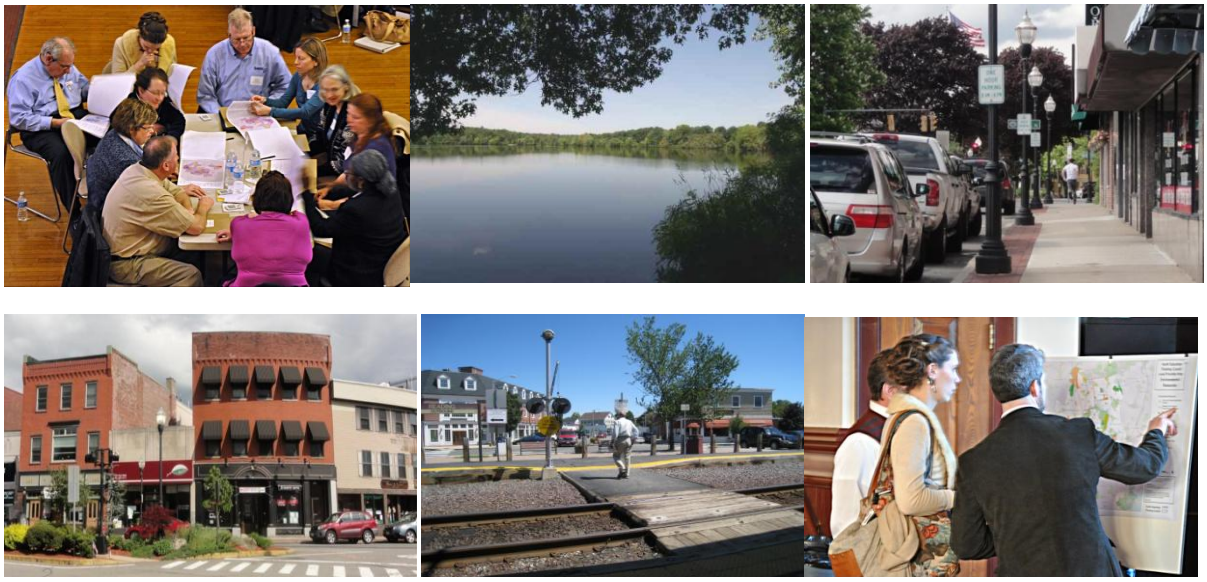
North Suburban Planning Council Subregional Priority Mapping Project

Final Report, January 2014



Prepared for eight North Suburban Planning Council municipalities: Burlington, North Reading, Reading, Stoneham, Wakefield, Wilmington, Winchester, and Woburn

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Acknowledgments

This document is produced with lead input from the North Suburban Planning Council with data supplied by the following municipalities:

- Town of Burlington
- Town of North Reading
- Town of Reading
- Town of Stoneham
- Town of Wakefield
- Town of Wilmington
- Town of Winchester
- City of Woburn

FY13 NSPC co-chairs: Elizabeth Ware, Winchester Town Planner and Kristin Kassner, Burlington Planning Director

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MetroFuture

MetroFuture is MAPC's 30-year plan to create a sustainable, equitable, and economically competitive Boston Region. This project advances goals in the MetroFuture Regional Plan, including:

- #1. Population and job growth will be concentrated in developed areas already served by infrastructure, with slower growth in less developed areas where infrastructure is more limited.
- #2. Most new growth will occur through reuse of previously developed land and buildings.
- #4. In suburban municipalities, most new growth will occur near town and village centers.
- #5: Most new homes and jobs will be near transit stops and bus routes, and new growth will be designed to promote transit use
- #10. Growth in the region will be guided by informed, inclusive, and proactive planning.
- # 25: Most residents will build regular physical activity into their daily lives.
- #44: An expanded transit system will provide better service to both urban and suburban areas, linking more homes and jobs.
- #51: Regional transportation planning will be linked with sustainable land use planning.
- #45: More people will use transit for work and personal trips.
- #46: Commuters will have more options to avoid congestion.
- #47: Most people will choose to walk or bike for short trips.
- #48: The average person will drive fewer miles every day.
- #49: Outlying areas will see little increase in traffic congestion.
- #50: People with disabilities will find it easier to get around the region.
- #51: Regional transportation planning will be linked with sustainable land use planning.
- #53: Transportation projects will be designed and built cost-effectively.
- #65. A robust network of protected open spaces, farms, parks, and greenways will provide wildlife habitat, ecological benefits, recreational opportunities, and scenic beauty.

Funding

This project was made possible with funding from the 2012 District Local Technical Assistance (DLTA) program, the FY13 Unified Planning Work Program (UPWP), and by funding under an award with the U.S. Department of Housing and Urban Development. The substance and findings of the work are dedicated to the public. The author and publisher are solely responsible for the accuracy of the statements and interpretations contained in this publication. Such interpretations do not necessarily reflect the views of the Federal Government. We also thank the Metro Boston Consortium for Sustainable Communities for making this work possible.

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Appendices are provided in a separate document accompanying this report.

Executive Summary

Creating vibrant communities where we want to live, work, play, and visit involves local action, collaboration, and planning. Our region is home to many assets including job centers, housing choices, environmental resources, and transportation facilities. But residents in different parts of the region do not have equal access to these opportunities. How can we plan for present and future generations to ensure that they inherit a more sustainable future?

While governance is defined by political boundaries at the municipal and state levels, the issues and opportunities that we face are regional. The North Suburban Planning Council (NSPC), a subregion of the Metropolitan Area Planning Council, is composed of eight towns and one city that have formed a voluntary association to facilitate cooperative regional planning. The goals of NSPC are to facilitate communication between the member municipalities and to assist them in setting an agenda for action on planning topics including issues of growth management and land use.

This report describes the North Suburban Priority Mapping Project's process to develop a list of regionally significant development, preservation, and infrastructure investment priorities in eight municipalities in the North Suburban subregion: Burlington, North Reading, Reading, Stoneham, Wakefield, Wilmington, Winchester, and Woburn and provides an overview of the process and methodology used to identify both. This report reviews the project scope, process, and study area; provides context for the work by reviewing the characteristics of the subregion; describes the method to develop the regional priorities list, which drew from priorities identified at the local level; and indicates how all of this information can inform continued local and regional planning and provide direction for public investments.

Origins

The NSPC Priority Mapping Project emerged through dialogues between MAPC and municipalities in the region. The project is exemplary of the subregion's desire to facilitate communication between member municipalities and to assist municipalities in developing an action agenda on planning topics of mutual concern. The project provided an opportunity to promote dialogue about land use issues that transcend municipal boundaries and an opportunity to integrate municipal priorities into regional and state development and preservation strategies.

Process

Between April 2012 and September 2013, MAPC engaged the eight participating municipalities in the subregion in local and subregional dialogues about land use issues that transcend municipal boundaries. Local perspectives – including those of municipal staff and interest members of the public – were core to identifying areas where growth and development should be emphasized (Priority Development Areas), areas that should be preserved to protect natural resources (Priority Preservation Areas), and the infrastructure investments needed to support these priorities (Significant Transportation Investments and other Significant Infrastructure Investments, e.g., sewer and water).

In order to develop the list of regional priorities for the subregion, each participating municipality first generated a local priorities list. Local priorities lists included priorities that have been identified in recent planning documents and priorities identified during conversations at the local level – informed by MAPC meetings with municipal staff, briefings at public meetings, and NSPC subregion discussions.

Definitions

A description of the priority types emerging from this project are defined below.

- **Priority Development Areas (PDAs)** are areas within a city of town where additional development or redevelopment are emphasized, but which may require additional investments in infrastructure. PDAs can range in size from a single lot to many acres and may include a mix of retail, commercial, industrial, office, and housing uses. Regional PDAs include those areas where projected development types advance smart growth goals. These include development areas that respond to regional demands for housing, commercial, and industrial uses; strengthen existing places by improving the mix of development types in areas where development already exists; are sited in areas defined as having major growth potential, which may be within smart growth or expedited permitting districts; are sited near existing transportation resources including public transit, bike, and trail facilities, thus contributing to the creation of more walk able communities; and are sited in areas that preserve healthy watersheds and access to natural resources.

- **Priority Preservation Areas (PPAs)** are areas within a city of town that are priorities for preservation to protect for conservation for environmental, cultural, historical, and other reasons. These are areas not currently permanently protected e.g., through a conservation restriction, land trust ownership, or municipal or state conservation land designation. Regional PPAs include areas that meet priority preservation criteria defined by the Executive Office of Energy and Environmental Affairs (EOEEA) and which advance regional greenway connectivity. EOEEA criteria identifies preservation priorities as areas that protect natural assets including: core habitat; critical natural landscapes; areas of critical environmental concern; aquifers; public water supply wells; wetlands; Rivers Protection Act buffers; and FEMA 100-year floodplains. In addition to the screen of preservation priorities using EOEEA criteria, MAPC also included priorities that would contribute to a regional greenways system in the Greater Boston region. A greenway is a multi-use linear park system that links shared use paths and bicycle and pedestrian paths that run through or along parkland or waterfront. Greenways are designed especially for non-motorized travel and may be used primarily for transportation or recreation.

- **Significant Transportation Investments (STIs)** are transportation infrastructure projects that can improve efficiency and interconnectivity for facilities which serve regional transportation needs. These may include projects that address major roadways as well as transit, bicycle, and pedestrian facilities that serve regional travel needs. Regional STIs include those transportation infrastructure projects that advance regional transportation connectivity goals. Regional STIs support and improve connectivity between regionally significant PDAs and PPAs; increase regional multi-modal transportation choices, offering more alternatives to the single-occupancy-vehicle mode of transit and decreasing distances between employers and their work places; and support reductions in greenhouse gas emissions as emphasized by the Global Warming Solutions Act and the GreenDOT Initiative. Regional STIs align with existing transportation project prioritization efforts established by the Boston Metropolitan Planning Organization and the Executive Office of Housing and Economic Development. Regional STIs are also consistent with state-wide and regional transportation planning documents and build on previous MAPC transportation-related studies involving NSPC communities.

- **Significant Infrastructure Investments (SIIs)** are infrastructure projects that have the potential to significantly enhance new development or redevelopment potential in regional PDAs and advance sustainability in the region. These may include wastewater, drinking

water, and energy infrastructure improvements. An overview of these regional non-transportation infrastructure needs is described in this report.

Results

The project resulted in the identification of 71 regional priorities for development, preservation, and infrastructure investment in the eight participating NSPC subregion municipalities: 25 regional PDAs, 19 regional PPAs, and 27 regionally significant transportation projects that support identified regional PDAs and PPAs. Examples of other regionally significant infrastructure priorities in the areas of water and sewer are described in narrative. These regional priorities were elevated from a list of 211 local priorities: 67 local priority development areas (PDAs), 40 local priority preservation areas (PPAs), 16 areas with both development and preservation opportunities, and 88 locally significant transportation investments (STIs).

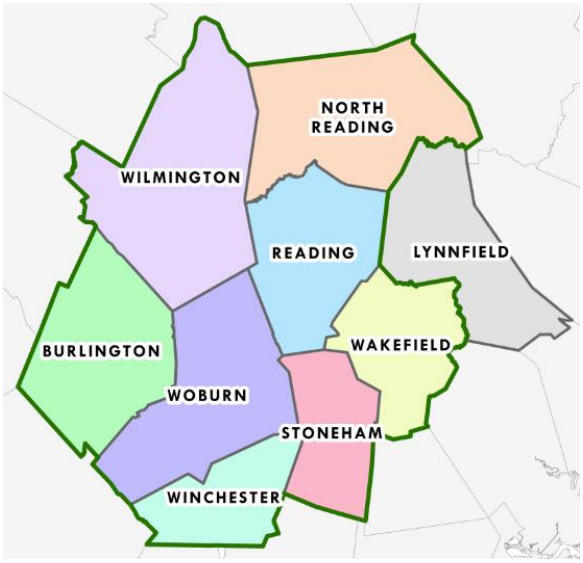
The regional priorities list for the NSPC subregion is a subset of the local priorities lists and identifies those priorities that capitalize on subregion assets and will contribute to a more diverse mix of development types and natural assets in the subregion. The regional priorities will increase access to housing opportunity, expand job opportunities, strengthen and diversify modes of transit, and protect and conserve natural resources. Consistent with the Commonwealth's focus on planning ahead for growth, these identified regional priorities

Identification of these priorities in the NSPC subregion aims to support continued local and regional planning consistent with the vision of promoting smart growth and regional collaboration in the MAPC region. The identified regional priorities are a snapshot in time and are intended to serve as a resource for the continued development of local and subregional growth and preservation strategies. Municipal staff, public officials, and community advocates can reference this information to augment local planning efforts and applications for funding. Regional and state government can review and factor these regional priorities for the NSPC subregion into regional and state development and preservation programs and strategies. The Commonwealth can also consider these regional priorities when making public investments.

Introduction

The mission of the North Suburban Planning Council subregion of the Metropolitan Area Planning Council is to facilitate cooperative regional planning. An open forum for member municipalities[1] and MAPC to discuss local planning issues, the subregion is a space where planners and community members learn about emerging planning issues, share strategies, voice concerns, and incubate project ideas that advance the vision of a more sustainable and equitable region. The subregion also allows MAPC to listen and respond to community needs by providing technical assistance and funding.

The seeds of the project began as a dialogue among subregion members several years ago, who wished to identify infrastructure constraints facing the subregion and to explore regional solutions for addressing them. Building on MAPC experience in helping municipalities identify local and regionally significant priority development and preservation areas and the infrastructure investments needed to support those priorities, a scope of work to conduct a subregional analysis of shared land use priorities among eight of the nine NSPC municipalities was developed and work commenced in April 2012. The map on the right identifies the eight participating municipalities.



Project Context

In January 2012, the Commonwealth Executive Office of Housing and Economic Development (EOHED) articulated a goal for planning ahead for job and housing growth in partnership with local communities. In the view of the Patrick-Murray Administration, planning ahead for growth involves four critical elements:

- Identify promising places for growth that not only have community support, but are also consistent with regional considerations and with the Commonwealth's Sustainable Development Principles
- Create prompt and predictable zoning and permitting in those places (both state and local)
- Invest in public infrastructure needed to support that growth
- Market those places to businesses and developers interested in locating and growing in the Commonwealth

EOHED's strategy to support this goal includes regional identification of priority growth and priority preservation areas. Regional priorities identified through this process are in a stronger position for Commonwealth investments and state incentives and may inform zoning changes that streamline the process for vetted development priorities. This methodology for identifying PDA, PPA, and

[1] NSPC subregion member municipalities include: Burlington, Lynnfield, North Reading, Reading, Stoneham, Wakefield, Wilmington, Winchester, and Woburn. The NSPC subregion network consists of municipal staff including town managers and town administrators; planners; staff from public works, engineering, conservation, public health, and public safety departments; municipal boards and committees; chief elected officials; legislators and their staff; residents; businesses; nonprofits; advocacy groups; and others.

infrastructure investment priorities within the NSPC subregion grew out of Executive Order 525, which was issued in 2010 and articulated the Commonwealth's focus in orienting state funding towards priority development areas identified through a regional process.[2] The NSPC Priority Mapping Project is consistent with the Commonwealth's goal to identify regional priority development and preservation areas and MAPC MetroFuture regional plan goals to advance smart growth and regional collaboration.

Project Process

The goal of the project was to provide an opportunity to promote dialogue about land use issues that transcend municipal boundaries and to identify local and regional priorities for development, preservation, and infrastructure investment in the subregion. The project aimed to advance the following outcomes:

- Establish community-based priorities and strategies within the NSPC subregion
- Integrate municipal priorities into regional and state development and preservation strategies
- Provide direction for public investments that consider the intrinsic qualities of the subregion while capitalizing on its strengths

MAPC began the process by working with participating municipalities to identify local (municipal) priorities in the following categories: Priority Development Areas (PDAs); Priority Preservation Areas (PPAs), Significant Transportation Investments (STIs), and other significant non-transportation infrastructure investments. The list of regional priorities for the subregion was later identified, which elevated priorities identified in the local (municipal) priorities lists.

The local priorities were identified in consultation with municipal staff including town administrators and managers, mayors, town and city planners, engineers, GIS staff, conservation staff, and community advocates including Planning Board and Board of Selectmen members and advocates from social service, open space, bike, and trails groups. In addition to consultation with members of municipal staff, boards and committees and the public, MAPC also reviewed master plans, community development plans, open space and recreation plans, and studies that have been produced previously for the municipalities within the subregion in order to ensure that no previously identified local priorities were overlooked.

MAPC's process for identifying regionally significant priorities involved a qualitative review of all locally-identified priorities against local and regional characteristics and was supported by a quantitative, GIS-based model that evaluated how sites scored against different indicators. Subregion members were engaged in the refinement of the data-based model at three public meetings in 2013. Subregion members also provided feedback on the subregional priority list that was included in draft versions of this report.

Identifying regional PDAs: Areas categorized as development priorities were further categorized by projected development type(s) – uses identified as most suitable or likely. PDAs were identified as accommodating any combination of these eight development types:

- Multifamily Housing
- Mixed use – Infill

[2] EO525 directed state agencies to ensure that policies, actions, and investments be consistent with the South Coast Rail Corridor Management Plan to the extent feasible, including but not limited to water, wastewater, transportation, and economic development and land preservation funding.

- Mixed use – Master Planned
- Commercial: Retail, Entertainment and Hospitality
- Commercial: Medical and Office
- Commercial: Industrial
- Single family housing – low density (under 8 units per acre)
- Single family housing – high density (8 or more units per acre)

Regional screen criteria for PDAs assessed suitability against indicators pertaining to travel choices, walkable communities, open spaces, healthy watersheds, current assets (such as sewer service, population and employment density, and number of businesses), and growth potential (such as overlap with smart growth zoning districts and expedited permitting districts.

Identifying regional PPAs: Regional screen criteria for PPAs assessed suitability against indicators defined in the Land Use Partnership Act, which have also been used in a priority areas analysis in the Merrimack Valley region. Indicators included core habitat, critical landscape, prime forest land, wellhead protection areas, wetlands, floodplains, and protected open space.

Project Scope

Below is an overview of the step-by-step process by which this project was executed.

- View Appendix A for a full list of the elements considered when meeting with municipal staff to identify local development, preservation, and infrastructure investment priorities View the full project timeline in Appendix B.
- View the outline of planning documents reviewed by MAPC in advance of meetings with municipal staff in Appendix C.
- View the schedule of meetings with municipal staff and local boards in Appendix D.
- View public forum agendas and presentation materials in Appendix E.

