	N/A			N/A	N/A		
Handrails at 36" & 12" from ramp surface	Y		No	N/A	N/A	N/A	N/A			N/A	N/A		
Handrails extend 3 ft. beyond top & bottom	Y		No	N/A	N/A	N/A	N/A			N/A	N/A		
Minimum clear width 36" at every 6 ft. space	Y		No	N/A	N/A	N/A	N/A			N/A	N/A		
Maximum clear width between 36" & 48"	Y		No	N/A	N/A	N/A	N/A			N/A	N/A		
Clearance at 36" between handrails and rail	Y		N/A	N/A	N/A	N/A	N/A			N/A	N/A		
Non-slip surface	Y		Y	N/A	N/A	N/A	N/A			N/A	N/A		
Level plateaus 4 ft. x 4 ft. or every 20 ft. at top, bottom, direction change	Y		Y	N/A	N/A	N/A	N/A			N/A	N/A		

SITE ACCESS, PATH OF TRAVEL, ENTRANCES

Specification	LOCATION												
	Barrett St. Church	First United Church	Highland Lake (St. Anne's Pk.)	Highland Lake (Cedar Ave.)	Green Brook/Grand Brook Community	CT River Greenway	State Hill Hills (Polio Center Pk.)	State Hill Hills (St. Anne's Pk.)	State Hill Hills (John Chubb)	Mineral Hills (St. Anne's Pk.)	Mineral Hills (Trinity Hill Pk.)	Mineral Hills (St. Anne's Pk.)	Ice Pond (North of Ct.)
Site Access													
Accessible path of travel from parking area to entrance or to accessible entrance	Y		Y	Y	Y	Y	Y			Y	Y		
Dispersing area at accessible entrance	Y		Y	Y	Y	Y	Y			Y	Y		
Surface evenly paved or hard-packed	Y		Y	Y	Y	Y	Y			Y	Y		
No ponding of water	Y		Y	potential	Y	Y	Some areas			Y	Y		
Path of travel													
Path does not require use of stairs	Y		Y	Y	Y	Y	Y			Y	Y		
Path is stable, firm, & slip resistant	Y		Y	Y	Y	Y	Y			Y	Y		
3 ft. wide minimum	Y		Y	Y	Y	Y	Some areas			Some areas	Y		
Slope maximum 1:20 (5%) & maximum cross slope is 1:50 (2%)	Y		Y	Y	Y	Y	Y			Y	Y		
Continuous, compact surface, no changes in level greater than 1/4"	Y		Y	Some sudden slope changes	Some slight slope changes	Y	Y			Y	Y		
Any objects protrude 8" or into pathway must be detectable by person with visual disability, using cane	Y		N/A	Rock, log, tree, roots, etc.	N/A	Y	N/A			N/A	N/A		
Objects protruding more than 4" from wall must be within 27" of ground, or higher than 80"	Y		N/A	N/A	N/A	N/A	N/A			N/A	N/A		
Curbs on pathway must have curbside of 4" max, surface, & drop side	Y		Y	N/A	N/A	N/A	N/A			Y	Y		
Entrances (not applicable)													

ADA INVENTORY

RECREATION AREAS

FACILITY INVENTORY

ACTIVITY	EQUIPMENT	NOTES	LOCATION													
			Agnes Peak Park	Armenian Park	Chubb City Park	Camelot Community Center	JFC Middle School	Leadbriar	Main St. Park	Mohawk Park	Monmouth, Jr. Beach	Northampton High School	Pembroke Park	Sheldon Park	Veterans Memorial Field	
Public facilities	Access	All public (parks, beaches, gyms, senior centers, public libraries, etc.) are adjacent to accessible paths & open spaces	✓	✓	✓	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	
	Tables & Benches		✓	✓	✓	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	
	Water		N/A	N/A	N/A	N/A	N/A	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	
	Public restrooms		N/A	✓	N/A	N/A	N/A	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	
Tennis	Surface material		N/A	✓	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	✓	✓	
	Dimensions		N/A	✓	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	✓	✓	
	Net		N/A	N/A	N/A	N/A	N/A	N/A	✓	✓	✓	N/A	✓	N/A	✓	
	Storage for rackets (separate)		No	No	No	No	N/A	No	✓	✓	No	✓	No	No	No	
Swimming facilities	Pool & Beaches	Location from accessible path to pool/beach water	N/A	N/A	N/A	N/A	✓	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A	
		Location from accessible path to entry features	N/A	N/A	N/A	N/A	✓	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A	
		Handrails	N/A	N/A	N/A	N/A	✓	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A	
		Shade provided	N/A	N/A	N/A	N/A	✓	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A	
		Other		N/A	N/A	N/A	N/A	✓	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A
Play Areas (not ball)	All Play Equipment	Some equipment prohibited to all	No	No	N/A	N/A	N/A	✓	✓	No	N/A	No	No	✓	No	
	Access Features	Located adjacent to accessible paths	✓	✓	N/A	N/A	N/A	✓	✓	✓	N/A	✓	✓	✓	✓	
	Drop-off space (separate equipment for wheelchair)		✓	✓	N/A	N/A	N/A	✓	✓	✓	N/A	✓	✓	✓	✓	
Dance Areas	Access Features	Located adjacent to accessible paths	No	✓	N/A	N/A	✓	✓	✓	✓	N/A	✓	N/A	✓	✓	
	Equipment	Some onto onto courts	No	✓	N/A	N/A	✓	✓	✓	✓	N/A	No	N/A	✓	✓	
		Height & dimensions	N/A	✓	N/A	N/A	✓	✓	✓	✓	N/A	N/A	N/A	✓	✓	
		Spectator seating	✓	✓	N/A	N/A	✓	✓	✓	✓	N/A	N/A	✓	N/A	✓	✓
Fishing facilities & Boat Docks	Access Features	Located adjacent to accessible paths	N/A	N/A	N/A	N/A	N/A	N/A	✓	✓	N/A	N/A	N/A	N/A	N/A	
		Handrails	N/A	N/A	N/A	N/A	N/A	N/A	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A
	Equipment	Arrests, boat docks, & fish cleaning facilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓	✓	N/A	N/A	N/A	N/A	N/A
		Handrails	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓	✓	N/A	N/A	N/A	N/A	N/A
Programming & Services	Are special programs at your facilities available?		N/A	N/A	N/A	N/A	✓	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	
	Are trailers available in alternative locations?		N/A	N/A	N/A	N/A	✓	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	
	Process to request items before event?		N/A	N/A	N/A	N/A	✓	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	

PARKING

Specifications for Accessible Spaces	LOCATION												
	Agnes Peak Park	Armenian Park	Chubb City Park	Camelot Community Center	JFC Middle School	Leadbriar	Main St. Park	Mohawk Park	Monmouth, Jr. Beach	Northampton High School	Pembroke Park	Sheldon Park	Veterans Memorial Field
Number of spaces/accessible spaces	None	✓	✓	None	✓	✓	None	✓	✓	None	✓	✓	None
Accessible spaces located closest to accessible entrance	N/A	✓	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	N/A
Where spaces cannot be located within 200 ft. of accessible entrance, drop-off area is provided within 100 ft.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Minimum width of 20 ft. includes 5 ft. space plus 3 ft. accessible aisle	N/A	✓	✓	N/A	✓	✓	N/A	✓	✓	N/A	✓	✓	N/A
Van spaces – minimum of 1 van space for accessible spaces, 5 ft. aisle plus 3 ft. aisle	None	✓	None	None	✓	✓	None	✓	✓	None	✓	✓	None
Sign with international symbol of accessibility at each space or pair of spaces, read as min. 3 ft, max 9 ft. to top	No	✓	✓	No	✓	✓	No	✓	✓	No	✓	✓	No
Surface evenly paved or hard-packed (no cracks)	✓	✓	No	No	✓	✓	✓	✓	✓	✓	✓	✓	No
Surface slope less than 1:20, 3%	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	N/A
Clearcut to pathway from parking lot at each space or pair of spaces, if clearance (curb) is present	No	✓	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	N/A
Clearcut remove debris at lot, each using orange cones, two orange cones, orange and reflective 11x14, & located on painted yellow	No	✓	✓	N/A	✓	✓	No	✓	✓	N/A	✓	✓	N/A

ADA INVENTORY

RECREATION AREAS

BUMPS

Specification	LOCATION													
	Age of Park Field	Arroyo Field	Chick City Park	Community Gardens	J.P. Middle School	Creekbank	Mike Street Park	North St. Park	North St. Blvd	Mike Martin Jr. Branch	Northampton High School	Parkland Park	Quail Creek	Veterans Memorial Field
Slope maximum is 1:12	N/A	N/A	N/A	N/A	N/A			N/A					N/A	N/A
Minimum width 4 ft between boundaries	N/A	N/A	N/A	N/A	N/A			N/A					N/A	N/A
Maximum on curb slope (if ramp) is steeper than 1:4	N/A	N/A	N/A	N/A	N/A			N/A					N/A	N/A
Maximum on 4" x 8" cross ramp corners	N/A	N/A	N/A	N/A	N/A			N/A					N/A	N/A
Handrails extend 12" beyond top & bottom	N/A	N/A	N/A	N/A	N/A			N/A					N/A	N/A
Handrails extend 12" beyond top & bottom	N/A	N/A	N/A	N/A	N/A			N/A					N/A	N/A
Handrail diameter between 1 1/2" & 2"	N/A	N/A	N/A	N/A	N/A			N/A					N/A	N/A
Clearance of 1 1/2" (between seat and arm rest)	N/A	N/A	N/A	N/A	N/A			N/A					N/A	N/A
Non-slip surface	N/A	N/A	N/A	N/A	N/A			N/A					N/A	N/A
Level platform 4" x 3' x 4' at every 30 ft, at top, at bottom, at direction change	N/A	N/A	N/A	N/A	N/A			N/A					N/A	N/A

SITE ACCESS, PATH OF TRAVEL, ENTRANCES

Specification	LOCATION													
	Age of Park Field	Arroyo Field	Chick City Park	Community Gardens	J.P. Middle School	Creekbank	Mike Street Park	North St. Park	North St. Blvd	Mike Martin Jr. Branch	Northampton High School	Parkland Park	Quail Creek	Veterans Memorial Field
Site Access														
Accessible path of travel from passenger clearloading area to parking area to accessible entrance														
Use ramping area at accessible entrance	No													
Surface: smooth, paved or non-paved														
No ponding of water				Correct										
Path of Travel														
Path does not require use of stairs														
Path is visible, firm, and slip resistant														
2 ft wide minimum														
Slope max. 1:48 (3%) & max. cross pitch is 1:24 (4%)														
Continuous common surface, no changes in level greater than 1/4"														
Any objects protruding into pathway or not be detected by person of short visibility, using cane														
Objects protruding more than 4" from wall must be within 37" of ground, or higher than 80"														
Curb on pathway maximum 1/4" high at curb, parking, & at top of ramp														
ENTRANCES														
Primary public entrances accessible to person using wheelchair, must be signposted to independent by ADA sign visible entrance	Not signposted							N/A					Not signposted	Not signposted
Level space extending 5 ft from door, inward to outside of entrance doors	N/A	N/A	N/A	N/A				N/A					N/A	N/A
Minimum 32" clear width opening (i.e. 36" door width + 2" clearance)	N/A	N/A	N/A	N/A				N/A					N/A	N/A
At least 12" clear floor area on latch, pull side of door	N/A	N/A	N/A	N/A				N/A					N/A	N/A
Door handle no higher than 48" and operable with closed fist	N/A	N/A	N/A	N/A				N/A					N/A	N/A
Vertical clearance 4 ft plus width of door swing into space	N/A	N/A	N/A	N/A				N/A					N/A	N/A
Maximum 50 lbs max force required to operate door	N/A	N/A	N/A	N/A				N/A					N/A	N/A
Door must not swing 70" clear area required	N/A	N/A	N/A	N/A				N/A					N/A	N/A
Grabs in path of travel have openings of 1/4" maximum	N/A	N/A	N/A	N/A				N/A					N/A	N/A
Signs of non-accessible entrance indicate entrance to accessible entrance	N/A	N/A	N/A	N/A				N/A					N/A	N/A
Emergency egress - doors with flashing lights & audible signs, sufficiently lit	N/A	N/A	N/A	N/A				N/A					N/A	N/A

ADA INVENTORY

RECREATION AREAS

STAIRS AND DOORS

Specification	LOCATION												
	Agnes Fox Field	Arcanum Field	Childs City Park	GardensCommunity	JFK Middle School	Look Park	Main St. Park	Maine's Field	Musante, Jr. Beach	Northampton High School	Pulaski Park	Sheldon Field	Veterans Memorial Field
Stairs													
No open risers	N/A	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	✓	N/A
Nosings not projecting	N/A	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	✓	N/A
Treads no less than 11" wide	N/A	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	✓	N/A
Handrails on both sides	N/A	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	✓	N/A
Handrails 34"-38" above tread	N/A	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	✓	N/A
Handrail extends min. of 1 ft beyond top & bottom riser (if no safety hazard & space permits)	N/A	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	✓	N/A
Handgrip oval or round, has a smooth surface, & has diameter between 1 1/4" & 1 1/2"	N/A	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	✓	N/A
1 1/2" clearance between wall & handrail	N/A	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	✓	N/A
Doors													
Minimum 32" clear opening	✓	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	N/A	N/A
At least 18" clear floor space on pull side of door	✓	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	N/A	N/A
Closing speed minimum 3 seconds to within 3" of latch	N/A	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	N/A	N/A
Maximum pressure 5 lbs. interior doors	N/A	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	N/A	N/A
Threshold maximum 1/2" high, beveled on both sides	N/A	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	N/A	N/A
Hardware operable with closed fist (no conventional door knobs or thumb latch devices)	✓	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	N/A	N/A
Hardware minimum 36", maximum 48" above floor	✓	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	N/A	N/A
Clear, level floor space extends out 5 ft from both sides of door	✓	N/A	N/A	N/A	✓	N/A		N/A	✓	✓	N/A	N/A	N/A
Door adjacent to revolving door is accessible & unlocked	N/A	N/A	N/A	N/A	✓	N/A		N/A	N/A	✓	N/A	N/A	N/A
Doors opening into hazardous area have hardware that is knurled or roughened	N/A	N/A	N/A	N/A	✓	N/A		N/A	N/A	✓	N/A	N/A	N/A
5 ft turning space measured 12" from floor	✓	N/A	N/A	N/A	✓	N/A		N/A	N/A	✓	N/A	N/A	N/A

RESTROOMS — also see DOORS AND VESTIBULES

Specification	LOCATION												
	Agnes Fox Field	Arcanum Field	Childs City Park	GardensCommunity	JFK Middle School	Look Park	Main St. Park	Maine's Field	Musante, Jr. Beach	Northampton High School	Pulaski Park	Sheldon Field	Veterans Memorial Field
At least one side:													
Clear floor space of 30" by 48" to allow forward approach	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Mounted without pedestal or legs, height 34" to top of rim	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Edicals of local 32" from wall	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Open knee space minimum 18" deep, 40" wide, at 37" high	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Control operable with closed fist	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Recess operable with closed fist (lever or spring activated handle)	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Additional user needs:													
Accessible to person using wheelchair of 60" wide by 72" deep	N/A	N/A	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Stall door is 36" wide, swings out, is not latched up, is 80" or 90" high	N/A	N/A	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Stall on stall door is operable with closed fist & is 33" above floor	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Clear height is 34" high	N/A	N/A	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Toilet													
18" from center to nearest side wall	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
42" minimum clear space from center to furthest wall or fixture	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Top of seat is 17"-19" above floor	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Seat Pan													
On back & side wall closest to toilet	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
1 1/2" diameter	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
1 1/2" clearance to seat	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Installed 20" above & parallel to floor	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Acid etched or roughened surface	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
42" high	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Fixtures													
Toilet paper dispenser is 48" above floor	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Clear mirror and rearview 32" in width, (if fixed, 42")	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A
Dispenser (toilet, soap, etc.) at least one of each, within 42" above floor	N/A	✓	N/A	N/A	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A

**NOTE: ADA Compliance Plan/Transition Plan is under revision.
It will be updated by the end of FY2018.**

**ADA COMPLIANCE PLAN
CITY OF NORTHAMPTON**

January 1995

TABLE OF CONTENTS

BACKGROUND 1

SECTION 1: Public Buildings\Programs 2

SECTION 2: Open Space and Recreational Areas 4

SECTION 3: Pedestrian Circulation and Signage 6

SECTION 4: Employment Policies 8

SECTION 5: Grievance Procedure 9

NEXT STEPS 10

APPENDIX A: Allocations of CDBG Funds

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BACKGROUND

The City of Northampton adopted an ADA Transition Plan in August 1992.

That Transition Plan was based on a city-wide assessment which identified barriers to accessibility (physical, employment and program delivery). The Plan outlined recommendations for change/improvements and set forth a two year implementation strategy.

This report describes the progress made and projects undertaken by the City in the following areas:

- Section 1 Public Buildings/Program Access
- Section 2 Open Space and Recreational Areas
- Section 3 Pedestrian Circulation and Signage
- Section 4 Employment Policies
- Section 5 Grievance Procedure

The final section of this report discusses "Next Steps" as the City continues to insure equal access to its buildings, facilities, employment and programs.

Appendix A details the expenditure of HUD/CDBG funds (a total allocation of \$411,834.77) to achieve ADA compliance objectives

SECTION 1

PUBLIC BUILDINGS\PROGRAM ACCESS

A Public Buildings

An assessment of all Municipal Buildings was made in 1992. The buildings were classified into the following categories.

Largely Accessible	Municipal Annex Memorial Hall Bridge Street School Leeds School Ryan Road School Forbes Library
Partially Accessible	Dept. of Public Works Smith Vocational School High School John F. Kennedy Middle School Police Station Florence Fire Station
Partially Inaccessible	Vernon Street School Academy of Music
Largely Inaccessible	Main Fire Station Florence Grammar School Water Treatment Plant Lilly Library City Hall

A Municipal Access Committee (M.A.C.) reviewed the Assessment and assigned a priority ranking (1 to 3) to the needed projects based on the public's need for access. For example, City Hall which was largely inaccessible was deemed of the highest priority based on the nature of the offices located therein and the need for full public access to those offices.

The M.A.C. consists of representatives of the following departments:

- Property Committee
- Building Inspection
- Office of Planning & Development
- School Department
- Smith Vocational School
- Personnel Department
- Council on Aging/ADA Co-ordinator

After assigning priorities and identifying projects, members of the M.A.C. met with the City Property Committee to seek authorization to proceed. Further, funding for improvements was allocated through the City's U.S. Department of Housing and Urban Development Community Development Block Grant Program under the direction of Mayor Mary L. Ford (see Appendix A for an overview of funding)

Table 1 illustrates the scope of projects as first identified in July 1992. Table 2 provides a report as of January 1995 showing the status of those projects with some additional work identified for future attention.

Improvements to two buildings are of particular note. City Hall, which houses the Mayor's Office and numerous city departments to which the public needs access, was "Largely Inaccessible" in 1992. In 1995, it had been moved to the "Accessible" category. To make this central municipal building accessible, an elevator was installed, rest rooms were upgraded and a pathway system redefined the main entranceway to the building. The Florence Community Center, listed as "Largely Inaccessible" in 1992, is now "Partially Accessible" and future improvements are planned within the interior to make it fully accessible.

Through these projects, access to municipal buildings has been improved for the physically limited residents of the City. The elevators in municipal buildings have information in braille to assist the visually impaired.

B. Program Access

In order to insure access to programs, services and public meetings for the hearing impaired, the City provides the following:

- sign language interpreters upon request
- TDD/TTY devices at the Police Department, City Hall and the School Administration
- the Council on Aging has an assistive listening device as does the City Council Chambers

ACCESSIBILITY SURVEY OF MUNICIPAL BUILDINGS		TABLE 1 prepared 7/92	
	NEEDED IMPROVEMENTS	ACTION	PRIORITY
LARGELY ACCESSIBLE			
Municipal Annex	Front Doors and Signage Entranceway Regrading		1
Memorial Hall	Side Entranceway, Doors Regrading of Driveway Repair of Threshold		1
James House	None		
Bridge St. School	Signage/Buzzer at entrance		
Leads School	Signage re: parking		
Jackson St. School	None	ramp for convenience requested	
Forbes Library	Parking	Define spaces; improve entry	
Ryan Rd. School	Parking	Relocate spaces	
PARTIALLY ACCESSIBLE			
D.P.W.	Entry Access: ramp	ramp vestibule and doors	1 1
Smith Vee.	A Bldg. accessib. C Bldg. D Bldg.	sidewalk/curb cuts/speed bump two ramps needed three ramps renovate bathrooms	1 1
	E Bldg.	ramp (rear entrance)	1
High School	Front entry A.V. room	redesign; signage	1/2
JFK	Access to stage	renovations underway	3
Police Station	Entry Access Parking Designation	improve ramp Add parking & signage	1
Florence Fire Station	Entry Access	Ramp in Rear	1
PARTIALLY INACCESSIBLE			
Vernon St. School	Landing at top of hill Interior Access	Property Committee requesting info. from HCAC re. compliance	
Academy of Music	Seating and Parking Rest Rooms	Referred to the Bd. of Directors	
LARGELY INACCESSIBLE			
Fire Station	Entry Access	None feasible	3
Florence Community Center	Phase 1 Phase 2	Entry Access Preliminary Interior Rest Rooms Interior Access	1/2
Water Treatment Plant	Entry Access Restroom	none recommended: not a public access facility	3
Lily Library	access to 2nd floor Lower level access	none recommended grading and rear entry upgrading	3
City Hall	Entry Access Restrooms Interior Access/elevator		1

ACCESSIBILITY SURVEY OF MUNICIPAL BUILDINGS		TABLE 2		
		January 1995		
	NEEDED IMPROVEMENTS	ACTION	PRIORITY	STATUS
LARGELY ACCESSIBLE				
City Hall	Entry Access Restrooms Interior Access: elevator		1	completed .
Municipal Annex	Front Doors and Signage Entranceway/Regrading		1	completed .
Memorial Hall	Side Entranceway/Doors Regrading of Driveway Repair of Threshold	scheduled for Spring 1995	1	completed +
James House	None			
Bridge St. School	Signage/Buzzer at entrance			
Leeds School	Signage re. parking			
Jackson Bl. School	None	ramp for convenience requested		
Forbes Library	Parking	Define spaces; improve entry		
Ryan Rd. School	Parking	Relocate spaces		
PARTIALLY ACCESSIBLE				
D.P.W.	Entry Access: ramp	ramp vestibule and doors	1 1	completed
Smith Vcc.	A Bldg: access C Bldg. D Bldg. E Bldg.	sidewalk/curb cut/speed bump two ramps needed three ramps renovate bathrooms ramp rear entrance	1 1 1	completed completed underway completed
High School	Front entry A.V. room	redesign, signage	1/2	on hold
JFK	Access to stage	rehabilitate sidewalk	3	underway
Police Station	Entry Access Parking Designation	improve ramp Add parking & signage	1	on hold
Florence Fire Station	Entry Access	Ramp in Rear	1	
Florence Community Ctr.	Phase 1 Phase 2	Entry Access Preliminary Interior. Mt Rest Rooms Interior access	1/2 1/2	completed in progress to be determined
PARTIALLY INACCESSIBLE				
Vernon St. School	Landing at top of ramp Interior Access	Property Committee requesting info. from HCAC re. compliance		
Academy of Music	Seating and Parking Rest Rooms	Referred to the Bd. of Directors		
LARGELY INACCESSIBLE				
Fire Station	Entry Access	None feasible	3	
Water Treatment Plant	Entry Access Restroom	none recommended. not a public access facility	3	
Jilly Library	access to 2nd floor Lower level access	none recommended grading and rear entry upgrading	3	underway

SECTION 2 OPEN SPACE AND RECREATION AREAS

The Assessment done for the ADA Compliance Plan included a review of all City owned Conservation and Recreation Areas. Table 3 on the following page shows the summary of recommended actions and priorities as established in August, 1992.

That Assessment was drawn from the 1990 Section 504 Accessibility Self-Evaluation. Since that time, City Boards and staff have developed a new Five Year Open Space and Recreation Plan which established new priorities and new projects. That Plan was adopted in January, 1994.

A. Conservation Areas

Most of the Conservation Areas remain largely inaccessible due to the nature of the properties themselves.

The Barrett Street Marsh provides access to an area of great natural interest. While the City-owned portion of the Elwell Island area remains inaccessible, the State facilities are accessible. Access to the Fitzgerald Lake area has been accomplished; the parking area has been resurfaced and a spot for parking identified. An accessible path provides access for approximately 150' and an extension is under construction which will provide access to fishing.

At this time, the path suggested for the Roberts Hill area is not recommended due to the nature of the terrain.

B. Recreation Areas

Some progress has been made in the City's Recreation Areas. Since the construction of improvements to the major areas is dependent on securing grant funds, the planned projects for Sheldon Field and Arcanum Field have not yet commenced. However, design studies have been accomplished and plans have been submitted. It is hoped that Arcanum Field improvements will be funded in the FY 96 summer season and Sheldon Field improvements the following year.

The Agnes Fox Playground provided an opportunity for a neighborhood group to participate in the design and implementation of improvements. Working with the Recreation Commission, the neighborhood group planned for accessible paths and play equipment. They decided against a fountain; funds were not available for construction of a rest room. The project was completed in 1994. The designation of a HP space on State Street has been proposed.

During the FY 95 year, improvements will be made to Veteran's Field. Paths and play equipment will be installed and parking better defined. Other fields will be addressed as funding allows.

Table . Overview of accessibility needs, actions, and priorities for Northampton conservation areas

ACCESSIBILITY	FACILITY	NEEDS	ACTION	PRIORITY
Largely Accessible	Barnett St Marsh	Parking	none needed	-
		Paths	boardwalk completed	
Largely Inaccessible	Elwell	none	use state facilities	2
	Aquifer Protection	Trail	none recommended	3
	Merron Area	none	none recommended	3
	Mill River	none	none recommended	3
	Pines Edge	none	none recommended	3
	Rainbow Beach	none	none recommended	3
	Roberts Hill	Parking	dedicate space	4
		Paths	provide accessible path for 1st stretch	
	Fitzgerald Lake	Parking	resurface	2
		Paths	dedicate space provide accessible path for 1st stretch	

Table . Overview of accessibility needs, actions, and priorities for Northampton recreation areas

FACILITY	NEEDS	ACTION	PRIORITY
Roberts Reservoir	none		
Bake Path	Parking	dedicate spaces	1
	Access	State St ramp Boford spring	
	Use	Pull off rest spots	
Agnes Fox	Parking/drop off	dedicate spaces	3
		install curbs	
	Path system	install paths	
	Fountain	install fountain	
	Restrooms	renovate	
	Play equipment	replace some	
Arcadium Field	Parking/drop off	Increase lot	1
		dedicate spaces	
		pave parking	
	Path system	install paths	
	Fountain	install fountain	
	Play equipment	replace some/add to	
Keamsy Field	Restrooms	renovate	
	Parking/drop off	provide spaces	1
		pave parking	
	Path system	install paths	
	Fountain	install fountain	
Maines Field	Play equipment	renovate	
	Restrooms	renovate	
	Parking/drop off	Provide closer spaces	1
	Path system	install paths	
	Fountain	install fountain	
	Restrooms	renovate	
Veteran's Field	Decaying wall	replace	
	Play equipment	replace	
	Play equipment	replace	2
	Parking/drop off	pave parking	
		dedicate spaces	
Sheldon Field	Paths	install paths	
	Fountain	install fountain	
	Restrooms	renovate	
	Parking	enlarge paved area dedicate spaces	1
	Play equipment	replace some/relocate	
	Paths	install paths	
	Fountain	install fountain	
	Restrooms	replace	

TABLE 3 1992

The Northampton Bike Path continues to be used by many Northampton residents. The City's M.A.C. Committee recognizes the desirability of locating HP spaces and/or drop off areas at various access points to the bike path. An extension of the Northampton Bike Path from Damon Road to King Street is to be constructed within the next year. This Bike Path provides a recreational opportunity for people of all ages and of all physical conditions as it is a smooth, flat surface which extends throughout the heart of the City.

SECTION 3 PEDESTRIAN CIRCULATION AND SIGNAGE

The Assessment done for the ADA Compliance Plan in August 1992 included a review of sidewalks in areas of high pedestrian traffic. Additionally, as a part of the assessment of municipal buildings, note was made of the presence or lack of handicap parking spaces.

Within this general category, four components have been addressed:

- A. Curb Cuts\Handicap Ramps
- B. HP Spaces
- C. Signage
- D. Other

A. Curb Cuts\Handicap Ramps

It has been the policy of the City, through its Department of Public Works, that, when new roadway or sidewalk construction is undertaken, appropriate handicap ramps will be included in the projects' specifications and new handicap ramps installed. In 1994, as a result of requests from residents, six areas in Florence were identified and handicap ramps constructed to further enhance accessibility in the downtown Florence vicinity.

Currently, as a part of a Downtown Access Plan, eight (8) curb cuts\ramps in need or repair and four (4) locations where new ones should be installed have been identified. Funds from the HUD\CDBG program have been reserved and the DPW will be asked to incorporate these improvements in the coming construction season. (See Table 4)

Other areas, especially along the major pedestrian routes leading to the downtown, have been earmarked for future attention. Especial attention will be directed to Bridge Street, South Street and Pleasant Street.

B. HP Spaces

As a part of the Assessment done in 1992, note was made of the location of handicap parking spaces at or near all municipal buildings. Recommendations for creation of new spaces, relocation of others and installation of signage were made and implemented.

Table 4

CURB CUTS \ HANDICAP RAMPS

A number of existing curb cuts need attention to bring them up to the standard:

<u>Location</u>	<u>Problem\Solution</u>
1. Corner of Green and West Streets	Curb too high Add paving for ramp
2. SW Corner of Main and Pleasant Streets	Ramp needs patching
3. NE Corner Main and King Streets	Ramp needs patching
4. NW Corner Main and Gothic Streets	Ramp needs patching
5. SW Corner King and Trumbull	Patch to eliminate lip
6. NE Corner Main and Masonic	Patching needed
7. North Curb - intersection of Randolph Place and Pleasant Street	Lip high, needs patching
8. Hampton Ave., Entrance to Armory St. Lot (next to WHMP)	Curb cut needs patching

There are several areas where curb cuts need to be installed:

<u>Location</u>	<u>Problem\Solution</u>
1. Conz Street - Front of Salvo House	4 curb cuts needed
2. Conz Street and Smith St. Intersection	Curb cut needed, north side
3. Main Street (front of Fitzwilly's)	High curb. Cut needed
4. New South St. crosswalk in front of Old School Commons	Needs curb cuts installed on east and west ends of crosswalk

Further, as Table 4 demonstrates, an Inventory of HP spaces in Municipal Lots and on City Streets was made in 1994. A Community Access in Northampton (C.A.N.) Committee proposed the creation of three (3) new HP spaces on City Streets: namely, on New South Street, State Street and Pleasant Street. It further recommended the move of one space on Green Street to a more accessible corner location and the creation of three (3) additional spaces in three of the municipal lots (one of which will accommodate a van).

These recommendations will be implemented in Spring 1995.

C. Signage

The Assessment of Municipal Facilities identified the need for improved signage to direct people to accessible building entrances and parking spaces.

A total of twenty-nine (29) new sign posts, twenty-six (26) new HP signs and thirty-four (34) directional signs (with arrows pointing left or right) on or near municipal buildings (Schools, libraries, City Hall, the Municipal Annex, Memorial Hall) were installed.

A follow-up survey completed in the Fall of 1994 demonstrated the need for additional signage.

D. Other

The C.A.N. Committee, in reviewing a Downtown Access Plan, identified two corners in the center of the downtown to be assessed:

1. Main Street and Strong Avenue: Examine feasibility of constructing a ramp at the site of a stone staircase
2. Center and Main Streets: Examine alternatives to steps in front of several buildings

Discussion has arisen in various meetings concerning the need for an activated audio signal at major intersections (principally at Main and Pleasant/North King Street). The D.P.W. has been asked to address this matter.

SECTION 4 EMPLOYMENT

The City of Northampton is finalizing its own policy regarding Title I: Employment of the ADA. Until the time that the policy is adopted, the City of Northampton continues to comply with the mandates of the legislation as contained and enumerated in the Federal Register of Friday, July 26, 1991, and to work vigorously toward identifying any potential job related barriers to employment and to making reasonable accommodations whenever necessary or appropriate. On December 24, 1991, the Personnel Director issued a Personnel Policy Statement in a memo to the then-Mayor, describing his department's commitment to implementation of ADA mandates. (see attachment)

The City of Northampton is in the final stage of adopting a comprehensive reclassification of all city positions (with an attendant wage plan). Each employee has a new job description designed specifically to adhere to and include essential ADA related requirements. The new descriptions provide clear definitions and outline skills required to accomplish the job(s). Recruiting and hiring of new employees pursuant to the ADA vis-a-vis new job descriptions, is already a well-established administrative practice.

Addressing the concerns of employees who desire to return to work after sustaining a disability is facilitated by the review of their essential duties and what the City is required to do as an employer in order to provide reasonable accommodations until their disability is relieved.

The overall reclassification plan, with its focus on job descriptions that are ADA compliant, is considered to be state of the art and unequivocally will ensure that all qualified individuals with disabilities will be provided fair and nondiscriminatory treatment covering all aspects of public employment.

The City of Northampton has and will continue to strive to ensure that the basic requirements of the ADA are implemented and that all employees and potential employees are precluded from discrimination on the basis of a disability.

SECTION 5 GRIEVANCE PROCEDURES

The City has identified Procedures for addressing any grievances as they fall into two general categories: 1. Employment and 2. Access to programs and facilities.

1. Employment

For any individual who feels that they have not been afforded appropriate treatment when applying for a position with the City, the Personnel Director will review the procedures with the applicant. If the applicant feels that discrimination has occurred, then s/he will be referred to the MA Commission Against Discrimination for review of the issues.

For any individual employed by the City whose duties are being transferred, should the employee feel the need to file a grievance, the employee will be referred to:

- a. his/her union representative and/or
- b. civil service regulations and procedures

2. Access to Programs and Facilities

For any individual who feels that s/he has been denied access to the physical facilities or the programs of the City because of a disability, a grievance can be brought to the ADA Co-Ordinator. The Co-Ordinator will convene a Review Panel (made up of a pool of individuals drawn from various departments and agencies within and beyond municipal government). The Review Panel will consist of the ADA Coordinator and two other individuals who will meet within 21 days of receipt of the complaint and will hold a hearing (with notice of said hearing made at least one week prior to its date) at which time the complainant will present his/her case. The Review Panel will be required to make a recommendation in one week's time and notify, in writing, the complainant of that recommendation.

This Grievance Procedure will be established as an Executive Order of the Mayor and will be in effect from the date of its issuance.

NEXT STEPS

The City will continue to address the projects identified above through the combined efforts of the various departments (Public Works, Building, Recreation, Planning, e.g.) involved. The City will continue to utilize HUD/CDBG funds, where appropriate, and to seek additional funding to construct the physical improvements indicated.

The City will continue to implement and enforce its Employment Policies and Grievance Procedures.

The City has an ADA Co-Ordinator, Irene Lamson, who is charged with overseeing all ADA Compliance activities. The City also has a Committee on Disabilities which serves to review requests for variances from the Architectural Access Board and to initiate projects and programs.

Further, The City of Northampton will continue to provide leadership throughout the community by setting an example, providing information on ADA requirements and encouraging all business people and property owners to ensure accessibility for all who need their services and facilities.



CITY OF NORTHAMPTON

Mayor David J. Narkewicz

City Hall

210 Main Street Room 12

Northampton, MA 01060-3199

(413) 587-1249

mayor@northamptonma.gov

Northampton Grievance Procedure under the Americans with Disabilities Act

This Grievance Procedure is established to meet the requirements of the Americans with Disabilities Act of 1990 ("ADA"). This may be used by anyone who wishes to file a complaint alleging discrimination on the basis of disability in the provision of services, activities, programs, or benefits by the City of Northampton.

The City of Northampton's Personnel Policy governs employment-related complaints of disability discrimination. The complaint should be in writing and contain information about the alleged discrimination such as name, address, phone number of complainant and location, date, and description of the problem. Alternative means of filing complaints, such as personal interviews or a tape recording of the complaint, will be made available for persons with disabilities upon request.

The complaint should be submitted by the grievant and/or his/her designee as soon as possible but no later than 60 calendar days after the alleged violation to: ADA Coordinator, Senior Center, 67 Conz Street, Northampton, MA 01060.

Within 15 calendar days after receipt of the complaint, the Northampton ADA Coordinator or ADA Coordinator designee will meet with the complainant to discuss the complaint and the possible resolutions. Within 15 calendar days of the meeting, ADA Coordinator or ADA Coordinator will respond in writing, and where appropriate, in a format accessible to the complainant, such as large print, Braille, or audio tape. The response will explain the position of the City of Northampton and offer options for substantive resolution of the complaint.

If the response by ADA Coordinator or ADA Coordinator does not satisfactorily resolve the issue, the complainant and/or his/her designee may appeal the decision within 15 calendar days after receipt of the response to the Mayor's Chief of Staff or Chief of Staff's designee.

Within 15 calendar days after receipt of the appeal, the Mayor's Chief of Staff or Chief of Staff's designee will meet with the complainant to discuss the complaint and possible resolutions. Within 15 calendar days after the meeting, the Mayor's Chief of Staff or Chief of Staff's designee will respond in writing, and, where appropriate, in a format accessible to the complainant, with a final resolution of the complaint.

All written complaints received by Northampton ADA Coordinator or ADA Coordinator designee, appeals to the Mayor's Chief of Staff or Chief of Staff's designee, and responses from these two offices will be retained by the those respective offices for at least three years.

Approved Mayor David J. Narkewicz

Date: November 8, 2017

Approved Linda Desmond, ADA Coordinator

Date: November 8, 2017



CITY OF NORTHAMPTON

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Public Notice

In accordance with the requirements of title II of the Americans with Disabilities Act of 1990 ("ADA"), the City of Northampton will not discriminate against qualified individuals with disabilities on the basis of disability in its services, programs, or activities.

Employment: The City of Northampton does not discriminate on the basis of disability in its hiring or employment practices and complies with all regulations promulgated by the U.S. Equal Employment Opportunity Commission under title I of the ADA.

Effective Communication: The City of Northampton will generally, upon request, make reasonable accommodation to provide appropriate aids and services leading to effective communication for qualified persons with disabilities so they can participate equally in Northampton programs, services, and activities, including qualified sign language interpreters, documents in Braille, and other ways of making information and communications accessible to people who have speech, hearing, or vision impairments.

Modifications to Policies and Procedures: The City of Northampton will make all reasonable modifications to policies and programs to ensure that people with disabilities have an equal opportunity to enjoy all of its programs, services, and activities. For example, individuals with service animals are welcomed in City of Northampton offices, even where pets are generally prohibited.

Anyone who requires an auxiliary aid or service for effective communication, or a modification of policies or procedures to participate in a program, service, or activity of the City of Northampton, should contact the office of ADA Coordinator, Northampton Senior Services as soon as possible but no later than 48 hours before the scheduled event.

The ADA does not require the City of Northampton to take any action that would fundamentally alter the nature of its programs or services, or impose an undue financial or administrative burden. Complaints that a program, service, or activity of the City of Northampton is not accessible to persons with disabilities should be directed to the ADA Coordinator, Northampton Senior Services

The City of Northampton will not place a surcharge on a particular individual with a disability or any group of individuals with disabilities to cover the cost of providing auxiliary aids/services or reasonable modifications of policy, such as retrieving items from locations that are open to the public but are not accessible to persons who use wheelchairs.

Approved Mayor David J. Narkewicz

Date: November 8, 2017

Approved Linda Desmond, ADA Coordinator

Date: November 8, 2017



CITY OF NORTHAMPTON

Mayor David J. Narkewicz

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ADA Coordinator Designation

ADA Coordinator Name: **Linda Desmond**

City Department housing ADA Coordinator: **Senior Services**

Job Title: **Director of Senior Services**

E-Mail: **ldesmond@northamptonma.gov**

Phone: **413-587-1231**

Address: **67 Conz Street, Northampton, MA 01060**

Date Appointed: **July 5, 2016**

Is This Appointment: **Permanent**

Does this ADA Coordinator report directly to the appointing authority? **Yes**

Are the ADA Coordinator Duties: **Position is full-time but portion devoted to ADA is part-time**

Direct Supervisor and Appointing Authority: **David J. Narkewicz, Mayor**

Approved Mayor David J. Narkewicz  Date: **November 8, 2017**

Approved Linda Desmond, ADA Coordinator  Date: **November 8, 2017**

Please send copy of completed form to:
The Massachusetts Office On Disability, 1 Ashburton Place, Room 1305
OR email to mod-info@state.ma.us



PART 4
Pedestrian & Bicycle Plan



Executive Summary

1. GOALS, OBJECTIVES, STRATEGIES + ACTIONS

The City of Northampton aims to increase walking and bicycling by residents and visitors of all ages and abilities. The goals and objectives of the Walk/Bike Northampton Plan will guide the development and implementation of the City's sidewalk, trail and bicycle network and programming for years to come. Collectively, they support the City's vision, and are consistent with and build upon the City's current transportation goals, objectives, strategies and actions found within the Sustainable Northampton Comprehensive Plan.