Table 1: NSPC Priority Mapping Project Scope

Task	Description
Research + Preparation	• Review of current municipal provisions and planning documents and studies, e.g., master plans, community development plans, open space and recreation plans and studies • Preparation of municipal base maps inclusive of parcel and assessor's data and basic GIS data layers (transit, roads/corridors, water, trails, land use development status, open space, BioMap2) • Review of subregion in context of statewide and regional planning documents including the MetroFuture Regional Plan, the Metropolitan Area Planning Organization(MPO) TIP list for FFY 2014-2017, the Boston Region Pedestrian Transportation Plan, Journey to 2030, and the Massachusetts Long-Range Transportation Plan
Meetings with Municipal Staff	• MAPC subregional coordinator arranges kickoff meeting in each municipality in cooperation with planning or administration staff. • MAPC facilitates meeting with each municipality to discuss development, preservation, and infrastructure investment priorities. MAPC met with city and town staff from administration, planning, conservation, engineering, public works, GIS, and other departments. • Outcome: Draft local priorities lists and maps in GIS and PDF formats
	• Briefings to municipal boards and committees in each community including

Briefings to Local Boards and General Public	boards of selectmen, planning boards, conservation commissions, city council, and redevelopment authority. MAPC provided an overview of project goals and outcomes and presented the draft local priorities lists for review and comment. • Outcome: Final local priorities lists and maps in GIS and PDF formats
Dialogue on Regional Screen Criteria	• Finalized local priorities lists and maps for each municipality based on staff, board, and committee input • Regional screen criteria presentation to NSPC members at February 2012 subregion meeting
Identification of Regional Priorities for the Subregion	• Review of local priority areas' suitability based on regional screen criteria • Subregion maps of local priorities and regional priorities for the NSPC subregion
Spring Subregional Public Forum – Regional Screen Process	• Presentation of subregion population, housing, economic, and environmental characteristics and draft subregion maps with local priorities screened according to regional screen criteria • Presentation + exercise on criteria to evaluate local priority development areas' suitability
Drafts Released for Public Comment	• Comment period #1: July 10 – July 31, 2013 • Comment period #2: September 18 – October 2, 2013 • Comment period #3: November 6 – November 13, 2013
Final Deliverables	• Final report inclusive of maps depicting local and subregional preservation, development, and infrastructure investment priorities and narrative describing the characteristics of the subregion and projections in terms of population, housing, and jobs in the context of the region • Final report and local and regional priorities maps in GIS and PDF formats delivered to each participating municipality
Fall/Winter Subregional Public Forum – Next Steps	• Presentation of subregion population, housing, economic, and environmental characteristics and final subregional preservation, development, and infrastructure investment priorities • Dialogue on how data emerging from the project can aid continued planning

The North Suburban Planning Council Region

This section provides an overview of select characteristics of the NSPC subregion: population, housing, income, transportation, employment, development, preservation, and infrastructure.

Population

According to Census 2010 figures, the NSPC subregion is home to approximately 203,921 individuals or 6.5 percent of the population in the MAPC region. Among the nine municipalities in the subregion, Woburn, Wakefield, Reading, and Burlington have the largest total population. Over the last decade, the subregion population has grown at a slightly lower rate when compared to the MAPC region and the state as a whole. According to Census data, between 2000 and 2010, the NSPC subregion grew by 5,504 or 2.9 percent, compared to the MAPC region growth rate of 3.1 percent. MAPC MetroFuture projections indicate that the 65+ population is projected to grow 86 percent from 2010 – 2035. In terms of ethnic diversity, over the last decade the subregion has become more diverse. In many communities, the non-Hispanic white population has decreased while non-Hispanic and Hispanic populations have increased.

Figure 1: NSPC Subregion Population by Age, MetroFuture Projections, 1990 – 2035

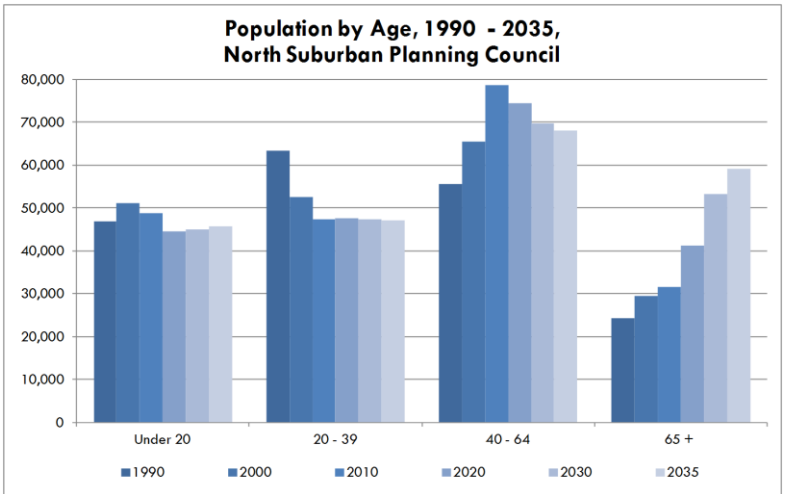
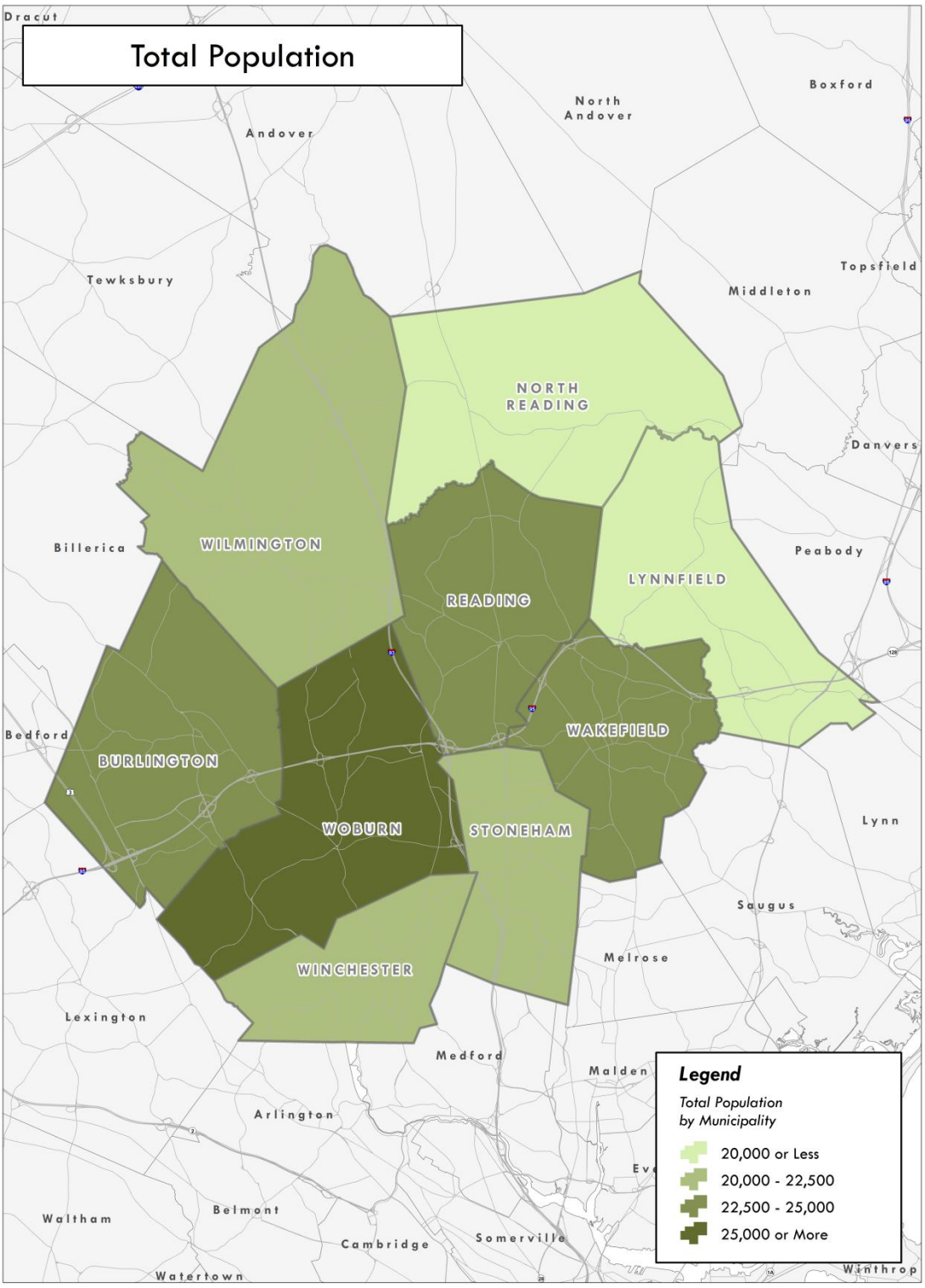


Figure 2: Race/Ethnicity of NSPC Subregion Population, 2000-2010

	White, non-Hispanic			non-White, non-Hispanic			Hispanic		
	2010	%	%Δ	2010	%	%Δ	2010	%	%Δ
Burlington	19392	79.2	-1.2	4528	18.5	53.3	578	2.4	95.3
Lynnfield	10838	93.5	-2.4	556	4.8	55.3	202	1.7	162.3
North Reading	13991	93.9	4.3	670	4.5	112.7	231	1.6	126.5
Reading	22877	92.4	0.7	1492	6.0	89.6	378	1.5	89.0
Stoneham	19404	90.5	-7.0	1399	6.5	47.7	634	3.0	59.7
Wakefield	23181	93.0	-3.0	1176	4.7	68.5	575	2.3	181.9
Wilmington	20600	92.3	0.7	1322	5.9	89.7	403	1.8	98.5
Winchester	18309	85.7	-4.7	2660	12.4	93.2	405	1.9	91.9
Woburn	31130	81.7	-6.2	5266	13.8	79.7	1724	4.5	49.7
MAPC	2283594	72.2	-5.2	589084	18.6	27.6	289034	9.1	47.8
NSPC	179722	88.1	-2.6	19069	9.4	72.4	5130	2.5	80.5

Figure 3: NSPC Total Population, Census 2010



Data Sources:
MassDOT, MassGIS, MAPC, Census 2010

May, 2013

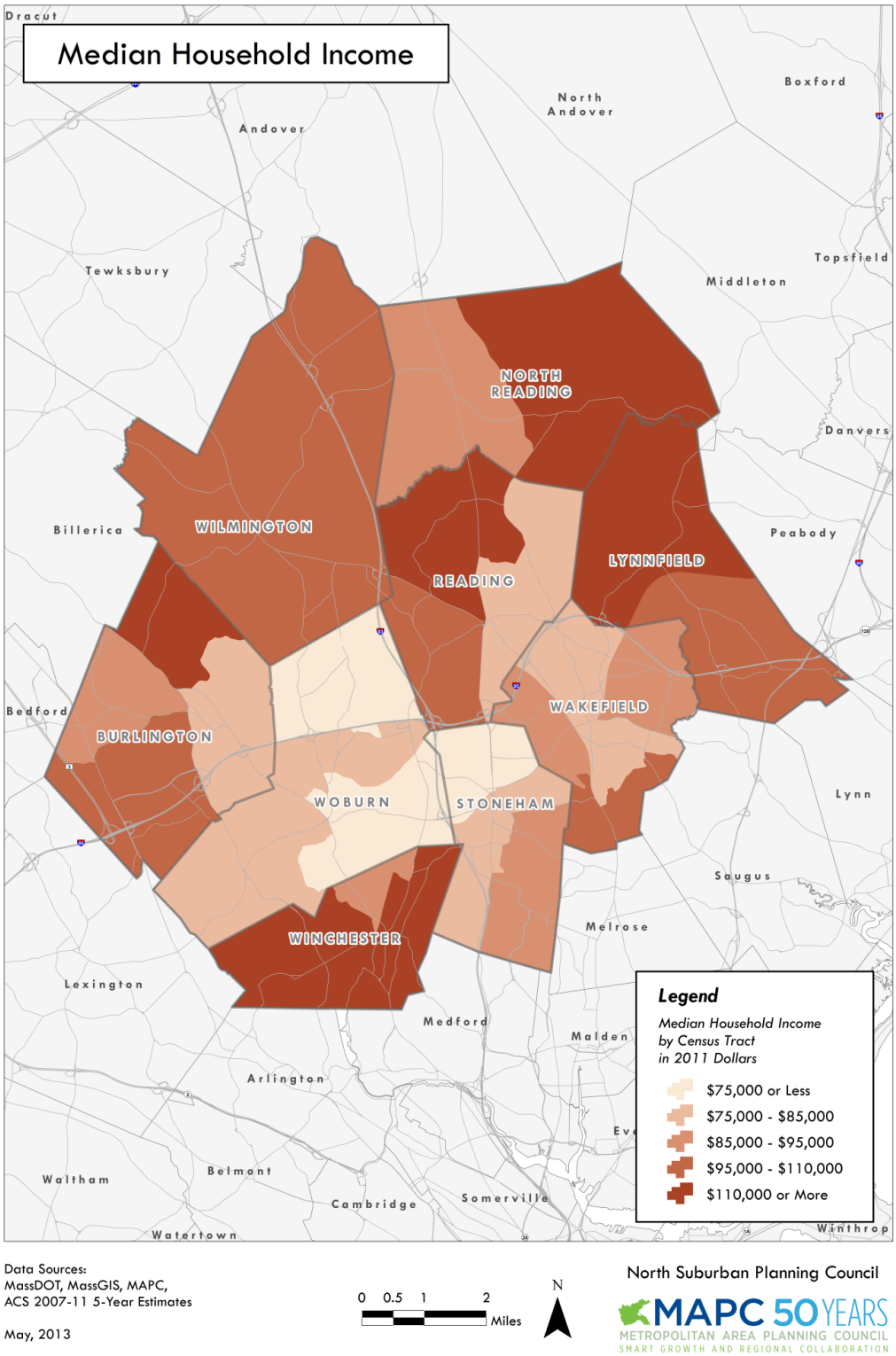
North Suburban Planning Council

MAPC 50 YEARS
METROPOLITAN AREA PLANNING COUNCIL
SMART GROWTH AND REGIONAL COLLABORATION

Median Income

The subregion is home to census tracts with a diversity of median household incomes.

Figure 4: NSPC Subregion Median Household Income, ACS 2007-2011 Estimates



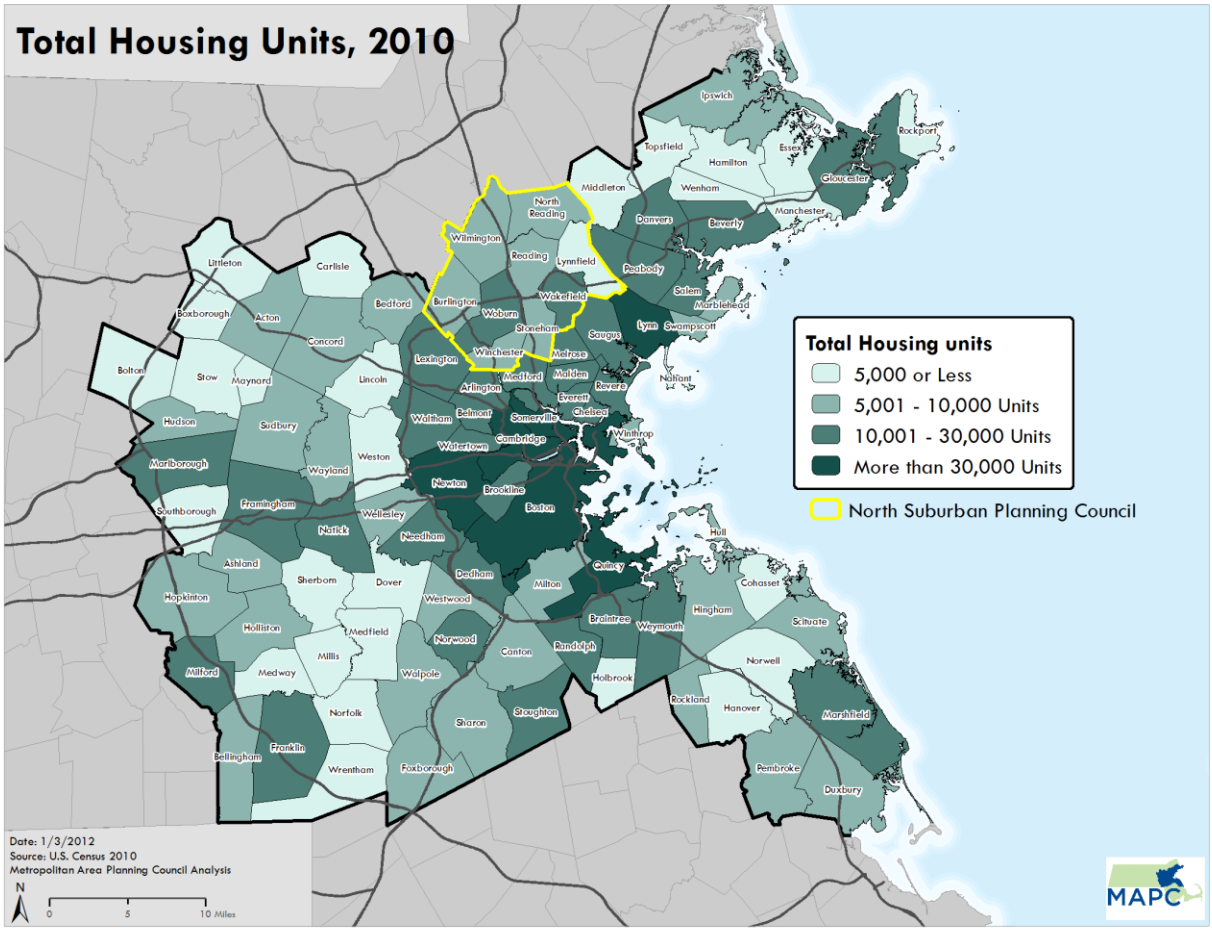
Household Characteristics

According to Census 2010 figures, family households make up over half of all households in the NSPC subregion, which is comparative to the MAPC region (70 percent in NSPC and 60 percent in MAPC, respectively). Non-family households make up 30 percent of NSPC and 40 percent of MAPC households. Among non-family households, the NSPC region has a larger percentage of single person households when compared to the MAPC region (83 percent of NSPC and 75 percent in MAPC, respectively). The subregion also has a greater percentage of non-family, single person households with people aged 65 and older (42 percent in NSPC and 35 percent in MAPC, respectively).

Housing Units

Housing units have grown statewide by 7 percent since 2000 (2,621,989 total housing units in 2000 and 2,808,254 total housing units in 2010). Woburn and Wakefield had the largest housing unit growth in the North Suburban region, ranging from 10,000 to 30,000 units each.

Figure 5: Total Housing Units, NSPC and MAPC region, 2010

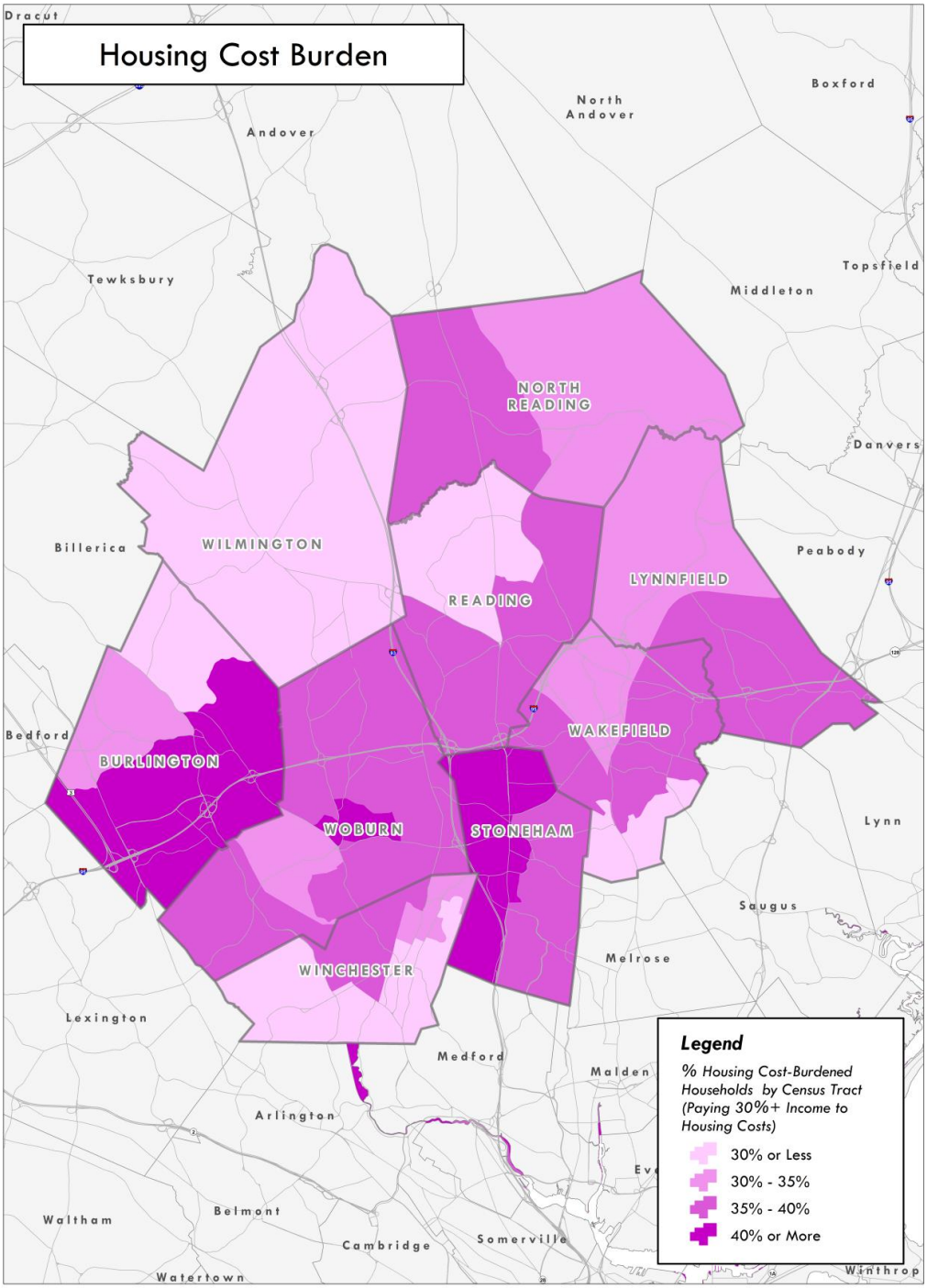


Housing Cost Burden

The federal government defines households as cost-burdened if they spend more than 30 percent of income on housing. Households spending more than 50 percent of income on housing are considered extremely cost-burdened. Housing costs include expenses on mortgage, real estate

taxes, homeowner insurance, rent, utilities, etc. Census tracts with the greatest percent of cost-burdened households are located in Burlington, Stoneham, and Woburn.

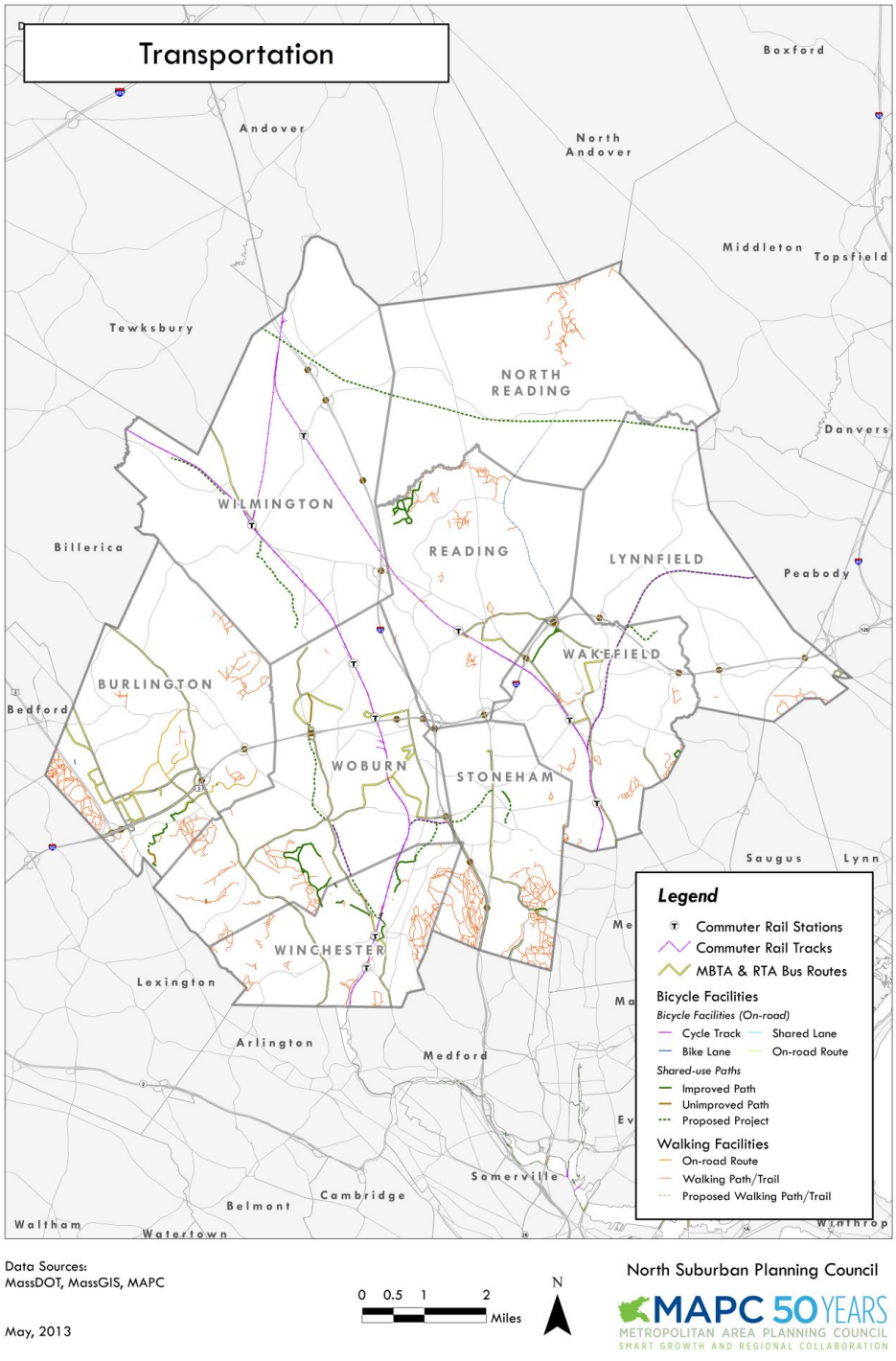
Figure 6: NSPC Subregion Housing Cost Burden



Transportation

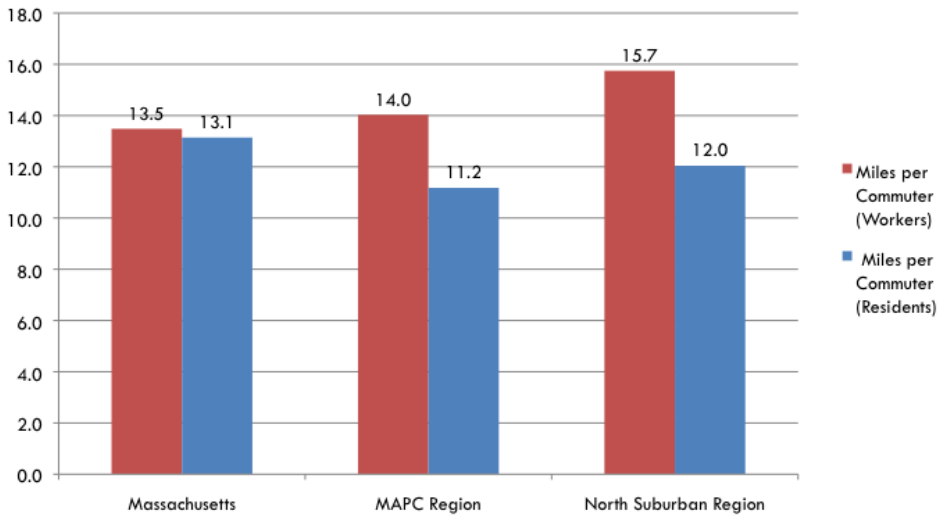
The subregion is partially served by commuter rail and bus lines. The town of North Reading is the only municipality not directly served by MBTA bus or rail service. In terms of bike and walk facilities, Stoneham, Woburn, and Burlington are home to the greatest number of walking and bike trails. The Tri-Community Bikeway, which involves these three communities, is a priority transportation infrastructure project.

Figure 7: NSPC Subregion Transportation Assets



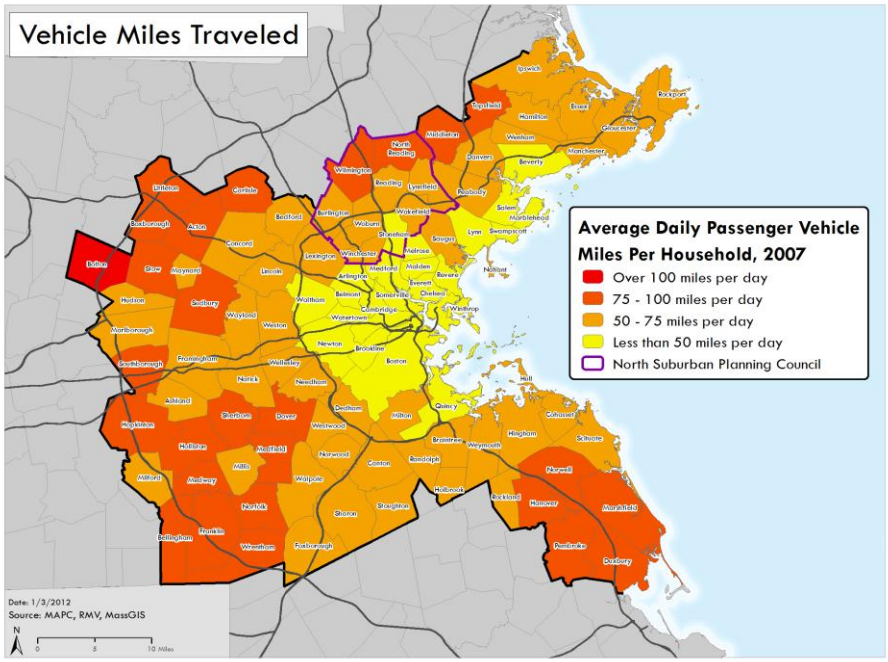
Workers in the North Suburban subregion are traveling 16 miles round trip on average to their place of employment, which is much more than their counterparts in Metro Boston and statewide, where residents are traveling about 14 miles round trip to work every day. When we look at commutes for people who live in NSPC municipalities, residents commute for roughly 12 miles roundtrip; workers in the MAPC region as a whole commuter for roughly 11 miles roundtrip; in contrast, workers statewide have the longer commute at 13 miles roundtrip (Census 2000). When we look at 2007 data on average daily passenger vehicle miles traveled per household in the subregion, we see that the average Wilmington and North Reading household drives as much as 75 to 100 miles per day. This creates green house gas emissions, financial costs, and results in more time spent in the car.

Figure 8: Commutes to Work, Residents and Workers, NSPC, MAPC Region, and State, Census 2000 and MAPC Analysis



Source: Census 2000 and MAPC analysis.

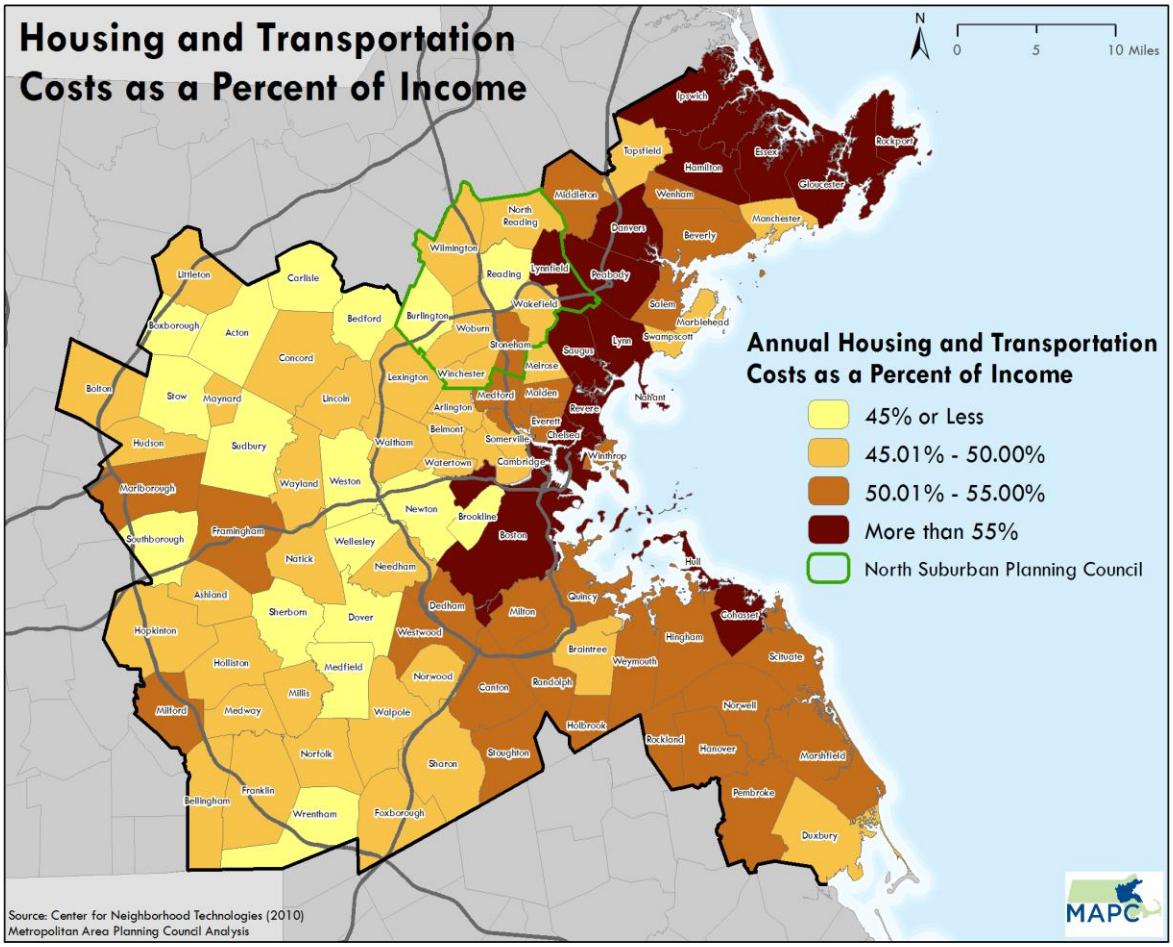
Figure 9: Average Daily Passenger Vehicle Miles Traveled, NSPC and MAPC region, 2007



Housing and Transportation Costs

Households are generally considered cost burdened if they are paying more than 30 percent of income on housing. However, in Metro Boston where housing costs are often higher than other urban areas in the country, it is not uncommon for many households to be paying more than 30 percent of their income on housing. The general rule of thumb for housing and transportation cost is that households paying more than 45 percent of their income on housing and transportation are considered cost burdened. An overwhelming majority of households in the NSPC subregion are paying 45 percent or more of their income on housing and transportation costs. Reading and Burlington were the only North Suburban communities that were not considered cost burdened by this measure. Stoneham and Lynnfield are much more cost burdened compared to other North Suburban communities.