A **Vision** is a broad inspirational statement for the desired future state of the City. (See below.)

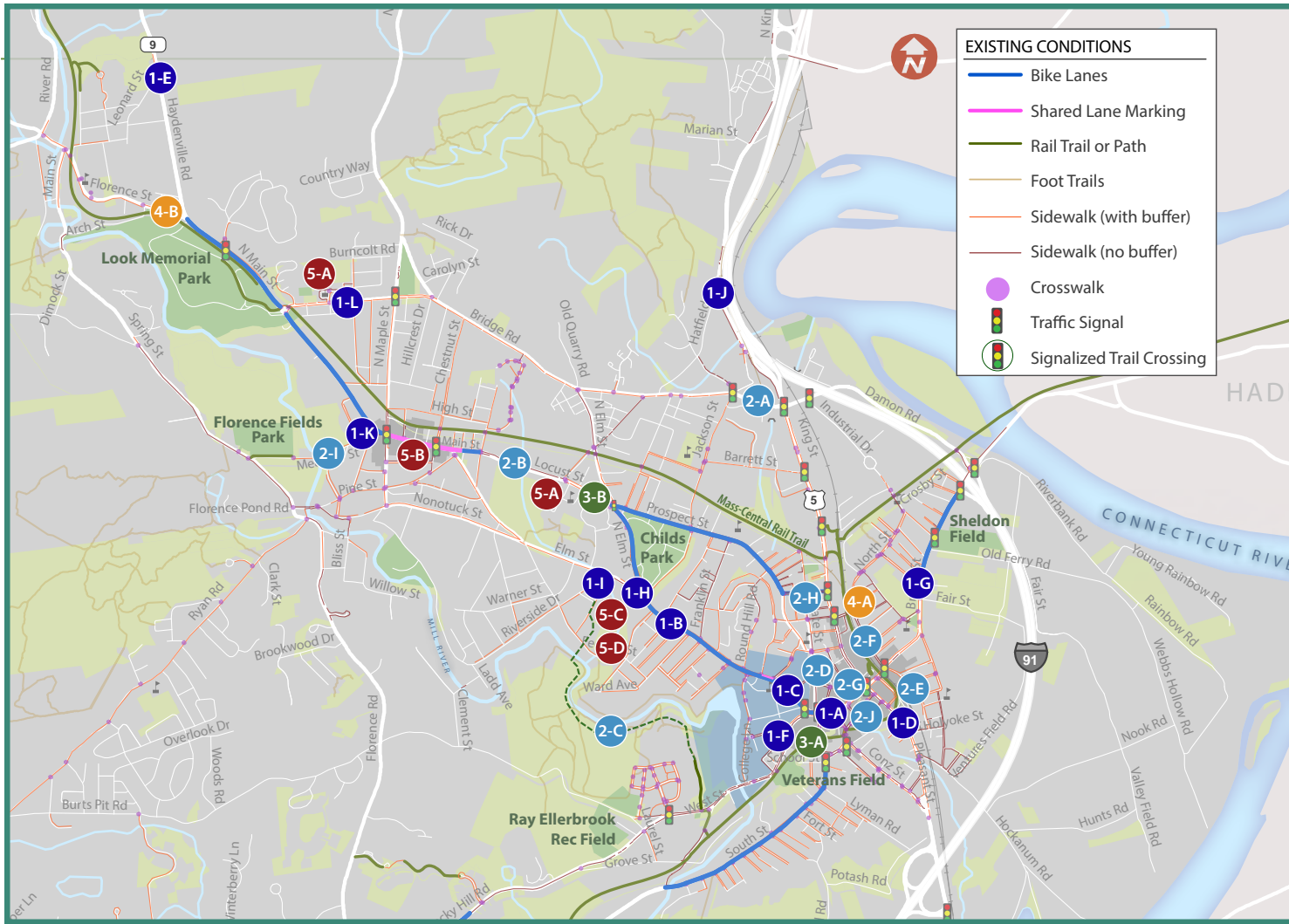
Goals are general statements of what the City and residents hope to achieve over time.

Objectives are more specific statements that mark progress towards the goal.

Strategies + Actions reference the project and program recommendations that will move the City closer to achieving its goals and objectives.

VISION

The Vision for the Walk/Bike Northampton Plan is to make Northampton one of the top leaders in walk and bike friendly streets of any small city in New England. Pedestrians and bicyclists will be integrated into the City's projects, policies and programs. Planning, design and implementation of roadway, public works and transit projects will accommodate pedestrians and bicyclists of all abilities. The non-motorized transportation system in the City will encourage mode shift and improve safety, the environment, health, and quality of life for residents, visitors and businesses. A bicycle and pedestrian-friendly Northampton will be a more green, affordable and sustainable city with improved mobility and economic vitality.



- Sustainable Northampton Transportation Goals**
- Goal T-1: Ensure the safe and efficient transportation of goods and people by motor vehicles, bicycle, foot, and any other means
 - Goal T-2: Improve circulation system to accommodate development and encourage bicycle and pedestrian transit
 - Goal T-3: Improve and expand public transit
 - Goal T-4: Support Federal and State investments in transportation improvements
 - Goal T-5: Provide appropriate bicycle and vehicle parking to support local businesses
 - Goal T-6: Increase programs (no project circles shown due to City-wide impact)

KEY STRATEGIES + ACTIONS

The projects referenced on this map represent the key Strategies and Actions from the Northampton Pedestrian and Bicycle Comprehensive Plan. In aggregate, they help to complete key gaps in the City's existing walking and bicycling network and improve safety and connectivity. As this portion of the pedestrian and bicycle plan is ultimately incorporated into the 2018 update of the Sustainable Northampton Comprehensive Plan, it will provide a blueprint for the City to become a more walkable and bikeable community and help to offset the community's overall carbon footprint. It also aims to promote new businesses and further attract new residents interested in a small city that puts an emphasis on a high quality of life.

Goal T-1: Ensure the safe and efficient transportation of goods and people by motor vehicles, bicycle, foot, and any other means.

Objectives

1. Maintain an efficient transportation system.
2. Maintain a transportation system that reduces air pollution and minimizes congestion.
3. Ensure that environmental impacts are considered and adverse effects are minimized on all transportation projects.
4. Reduce use of single occupancy vehicles.
5. Ensure that safety is a primary goal in transportation improvements, systems, and operations, both to reduce crashes and to ensure that both vehicular and non-vehicular modes of traffic are safe and attractive to all users on all roads.
6. Participate in regional efforts to improve utilization of intelligent transportation systems.
7. Develop a public transit plan in coordination with Pioneer Valley Transit Authority and Pioneer Valley Planning Commission.
8. Ensure that the needs of transit services, bicycles, pedestrians, and wheelchairs are considered and addressed in the design, construction, and management of every project affecting the transportation system.
9. Ensure that bicycle infrastructure incorporates current best practices such as separated bike lanes into the planning and design of the facilities
10. Improve the design of key intersections with tighter turning radii, well-designed crosswalks and audible signals with countdowns; where space is available, plan to convert appropriate intersections to roundabouts in the long term.
11. Emphasize walking and bicycling infrastructure enhancements in areas that improve connectivity to schools, commercial districts and bus stops.

Strategies + Actions

1-A. Main Street Redesign (Downtown Inset Projects #43-47) – More than any other recommended project, the redesign of Main Street would improve safe and efficient transportation, especially for people walking and bicycling downtown. The redesign will include a more-efficient channelization of traffic, improved signals, separated bicycle lanes, new crosswalk islands, bump outs, shorter crosswalks, wider sidewalks (in places), new streetscape and landscape elements that improve storm water management. Future design for Main Street will also incorporate areas for deliveries and minimize any reduction in curb side parking downtown.

Responsible agencies: Mayor's Office, Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

1-B. Elm Street Separated Bike Lanes (Downtown Inset Project #18) – The current striped bicycle lanes on Elm Street provide an adequate facility for bicyclists with moderate-to-high levels of experience and confidence riding in the roadway adjacent to traffic. Although additional study is required—especially at the intersections—it may be possible to flip the orientation of the parking and the bike lane, so that parked cars buffer bicyclists from moving traffic. Separated bike lanes are on-street bike facilities but intended to evoke a similar feeling of separation as riding along a rail trail or path.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

1-C. Removal of gaps in Elm Street Bike Lanes (Downtown Inset Project #19 & 51) – In order to create a seamless bike facility along Elm Street from downtown Northampton to Cooley Dickinson Hospital, a small number of parking spaces should be removed. Gaps in the bike lanes can be eliminated with the removal of parking on one side between Prospect Street

and Bedford Terrace and on the north side of Elm, just east of the North Elm/Elm intersection.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee; note: will require outreach to Smith College

1-D. Pleasant Street Traffic Calming (Downtown Inset Project #60) – A raised crossing, curb extensions and related drainage improvements at the rail trail crossing will improve safety and efficiency of pedestrian and bicycle traffic across Pleasant Street.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

1-E. Leonard Street Traffic Calming (Florence Inset Project #19) – Improved geometry at the Leonard Street intersection with Route 9/Haydenville Road will help to slow traffic, discourage cut through traffic and improve pedestrian safety.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

1-F. West Street Crossing (Downtown Inset Project #88) – A raised crosswalk and curb extensions at the West Street crossing at Green Street will reduce the crossing distance for pedestrians and reduce traffic speeds on the approach to the Smith College campus area.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee; note: will require outreach to Smith College

1-G. Bridge Road Crossing (Downtown Inset Project #4) – A raised crosswalk and curb extensions at the Bridge Street crossing at Orchard Street will reduce the crossing distance for pedestrians and reduce traffic speeds to provide a safer connection to Lampron Park.

Responsible agencies: Department of Planning &

Sustainability, Department of Public Works, Parks and Recreation and Transportation and Parking Committee

1-H. Elm and N Elm Street Crossing (Downtown Inset Project #16) – Curb extensions at the Elm/N Elm intersection and the Elm/Woodlawn intersection will reduce the crossing distance and improve safety for students looking to reach Northampton High School.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, School Department and Transportation and Parking Committee

1-I. Milton Avenue and Riverside Drive Intersection (Downtown Inset Project #70) – To improve safety for all roadway users—drivers, bicyclists and pedestrians—Milton should be “T-ed” into Riverside drive to create a more orthogonal intersection and reducing the length of the current crosswalk across both roadways where they meet Elm Street. Potentially replacing the currently complex intersection with a mini roundabout is worthy of future study as well.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

1-J. Hatfield Street/King Street Intersection (Citywide Map Project #10) – To improve the wide intersection geometry that creates a challenging environment for pedestrians and bicyclists, replacement with a roundabout is in the planning stages and should be moved forward into final design and implementation.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

1-K. Improvements at N Main, Meadow and Park (Florence Inset Projects #24 and 26) – In order to activate the small common space in Downtown Florence, intersection improvements are needed to enhance pedestrian connectivity and safety. This includes raised crosswalks

and curb extensions at the Meadow and Park intersections with N Main along with a long-term plan to address the complex Meadow/Park intersection adjacent to the Lilly Library.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

1-L. Bridge Road Bike Lanes (Florence Inset Project #3) – Bike lanes along Bridge Road between North Maple and N Main Street would improve connectivity and safety for JFK Middle School students who bicycle to school.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

Goal T-2: Improve circulation system to accommodate development and encourage bicycle and pedestrian transit.

Objectives

1. Ensure that all new privately built streets include sidewalks, consistent with the Northampton Subdivision Regulations. When feasible and practical, concrete sidewalks on two sides of a street are most desirable.
2. Calm traffic to preserve pedestrian safety and encourage pedestrian activity in neighborhoods and villages. See Also: Transportation Goal T-1 Traffic Calming
3. Transform the Northampton Bike Path and Norwottuck Bike paths/multi-use trail into a complete rail-trail network and increase the number of spur connections to/from the rail-trails to adjacent neighborhoods, commercial districts and schools.
4. Ensure that economic development goals are considered and balanced with other City goals in all transportation objectives, decisions, and improvements
5. Upgrade transportation and public utilities to

facilitate expansion of the commercial/industrial site inventory in identified growth areas

6. Ensure pedestrian, bicycle, non-motorized travel, and transit are addressed in every development project.
7. Ensure that public transit stops are located at industrial parks and commercial centers.
8. Close gaps in the pedestrian and bicycle network and address barriers to walking and cycling with new sidewalks, crosswalks, bike lanes, and improved shared lanes where striped bike lanes are not feasible.
9. Target walking and bicycling infrastructure treatments for all ages and abilities.
10. Target walking and bicycling planning and investment that reach a wide variety of neighborhoods regardless of economic status or demographics.

Strategies + Actions

2-A. Bridge Road Sidewalk (Citywide Map Project #1) – The stretch of Bridge Road between Jackson and King Street is one of the most significant gaps in Northampton’s walking network. A new sidewalk on at least the south side of the street would improve circulation between areas of low income housing and the King Street commercial district.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

2-B. Locust Street Bike Lanes (Florence Inset Project #20) – The stretch of Locust Street between Straw Ave/Berkshire Terrace and N Elm Street is one of the most significant gaps in Northampton’s bicycling network. The roadway is wide enough to accommodate striped bike lanes, potentially enhanced with a painted buffer and/or delineator posts for additional visual separation between motor vehicles and bicyclists.

Responsible agencies: Department of Planning &

Sustainability, Department of Public Works, and Transportation and Parking Committee

2-C. Hospital Hill Trail Extension

(Downtown Inset Project #32) – The currently-paved portion of the Hospital Hill Trail runs for a short distance north of West Street until it becomes a dirt path. This major trail project would extend the paved trail section along the Mill River and cross the river in order to connect to the high school, via Milton Street. The project also includes spur trail connections to the Village Hill neighborhood and to Burts Pit Road.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works and Northampton Conservation Commission

2-D. State Street Sidewalk (Downtown Inset Project #82) – The new sidewalk along the west side of State Street between Main Street and Center Street will fill one of the few sidewalk gaps downtown.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

2-E. Hawley Street Sidewalk (Downtown Inset Project #26) – The existing sidewalks on Hawley Street are narrow asphalt walkways without proper curb ramps in some locations. This recommendation is for a newly built sidewalk that meets all ADA standards from Bridge Street to Holyoke Street.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

2-F. Hawley/Holyoke Street Bicycle Boulevard (Downtown Inset Project #30) – As a low-volume route that parallels Pleasant Street and King Street, the Hawley/Holyoke corridor has potential to be a critical part of Northampton’s bicycle circulation network. To encourage bicycling, new shared lane markings, signage, and potential traffic calming features are recommended in order to create a “bicycle

boulevard”, a shared street that emphasizes bicycle safety over motorist speed and convenience. (Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee)

2-G. Gothic and Trumbull Street Bicycle Safety (Downtown Inset Project #24) – The Gothic/Trumbull corridor is a low-volume route that allows bicyclists to avoid busy sections of Main Street and State Street, and has potential to be a critical part of Northampton’s bicycle circulation network. To encourage bicycling, new shared lane markings, signage, and potential traffic calming features are recommended in order to create a “bicycle boulevard”.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

2-H. State Street Traffic Calming

(Downtown Inset Project #81) – State Street offers the potential for a more direct link between the MassCentral Rail Trail and Main Street for bicyclists coming downtown from Florence and Leeds. Traffic calming and other bicycle facility improvements are required to make most bicyclists and potential bicyclists comfortable along State Street, especially between Finn and Main. To do so requires a number of traffic calming strategies such as raised crosswalks, additional signage, shared lane markings and bike lanes where space is provided.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

2-I. Meadow Street Sidewalk (Florence Inset Project #25) – Replacement of narrow asphalt sidewalk will improve the pedestrian connection from Downtown Florence to the ballfields west of the Mill River.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

2-J. Kirkland Avenue Alley

Improvements (Downtown Inset Project #41)

– Though it provides a convenient connection between the parking lots on Armory Street and Pleasant Street, the Kirkland Avenue alley is in need of better lighting, surface materials and street furniture to become a safe and comfortable space for pedestrians. (Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee)

Goal T-3: Improve and expand public transit

Objectives

1. Leverage regional collaborations to increase funding for provision of public transit services, including shuttles where appropriate.
2. Consider transportation associations that include memberships of local businesses and government to support public transit.
3. Develop Transit Oriented Development guidelines with incentives.
4. Encourage increased use of transit options.
5. Provide reasonable options for public transit based on need, cost, and funding.
6. Develop a public transit plan in cooperation with the PVRTA and PVPC to expand and enhance the transit system to the level that it is economically viable and supported by ridership.
7. Participate in regional efforts to consider the expansion of passenger rail service along the North-South rail links with service to Northampton.

Strategies + Actions

3-A. Main Street Redesign (Downtown Inset Projects #43-47) – Part of the schematic redesign for Main Street includes the incorporation of an improved PVRTA Pulse point adjacent to Pulaski Park (Responsible agencies: Department of Planning & Sustainability, Department of

Public Works, and Transportation and Parking Committee, in coordination with the Pioneer Valley Transit Authority)

3-B. Bike Share Program (See Section 8 of this report) – Because of Bike Share programs' typical orientation towards short, utilitarian trips—rather than for recreational riding—they are designed to complement a city or region's public transit network. As such, some of the recommended station locations are planned to be adjacent to the PVRTA Pulse Point, the Amtrak station, the bus station and a key bus stop adjacent to Smith College.

Responsible agencies: **Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee**

Goal T-4: Support Federal and State investments in transportation improvements

Objectives

1. Compare the State Transportation Improvement Plan and regional Transportation Improvement Program with the goals and objectives of Sustainable Northampton to ensure compatibility.
2. Review the State Transportation Improvement Plan and regional Transportation Improvement Program to ensure investments are programmed for the City.
3. Ensure the plans can provide support to all sectors and areas of the City.

Strategies + Actions

4-A. MassCentral Rail Trail access at North Street (Downtown Inset Project #60) – In order to maximize the long term investments made in Northampton's rail trail network—including the 2017 Norwottuck Trail underpass project—improved access points and spur trails are needed. An ADA connection from the rail trail to North Street via Edwards Square would satisfy an obvious desire line and current use patterns. The link would also enhance connectivity from the rail trail to the commercial district along King Street.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

4-B MassCentral Rail Trail access at N Main Street in Leeds (Florence Inset Project #13) – In order to maximize the long term investments made in Northampton’s rail trail network, improved access points and spur trails are needed. Currently, there are very limited connections from the Leeds community to the rail trail. A trail connection to/from N Main Street utilizing a long ramp up the embankment would improve access, use and safety of the trail.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Transportation and Parking Committee

Goal T-5: Provide appropriate bicycle and vehicle parking to support local businesses.

Objectives

1. Create additional spaces to meet current and future anticipated parking demands for vehicles and bicycles while also applying demand management solutions for better utilization.
2. Utilize strategies to minimize parking demand and maximize alternative transportation.
3. Develop parking structures or decks north of Main St. to meet parking needs.
4. Improve the operation of parking in the downtown and village centers.
5. Ensure reasonable access to businesses and services is available to all residents and visitors.
6. Ensure plentiful bike parking in all commercial districts of the city, at schools, public buildings, transit hubs and key destinations

Strategies + Actions

5-A. Enhanced Bike Parking at the JFK and Smith Voc-Ag Schools (Florence Inset Project #22) – In order to promote bicycling to school

for students and staff, additional racks are recommended, including a significant percentage that are protected from the elements. The new racks should replace existing bike racks that do not meet current standards for security, access and circulation.

Responsible agencies: Department of Planning & Sustainability, School Department and Department of Public Works

5-B. Enhanced Bike Parking in Downtown Florence (Florence Inset Project #32) – The current lack of bike racks in Downtown Florence discourages bicycling to the commercial district. New racks that meet current standards should be installed in various locations along Main Street between Park Street and South Main.

Responsible agencies: Department of Planning & Sustainability, School Department and Department of Public Works

5-C. Enhanced Bike Parking at Northampton High School (Downtown Inset Project #59) – In order to promote bicycling to school for students and staff, additional racks are recommended, including a significant percentage that are protected from the elements. The new racks should replace existing bike racks that do not meet current standards for security, access and circulation. The new racks will complement the proposed two-way cycle track on the former Elm Street right of way in front of the high school, per Downtown Inset Project #20.

Responsible agencies: Department of Planning & Sustainability, School Department and Department of Public Works

5-D. Funding Program for New Bike Parking at the High Schools – One potential method to raise funding for new bike parking is to raise parking fees (with needs-based exceptions, however) at the two high schools in Northampton.

Responsible agencies: Department of Planning & Sustainability, School Department and Department of Public Works

Goal T-6: Increase walking and bicycling trips through education, encouragement, enforcement and evaluation programs

Objectives

1. Support the establishment of a walk/bike safety education curriculum in schools, as well as through recreation and commuter programs for adults that focuses on bicycle safety.
2. Work with advocates and business interests to promote walking and bicycling through events (e.g. walk/bike to work day, community bike rides), friendly competitions (e.g. walk/bike commute challenge) and awards (e.g. Mayoral recognition to bike friendly businesses).
3. Target walking and bicycling education and encouragement programs in neighborhoods throughout Northampton, with particular focus on those that have not traditionally been involved with such programs.
4. Conduct annual trainings with public safety staff, planners, engineers, parks and recreation and other staff on policies and programs related to walking and bicycling.
5. Establish a city-wide bike share program in coordination with other regional jurisdictions, and with a focus on equitable distribution of stations.
6. Track the number of people walking and bicycling in the spring and early fall, using automated counters at key locations on city streets and on the rail trails.
7. Train local police to ensure proper enforcement of laws related to walking and bicycling; promote compliance to these laws through education efforts such as printed materials, mailers, PSA's, and through social media outlets to the wider community.
8. Designate a part-time Pedestrian and Bicycle Coordinator position to focus on the implementation of pedestrian and bicycle-related policy, program and project recommendations.
9. Gather key data metrics related to the number

of miles of designated bike facilities, the bike commute mode share and crashes involving injury and death in order to provide back-up material for Bike Friendly Community applications.

Strategies + Actions

6-A. Children's Walking/Bicycling

Education An in-school "transportation literacy" program can teach and repeatedly reinforce traffic safety and safe interactions for children who walk or bicycle to school; this could also involve a more-robust Safety Village program.

Responsible agencies: Department of Parks and Recreation and School Department

6-B. Seniors' Bicycling Education

Senior's bicycling education and training workshops can be held at the Northampton Senior Center and elsewhere to encourage additional mobility for older members of the community.

Responsible agencies: Department of Parks and Recreation and Northampton Senior Services

6-C. Driver Behavior Education

Coordinate a public outreach campaign with PSAs and mailers to educate residents about safe interactions between motorists and walkers and bicyclists.

Responsible agencies: Northampton Police Department and Transportation and Parking Committee

6-D. Nighttime Visibility Education

Develop an education campaign targeting appropriate and legal use of lights and reflective clothing for bicycling in Northampton after dark.

Responsible agencies: Northampton Police Department and Transportation and Parking Committee

6-E. School-based Encouragement

Programs Create school-based encouragement programs such as walking school buses, bike trains and neighborhood walk/bike route maps.

Responsible agencies: Department of Parks and Recreation and School Department, perhaps

with assistance from MassDOT's Safe Routes to School program

6-F. Bike Maintenance Stands To encourage more bicycling in the City, especially along the rail trails, downtown and to/from schools, publicly-accessible bike maintenance stands (and potentially drinking fountains) should be located in strategic positions.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, Parks & Recreation and the School Department

6-G. Open Streets Events To encourage walking and bicycling for transportation and recreation, Open Streets events, pop-up bike lanes and other tactical urbanism projects and programs should be scheduled on a regular basis.

Responsible agencies: Department of Planning & Sustainability, Department of Public Works, and Parks & Recreation

6-H. Crosswalk Enforcement Campaign Because motorists frequently fail to yield to pedestrians in crosswalks, additional enforcement, education stops/warnings and decoy operations are recommended.

Responsible agencies: Police Department and Transportation and Parking Committee

6-I. Speed Enforcement Campaign Because speeding presents a clear danger to pedestrians and bicyclists, targeted enforcement actions in strategic areas of the City—especially near schools and senior housing locations—are recommended.

Responsible agencies: Police Department and Transportation and Parking Committee

6-J. Pedestrian and Bicycle Counts Supplement the pedestrian and bicycle counts conducted by the Pioneer Valley Planning Commission and the Central Transportation Planning Staff with additional on-street locations in order to track changes in walking and

bicycling behavior in different parts of the City. (Responsible agencies: Department of Planning & Sustainability, in coordination with the Pioneer Valley Planning Commission and with help from local bicycle advocates and other volunteers)

Existing Conditions



2. EXISTING CONDITIONS: INTRODUCTION

The Pedestrian and Bicycle Comprehensive Plan includes summaries of pertinent existing studies, reports and policies that will inform the plan's future infrastructure, program and policy recommendations. In addition, it provides an assessment of current walking and bicycling conditions, including gaps in the walking and bicycling network. Other maps show transit routes in Northampton, as well as traffic volumes on key streets. A combination of GIS-based data, field work, and input from the City's Project Advisory Committee was used to develop the analysis. The City's Bicycle and Pedestrian Subcommittee served as the project advisory committee. The map analysis was used to create recommendations for an integrated network of sidewalks, crosswalks, enhanced intersections, rail trail improvements and on-street bicycle facilities presented in Part III of this report.

The following section contains a synopsis of six reports that rely on common themes of creating a safer and more pleasant streetscape environment for the citizens and visitors of Northampton. The reports include a Wayfinding Pilot Program, Walk/Bike Assessment, Parking Management Study, Feasibility Study for Regional Bike Share, Open Space, Recreation and Multi-Use Trail Plan, and the Sustainable Northampton Comprehensive Plan. In each of the reports, common themes of adding appropriate signage for pedestrians, motorists, and cyclists, reducing motor vehicle congestion downtown, increasing the ability, safety, and comfort of cyclists and pedestrians on sidewalks, roads, and crosswalks, providing safe access to rail trail corridors. The Bike Share Feasibility Study recommends introducing a regional Bike Share system in key locations through-out the City and extending into the Pioneer Valley. The Open Space plan has been adopted by 10 municipal boards and provides a blueprint for the long term development and infrastructural upgrades in the future, including providing sidewalks within a mile of all schools and creating a detailed map available to the public of the City's existing and planned bicycle network.



3. ADOPTED PLANS, REPORTS & POLICIES

3.1 SUMMARY OF ADOPTED PLANS + REPORTS

Northampton Walk / Bike Assessment: Main Street, Northampton, MA (Jan 2016)

Prepared for: Massachusetts Department of Transportation Bicycle and Pedestrian Safety Awareness and Enforcement Program

Prepared by: Toole Design Group, WalkBoston, MassBike

Plan Overview: Northampton is one of 18 communities participating in a MassDOT multi-disciplined program to improve bicycle and pedestrian safety in Massachusetts. A component of the program is to conduct walk and bike assessments, identify challenges, and make short and long-term recommendations. For this effort, WalkBoston, MassBike and Toole Design Group conducted the assessment of pedestrian and bicycle infrastructure along Main Street (Route 9) in October 2015. Overall, the team found that pedestrian and bicycle movement along Main Street is compromised by the width of the roadway, multiple undefined travel lanes, poor sight lines adjacent to parked cars, long crosswalks, complex intersections and head-in angled parking (for bicyclists). Of note is that there have been several crashes involving pedestrians and bicyclists along the corridor, including one fatality.

Key Findings & Recommendations:

General Improvements:

- Reroute truck traffic on a different route to bypass Main Street through downtown

- Reconfigure the roadway width and, in places, geometry of travel lanes to provide a safer and more-coherent environment for pedestrians and bicyclists

Pedestrian Improvements:

- Narrow Main Street to shorten crossing distances by installing curb extensions and refuge islands, install bike lanes
- Remove parking within 20 ft. of crosswalks
- Evaluate signal timing for consistency and accessibility (including count-down timers)
- Enforce ordinances to keep sidewalks clear of intrusions into the pedestrian thru-zone
- Upgrade curb ramps and install detectable warning strips

Bicycle Improvements:

- Install bike facilities along Main Street (with both short and longer term options), ideally separated from motor vehicle traffic
- Install bike parking and way-finding signage
- More detailed recommendations were provided at the following intersections:
- Elm/West/State/New South intersection
- Cracker Barrel Alley/Crafts Ave intersection
- Old South Street to Gothic Street segment
- King/Pleasant Street intersections
- Main/Crackerbarrel Alley: converting the latter to 'pedestrian only' would have little impact on access to the parking lot but reduce one significant conflict point

Parking Management Study, Downtown Northampton, MA (April 2015)

Prepared for: City of Northampton.

Plan Overview: Although downtown is pedestrian oriented, the combination of newly planned developments and the ongoing presence of motor vehicles and the ability to meet parking demand is important to the success of downtown businesses. The three elements of this plan are: (1) to determine how parking is being utilized now and whether there is capacity to accommodate current needs, (2) to project the impact of future development on the parking system, (3) to review the City's parking management approach and offer recommendations for improvements.

Key Findings and Recommendations:

- Slowly increase price of parking on Main Street over time, from \$0.75/hr today to \$1.50/hr over the next few years
- Allow two-hour parking on Main Street, install signage prohibiting "re-parking" or exceeding the maximum
- Delay meter enforcement start times until 9:00am, allow three-hour parking in Armory Lot
- As single-space meters require replacement, consider upgrading to accept credit cards or pay-by-plate
- Retain a signage and graphics consultant to improve wayfinding to better facilitate access to the parking lots by car and on foot
- Explore feasibility of a parking app, a valet service for downtown businesses, and an inexpensive permit in peripheral lots for students of downtown trade schools
- To encourage turnover, step-up enforcement of meter violations

Feasibility Study for Regional Bike Share in the Pioneer Valley (March, 2015)

Prepared For: Pioneer Valley Planning Commission in collaboration with the Bike

Share Feasibility Study Advisory Committee and municipalities of Northampton, Amherst, Holyoke and Springfield.

Plan Overview: From the report: "The Pioneer Valley region and its member communities are committed to creating more livable communities and downtowns, as well as reducing single occupancy vehicle trips and the resulting air pollution and greenhouse gas emissions. The region is working to increase alternative modes of transportation, including expanding infrastructure for biking, walking, bus and rail service. The region is also seeking to establish commuter rail service along the north-south Amtrak rail line serving Springfield, Holyoke and Northampton, and a bike share program could provide a complementary 'last mile' component to this service." The Feasibility Study has been supplemented by a follow-up report in 2015-16 by Alta Planning + Design. The report includes more-detailed recommendations for a business model, recommended equipment, cost estimates over a 5-year period, a phasing plan for deployment and preliminary site plans for four bike share stations in each of the four municipalities that are part of PVPC's study.

Key Findings and Recommendations:

- Systems should serve as an extension of public transit, and station phasing is important
- Casual riders are important; daily, weekly, and monthly users comprise a significant factor of overall ridership. Locate stations near major tourism destinations.
- Operating 3 seasons / year minimizes snow-removal issues.
- Implement a pricing structure that allows for multi-hour rentals. This allows built-in flexibility for recreational trips where a user would want to rent a bike for more than one hour without paying additional fees.
- Smart-lock or non-kiosk based systems greatly reduce the up front and maintenance costs of system operation. Continue to monitor the success of the Phoenix, AZ

bike share program to evaluate whether a public non-kiosk system would be practical for the Pioneer Valley.

- Provide discounted student memberships. Targeting the large student population for use of the bike share system will help increase its overall use, and many students who do not reside in Northampton during the summer months will have trouble justifying the membership fee for a 3-season system.
- Explore alternatives to credit card requirements. Credit-card requirements are common in order to prevent theft or vandalism to the bicycles, but present a major barrier to participation among low-income residents or those who do not have a credit card.
- Partner with other organizations to expand service to low-income individuals and locate stations in areas that have affordable housing and disproportionately low rates of bicycling. Financial assistance should be offered to low-income individuals seeking a membership.
- Explore feasibility of integrating fare payment with PVRTA payment system to increase convenience of using both systems.

Open Space, Recreation & Multi-Use Trail Plan (2011)

Prepared For: City of Northampton.

Plan Overview: From the report: “The plan provides guidance on how the City of Northampton can best use limited resources to meet the City’s open space, agriculture, conservation, multi-use trail, and recreation needs.” The City engaged public participation and has received the endorsement of 10 municipal boards to adopt this plan in an effort to meet the needs of citizens and become one the most sustainable cities in Massachusetts.

Key Findings and Recommendations

(within 13 broad categories of open space,

recreation, and multi-use trail actions):

- Reclaim pavement for parks as appropriate. Report acknowledges that while “few sites are appropriate”, the effect on those sites can be dramatic. Potential sites include: Historic Mill River mixed-use development and park at Pleasant Street / Hockanum Rd., an urban park along Main St. / Crafts Ave in front of City Hall, and at historically filled wetland sites in the Montview neighborhood and the Industrial Dr. traffic circle area.
- Maintain well-managed conservation areas to preserve natural systems and make areas available for visitors, including those with disabilities
- Identify places for fishing, hunting, snowmobiling, off-road vehicles, horseback riding, and mountain biking
- Acquire conservation areas to enhance neighborhoods and urban areas
- Develop a Connecticut River Boathouse
- Connect the MassCentral / Norwottuck Rail Trail gap between Woodmont Road and King Street (funded)
- Extend the Connecticut River Greenway Trail 1.3 miles to Hatfield
- Utilize Village Hill development to extend a trail around the north edge of the campus
- A staircase ramp from the MassCentral / Norwottuck Rail Trail to Look Restaurant
- A ramp from the MassCentral / Norwottuck Rail Trail to the VA Hospital signal (develop a VA Park & Ride lot)
- A spur from JFK Middle School to Morningside Drive
- An access ramp in Haydenville to provide a northerly terminus of the MassCentral / Norwottuck Rail Trail
- Develop a park at the triangle formed between Wright Avenue, Hockanum Road, and Pleasant St.

- Develop a very small park in front of City Hall by reclaiming some land from Main Street and Crafts Avenue (which are unsafe for pedestrians as they are too wide)
- Handicap Accessibility along the Nagel Walkway downtown
- The development of a handicap accessible ramp near the Jackson Street School to connect with existing rail trail (complete)
- Future projects should take environmental and cultural uniqueness into account, providing locations for specific activity within open spaces. For example, Northampton has a significant Hispanic population, so park designs should allocate space for traditional Mexican, South American, and Puerto Rican recreation.

Sustainable Northampton Comprehensive Plan (2008 as amended to 2021)

Prepared For: City of Northampton

Plan Overview: A comprehensive planning effort intended to “ensure the City can continue to meet its current and ongoing environmental, social and economic needs without compromising the future for succeeding generations.” It is also intended to provide a blueprint for long-term infrastructure and development projects within the City. Ultimately, the Goals, Objectives, Strategies and Actions section found in the Walk/Bike Northampton report will become a new chapter within the Sustainable Northampton Comprehensive Plan.

Key Findings and Recommendations:

- Ensure the safe and efficient transportation of goods and people by motor vehicles, bicycle, foot, and any other means
- Maintain an efficient transportation system that reduces air pollution and minimizes congestion
- Reduce use of single occupancy vehicles

- Ensure that safety is a primary goal in transportation improvements, to reduce crashes and ensure that all modes of

“Develop more multi-use trails, bike paths, bike lanes, bike routes and bike linkages to provide access to active and passive recreation and to create a healthy lifestyle and provide an alternative to single-occupancy vehicles.”

traffic are safe and attractive to all users on all roads

- Ensure that the needs of transit services, bicycle, pedestrian, and wheelchairs are considered in every project affecting the transportation system
- When designing for truck movements, utilize mountable curbs, pedestrian islands, raised pedestrian crossings, and alternate truck routes where feasible
- Ensure that all new traffic signals incorporate audible pedestrian signals, and create a prioritized list of existing traffic signals where pedestrian signals are desired
- Examine all unsafe intersections, areas of excessive speeds, and areas where neighborhoods perceive a loss of quality of life to consider traffic calming efforts, ensure that the design of all new and reconstructed streets considers incorporating appropriate traffic calming measures
- Provide sidewalks on all roads within one mile of all schools
- Improve circulation system to accommodate development and encourage bicycle and pedestrian transit
- Ensure pedestrian, bicycle, non-motorized travel, and transit are addressed in every development project

From part 7, Analysis of Needs: Resource Protection, Community, and Management Needs, # 16

- Replace all catch basin covers that are not bicycle-friendly
- Develop a citywide bicycle system including existing and planned off-road bicycle paths, on road-bike lanes, and safe on-road bike routes. On-road bike routes and lanes that provide direct access to the growing rail-trail network and to urban core areas should receive a high priority. The system should include supporting services, such as signage, bicycle storage, and bicycle system maps and information.
- Provide appropriate bicycle and vehicle parking to support local businesses

Main Street and King Street Transportation Charrette (2011)

Prepared For: City of Northampton

Prepared By: Nelson / Nygaard

Plan Overview: In 2011, a 3-day design charrette worked to identify issues and opportunities along the Main St. and King St. corridors in Northampton. The impetus for this study was Northampton's desire to enhance the bicycle and pedestrian environments without decreasing the vehicle throughput, as well as preserve or improve access to downtown businesses.

Key Findings and Recommendations:

- Critical issues identified: 1) over-designed 4-lane cross sections, 2) large intersections, 3) inhospitable bicycling environment. An over-designed street is defined as one that is "over-scaled as compared to the needs of traffic volumes and adjacent land uses. The cross-section of these roads is too wide, allowing cars to travel at excessive speeds and creating unsafe conditions for bicyclists and pedestrians."
- Lowering speeds through a road-diet identified as critical solution during charrette
- Studies referenced that show a direct correlation between street width and rate of injury in collisions, "with a very steep upward curve for streets wider than 44 feet."
- Shrinking the intersection size and width with compact design treatments have a number of benefits: "reducing vehicle speeds, particularly at the end of signal phases; less wasted space, especially where right-turn lanes are poorly utilized today; stretching of vehicle queues away from multiple approach lanes linearly towards mid-block areas, with no additional vehicle delay; far more frequent pedestrian crossing phases, which are also longer in duration; significantly shorter crossing distances that reduce the barrier of intersections like Main & King; and more predictable driver and bicyclists expectations through clearly channelized movements."
- Long street widths and large intersections create "very long crossing distances for pedestrians, putting them in the path of cars for a long period of time."
- Large intersections result in additional time required for each car to pass through, reducing the number of cars that can pass through in each signal cycle.
- Pull-in angled parking spaces on Main St. limit drivers' field of view when backing out
- Additional connections are needed in places where bicycle facilities do exist but are lost at street crossings and intersections
- There is a general lack of quality bicycle parking in Northampton
- Solutions offered include road diets of four lanes to two lanes, shared bicycle boulevard style treatments, reverse angled parking on Main St., raised crossings on slip lanes, a textured crossing plaza in front of City Hall, curb extensions, new sidewalks under rail trail crossing, and

widened sidewalks elsewhere

Main St. / State St. / Elm St. / West St. / New South St. Preliminary Intersection Design (July 2010)

Prepared For: City of Northampton

Prepared By: Nelson / Nygaard

Plan Overview: In 2011, the city of Northampton brought in Nelson Nygaard to analyze the State / Main / New South intersection and to develop recommendations for redesigning the intersection to better accommodate traffic flow and pedestrian and bicycle safety. Their work resulted in three alternative options, including:

Alternative A:

- Right turn “boulder style” slip lanes
- New NB left-turn lane
- Single EB through lane
- Lengthened storage
- New on-street parking

Alternative B:

- Right turn “Boulder style” slip lanes
 - New NB left-turn lane
 - Single EB through lane
 - Lengthened storage
 - New on-street parking
- Two EB receiving lanes retained
- No northwest curb extension on Main St.