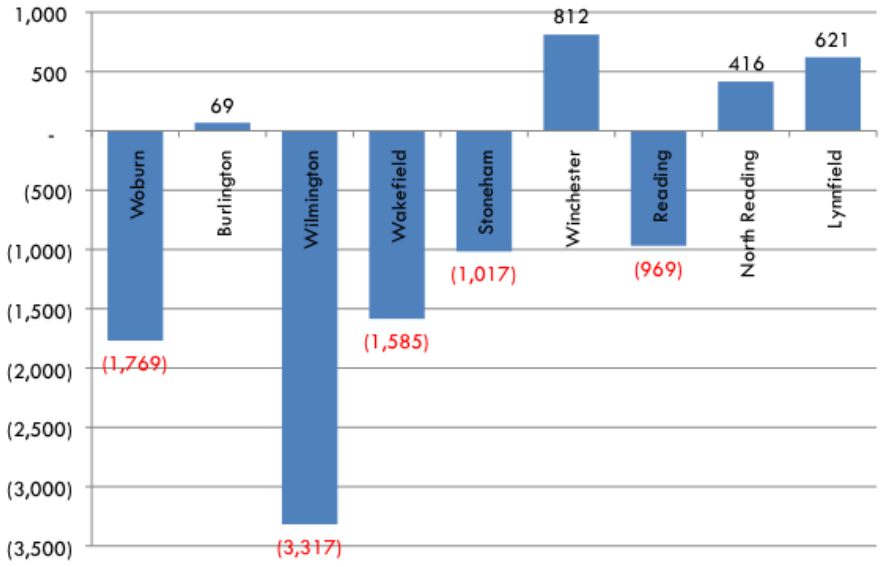
Figure 10: Housing & Transportation Costs as a Percent of Household Income, NSPC and MAPC region, 2010



Economy

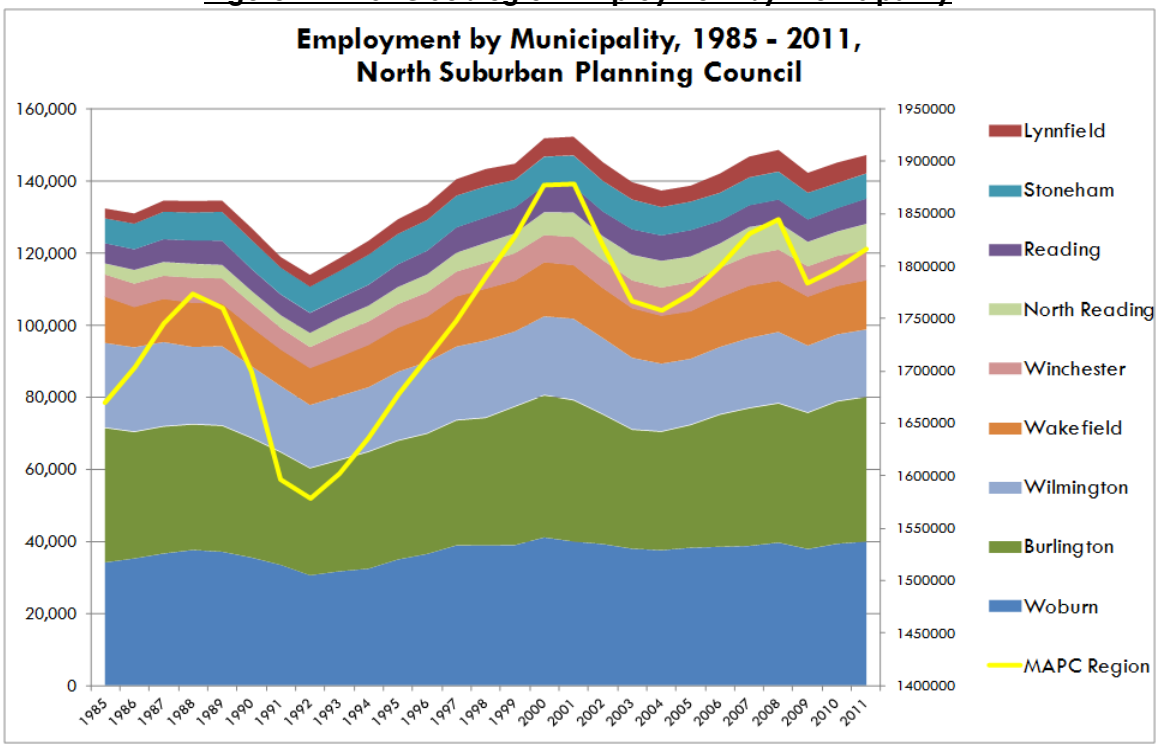
The NSPC subregion saw an absolute peak in employment between 2000 - 2001 but when we look at the last decade between 2000 and 2010, the subregion saw a 4.4 percent decline (a loss of 6,739 jobs). Job loss in the MAPC region, which is not shown, was comparable (- 4.2 percent). Less than half of North Suburban communities experienced job growth, which ranged from 69 jobs in Burlington, to 812 jobs in Winchester. Wilmington saw the most job loss at 3300 (3,317).

Figure 11: Job Growth and Loss, 2000 – 2010



Source: Employment and Wage Data, ES-202, 2000 and 2010.

Figure 12: NSPC Subregion Employment by Municipality



Development and Preservation, 1999-2005

Wilmington experienced the most new developed land of 150 to 200 acres between 1999 and 2005. In contrast, over the same time period we saw conservation of 25 to 50 acres in places like Reading.

Figure 13: Acres of New Development, 1999-2005, NSPC and MAPC Region

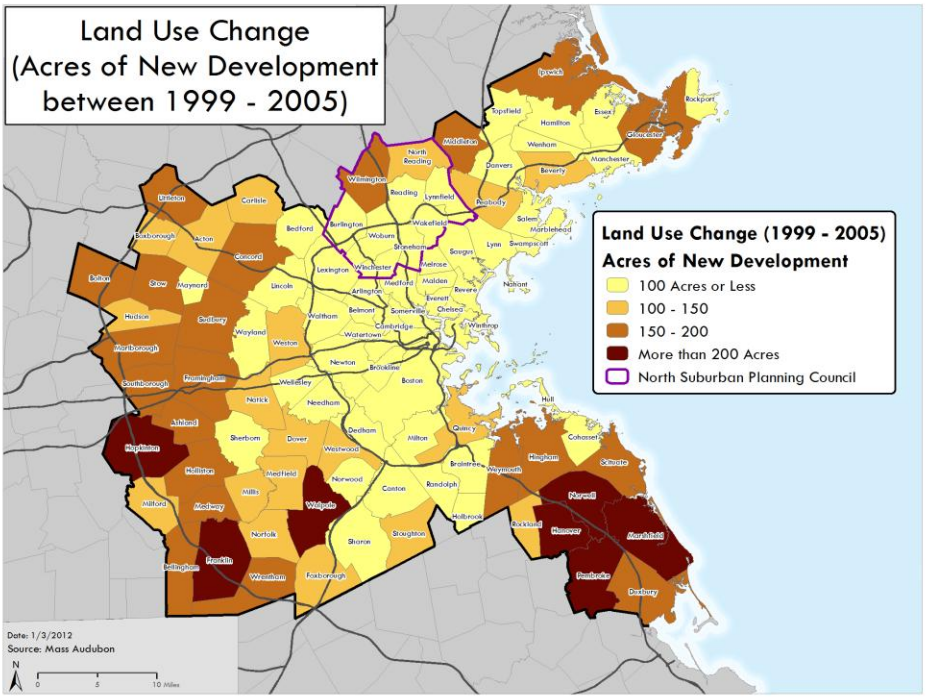
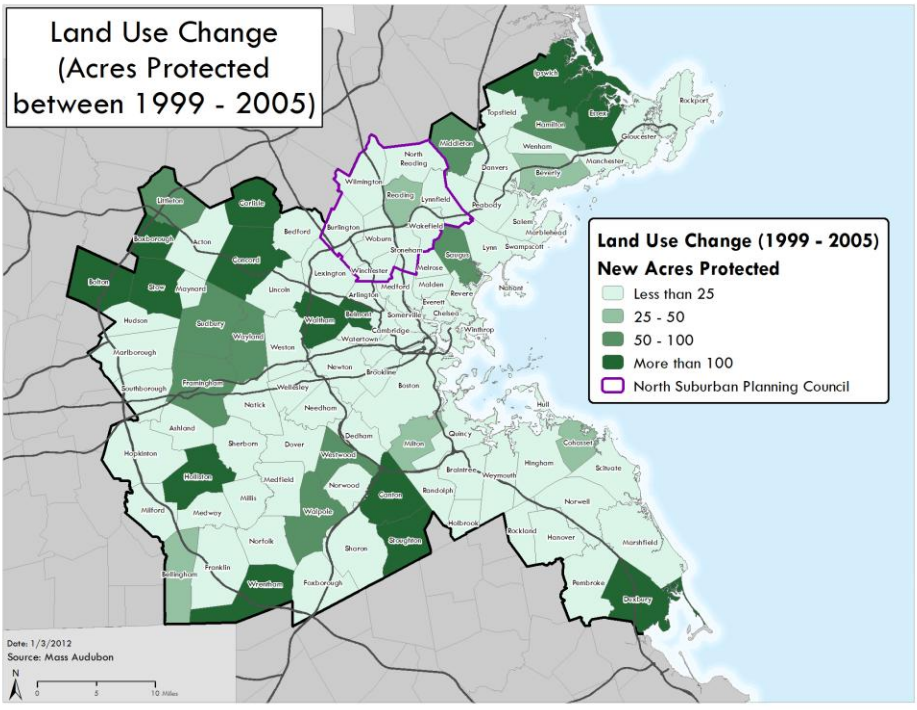


Figure 14: Acres Protected, 1999-2005, NSPC and MAPC Region



Historic Assets

The NSPC subregion is home to over 3,000 inventoried historic properties and historic districts, many of which have been granted local or national designation as historic places. The Massachusetts Historical Commission (MHC) inventories historic places and districts on an ongoing basis. Within the subregion, Winchester is home to the largest number of historic places with an official designation; it is also home to the largest number of inventoried historic places that have not been officially designated as a local or national historic place or district.

MAPC recognizes the importance of preserving cultural assets in the NSPC subregion. As projects proceed in identified local and regional priority development areas and as design activity to support priority transportation infrastructure improvements begins, planning and design should include measures to preserve historic, cultural assets.

The Massachusetts Historical Commission (MHC) maintains an online database of historic places and districts in Massachusetts – the Massachusetts Cultural Resource Information System (MACRIS). The table below provides a high level summary of places and districts in the MACRIS database as of January 2014. Please visit the MACRIS website to browse detailed information on the properties. Note: Places and districts in the MACRIS database reflect only those that MHC has inventoried. It includes places and districts with local designation, national designation, preservation restricts, and areas with multiple designations (e.g., local and national.)

Table 2: Massachusetts Historical Commission Inventory of Historic Places in NSPC Subregion

Municipality	Grand Total
Burlington	105
Lynnfield	58
North Reading	205
Reading	414
Stoneham	270
Wakefield	436
Wilmington	192
Winchester	1006
Woburn	350
Grand Total	**3036**

Note: This table is current as of January 2014

Environmental Resources

The NSPC subregion is home to assets including the Middlesex Fells, the Burlington Landlocked Forest, Lake Quannapowitt, and Horn Pond. Some assets are permanently protected while others are not. The subregion is also home to species of conservation concern, including specific types of insects, crustaceans, plants, and amphibians. These species reside in wetlands, ponds, forests, and vernal pools. These critical habitats are concentrated in North Reading, Reading, Lynnfield, Winchester, and Stoneham.

The NSPC subregion municipalities fall into the Ipswich, Shawsheen, Sudbury-Assabet-Concord River (SuAsCo), North Coastal, and Boston Harbor watersheds.

- Wilmington and North Reading are in the Ipswich watershed; Wilmington is also partly in the SuAsCo watershed
- Lynnfield and Reading are in the Ipswich and North Coastal watersheds, with a southwestern portion of Reading also in the Boston Harbor watershed
- Woburn, Winchester, and Stoneham are in the Boston Harbor watershed
- Burlington is in the Ipswich, Shawsheen, and Boston Harbor watersheds
- Wakefield is in the North Coastal and Boston Harbor watersheds

The Ipswich is one of the most flow-stressed watersheds in the state. High levels of impervious surface and landscaping practices disrupt the natural hydrology of the watershed, resulting in increased flooding during large rain events and snowmelt and decreased flow in dry periods. This has resulted in low flows to rivers and streams in the summer. In 1999, Four NSPC communities – Wilmington, Burlington, Reading, and North Reading engaged in a joint effort with Ipswich River Watershed Association. The effort contributed to a Regional Water Conservation Plan published in 2003 and the Water Wise Communities Handbook for municipal managers, which outlines tools communities can use to manage stormwater, preserve open space, and educate residents.

Figure 15: NSPC Subregion by Watershed

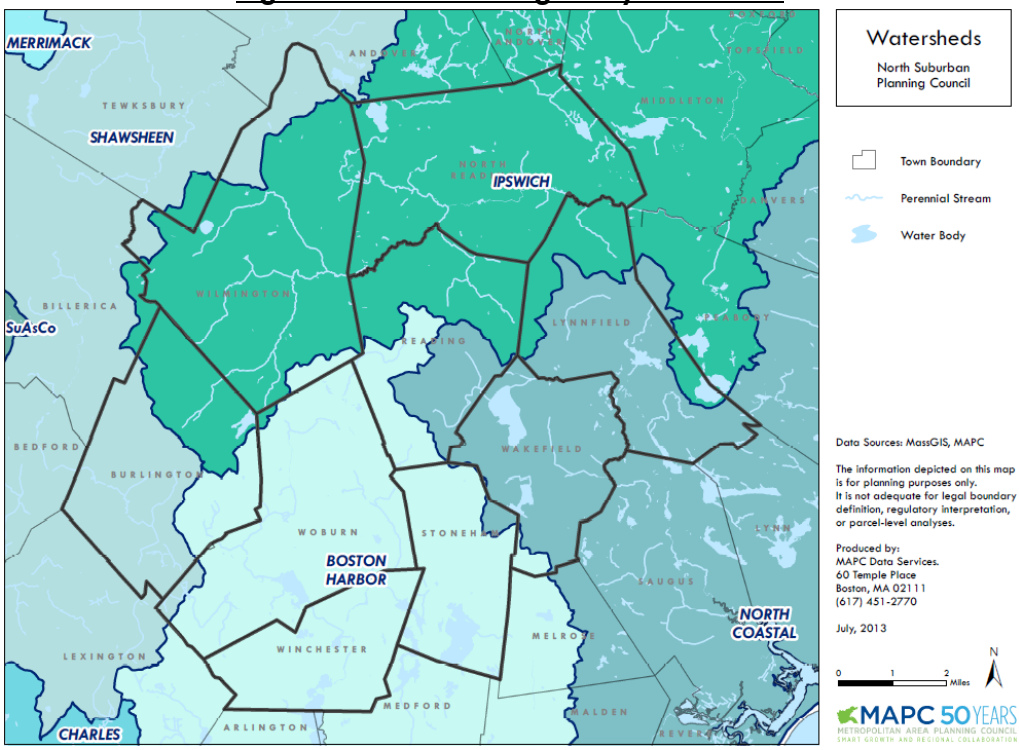
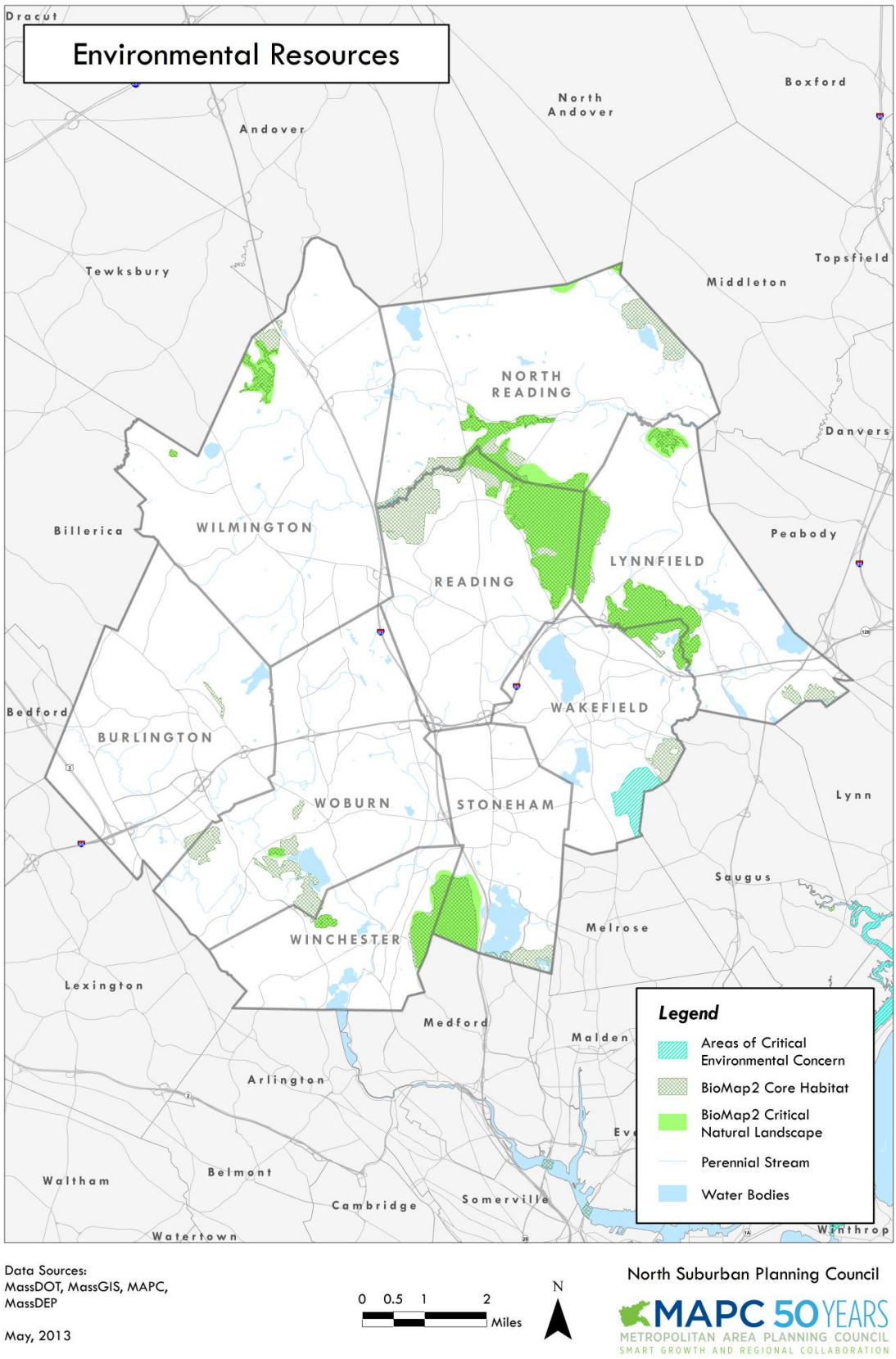


Figure 16: NSPC Subregion Environmental Assets



Water and Sewer Infrastructure

A well-maintained water infrastructure system to support drinking water service, wastewater disposal, stormwater management protects our health and is vital to the economy and environment. The Massachusetts Water Infrastructure Finance Commission Report of 2012 found that the Commonwealth faces an estimates $10.2 billion gap in resources for drinking water infrastructure, an $11.2 billion gap in resources for wastewater, and an additional $18 billion for stormwater over the next 20 years. The Commission estimates that in total, there is a $39.4 billion gap in available funding needed for statewide improvements for all water management systems.

While federal subsidies will support a portion of these costs; state and local governments need to prepare integrated responses to address these critical infrastructure needs. Some of the Commission's recommendations to address the gap include incentivizing the utilization of rate structures that reflect the full cost of water supply and wastewater treatment; innovative best management practices; and regional, watershed-based solutions to management. In addition, the Commission recommended establishing a new Trust Fund to be funded annually at $200 million comprised of a mixed program of direct payments to cities and towns, low interest loans, and grants (MWIFC Report, 2012).