Alternative C:

- Right turn “Boulder style” slip lanes
- New NB left-turn lane
- Two EB through lanes
- Lengthened storage
- Two EB receiving lanes retained
- No northwest curb extension on Main

After the completion of the three design options,

“Develop more multi-use trails, bike paths, bike lanes, bike routes and bike linkages to provide access to active and passive recreation and to create a healthy lifestyle and provide an alternative to single-occupancy vehicles.”

the city of Northampton then decided to hold back on moving forward with final design due to issues related to truck turning movements and to await the recommendations on the redesign of Main St developed during this Walk/Bike Northampton effort.

From part 7, Analysis of Needs: Resource Protection, Community, and Management Needs, # 16

3.2 Review of Current Policies

3.2.1 ZONING ORDINANCES (includes Site Plan Review)

Prepared by: City of Northampton
Policy/Program Overview: Chapter 350 of the Code of Ordinances of the City of Northampton governs zoning in the City. Analysis based on code version linked from City website at <http://ecode360.com/NO2226>.

Key provisions related to walking and bicycling:

1. Defines short- and long-term bicycle parking (§350-2.1 General).
2. Prohibits obstruction of sightlines at intersections and driveways (§350-6.8 Other general dimensional and density provisions).
3. Sets minimum vehicle parking space requirements for different types of structures and uses, based primarily on square footage, with residential caps but no caps for businesses or institutions (§350-8.1 Off-Street parking requirements).
 - Businesses can reduce parking up to 20% with an employee trip-reduction plan (§350-8.6 Shared parking)
 - For the majority of the Central Business District uses there are no parking requirements. Developers can also meet parking requirement by paying \$2,000 per parking space into Downtown Parking Reserve Account (§350-8.10 Special provisions in Central Business District for meeting off-street parking requirements). This only applies to very few uses (places of assembly).
4. Bicycle parking required for “any new building, addition or enlargement of existing building, or, except for in the Central Business District, for any change in the use of a building” (§350-8.11 Bicycle parking). NOTE: The

- Based on number of units for dwellings, square footage for businesses, number of classrooms for schools.
- 50% long-term bicycle parking required for residential, hotel, motel, bed & breakfast
- For consideration: Look at alternative formulations for bike parking requirements, and provision of end-of-trip facilities (showers and lockers).

“Safe and adequate pedestrian access, including provisions for sidewalks and/or bike paths to provide access to adjacent properties and adjacent residential neighborhoods, as applicable, and between individual businesses within a development.”

5. Specifies site plan requirements (§350-11.5 Procedures)

From §350-11.5 Procedures

- Requires estimated vehicle (but not bicycle or pedestrian) trip data.
- Traffic patterns for vehicle and pedestrian access.
- Traffic safety plan, which, for new commercial, office, and industrial buildings, must “evaluate alternative mitigation methods to reduce traffic by 35%”, including “Encouraging pedestrian and bicycle access to the site”.
- Assessment of traffic safety impacts on adjacent roadways.
- “An interior traffic and pedestrian circulation plan designed to minimize conflicts and safety problems.”

6. Sets up site plan approval criteria (§350-11.6 Approval criteria)

- “The requested use will promote the convenience and safety of vehicular and pedestrian movement within the site and on adjacent streets, cycle tracks and bike paths, minimize traffic impacts on the streets and roads in the area.”

- “The project, including any concurrent road improvements, will not decrease the level of service (LOS) of all area City and state roads or intersections affected by the project below the existing conditions when the project is proposed and shall consider the incremental nature of development and cumulative impacts on the LOS. The project proponent must demonstrate that all cumulative and incremental traffic impacts have been mitigated.”
- Mitigation can include payments to fund improvements for off-site traffic impacts, public transit, and pedestrian or bicycle paths. It is expected that developers mitigate even incremental impacts of their projects with improvements, or payment in lieu of improvements. Mitigation payments range from \$0 - \$3,000 per peak afternoon motor vehicle trip generated, when developers do not directly mitigate with off-site projects approved by the Planning Board. There is no fee when proposed uses generate walking trips within central business districts.
- Specific mitigation payments are set based on type of location and estimated peak trips.
- “Rear and/or side wall facades within 50 feet of a completed or planned section of a cycle track or bike path shall have features that invite pedestrian access from that side of the building”.
- “Pedestrian, bicycle and vehicular traffic movement on site must be separated, to the extent possible, and sidewalks must be provided between businesses within a development and from public sidewalks, cycle tracks and bike paths. All projects shall include sidewalks and tree belts abutting the street, except where site topography or other limitations make them infeasible. In such cases where the sidewalk is infeasible, the developer shall install an equal number of feet of sidewalk and/or tree belt in another area of the community as deemed by the

Planning Board or Office of Planning and Sustainability.”

- Establishes technical specifications for sidewalk design:
 - Concrete.
 - Minimum six feet in commercial and industrial districts.
 - Minimum five feet in residential district.
 - Specs for ramps, cross-slope, etc.
 - Allows, but does not require, curb extensions.
 - Curb extensions must not impede bicycle traffic.
- 7. Provisions for vehicles and pedestrians must be at or near grade if at or below the 100-year floodplain in the SC or Floodplain District (§350-13.6 and §350-14.6 Development conditions).
- 8. Establishes Sustainable Growth Overlay District to encourage smart growth developments, including “a variety of transportation options” (§350-20 Sustainable Growth Overlay District (SG))
- 9. Bike parking in Highway Business District: “1 bike rack per 10 parking spaces up to 15 required (indoor or outdoor). Storage must allow locking of bicycles to racks or inside storage containers.” (Chapter 350 Attachment 12)
- 10. Bike parking in the Entranceway Business District: “1 bike rack per 10 parking spaces up to 15 required (indoor or outdoor). Storage must allow locking of bicycles to racks or inside storage containers.” (Chapter 350 Attachment 10)

3.2.2 SUBDIVISION REGULATIONS

Prepared by: City of Northampton

Policy/Program Overview: Chapter 290 of the Code of Ordinances of the City of Northampton governs subdivision of land in the City. Analysis based on code version linked from City website at <http://ecode360.com/NO2226>.

Key Provisions related to walking & bicycling:

1. In addition to governing the subdivision of land, these are the technical specifications that apply for site plan approvals. Purpose does not expressly include pedestrian or bicyclist access or safety (§290-2 Purpose): “The powers of the Planning Board and the Board of Appeals under these rules and regulations shall be exercised with due regard for the provision of adequate access to all of the lots in a subdivision by ways that will be safe and convenient for travel; for lessening congestion on such ways and in the adjacent public ways; for reducing danger to life and limb in the operation of motor vehicles....”

2. Traffic study submittal requirements include pedestrian and bicycle modes (§290-23 Additional subdivision submittal requirements):

- Estimated daily and peak-hour trips for vehicles and pedestrians; does not specifically include bicycles.
- Traffic safety plan, including alternatives to single-occupancy motor vehicles, and evaluation of methods to reduce traffic by 35%, including “Encouraging pedestrian and bicycle access to the site”.
- Network analysis showing how project enhances flow of existing network.
- Pedestrian components: interior circulation plan to minimize conflicts and safety problems, and adequate pedestrian access including sidewalks connecting to adjacent properties and businesses within the development.
- School bus and public transit stops, as appropriate.
- Maintain Level of Service (LOS): Demonstrate that project will not decrease LOS below existing conditions at time of proposal and considering future development and impacts.
- Proponent must mitigate off-site traffic impacts, or may request to pay to fund necessary off-site improvements,

including public transit and pedestrian or bicycle paths.

3. Adopts Massachusetts Department of Transportation (MassDOT) Standard Specifications for Highways and Bridges and its supplements (§290-28 Controlling standards).

4. Design specifications for the four street types, as relevant to pedestrian and bicycle use (§290-29 Streets and ways):

.....

“Access by non-motorized means must be accommodated with facilities such as bike racks, sidewalk connections from the building to the street, cycle tracks, and bike paths that are clearly delineated through materials and/or markings to distinguish the vehicular route from the non-vehicular route.”

.....

• Right-of-way

From §350-11.6

- Private Alley: N/A
- Residential Shared Street: N/A
- Residential Yield Street: 60’
- Mixed Use/Commercial Street: 70’

• Pavement width

- Private Alley: 14’
- Residential Shared Street: 20’
- Residential Yield Street: 20’ within 30’ of intersection; 24’ elsewhere
- Mixed Use/Commercial Street: 22’ within 30’ of intersection; otherwise 30’ when street serves <25% commercial by sq. ft.; 38’ all other
- Limit of dead-end streets, measured along the center line, from the nearest public (non-alley) street that is not itself a dead-end street: 500’
- Length of block between 3+ way intersections
- Length of block if broken up at least every 500’

by a walking or bicycling trail and connects permanently to protected open space

- Pavement Type: Hot mix asphalt, with textural changes for Private Alley or Residential Shared Street.
- Vehicle flow: Two-way, except Private Alley may be one-way.
- Sidewalk (cement concrete only, including where it crosses driveway)

- Curbs: 30' from each intersection and on sides whenever there are no rain gardens, bioretention areas, or curb cuts.

- Stopping sight distance (considering vertical alignment, slopes, and obstructions)
 - Private Alley: 80'
 - Residential Shared Street: 80'
 - Residential Yield Street: 115'
 - Mixed Use/Commercial Street: 155'

“...the design shall make every effort to reasonably calm the traffic within the subdivision and on surrounding streets to ensure pedestrian- and bicycle-friendly design and to prevent a decrease in traffic safety as a result of the additional traffic the project will generate. Bicycle and pedestrian pathways are encouraged within large developments and should be linked to adjacent properties, pathways, sidewalks, and transit stops wherever feasible.”

From §209-29

- Private Alley: none
- Residential Shared Street: none
- Residential Yield Street: 5' wide, both sides, except that LID street with no curbs on one side may eliminate sidewalks on the curbless side with additional crosswalks at least every 200 feet.
- Mixed Use/Commercial Street: 6' wide both sides
- Crosswalks (to be located at all street and trail intersections and no other locations): Raised to elevation of sidewalk (or pedestrian path for Alley or Residential Shared Street).
- Shoulders
 - Private Alley: not allowed
 - Residential Shared Street: not allowed
 - Residential Yield Street: bike facilities as necessary for arterials
 - Mixed Use/Commercial Street: bike facilities as necessary depending on functional type

- Design speed:
 - Private Alley: 15 mph
 - Residential Shared Street: 15 mph
 - Residential Yield Street: 20 mph
 - Mixed Use/Commercial Street: 25 mph
 - Street lighting (must be LED): Intersections and crosswalks.

5. Location of Accessway (§290-29.A):

- “All streets and ways shall be designed so that, in the opinion of the Planning Board, they will provide safe vehicular travel”.
- “The proposed streets shall be consistent with the goals of Sustainable Northampton”.
- Requires provision “for the proper projection of streets, or for access to adjoining property that is not yet subdivided or developed”.
- Dead-end/cul-de-sac: “A right-of-way from the end of all culs-de-sac and dead-end roads to adjoining property must be part of the street layout and must be shown on street acceptance

plans and deeds unless there is compelling evidence that the adjoining property will never be developed.”

- Requires bicycle and pedestrian access to adjoining undeveloped property: “If the adjoining property shall never be developed, there shall be a pedestrian and bicycle trail up to the property line, unless wetlands and grade make that impossible.”

6. Cul-de-sac or dead-end streets (§290-29.B):

- “It is the Board’s policy not to approve streets that do not connect to existing neighborhoods or do not provide for connections in the future. The applicant must show a scenario of how a street connection can be made. Further, the developer shall make every effort to avoid the creation of dead-end streets and must connect its subdivision to existing dead-end streets whenever reasonably possible. Dead-end streets are more expensive to maintain, limit emergency access, and reduce the sense of connection and equality that comes from interconnecting street grids.” NOTE: Bicycle and pedestrian connectivity required when dead-ends are allowed.
- Less than 500 feet from a connected street: “Every street in the proposed subdivision shall be laid out in such a manner that every portion of every street is less than 500 feet, as measured along the center line of construction of the street from the nearest connected existing public street which is not itself a dead-end street. Culs-de-sac or dead-end streets shall be allowed only on residential streets.”

7. Street cross sections (§290-29.C): representative cross sections are shown for the four street types.

8. Traffic calming and pedestrian and bicycle access (§290-29.E):

- Traffic calming may utilize methods detailed in ITE’s Traditional Neighborhood Development or Traffic Calming: State of the Practice, and “complete streets” principles from the National Complete Streets Coalition, but must utilize methods that will not make snow plowing or road maintenance especially burdensome for the City.”

9. Shared streets (§290-29.F):

- Traffic calming to reduce vehicle speeds to 15 mph.
- Use chicanes to reduce speeds.
- Narrow to one travel lane at entryways, using excess space for at-grade sidewalks.

10. Sidewalk standard (§290-35 Sidewalk standards and school bus stops):

- Home Owners Association (HOA) covenants must require that HOA clear snow from all sidewalks.
- With approval, sidewalks may be built in common areas rather than right-of-way, but HOA must still do snow clearance.
- Shared streets should have paved pedestrian area on both sides, from 3-12 feet, but a pedestrian area on only one side is permissible with approval.
- Paving as indicated in §290-29, with textured pervious paving and flush granite curbing on shared streets. Bollards may be required to separate pedestrian areas and travel lanes, or around bioretention areas or sharp curves.

Bicycle and pedestrian access (§290-37 Adequate access from public way):

Subdivision street system required to have adequate vehicular, pedestrian, and bicycle access to a City, county, or state public or private way.

3.2.3 VARIOUS WALK / BIKE RELATED POLICIES

1. Bikeway Ordinance

Policy/Program Overview: Chapter 312 of the Code of Ordinances of the City of Northampton governs vehicles and traffic in the City. Section 312-78 establishes rules specifically for “the bikeway”. Analysis based on code version linked from City website at <http://ecode360.com/NO2226>.

Key Provisions: No motorized vehicles allowed; could limit use of e-bikes.

- Bikeway is closed from dusk to dawn; inconsistent with using the bikeway as a transportation corridor.
- Bikeway users required to:
- Stop at all street crossings.
- Yield to vehicles in the road.
- Keep to the right.

2. Bike Lane Ordinance

Policy/Program Overview: Chapter 312 of the Code of Ordinances of the City of Northampton governs vehicles and traffic in the City. Section 312-80 defines and regulates use of bike lanes in the City. Analysis based on code version linked from City website at <http://ecode360.com/NO2226>.

Key Provisions: Bike lanes are for preferential, but not exclusive, non-motorized bicycle use.

- Bike lanes to be designated by “painted lines, pavement coloring or other appropriate markings.”
- Vehicle parking in bike lanes is prohibited, subject to a \$25 fine.
- Motor vehicles must use “due caution and care” before entering or crossing a bike lane.
- City Council designates bike lanes based on recommendation of Transportation and Parking Commission, with concurrence of Department of Public Works (all three bodies must agree).

3. Bicycling Prohibited at Schools & Recreational Facilities

Policy/Program Overview: Chapter 233 of the Code of Ordinances of the City of Northampton governs parks and recreation in the City. Analysis based on code version linked from City website at <http://ecode360.com/NO2226>.

Key Provisions: “No person shall operate a motor vehicle, including, but not limited to a skimobile, minibike, trailbike, automobile, or other powered vehicle, or a bicycle, on any school grounds or in any park, playground, or recreation field operated by the Recreation Department, except on driveways and in parking lots.” (§233-1 Operation of Vehicles, emphasis added)

4. Enforcement of Ordinances

Policy/Program Overview: Chapter 40 of the Code of Ordinances of the City of Northampton governs enforcement of City ordinances by criminal complaint, civil action, and noncriminal disposition (fine). Analysis based on code version linked from City website at <http://ecode360.com/NO2226>.

Key Provisions:

- Covers all violations of city ordinances, including zoning.
- Fines are not specified for every ordinance:
 - Where a fine is not specified for a criminal complaint, the default fine is up to \$300 (§1-17 General penalty).
 - Where a fine is not specified for a noncriminal disposition, the default fine is \$20 for the first offense and \$50 for subsequent offenses.
 - Each day a violation continues is considered a separate offense.
- Fine for zoning violation (Chapter 350) is \$100.
- Fine for snow/ice removal violation (§285-17) is \$50.
- Fine for obstructing a street or sidewalk (§285-29) is \$50.

5. Complete Streets Policy

Policy/Program Overview: Section 285-51 of the Code of Ordinances of the City of Northampton contains the City's new Complete Streets Policy, passed by the City Council on December 3, 2015, and approved by the Mayor on December 7, 2015. Analysis based on code version linked from City website at <http://ecode360.com/NO2226>.

Key Provisions:

- The City's Complete Streets Policy ensures that pedestrian, bicycle and transit facilities are fully integrated into a safe and efficient transportation system.
- Since the Complete Streets Policy has been approved by MassDOT, the City submitted a Complete Streets Prioritization Plan and request funding for up to five Complete Streets projects for a maximum total of \$400,000. Program details can be found at: <http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/LocalAidPrograms/CompleteStreets/FundingProgram.aspx>.

6. Street and Sidewalk Ordinances

Policy/Program Overview: Chapter 285 of the Code of Ordinances of the City of Northampton governs various aspects of construction, maintenance, and use of streets, sidewalks, and public property in the City. Analysis based on code version linked from City website at <http://ecode360.com/NO2226>.

Key Provisions:

- Sidewalk snow clearance (§285-17 Removal of snow and ice from sidewalks):
 - Owner of any building, structure, or lot with a sidewalk must clear snow within 24 hours after snowfall ceased.
 - Owner must remove or cover with sand or other suitable substance any ice within 24 hours of its appearance.
 - Full width of sidewalk must be cleared.
 - Sidewalk must be rendered safe and convenient for travel.
- Special timing for Central Business District: within 24 hours or 9:00am the next business day, whichever is sooner.
- Violation to move ice or snow onto paved street or gravel shoulder.
- \$50 fine for violation, new fine each 24-hour period of violation.
- DPW may clear violator's sidewalk, at owner's expense.
- Preventing tire damage (§285-8 Placing items liable to damage tires on streets prohibited): illegal to place anything on a street that can damage the tires or wheels of bicycles, automobiles, or other vehicles with rubber or pneumatic tires.
- Prohibited activities (§285-12 Certain activities on streets and sidewalks prohibited):
 - No sidewalk surfboards, skateboards, roller skates, or in-line skates on certain public area, public ways, and sidewalks (§285-12.A)
 - Use of bicycles (§285-12.B Provisions for bicycles):
 - Bicycles allowed on all streets.
 - Bicycles allowed on all sidewalks except specific sidewalks in the Downtown Business District and the Florence Business District:
 - Bicycles not allowed to be "driven" in Pulaski Park.
 - Important Note: Bicycling further prohibited from "any school grounds or in any park, playground, or recreation field operated by the Recreation Department, except on driveways and in parking lots" by §233-1 Operation of Vehicles (in Chapter 233: Parks and Recreation).
- Gratings (§285-24 Gratings in streets): specifies certain dimensions of grates – no more than 2 inches between bars, and no more than 18 inches from a building;

does not meet requirements for bicycle-safe grate, and does not otherwise limit size or shape of grate.

- Obstructing sidewalks (§285-29 Obstructions to sidewalks): No obstructions allowed to sidewalks, or the pavement edge or shoulder where there is no sidewalk, including protruding vegetation. Owner must remove obstruction within 14 days of notice, or City will remove at owner's expense.

3.3 Walk Bike Programs Review

As a community that has strived to achieve its status as a very walkable and bikable city, Northampton has initiated a number of Active Transportation Programs. The mix of Education, Encouragement, Enforcement and Evaluation programs give residents important tools to better integrate walking and bicycling into their lives, and increase the number of both modes. This is especially critical with children as Safe Routes to School efforts will instill lessons and habits that can be used for a lifetime. The sections below give a summary of the various programs, which in aggregate have helped the City achieve designation as a walk-friendly and bicycle-friendly community.

Program: Safe Routes to School (Education and Encouragement)

Source: Erin Reed, Statewide Coordinator, Massachusetts Safe Routes to School Program

Safe Routes to Schools Overview: Safe Routes to School (SRTS) is a federally-funded, MassDOT-managed program that “promotes healthy alternatives for children and parents in their travel to and from school.” SRTS has education, encouragement, and infrastructure components.

Key Activities:

All four Northampton elementary schools and the middle school are SRTS partner schools.

- According to SRTS: “Northampton Schools have various walking clubs/ activities within their gyms and/or on school grounds. During 2014 and 2015,

SRTS met with the head nurse of K-12, twice with the transportation director, and once with the Superintendent. A handful of meetings were held with Northampton's Mass in Motion organizer about plans to increase walking and walking/ bicycling safety. There was a big concern expressed regarding walking school bus creation and walking promotion in general: the number of local child offenders/ predators in the community.”

- Northampton schools have not participated in SRTS bicycle or pedestrian safety trainings.
- The Jackson Street Elementary School received a SRTS infrastructure project completed in 2010. Leading up to the project, the school conducted student travel tallies and parent surveys annually.
- Northampton Public Schools added travel safety information to the school district website (<http://www.northampton-k12.us/traveling-to-school-safely>):

Northampton Public Schools has employed crossing guards at the following intersections:

- Jackson Street & Barrett Street
- Florence Street and Leeds
- Prospect Street & Massasoit Street
- Florence Street & Arch Street
- Bridge Street & Hawley Street
- Parson Street & Union Street
- Bridge Street near Pomeroy Terrace
- Brookside Circle & Deerfield Drive
- JFK Middle School
- Mulberry Street & Main Street
- Ryan Road & Matthew Drive

Program: Encouragement

Sources: Wayne Feiden, Northampton Director of Planning and Sustainability; Sean Condon, President, MassBike Pioneer Valley Chapter; Craig Della Penna, Co-President, Friends of

Northampton Trails and Greenways; MB/PV website (<http://massbikepv.org/>); Bay State Bike Week website (<http://baystatebikeweek.org/>); Friends of Northampton Trails and Greenways website (<http://fntg.net/>); Northampton Cycling Club website (<http://www.nohobikeclub.org/nccwp/>)

Encouragement Overview: Activities to encourage bicycling and walking in Northampton are ongoing and multi-faceted, relying on various nonprofit organizations, with very limited government funding.

Key Activities:

- Trail and bike maps: Produced by the Friends of Northampton Trails and Greenways, available for download on the FNTG website, hardcopy at local businesses and at several bike path kiosks.
- Wayfinding/Signage:
 - City installed approximately 12 bike paths kiosks 12-13 with signage, funded by a Recreational Trails Grant obtained by MassBike and the City.
 - City installed a large graphic art sign on the bike path bridge over Main Street (helps define downtown and draw people to path).
 - City is working with WalkBoston to install wayfinding signs with distances to key destinations, 100 total, 20-30 on bike path.
 - City plans to install mileage markers on bike paths, starting with salvaged granite marker at Union Station, with flush granite markers on bike paths.
- Trail information is available on City website at: <http://www.northamptonma.gov/1346/BikeWalk-Trails>.
- Bay State Bike Week: annual statewide celebration of bicycling, coordinated by MassDOT, MassBike, and MassRIDES. The Pioneer Valley is host to many Bike Week events each year. Bay State Bike Week traces its roots to Pioneer Valley Bike Commute Week, which



started in 1999 and is now in its 17th year, coordinated by the Pioneer Valley Planning Commission and the MassBike Pioneer Valley Chapter.

- Northampton Cycling Club (NCC) BikeFest: annual bike tour and festival.
- MassBike/Pioneer Valley chapter is interested in holding Open Streets events in Northampton, but has not identified funding.
- National recognition for Northampton's programs (and infrastructure): recognized as a Bronze-Level "Bicycle Friendly Community" by the League of American Bicyclists and a Bronze-Level "Walk Friendly Community" by the Pedestrian and Bicycle Information Center.

Program: Education

Sources: Anne-Marie Moggio, Director, Northampton Parks & Recreation Department; Sean Condon, President, MassBike Pioneer Valley Chapter; Ruthy Woodring, Co-founder, Pedal People Cooperative; MB/PV website (<http://massbikepv.org/>); Bay State Bike Week website (<http://baystatebikeweek.org/>)

Education Overview: A variety of local

Kids participate in the Safety Village summer program



programs provide education on bicycling and walking safety, and related topics, led by the City, nonprofits, Smith College, and other organizations.

Key Activities:

- **Safety Village:** The Parks & Recreation Department runs a summer program for 4-6 year olds that teaches various safety topics, including bicycle, pedestrian, and traffic safety, in a replica of Northampton with storefronts, streets, sidewalks, and signs. The program consists of three, two-week sessions per year, reaching up to 120 children. It has been in operation for approximately 25 years. Representatives from the police, fire department, hospitals, and other agencies participate. The children ride bicycles with training wheels and walk the sidewalks to learn traffic safety. See details at <http://www.northamptonma.gov/905/Safety-Village>.
- **Teen Camp:** The Parks & Recreation Department also offers occasional bike safety training, bike rides, and bike maintenance training at its teen camps, but less regularly than the Safety Village program.
- City distributes “Watch for Bikes” stickers for car mirrors, but not in an organized program.
- **Road Cycling 101:** bicycling skills class offered jointly by MassBike Pioneer Valley Chapter and Northampton Cycling Club, 14 participants in 2015
- **Smith Bike Kitchen:** Smith College has an on-campus bicycle repair, education, and rental organization.
- **Pedal People education programs:** Pedal People is a cooperative whose primary activity is delivery and cargo hauling by bicycle, and they provide training to their employees covering bike safety and maintenance, and operation of cargo trailers. Pedal People also provides

educational programs to the public. The Saturday Bike Lab consists of regular workshops and classes in bicycling skills and bicycle maintenance. Since December 2014, Pedal People has partnered with Berkshire Driving School in Easthampton to offer a monthly, one-hour training to student drivers (mostly teenagers) including sharing the roads as drivers and cyclists, safe interactions between drivers and cyclists, common cyclist concerns, and cyclist behavior.

- As noted in the Safe Routes to School section, Northampton schools have not participated in bicycle and pedestrian safety trainings offered by SRTS.

Program: Enforcement

Sources: Bonnie Polin, Chief Safety Analyst, Traffic and Safety Engineering Section, MassDOT Highway Division; Gary Roux, Principal Planner/Traffic Manager, Transportation, Pioneer Valley Planning Commission; Wayne Feiden, Northampton

Director of Planning and Sustainability

Enforcement Overview: A collection of target enforcement activities intended to enhance pedestrian and bicycle planning.

Key Activities:

Northampton is currently participating in the MassDOT bicycle and pedestrian safety program, which includes an enforcement component funded through the Pioneer Valley Planning Commission. This funding has included occasional helmet giveaways by Northampton Police Department.

Program: Evaluation

Sources: Friends of Northampton Trails and Greenways, Pioneer Valley Planning Commission (PVPC), Central Transportation Planning Staff (CTPS)

Evaluation Overview: Involved a series of trail counts between 2005 and 2011 on the three rail trails within the City of Northampton. A summary of the data collected can be found on the following page.

Bicycle & Pedestrian Counts

RAIL TRAILS

Counted	All users	All users	All users	All users	Bikes	Bikes	Bikes	All users	Bikes	All users	All users	All users	All users
When	2005	2005	2005	2005	2005	2007	2008	2008	2008	2008	2008	2010	2010
Where	Mass Central Rail Trail	Mass Central Rail Trail	Mass Central Rail Trail	Mass Central Rail Trail	Mass Central Rail Trail	Mass Central Rail Trail	Mass Central Rail Trail	Mass Central Rail Trail	MassCentral Rail Trail / Norwottuck Rail Trail	MassCentral Rail Trail / Norwottuck Rail Trail	New Haven & Northampton Canal Line	New Haven & Northampton Canal Line	New Haven & Northampton Canal Line
Daily Average	301	280	417	470	514	341	-	-	-	-	-	650	286
Count	-	-	-	-	-	-	35 / hour	68 / hour	109 / hour	129 / hour	450 / day	-	-
Month	April	November	-	-	-	-	September	September	September	September	April - September	May, July, September	May, July, September
Day	Weekday	Weekday	Weekday	Weekend	-	-	Weekend	Weekend	Weekend	Weekend	Weekend	Weekend	Weekday

Trail Counts

The map graphic to the right displays the rail trail count locations described in the table above. The Friends of the Northampton Trails & Greenways conducted five separate manual counts on Tuesdays and Saturdays. The Pioneer Valley Planning Commission utilized automated counters, and recorded a peak number of users in summer and early fall, and as expected, a low of 170 users per day during rain. The Central Transportation Planning Staff utilized both manual counts and automated count devices, conducting counts across a wide variety of times throughout the day, recording the peak hour for cyclists between 3:00 and



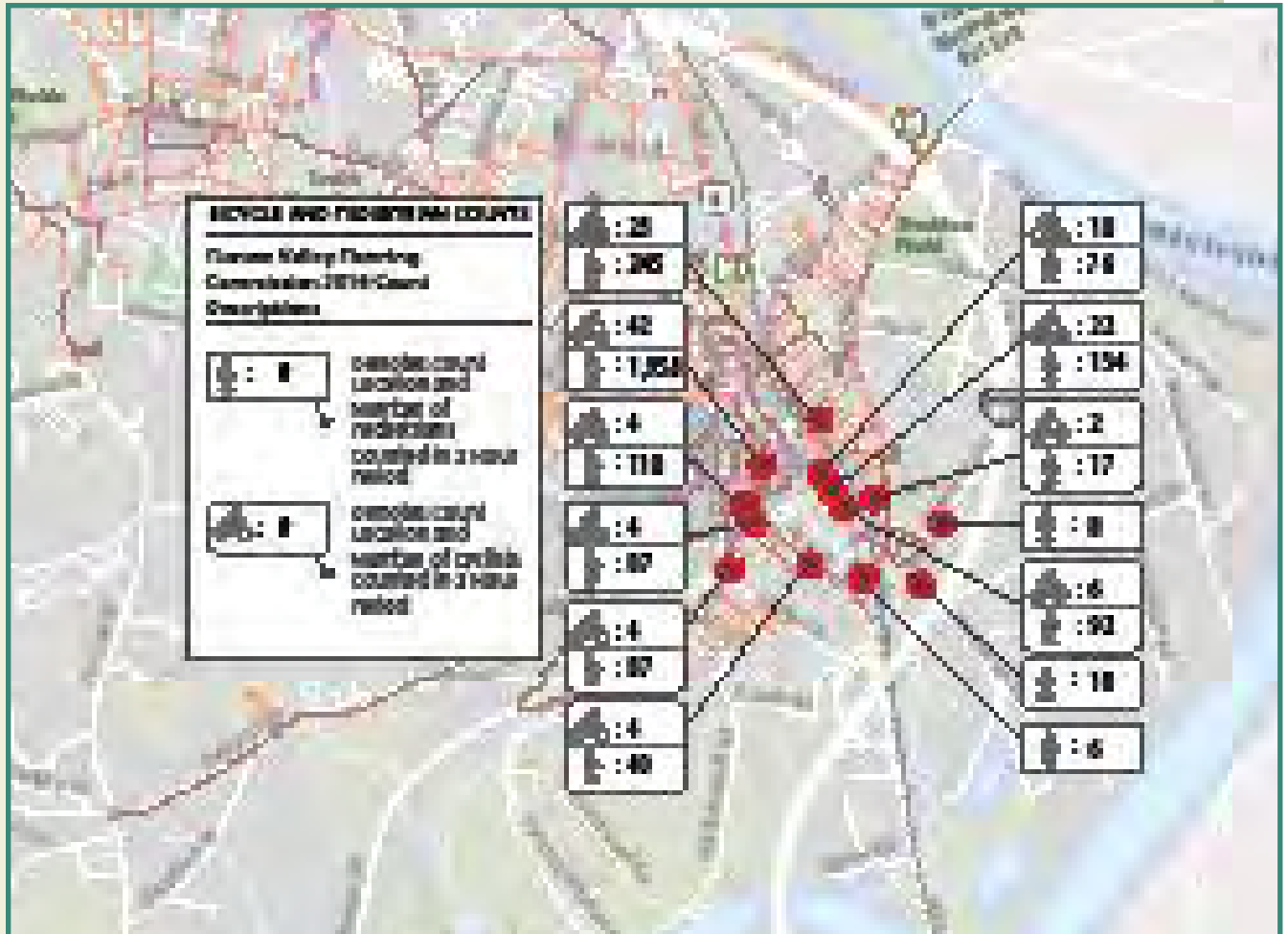
4:00 pm and the peak hour for all trail users between 9:00 and 10:00 am. The City of Northampton will set up a permanent automated counter

on the MassCentral Rail Trail for pedestrian and bike traffic, along with a second 24-hour counter on Main Street for pedestrians only.

Pedestrian and bicycle counts on other streets and sidewalks on next page.

PVPC 2016 Bicycle & Pedestrian Counts

..... DOWNTOWN LOCATIONS



Street & Sidewalk Counts

The map graphic to the left displays the street and sidewalk count locations conducted by the PVPC in 2016. The counts record data over a two hour timeframe, evenly split between mornings and afternoons, and typically on weekdays in February and March. An important statistic present in the data is the 1,958 pedestrians counted over a two-hour span on Main St. just east of Center St.



4. EXISTING CONDITIONS ANALYSIS

The analysis of existing conditions has been divided into two sections: Current Conditions and System Gap Analysis. Current Conditions includes a graphic description of existing bicycle facilities, transit routes and the sidewalk/crosswalk network, while the System Gap Analysis inventories gaps in the bicycle and pedestrian network and/or missing facilities for bicyclists and walkers.

4.1 CURRENT CONDITIONS

Alta conducted an analysis of current conditions based on field work, comments from City staff and the Project Advisory Committee, online resources, and through the examination of multiple sets of data.

Northampton's bicycle facilities include an extensive rail trail system comprised of four legs:

- **The MassCentral / Norwottuck Rail Trail** from downtown easterly toward Hadley and Belchertown (this trail will eventually reach Boston)
- **The Mass Central Rail Trail** from downtown westerly towards Williamsburg
- **The New Haven & Northampton Canal Line** from downtown Northampton extends to Southampton and will eventually reach New Haven
- **Rocky Hill Greenway** from Ice Pond Drive to Blackbirch Trail / Rocky Hill Cohousing

Most rail-trails are 10 feet wide and paved. Many have a broken yellow divider line. In most instances, the trail crosses the various intersecting streets at grade, with connecting ramps where the trail passes above or below road grade at Jackson Street, Easthampton Road and over Main Street. In addition to the rail trail network, Northampton has a modest network of on-street bicycle facilities, which include:

- **Main Street / Elm Street / North Elm Street bike lanes** are between State Street and Prospect Avenue, and with shared lane markings for a short stretch between Bedford Terrace and Prospect Street
- **Prospect Street bike lanes** from Finn Street to the intersection with North Elm
- **Main Street Shared lane markings in Florence**, transitioning to **North Main Street striped bike lanes** from Cosmian Avenue to Hayward Road and the Norwottuck Rail Trail to Haydenville Road



Most sidewalks outside of downtown are five feet wide with grass strips between them and the adjacent roadway



Wide sidewalks in the heart of downtown help to create a strong sense of place

- **Bridge Street bike lanes** from the on-ramp access to I-91 southbound to Parsons Street
- **South Street bike lanes** from Old South St. to the Earle St. intersection, with most of the segment including a green striped buffer area for additional width and a rumble strip for vehicular separation
- **West/Chapel/Rocky Hill Road (Route 66) striped shoulder** from Belmont Avenue to the Westhampton City line. (No bike lane markings along this corridor)
- **Locust Street bike lanes** between S. Main St. and Berkshire Terrace
- **North Main Street Florence bike lanes** from North Maple to Haydenville Road

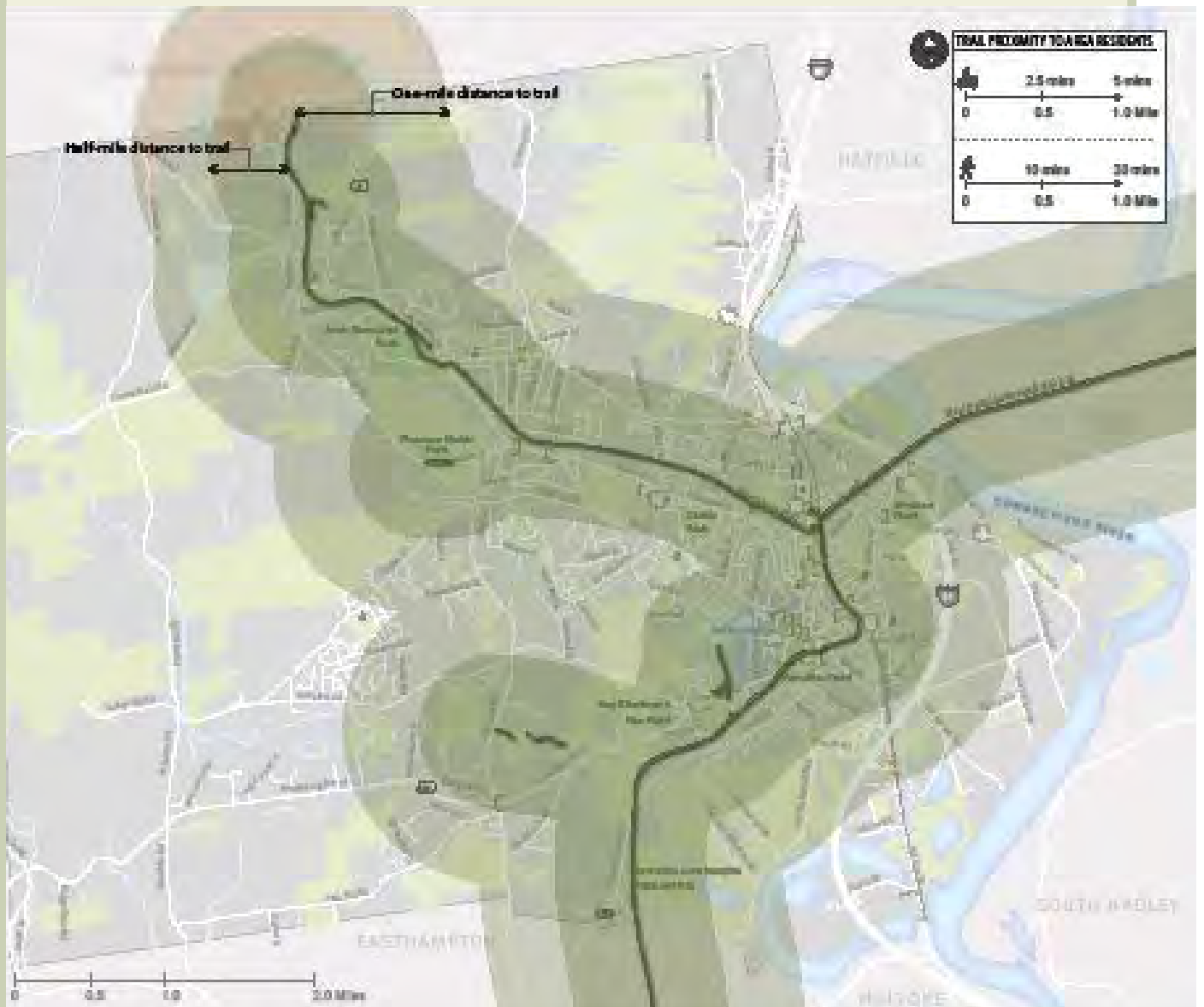
From a pedestrian infrastructure point of view, Northampton's sidewalk network is quite complete downtown, in the adjacent historic neighborhoods and along the radial road network extending away from downtown. Most sidewalks on residential streets are buffered from the adjacent roads by grassy strips, with sidewalks along narrow corridors and downtown separated from the roadway only by a curb. A number of streets in these areas lack a sidewalk on one side, with a handful lacking sidewalks entirely. Downtown, the retail environment and generous sidewalks along Main Street and the adjacent side streets create a strong sense of place that draws shoppers, diners and music lovers from throughout the region.

Inventory of Pedestrian/ Bike Infrastructure

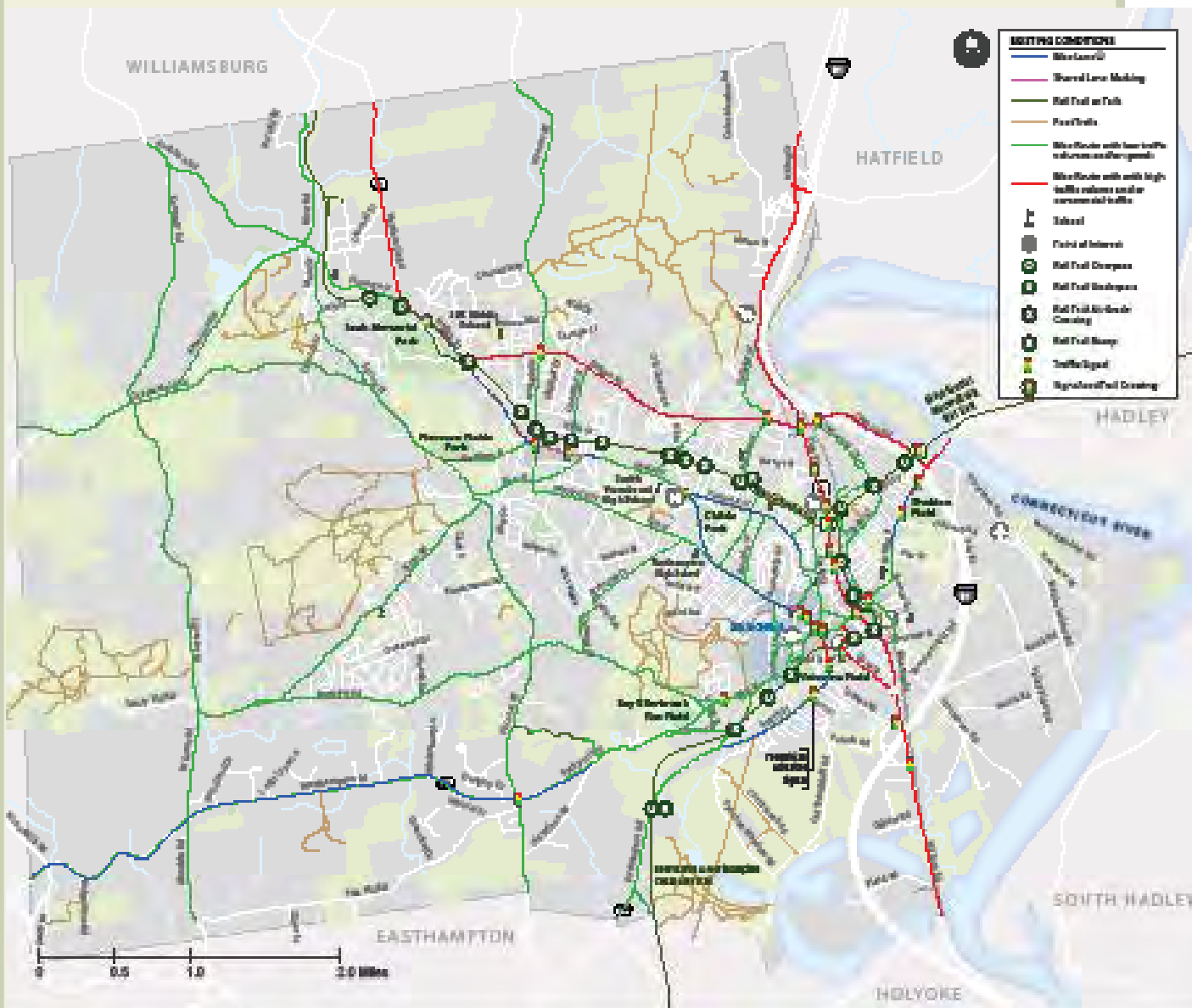
ON-STREET BIKE FACILITY DISTANCES*	
Bike Lanes	8.5 miles
Shared Lane Markings	0.4 miles
ARTERIALS & COLLECTORS*	
Total Length of Northampton Arterials & Collectors	32.4 miles
Bike Lanes on Arterials & Collectors	5.1 miles
Percentage of Bike Lanes on Arterials and Collectors	16%
Bike Lanes on Other Streets	3.4 miles
RAIL TRAILS*	
MassCentral / Norwottuck	1.7 miles
MassCentral Rail Trail	5.1 miles
New Haven & Northampton Canal Line	2.7 miles
Rocky Hill Greenway	0.3 miles
Total	9.8 miles
SIDEWALKS	
Total sidewalks	77.8 miles

*Per City of Northampton GIS data

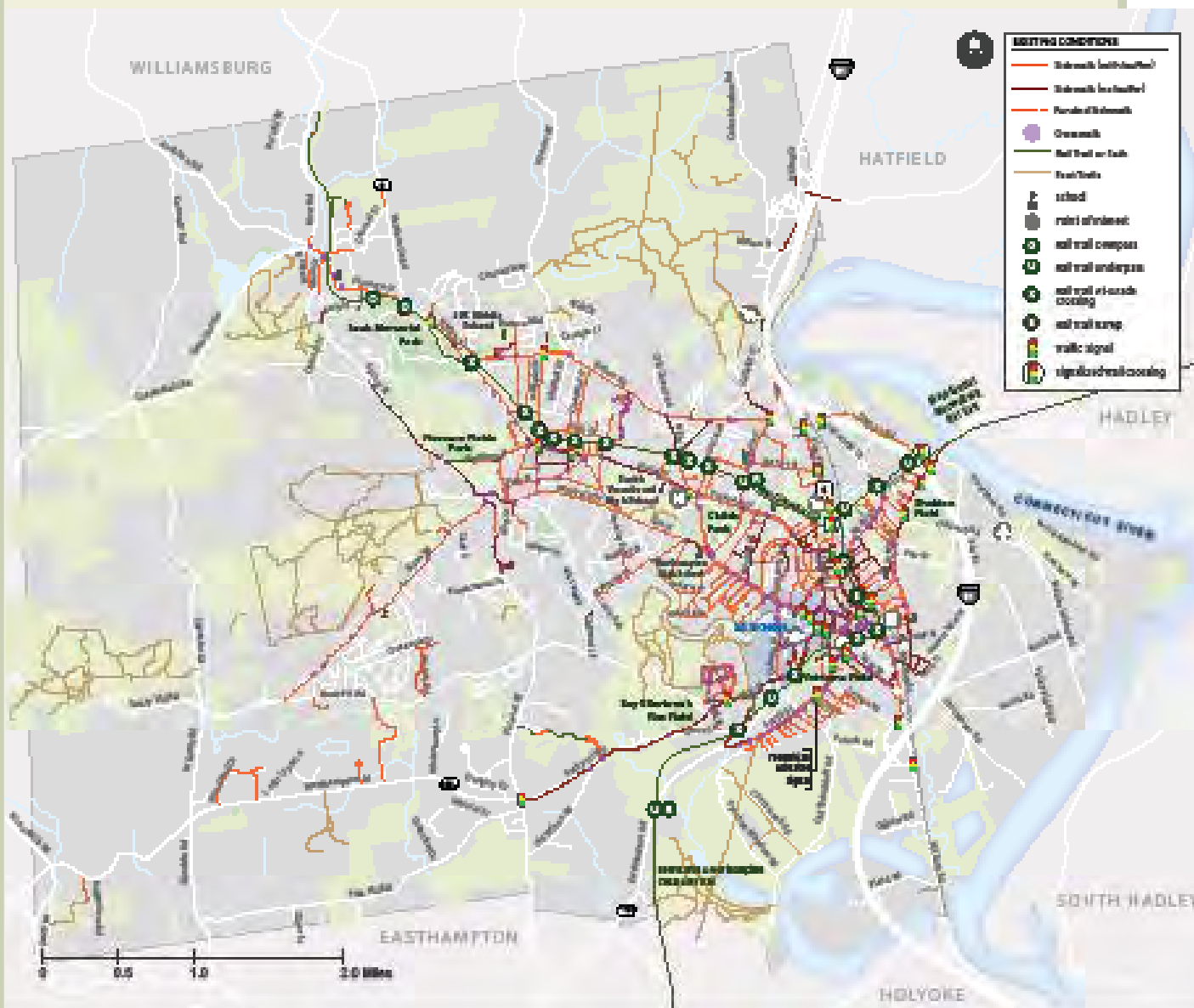
EXISTING TRAIL NETWORK



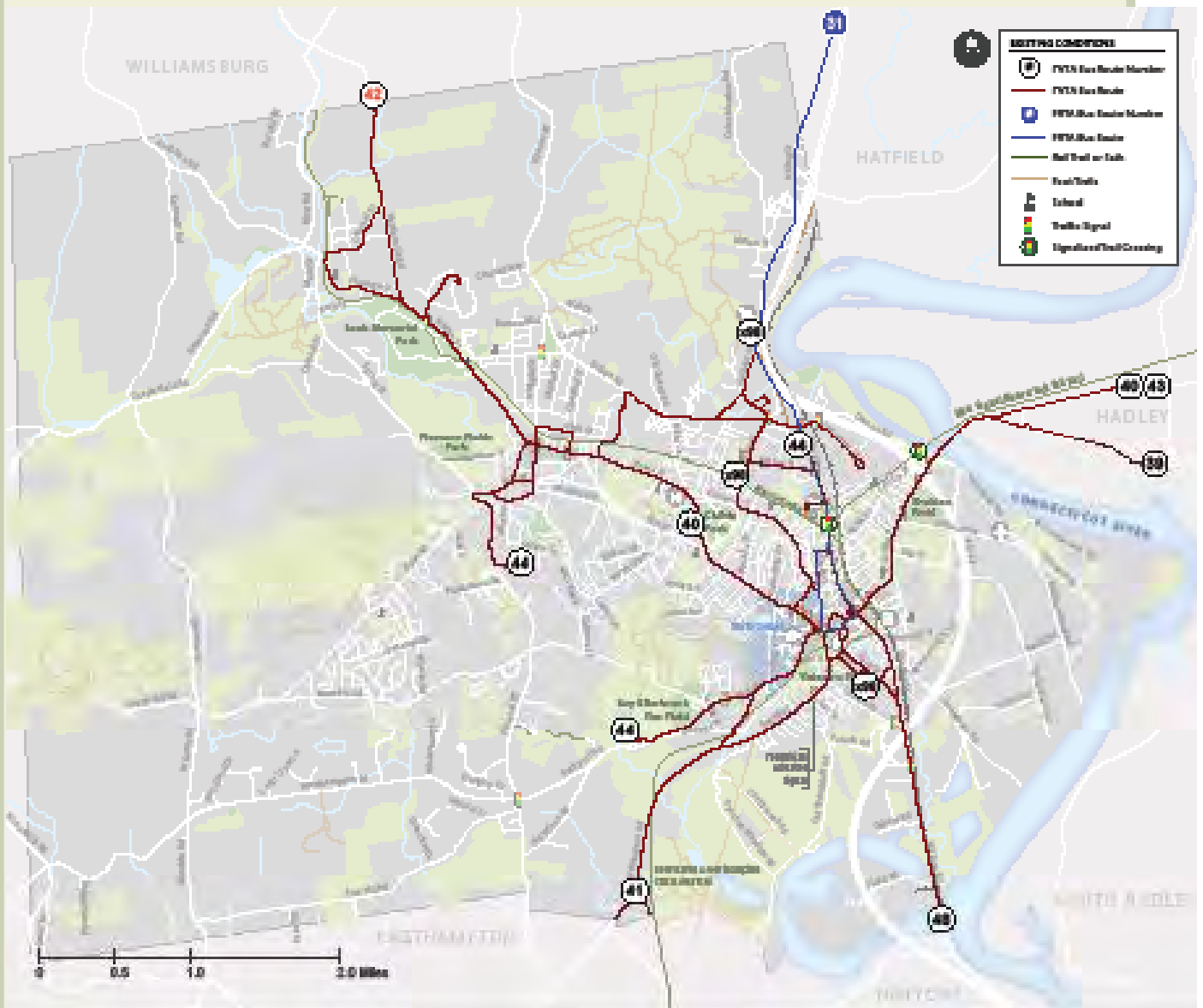
EXISTING BICYCLE NETWORK



EXISTING PEDESTRIAN NETWORK



EXISTING PVTA BUS NETWORK





CRASHES RELATED TO PEDESTRIANS & BICYCLISTS*

Year	CITY WIDE TOTAL		MAIN STREET ONLY		FATALITIES
	Pedestrian	Bicycle	Pedestrian	Bicycle	All Modes
2006	17	12	8	0	1
2007	16	12	2	5	3
2008	18	17	3	3	2
2009	11	11	1	3	1
2010	16	16	3	1	4
2011	16	17	1	7	0
2012	22	20	0	3	4
2013	18	17	3	2	1
2014	12	17	1	3	1
2015	15	14	3	2	2
TOTAL	161	153	25	29	19
Average	16.1	15.3	2.5	3.9	1.9

Pedestrian + Bicycle + Crashes & Fatalities

The dots on the map represent MassDOT's data from 2009 - 2013. The crash data displayed here included X and Y coordinates, and are therefore presented in the map graphic below. The table in the bottom left contains a summary of 10 years of crash data provided by the Northampton Police Department. While the police department data did include the street name where the crash occurred, no address or cross streets were included, and therefore this data was not mapped.



Lack of bicycle facilities & continuous sidewalks along N Maple St. creates a corridor gap between Mass Central Rail Trail, Arcanum Field & Fitzgerald Lake Conservation Area trails



The west side of State St. is a linear gap in pedestrian connectivity downtown



Along MassCentral Rail Trail, desire lines in spots indicate need of easement rights across National Grid's utility corridor*

4.2 GAP ANALYSIS

As part of the existing conditions analysis, Alta conducted a qualitative system gap analysis based on field observations, existing planning documents and through the examination of GIS data, aerial imagery, and on-line mapping websites. The analysis includes existing rail trail and on-street networks and features Corridor Gaps, Linear Gaps, Spot Gaps, and intersections that are particularly challenging for bicyclists and pedestrians. In a follow-up contract to this plan, Alta is currently building from this qualitative analysis to develop a more-detailed quantitative gap analysis of the City's sidewalk network.

In aggregate, this analysis provides an understanding of which areas have the greatest need for improvements, which areas can benefit most from strategic investment, and which areas pose the greatest challenges to further developing a bicycling and walking network.

Corridor Gaps These gaps are missing links of significant length, typically a half mile or more, where bicycle/pedestrian facilities are desired but do not exist, or are not adequate based on existing or future demand. They may correspond to a street corridor or a desirable route connecting neighborhoods, popular destinations, or to adjacent communities.

Linear Gaps These gaps are missing segments in an otherwise connected facility, typically ¼ mile or less. Linear gaps may also be barriers between destinations and routes. Significant

linear gaps occur in the sidewalk network in many parts of Northampton, especially the more suburban/rural areas where homes were developed in the 1960's through the first decade of the 21st century. (More-recent housing development is required to have sidewalks, as part of current sub-division regulations.) A key linear gap in the bicycle network include the gap between the bike lanes and shared lane markings in central Florence and the bike lanes along Elm St. and Prospect St. For the sidewalk network, one critical linear gap runs along the west side of State Street from Main Street to Trumbull Road.

Spot Gaps These gaps are point-specific locations lacking facilities or other treatments to accommodate safe and comfortable travel for walkers and bicyclists. This could range from a lack of crosswalk at a key location to a missing spur connection from a rail trail to an adjacent street or open space. There are various spot gaps within the pedestrian network throughout Northampton: a block lacking a sidewalk, a missing crosswalk at the end of a sidewalk stub, a worn path between a rail trail and adjacent street, and a wide roadway with an unnecessarily long crosswalk. Many streets that dead-end at a rail trail lack proper ADA curb ramps and comfortable connections to the rail trails.

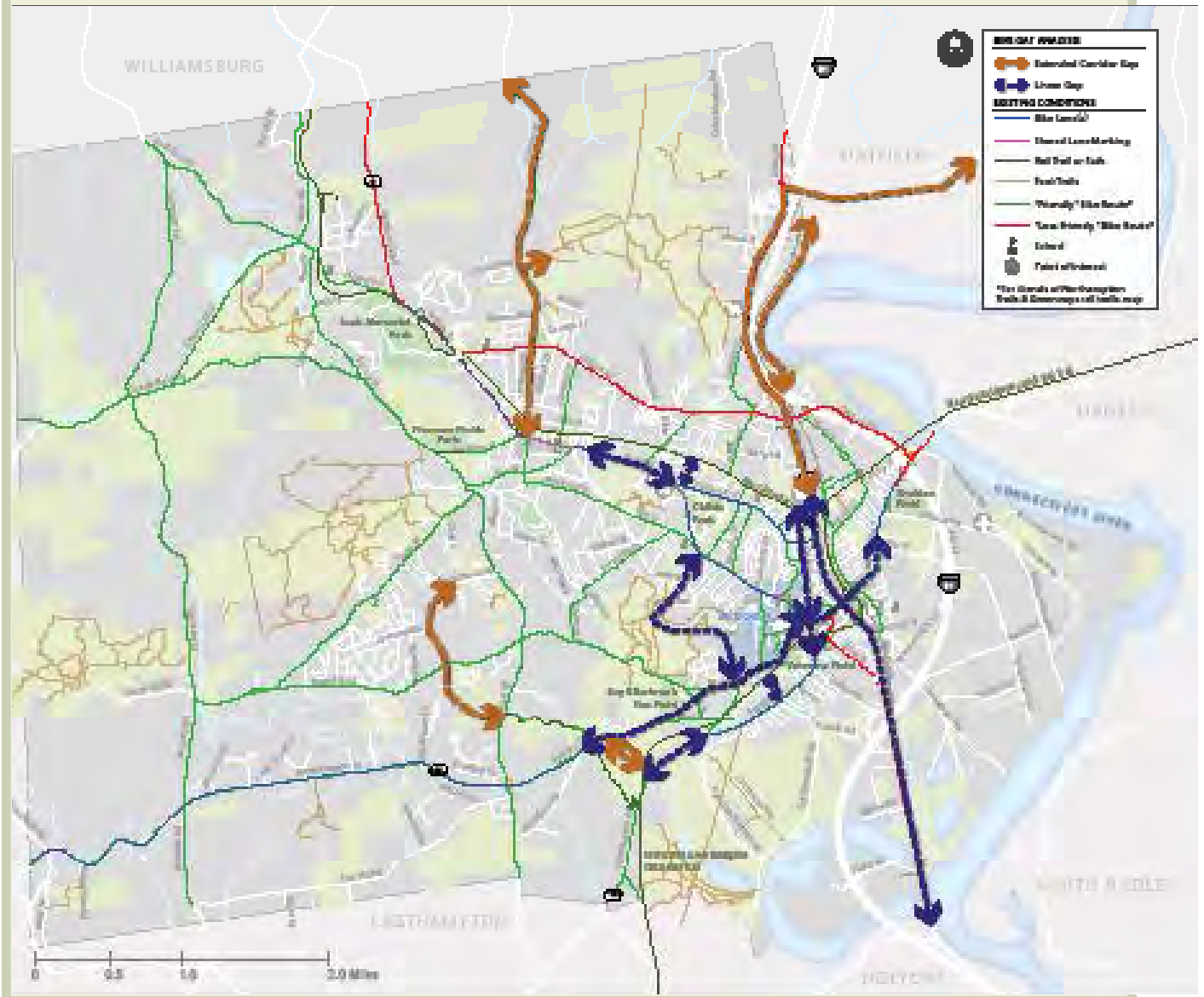
Challenging Intersections These are intersections that are particularly difficult or unsafe for pedestrians and/or bicyclists. This may be due to wide intersecting roadways, free right turns, large turning radii, confusing geometry, long crossing

*NOTE: This trail access is designed and planned for 2016 or 2017 construction

distances, lack of crosswalks, or inadequate traffic controls. There are challenging intersections sprinkled throughout the City, with some of the most prominent being the West Street/Elm Street intersection, King Street/Damon Road, Elm Street/North Elm Street and Park Street/Meadow Street/North Main Street.

In aggregate, the various gaps form a key challenge to improving bicycling and walking conditions in Northampton. The following series of maps represent gaps, opportunities and challenges, citywide and within Florence and downtown Northampton.

BICYCLE GAP ANALYSIS



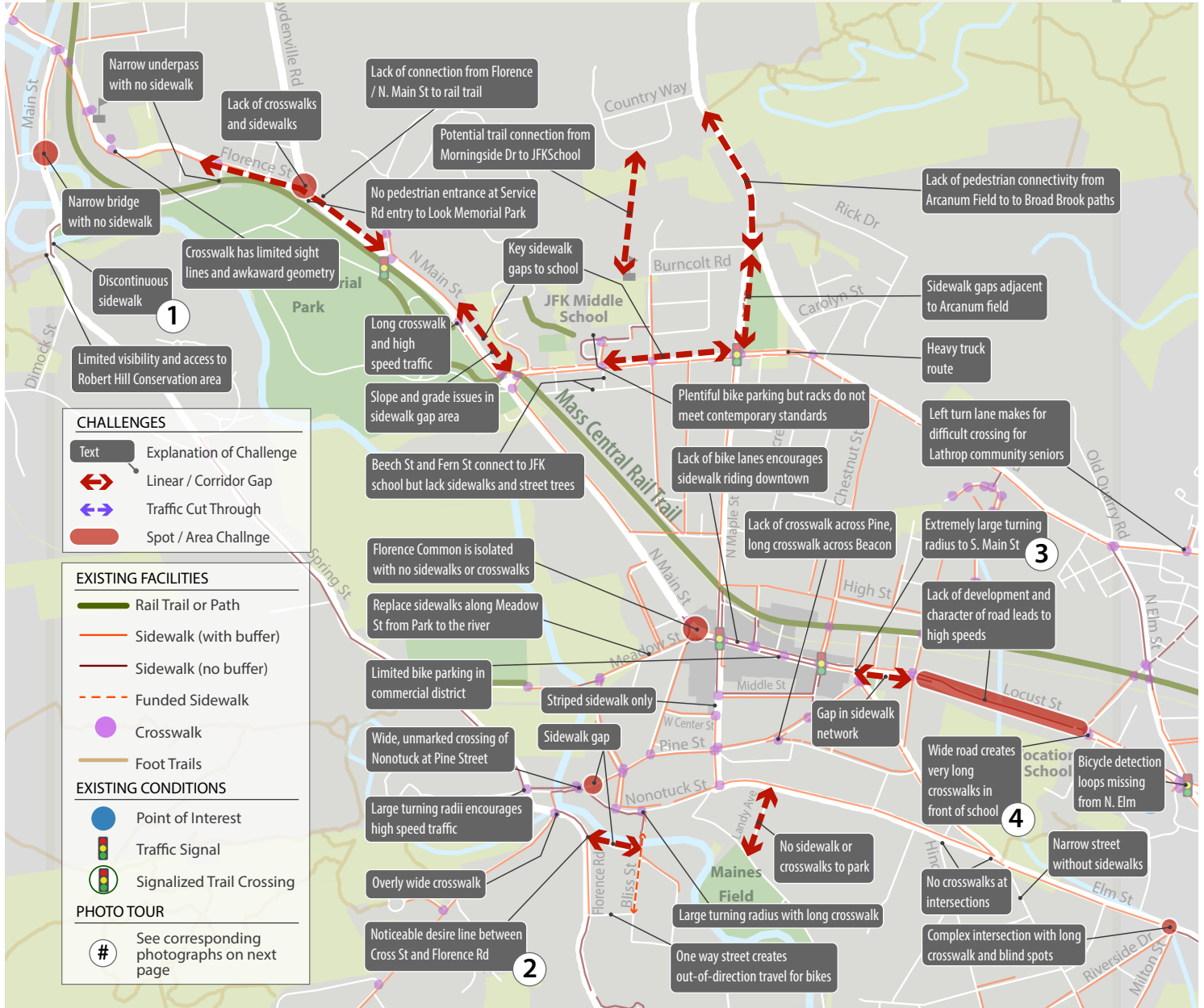
FLORENCE OPPORTUNITIES ANALYSIS



DOWNTOWN - OPPORTUNITIES ANALYSIS



FLORENCE CHALLENGES ANALYSIS



1

Discontinuous sidewalk.



2

Noticeable desire line between Cross St and Florence Rd.



3

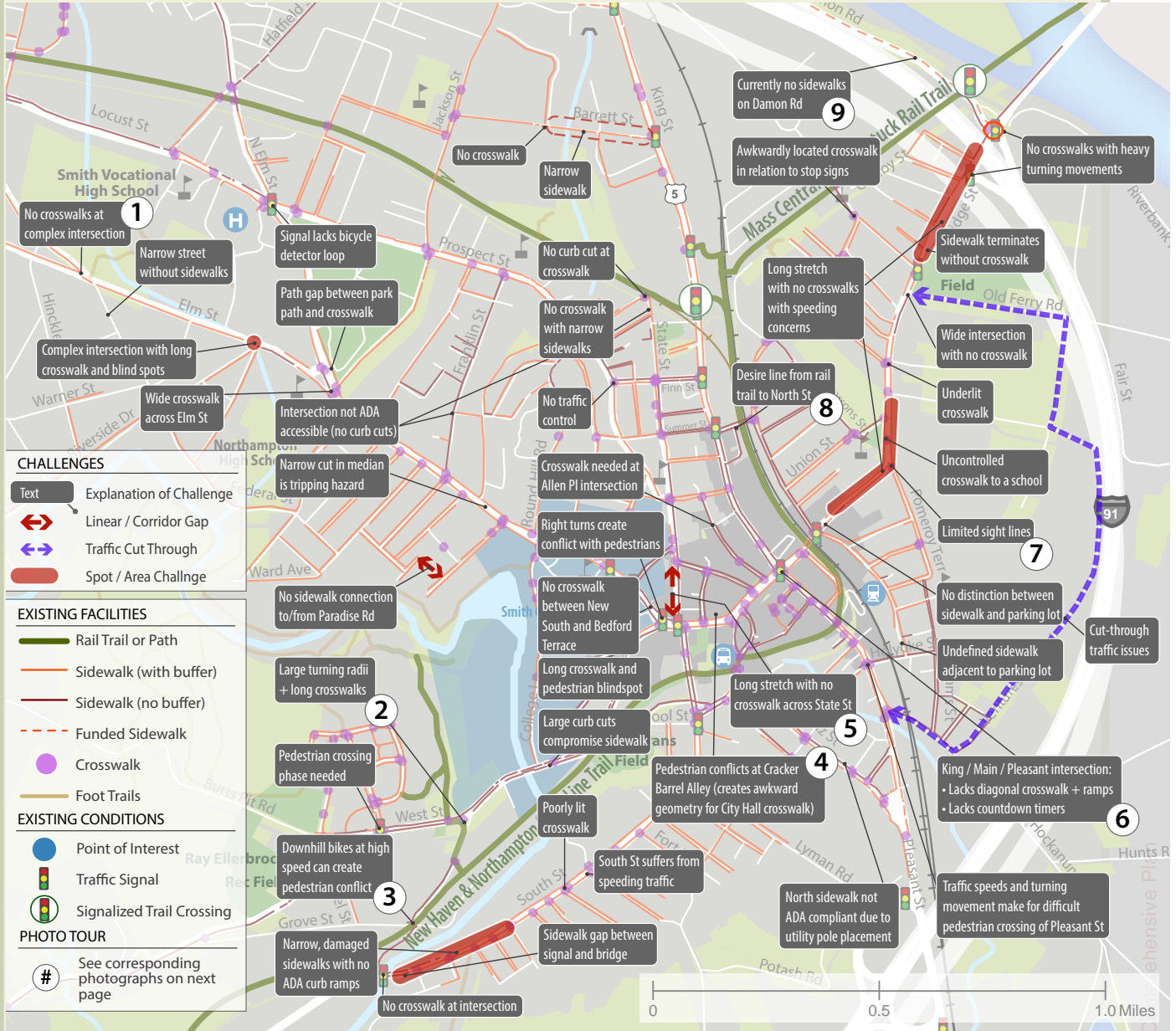
Extremely large turning radius to S Main St from Main St. (at upper left



4

Wide road creates very long crosswalks in front of school.

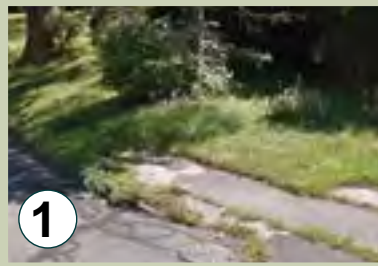
DOWNTOWN PEDESTRIAN NETWORK CHALLENGES ANALYSIS



GAP ANALYSIS: BIKE NETWORK, DOWNTOWN

Challenges that exist in the pedestrian and bicycle network in downtown Northampton.

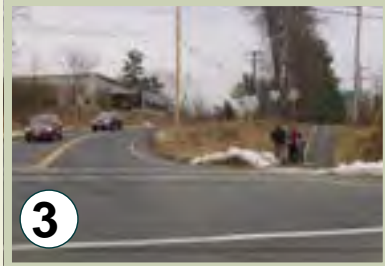
(See map on previous page.)



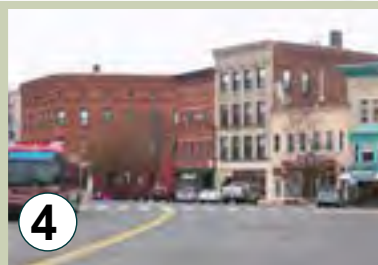
No crosswalks at complex intersection.



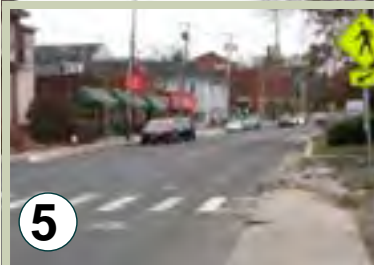
Large turning radii and long crosswalks.



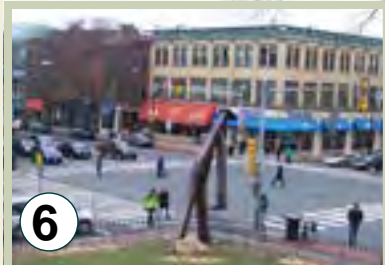
Downhill bikes at high speed create pedestrian conflict.



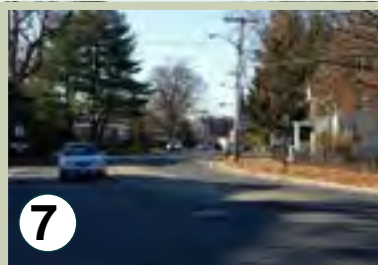
Pedestrian conflicts at Cracker Barrel Alley.



Long stretch with no crosswalks across State Street.



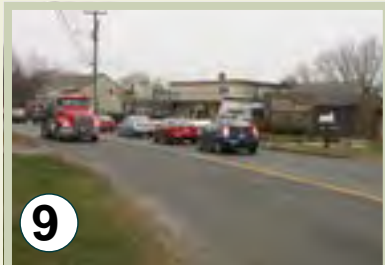
Lacks diagonal crosswalks, ramps, and countdown timers.



Limited sight lines.



Desire line from rail trail to North Street.



Currently no sidewalks along Damon Rd.

DOWNTOWN BICYCLE NETWORK CHALLENGES ANALYSIS



5. Public Outreach



The Walk/Bike Northampton Comprehensive Plan is a reflection of the community's desire for a more walkable, bikable and accessible city. Through communication with residents, business owners, advocates, stakeholders and other interested groups, the planning team created a long list of projects to support this desire. The public engagement process included a pair of well-attended public forums, two outreach events related to the redesign of Main Street, monthly meetings with the City's Bicycle and Pedestrian Subcommittee and a project website that was able to process public comments. To supplement the Alta team's effort, the Pioneer Valley Planning Commission conducted additional outreach to communities who are less likely to attend evening meetings downtown to ensure input was gathered from a wide variety of sources. In aggregate, the comments and ideas from all facets of the engagement helped to inform many of the project and policy recommendations found throughout this report.

Pioneer Valley Planning Commission Outreach

Concurrent with Alta's public involvement described in this section, the Pioneer Valley Planning Commission (PVPC) sought perspectives on walking and bicycling by engaging with residents via Casa Latina, the Human Rights Commission and the Housing Authority properties. Generally, they were more interested in specifics for walking--with requests for:

- More sidewalks to assure connectivity, especially to school and parks from residential neighborhoods as well as other important destinations,
- Highlighting the need for sidewalk repair and maintenance, especially for wheel

chair accessibility and to avoid elderly falls due to cracks and upwelled surfaces,

- The importance of lighting for safe walking at all hours.

With respect to bicycling, the people engaged did not, for the most part, feel that bicyclists belong within shared lanes with cars, so the need for bike lanes on streets as well as off road bike paths was highlighted. PVPC also understood this as an expression of need for a broad public information and education campaign to inform Northampton residents that a bicycle is a vehicle and as such belongs on the road.

A potential area of conflict surfaced with respect to the City's commitment to prioritize pedestrian infrastructure within a close proximity to the

downtown--where services are concentrated--versus the high cost of housing within this same area. The residents PVPC engaged are generally less well-off economically and, not including the people who live in the Housing Authority properties downtown, cannot afford to live close to the city center. These people indicated a desire for new and improved sidewalks in the outlying neighborhoods.

PUBLIC FORUM #1

On March 7th, 2016 the consultant team led the first public forum at the Senior Center on Conz Street to introduce our general approach to conducting Northampton's Walk Bike Comprehensive plan and present the existing conditions analysis. The presentation included photos and explanations of pedestrian and bicycle facility-related tools that can be used to create a comfortable cycling and walking environment for everyone. Pieces of the toolkit included rail trails, sidewalks/crosswalks, intersections, and green streets principles. The forum had a strong turnout, with over 120 in attendance. Base maps of the city that showed existing sidewalk locations and conditions, rail trail locations, and on-street bicycle facility locations were utilized to solicit input and feedback from the public. Comments were recorded and digitized in the appendix of this report.



PUBLIC FORUM #2

On May 18th, 2016 the consultant team led the second of two public forums at First Churches Sanctuary on Main Street to go over the proposed recommendations to enhance Northampton's bicycle and pedestrian network. Over 40 members of the community attended the event. Project ideas were displayed on large printed maps and digitally during a presentation. The public was encouraged to comment on specific projects and recommend changes to project maps. In an effort to develop a fair and equitable project priority list, a common set of evaluation criteria was circulated and attendees were encouraged to list the criteria on a scale of Very Important to Not Important (right top). 32 surveys were completed. The survey results (right bottom) indicate that improved connectivity to existing networks, improved links to popular destinations, and improved safety were the highest-rated choices.

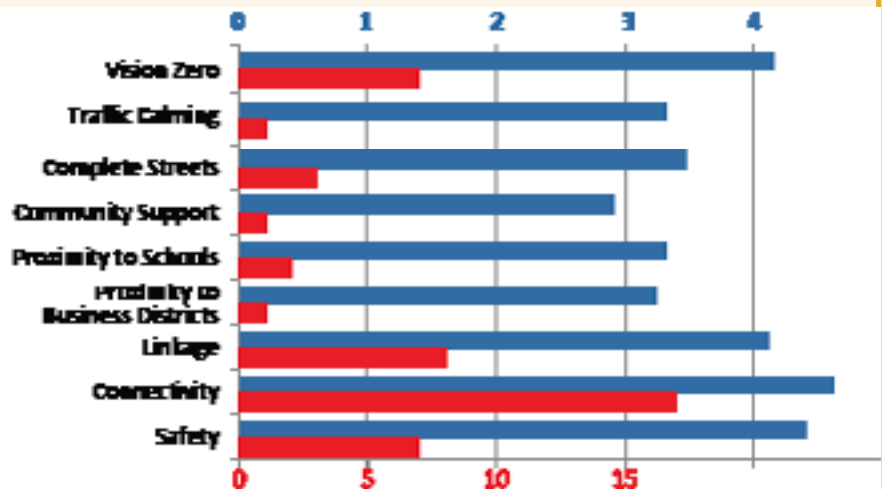
One of the many outreach meetings hosted "on-site" by PVPC included one in April at CasaLatina in Florence.

Project Priority Evaluation Criteria Survey Responses

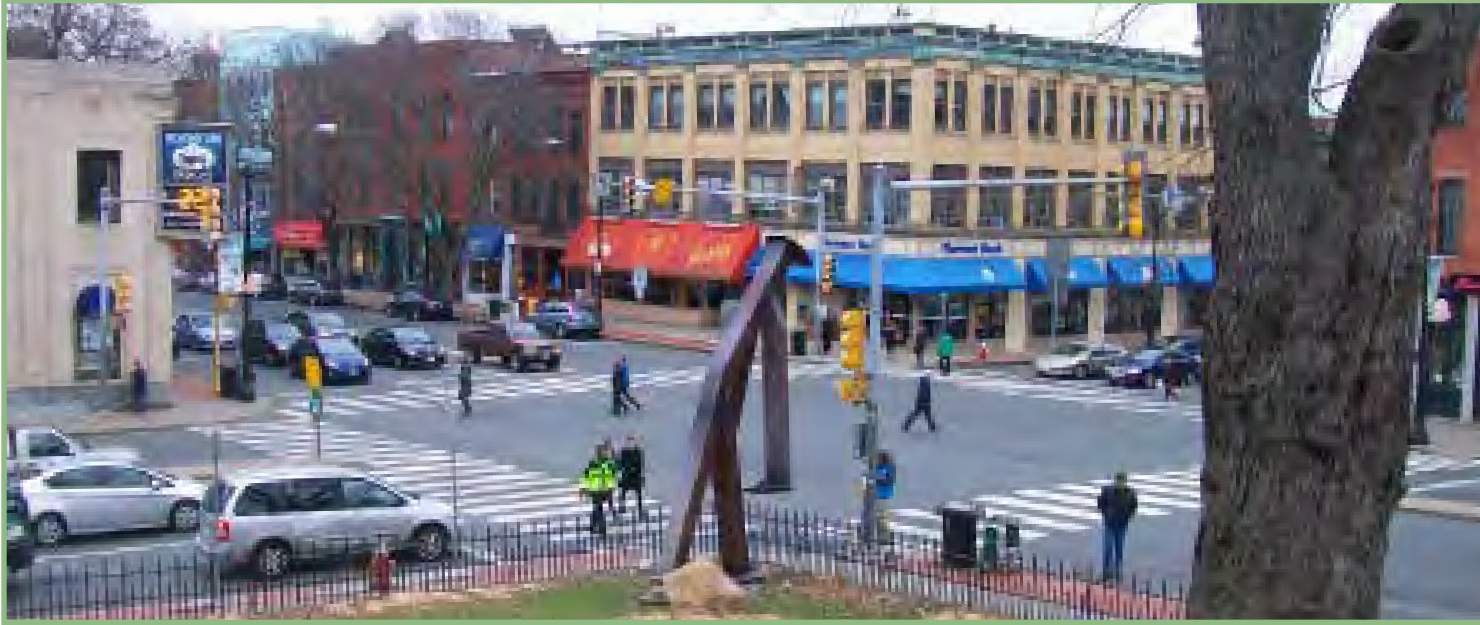
1. Average score of all evaluation criteria

2. Number of people who selected each evaluation criterion as the most important

Question 1 answers are displayed in Blue, and Question 2 answers are displayed in red.



6. Recommended Network



The nearly 200 project recommendations for the City of Northampton include new crosswalks, sidewalks, bike lanes, traffic calming elements, short connections to rail trails, and entirely new trails. All are conceptual in nature and most will need to be followed up with additional analysis, engineering study and public outreach. The projects are derived from previous City and regional planning studies and reports, consultant team field work and analysis, the public outreach described above, input from City staff and comments from the Bicycle and Pedestrian Subcommittee. All are consistent with Northampton's current Complete Streets ordinance and intended to be eligible for potential funding from the state. In aggregate, the intent of the dozens of miles of network recommendations is to improve safety, connectivity and mobility for people on foot, riding bicycles and for those with disabilities.

With the future implementation of the pedestrian, bicycle and trail projects, Northampton's network of sidewalks will increase from nearly 78 miles today to 88 miles in the future. The City's designated bicycle facilities will grow from today's 8.9 miles to 26.4 miles in the future and the trail network will expand from nearly 9.5 miles today to 14.3 miles. The expansion of active transportation infrastructure will help the City achieve its mode share goals, mitigate increases in traffic congestion and air pollution and reduce its carbon footprint. The new sidewalks, trails and bike lanes will also improve the quality of life for Northampton's residents and help businesses draw customers from a more-diverse range of transportation modes, not just motor vehicle drivers. They will enhance the City's progressive and sustainable "brand" and help attract new residents, businesses and institutions.