MWRA Sewer and Water Service Areas

Most of the NSPC subregion is served by the Massachusetts Water Resources Authority, which was created by an Act of the Legislature in 1984. On the wastewater side, MWRA serves 43 sewer member communities and collects flow from over 5,000 miles of local community sewers. Many of MWRA's 240 miles of interceptor sewers follow river banks, and today, wastewater from communities in the NSPC district served by MWRA flows through their Chelsea Headworks facility to the Deer Island Wastewater treatment Plant.. MWRA provides drinking water to 50 municipalities, where local water distribution systems collectively consist of 5,000 miles of pipes. MWRA's water transmission system consists of over 100 miles of tunnels and aqueducts, and the distribution system consists of almost 300 miles of pipes. The MWRA produces a Capital Improvement Plan (CIP) every fiscal year. The MWRA FY2014 Capital Improvement Program indicates that about 80 percent of MWRA's spending through the FY2013 CIP was for projects mandated by federal court orders and federal and state regulations, with the balance supporting pipeline rehabilitation and infrastructure replacement.

The MWRA provides the following services to NSPC municipalities:

- Burlington receives sewer service only.
- The Lynnfield Water District, servicing the southern portion of Lynnfield, receives MWRA water.
- Reading and Stoneham are fully served by MWRA water and sewer.
- Winchester, Woburn, Wilmington, and Wakefield are MWRA sewer communities, and are also partially served MWRA drinking water communities (they also use local water sources to meet demand).

MWRA Wastewater Infrastructure

The MWRA sewer service area is defined in the MWRA's 1984 Enabling Act. Any expansion of the sewer service area requires compliance with numerous criteria for sewer system expansion that are set forth in the Enabling Act and MWRA's sewer system expansion policy, *OP#11, Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area*. Sewer service has in some cases been extended to specific residences,

businesses, and institutions in non-MWRA communities that are close to MWRA sewer communities. Expansion of the wastewater system to additional communities, or significant portions of communities outside of the current MWRA service area, is not planned.

A concern associated with adding new communities is that wastewater transport capacity in the MWRA sewer system is constrained during severe wet weather events. One of the challenges is reducing infiltration and inflow (I/I). Infiltration occurs when existing sewer lines degrade and deteriorate allowing groundwater to enters the system. Inflow occurs when water enters the system through either direct connections (e.g. catch basins, sump pumps) or indirect stormwater flow. This extraneous flow impacts the whole sewer system; increasing the total wastewater flow treated by MWRA. This depletes capacity that would otherwise be available to transmit sanitary flows, reducing in overflows of untreated sewage, combined sewage overflows (CSOs), and pumping and treatment costs (MWRA CIP FY2014). These needs are documented in the annual MWRA Annual Infiltration/Inflow (I/I) Reduction Report, which outlines I/I rates for each community. Links to this and other resources on wastewater infrastructure needs and priorities is provided in Appendix G.

For those municipalities that do not receive MWRA sewer service, communities must utilize other methods such as individual septic systems or, hopefully, more innovative methods such as package treatment. Title 5 (310 CMR 15.000) provides regulations for traditional septic systems and authorizes local Boards of Health to be the local regulatory authority. .

MWRA Sewer System Improvements

The MRWA has made recent improvements to main sewer systems in the subregion. The MWRA Cummingsville Sewer System is located in the Town of Winchester, with a small portion in Woburn, and serves sections of Winchester, Woburn, and all of Burlington.[3] The Cummingsville Branch Sewers Facilities Plan addressed Sanitary Sewer Overflows in Woburn near Horn Pond. The constructed improvements have reduced the likelihood of overflows under design storm conditions. A current MWRA capital improvement priority is asset protection. For example, the Deer Island Treatment Plant houses more than 60,000 pieces of equipment, and some parts of the treatment plant have been in use for almost twenty years.

MWRA Drinking Water Infrastructure

On the water side, MWRA's capital improvement priorities are to further enhance water system efficiency and water storage. Operationally, one of MWRA's objectives is to expand its water service area to additional communities. Due to aggressive conservation measures, MWRA's water system demand has significantly declined, and MWRA's water supply capacity and Safe Yield (large multi-year storage reservoirs) exceeds the MWRA existing service area's demand. MWRA has resources that enable water system expansion to the north, and is currently in discussion with North Reading about joining the MWRA water system.

Connections to the MWRA drinking water service requires compliance with numerous criteria that are set forth in the Enabling Act. Some of the key provisions include:

- A water management plan has been adopted after approval by the Water Resources Commission;
- Effective demand management measures have been established;

[3] Studies associated with the 2005 renovations to the Cummingsville System identified a deficiency of 8 million gallons per day (mgd)[3], from infiltration, and inflow. The Cummingsville System improvements provided capacity to handle an appropriate design flow (21 mgd capacity vs. 13 mgd capacity prior to implementation).

- A feasible local water supply source has not been identified by the municipality or the Department of Environmental Protection (MassDEP); and
- A water use survey has been completed identifying users consume in excess of twenty million gallons per year.

In addition, there are a number of environmental regulations that must be met to protect the health of the donor and receiving watershed basin such as the Inter Basin Transfer Act regulations.

The towns of Burlington and North Reading provide their own water supply. Winchester, Woburn, Wilmington, and Wakefield are partially served by MWRA, but supplement that with local water sources to meet drinking water demand.

Planned MWRA Capital Improvements in the Subregion

Below is an outline of FY2014 MWRA capital improvement projects in the subregion that are in the planning or design phase, as of July 2013[4]:

Lynnfield:

- Project #731: Lynnfield Pipeline. To meet high demands in Lynnfield by installing approximately 4,700 linear feet 24-inch water main, 1,800 feet of 36-inch water main and 6,000 feet of 12-inch water main The Lynnfield Water District serves a portion of the Town of Lynnfield. The community meter is served by an 8-inch main, approximately 7,000 feet long. The main is undersized and its capacity is inadequate to meet high water demands. Rehabilitation of the main will not increase the capacity sufficiently.

Stoneham:

- Project #713, Spot Pond Supply Mains Rehabilitation: $28.7 million ($37.7 million total construction cost) - This project is for the construction of a 20 million-gallon drinking water storage facility and redundant pump station in Stoneham. The underground, concrete tanks will provide drinking water storage for MWRA's Low Service area. Additionally, this project will provide system redundancy for 21 communities in the Northern Intermediate High and Northern High service areas currently served by the Gillis Pump Station.

Reading, Wakefield, Winchester, Woburn:

- Project #722, NIH Redundancy and Covered Storage: Section 89 & 29 Redundancy Construction Phases 1 & 2, $21.3 million and $21.7 million respectively – This is a redundancy project for the MWRA's Northern Intermediate High service area. Currently, this area is supplied primarily by a single 48-inch diameter pipeline, a single pump station (Gillis Pump Station), and a water distribution storage tank (Bear Hill Tank). This project proposes construction of a new seven mile redundant pipeline under two construction phases and will provide uninterrupted water supply to the service area in the event of a failure. Additionally, the project will allow for the inspection and maintenance of the existing pipeline once redundancy is achieve

Lynnfield and Wakefield:

- Project #618: Northern High NW Trans Section 70-71. To improve service reliability by completing a study to rehabilitate more than 10 miles of pipeline serving the northern high service area. The Northern High System Pipeline Sections 70, 71 and 79 are the primary distribution mains that supply water to seven north shore communities. These water mains

[4] http://www.mwra.state.ma.us/finance/cip/fy14proposed/document.pdf

are constructed of unlined steel and are over 55 years old. Rehabilitation of these pipelines will extend their useful life and postpone the need for more costly pipe replacement in the future. This project includes an initial planning study that will assess the existing pipe condition and develop a sequence of work that would ensure uninterrupted service to the north shore communities while pipeline segments are out of service for rehabilitation. Future phases for design and construction of the rehabilitation will be added to this project based on the results of the planning study.

Winchester:

- Project #702, New Connecting Mains – Shaft 7 to WASM 3. To provide redundancy and improve the reliability of WASM 3; provide hydraulic looping and redundancy, enable Intermediate High Sections 59 and 60 to be taken off-line for rehabilitation, and improve water quality by reducing the length of unlined cast iron water mains in the MWRA system. Completion of this project will help provide the basis for a strong hydraulic network of piping among WASM 3, WASM 4, and the City Tunnel. The future conversion of Sections 23 and 24 to the Intermediate High Service system to create a unified Intermediate High Service area connecting the Belmont and Commonwealth Avenue pump stations will also be possible
- Project #704: Rehabilitation of Other Pump Stations. To rehabilitate five active pump stations (Brattle Court, Reservoir Road, Hyde Park, Belmont, and Spring Street) - each of which is more than 40 years old and is overdue for renewal for safety, reliability, and efficiency reasons. Project includes a future phase to rehabilitate Gillis, Newton Street, Lexington Street, and Commonwealth Ave pumping stations

Figure 17: MWRA Service in NSPC Subregion

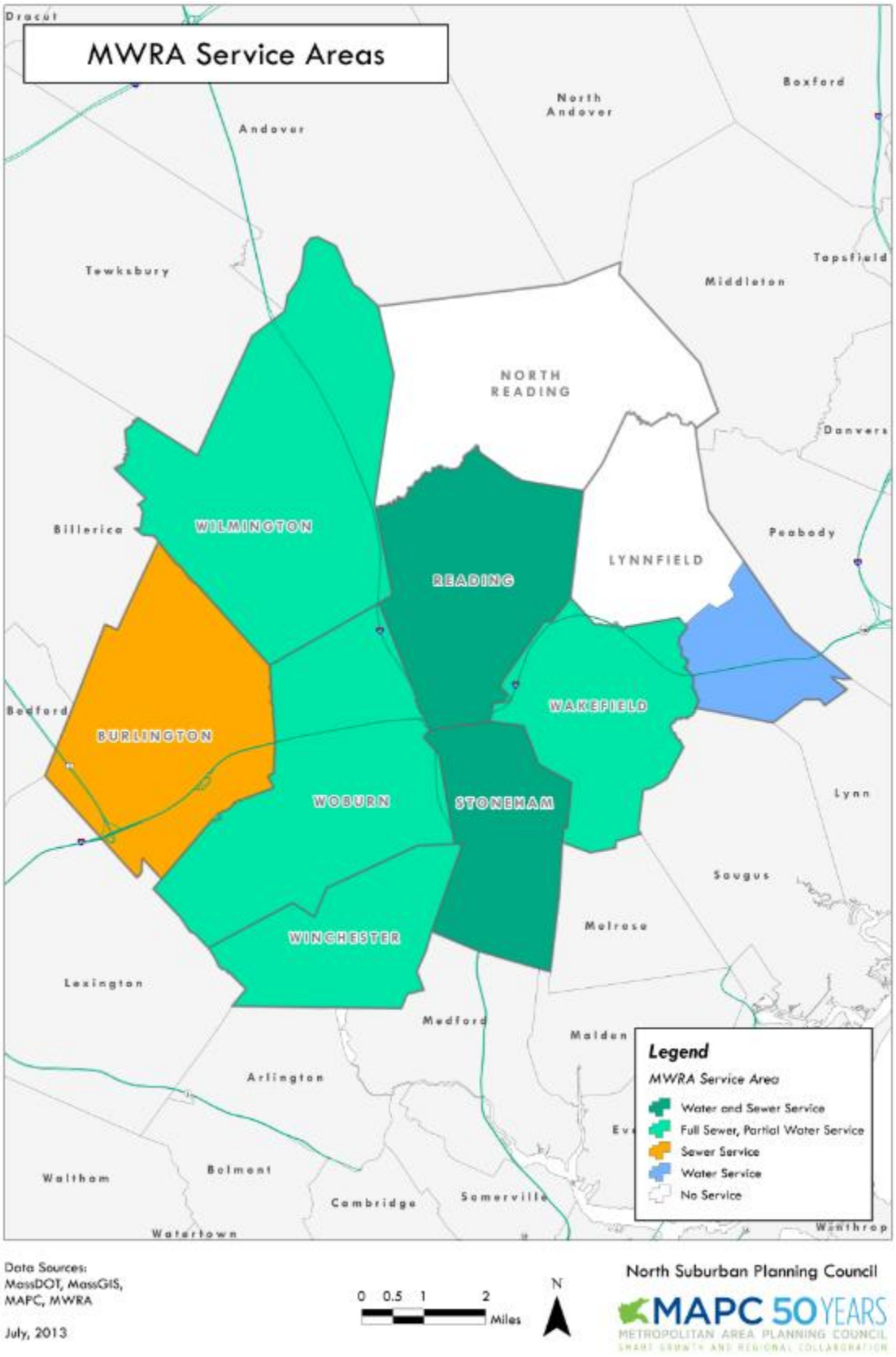
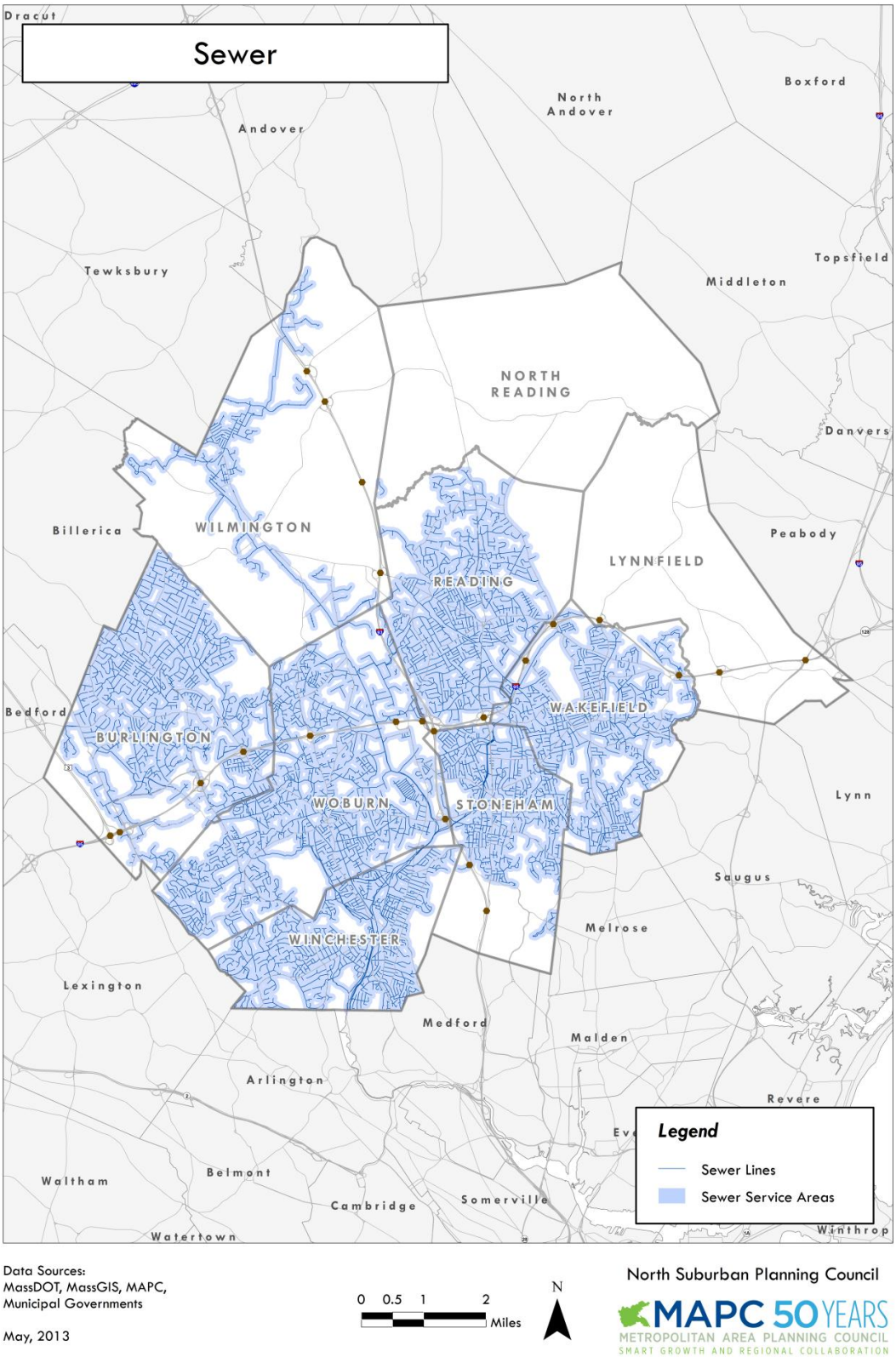


Figure 18: NSPC Subregion Sewer Service Areas, 2013



Note: Data on the sewer service area in the town of Lynnfield is not depicted on this map.

Locally-Identified Priorities

The eight participating NSPC communities identified a total of 211 local priorities – 123 local priority areas for development and preservation comprising nearly 9,000 acres, over 80 priority transportation infrastructure investments, and 15 other infrastructure investment priorities pertaining to water and sewer. These priorities emerged during dialogues with municipal staff, boards, and committees and were informed by priorities identified in existing planning documents and studies. Copies of local priorities lists and maps by municipality can be found in Appendix F.