Prioritization

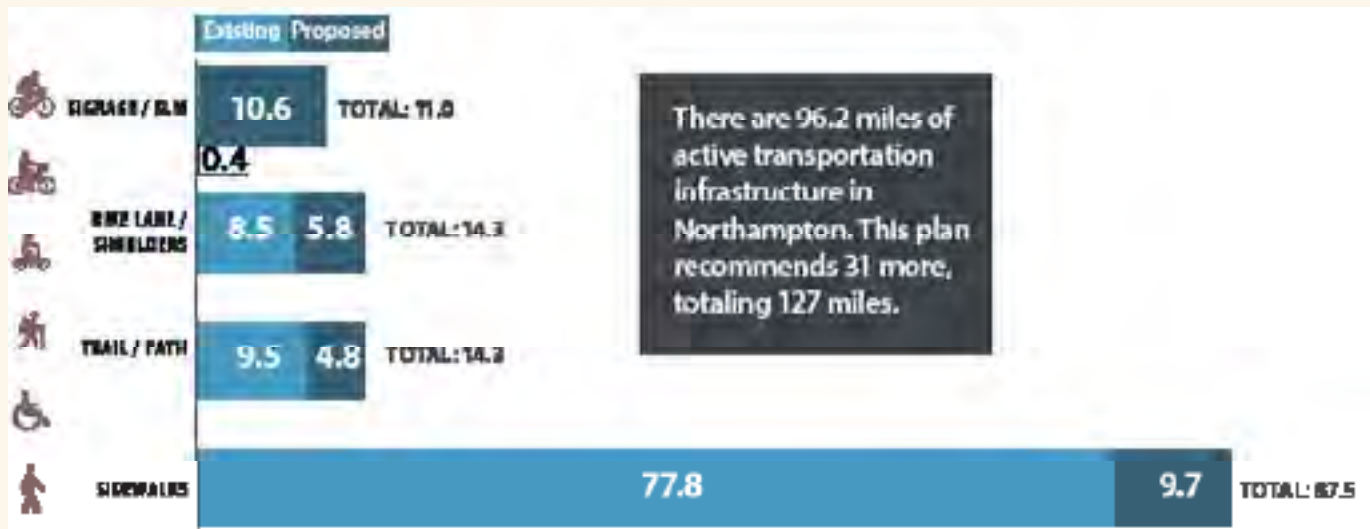
In order to help the City of Northampton prioritize the nearly 200 project recommendations, the plan used 9 criteria to evaluate each project. The scoring was qualitative in nature and should not be interpreted as being inflexible. The final scores should instead be used to inform funding decisions and grant requests in the future.

It should be noted that because safety and connectivity were considered the most critical criteria, both were weighted with a multiplier of 2X when determining the final scores for each recommendation.

Goal	Explanation
G1: Safety	Project provides a significant safety improvement for all users
G2: Connectivity	Project improves connections to existing sidewalks, rail trails and bike lanes
G3: Linkage	Project provides direct links to key civic, open space and cultural destinations
G4: Proximity to Business District	Project lies within one mile of Downtown Northampton or Florence
G5: Proximity to Schools	Project lies within one mile radius of a school
G6: Community Support	Project is supported by >1 person at a public forum or on web site
G7: Complete Streets	Project is consistent with the City's Complete Streets policy and eligible for MassDOT Complete Streets funding program
G8: DPW Traffic Calming List	Project lies along a roadway currently on the DPW's list of traffic calming projects
G9: Vision Zero	Project is intended to help the city achieve the goal of zero pedestrian and bicyclist deaths

The consultant team collected important data regarding how residents of Northampton want bicycle and pedestrian network projects prioritized in the plan utilizing the above information in a survey presented to attendees of Public Forum #2

PROPOSED ADDITIONS



6.1 Design Features Toolkit Bicycle

Infrastructure that enables the safety of cyclists is a key feature of the recommendations section of this report. The cost and implementation timeline of these upgrades ranges from low to high. Low-cost, context-sensitive retrofits can enable safety improvements to an area pending a more robust or significant future redesign, and can encourage would-be cyclists to try out the new facility. The following design features make up a significant portion of the infrastructure improvement recommendations table in the appendix.



Contra-Flow Bike Lane

Contra-flow bike lanes are designed to allow bicycles to ride the opposite direction of motor vehicle traffic. This treatment converts a one-way street into a two-way street for bike traffic - connecting neighborhoods via an important link in an overall bike network. Warning signs should be placed at cross streets to warn motor vehicles. SLMs may be included for cyclists riding with traffic.

SHARED LANE MARKING (SLM) A.K.A. SHARROW



Standard SLM



Enhanced SLM



Greenbacked Sharrow

Shared lane markings are used to mark a designated bike route on roadways signed at 35 MPH or less. They are placed in the travel lane, encouraging cyclists to travel away from the door-zone of parked vehicles. These symbols highlight the fact that the roadway is a shared space, and should be coupled with "Bikes May Use Full Lane" signs (MUTCD R4-11). Enhanced Sharrows provide extra awareness to motorists due to the dashed lane lines.

The addition of green paint on the roadway typically signifies a potential conflict point. Bicycles conflict with motor vehicles at intersections and driveways where a turning movement forces a motor vehicle to cross the path of a bicycle. Although MUTCD allows up to 250 foot (maximum) spacing between sharrows, 150 - 200 feet is ideal.



Bike Lane

Bike lanes designate an exclusive space for bicycles through the use of pavement markings and signage. Bike lanes are typically located adjacent to motor vehicle traffic and travel in the same direction as motor vehicles.



Separated Bike Lane: Sidewalk

Raised separated bicycle lanes are vertically separated from motor vehicle traffic. A furnishing zone between the bicycle lane and curb or motor vehicle traffic is a common feature. At intersections, the raised bicycle lane can be dropped down to the street level.



Separated Bike Lane: Street

These bikeways are at street-level and use a variety of methods for physical protection from passing traffic. A parking lane, flexible delineator posts, or flower boxes may provide the physical separation from motor vehicle traffic.



Advisory Bike Lane

Advisory bike lanes are bicycle priority areas delineated by broken white lines, separate from a center one-lane two-way travel area. Motorists may only enter the bicycle zone when no bicycles are present. Motorists must overtake bicyclists with caution due to potential oncoming traffic.

6.1 Design Features Toolkit Pedestrian

Pedestrian design features create a more comfortable and safe environment for pedestrians. Many of these are designed to slow motor vehicle traffic.



Commercial Zone Sidewalk

A sidewalk is a dedicated space for pedestrians adjacent to a street or connecting cul-de-sac neighborhoods. A 6-foot sidewalk is the minimum preferred standard in commercial areas.



Residential Zone Sidewalk

Residential zone sidewalks are important in providing pedestrians access to schools, businesses, and recreation areas. Four feet is the minimum preferred standard, and a 5-foot sidewalk is common.



Signalized Road Crossing

Signalized road crossings are typically locations where rail trails or paths cross roadways with high traffic volumes or or speed and/or connect to schools.



Neck Down

Neck downs are typically aligned at the beginning or entrance to a residential side street. Neck downs may be appropriate along typically low-volume streets that experience a high amount of commuter cut-throughs at peak times.

MIDDLE PHOTO CREDIT: GOOGLE STREET VIEW



Raised Crosswalk

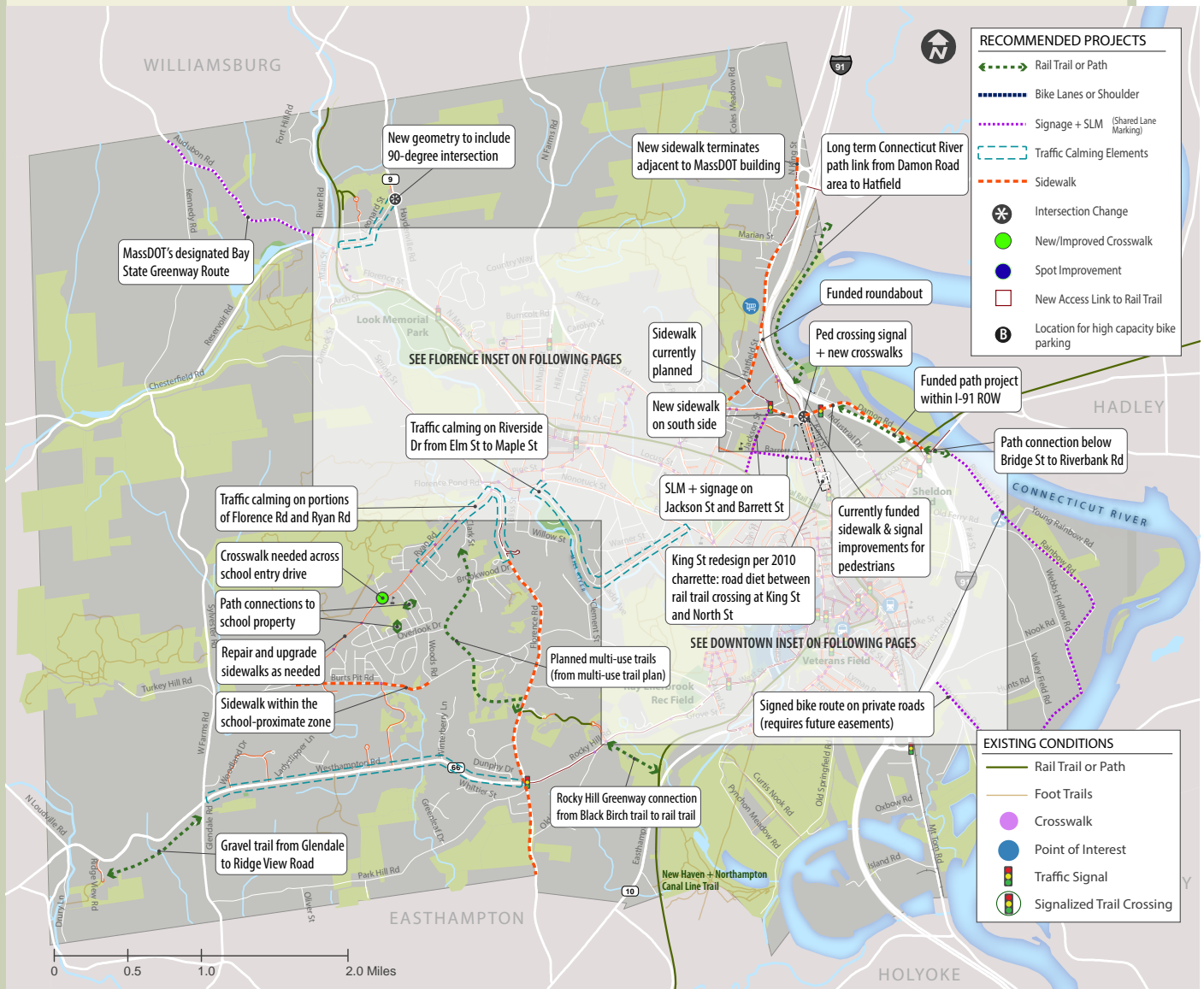
A steeper-pitched raised crosswalk is ideal for some college campus or downtown core locations where significant pedestrian crossings occur regularly or frequently. One result of a steeper crossing is motor vehicle traffic slowed to approximately 10 MPH or less. Mobility-impaired individuals have an easier time crossing as they do not have change in grade.



Chicane

Chicanes deflect vehicles and reduce mid-block speeds by discouraging rapid acceleration.

SUMMARY OF PEDESTRIAN + BICYCLE NETWORK RECOMMENDATIONS



Project Description Citywide

PROJECT DESCRIPTION - CITYWIDE						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k - 50k, \$\$\$ = > 50k)
1	Sidewalk	Bridge Rd	Between King St and Jackson St	Install sidewalks	Key gap in sidewalk network	32	X	\$\$\$
2	Trail Connection	Bridge St	Below Bridge St to Riverbank Rd.	Create path connection below Bridge St	To avoid the congestion of the Damon Rd / Bridge St intersection	24		\$\$
3	Sidewalk	Burts Pit Rd	From Woods Rd to Ryan Rd	Install sidewalk in school-proximate zone		25		\$\$\$
4	Trail Connection	Damon Road area	Along Connecticut River north to Hatfield town line	Explore feasibility of building offroad trail link along the Connecticut River from Damon Road at Bridge Rd intersection area towards Hatfield	Long term regional trail connection from Northampton to communities along the river	27		\$\$
5	On-Street Bike Facility	Florence Rd		Stripe bikeable shoulder and 11' travel lanes	Florence Rd is uncomfortable for cycling	31	X	\$\$ - \$\$\$
6	Sidewalk	Florence Rd	Between Rocky Hill Rd and Blackbirch Trail	Install sidewalk along Florence Rd	Large gap in sidewalk network	27		\$\$\$
7	Traffic	Florence Rd	From Ryan Rd to Brookwood Dr	Utilize traffic calming elements on this portion of road, ranked #3 on DPW's Top 5 list of roadways in need of traffic calming		25		\$\$
8	Trail Connection	Florence Rd	At Black Birch Trail	Extend Rocky Hill Greenway connection from Florence Rd. to Rail Trail	The existing trail provides a convenient shortcut from residential neighborhoods towards downtown. Expanding this trail would enhance connectivity to the New Haven & Northampton Canal Line Trail	20		\$\$

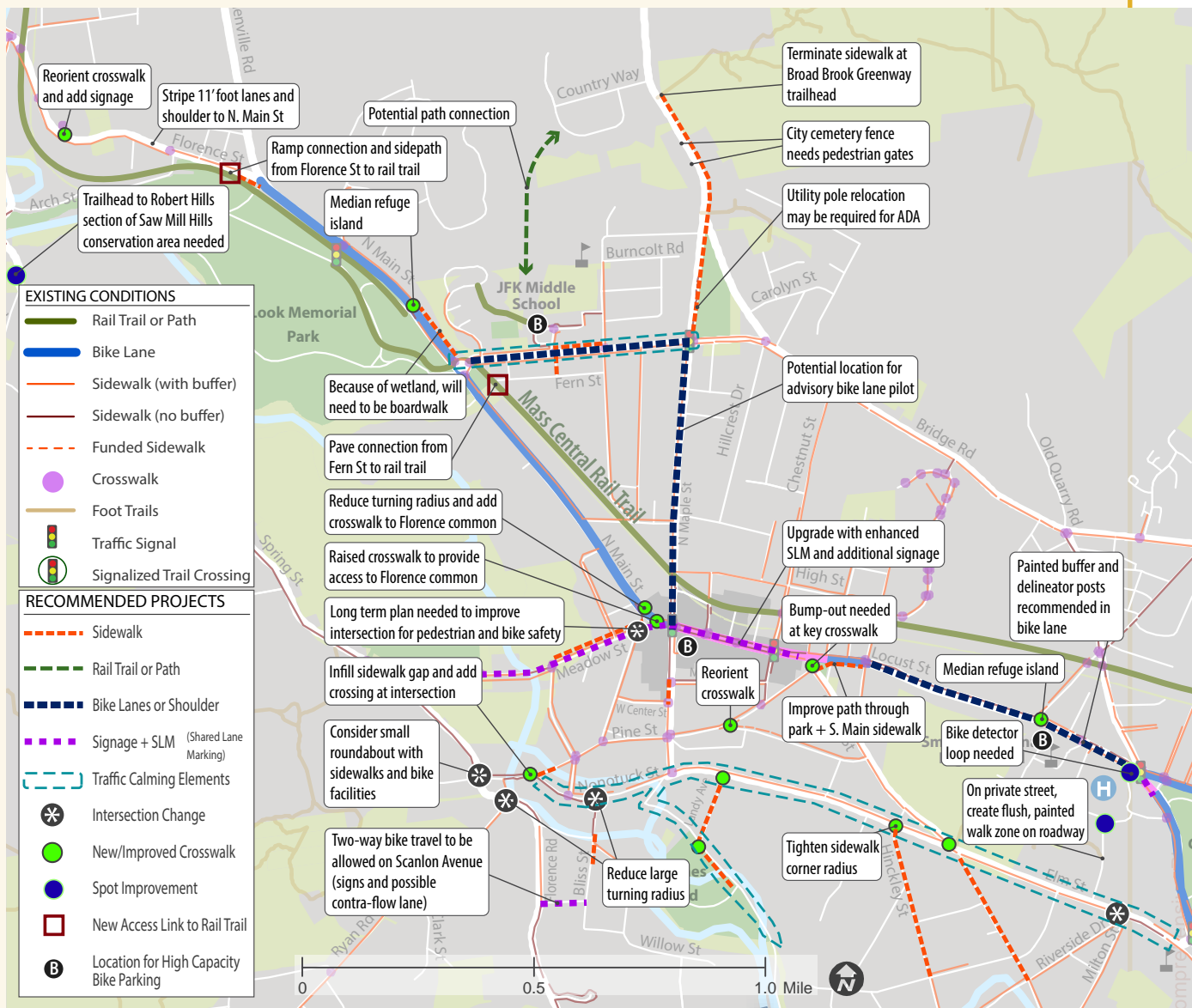
Project Description Citywide

PROJECT DESCRIPTION - CITYWIDE						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k - 50k, \$\$\$ = > 50k)
9	Sidewalk	Hatfield St	From Bridge Rd to N King St	Utilize traffic calming, including installation of ADA compliant curb cuts	There are currently no sidewalks along Hatfield St and this is a key route for cyclists and pedestrians to access the River Valley Coop and other retailers	25		\$\$\$
10	Intersection	Hatfield St	At N. King St	Roundabout in planning stage	Wide intersection geometry creates challenging turn movement for cyclists and challenging crossing for pedestrians	23		\$\$\$
11	Traffic Calming	Jackson St	Entire length	Traffic calming	Narrow roadway provides uncomfortable feeling for cyclists	27		\$\$
12	Traffic Signal	King St	At Bridge Rd	Install pedestrian crossing signal, countdown timers, and crosswalks	High pedestrian demand to access nearby grocers	27		\$\$\$
13	Sidewalk	King St	Between River Valley Coop and Big Y	Install sidewalks	Key gap in sidewalk network	24		\$\$
14	Sidewalk	N King St	From Asbury St to the Northampton / Hatfield line	Install sidewalks	This is key gap in the sidewalk network	22		\$\$\$
15	Traffic Calming	Riverside Dr	From Lexington Ave to Nonotuck	Utilize traffic calming elements on this portion of road, ranked #5 on DPW's Top 5 list of roadways in need of traffic calming		25		\$\$
16	Traffic Calming	Ryan Rd	From Florence Rd to Pioneer Knolls	Utilize traffic calming elements on this portion of road, ranked #3 on DPW's Top 5 list of roadways in need of traffic calming		25		\$\$

Project Description Citywide

PROJECT DESCRIPTION - CITYWIDE						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k - 50k, \$\$\$ = > 50k)
17	Sidewalk	Ryan Rd	Burts Pit Rd to Florence Rd	Upgrade / repair / widen sidewalks	Ryan Rd is uncomfortable for pedestrians: existing sidewalks non ADA compliant	28		\$\$\$
18	Intersection	Ryan Rd	At RK Finn Ryan Road School	Install crosswalk	Students would benefit from a crosswalk at the school entrance / driveway	24		\$
19	Traffic Calming	Westhampton Rd	From Glendale Rd / West Farms Rd to Florence Rd	Utilize traffic calming elements	Despite posted 35 MPH signage, many motorists speed here regularly	19		\$\$
20	Trail Connection		At rear of RK Finn Ryan Road school	Establish trail connection between neighborhood and school on Birchwood Dr on Austin Cir	There is currently no way for students walking and biking to school from this neighborhood to reach school grounds safely and comfortably without utilizing Ryan Rd	24		\$\$\$

FLORENCE INSET



Project Description Citywide

PROJECT DESCRIPTION - CITYWIDE						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k - 50k, \$\$\$ = > 50k)
1	Crosswalk	Beacon St	At Pine St	Reorient crosswalk	Awkward geometry	25		\$
2	Sidewalk	Bliss St	Between Willow St and Mill River bridge	New sidewalk and crosswalk	Gap in pedestrian network	25		\$\$
3	On-Street Bike Facility	Bridge Rd	From N. Maple St. to Main St.	Stripe bike lanes	Important bicycle improvement for JFK Middle school students	29	X	\$\$
4	Traffic Calming	Bridge Rd	From N Maple to N Main	Utilize traffic calming elements on this portion of road, ranked #5 on DPW's Top 5 list of roadways in need of traffic calming, including a new sidewalk	Proximity to JFK Middle School	25		\$\$
5	Trail Connection	Childs Park	From Prospect St to Elm St / Northampton High School	Create path inside Childs Park adjacent to Woodlawn Ave		28		\$\$\$
6	Trail Connection	City Cemetery	Along N Maple	Install pedestrian gates at north and south end of existing cemetery fence		18		\$\$\$
7	Sidewalk	Cooley Dickinson Property	At north end of Hospital Rd	Work with Cooley Dickinson to provide better pedestrian access from Hospital Rd to the main hospital entrance	Lack of sidewalks prohibits pedestrian access the south	27		\$\$
8	Trail Connection	Dimock St	At Arch St	Provide mountain bike and hiker access to conservation land just west of intersection	Pedestrian demand	24		\$\$
9	Sidewalk	Fern St	Entire length	Install sidewalk along Fern St	Proximity to JFK Middle School	28		\$\$\$
10	Intersection	Florence Rd	At Spring St / Pine St	Consider small roundabout for safety of all users	Challenging intersection would benefit from a roundabout	17		\$\$
11	Crosswalk	Florence St	Between Warner Row and Leeds Elementary School	Re-orient crosswalk and add warning signage	Limited sight lines at curve in road and motorists speeding makes crosswalk uncomfortable for school children	27		\$
12	Sidewalk	Florence St	At Warner Row	Install curb-cuts to sidewalk	Current sidewalks non ADAcompliant	25		\$\$

Project Description Citywide

PROJECT DESCRIPTION - CITYWIDE						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k - 50k, \$\$\$ = > 50k)
13	Trail Connection	Florence St	At N. Main St - Leeds	Connect Florence St to MassCentral Rail Trail with sidepath and ramp up embankment	Pedestrian / bike demand	31	X	\$\$\$
14	Traffic Calming	Front / Leonard St	Between Florence St and Rt 9	Utilize traffic calming infrastructure	Leonard St is used as a commuter cut through from Florence Rd to Haydenville Rd / Route 9	21		\$\$
15	Sidewalk	Hospital Rd	From Elm St to Cooley Dickinson Hospital	Stripe flush painted walkway zone along edge of roadway	Currently there is no pedestrian access to the Hospital from Elm St	27		\$\$
16	On-Street Bike Facility	Jackson St	From Prospect St to Bridge Rd (entire length of Jackson St)	Stripe Shared Lane Markings	To create more comfortable road conditions for cyclists	22		\$\$
17	Bike Parking	JFK Middle School		Install APBP-approved bicycle racks	APBP approved racks are more secure and organize bikes in an aesthetically pleasing fashion	21		\$
18	Sidewalk	Landy Ave	From Nonotuck St to Maines Field	Install sidewalks on Landy Ave	Proximity to park	27		\$\$\$
19	Intersection	Leonard St	At Route 9 / Haydenville Rd	Rebuild intersection with new geometry to include a 90 degree intersection	Oblique angle of current intersection encourages high speed turns	29	X	\$\$\$
20	On-Street Bike Facility	Locust St	From N Main St to N Elm St	Stripe travel lanes / bike lanes, include painted buffer and delineator posts	No striping or lane designation causes discomfort among cyclists and pedestrians	31	X	\$\$\$
21	Intersection	Locust St	At Hatfield St	Install refuge island in median area	This is currently an unnecessarily wide roadway with no shoulder or bike lane striping resulting in long pedestrian crossing distances	28		\$\$
22	Bike Parking	Locust Street & Bridge Road	At Smith Vocational School and JFK Middle School	Install ABPB-approved bicycle parking at these schools	Lack of bike racks that meet APBP-approved standards	21		\$ - \$\$
23	Sidewalk	Maple St	From W Center St to Middle St	Install sidewalk to close this sidewalk gap along the west side of Maple St		23		\$\$

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24	Intersection	Meadow St	At Park St	Long term plan to redesign needed	Wide intersection creates unnecessarily long crossing distances for pedestrians and encourages motorist speeding	28		\$\$
25	Sidewalk	Meadow St	From N. Main St to Corticelli St	Replace existing north sidewalk to better connect Downtown Florence to the path west of the Mill River Ball Fields	Existing sidewalk is narrow and the asphalt is well worn and in need of maintenance	29	X	\$\$\$
26	Crosswalk	Meadow St	Near N Main	Install raised crosswalk to park in Florence Center beyond the path from Spring St to Corticelli St.	This is an ideal location for a raised crosswalk as motor vehicle traffic approaches a yield sign	28		\$\$
27	On-Street Bike Facility	Meadow St	From N Main to existing path on Meadow St at Corticelli St.	Stripe Shared Lane Markings		22		\$
28	Sidewalk	Meadow St	From Park St/N Main to Spring St	Replace broken / damaged sidewalks	Gap in pedestrian network	26		\$\$
29	Trail Connection	Morningside Dr.	From Morningside Dr. to JFK Middle School	Trail connection to improve access to the JFK Middle School		26		\$\$\$
30	Traffic Calming	Multiple	At all rail trail crossing	Include standard signage on approach to all rail trail crossings	Current roadway crossings lack Trail Crossing / Yield to Peds signage	29	X	\$
31	On-Street Bike Facility	N Elm St	From Locust to Prospect Ave.	Reduce width of travel lanes and flush median to provide space for bike lanes		25		\$\$
32	Bike Parking	N Main St	From N. Maple St to Chestnut St	Install bike parking	A lack of bike parking in the Florence commercial district may cause fewer bicycle trips to town and increase the number of single-occupant motor vehicle trips	19		\$

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33	On-Street Bike Facility	N Main St	From N. Maple St to Chestnut St	Install enhanced Shared Lane Markings or bike lanes	A lack of bike lanes in the Florence commercial district results in less confident riders cycling on the sidewalk, causing potential conflicts between pedestrians and cyclists	31	X	\$
34	Crosswalk	N Main St	Between Look Memorial Park and JFK Middle School	Install median refuge island and boardwalk / sidewalk (due to presence of wetlands) on east side of N Main St to Bridge Rd	Proximity to JFK Middle School	26		\$\$\$
35	Sidewalk	N Maple St	At Arcanum Field	Install sidewalk adjacent to Arcanum Field (utility pole relocation may be required for sidewalks to meet ADA standards)	Major gap in sidewalk network to and from Arcanum jeopardizes pedestrian safety	29	X	\$\$
36	On-Street Bike Facility	N Maple St	From Bridge Rd to Main St.	Stripe Shared Lane Markings OR advisory bike lane markings	Potential location for advisory bike lane pilot	22		\$
37	Traffic Calming	Nonotuck St (and Elm St)	From the southern tip of Childs Park to Pine St	Utilize traffic calming elements on this portion of road, ranked #4 on DPW's Top 5 list of roadways in need of traffic calming		24		\$\$\$
38	Traffic Calming	Nonotuck St (and Elm St)	At Hinckley St	Tighten turning radius in southwest corner	Wide geometry creates intersection with high conflicts	31	X	\$\$
39	Traffic Calming	Nonotuck St (and Elm St)	At S. Main St	Install two crosswalks at this location	Crosswalks and sidewalks are inadequate at this location	27		\$
40	Traffic Calming	Nonotuck St (and Elm St)	At Bliss St	Reduce large turning radius and add crosswalk across Bliss St	Large turning radii encourages high speed traffic and creates unnecessarily long crossings for pedestrians	24		\$\$
41	Intersection	Park St	At N Main St	Reduce turning radius dramatically to slow traffic and provide opportunity to add a crosswalk	Tightening the turning radius of this intersection will reduce an unnecessarily long crossing distance for pedestrians and discourage speeding	28		\$\$

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42	Sidewalk	Pine St	Between Nonotuck and Corticelli St	Install sidewalk on south side and crosswalk at Nonotuck intersection	There is currently a wide, unmarked crossing	26		\$\$
43	Trail Connection	Prospect Ave	From rail trail intersection with Prospect Ave along N. Elm St to Elm St / Northampton High School	Install on-street bicycle facility and refuge island	This is a key connection for Northampton High School students and faculty to use the MassCentral Rail Trail to travel from neighborhoods East, North, and West of this area	29	X	\$\$\$
44	Sidewalk	Riverside Dr	Along edge of Maines Field	Install sidewalk or path along edge of park	Proximity to park	32	X	\$\$
45	Crosswalk	S Main St	At Pine St	Add curb extension and typical Pedestrian Crossing signage	This is a key crosswalk that has low visibility for approaching motorists	25		\$\$
46	Sidewalk	S Main St	From Pine St to Berkshire Terrace	Make path through triangle park ADA accessible (minimum five feet) and install sidewalk along south side of South Main St		30	X	\$\$
47	On-Street Bike Facility	Scanlon Ave	Florence Ave	Install "except bicycles" plaque to Do Not Enter sign	One way street inconvenient for cyclists	25		\$
48	Sidewalk	Sheffield Ln		Update / repair sidewalks	Pedestrian demand	25		\$\$
49	Sidewalk	Willow St		New sidewalk and crosswalk	Gap in pedestrian network	25		\$\$\$

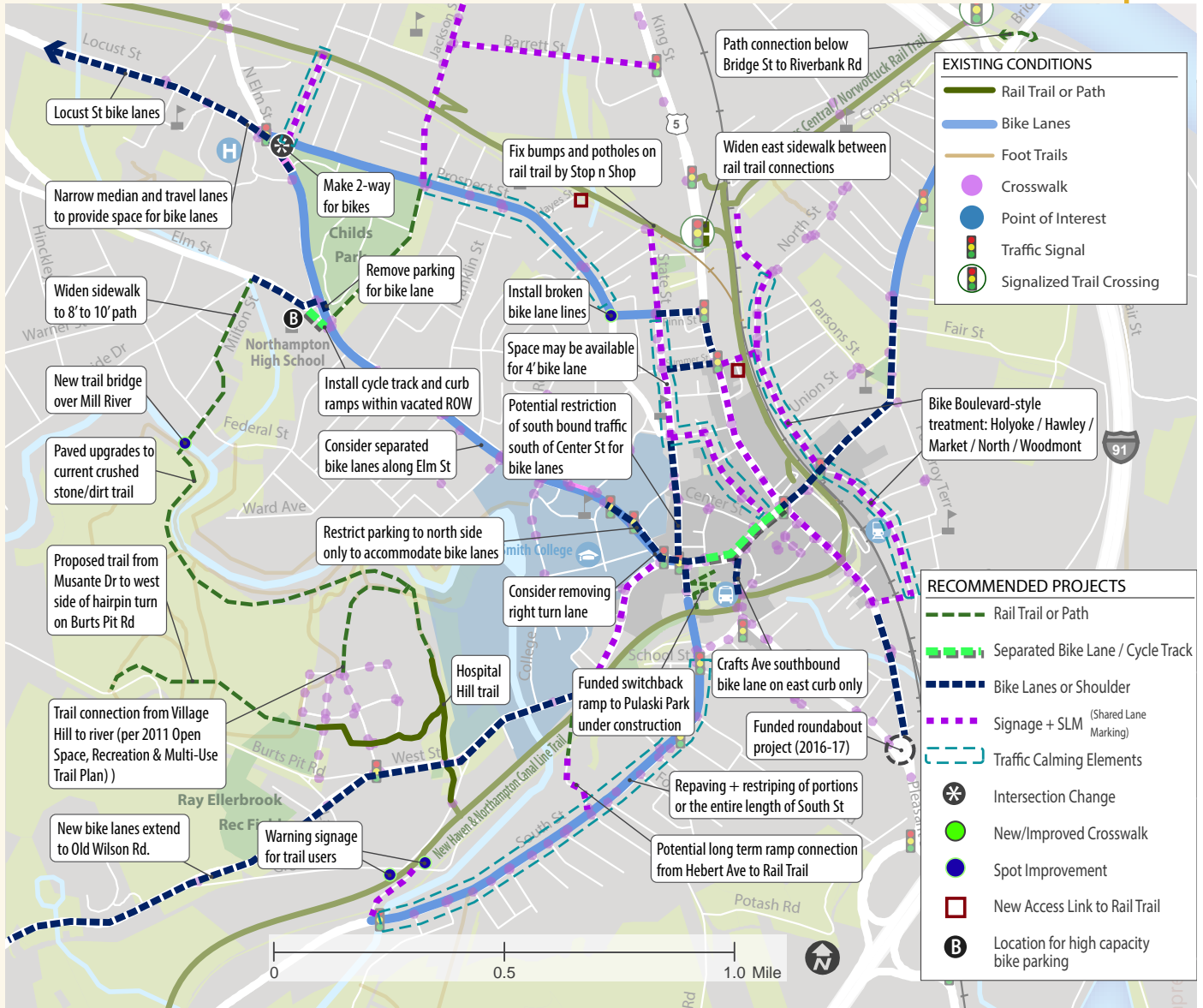
DOWNTOWN INSET

Summary of Pedestrian Network Recommendations



DOWNTOWN INSET

Summary of Bicycle Network Recommendations



Project Description Citywide

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1	Crosswalk	Allen Pl	At Gothic St	Install crosswalk	This is a difficult place for pedestrians to cross	29	X	\$
2	Sidewalk	Atwood Dr	Entire length	Roundabout project on Pleasant Street (under construction) will extend sidewalks to Dike Road and MassDOT has begun the planning for extending sidewalks from there to Atwood Drive.	This is a difficult place for pedestrians to cross	22		\$\$
3	On-Street Bike Facility	Barrett St	From King St to Jackson St	Add Shared Lane Markings and signage	This is a key bicycle route through the city and offers direct connections from neighborhoods west to the Jackson Street School	28		\$
4	Traffic Calming	Bridge St	Between Orchard St and Lampron Park	Utilize traffic calming: refuge island / curb extensions / raised-table crossing	Traffic frequently does not stop at crosswalks	30	X	\$\$\$
5	Traffic Calming	Bridge St	Between Fair St and Old Ferry Rd	Enforce no parking on sidewalk	Pedestrian demand and safety	24		\$
6	On-Street Bike Facility	Bridge St	From Market St to Orchard St	Stripe bike lanes	To create more comfortable road conditions for cyclists	29	X	\$
7	Crosswalk	Bridge St	At Parsons St	Install Rectangular Rapid Flash Beacon or other device to control crosswalk across from school	Uncontrolled crosswalk across from elementary school is inadequate for young school children who want to bike or walk to school	30	X	\$\$
8	Sidewalk	Conz St	Between Service center Rd and Wilson Ave	Relocate utility poles for sidewalk ADA compliance	Utility pole placement makes sidewalks non ADA compliant	21		\$\$ - \$\$\$
9	Intersection	Conz St	At Old South St	Install countdown timers and audible signals	Pedestrian safety and comfort.	28		\$\$
10	Intersection	Cracker Barrel Alley	At Main St	Convert Cracker Barrel Alley to pedestrian / bicycle access only, utilize curb extensions on Main Street to signify change	Low visibility, high crash / conflict area	29	X	\$\$

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11	Crosswalk	Cracker Barrel Alley	Behind Main Street businesses and at Main St	Install crosswalk in rear of buildings. Re-align crosswalk extending across Main St from Cracker Barrel Alley to reflect change in Cracker Barrel Alley access	Current awkward crosswalk geometry will be out of date when Cracker Barrel Alley access changes take place	26		\$
12	On-Street Bike Facility	Crafts Ave	From Main St to Old South	Install bike lanes on left side of Craft St	This will relocate bicycles further away from angled parking which may create a potential conflict	26		\$
13	On-Street Bike Facility	Earle St	From South St to Grove St	Stripe Shared Lane Markings	To create more comfortable road conditions for cyclists	21		\$
14	Intersection	Earle St	At West St	Earle St should be narrowed on the approach to West St, consider dropping the turn lane		19		\$\$\$
15	Intersection	Elm St	At West St	Examine intersection for long term redesign including potential removal of right turn lane from Elm St to West St	Intersection prone to conflicts due to awkward geometry and traffic signal phasing	27		\$\$ - \$\$\$
16	Intersection	Elm St	N. Elm and Woodlawn Ave	Build new curb extensions (may require relocation of fire hydrant)	Long crosswalks used by High School students	30	X	\$\$\$
17	Sidewalk	Elm St	At N. Elm crosswalk	Path connection from Elm St sidewalk to path within Childs Park		26		\$
18	On-Street Bike Facility	Elm St	From Child's Park to Prospect St (at John M Greene Hall)	Swap parking with bike lane to create a protected facility	Create comfortable riding conditions for a broad range of cyclists	30	X	\$\$
19	On-Street Bike Facility	Elm St	From Prospect St to Bedford Terrace	Remove parking on the south side of street to accommodate bike lane (loss of 10 spaces)	Create comfortable riding conditions for a broad range of cyclists	26		\$
20	Trail Connection	Elm St	n front of Northampton High School, where Elm turns to N Elm back to Elm	Install cycle track along vacated ROW	Encouraging cycling to and from school by providing new facilities will encourage bicycle use over single occupancy motor vehicle trips	29	X	\$ - \$\$

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21	Sidewalk	Federal St	Between Riverside and Elm	Install sidewalks east side of street	This is a narrow street currently without sidewalks, and has close proximity to schools and parks	29	X	\$\$
22	On-Street Bike Facility	Finn St	Between King St and Prospect	Where possible, narrow travel lanes to 10' and install bike lane stencils in existing or new shoulder zones	This defacto bike lane area would benefit from a formal designation as a bike lane by adding traditional bike lane stencils	26		\$
23	Sidewalk	Franklin St	Between Bancroft St and Elm St	Install curb cuts	Pedestrian demand / current sidewalks non ADA compliant	24		\$\$
24	On-Street Bike Facility	Gothic and Trumbull St	Gothic: Entire Length. Trumbull: From Gothic intersection to State St.	Utilize bike-boulevard style treatments: Install Shared Lane Markings / utilize traffic calming elements	Provides an alternative to bicycling on State to access Main St	29	X	\$\$ - \$\$\$
25	Crosswalk	Hampton Ave	At Kirkland Ave OR in front of Hampton Court Apartments	Install new crosswalk at either location	A crosswalk is needed to improve pedestrian access across Hampton Ave, either at Kirkland Ave or further east towards Pleasant St at the primary entry to a parking lot which is similar to being located at a cross street.	21		\$
26	Sidewalk	Hawley St	From Holyoke St to Bridge St	Add 5' sidewalks and ADA curb ramps, make bike boulevard improvements	Bumpy, deteriorated sidewalks along Hawley St	31	X	\$\$\$
27	Trail Connection	Hayes Ave	At rail trail crossing	Install spur connection/ ramp from Hayes to rail trail	Clear desire line shows existing path through woods that should be formalized with a paved ramp	26		\$\$\$
28	Trail Connection	Hebert Ave	From intersection of South St and Hebert Ave (opposite Olive St) to New Haven and Northampton Canal Line Trail at end of Hebert St	Establish formal connection by installation of ramp at end of Hebert St and signage along Hebert St and South St directing cyclists and pedestrians towards rail trail	Important connection opportunity on busy roadway to divert cyclists and pedestrians onto separated trail facility	28		\$
29	Intersection	Hockanum Rd	At intersection with Pleasant St	Make intersection a "T" right angle, narrow Hockanum Road at intersection approach	Wide turn radii creates unnecessarily long crossing for pedestrians and encourages motorist speeding	26		\$\$

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30	On-Street Bike Facility	Holyoke / Hawley / Market / North / Woodmont	From Pleasant St to Norwottuck Rail Trail	Bike boulevard style treatments from end to end, using enhanced Shared Lane Markings and signage	Alternative bike route to Pleasant and Main St	31	X	\$\$\$
31	Traffic Calming	Holyoke St	At Pleasant St	Utilize traffic calming devices		26		\$\$
32	Trail Connection	Hospital Hill Trail	From Village Hill development to Northampton High School	Extend and pave existing Hospital Hill path	This path is currently neglected and in disrepair	24		\$\$\$
33	Traffic Calming	King St	At Hotel Northampton	Install curb extensions at this unsignalized crosswalk		28		\$\$
34	Traffic Calming	King St	At Trumbull Rd	Install curb extensions		23		\$\$
35	Traffic Signal	King St	At Finn St	Install pedestrian signal heads, count-down timers and audible signals (for both crosswalks)		29	X	\$\$
36	Traffic Signal	King St	At Summer St and North St	Install pedestrian crossing signal, countdown timers and audible signals	No pedestrian signal exists	28		\$\$\$
37	Sidewalk	King St	At rail trail crossing	Install wider sidewalk on east side of King St.	Existing sidewalk is too narrow	27		\$\$
38	Intersection	King St	At Main St / Pleasant St	Install pedestrian countdown timers on traffic signals downtown		30	X	\$\$
39	Traffic Calming	King St	From rail trail crossing at King St to North St	Implement road diet (per 2010 charrette)		22		\$
40	On-Street Bike Facility	King St	From Finn to North St	Stripe bike lanes	To provide bike facility between Finn St bike lanes and North St connection to rail trail	28		\$

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41	Alley Repair	Kirkland Ave. Alley	Between Pleasant St. and Armory St. lot	Improve surface materials, lighting, and street furniture within the alley	Alley is not a comfortable place for pedestrians, though it provides a convenient connection to Pleasant St.	30	X	\$\$\$
42	Intersection	Locust St	At N Elm / Prospect St	Make intersection two-way for bikes	Bicyclists traveling from Cooley Dicknson to points north from Prospect Ave are currently forced to make difficult left against traffic on Prospect St	23		\$\$
43	On-Street Bike Facility	Main St	From State at South to Hawley at Market	Install separated bike lane	Plenty of space exists within existing right of way to create separated bicycle facility.	30	X	\$\$\$
44	Sidewalk	Main St	North side, from Cracker Barrel Alley to Center	Widen sidewalk	High pedestrian demand with numerous adjacent eating establishments	21		
45	Traffic Calming	Main St	All Main St Crosswalks	Install curb extensions and median islands at all Main St crosswalks	Main streets width creates unnecessary long crossings for pedestrians	29	X	\$\$
46	Trees	Main St	Main / State / South to Main / Hawley / Market	Install new street trees and landscaping	Bolstering the already established urban tree canopy in this core downtown streetscape will provide a comfortable pedestrian experience on hot summer days.	23		\$\$
47	Crosswalk	Main St	At Cracker Barrel Alley	Re-align crosswalk geometry		27		\$
48	Trail Connection	Main St	Behind Fitzwilly's	Install signage to Main St at ramp behind Fitzwilly's	Lack of signage may confuse trail users	26		\$
49	Trail Connection	Mill River / Hospital Hill Trail		New paved trail from current terminus near Olander Dr to high school	Need to connect New Haven + Canal Line Trail to High School + Elm St	27		\$\$\$
50	Trail Connection	Musante Dr	To Burts Pit Rd (north side of road)	Install trail from Musante Dr to the west side of the hairpin turn on Burts Pit Road, on the north side of the road partially to avoid both the steep grade of the hairpin turn		23		\$\$\$

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51	On-Street Bike Facility	N Elm St	Just north of Elm St intersection / just west of the southern tip of Child's Park	Remove six parking spots for continual bike lane	Removal of the parking establishes a more complete connection along Elm St's established bike facility in front of the high school	30	X	\$
52	Intersection	N Elm St	At Locust St	Install bicycle loop detector or video		21		\$
53	Intersection	New Haven & Northampton Canal Line	At Earle St	Install signage instructing cyclists to approach intersection slowly	This intersection is at the bottom of a hill and the rail trail approach is on a diagonal path with significant blind spots	18		\$
54	Crosswalk	North St	Where North St meets Day Ave / Bates Ave	Update crosswalk geometry	Crosswalk is poorly aligned	30	X	\$\$
55	Intersection	North St	At Rail trail bridge at North St (between Market and King)	Upgrade underpass	Sidewalks below underpass are in poor condition	25		\$\$
56	On-Street Bike Facility	North St	North St between the King St and Day Ave	Install on-street bicycle facility (mix of bike lanes and shared lane markings)		25		\$\$
57	Trees	North St	North St between the intersection of North and Market and the intersection of North and Lincoln	Install street trees	Newly widened roadway has many fewer street trees	20		\$\$\$
58	Trail Connection	North St	At Edwards Square	Ramp to rail trail from the east end of the parking lot at corner of North and Edwards Sq	Important desire line currently used by many walkers and bicyclists	29	X	\$\$\$
59	Bike Parking	Northampton High School	Front entrance	Replace wheel bender bicycle racks with APBP approved racks	"Wheel bender" bicycle racks are less secure than APBP approved racks	18		\$
60	Traffic Calming	Pleasant St	New Haven & Northampton Canal Line Trail crossing	Utilize traffic calming: refuge island / curb extensions / raised-table crossing	Cars frequently don't stop for crossing cyclists or pedestrians	29	X	\$\$\$
61	On-Street Bike Facility	Pleasant St	Between Conz St and Main St	Install bike lanes from Conz to Holyoke and Shared Lane Markings to Main St	Bicycle safety and access	31	X	\$\$

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62	Intersection	Pleasant St	At Holyoke St	Reduce size of turning radius to slow turning traffic	This is a tough crossing for pedestrians due to intersection geometry	29	X	\$\$
63	Sidewalk	Pleasant St		Close excess and historic curb cuts on Pleasant St	These redundant curb cuts create unnecessary hazards for pedestrians	29	X	\$\$
64	Trees	Pleasant St / King St	From new roundabout at Conz St to Finn St.	Install additional street trees	This area represents a gap in the established urban tree canopy	22		\$\$\$
65	On-Street Bike Facility	Prospect St	At Finn St	Install bike guide lines (dashed lines) through intersection	White dashed lines will help to continue and define the eastbound bike lane as it passes through the intersection	25		\$
66	Intersection	Prospect St	At Finn St	All way stop signs needed	Motorists don't always stop for people crossing Finn St on foot	20		\$
67	Traffic Calming	Prospect St	Between Childs Park and Finn St	Utilize traffic calming: narrow roadway width	Road is too wide, causes speeding	25		\$\$
68	Trail Connection	Rail trail at Stop n Shop	Near State St	Address bumpy conditions and potholes on rail trail at this location	Bicyclist and skater safety and comfort while using trail.	20		\$
69	On-Street Bike Facility	Rainbow Rd / Hockanum Rd		Install Shared Lane Markings and/or signage	To designate this as a bicyclefriendly route around downtown	19		\$\$
70	Intersection	Riverside Dr	At Elm St / Milton St	Improve crosswalk by "T-ing" Milton into Riverside Dr via the existing parking lot or installing a mini roundabout	This intersection has an unnecessarily long pedestrian crossing	30	X	\$\$\$
71	Traffic Calming	Riverside Dr	From Elm to Maple	Utilize traffic calming elements on this portion of road, ranked #2 on DPW's Top 5 list of roadways in need of traffic calming		23		\$\$
72	Crosswalk	Roundhill Rd	At Crescent St	Install curb cuts	Current sidewalks non ADA compliant	23		\$\$

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73	Traffic Calming	South St	Between Cedar St and Fort St	Utilize traffic calming: refuge island / curb extensions / raised-table crossing	High speeding traffic and tractor trailers, many motorists do not yield to pedestrians waiting in crosswalks	26		\$\$\$
74	Traffic Signal	South St	At Old South St	Install additional crosswalk signage	Long crosswalk geometry	19		\$
75	On-Street Bike Facility	South St	1,000 feet from Main St intersection	Install bike lane (continue existing bike lane)	The existing bike lane peters out in a high-traffic volume area along South St	30	X	\$
76	On-Street Bike Facility	South St	Between Earle St and Old South St	Repave South St, continue rumble strip between bike lane and travel lane	Multiple instances of debris in the bike lane results from deteriorated pavement and sidewalks	22		\$\$\$
77	Sidewalk	South St	Between Earle St and Dewey Ct	Update some or all sidewalks and curb cuts along South St corridor	Existing sidewalks and curb cuts in disrepair, non ADA compliant; no sidewalks between S. Park Terrace and Earle St.	26		\$\$
78	On-Street Bike Facility	South St		Spring sweeping and debris removal of bike lane is critical		25		\$
79	On-Street Bike Facility	South St / Pleasant St / Rt 9	Entire corridors of all 3 roadways	Install LED crosswalk lighting	Difficult lighting at numerous crosswalks	24		\$\$
80	Sidewalk	State St	Between Finn St and MassCentral Rail Trail	Repair and widen sidewalks	High pedestrian demand area, sidewalks are narrow and in disrepair	29	X	\$\$
81	On-Street Bike Facility	State St	Between Main St and Finn St	Utilize traffic calming devices / Stripe bike lanes (requires potential restriction of southbound traffic south of Center St) for bike lanes. State St is ranked #1 on DPW's Top 5 list of roadways in need of traffic calming.	Currently bikes ride on the sidewalk along this portion of State St causing uncomfortable situations for pedestrians. Investigate opportunity for raised crosswalks along entire length of State St.	32	X	\$\$\$
82	Sidewalk	State St	Between Center St and Main St	Install sidewalk along west side of State St	This is a high demand pedestrian area with inadequate sidewalks	33	X	\$\$\$
83	Sidewalk	State St	At Stoddard St	Install curb cuts	Existing sidewalks do not have curb cuts and therefore are not ADA compliant	26		\$\$

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84	On-Street Bike Facility	Summer St	Between King St and State St	Relocate parking to south side and install west-bound contraflow bike lane	Bicycle desire line	29	X	\$\$
85	Street Furniture	The parking lot west of Roundhouse Plaza	Between Roundhouse Pl and the New South overpass	Install edge lines at the south end of the parking lot	This will discourage motorists from parking with their bumpers extending into the rail-trail zone	23		\$
86	Intersection	Village Hill Rd	At West St	Reduce size of all corner radii for slower traffic speeds	Overly wide intersection invites speeding and creates uncomfortable crossing distance for pedestrians	23		\$
87	On-Street Bike Facility	West / Chapel / Rocky Hill Rd.	Between Elm St and Old Wilson Road	Add shared lane markings and signage from Elm to Belmont and bike lanes from Belmont to Old Wilson Rd		27		\$\$
88	Intersection	West St	At Green St	Utilize traffic calming: refuge island / curb extensions / raised-table crossing	Crosswalk is too long, telephone pole restricts sight lines	31	X	\$\$\$
89	Intersection	West St	At Earle St	Install refuge island in median area	A refuge island will aid crossing pedestrians at this wide roadway	22		\$
90	Traffic Signal	West St	At Village Hill Rd	Install pedestrian signal phase at existing traffic signal		24		\$
91	Crosswalk	Woodmont Rd	At Norwottuck rail trail crossing	Install new crosswalk	Existing crosswalk is faded. High cyclist and pedestrian presence.	28		\$

7. Crosswalk Planning & Design



CROSSWALK RECOMMENDATIONS

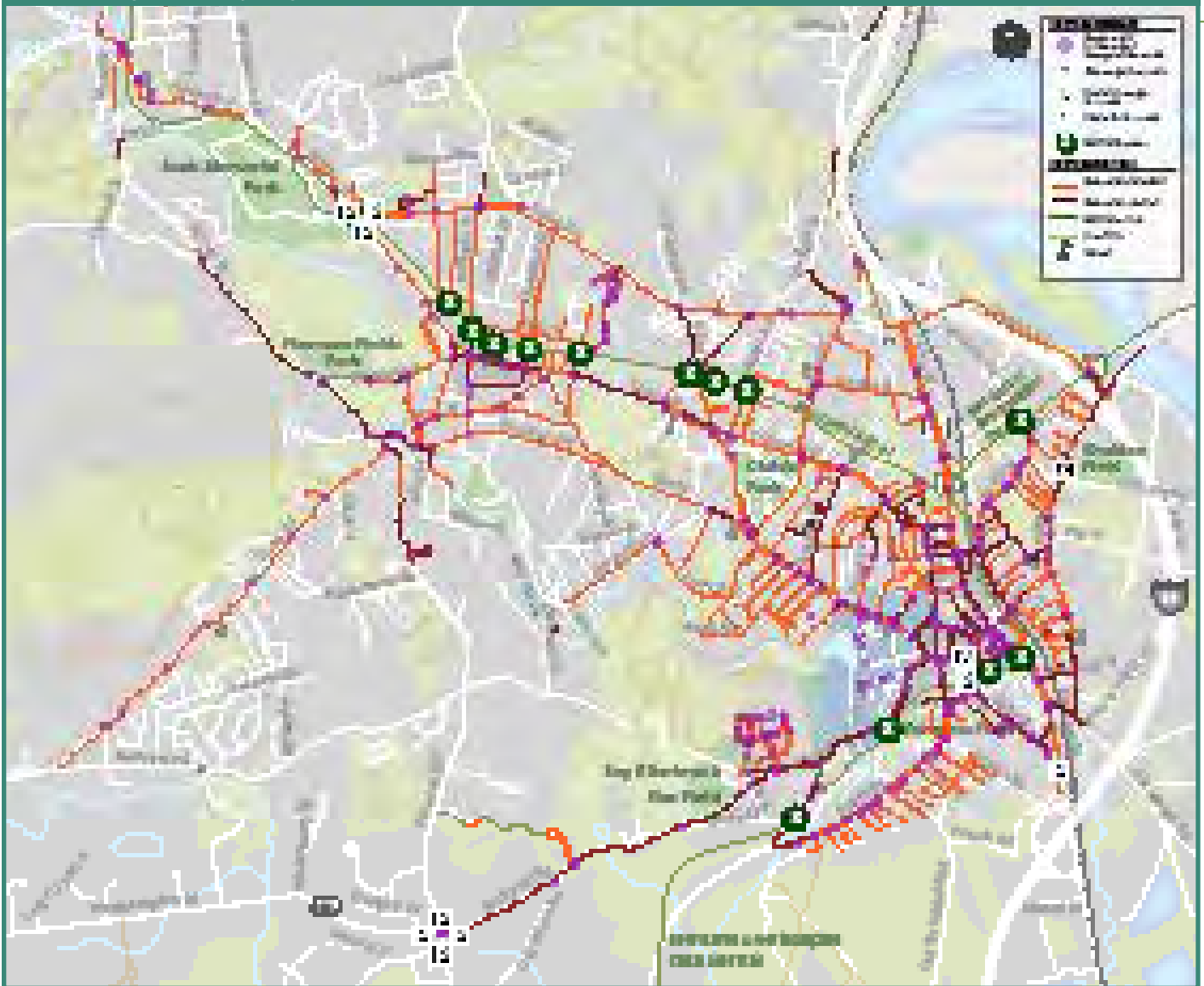
This section describes crosswalk design guidelines, inventories the existing types of crosswalks and their locations in Northampton, and provides a toolkit of design elements for safe crosswalks. More detailed design standards for crosswalks can be found in the appendix. The general guidelines below and the detailed design standards in the appendix are based on the AASHTO Guide for Planning, Design, and Operation of Pedestrian Facilities, the MassDOT Project Development & Design Guide (2006), the NACTO Urban Streets Design Guide and Manual of Uniform Traffic Control Devices (MUTCD), including the MA MUTCD Amendments, section 3B.18, Crosswalk Markings.

7.1 General Guidelines

Installation of any new crosswalks should be preceded by an engineering study that will need to consider the number of traffic lanes, the presence of, or potential for, a median, the distance from signalized intersections, pedestrian volumes, roadway geometry, availability of street lighting, traffic volumes and posted and/or 85th percentile speed.

- Crosswalks are not required at all intersections; crosswalks should be considered at street intersections where the primary roadway has volumes of >3,000 vehicles per day, speeds typically exceed 25 MPH or where schools, parks and senior centers are present.
- Land use, crash history, and present and future pedestrian demand to be expected can impact crosswalk design and location.
- Crosswalks shall be supplemented with curb ramps, stop bars, and signage to improve access, pedestrian convenience, and safety. In addition, crosswalks may be supplemented with curb extensions, refuge islands, raised crossings, advanced yield lines, pedestrian crossing bollard signs, and pedestrian signals with countdown timers in locations where pedestrian traffic is heavy, or near schools, parks, and senior centers.
- Compelling reasons should be found to not include crosswalks on all legs of an intersection, e.g. missing sidewalk(s), high turning volume and/or low traffic volume.
- The minimum crosswalk width at side streets with a 5' sidewalk is 8', with 12' preferred. Across busier streets and downtown, the minimum crosswalk width is 12' or the width of the adjacent sidewalk, whichever is greater.

Map of existing crosswalk typologies



- On 4-lane roads or where 85th percentile speeds exceed 35 MPH, medians, flashing beacons or a pedestrian signage and overhead lighting.
- Any mid-block crossing requires appropriate signage and overhead lighting.
- Per MUTCD, Section 4D.01, mid-block crosswalks should not be signalized if within 300' of the nearest traffic signal, or within 100' of a side street controlled by a stop or yield sign, unless a study indicates the new signal will not restrict progressive movement of traffic

7.2 Existing Crosswalk Typologies

There are a variety of crosswalk typologies within the City of Northampton. Five distinct types of crosswalk are displayed in the photos to the right, along with a synopsis of those that are preferred versus those in need of improvement.

Existing Crosswalks

Crosswalk Type	Quantity
Ladder / Continental Crosswalks	340
Parallel Crosswalks	8
Street Print	23
Zebra-style Crosswalks	1
Total Number of Crosswalks	373

7.3 Recommended Crosswalk Design Features Toolkit

Lower Cost Elements

Pedestrian infrastructure that may not be old enough to require full replacement, or where funding is limited should consider these improvements. Low cost fixes to calm traffic and enhance safety for all users of the road and sidewalk are likely to be adopted and completed sooner than more expensive projects, and can serve as

catalysts for long-term change. Additionally, low-cost, context-sensitive retrofits can enable safety improvements to an area pending a more robust or significant future redesign. These are some of the design features illustrated in the crosswalk design standards found in the appendix.



Continental Style Crosswalk

Continental style crosswalks are highly visible to motorists. They are cost-effective by placing gaps in established tire tracks, reducing the level of wear over time. Continental crosswalks are the preferred crosswalk design standard.



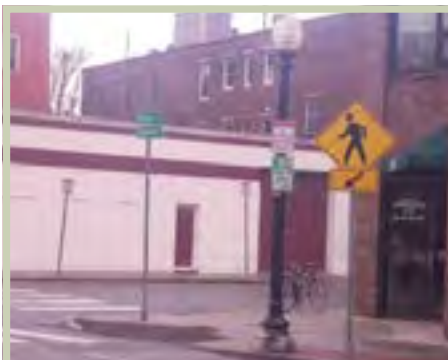
Stop Line

Stop lines should be located a minimum of 4 feet (10' preferred) in advance of the crosswalk to reinforce yielding to pedestrians. Stop bars should be perpendicular to the travel lane, not parallel to the adjacent street or crosswalk. Stop lines can be painted where there is a stop sign (MUTCD 3B.16), and at traffic signals.



Advanced Yield Line

(Uncontrolled crossing only) Advanced yield lines placed 20 to 50 feet prior to a crosswalk can reduce likelihood of crashes at un-signalized mid-block crossings. The line encourages drivers to yield far enough away so a pedestrian can see if a second motor vehicle is not stopping a multi-lane roadway.



Continental

Crosswalk signage at unsignalized crossings can alert motorists to the presence of pedestrians at these locations.



Curb Ramps

ADA compliant curb ramps contain Pedestrian Warning Strips (truncated domes) to alert mobility impaired individuals utilizing walking canes to the presence of a road crossing.



In-Street Yield to Pedestrian Sign

The in-street yield to pedestrian crosswalk sign provides a reminder to alert motorists at un-signalized intersections to laws concerning yielding or stopping for pedestrians in crosswalks. These signs are also more visible to motorists than signage posted to sign poles.

Higher Cost Elements

Pedestrian crossing facilities are higher cost improvements, but generally have higher compliance rates and create a more comfortable environment for pedestrians. They should be installed at locations where there have been crashes involving pedestrians, or where heavy

levels of traffic calming is needed. In order to absorb the costs, these improvements can be included in larger capital projects or redevelopment plans. Many of these elements are featured in the crosswalk design standards found in the appendix.



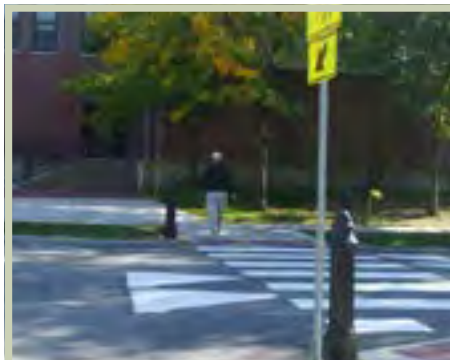
Curb Extension

Curb extensions include both mid-block extensions (known as pinchpoints or chokers) that may include cut-throughs for bicyclists, and intersection curb extensions that align well on streets with parallel parking. Curb extensions shorten crossing distance for pedestrians and increase sight lines for motorists by reducing parked car obstacles near crosswalks.



Refuge Island - Raised

Pedestrian refuge islands limit pedestrian exposure in the intersection. They are recommended where a pedestrian must cross more than two lanes of traffic in one direction, locations with high pedestrian-collision rates, and locations where there are high traffic volumes and speeds. Medians or safety islands create a two-stage crossing for pedestrians, which is easier and safer.



Raised Crosswalk - Shallow

Raised crossings calm traffic, increase visibility and yielding behavior, and create a safer pedestrian crossing environment, especially for mobility-impaired individuals. Shallow crossings may have a longer ramp leading to the raised crossing and / or are shorter in height than a steep raised crossing.



Raised Crosswalk - Steep

A steeper crosswalk is ideal for some college campus or downtown core locations where traffic calming goals stem from significant pedestrian crossings occur regularly or frequently. One result of a steeper crossing is motor vehicle traffic slowed to approximately 10 MPH or less. Mobility-impaired individuals have an easier time crossing as they do not have change in grade.



Pedestrian Signal With Countdown Timer

The countdown timer shows how many seconds remain for the clearing phase. The MUTCD requires countdown signals be used at all signalized intersections with pedestrian clearance intervals longer than seven seconds.

- While there is no specific guidance from MUTCD on material use, epoxy, thermoplastic or similar durable materials should be used; brick or unit paver crosswalks are allowed but not recommended, except at signalized intersections in specific districts.
- Crosswalks should either be located where street lighting is plentiful, or new lighting should be installed concurrently.

Mid-Block Crossings

Because mid-block crosswalks can create a safer and more direct route for pedestrians hoping to avoid significant out-of-direction travel to the nearest signalized intersection, they are recommended. All sites will require an engineering study and approval by the City Engineer and follow these guidelines:

- On low-volume roadways with 85th percentile speeds up to 30 MPH, the City's standard crosswalk design will suffice (see Appendix)



Continental

MAIN ST AT CRACKER BARREL ALLEY: The most dominant style of crosswalk in Northampton, continental style crosswalks are highly visible to motor vehicle traffic. These and ladder crosswalks are the preferred standard.



Ladder

DAMON RD. AT RAIL TRAIL CROSSING: There are relatively few ladder crosswalks in Northampton. Ladder and Continental-style are the most preferred due to their high visibility and are recommended as the standard for new crosswalk striping in the future.



Street Print

MUSANT DR. AT MOSER ST: Throughout the Village Hill Development, more decorative street print duratherm crosswalks are used..



Parallel

CRAFTS AVE AT OLD SOUTH ST: There are only 8 instances of parallel-line style crosswalks in Northampton. These are the least preferred style of crosswalk due to their lower levels of visibility. Due to the inherent design of striping perpendicular to the flow of traffic, these crosswalks wear down faster due to motor vehicle tires. Parallel-style crosswalks should be updated to the preferred standard, except at locations with decorative pavers or brick, in which parallel style will be needed at the edges.

8. Bike Share



Introduction

Dozens of cities in North America have recognized the health, environmental, and economic benefits of bike sharing. Northampton is well positioned as a bike friendly city in the Pioneer Valley That serves as the coordinator and project manager for the eight-municipality (Amherst, Chicopee, Easthampton, Holyoke, Northampton, South Hadley, Springfield, and West Springfield) regional ValleyBike share program, with 65 stations and over 600 electric pedal assist bikes..

The program is designed for short trips within the city, though intrepid bicyclists would be allowed to ride between any of the participating cities and towns in the network.



9. POLICY & PROGRAM RECOMMENDATIONS

Introduction

Northampton's commitment to improving bicycling and walking in the community is clearly expressed through existing policies and programs that, on the whole, strongly support access and safety for bicyclists and pedestrians. As part of the process for developing this plan, the project team reviewed and analyzed the existing policies and programs in the areas of Education, Encouragement, Enforcement, Engineering, and Evaluation, including local ordinances regulating bicycling and walking, zoning and site plan review ordinances, subdivision regulations, driver behavior, Safe Routes to School, and more. Input was gathered from the public via meetings and email from local officials and published information, and from research into best practices. Gaps in existing policies and programs, and potential additions or improvements, were identified. The following tables contain the policy and program recommendations resulting from this process.

POLICY RECOMMENDATIONS

Education & Encouragement

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Education	Bicyclist Behavior	Some bicyclists exhibit unsafe or illegal behavior.	Laws specific to bicyclist behavior are in MGL Chapter 85, Section 11B.	Provide education and public outreach resources on (1) the state laws and local ordinances related to bicycling, and (2) safe bicycling practices. Resources include MassBike, League of American Bicyclists Smart Cycling Program, and CyclingSavvy.	Parks & Recreation Police Schools
Education	Bike/Transit Integration	Integration between bicycling and transit could be better, and could extend range of potential trips.	PVTA has web-based information and video on using bus bike racks.	Promote existing PVTA information resources, and coordinate demonstration events where people can try our bus bike racks.	PVTA
Education	Children's Education	MA Safe Routes to School offers bike and pedestrian safety training free-of-charge to partner schools.	All elementary and middle schools are Safe Routes to School partners, but do not participate in SRTS educational components.	Fully participate in MA Safe Routes to School program each year.	Schools
Education	Children's Education	Many children do not receive adequate education and practical experience about traffic safety, especially interactions among motorists, bicyclists, and pedestrians.	Summer-only Safety Village program.	Create in-school "transportation literacy" program that teaches and repeatedly reinforces traffic safety and safe interactions; extend time period for the Safety Village program.	Parks & Recreation
Education	Driver Behavior	Many motorists, bicyclists, and pedestrians lack basic information about safely interacting as the mix of roadway users evolves; also motorists often fail to yield to pedestrians in crosswalks.	None.	Public outreach, such as mailings and PSAs, to educate all roadway users about safe interactions with each other, but particularly motorist interactions with vulnerable users.	Bicycle & Pedestrian Subcommittee Police
Education	Driver Behavior	Vulnerable road users, particularly bicyclists, are at risk from drivers of buses, large trucks, and other commercial vehicle who do not know how to safely interact with vulnerable road users.	None.	Require training on safe interactions with vulnerable road users, and for all city employees or contractors who operate trucks or other motor vehicles on the job; work with PVTA to enhance training for bus drivers.	Public Works / PVTA Transportation & Parking Committee
Education	Equity	Residents in public housing often lack access to traffic safety information and other information on vulnerable users as described above.	None	Distribute traffic safety information through Northampton Housing Authority.	Northampton Housing Authority Bicycle and Pedestrian Subcommittee
Education	Infrastructure	Some bicyclists and motorists are confused about what new roadway markings and signage mean, and how to use new types of facilities.	None	Pictorial and video resources to demonstrate how new bicycle and pedestrian facilities are intended to be used, and pop-up installations for people to try out.	Bicycle & Pedestrian Subcommittee
Education & Encouragement	Nighttime Visibility	Difficult to see pedestrians at night on paths and in crosswalks and bicyclists on paths and roads.	Pedestrians: None. Bicyclists: Bicycle lights and reflectors required at night (MGL Chapter 85, Section 11B).	Education campaign on using lights and reflective gear at night; possible reflective vest giveaways.	Bicycle & Pedestrian Subcommittee Police

POLICY RECOMMENDATIONS

Education & Encouragement

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Education	Signage	Rail trail users lack information about rules and etiquette, leading to unsafe conditions and user conflict.	City Ordinances: Bikeway regulations (§312-78) include several usage rules, but nothing related to user interactions or etiquette; and bikeway users must keep right (§312-78).	Signage at trail entrances and along trails, emphasizing rules and courtesy.	Parks & Recreation Public Works Bicycle & Pedestrian Subcommittee
Education	Snow removal	Sidewalk snow clearance not done consistently, particularly issue with crosswalks in Central Business District formerly cleared by BID.	Sidewalk snow clearance ordinance (§285-17).	Outreach to residential and commercial building owners to ensure they understand their snow clearance responsibilities.	Public Works Bicycle & Pedestrian Subcommittee
Education	User conflicts	Bicyclists and skateboarders ride on the sidewalk, conflict with pedestrians.	Sidewalk bicycling is legal except on specifically designated streets in the Downtown Business District and the Florence Business District (§285-12.B). Bicyclists legally riding on sidewalks must yield to pedestrians and warn them before passing (MGL Chapter 85, Section 11B).	Outreach and signage to discourage sidewalk bicycling where prohibited and to encourage courteous interactions on sidewalks. (Note that sidewalk bicycling can be an indicator of inadequate bicycle infrastructure.) Consider enforcement in high conflict areas, ideally with education stops and warnings, except where behavior is egregious.	Bicycle & Pedestrian Subcommittee Police
Education & Encouragement	Bike Parking	More bike parking needed throughout city, particularly popular destinations and nearby trailheads.	City Ordinance: Zoning ordinance requires bike parking for new construction, additions and enlargements (§350-8.11), but no general bike parking requirement.	Add bike parking at key destinations, crowdsource bike parking locations, encourage business sponsorship of bike racks.	Parks & Recreation Public Works Bicycle & Pedestrian Subcommittee
Encouragement	Bike Parking	Improve bike storage in multi-family housing	Zoning ordinance requires bike parking for new construction, additions and enlargements (§350-8.11), but not existing structures.	Provide information about acceptable bike parking (such as Northampton bike parking guide) to multi-unit residential owners. Consider incentives for improving bicycle parking in existing buildings.	Planning Board Bicycle & Pedestrian Subcommittee
Encouragement	Bike Parking	Limited and substandard bike parking at Northampton High School and Smith Voc-Ag. At the same time, vehicle parking is free or extremely low-cost, incentivizing students to drive to school rather than considering biking, walking, or transit.	Vehicle parking permit required for lower lot adjacent to NHS (purchased by \$25 "donation" to student group), with violators subject to towing. In practice, no one has ever been towed, but might be asked to move to the athletic field lot. No permit is required to park in the athletic field lot. Vehicle parking is entirely free at Smith Voc-Ag.	Consider raising parking fees (subject to need-based exceptions) at the two high schools to subsidize improved bicycle parking facilities at the schools. Conduct a study of student travel modes and preferences to determine potential for mode shift.	Schools Transportation & Parking Committee Bicycle & Pedestrian Subcommittee

POLICY RECOMMENDATIONS

Encouragement

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Encouragement	Bikeway Ordinance	Nighttime bikeway closure is inconsistent with transportation needs.	Bikeway is officially closed from dusk to dawn (§312-78).	Consider repealing nighttime bikeway closure, or extend hours to mid-evening, e.g. 9:00 or 10:00 pm	Planning Board Police Bicycle & Pedestrian Subcommittee
Encouragement	Children's Education	Northampton schools do not take advantage of Safe Routes to School educational or encouragement services.	Northampton schools are SRTS partners, but do not actively participate.	Work with MassRIDES to bring bicycling and walking safety training and activities to schools.	Schools Bicycle & Pedestrian Subcommittee
Encouragement	Children's Education	Encouraging children and youth to bike and walk has proven benefits for public health.	Northampton schools are SRTS partners, but do not actively participate.	Use school-based encouragement programs to engage children and youth in biking and walking. Examples: walking school buses and bike trains; targeted encouragement/incentives for high school students; adapt/expand Safety Village bike/ped safety components to in-school curriculum.	Schools Bicycle & Pedestrian Subcommittee
Encouragement	Facilities	People who cannot afford repairs at traditional bike shops or who do not know people to ride with have no place to go.	Smith Bike Kitchen serves this purpose for the Smith College community.	Create a community bike hub (similar to Smith Bike Kitchen) that can provide low-cost or self-service bike repair facilities and a location for organizing rides.	MassBike PV Bicycle & Pedestrian Subcommittee
Encouragement	Facilities	Convenient bike maintenance stands on rail trails and elsewhere.	MassBike PV purchased one bike maintenance station, which was installed.	Install (and maintain) additional publicly-accessible bike maintenance stations and water sources at key trail locations.	Public Works Bicycle & Pedestrian Subcommittee
Encouragement	Facilities	Bicycle use on school grounds and recreational facilities is broadly prohibited and treated the same as motor vehicles.	City Ordinance: Operation of vehicles (§233-1).	Amend §233-1 to allow use on school grounds and recreational facilities to the extent needed for transportation and bike parking.	Parks & Recreation Schools
Encouragement	Open Streets	Open Streets (aka: "ciclovia") or tactical urbanism events engage more people in biking, walking, and other outdoor activities in a safe, social, car-free space, and emphasize that the streets are for everyone by closing busy streets to motorized vehicles.	None.	Pilot an Open Streets event or continue the demonstration project on Main Street on regular intervals, such as monthly from April to October.	Parks & Recreation Bicycle & Pedestrian Subcommittee MassBike PV
Encouragement	Recognition	Goal: Silver (or higher) Bicycle Friendly Community	Bronze Bicycle Friendly Community	Adopt this plan and Implement "Key Steps" in Bicycle Friendly Community Report Card.	Bicycle & Pedestrian Subcommittee PVPC
Encouragement	Recognition	Goal: Silver (or higher) Walk Friendly Community	Bronze Walk Friendly Community	Adopt this plan and use WFC assessment tool feedback to improve the City's standing.	Bicycle & Pedestrian Subcommittee

POLICY RECOMMENDATIONS

Encouragement

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Encouragement	Seniors	Bicycling is a viable but under-utilized transportation and recreation option for seniors, with Northampton's compact downtown and trail network.	None.	Provide education and training resources to encourage seniors to bike (or tricycle) for transportation or recreation.	Senior services Bicycle & Pedestrian Subcommittee
Encouragement	Snow Removal	Path network is essential transportation infrastructure, and lack of clarity and consistency with snow removal impacts bicycle and pedestrian transportation in the winter. Snow removal policy for paths is not included in DPW's Snow Removal Procedures document.	The city's objective is to plow the trails from West Street to Florence/Mulberry Streets because these are areas with the highest volumes and serve the village centers, downtown, dense neighborhoods, and schools. The former Business Improvement District used to plow the section from Main Street to State Street.	Restore plowing on rail trail from Main Street to State Street. Formalize and publicize path snow removal policy to inform public and set expectations.	Planning & Sustainability Public Works Bicycle & Pedestrian Subcommittee
Encouragement	Wayfinding	Wayfinding signage assists people to find key destinations, and encourages them to bike or walk.	Bike path kiosks, graphic art sign on rail trail bridge, WalkBoston signage, path mileage markers (planned).	Continue existing wayfinding efforts, and evaluate effectiveness. Consider need for bilingual or multi-lingual signage.	Planning & Sustainability Bicycle & Pedestrian Subcommittee Public Works
Encouragement	Snow Removal	Seniors may be unable to comply with snow removal ordinance due to physical or financial limitations.	City Ordinance: Removal of snow and ice from sidewalks (§285-17)	Provide financial and/or manpower to assist seniors with residential snow removal.	Public Works Senior Services



Publicly accessible bicycle repair stands reduce barriers to riding by providing convenient and free access to tools necessary to keep a bicycle working properly.



This Ciclovía in Bogota in 2009 is an example of a successful Open Streets policy. Each Sunday and public holiday from 7:00am to 2:00pm certain main thoroughfares are closed to motor vehicles and opened for any form of non-motorized active transportation.



Walking School Bus program encourages students to walk to school by banding together in groups similar to a school bus. A parent or teacher volunteer often leads the effort.

POLICY RECOMMENDATIONS

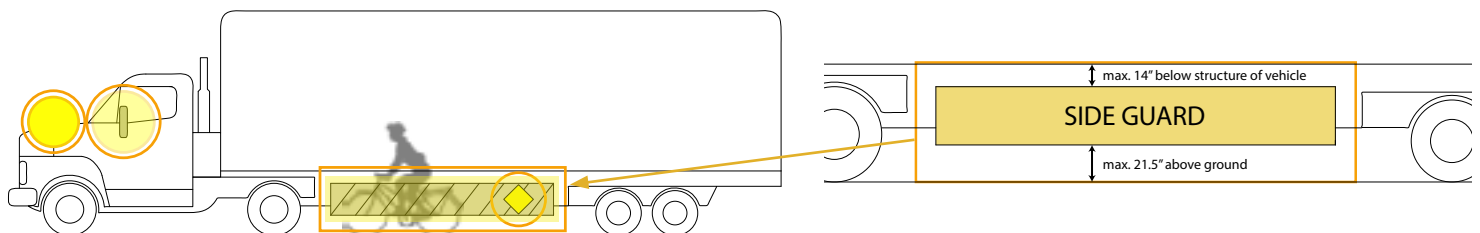
Enforcement

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Enforcement	Bikeway Ordinance	Unclear which bikeways or paths the bikeway ordinance applies to, as it refers to a singular bikeway.	City Ordinance: Bikeway (§312-78)	Clarify which bikeways and paths this ordinance applies to.	Transportation & Parking Committee Bicycle & Pedestrian Subcommittee
Enforcement	Bikeway Ordinance / E-Bikes	Ban on use of "motorized vehicles" on bikeway prohibits use of electric-assist bicycles (e-bikes).	City Ordinance: Bikeway (§312-78)	Consider whether use of e-bikes should be permitted on bikeways, and how such use would be regulated.	Transportation & Parking Committee Bicycle & Pedestrian Subcommittee Police
Enforcement	Bikeway Ordinance / Motorist Behavior	Bikeway ordinance currently requires all users to yield to vehicles in the road at crossings. This may be inconsistent with MGL Chapter 89, Section 11 that requires vehicles in road to yield to pedestrians at all marked crosswalks.	City Ordinance: Bikeway (§312-78)	Consider amending ordinance to require vehicles on roadway to yield to all bikeway (or trail) users at marked crossings (and all path crossings should be marked).	Transportation & Parking Committee Bicycle & Pedestrian Subcommittee Police
Enforcement	Driver Behavior	Motorists often fail to yield to pedestrians in crosswalks.	Motorists required to yield to pedestrians in crosswalks (MGL Chapter 89, Section 11).	Additional enforcement, educational stops, and decoy operations.	Police
Enforcement	Driver Behavior	Motorists sometimes park in bike lanes, which is prohibited by city ordinance.	City Ordinance: Bike lanes (§312-80)	Additional enforcement, motorist education and outreach.	Police
Enforcement	E-Bikes	Current definition of "motor vehicle" in zoning ordinance could potentially apply to and limit use of electric-assist bicycles (e-bikes).	City Ordinance: Zoning, General (§350-2.1)	Amend zoning ordinance to differentiate e-bike from motor vehicle, consistent with any other policy changes related to e-bikes.	Transportation & Parking Committee Bicycle & Pedestrian Subcommittee Planning Board
Enforcement	Personal Safety	Concerns over personal safety and crime on rail trails, particularly at night.	None.	Consider additional patrols on rail trails.	Police

POLICY RECOMMENDATIONS

Enforcement

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Enforcement	Police Education	Law enforcement officers may not have the latest information on laws and safety issues relating to bicyclists and pedestrians.	None.	Use available training resources, such as MassBike and WalkBoston training videos, supplemented with information on local ordinances.	Police Bicycle & Pedestrian Subcommittee
Enforcement	Snow Removal	Property owners do not consistently clear snow from the sidewalks in front of their properties, in violation of city ordinance. Crosswalks and curb ramps in Central Business District formerly cleared by BID no longer cleared.	City Ordinance: Removal of snow and ice from sidewalks (§285-17)	Issue citations to non-complying building owners and/or DPW does work and bills owner. DPW should clear crosswalks in CBD.	Police Public Works
Enforcement	Speeding	Speeding by motorists endangers bicyclists and pedestrians, particularly downtown.	City Ordinances: Speed regulation (§312-79) Speed limits (MGL Chapter 90, Section 17)	Identify areas where speeding is most dangerous to bicyclists and pedestrians, and target enforcement.	Police
Enforcement	Truck Safety	Large trucks present a particular hazard for bicyclists and pedestrians, and most trucks lack safety measures designed to protect vulnerable users.	None.	Establish an internal policy requiring side guards, convex mirrors, and cross-over mirrors on all large trucks owned or operated by the City.	Transportation & Parking Committee Police Public Works
Enforcement	Truck Safety	Operation of trucks can be unsafe in areas of high bicycle and pedestrian activity. (e.g., Main Street)	None.	Consider a long-term plan for appropriate delivery and loading locations for Main St. businesses.	Transportation & Parking Committee Police



TRUCK SIDE GUARD GRAPHIC PROVIDED BY [HTTP://WWW.CITYOFBOSTON.GOV/IS/PDFS/TRUCKSIDE GUARD_HANDOUT_VF2.PDF](http://www.cityofboston.gov/is/pdfs/trucksideguard_handout_vf2.pdf)

POLICY RECOMMENDATIONS

Encouragement

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Engineering	Bike Lane Ordinance	Existing ordinance does not contemplate a wider range of possible bicycle facilities than striped bike lanes, and specifically does not allow separated bike lanes for exclusive non-motorized use.	City Ordinance: Bike lanes (§312-80)	Amend ordinance to allow the full range of bicycle facilities, including separated bike lanes that are intended for the exclusive use of non-motorized users.	Planning & Sustainability Transportation & Parking Committee Bicycle & Pedestrian Subcommittee
Engineering	Bike Lane Ordinance	Streets with bike lanes are specifically listed in the ordinance, which is unnecessary for designating a bike lane, burdensome to keep up-to-date, and unclear what the legal consequences are if a bike lane is or is not listed.	City Ordinance: Bike lanes (§312-80)	Consider removing specific list of bike lanes from the ordinance.	Planning & Sustainability Transportation & Parking Committee Bicycle & Pedestrian Subcommittee
Engineering	Bike/Transit Integration	Integration between bicycling and transit could be better, and could extend range of potential trips by enabling bike use at beginning and/or end of transit trip.	None	Ensure adequate bike parking exists in proximity to key transit stops, and communicate the locations of integrated bus/bike stops to the public.	Planning & Sustainability Public Works Bicycle & Pedestrian Subcommittee PVRTA
Engineering	Funding	The city does not currently designate any Chapter 90 funds specifically for bicycle or pedestrian projects, nor does the state expressly require that Chapter 90 projects comply with Complete Streets standards.* (See note by City Traffic Engineer.)	None	Consider allocating a specific percentage of Chapter 90 funds for bicycle and pedestrian projects, in proportion to mode share or another metric. Apply the city's Complete Streets Policy to all Chapter 90 projects.	Planning & Sustainability Public Works Transportation & Parking Committee Bicycle & Pedestrian Subcommittee
Engineering	Funding	MassDOT offers funding for Complete Streets projects.	Complete Streets Policy adopted.	Continue MassDOT Complete Streets funding process, with the goal of receiving up to \$400,000 in project implementation funds.	Planning & Sustainability Public Works Transportation & Parking Committee Bicycle & Pedestrian Subcommittee
Engineering	Grates	Grates are not consistently bicycle-safe in either design or orientation. Ordinance does not include bicycle safety requirements.	City Ordinance: Gratings in streets (§285-24)	Although the DPW does install bike-friendly castings for upgrades and new projects, formalize by amendment to specify bicycle-safe design and orientation of grates on all streets and sidewalks.	Public Works Bicycle & Pedestrian Subcommittee

*Bicycle and pedestrian access is considered for City projects. Full reconstruction projects consider the addition of sidewalks. Most resurfacing projects require the reconstruction of wheelchair ramps and bike lanes are considered where there is sufficient pavement width.