Each municipality was asked to identify the projected development type(s) at each locally-identified PDA. This process was done by municipal staff in consultation with MAPC during the local priorities identification process. Each PDA was identified as being suitable for any of the eight projected development types, and any given PDA could be identified as suitable for multiple development types:

- Multifamily housing
- Mixed use – infill
- Mixed use – master planned
- Retail, Entertainment and Hospitality
- Commercial: Medical and Office
- Commercial: Industrial
- Single family housing – low density (under 8 units per acre)
- Single family housing – high density (8 or more units per acre)

The following table provides examples of existing developments in the NSPC subregion that are representative of each development type:

Table 3: Descriptions of Development Types

PDA Type	Description	Examples
Multifamily Housing (Y/N)	Stand-alone multifamily residential development, including attached housing, townhouses, apartments, and condominiums. May include affordable or over-55 developments. May include accessory retail and services such as restaurant or health club.	Edgewood Apartments, North Reading
Mixed Use: Infill Development (Residential and Commercial (Y/N)	Site-by-site reuse or redevelopment of currently vacant or underutilized parcels in city or town centers & other traditional business districts. Not every individual development must include both residential and commercial uses, but a cumulative mix of these uses is implied.	30 Haven Street, Reading
Mixed Use: Master Planned Development (Residential and Commercial) (Y/N)	Large scale development or redevelopment generally encompassing multiple parcels and often including the creation of new land use patterns and street networks. Includes a mix of high-density multifamily housing element, retail, services, restaurants, and/or office uses.	Market Street, Lynnfield Northwest Park, Burlington
Commercial: Retail,	Stand-alone retail development, restaurants, hotel, or	Wilmington

PDA Type	Description	Examples
Hospitality, Entertainment (Y/N)	entertainment.	Plaza, Wilmington
Mixed Commercial: Medical or Office (Y/N)	Offices, medical clinics & medical offices, research & development, or professional services. May include some accessory retail or restaurants.	Oracle, Burlington
Commercial: Industrial (Y/N)	Manufacturing, warehousing, storage, contractor yards, etc.	Analog Devices, Wilmington
Single-Family Housing (high or low density? High= 8 units per acre or more)	Detached single family housing development, including conventional subdivisions or open space residential development.	Low Density: Eleanor Estates, Wilmington

Table 4: Summary of Locally-Identified PDAs and PPAs

- PDAs: priority development areas
- PPAs: priority preservation areas
- PDAs/PPAs: priorities areas suitable for a combination of development and preservation
- STIs: significant transportation infrastructure projects

	Local Priorities Summary									
	Total PDAs & PPAs		PDA		PPA		PDA/PPA		STIs	SIIs
	#	Acre	#	Acre	#	Acre	#	Acre	#	#
Burlington	25	1887.7	15	1087.0	8	701.3	2	99.3	14	1
North Reading	18	984.5	11	387.3	6	544.1	1	46.4	10	1
Reading	18	906.8	8	494.0	8	385.1	2	27.8	9	2
Stoneham	12	228.1	9	183.9	2	38.9	1	5.3	12	1
Wakefield	12	577.7	8	438.0	3	137.0	1	2.7	12	0
Wilmington	12	1883.5	8	1256.3	2	471.3	2	155.8	10	1
Winchester	17	725.1	4	133.7	7	497.1	6	94.4	9	3
Woburn	9	1284.1	4	1039.8	4	184.6	1	59.7	12	6
Total	**123**	**8477.4**	**67**	**5020.1**	**40**	**2959.4**	**16**	**491.3**	**88**	**15**

Participating municipalities identified a list of 15 infrastructure investment priorities. Since these locally identified priorities could not be mapped, they are captured in narrative below.

Table 5: Locally-Identified Infrastructure Investment Priorities

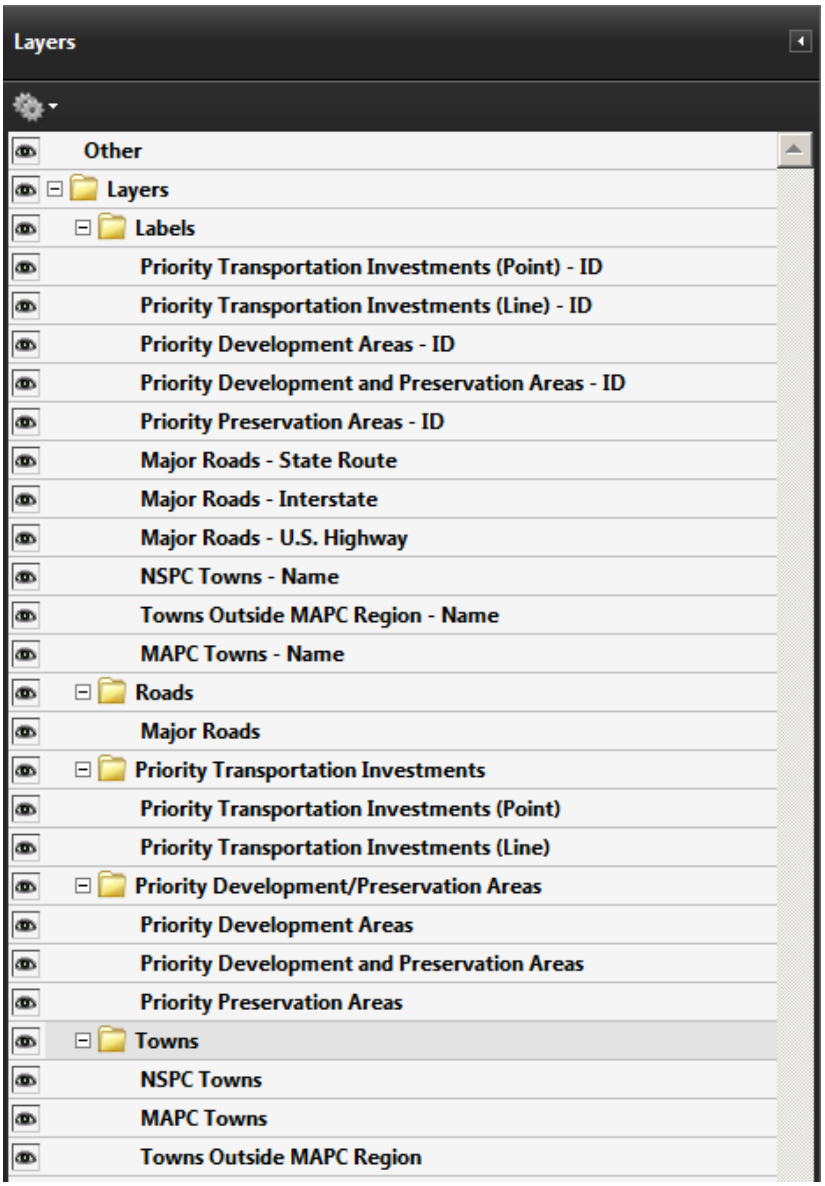
Town or City	Short Description
Burlington	*Sewer capacity.* While most areas in town are served by water and sewer, sewer capacity is identified as a significant growth issue throughout town under the

Town or City	Short Description
	DEP-issued administrative consent order (ACO).
North Reading	*Sewer connections.* The town would like a sewer connection to come up through Route 28 through town and connect with the Greater Lawrence Sanitary District in North Andover, MA. The town would also like a connection along Route 62 up to the Town Center.
Reading	*Water Supply Redundancy; need for water storage in the NIH (National Institutes of Health) region.* Reading is working with the MWRA on addressing water supply redundancy, and on concerns about being able to maintain water quality (level of Chloramines) in the northern areas of Town. The Town also understands the need for water storage in the NIH area, and has agreed to consider an option to help the MWRA address part of the water storage need. There are 10 wastewater pumping stations that need to be replaced by the Town. There is sewer surcharging from the Golf Course at Franklin and Grove intersection during periods of rain. Effluent is flowing out of the ground during heavy peak flows. (note: To be verified by Town Engineer)
Reading	*Storm drain system improvements.* The town is working on design of storm drain systems on the Aberjona River and the Saugus River. There is a dam on Saugus River in Lynnfield – regulated by Saugus Water Dept that us upstream of Reedy Meadow; this is causing the water level in the meadow to remain artificially high.
Stoneham	*Fallon Road in the Commercial District – wastewater pumping station.* Drainage is not an issue in this area but there are sewer and traffic issues. There is planned development of 300 units of housing in this area.
Wilmington	*Water and sewer improvements*. Water and sewer improvements to accommodate redevelopment in all identified local priority development areas (e.g., North Wilmington Train Station area).
Winchester	*MWRA infrastructure improvements.* MWRA piping in Winchester is actually causing a bottleneck/constriction so that development cannot proceed in towns outside of the Route 128 beltway (Burlington, Bedford, and other subregion communities.) In particular, the Town of Burlington has expressed that there is a need for infrastructure improvements to MWRA sewer infrastructure in Winchester to enable additional development in Burlington.
Woburn	*Scalley Dam.* Supplied by the town of Winchester: It is a critical infrastructure element for Winchester, as the operation and maintenance of this dam directly impacts flooding in Winchester Center. The water level may be kept high to protect Woburn's drinking water but it also lowers Horn Pond's ability to store flood water.
Winchester	*Implementation of Winchester's Flood Mitigation Program.* The Town is currently in the process of implementing a multi-phased Flood Mitigation Program aimed at reducing the impact from flooding along the Aberjona River, which has resulted in economic losses totaling more than $25 million over the past 20-years. The need for this program was identified through the MEPA process. The program includes six in-town projects to increase the hydraulic capacity of the River and three mitigation projects outside of Winchester to ensure that downstream communities are not adversely impacted. This is one of the most significant infrastructure investments facing the Town of Winchester over the next decade or more (with the exception of the potential High School renovation project).
Winchester	*Creation of a fund to support infrastructure projects*.
Woburn	*Horn Pond Dam.* Improvements are needed to control area flooding.
Woburn	*Dix Road.* Sewer water pumps are being replaced.

Town or City	Short Description
Woburn	*Shaker Glen.* Water pipes are being replaced.
Woburn	*MWRA sewer trunk line*. Expansion of the sewer trunk line between Winchester and Woburn. Addresses sewer surcharges to Horn Pond.
Woburn	*Hart Street to Hanson Avenue.* Proposed drain line that runs through the rail bed. This will address stormwater flow issues.

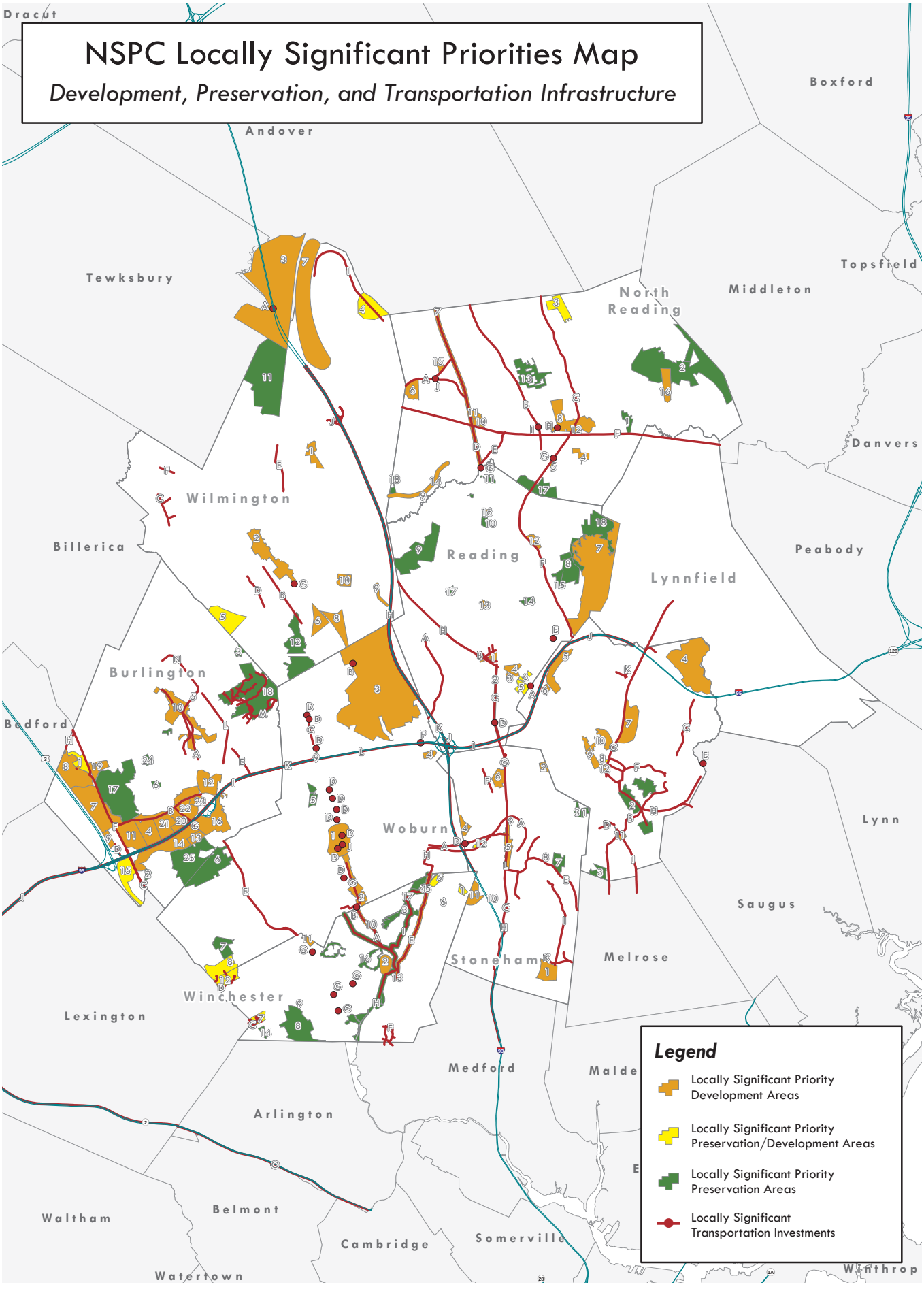
Figure 19: NSPC Subregion Locally Significant Priorities Map

This Locally Significant Priorities Map provided on the next page includes stored layers of information on each priority area listed. To access this information, in Adobe choose View > Show/Hide > Navigation Panes > Layers. The following layers of information are available:



NSPC Locally Significant Priorities Map

Development, Preservation, and Transportation Infrastructure



Data Sources:
MAPC, MassDOT, MassGIS,
NSPC Municipalities

December, 2013

0 0.5 1 2 Miles

N

North Suburban Planning Council

MAPC 50 YEARS
METROPOLITAN AREA PLANNING COUNCIL
SMART GROWTH AND REGIONAL COLLABORATION

Regional Screening Methodology

MAPC evaluated 139 locally-identified preservation, development, and infrastructure investment priorities identified by city and town staff, board, and committee members to generate a list of regional priorities for the subregion. Development of the regional priorities list involved an assessment of how the local priorities would advance the vision of a Greater Boston region and the smart growth goals outlined in the MetroFuture regional plan. MAPC also used a data-based GIS model that allowed us to systematically screen priority areas' suitability as priority development and preservation areas based on a host of available data/indicators from MassGIS, the Census, and other sources.

Criteria and Indicators – Priority Development Areas (PDAs)

The locally-identified PDAs[5] in the NSPC region are a very diverse collection appropriate for different kinds of development. Some areas are targeted for moderate density mixed use infill development; some are sites for stand-alone retail uses; and others are more appropriate for large-scale, transformational redevelopment that may create a new street network and whole new urban fabric.

More than twenty different ***indicators*** about each PDA were combined to generate a score for each of six broad ***criteria***, which were then combined to create a ***composite suitability*** score / percent rank for each PDA according to the development type(s) each PDA is projected to accommodate. Using the criteria scoring as a resource, MAPC prepared the final list of regionally significant priorities for both development and preservation.

Locally identified PDAs were screened according to suitability under six summary criteria that align with MetroFuture regional principles. Available data (indicators) pertaining to each category of criteria were used to screen PDA suitability according to each criteria. Details on the data sources and specific metrics used to generate the indicators can be found in Appendix G.

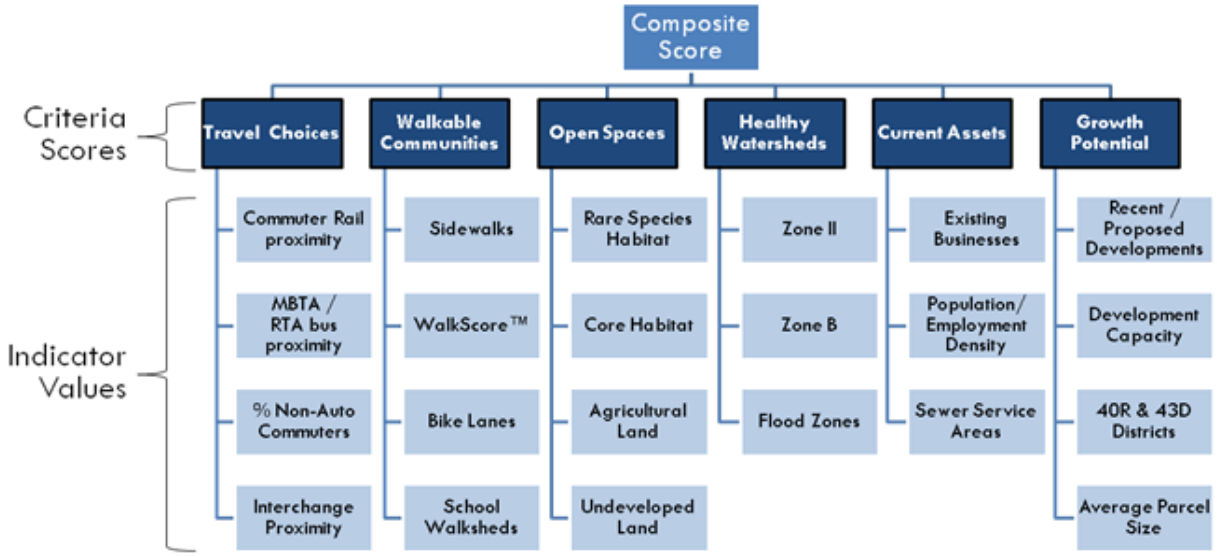
- Travel Choices
- Walkable Communities
- Open Spaces
- Healthy Watersheds
- Current Assets
- Growth Potential

A value for each indicator was calculated for each PDA. The values of the indicators under each set of criteria were then combined to create a criteria score. The six criteria scores were then averaged to yield a composite score for each area. All scores were converted to percent rankings by PDA type to streamline regional screen results. Example: Interchange Proximity indicator is based on the calculated driving distance to the nearest highway exit, with distances ranging from ¼ mile to more than five miles; these values were then normalized so that the site closest to a highway interchange has a score of 100, and the most remote site has a value of zero. (In some cases such as overlap with rare species habitat, high indicators values indicate low suitability, and the normalized score reflects this fact.) The normalized indicator value is then combined with the comparable values for

[5] This total includes those 17 areas that were identified by municipal staff as having potential for both development and preservation (identified as PDA/PPA on local priorities lists).

commuter rail proximity, bus proximity, and non-auto commuters to generate a combined Travel Choices score, also ranging from 0 to 100.

Figure 20: PDA Scoring Criteria



This table describes what is implied by a low or high score / percent rank for each of the criteria.