POLICY RECOMMENDATIONS

Encouragement

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Engineering	Maintenance	Some crosswalks and bike lanes are faded and hard to see, reducing their safety effectiveness.	Crosswalks repainted annually over the summer by Public Works with bike lanes painted by a contractor	Crosswalk inventory is part of this plan. Bike lanes are listed in the bike lane ordinance, but bicycle facilities should be tracked independent of the ordinance. Ensure maintenance status is tracked as part of inventory.	Public Works
Engineering	Maintenance	Trail cleanup (brush cutting and trash cleanup) is not done consistently throughout the network.	DPW cuts brush twice a year on the Northampton Bikeway, once a year on other paths.	Expand twice-a-year brush cutting beyond the core Northampton Bikeway to other trails. Consider options for regular trash cleanup. Continue to seek "Adopt a Trail" sponsors for additional maintenance.	Public Works
Engineering	Maintenance	Street maintenance or construction operations can create hazardous conditions or block access for bicyclists, pedestrians, and people with disabilities.	City follows MassDOT guidelines for construction zone management.	Consider adopting a city policy detailing requirements for maintaining safe access through construction zones for bicyclists, pedestrians, and people with disabilities.	Public Works Bicycle & Pedestrian Subcommittee
Engineering	Trails	Consistency of signage at trail crossing of roadways.	Some roadway crossings include W11-2 and W16-7P signs currently.	All crossings should include MUTCD W11-15P signs.	Public Works



A bicycle-unfriendly sewer grate design in Nashville, TN. These should be avoided at all costs.;



Covered bicycle parking racks near key destinations and adjacent to transit stations increase the likelihood of users completing a multi-modal transit journey.



A bicycle-friendly sewer grate in Cambridge, MA. Note the direction of travel and the small opening size.

POLICY RECOMMENDATIONS

Engineering

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Engineering	Snow Removal	Rail trail network is essential transportation infrastructure, and lack of clarity and consistency with snow removal impacts bicycle and pedestrian transportation in the winter. Snow removal policy for paths is not included in DPW's Snow Removal Procedures document.	DPW plows the Northampton Bikeway from Stoddard Street to Florence Street in Leeds. The section of the bikeway from King Street to Earle and Grove Streets (Manhan Rail Trail) used to be plowed by the former BID, by is now plowed by the Parking Maintenance Division. Plowing starts after a storm has ended, not during.	Formalize and publicize path snow removal policy to inform public and set expectations. Consider plowing during storms of sustained duration.	Planning & Sustainability Public Works Bicycle & Pedestrian Subcommittee
Engineering	Snow Removal	Previously the work of the downtown BID, snow clearance at crosswalks in Central Business District is inconsistent.	None.	City should include crosswalks and curb ramps in snow removal operations, particularly in the Central Business District.	Public Works
Engineering	Subdivision Regulations	Any point along a street (measured at the center line) must be less than 500 feet away from the nearest connected street; this applies to cul-de-sac or dead-end streets as well.	City Ordinance: Cul-de-sac or dead-end streets (§290-29.B)	Amend regulation to require that in the case of a cul-de-sac or dead-end street, if a non-connected public street that is not a dead-end is within 250 feet, and an alternative bicycle and pedestrian connection to that street is feasible, such connection is required.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Subdivision Regulations	Bicyclist and pedestrian access and safety not expressly part of Purpose, while motor vehicle safety is emphasized.	City Ordinance: Purpose (§290-2)	Add bicyclist and pedestrian access and safety to Purpose section of subdivision regulations.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Subdivision Regulations	Bicycle peak-hour and daily trips not included in traffic analysis.	City Ordinance: Additional subdivision submittal requirements (§290-23)	Include bicycle trips in traffic analysis.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Subdivision Regulations	No existing requirement of interior circulation plan for bicycles.	City Ordinance: Additional subdivision submittal requirements (§290-23)	Require interior bicycle circulation plan.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee

POLICY RECOMMENDATIONS

Engineering

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Engineering	Subdivision Regulations	Street design is expressly focused on “safe vehicular travel”.	City Ordinance: Location (§290-29.A)	Broaden street design focus from “safe vehicular travel” to “safe travel for all road users.”	Planning & Sustainability Planning Board
Engineering	A. Subdivision Regulations B. Zoning Ordinances	Subdivision Regulations and Site Plan Review criteria does not permit any decrease in roadway Level of Service, limiting potential for biking and walking improvements.	A. City Ordinance: Additional subdivision submittal requirements (§290-23) B. City Ordinance: Approval criteria (§350-11.6)	Adopt more flexible and context-sensitive Level of Service analysis, and require that project reduce (or at least not increase) Bicycling Level of Traffic Stress.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Zoning Ordinances	No requirement to orient new buildings to street frontage, limiting access for non-vehicular users.	City Ordinance: Procedures (§350-11.5), Approval criteria (§350-11.6)	Amend site plan procedures and approval criteria to require new buildings to be oriented to street frontage.	Planning & Sustainability Planning Board
Engineering	Zoning Ordinances	Fixed minimum off-street vehicle parking currently required for all structures, based primarily on square footage (seats for restaurants), with no limit on commercial parking, and reductions only possible through shared parking or payment-in-lieu (for CBD).	City Ordinances: Off-Street parking requirements (§350-8.1), Shared parking (§350-8.6), Special provisions in Central Business District for meeting off-street parking requirements (§350-8.10)	Dynamically set off-street vehicle parking requirements by requiring Transportation Demand Management Plan that maximizes bicycle, pedestrian, and transit trips, and then calculates minimum off-street parking needed (not to exceed statutory minimum). Allow reduction of off-street vehicle parking for exceeding bicycle parking requirements.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Zoning Ordinances	Crosswalks not expressly required, even when sidewalks are required.	City Ordinances: Procedures (§350-11.5), Approval criteria (§350-11.6), Highway Business District Design Standards attachment	Expressly require crosswalks at intersections, transit stops, building entrances, and other key locations within and adjacent to site, subject to engineering review.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Zoning Ordinances	Bicycles and pedestrians not included in trip estimates, only vehicles.	City Ordinance: Procedures (§350-11.5)	Require bicycle and pedestrian trip estimates, based on anticipated demand assumption and/or nearby ped/ bike counts.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Zoning Ordinances	Bicycles not included in traffic pattern analysis.	City Ordinance: Procedures (§350-11.5)	Expressly add bicycles to traffic pattern analysis.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee

POLICY RECOMMENDATIONS

Engineering

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Engineering	Subdivision Regulations	Street design is expressly focused on “safe vehicular travel”.	City Ordinance: Location (§290-29.A)	Broaden street design focus from “safe vehicular travel” to “safe travel for all road users.”	Planning & Sustainability Planning Board
Engineering	A. Subdivision Regulations B. Zoning Ordinances	Subdivision Regulations and Site Plan Review criteria does not permit any decrease in roadway Level of Service, limiting potential for biking and walking improvements.	A. City Ordinance: Additional subdivision submittal requirements (§290-23) B. City Ordinance: Approval criteria (§350-11.6)	Adopt more flexible and context-sensitive Level of Service analysis, and require that project reduce (or at least not increase) Bicycling Level of Traffic Stress.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Zoning Ordinances	No requirement to orient new buildings to street frontage, limiting access for non-vehicular users.	City Ordinance: Procedures (§350-11.5), Approval criteria (§350-11.6)	Amend site plan procedures and approval criteria to require new buildings to be oriented to street frontage.	Planning & Sustainability Planning Board
Engineering	Zoning Ordinances	Fixed minimum off-street vehicle parking currently required for all structures, based primarily on square footage (seats for restaurants), with no limit on commercial parking, and reductions only possible through shared parking or payment-in-lieu (for CBD).	City Ordinances: Off-Street parking requirements (§350-8.1), Shared parking (§350-8.6), Special provisions in Central Business District for meeting off-street parking requirements (§350-8.10)	Dynamically set off-street vehicle parking requirements by requiring Transportation Demand Management Plan that maximizes bicycle, pedestrian, and transit trips, and then calculates minimum off-street parking needed (not to exceed statutory minimum). Allow reduction of off-street vehicle parking for exceeding bicycle parking requirements.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Zoning Ordinances	Crosswalks not expressly required, even when sidewalks are required.	City Ordinances: Procedures (§350-11.5), Approval criteria (§350-11.6), Highway Business District Design Standards attachment	Expressly require crosswalks at intersections, transit stops, building entrances, and other key locations within and adjacent to site, subject to engineering review.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Zoning Ordinances	Bicycles and pedestrians not included in trip estimates, only vehicles.	City Ordinance: Procedures (§350-11.5)	Require bicycle and pedestrian trip estimates, based on anticipated demand assumption and/or nearby ped/ bike counts.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Zoning Ordinances	Bicycles not included in traffic pattern analysis.	City Ordinance: Procedures (§350-11.5)	Expressly add bicycles to traffic pattern analysis.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee

POLICY RECOMMENDATIONS

Engineering

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Engineering	Zoning Ordinances	Insufficient bike parking at commercial and residential buildings.	City Ordinances: Bicycle parking (§350-8.11), Chapter 350 Attachment 10, Chapter 350 Attachment 12	Increase bike parking requirements relative to current measures, and require bike parking even when no additional car parking is required. Require bike parking demand analysis.	Planning & Sustainability Planning Board Bicycle & Pedestrian Subcommittee
Engineering	Zoning Ordinances	Lack of end-of-trip facilities (e.g., showers, lockers, changing rooms) in office/commercial buildings is an obstacle to bike commuting.	City Ordinance: Bicycle parking (§350-8.11)	Require end-of-trip facilities for commercial buildings.	Planning & Sustainability Planning Board Bicycle & Pedestrian Subcommittee
Engineering	DPW Policy	Refine the process for public comments for DPW street projects	n/a	The DPW City Engineer or Traffic Engineer should come before the transportation and parking committee on the Pedestrian Bicycle Subcommittee early enough in the decision process for substantive comments on any new or proposed projects.	Public Works

10. Main Street Design



Previous Planning

Past plans undertaken to redesign Main Street in Northampton include the Main Street and King Street Transportation Charrette (March 2011) and the Main Street / State Street / Elm Street / West Street / New South Street Preliminary Intersection Design (July 2010.) Both of these plans by Nelson/ Nygaard involved working to identify issues and opportunities along the Main St and King St corridors in Northampton and to analyze the State / Main / New South intersection to develop recommendations for redesigning the intersection to better accommodate traffic flow and pedestrian and bicycle safety. The impetus for these studies was Northampton's desire to enhance the bicycle and pedestrian environments without decreasing the vehicle throughput, as well as preserve or improve access to downtown businesses.

Some of the key findings and recommendations are summarized below:

- Critical issues identified: 1) over-designed 4-lane cross sections, 2) large intersections, 3) inhospitable bicycling environment. An over-designed street is defined as one that is “over-scaled as compared to the needs of traffic volumes and adjacent land uses. The cross-section of these roads is too wide, allowing cars to travel at excessive speeds and creating unsafe conditions for bicyclists and pedestrians.”
- Lowering speeds through a road-diet identified as critical solution during charrette
- Studies referenced that show a direct correlation between street width and rate of injury in collisions. “with a very steep upward curve for streets wider than 44 feet.”
- Shrinking the intersection size and width with compact design treatments have a number of benefits: “reducing vehicle speeds, particularly at the end of signal phases; less wasted space, especially where right-turn lanes are poorly utilized today; stretching of vehicle queues away from multiple approach lanes linearly towards mid-block areas, with no additional vehicle delay; far more frequent pedestrian crossing phases, which are also longer in duration; significantly shorter crossing distances that reduce the barrier of intersections like Main & King;

and more predictable driver and bicyclists expectations through clearly channelized movements.”

- Long street widths and large intersections create “very long crossing distances for pedestrians, putting them in the path of cars for a long period of time.”
- Large intersections result in additional time required for each car to pass through, reducing the number of cars that can pass through in each signal cycle.
- Pull-in angled parking spaces on Main St. limit drivers’ field of view when backing out
- Additional connections are needed in places where bicycle facilities do exist but are lost at street crossings and intersections
- There is a general lack of quality bicycle parking in Northampton
- Solutions offered include road diets of four lanes to two lanes, shared bicycle boulevard style treatments, reverse angled parking on Main St, raised crossings on slip lanes, a textured crossing plaza in front of City Hall, curb extensions, new sidewalks under rail trail crossing, and widened sidewalks elsewhere

Alternative A:

- Right turn “boulder style” slip lanes
- New NB left-turn lane
- Single EB through lane
- Lengthened storage
- New on-street parking

Alternative B:

- Right turn “Boulder style” slip lanes
- New NB left-turn lane
- Single EB through lane
- Lengthened storage
- New on-street parking
- Two EB receiving lanes retained

- No northwest curb extension on Main St

Alternative C:

- Right turn “Boulder style” slip lanes
- New NB left-turn lane
- Two EB through lanes
- Lengthened storage
- Two EB receiving lanes retained
- No northwest curb extension on Main

After the completion of the three design options the City of Northampton decided to hold back on moving forward with final design due to issues related to truck turning movements and to await the recommendations on the redesign of Main Street developed during this Walk / Bike Northampton effort.

2016 Public Involvement

On May 10th, the consultant team hosted a Main Street Design Workshop that solicited public input regarding design ideas for Northampton’s Main Street. Over 40 attendees engaged with cross sections of Main Street at three locations of varying width to inspire more than one option among the participants. The consultant team recognized that Northampton’s Main Street redesign will likely not be solved by a one-size-fits-all approach, which resulted in the development of an exercise where attendees could lay out Main Street in a manner that they thought best suited everyone’s needs. A range of graphics were created including sidewalk extensions, furniture zones, pedestrian through zones, travel lanes for vehicles, transit-only travel lanes, protected bicycle lanes and traditional bicycle lanes. Each section completed by a workshop attendee was photographed and recorded in the appendix of this report. Additionally, a brief synopsis of the results are listed below. This exercise helped to inform the consultant’s final Main Street design options and final recommendations.

Specific items the community wanted to see in a Main Street redesign included:

Travel Lanes:

- One travel lane in each direction
- Left turn lane pocket within median

Parking:

- 8' parallel parking
- 18' angled parking

Bicycle Facilities:

- Separated bike lanes (located between sidewalk and parking)

Sidewalks:

- Generous planting zone
- Sidewalk cafes

Demonstration Project

On June 18th, the consultant team led a demonstration project on Main Street in front of City Hall that involved temporarily striping a separated bicycle lane between the angled parking and the curb. Curb extensions were also temporarily placed in front of City Hall and at Crackerbarrel Alley to reduce the crossing distance, and to create space for landscaping, cafe tables and seating.



10.1 Design Options

As part of the public involvement and demonstration project effort, the design team created four design options for community evaluation. The four options were based on key design themes that included wider sidewalks, separated bike lanes, transit priority lanes, medians of various widths and a two-way cycle track within the median. Highlights of the design and the Pros and Cons of each option are presented on the following pages.



Views of the demonstration project set up that expanded the sidewalk space in front of City Hall and reduced the length of the crosswalk.



The Main Street demonstration project included large printed maps for the public to view and comment upon



A cyclist takes a video of the temporary separated bicycle lane on Main Street.



People seeking a shady place to have lunch enjoyed the outdoor seating provided during the demonstration project.



MAIN STREET DESIGN OPTION 1

Wide Sidewalks with Separated Bike Lanes

Option 1 included:

- Parking protected bike lanes on south side of Main from Strong Ave to Pleasant King.
- Sidewalk expansion, curb extensions, and raised crosswalk from Gothic to New South.
- Addition of median refuge islands and turn pockets.

Following community comment and consultant analysis, Option 1 evolved into the concept plan.

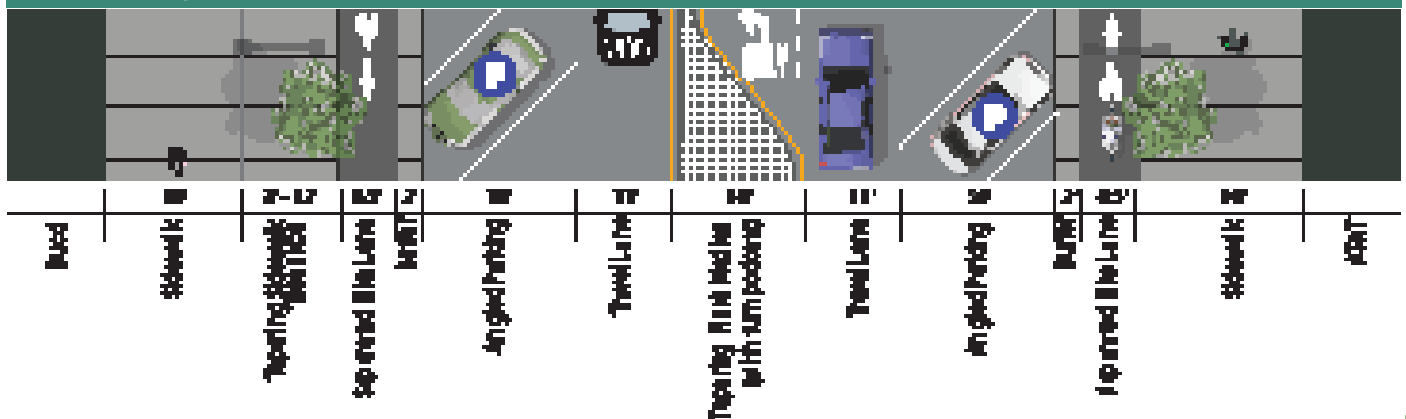
PROS

- Narrower roadway makes cars less dominant, provides a more welcoming environment for walkers and less pavement that needs plowing
- Provides a space for bicyclists separated from moving traffic and parked cars
- Textured, flush median provides additional space for cars to pass others who are waiting to park and for enhanced emergency vehicle access

CONS

- Separated bike lane takes up more space than standard bike lanes which could otherwise go into wider sidewalks or landscaping
- In order to provide appropriate visibility for cyclists on the approach to intersections, some parking spaces may need to be removed
- Limited opportunities to add significant landscaping or sustainability features within the median

Detail plan view graphic location between Center St and Old South St





MAIN STREET DESIGN OPTION 2

Transit Priority Lanes

Option 2 included:

- Median refuge islands in front of City Hall, between Center and Gothic, and between King and Gothic
- Narrow width of Main St to one traffic lane in each direction between Center and Gothic
- Curb extensions at 9 locations
- Traditional striped bike lanes outside of transit priority lane area

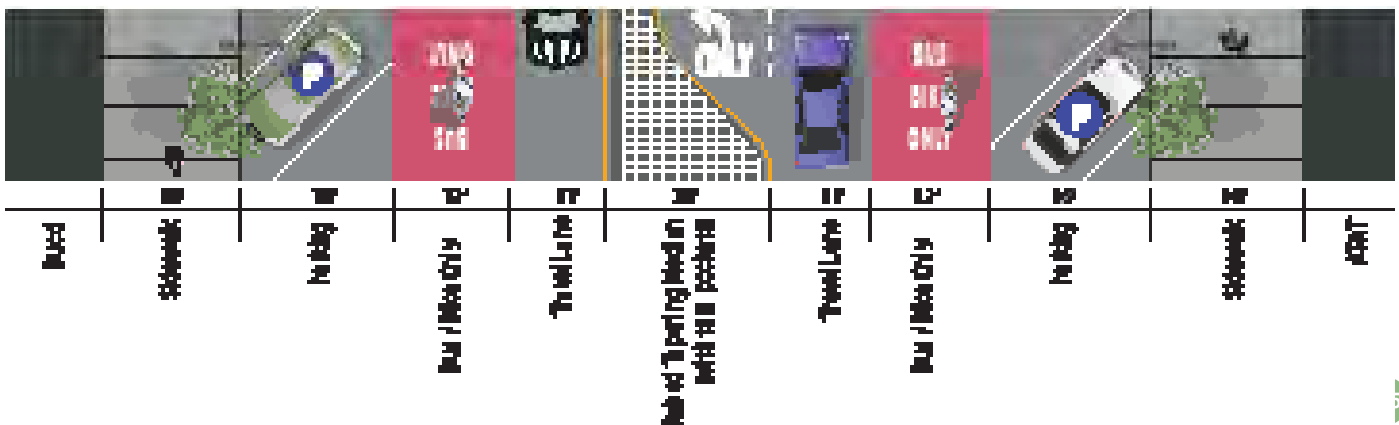
PROS

- Provides dedicated space for buses to avoid traffic back ups along Main Street, saving transit riders time
- Lack of space to maintain bus lanes through signalized intersections minimizes their utility
- The shared bus/bike lane provides a lot of dedicated space for bicyclists during off-peak hours when bus traffic is light
- During peak hours especially, many novice bicyclists and/or families riding with children will not feel comfortable sharing space with buses
- Curb to curb width is generally maintained, along with the current number of parking spaces (approximately)

CONS

- Lack of space to maintain bus lanes through signalized intersections minimizes their utility
- During peak hours especially, many novice bicyclists and/or families riding with children will not feel comfortable sharing space with buses
- Traffic and transit movement continues to be the dominant theme along Main Street

Detail plan view graphic location between Center St and Old South St





MAIN STREET DESIGN OPTION 3

Wide Median with Parking

Option 3 included:

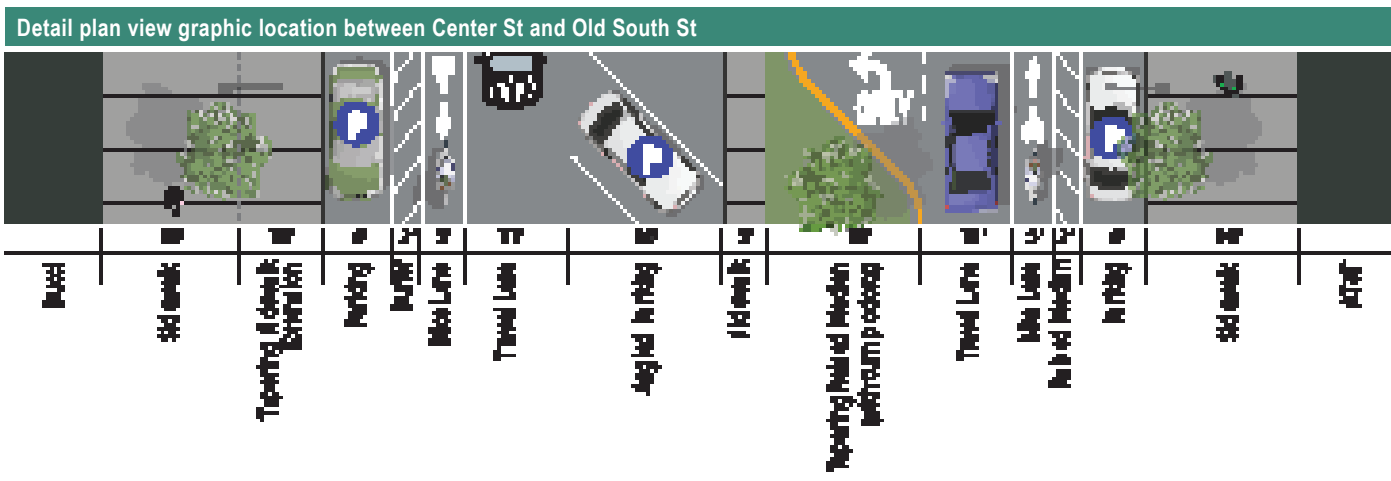
- Traditional striped bike lanes
- Raised median area with landscaping, crosswalks, angled parking, and a central sidewalk
- Existing angled parking on side of street transitions into a mixture of parallel parking and curb extensions

PROS

- Wide median provides much flexibility to provide public space and greenery that is not simply associated with the adjacent businesses
- Trees within the median will, in time, break down the scale of the widest blocks of Main Street
- Parallel parking is a more “urban” aesthetic than angled parking and provides consistent treatment along the edges from end to end

CONS

- Wide median creates a less flexible street space for parades and large-scale community events
- Trees within the median make for a less-conductive space for winter snow storage
- The additional angled parking in the median does not make up for the curb-side parallel parking, equating to a 15-20% loss in on-street parking





MAIN STREET DESIGN OPTION 4

Median Cycle Track

Option 4 included:

- Two-way raised cycle track in center of Main Street, protected by landscaping areas and curb in narrower portions
- Curb extensions at approximately twelve locations
- The addition of turn pockets at two locations

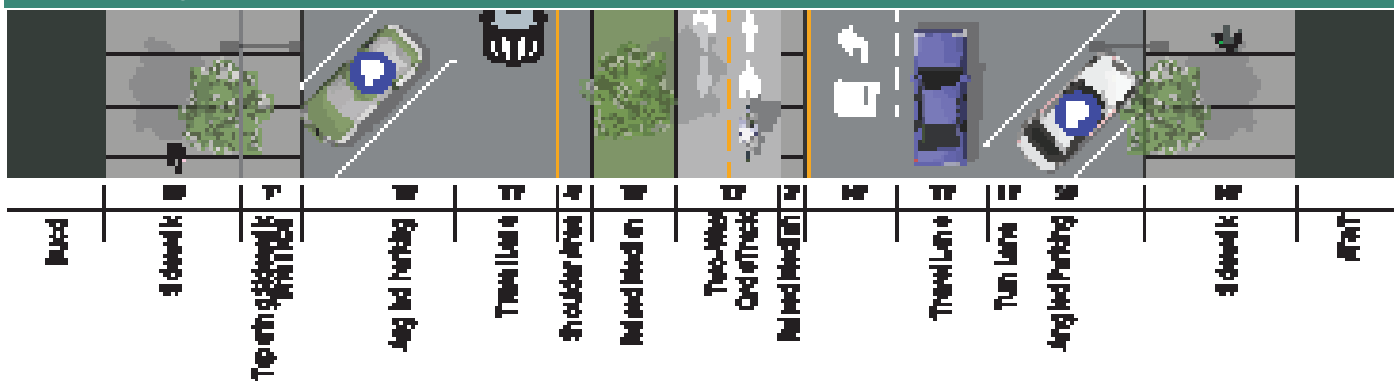
PROS

- Bicycles within the central median avoid conflicts with parked cars and minimizing cuts in the median reduces intersection conflicts
- A median bikeway flanked by landscaping on each side would provide a unique and interesting experience for people riding bicycles
- The potential landscaping and bikeway within the median would break down the scale of the overly-wide portions of Main Street

CONS

- The transition from the existing bike lanes on Elm and the median bikeway will be awkward and require an exclusive bike crossing phase at the Main/Elm/State and Main/King intersections
- There are few precedents for such a configuration, which would make success hard to predict
- People bicycling within the median may find it less convenient to access adjacent businesses and side streets

Detail plan view graphic location between Center St and Old South St



10.2 Recommended Concept Plan

After receiving feedback from the community and City staff, a recommended concept plan was created. The following synopsis explains each design feature, beginning at the Market / Hawley intersection and ending at the Main / State / New South intersection (from east to west.)

.....

Key Features of the Design

From Market / Hawley to Strong:

- White intersection crossing markings with solid green paint in the middle will be used to highlight to cross traffic on Hawley and Market that bicyclists are crossing the roadway along Main Street.
- Traditional bike lanes carry the cyclists up to the intersection of Strong Avenue.

From Strong to King / Pleasant:

- A curb extension on both sides of Main Street will reduce crossing distances for pedestrians and reduce motor vehicle speeds. The protected bicycle facility begins here on the south side of Main Street, while on the north side of Main Street a traditional bike lane carries cyclists up to the intersection of Pleasant and King. At this intersection the bicycle lane will be between the right turn lane and the through lane, reducing the likelihood of 'right hook' crashes.

From King / Pleasant to Center:

- The separated bike lane begins on the north side of Main Street and continues to Masonic Street.
- The bus stop on the north side of Main Street between King and Gothic will remain. Crosswalk markings shall be used to remind cyclists riding between the sidewalk and the bus stop to yield to transit users entering or exiting the bus waiting area.
- A curb extension on the west side of Gothic Street on both the north and south sides of Main Street will reduce the crossing distance for pedestrians. The curb extension on the south side of Main Street opposite Gothic Street will allow cyclists to transition into a

short stretch of standard bike lane between the right turn lane and the through lane to minimize conflicts with turning vehicles.

- The King / Pleasant intersection design should consider a special paving pattern or public art to highlight the critical nature of the intersection in the heart of downtown.
- A small additional raised median will act as a traffic calming measure for motorists queueing to make a left from Main onto King Street.
- Raised crossings for both pedestrians and bicyclists at both Gothic and Center Streets will slow turning traffic.

From Center to Old South:

- The crosswalk across Main Street just west of Center Street will be relocated to just east of Center Street to accommodate a left turn pocket to Center.
- Northampton's rainbow crosswalk will be shortened by curb-extensions on both sides of the street, resulting in a loss of two diagonal spaces on the north side of the street. The curb extension on the south side will be elongated towards the west to accommodate passengers waiting for the bus. The larger area will allow pedestrians, transit riders, and cyclists to have their own dedicated space.

From Old South to New South:

- The existing crossing at Crafts Avenue will be replaced by a raised crossing.
- Space in front of City Hall will be reclaimed to make room for a small urban parklet (per Open Space, Recreation & Multi-Use Trail Plan (2011)) and reduce crossing distances from City Hall to the pedestrianized Crackerbarrel Alley.

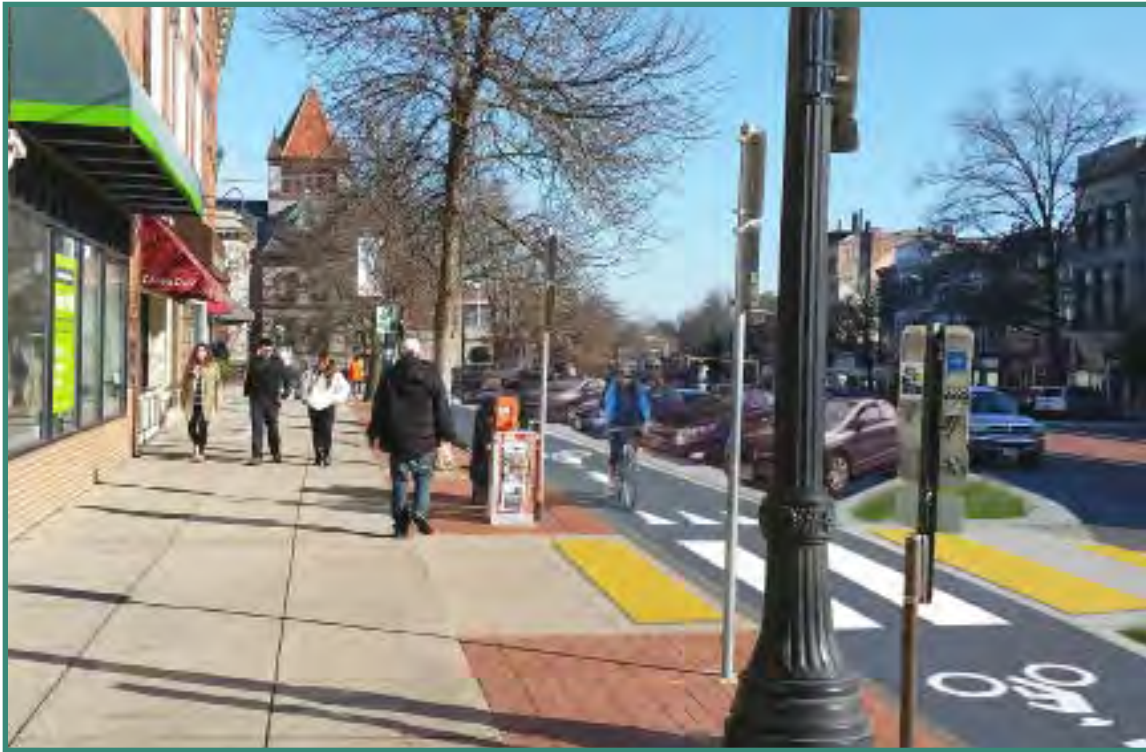


Photo-simulation of sidewalk-level protected bicycle facility, looking east on Main Street in front of Faces and TD Bank.

- A curb extension on the parklet side of the street will complement the urban park in front of City Hall as well as to reduce crossing distances.
- Parallel parking and a small buffer will separate the protected bicycle facility west from City Hall to Masonic.
- The existing bus stop and PVTA pulse point on the south side of Main Street between Masonic and New South will remain.

New South intersection:

- Refuge island at New South and Main Street will be expanded and relocated slightly to the east. Complimentary pedestrian refuge island with raised crossing will be constructed to the west of the existing island, slowing the turning speed of motor vehicles from Elm St. to New South.
- An additional refuge island will be constructed at the northwestern corner of State and Main Street to slow right-turn movements for motor vehicles.

General:

- The general existing mix of angled and parallel parking types will remain. A small number of parking spaces will be lost to accommodate curb extensions and crosswalks. The few parking spots that will be lost are currently too close to the pedestrian crossings, creating uncomfortably short sight lines.
- Reverse-angled parking should be considered for the corridor. However, the separated bike lane design will mitigate the concerns that typical angled parking create from a bicycle safety point of view.
- Additional engineering analysis and public involvement will be required to move the concept plan into design development and implementation in the near future.

MAIN STREET DESIGN RECOMMENDATIONS





Section 1 Main Street at Masonic Street

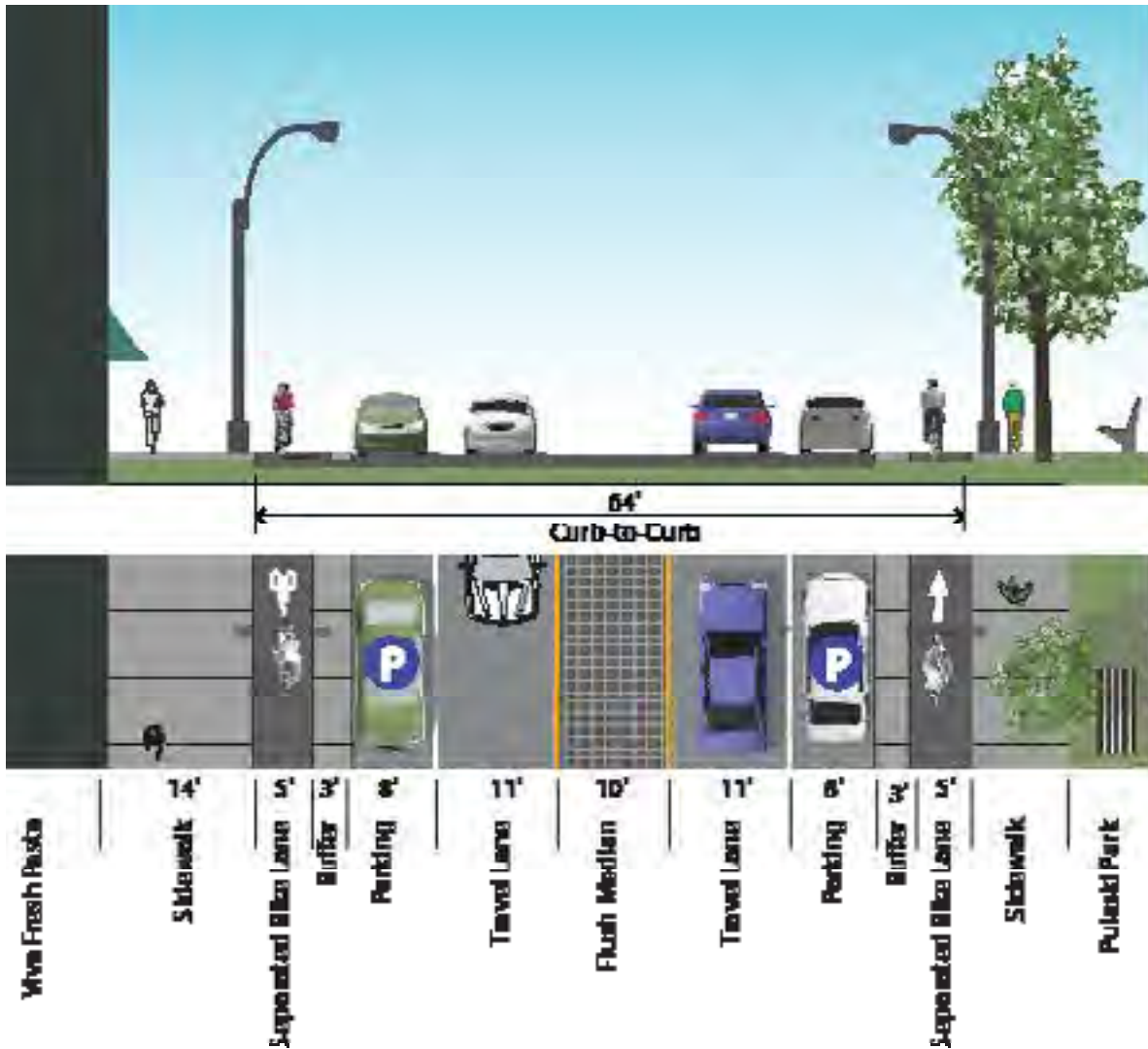
Separated bike lanes provide comfortable facilities for cyclists of all ages and abilities. A 3' buffer between the separated bike lane and curb allows space for motor vehicle doors and other potential obstacles entering the bicycle lane to be avoided. The median area remains flush for emergency vehicle passage and potentially for short term delivery vehicle parking.



Existing conditions, looking East



Existing conditions, looking west



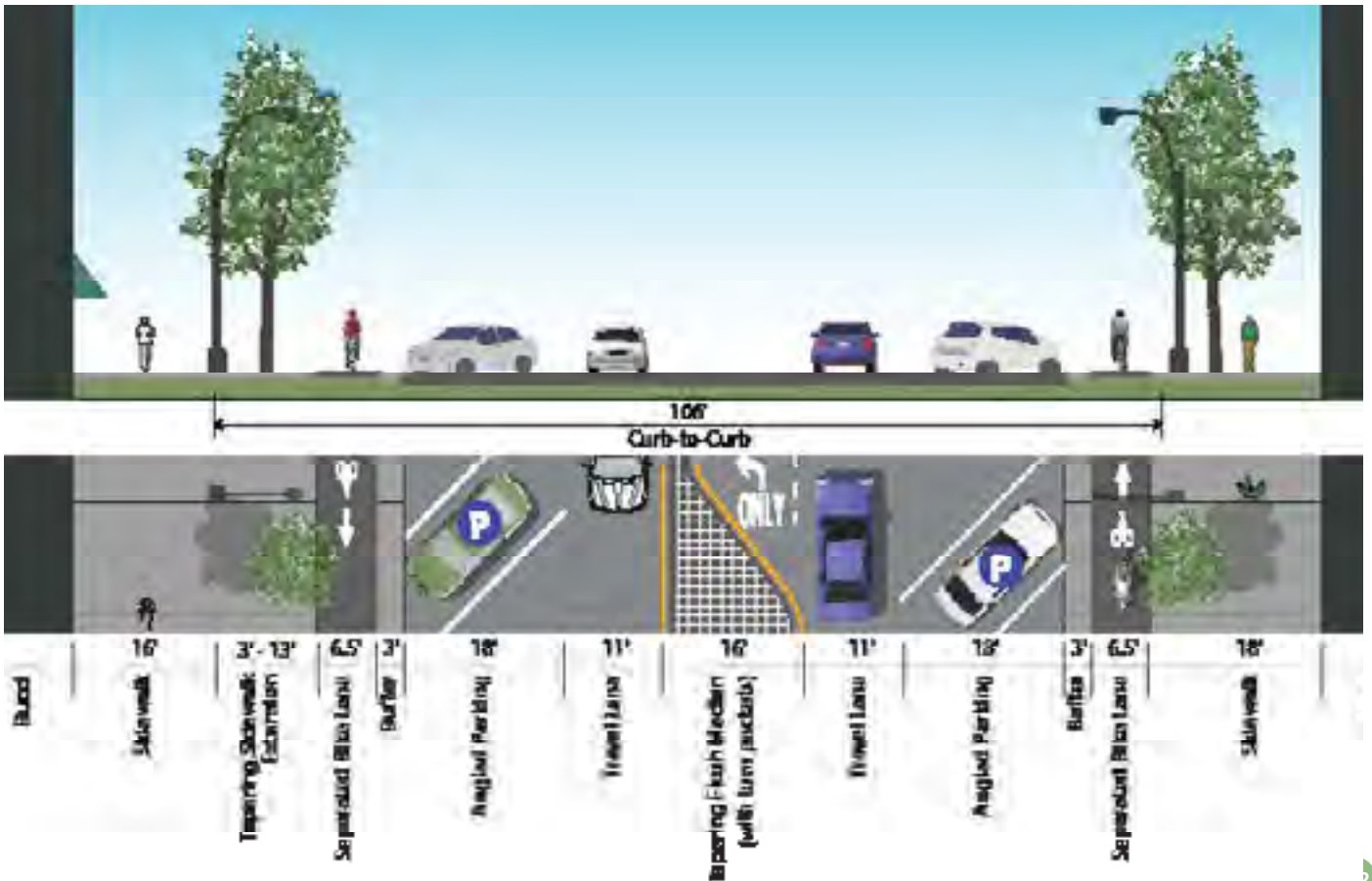


Section 2 Main Street at Center Street

An expanded sidewalk along the north side of Main Street reinforces this area as a lively pedestrian plaza and provides space for future civic events and outdoor seating. In this section the tapering median reflects the need for a left-turn pocket for motorists traveling up Center Street.



Existing conditions, looking east





Section 3 Main Street at Strong Avenue

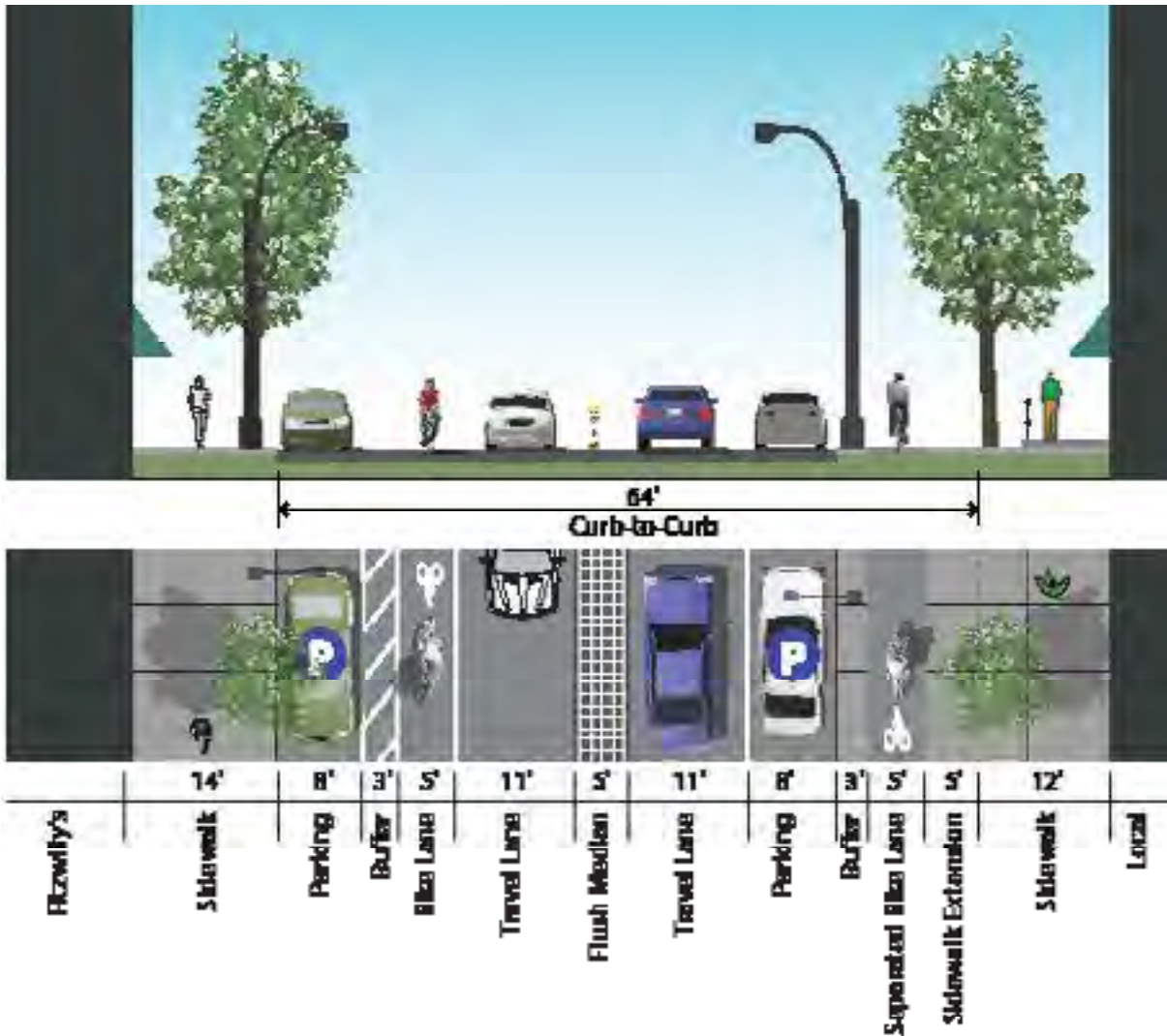
A bicycle lane on the south side of Main Street is separated from parked cars by a painted buffer, preventing the 'dooring' of cyclists by drivers exiting their vehicles. A sidewalk extension on the right side of Main Street allows space for a separated bicycle lane with a 3' buffer. A small flush median retains the one travel lane in each direction prior to the left turn pocket from Main St to Pleasant St.



Existing conditions, looking east



Existing conditions, looking southeast





Section 4 Main Street at Rail Trail Trestle

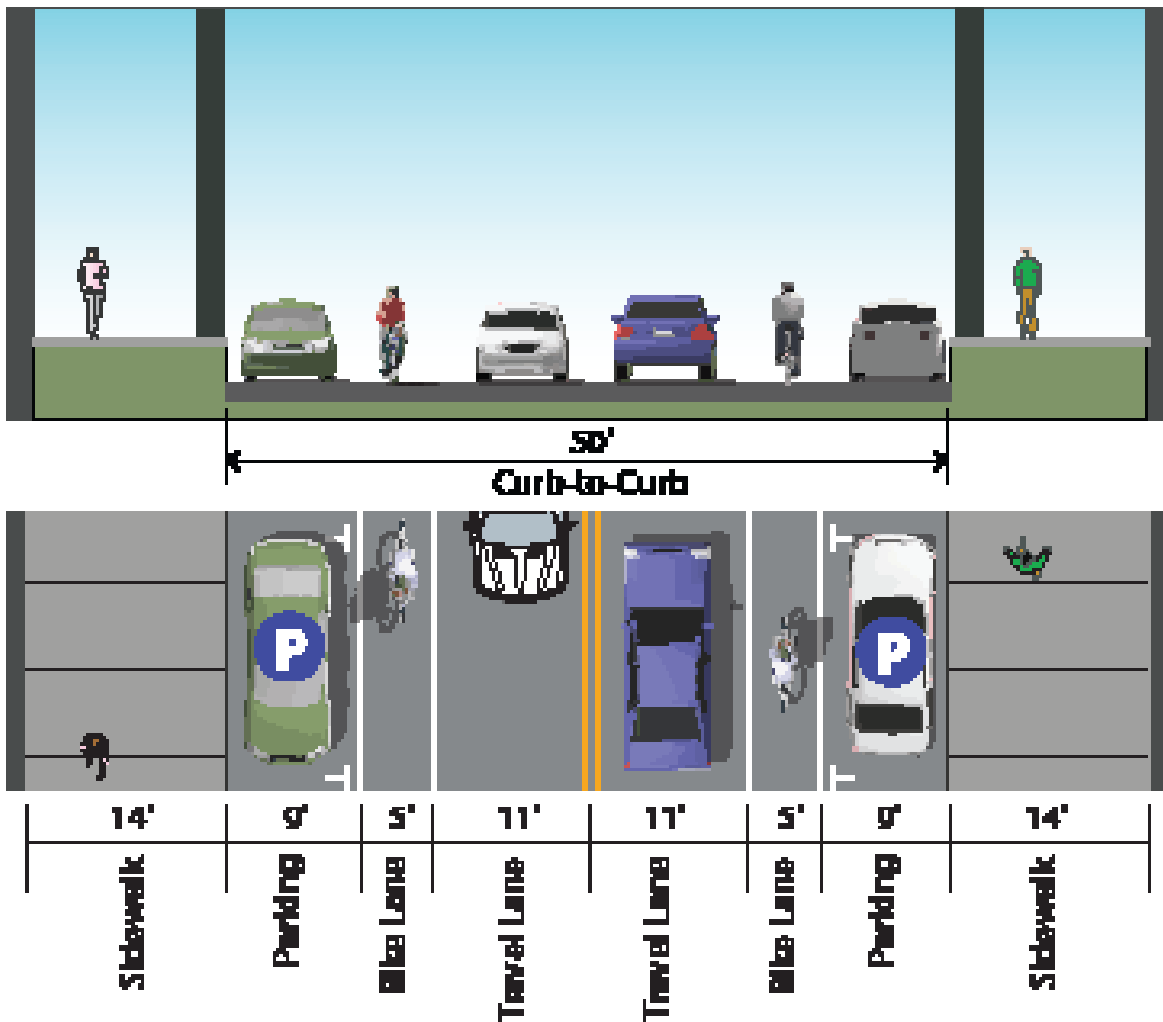
Nine foot wide parking lanes provide a small buffer between car doors and the 5' bike lane passing underneath the bridge. The bike lane is accommodated by narrowing the existing wide travel lane.



Existing conditions, looking west



Existing conditions, looking east



10.3 Main Street Engineering Constructability Review

The design of any streetscape retrofit presents numerous challenges that require careful consideration during design in order to ensure a quality design, regulatory compliance and constructability. During the concept-level design of Main Street, the consultants considered these potential issues and attempted to use all available information to ensure that the final recommendation would be implementable.

Roadway Geometry

The roadway reconfiguration being implemented in this recommendation maintains the existing roadway alignment of Main Street and does not exceed the current ROW or impose any new substandard geometry. A travel lane width of 11 feet was chosen to ensure compliance with the MassDOT Project Development and Design Guide. This lane width will allow adequate space for vehicles without encouraging excessive traffic speeds. The existing roadway consists of a single wide lane in each direction that varies from approximately 24' to 35' in width. Despite being striped as only one lane in each direction, the roadway often operates as two unmarked lanes in each direction. The recommended conceptual design maintains one lane, albeit a much narrower lane than currently exists. The addition of left turn lanes at unsignalized intersections will help to ensure smooth traffic operations despite the narrowed pavement width.

Separated Bike Lane Geometry

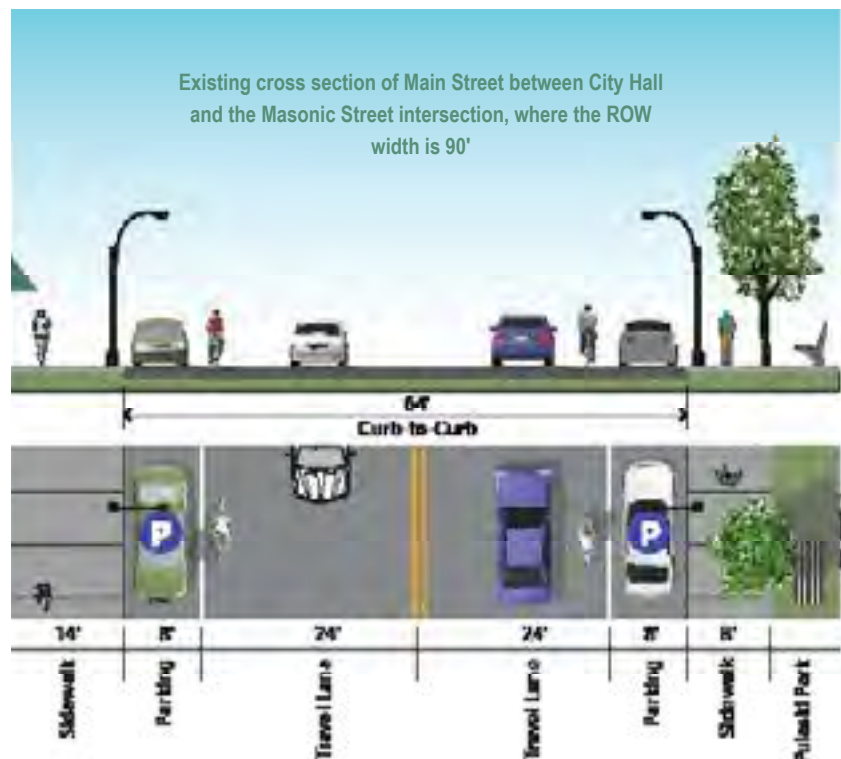
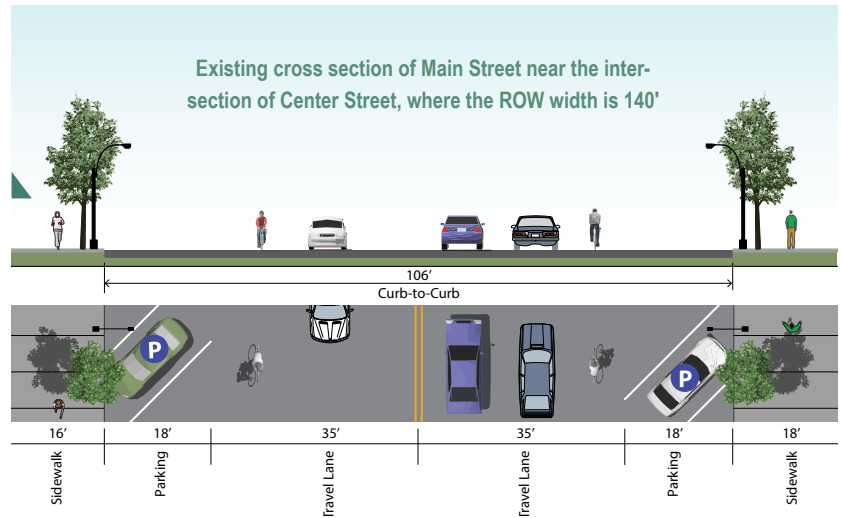
The separated bike lanes in the conceptual design recommendation have been designed to comply with the MassDOT Separated Bike Lane Planning & Design Guide. As the project progresses from this conceptual design to contract documents it will be the responsibility of the designer to ensure full compliance with the design guide as the overall design evolves.

Intersection Geometry & Signalization

There are three signalized intersections present in the corridor:

1. Main Street & New South Street/State Street

- This intersection will be fully designed under a separate project and will be coordinated with Pedestrian and Bicycle Comprehensive Plan's conceptual design



for Main Street to ensure compatibility. The current concept developed by Nelson/Nygaard does not provide adequate accommodation for trucks turning left from Main Street onto New South Street.

- The designer will need to explore options to accommodate this movement during the development of contract documents.

2. Main Street & Pleasant Street/King Street / US Route 5/MA Route 10

- The configuration of this intersection will remain largely unchanged. All approaches will be maintained, with one minor exception: the de facto thru/right lane on Main Street's westbound approach to the intersection will be changed to a right-turn only to accommodate safe bicycle connectivity. In the next stage of design, a thorough traffic analysis of this change will be needed to confirm its viability
- Due to the construction of wide sidewalks to accommodate the separated bike lane and curb extensions along Main Street, the crossing of Main Street will be shortened, potentially allowing signal retiming in order to improve traffic operations.
- Vehicles and bicycles will move through the intersection simultaneously; major signal modifications are not anticipated.

3. Bridge Street & Hawley Street/Market Street

- The configuration of the approaches to this intersection will remain unchanged. Traffic operations at this intersection should remain unchanged.
- Vehicles and bicycles will move through the intersection simultaneously; major signal modifications are not anticipated.

All turn lane lengths and tapers for all intersections (signalized and unsignalized) require further traffic analysis which will occur during preparation of the Functional Design Report, which is beyond the scope of this project.



Drainage and Utilities

Two major components of the conceptual design are sidewalk-level separated bike lanes and curb extensions. Any time that these features are proposed, drainage and utility modifications become a major point to be considered.

By widening the sidewalks to create sidewalk level separated bike lanes, the gutter elevation is raised and drainage must be carefully examined to prevent ponding along the sidewalk and flooding into doorways. In extreme cases, full depth reconstruction and lowering of the roadway may be required in order to ensure positive drainage.

The construction of curb extensions provides great benefit to pedestrians by reducing crossing distances, but by extending the curb line, stormwater runoff is inevitably trapped requiring the installation of new drainage structures.

The changes to finished grade and drainage modifications resulting from the proposed improvements must be coordinated with the existing utilities present to minimize conflicts. Any conflicts will need to be resolved, which may include utility relocation. A detailed field survey is required to perform this analysis. Significant utility coordination will likely be required and could be a major component of the design work for this project.

Accessibility

Compliance with Massachusetts Architectural Access Board (AAB) standards will be critical during design and construction of this project. There are numerous wheelchair ramps along the corridor that will require detailed design to ensure that they meet all aspects of the

Future curb extensions on Main Street will need to be carefully designed to ensure good drainage and can potentially include stormwater retention features.

AAB rules and regulations. Implementation of this conceptual design will improve access to pedestrians of all ages and abilities by resolving existing deficiencies including: excessively steep curb ramps, lack of detectable warning panels, and exceptionally long crossing distances.

Loading Zones

Due to the existing pavement width on Main Street, trucks loading and unloading typically park in the roadway since there is ample room for other vehicles to pass. The recommended single through lane design will prevent this from happening. In order to accommodate loading vehicles, additional consideration will need to be given to the implementation of loading zones during the transition from concept to contract documents. Conceptually, deliveries will occur in designated curb-side loading zones (TBD) and informally within extended-length turn lanes and portions of the recommended flush median.

Snow Removal

The current excessive width of Main Street allows Public Works staff to plow snow to the center of the roadway and haul off-site after the storm has concluded. The recommended conceptual design will require that the City modify their snow removal plan to ensure that the roadway remains passable during storms due to the minimal space in the center of the roadway to store snow. In order to alleviate some issues with snow removal, Main Street's final design should incorporate features that are easily accessed by forward moving snow plows, since reverse maneuvers slow down the process of snow removal and can be hazardous to users of the roadway, bicycle, and pedestrian facilities. This is of primary concern at the curb extensions, as they present unique snow removal challenges if not designed properly. Two key design components will help aid snow removal efforts:

- Eliminate acute curb line angles since obtuse angles allow easier access by snow plows.
- Utilize a flush median to the maximum extent practical to temporarily store snow

during storms.

Proper design of hardscape elements ensures that snow removal will be more efficient and less likely to damage the streetscape.

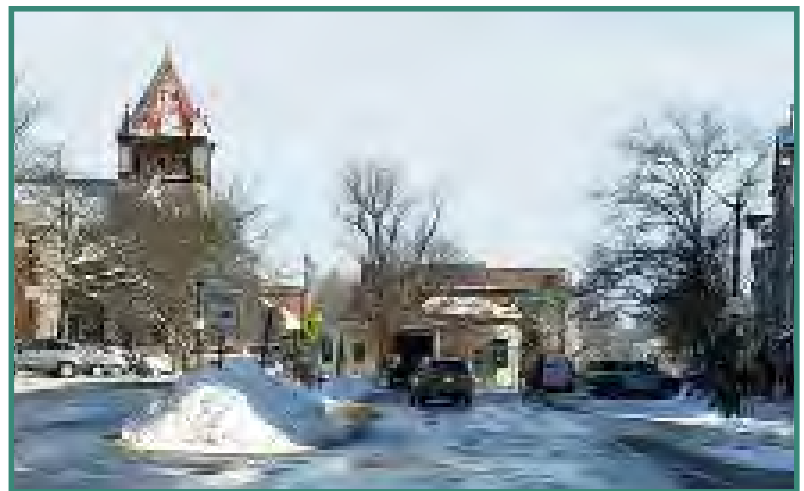
Transit

The recommended conceptual design shows bus stops along the corridor to encourage transit use. In order to allow buses to stop without impeding traffic flow, designated pull-offs are included. Bus stops located adjacent to the separated bike lane will be designed according to the standards in the MassDOT Separated Bike Lane Planning & Design Guide in order to provide safe access for transit users while maintaining the integrity of the bicycle facility. It will be the responsibility of the designer to coordinate the details of all bus stops with the Pioneer Valley Transit Authority (PVTA) to ensure their concurrence with the design and location.

Cost

The cost estimate for the Main Street project based on current unit prices is approximately \$5.8 million, which assumes two years of inflation. For a detailed cost estimate, see Appendix 2 in the Annex of this report.

The recommended conceptual design for Main Street includes some stretches on flush median to help accommodate snow storage where Main Street is at its widest



Design Toolkit

Key Features

The following graphics illustrate design-feature precedents for Northampton to consider in the future planning and design of Main Street



Floating Bus Stop - Mid Block

As illustrated in MassDOT's Separated Bike Lane Planning & Design Guide, "floating" bus stops can be incorporated at PVTA stops in order to maintain the integrity of the separated bike lane, while accommodating a comfortable waiting area for transit users.



Wide Sidewalks

Similar to the sidewalks in Central Square Cambridge, the future sidewalks along Main Street can be designed to incorporate a generous walking zone and provide a wide, varied-material furniture zone to accommodate outdoor seating, cafes, bike racks and street trees.



Raised Crossings at Side Streets

In conjunction with a green separated bike lane crossing, raised crosswalks slow turning motorists and emphasize that safe pedestrian and bicycle connections are the higher priority at low-volume cross streets.



Flush Median and Pedestrian Refuge Islands

Along Mass Ave in East Arlington, a flush median articulated in red "street-print" surface seamlessly gives way to raised island that provides a safe refuge for pedestrians crossing the formerly four-lane roadway

Public Realm Design Guide



INTRODUCTION

The purpose of this guide is to provide developers, property owners, and City officials with a set of recommended practices regarding the design of the public realm in the City of Northampton's primary commercial areas. The guidelines are designed to establish standards that will unify the visual environment along the major entries to the downtown, create pedestrian spaces that are consistent and inviting, and provide a vocabulary of materials and components that will create uniqueness and consistency to the City.

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The guidelines are focused on the following zoning districts:

CB – Central Business:

Primarily along Main and Bridge streets from the Main / State / New South intersection of Main and West streets to the Historic Northampton Museum, and also along King and Pleasant Streets from Summer Street to Holyoke Street;

EB – Entranceway Business:

Along King Street from Summer Street to the MassCentral / Norwottuck Rail Trail;

GB – General Business:

Along Pleasant Street from Holyoke Street to the former dike; and

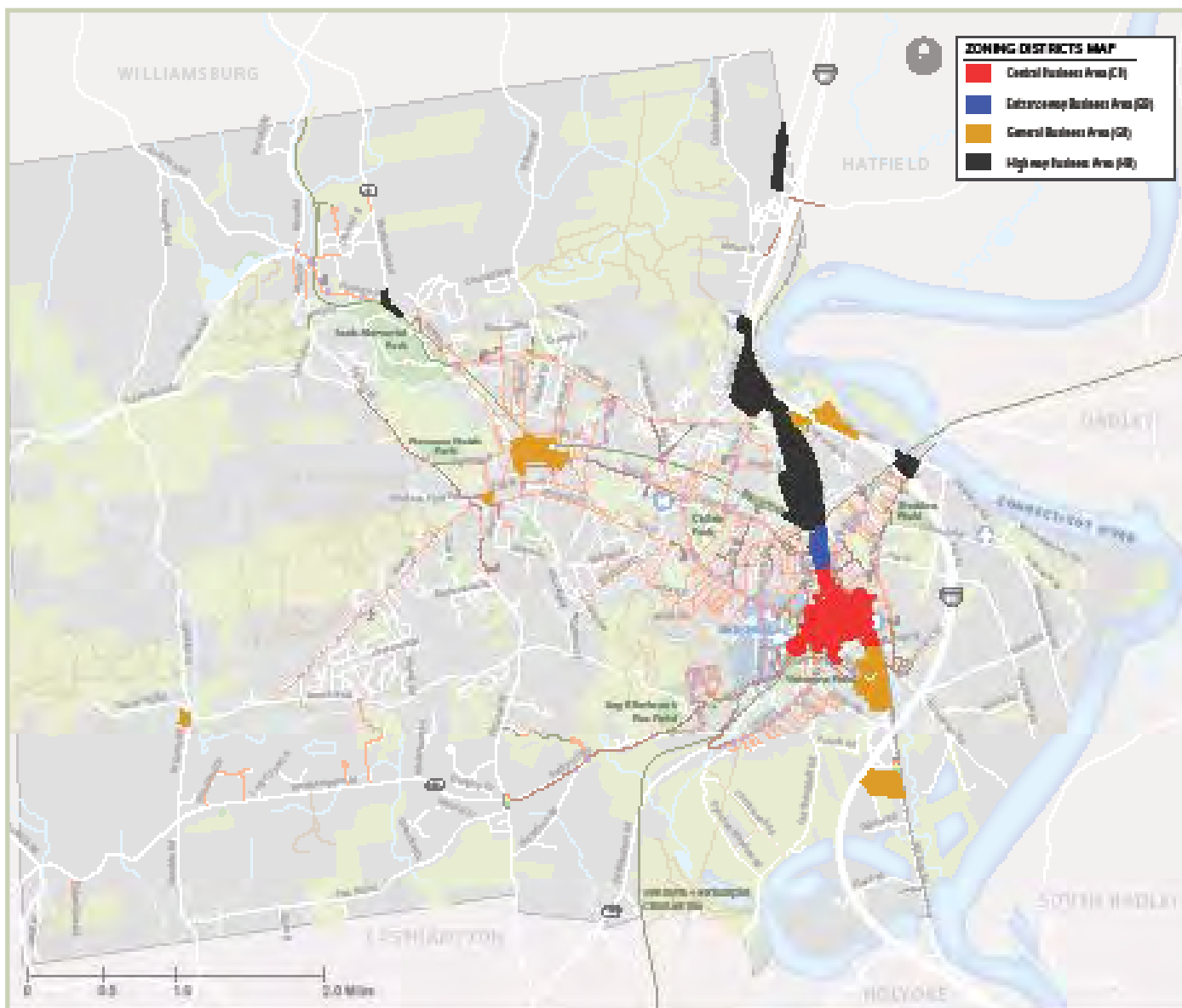
HB - Highway Business:

Along King Street from the MassCentral Rail Trail to the I-91 interchange.

In general, these zones follow the primary streets identified above, and are typically only the depth of the properties immediately along those streets. The exception to this is the CB zone, which includes several side streets off of Main Street in the downtown, including portions of State, Masonic, Center, New South, Old South, and Pearl streets.

The GB and HB zones also cover other areas within the City, such as the businesses along Damon Road east of I-91 and in the business district of Florence. While these guidelines may have applicability to these areas, they are primarily written for the core business districts of Northampton.

CB, EB, GB, HB ZONING MAP



Description of Zones

While the zones under study in this document generally represent the majority of the commercial districts of the city, they are very different in character based on both the zoning parameters provided in the code and the actual development of the areas. The following table captures some of the key criteria and characteristics of each zone:

The zones under study work as a progression into the center of Northampton from the north

and south, increasing in density towards the central business district. Along with the increase of density of buildings, the proximity of structures to the public realm and the presence of parking both decrease, ultimately forming the continuous street wall of Main Street. One outcome of this increasing density is a more prominent presence of pedestrians along the streets, requiring greater attention to the development of an appropriately scaled and furnished sidewalk environment.

Business Districts: Comparison of Zoning Parameters

Zone	Allowed Uses	Building Height	Setbacks	Parking	Landscaping
CB: Central Business	Commercial (retail, office), residential (second floor or back of first)	30' min. 70' max.	Front: 5' max. Side: 0' Rear: 0'	No new parking	--
EB: Entranceway Business	Retail, wholesale, office, residential (above first floor)	20' min. 65' max.	Front: 0' Side: 0' Rear: 0'	No parking within 10' of front lot line. One curb cut. Bicycle parking required.	8' buffer if building does not abut sidewalk; 10' buffer in front of parking.
GB: Greater Business	Any use	60' max.	Front: 0' Side: 0' Rear: 0'	No parking between building and front lot line	Landscaping, pedestrian malls or plazas required between building and front lot line
HB: Highway Business	Retail, wholesale, office, drive-throughs, residential (above first floor)	20' min. 65' max.	Front: 0' beyond required buffer & sidewalk Side: 0' Rear: 0'	Quantity and layout by site plan review. Bike parking required.	10' tree belt plus 6' sidewalk.

The zones also create a framework for the aesthetic approach to these major streets, requiring consistent landscape treatment and building presence which transitions along with the density of development. By establishing guidelines for the public realm design in all of these zones, a consistent and a pedestrian zone that is inviting and habitable from their readable framework can be created to bring greater unity and imageability to the city center and its approaches.

Design Intent

The intent of the Public Realm Design Guide is to respond to this increasing intensity of use while also creating a consistent vocabulary of materials and furnishings that is readable and understandable throughout the entire business district. To reinforce the progression and transition from edge to center, the following goals for the streetscape in each zone have been established:

HB – Highway Business:

- Separate pedestrians from traffic
- Provide only modest sidewalk capacity
- Buffer parking and development areas from roadway views
- Establish street trees as dominant street element

GB – General Business:

- Separate pedestrians from traffic
- Provide comfortable sidewalk capacity
- Buffer off-street parking from roadway views
- Bring street trees closer to roadway to reduce scale

EB – Entryway Business:

- Encourage pedestrian use by providing broad, comfortable sidewalks
- Incorporate amenities into sidewalk zones such as seating, tables, area lighting
- Provide variety of materials and colors to enliven pedestrian environment
- Maintain strong street tree presence

CB – Central Business

- Reinforce existing pedestrian activity with broad, comfortable sidewalks
- Incorporate amenities into sidewalk zones such as seating, tables, lighting, kiosks, clocks, etc.
- Provide a variety of materials and colors to enliven pedestrian environment
- Maintain strong street tree presence; provide understory plantings where appropriate
- Permit access between on-street parking and businesses

The goals can be translated into specific dimensional criteria to establish the framework of the street system. For consistency, the sidewalk is divided into four different components:

1. Greenscape/Furniture Zone

This is the area of the sidewalk immediately adjacent to the curb. Its primary role is to provide a buffer between vehicles moving in the street or parked at the curb and the pedestrians walking within the sidewalk. In the densely developed zones, this area can be paved and used for activities supporting the adjacent businesses, such as benches and tables, bicycle parking, information kiosks, and other furniture. In the less densely developed districts, where pedestrian traffic across it is minimal, this area becomes a green buffer forming an edge to the roadway and begins to soften the street. In both high and low density areas, the inclusion of street trees is critical to forming an edge to the roadway corridor and creating shade. Green infrastructure, in the form of infiltration planters that collect runoff from the roadway and infiltrate it back into the groundwater, is an important function that provides both softening and cooling and is an appropriate use of the greenscape zone as well. Other utilities, such as street lights, traffic signals, equipment cabinets, etc., also should be placed in this zone.

2. Pedestrian Zone

The pedestrian zone is the primary travel zone of the sidewalk. The primary criteria for this zone is the width: it must be wide enough to comfortably accommodate the volume of pedestrians expected to use the length of sidewalk in question; at a minimum, it must meet ADA standards. The pedestrian zone must be clear vertically to a comfortable dimension as well – branches, utilities, canopies, and other structures must not protrude into the envelope above the sidewalk; a minimum height of 6' – 8" must be kept clear to meet accessibility standards.



Central Business Zone

The Central Business District sidewalks should be broad, comfortable, and well equipped with amenities for shoppers and strollers.



Entranceway Business Zone

Sidewalks in the Entranceway Business District should be attractive and comfortable to encourage pedestrian usage in this emerging area.

3. Frontage Zone

This zone is particular to the CB and EB districts, and essentially provides a clear space in front of stores where merchants can display goods for sale or place outdoor seating for restaurants and cafes. While it is desirable for this zone to be consistent with the adjacent pedestrian zone, it does not necessarily have to be identical: different paving materials and furnishings can distinguish this use area from the circulation function of the pedestrian zone. Where this zone is not populated by uses supporting the adjacent businesses, it provides a shy zone from the building wall, making pedestrian circulation more comfortable.

4. Buffer Zone

For the GB and HB districts, the buffer zone is the equivalent of the frontage zone. While it can be used in manners similar to the frontage zone, the adjacent land uses tend to be less supportive of those types of activities. Its primary function therefore becomes more focused on creating an aesthetically pleasing space in front of the building wall that incorporates the pathway leading to the building entrance. In areas outside buildings, it provides critical screening of parking and other uses beyond the parcel's lot line, contributing to a more consistent and harmonious street environment.

Dimensional Characteristics & Materials

The tables on the following pages indicate recommended widths for each zone and also provide guidance on materials and furnishings to be provided within each zone. Guidelines are provided for both primary and secondary streets: The primary streets are the main streets through the zone, as identified above in the introduction to the design guide. The secondary streets are any streets that branch off the primary streets. In most instances, the secondary street standards will apply to a very short length of the street, as the zones are typically only one parcel deep, but in the Central Business zone, there are several side streets that lie entirely within the zone. The reduced dimensional standards recognize that these side streets are typically narrower in right-of-way and cross-section, they typically carry less pedestrian and vehicular traffic, and they must blend back into portions of the street grid that do not have established design standards.

The following section (continued on page 3-91) provides some do's and don'ts for proper application of and design for specific streetscape elements:



General Business Zone

The General Business District should provide adequate buffering of pedestrians from cars, both on the street and in parking lots for businesses.



Highway Business Zone

In the Highway Business District, the emphasis is on providing buffering and protection for pedestrians while creating a strong identity for the street through the use of street trees.

DO'S & DON'TS



Zone	Street Type	Greenscape / Furniture Zone		Pedestrian Zone		Frontage Zone	
		Minimum	Preferred	Minimum	Preferred	Minimum	Maximum
Central Business	Primary	4'	10'	8'	12'	2'	5'
	Secondary	4'*	6'	6'	8'	2'	5'
Entryway Business	Primary	6'	10'	8'	12'	2'	5'
	Secondary	4'	6'	6'	8'	2'	5'
Materials Criteria							
Central Business	All	Street tree planting, permeable pavement (unit pavers, etc.); Infiltration planters. Street furniture including benches, bike racks, trash receptacles, lighting, tables, etc. Must be pedestrian accessible.		Concrete with saw-cut joints for a minimum of 5' of sidewalk width; ADA-compliant unit pavers (no mortar joints)		Same as pedestrian zone.	
Entryway Business	All	Street tree planting, permeable pavement (unit pavers, etc.); Infiltration planters. Street furniture including benches, bike racks, trash receptacles, lighting, tables, etc. Must be pedestrian accessible		Concrete with saw-cut joints for a minimum of 5' of sidewalk width; ADA-compliant unit pavers (no mortar joints greater than 1/4")		Same as pedestrian zone.	

*Optional, if sidewalk space is available.

DO'S & DON'TS



		Greenscape / Furniture Zone		Pedestrian Zone		Buffer	
Zone	Street Type	Minimum	Preferred	Minimum	Preferred	Minimum	Preferred
General Business	Primary	6'	10'	6'	8'	4'	10'
	Secondary	6'	6'	5'	6'	4'	6'
Highway Business	Primary	10'	--	6'	8'	12'	--
	Secondary	10'	--	5'	6'	4'	6'
Materials Criteria							
General Business	All	Street tree planting; lawn or low-maint. shrubs and groundcovers, max. 24" ht. above sidewalk. Infiltration planters are encouraged. Only roadway lighting may be included within this zone; all other street furniture to be placed in the buffer zone.		Concrete with saw-cut joints.		Provide a planted buffer to screen parking. Planting design shall be consistent with the highway business district landscaping standards for the front buffer planting. Street furniture such as benches and bike racks may be included.	
Highway Business	All	Refer to highway business district landscaping standards - tree belt.		Concrete with saw-cut joints.		Refer to highway business district landscaping standards - front buffer.	

Street trees:

- Don't plant trees in an area less than 5' by 5'.
- When planting in areas surrounded by pavement (such as in the Central Business District), use structural soil or a suspended sidewalk to create at least 800 cubic feet of planting soil underneath the pavement.
- Provide irrigation, aeration and underdrainage for all street tree plantings. Automatic irrigation is preferred, but manual irrigation is acceptable if an automatic system is not feasible and a strong commitment to perform the hand watering can be obtained. And remember, more street trees die from drowning than lack of water, so underdrainage and soil design are critical.
- Plant street trees at sidewalk level, not in raised planters or within walled areas. It makes maintenance and watering simpler, and promotes better growth and development of the trees.
- Don't use tree grates unless no other option is available. Tree grates can become maintenance problems over time, and can create tripping hazards and other problems. Use a pervious stone (such as decomposed granite) or bark mulch to fill in the tree pit at the surface.
- Select street tree species for hardiness in the local microclimate. Native species are generally preferred for this reason, but exotics can be used if chosen carefully. Make sure the tree's mature crown size and shape will fit into the space available. Where overhead utility lines cross the planting area, choose species that will stay well below them.

Infiltration Planters:

- Infiltration planters are typically located between the curb line and the sidewalk, in the greenscape or furniture zone. They can be located at low points in the road or along the curb between the high and low points. Be sure to consider the location of crosswalks to prevent water from puddling within the pedestrian area.
- Size infiltration planters to accommodate the first 15 minutes of a rain event at a minimum. This "first flush" will carry with it all the oil, grit, and other contaminants that have collected on the road.
- Additional capacity can be provided in underground galleries to maximize the removal of stormwater from the drainage system.
- Make sure the soils used within the planter, including the growing medium for the plants, allows percolation of the water into the soil at an appropriate rate: too fast prevents the soil from filtering out contaminants; too slow means a larger reservoir is required to process the water.
- Make sure plants used in the planter are adaptable to both extremely wet and extremely dry conditions. On occasion, irrigation can be used to help plants survive through periods of drought.

Street Furniture:

- Keeping the design of all street furniture within a consistent family (for example, steel painted black, or natural wood with brushed steel accents) will provide a more uniform appearance, even if some of the details of each piece vary.
- Locate all street furniture so there is sufficient space around it for people to use it without interfering with other sidewalk functions. For instance, hold benches back two to three feet from the sidewalk to prevent sitter's legs from tripping walkers, and locate bike racks so there is plenty of room for a bike with a tag-along attached to be parked without blocking the pedestrian zone.
- Anchor furniture solidly to the ground to prevent it from tipping over.
- Keep a ready supply of replacement parts and paint to repair and touch up damage quickly.