Table 6: Summary Criteria for PDAs

What a low score means	*Summary Criteria*	*What a high score means*
• No bus or rail transit within walking distance • Nearly all residents commute by car • Must take local roads or arterials to reach highway	**Travel Choices** Commuter Rail Station Areas MBTA & RTA Bus Service Percent of Non-Auto Commutes Interchange Proximity (non-residential sites only)	• Existing train or bus service is an option for some trips • Up to 20% of people take transit, walk or bike to work • Easy on/off for company shuttles
• Not many sidewalks in the area & not many destinations to walk to • No off-road options for riding or walking nearby • No schools within walking distance	**Walkable Communities** Sidewalk Availability WalkScore™ Bicycle/Pedestrian Lanes & Paths Walkable Schools	• Residents and workers have option to walk or bike to nearby destinations • Less traffic from short trips and school commutes • Buildings near each other, less parking in between
• Undeveloped site; may contribute to town character • Rare species and wild areas may be impacted or may delay permitting • Existing local farms may be impacted by proposed	**Open Spaces** Rare Species Priority Habitat Core Habitat & Critical Landscapes Agricultural Land Uses Undeveloped Land	• Site is already developed • No impacts to rare species • Possible opportunities to restore degraded natural areas

What a low score means	*Summary Criteria*	*What a high score means*
development		
• Site contributes to a public well or drains to reservoir. • Vulnerable to flooding; resilient design required • If already developed, may be opportunity for restoration or recharge	**Healthy Watersheds** Zone II Aquifer Recharge Areas Zone B Surface Water Supply 100-Year Flood Zones 500-Year Flood Zones	• Development will not directly affect public water supply • On-site treatment and recharge may provide opportunities to reduce downstream flooding
• Not currently home to many businesses • Few residents or workers nearby • Would require sewer extension or on-site disposal	**Current Assets** Number of Businesses Population & Employment Density Sewer Service Areas	• Already a substantial employment center • Large resident market for new retail • Numerous residents and workers to share benefit/cost of investments
• No recent development or current proposals • Only a small amount of development could be accommodated • Expedited permitting not guaranteed	**Growth Potential** Recent & Proposed Developments Estimated Development Capacity Smart Growth Zoning Districts Expedited Permitting Districts	• Private sector investments already in place or planned • May be opportunity for very large scale development • Community support may speed permitting process as evidenced by 43D or by-right permitting

Criteria Used in Regional Screen of PDAs

As noted, the locally-identified PDAs are a diverse collection of areas appropriate for different kinds of development. As a result, MAPC felt it was not appropriate to measure each site using exactly the same set of indicators and criteria. MAPC tailored the scoring system for each of the development types so that it emphasized the site and location characteristics for that type of development. For example, MAPC considers sidewalk availability, school walkability, transit service, and proximity to goods and services as key criteria for locating multifamily housing; meanwhile, proximity to highway interchanges, sewer system availability, and the protection of natural habitat are more critical considerations for industrial or large-scale commercial development.

This "tailored" scoring system was implemented by 1) weighting certain indicators more heavily in the calculation of criteria scores, and 2) weighting certain criteria more heavily in calculation of the composite scores of the PDA's suitability for any projected development type(s). Table 7 shows the percent of the composite score attributable to each criterion, for each development type. (If all six criteria were weighted equally, each would account for 16.6% of the composite score.)

Table 7: Criteria Weights Used for Regional Screen of PDAs by Development Type

	PDA Development Types						
Criteria	Multifamily Residential	Mixed Use: Infill	Mixed Use: Master Planned	Commercial: Retail, Entertainment & Hospitality	Commercial: Office & Medical	Commercial: Industrial	Single-Family Residential
Travel Choices	30%	22%	17%	19%	14%	9%	19%
Walkable Communities	30%	28%	8%	17%	17%	9%	23%
Open Spaces	7%	16%	22%	19%	19%	23%	19%
Healthy Watersheds	19%	6%	14%	12%	22%	23%	23%
Current Assets	7%	16%	17%	19%	14%	14%	8%
Growth Potential	7%	13%	22%	14%	14%	23%	8%

Each site eligible for a given development type was scored against all those PDAs also eligible for that same development type. Development areas that are eligible for multiple types of development were assigned multiple scores—one for each development type. These composite scores were rank ordered to assist in identifying regionally significant PDAs – the sites most suitable for the projected development types, which would contribute to the mix of development in the region with respect to natural resources and existing infrastructure. It should be noted that the composite scores cannot be compared across development types because the spread of scores may vary considerably; the ranking of each PDA and its position in the top quartile, for example, is much more relevant than the absolute score.

A table depicting the weights for each of the indicators used to calculate the criteria scores is included in Appendix G.

Criteria and Indicators – Priority Preservation Areas (PPAs)

To evaluate PPAs, MAPC used a screening methodology developed by the Executive Office of Energy and Environmental Affairs. Similar to the screening used for PDAs, this method combines 18 different indicators about each site into a composite score. However, there are no intermediate criteria scores; the indicators are all normalized and then combined into a composite score according to a weighting system developed by EOEEA. The following table lists the indicators used for the PPA analysis and the relative weighting. (If all 18 criteria were weighted equally, each would account for 5.5% of the composite score.)

Table 8: Indicator Weights Used for Regional Screen of PPAs

Criteria	Weight
NHESP BioMap2 Core Habitat	10%
NHESP BioMap2 Critical Natural Landscape	10%
NHESP Priority Habitats of Rare Species	10%
CVPs buffered 150 feet	4%
Aquifers - High and Medium Yield	4%

EPA Designated Sole Source Aquifers	1%
Prime Agricultural Soils	7%
Prime Forest Land	4%
DEP Approved Zone 2s within 2640 ft of any PWS well	7%
DEP Approved Zone 2s further than 2640 ft from any PWS well	4%
Interim Wellhead Protection Areas: 2640 ft buffer of only PWS	6%
Zone Bs	6%
DEP Wetlands 150-ft Buffer erased with BioMap2 CNL wetlands	4%
Rivers Protection Act Buffers	4%
Areas of Critical Environmental Concern	4%
Outstanding Resource Waters	6%
FEMA Q3 Flood (100-Year Floodplains)	2%
1000 ft buffer of protected Open Space (buffer only)	3%

Regional Screen Results

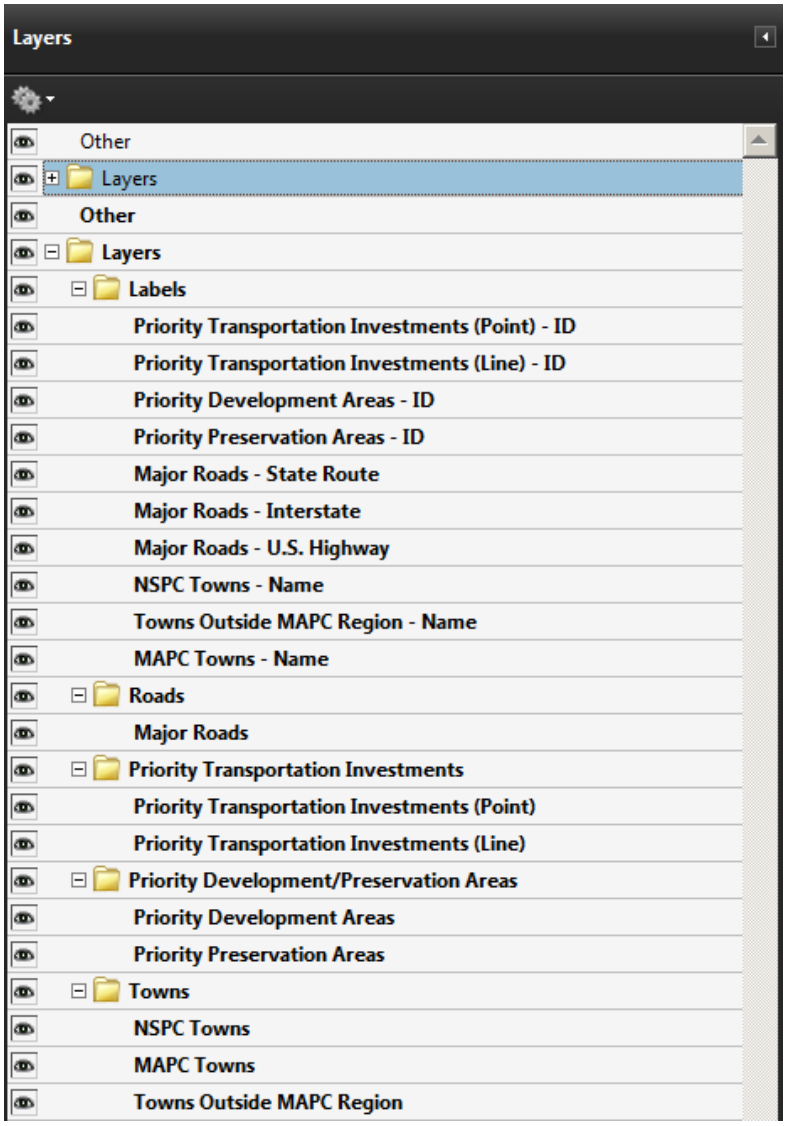
- View the data indicators used to screen both PDA and PPA suitability in Appendix G and H.
- View the raw results of the GIS model screen of locally-identified PDA and PPA suitability as regional priorities in Appendix I.

Regional Priorities in the NSPC Subregion

There are 71 regional priorities in the NSPC subregion: 25 regional PDAs, 19 regional PPAs, and 27 regional STIs. Other infrastructure investments that would support the priorities of the subregion are outlined in narrative. This map depicts the regional priorities; the numbers and letters on each area refer to the municipal priority ID, which was assigned to each area during the local priorities identification process. Narrative on each priority area is provided on the following pages.

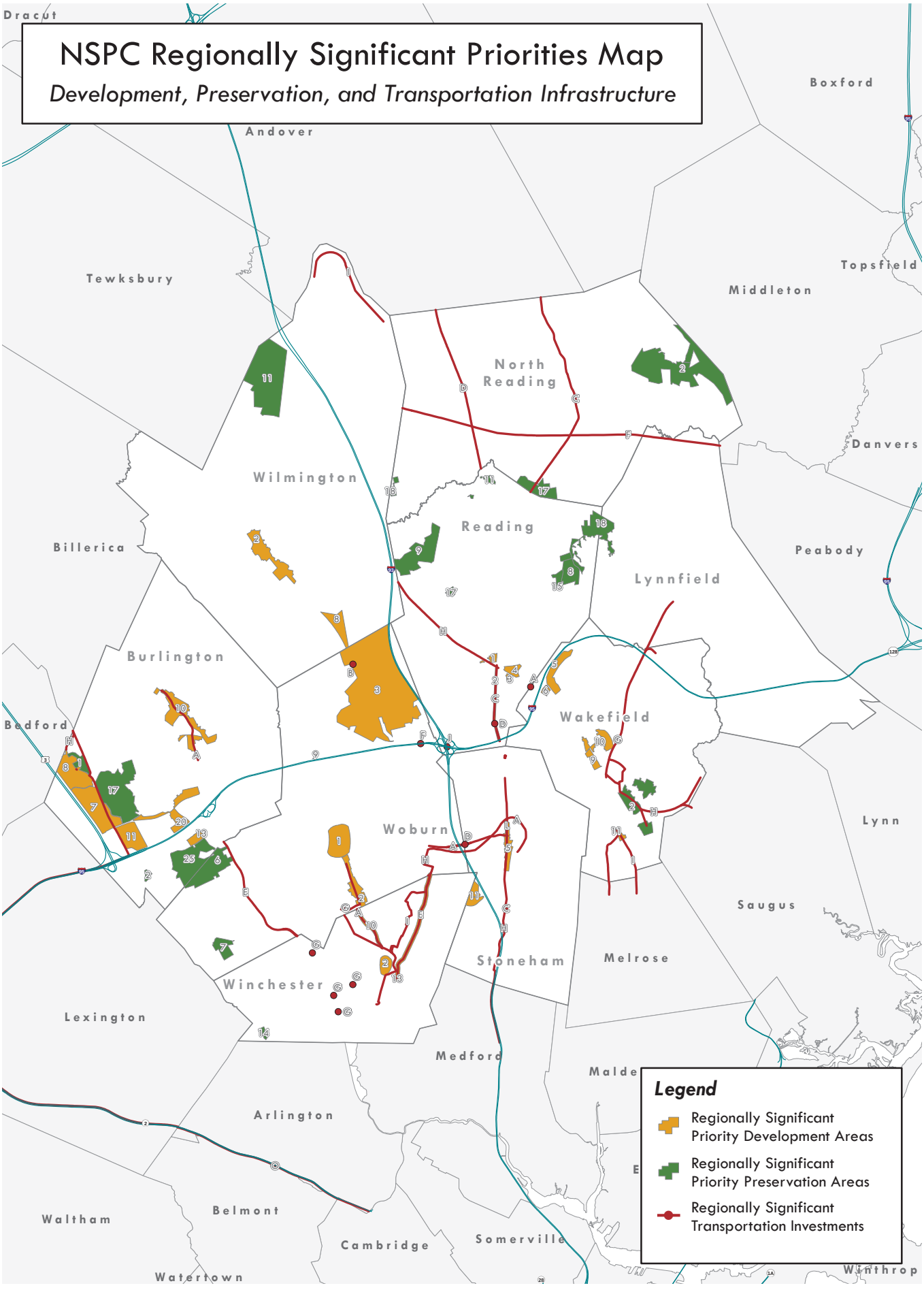
Figure 21: NSPC Regional Priorities Map

The NSPC Regional Priorities Map provided on the next page includes stored layers of information on each priority area listed. To access this information, in Adobe choose View > Show/Hide > Navigation Panes > Layers. The following layers of information are available:



NSPC Regionally Significant Priorities Map

Development, Preservation, and Transportation Infrastructure



Data Sources:
MAPC, MassDOT, MassGIS,
NSPC Municipalities

December, 2013

0 0.5 1 2 Miles

N

North Suburban Planning Council

MAPC 50 YEARS
METROPOLITAN AREA PLANNING COUNCIL
SMART GROWTH AND REGIONAL COLLABORATION

Regional Priority Development Areas (Regional PDAs)

There are 25 regional PDAs identified in the NSPC subregion totaling 2,160 acres. Regional PDAs are identified as suitable for accommodating one primary development type. Development types identified at each PDA are consistent with MetroFuture smart growth goals and build upon current assets in the region. To develop the regional PDAs list, each locally-identified priority development area was evaluated based on suitability according to the six criteria named previously. A review of PDA suitability scores within each development type was also augmented by a qualitative review considering regional needs consistent with MetroFuture. This process relied partly on a fact-based scoring system, but acknowledges that not all important site characteristics were measurable with the indicators used in the GIS model screen. Site descriptions reflect MAPC comment on suitable development types at each PDA and include content provided by municipal staff during local priorities meetings.

Note: The development of this regional PAA list considers significant priority development areas identified during the public process associated with this project. The information provided in this report is intended to augment continued local and regional planning and evaluation of regional needs, which may involve the future identification of other regionally significant development priorities that are consistent with MetroFuture smart growth goals.

Table 9: Housing and Employment Projections for Regional PDAs

Development Type	Total Selected Sites	Total Additional Housing Units	Total Additional Employment
Mixed Use - Infill	8	3,314	3,508
Mixed Use - Master Planned	6	12,179	23,527
Multifamily Residential	4	2,929	-
Office + Medical	3	-	2,237
Retail + Entertainment + Hospitality	1	-	741
Industrial	3	-	1,163
Total	**25**	**18,422**	**31,176**

Narrative descriptions for regional PDAs suitable for master planned and infill development also reference suitable uses that reflect municipal priorities and/or which scored highly as suitable uses in the regional screen. Note: In some cases, development types identified as envisioned for the area, which may not yet be the current reality.

Table 10: Regional PDAs by Development Type

Muni_PDA_ID	Site Name and Description	Acres	Development Type(s)
BURLINGTON_10	**Burlington Town Center.** The Town Center is home to a mix of low-density uses including town offices. It is also home to a large Common, which will remain undeveloped. This site was identified as suitable for multi-family and mixed use, infill development. This area is highly suitable for mixed use infill development to include housing.	132.3	• Mixed Use: Infill
BURLINGTON_11	**Burlington Mall Road.** This area is a redevelopment priority for the town. It is home to major sites including New England Executive Park, Lahey Clinic, and Burlington Woods. The site is highly suitable for commercial development to include retail, entertainment, and hospitality uses.	82.9	• Commercial: Retail, Entertainment, and Hospitality
BURLINGTON_13	**Blanchard Road.** This area is home to 1950s to 1060s era office. Some of it has been redeveloped, and it remains a redevelopment priority for the town. This area is highly suitable for industrial development.	20.0	• Commercial: Industrial
BURLINGTON_20	**Burlington Mall North.** This area is a center of retail for the region. In addition to current retail and entertainment uses, this area is highly suitable for commercial medical/office development.	105.8	• Commercial: Medical / Office
BURLINGTON_7	**Northwest Park.** This area is targeted as a mixed use village with housing and retail uses. It is within a 43D. 1.3 million net square feet is available for development. The site is highly suitable for mixed use, master planned development to include multifamily housing and medical/office uses.	132.9	• Mixed Use: Master Planned
BURLINGTON_8	**Network Drive at Northwest Park.** This site has been approved for 180,000 square feet of construction as an office and manufacturing facility and it can accommodate additional development up to 1.3 million net sf. A portion of this area is within a 43D. While this area is highly suitable for industrial development, the town desires Planned Unit Development activity in this area, which could be highly suitable on a portion of the site and performed in conjunction with adjacent PDA #7 Northwest Park, Nordblom property.	111.0	• Commercial: Industrial
READING_1	**Reading downtown 40R District - potential expansion.** The town would like to expand the 40R zoning to the remainder of the downtown. This area is highly suitable for mixed-use infill that would include housing and commercial medical/office uses.	9.6	• Mixed Use: Infill
READING_2	**South Main Street.** The town wishes to change zoning to enable mixed use in this	26.5	• Multifamily

Muni_PDA_ID	Site Name and Description	Acres	Development Type(s)
	26-acre area and to include streetscape and road reconfigurations to enhance the street for pedestrians and bicyclists. This area is suitable for multifamily housing development.		Housing
READING_3	**New Crossing Road Redevelopment District.** This 4-acre area, behind Reading Municipal Light District, is characterized as misused and underutilized and includes vacant lots, derelict buildings, and sites with industrial uses. The area is currently zoned for industrial use, and the town is interested in pursuing a change in zoning. A historic structure (an old power plant) could potentially be a site for a future community facility. Consistent with the town's interest in changing uses in this area, the area is highly suitable for mixed use, master planned development including medical/office, retail, entertainment, and hospitality uses, and multifamily housing.	4.0	• Mixed Use Master Planned
READING_4	**1 General Way.** This 20-acre area is identified as being suitable for more commercial development. This site could be suitable for medical/office development.	20.4	• Commercial: Medical / Office
STONEHAM_11	**Fallon Road in the Commercial District.** If improvements to this area through the installment of a wastewater pumping station are made, the town would like to promoted mixed use development in this area that includes housing. Housing development to meet the needs of diverse segments of the population is a priority for the town of Stoneham, and the town has identified this area as suitable for multifamily housing which could be integrated into a mixed use, master planned development.	33.4	• Mixed Use Master Planned
STONEHAM_5	**Stoneham Town Center.** The town would like mixed use (housing, retail) development to occur in the vacant lots in the downtown and particularly along the segment of Route 28 between Marble Street and Maple Street. This area is highly suitable for infill development.	39.9	• Mixed Use: Infill
WAKEFIELD_10	**Wakefield Town Center.** The town has recently modified zoning to enable mixed use in the town center. The town envisions transit-oriented mixed use development that includes office, retail, and housing. This area is highly suitable for both mixed use infill development that may include housing and commercial medical/office uses.	43.2	• Mixed Use: Infill
WAKEFIELD_11	**Greenwood Station Area.** The town envisions transit-oriented mixed use development that includes office, retail, and housing. This site is highly suitable for mixed use infill development that includes commercial medical/office uses.	7.3	• Mixed Use: Infill
WAKEFIELD_5	**Lakeside Office Park.** This Office Park is a priority redevelopment area for mixed use	53.4	• Commercial:

Muni_PDA_ID	Site Name and Description	Acres	Development Type(s)
	and is identified as an area worthy of further study in the town of Wakefield's forthcoming Economic Development Plan Update. This site is highly suitable for commercial medical/office development.		Medical / Office
WAKEFIELD_6	**Two sites on North Avenue**. This area, which includes two parcels totaling approximately 8 acres, is currently occupied by two auto dealerships. Should the opportunity arise to change uses in these areas, the town would like to encourage a mix of uses. This area is highly suitable for master planned development that may include small scale medical/office development.	8.3	• Mixed Use: Master Planned
WAKEFIELD_9	**Foundry Street.** This area has a variety of industrial uses that are important to the tax base in Wakefield. Rezoning to mixed use would allow the town to diversify uses and include housing and construct development that build upon the natural assets in this part of town. This area is highly suitable for mixed use master-planned development which may include commercial medical/office uses.	18.9	• Mixed Use: Master Planned
WILMINGTON_2	**Main Street in Wilmington at the Junction of Route 62 and Route 38.** This area is in the Wilmington Central Business District and is sewered and near the Commuter Rail station. At present, a 40B apartment complex is under development in this area. Flagged by the town as having redevelopment potential, this site is highly suitable for multifamily housing development.	103.6	• Multifamily Housing
WILMINGTON_8	**Eames Street.** This area is occupied by existing industrial uses. The town would like to encourage green redevelopment of this industrial area.	53.7	• Commercial: Industrial
WINCHESTER_10	**North Main Street.** The town has identified residential development, i.e., apartments, for this 24.7 - acre area of town. This area is highly suitable for mixed use infill development including multifamily housing and retail, entertainment, and hospitality uses.	24.7	• Mixed Use: Infill
WINCHESTER_13	**Washington Street from Montvale to Town Hall Corridor.** The town has identified this area as having the potential to accommodate more residential development, which would also generate new tax revenues. This area is highly suitable for multifamily housing development.	70.8	• Multifamily Housing
WINCHESTER_2	**Winchester Town Center.** The town has identified this area as a priority for redevelopment and noted that the town center used to have more upper story floors that provided housing. This area is highly suitable for mixed use, infill development to include multifamily housing, retail, entertainment, and hospitality, and commercial medical/office uses. The town is also exploring zoning changes in the	29.3	• Mixed Use: Infill

Muni_PDA_ID	Site Name and Description	Acres	Development Type(s)
	downtown including the adoption of form-based codes.		
WOBURN_1	**Woburn Downtown Development Area.** The city of Woburn has identified this area as a priority for transit-oriented development to include housing and commercial uses. This area is highly suitable for mixed use infill development to include multifamily housing, commercial medical/office, and retail, entertainment, and hospitality uses.	98.7	• Mixed Use: Infill
WOBURN_2	**Woburn Loop Bikeway/Overlay District.** The city of Woburn would like to promote appropriate development in this land area that is adjacent to and in the general area of the proposed Woburn Loop Bikeway/Greenway project. This area is highly suitable for multifamily housing development.	58.4	• Multifamily Housing
WOBURN_3	**Commerce Overlay District.** The city of Woburn has identified this 871-acre area as a priority for mixed use development including housing. The District is in close proximity to Anderson Commuter Rail Station. This area could be suitable for master planned development to include multifamily housing.	870.9	• Mixed Use Master Planned

Regional Priority Preservation Areas (Regional PPAs)

A livable region includes preserving the natural, scenic, agricultural, and recreational assets of the region to ensure that natural resources and future generations of diverse species can continue to thrive. There are 19 regional PPAs identified in the NSPC subregion that total 1,858.9 acres. Identification of regionally significant PPAs was based on a review of local PPAs scoring as highly suitable for preservation – sites with a percentile rank upwards of 75 percent, along with a consideration of sites not scoring in the upper percentiles but identified as being significant contributors to regional greenway connectivity that have limited or no protection status -- for which no solid data indicator was available for use in the GIS-based screen. This list also includes some areas originally identified as suitable for a combination of development and preservation; areas identified as suitable primarily as regional preservation areas are included in this list. Areas identified as advancing regional greenway connectivity are noted with an asterisk (*).

Areas that are major preservation priorities but which currently have Article 97 protection status are omitted from this regional preservation priorities list. This includes the Burlington Landlocked Forest and parcels adjacent to Crystal Lake in Wakefield. The omission of areas with Article 97 status from this list is not intended to suggest that these important areas are not regionally significant preservation areas. This list of regional priorities reflects those areas with limited or no Article 97 status that require proactive efforts to acquire and preserve.

Note: The development of this regional PPA list considers significant unprotected open spaces identified during the public process associated with this project. The information provided in this report is intended to augment continued local and regional planning and evaluation of regional needs, which may involve the future identification of other regionally significant preservation priorities that are consistent with MetroFuture smart growth and preservation goals.

Table 11: Regional Priority Preservation Areas

Municipality_ PPA_ID	Site Name	Acres	Description
BURLINGTON _1	Nordblom Greenleaf Way	30.2	This area is designated by the town as a priority for both development and preservation. While housing and commercial has been approved, a conservation restriction surrounds the rear of the site. This area is a high preservation priority according to EOEEA criteria.
BURLINGTON _2	Vine Brook Riverwalk*	7.3	This area is a preservation priority and could provide connectivity contributing to a Middlesex Greenway network, which could link Winchester, Burlington, Woburn, and Lexington. If a corridor that is not wetlands can be identified, a trail going through this area could connect Vine Brook to other assets in close proximity including Mary Cummings Park and Burlington Canyon. This area is a high preservation priority according to EOEEA criteria.
BURLINGTON _17	Wellfields	242.9	The Town of Burlington provides its own water supply. As a result, the Town plays close attention to development in the Aquifer and Water Resource

Municipality_ PPA_ID	Site Name	Acres	Description
			Districts and a major priority is protection of the wellfields. This area is a high preservation priority according to EOEEA criteria.
BURLINGTON _25	Mary P.C. Cummings Park	149.7	Mary P.C. Cummings Park and surrounding land are protected under the will of Mary Cummings for open space and recreational uses. Although documentation from legal counsel to the City of Boston, the trustee, indicates that the Park is believed to have Article 97 protection, Article 97 protection status has not been filed with the EOEEA.
NORTH READING_2	Swan Pond Area	359.7	This area includes multiple parcels owned by the Conservation Commission and municipal land without any restrictions on how it can be used. This land would provide open space connections between Swan Pond and Middleton Reservoir land.
NORTH READING_18	Extension of the Furbish Pond Preservation Area	11.2	The upper portion of 99 Concord Street, which is currently undeveloped and privately owned, is a priority for protection and would extend the preservation area located in adjacent Furbish Pond Lane, which is preserved. This area is a high preservation priority according to EOEEA criteria.
NORTH READING_17	Atlantic Cedar Swamp Area	69.3	This is three privately owned, undeveloped parcels containing rare Atlantic cedar swamp. This area is a high preservation priority according to EOEEA criteria.
READING_8	Reading Rifle and Revolver Club	54.4	This area is a high preservation priority according to EOEEA criteria.
READING_9	Golf Club	147.9	This is a privately owned Chapter 61 property. The Town is interested in acquiring it and continuing to run the Golf Club should the club ever close. Acquisition of this area is also a key component to an open space buffer circling the town. This area is a high preservation priority according to EOEEA criteria.
READING_11	Ipswich River Greenway	11.2	The Ipswich River Greenway has only been partially built. These parcels would be helpful to acquire to facilitate completion of the greenway, which would run adjacent to the River in the town of Reading. This area is a high preservation priority according to EOEEA criteria.
READING_15	Zanni Property	24.5	This area is a high preservation priority according to EOEEA criteria. This area includes and is surrounded by wetlands.
READING_17	Camp Rice Moody, Girl Scout camp	8.0	This area is a high preservation priority according to EOEEA criteria.
READING_18	National Guard - Camp Curtis Guild	115.8	This land area is a preservation priority as it includes wetlands. There is also a developable area on this property, which is separately noted as a local PDA -

Municipality_ PPA_ID	Site Name	Acres	Description
			site #7.
WAKEFIELD_ 2	Preservation and trail connection linking Mapleway Park area, Wakefield Town Forest, JJ Round Park, and Breakheart Reservation*	106.5	Preservation of this are which consists of several parcels would enable creation of a greenway link connecting Mapleway Park recreation area, the Wakefield Town Forest, the JJ Round Park and Breakheart Reservation. This area includes large undeveloped and rocky parcels. While this area does not score highly as a major preservation priority according to EOEEA criteria, this area would be an important part of a proposed regional greenway in the MAPC region.
WILMINGTON _11	Multiple parcels	335.9	While many parcels in this area are town-owned, many are not. These parcels are priorities for acquisition for preservation as this land is on wetlands. This area is a high preservation priority according to EOEEA criteria.
WINCHESTER _17	Horn Pond and Aberjona River corridors*	140.5	The towns of Winchester and Woburn, as well as the Mystic River Watershed Association, are working to get fish and wildlife back into the river. It's a priority to preserve the river, work to clean it up and to encourage fish and other wildlife back into the corridor. The river is designated as "impaired" by the State's office of EEOEA. This would contribute to the development of the Tri-Community Bikeway and enable an additional trail along the river corridor as an alternative to the planned trail on roadway.
WOBURN_6	Whispering Hill	119.3	The City purchased this land from Northeastern University for recreation/conservation purposes. This area is a high preservation priority according to EOEEA criteria and has Article 97 protection.
WOBURN_7	Shannon Farm*	42.1	This is privately owned farmland. The City has identified the property as a preservation priority, possibly as a new cemetery. While this area did not score highly according to EOEEA criteria, it is a high priority for preservation as part of the proposed Middlesex Greenway spur trail to Whipple Hill.
WOBURN_9	Middlesex Canal Park*	1.8	Plans for the trail have been developed by the city. While this area did not score highly according to EOEEA criteria, it is a high priority for preservation as an important linear corridor as part of developing the Middlesex Canal trail.

Transportation Investments Supportive of regional PDAs and PPAs

Transportation investments in our roadways, transit system, and bicycle and pedestrian networks are critical links that create the connections between housing, jobs, daily needs and services, schools, and recreational areas. Following the identification of regionally significant PDAs and PPAs, MAPC reviewed the list of locally-identified transportation infrastructure investment priorities to identify a list of 27 transportation investments that could be considered supportive of future development within PDAs and preservation efforts within PPAs.

Locally-identified transportation projects were reviewed in the context of a general set of criteria, which included a review of how identified projects advance MetroFuture transportation-related goals and a review of previous transportation-related studies involving NSPC communities such as the 128 Central Corridor Study and the Main Street Corridor Study. The criteria for this process were minimized as to not duplicate existing prioritization efforts done by the Boston Metropolitan Planning Organization (MPO) or the Executive Office of Housing and Economic Development. Both of these organizations have detailed scoring criteria for prioritizing and funding regional transportation projects, and are two likely funding sources for transportation investments listed in this document. MAPC's criteria should be viewed as an initial screening to identify the characteristics of transportation projects supportive of PDAs and PPAs. The criteria used to identify these transportation projects include:

- Supporting regional PDAs
- Improving connectivity to regional PPAs
- Increasing regional multi-modal transportation choices
- Supporting reductions in greenhouse gas emissions as emphasized by the Global Warming Solutions Act and the GreenDOT initiative
- Supporting the Commonwealth's mode shift goal of tripling walking, biking, and transit trips
- Consistency with state-wide and regional transportation planning documents

Approaching transportation investments with a regional perspective allows municipalities to identify the types of projects that are cross-jurisdictional and could be advanced through regional collaboration. A multi-municipal approach to advocating for these projects could both strengthen funding requests and result in project efficiencies. For example, if a regional roadway connecting several downtowns needs to be improved, there could be the possibility of aggregating multiple project requests into one comprehensive funding request for design and construction.

The 27 transportation projects are organized into two sub-sections to differentiate between projects that have moved out of the concept phase and into design, as opposed to projects that are still in the concept phase and do not have enough information associated with them for MAPC to make a complete assessment. The first sub-section includes projects that are at 25 percent design and/or can be found in the Boston MPO's Long-Range Transportation Plan or Transportation Improvement Program. The second sub-section includes projects that are still in concept phase and appear to be projects that are supportive of PDAs and PPAs in the subregion based on the limited information we have at this time. As additional information becomes available, a further evaluation of the merits of these projects would be warranted. Within each sub-section there are five categories of projects. Each category contains projects that embody the characteristics of transportation projects that could be supportive of PDAs and PPAs and match the criteria MAPC used to evaluate them. These projects advance the goals of MetroFuture and meet many, if not all, of the criteria listed above.

As with all identified priorities in this report, the intent is to enable municipalities to engage in cross-municipal dialogue about shared interests and needs and to work together to seek funding from different sources. For local maintenance, sidewalk improvements, or Complete Streets enhancements, Chapter 90 funding may be more appropriate. For larger higher dollar projects, state and federal resources may need to play a role in financing the project. Since many of these transportation investments are linked to PDAs, the private sector may be able to contribute financial assistance and create the option for public-private partnerships.

This section provides narrative on each major category of projects. The full list of 27 projects can be found in the table following the narrative on each category.

Category 1: MBTA Commuter Rail

The NSPC subregion is served by two existing MBTA commuter rail lines: the Lowell Line and the Haverhill Line. These transit lines provide direct connections to North Station in Downtown Boston as well as service to the two large Gateway Cities to the north of the subregion. Rail transit is a critical component to promoting successful compact smart growth development and supporting the build-out of PDAs in the subregion. Access to commuter rail service also provides a more equitable and affordable travel option for those households that cannot afford to own a car, or choose to not own a car. Expanding and enhancing transit options in this subregion also has environmental benefits by helping to reduce congestion on our local and regional roadways, and thereby reduce greenhouse gas emissions.

Category 2: MBTA Bus Routes and Shuttle Bus Service

In addition to the Commuter Rail service in the NSPC subregion, many of the municipalities also benefit from having MBTA bus service. Buses in the subregion provide in-town service, connections to adjoining municipalities, connections to rail stations, and in some cases direct connections to Boston. Bus service can be a less expensive transit option and a more flexible service that can be easily adjusted to maximize ridership and accessibility. Improving existing bus service or adding bus choices in the subregion not only provides commuting options for local residents; it also connects employees from inside and outside the subregion to PDAs. In areas not served by MBTA bus service, shuttles may be funded by employers. Transportation management associations (TMAs) including the Route 128 Business Council provide shuttle bus service to multiple municipalities adjacent to the NSPC subregion. Service is sometimes funded solely by area employers and in some cases through public-private partnerships.

Category 3: Regional Bicycle and Pedestrian Connections

In the NSPC subregion there are a number of opportunities to create or enhance the regional bicycle and pedestrian network in ways that are consistent with Complete Streets principles and in ways that support the vision of regional greenway connectivity. Components that may be found on a complete street include sidewalks, bike lanes, special bus lanes, accessible transit stops, and intersection and cross-walk improvements. The identified infrastructure investments are a combination of off-street walking and biking trails along roadways and rail rights-of-way, as well as connections to on-street bicycle facilities and sidewalks. Bicycle and pedestrian connections not only provide access to PDAs and PPAs in the subregion, but they can also be used to connect transit users to commuter and rapid rail stations along the MBTA system. Finally, increasing access to and use of these regional facilities can help reduce vehicular trips on local and regional roadways, thereby easing congestion and improving air quality. This also has direct benefits for the health of residents in the subregion.

Category 4: Bridges

Bridges are important connectors that span waterways, natural corridors, rail corridors, and other roadways. This plan supports the on-going MassDOT state-wide bridge program which addresses

structurally deficient bridges across the Commonwealth. Bridges also provide connectivity between roadways and can be used to accommodate pedestrians, cyclists, transit users, and drivers.

Category 5: Regional Roadways and Intersections

In the NSPC subregion there are several regional roadway corridors which traverse multiple municipalities and connect many PDAs and PPAs along the way. These regional roadways serve downtowns, job centers, residential areas, and recreational amenities. Many of the regional roadways utilize the full width of their right-of-way, making it critically important to use a multi-modal approach to link population centers, job centers, and preservation areas. Travel choice provides options for residents and employees and can help reduce reliance on the automobile as the primary mode of transportation. This has benefits for congestion relief, air quality, affordability, and public health. As development and preservation plans progress for the identified PDAs and PPAs, multi-modal transportation connectivity must be considered an integral part to increasing mobility options in the subregion.

There are several roadway corridors in the NSPC subregion that connect multiple municipalities and are important travel routes for pedestrians, cyclists, personal vehicles, and transit. It is important to think of these as transportation arteries that facilitate the movement of people to and through the municipalities along the corridor. While municipalities may have individual transportation challenges along a corridor, it is important that these issues are looked at comprehensively across the corridor to avoid improvements that may negatively impact movement upstream or downstream of the improved location. One example of this may be when one municipality creates a Complete Street accommodating pedestrians, cyclists, and vehicles within the right-of-way while an adjacent municipality widens a roadway and does not account for other modes of transportation besides vehicles. A comprehensive transportation plan can create a cohesive transportation network that links all modes of transportation to PDA and PPA sites.

Examples of these transportation corridors include, but are not limited to:

- Route 3/3A Corridor
- Route 28 Corridor
- Route 62 Corridor
- Route 38 Corridor
- Montvale Avenue

I-93/I-95 Interchange Project

The I-93/I-95 interchange on the border of Woburn, Reading, and Stoneham is a very large and expensive project that needs to be considered separately from the list of 27 transportation projects supportive of PDAs and PPAs. The I-93/I-95 interchange is central to vehicular circulation within the region and while this interchange does handle a large volume of vehicular traffic during peak travel hours and has safety issues due to the outdated design of the ramp system, MAPC has concerns with the overall cost of the project and its impact on regional mode shift. Early estimates put construction costs at over $300 million, which will place a burden on our federal and state transportation resources creating the need to evaluate this project against all other state-wide infrastructure investments. For these reasons, MAPC is not including this project on the list of 26 until more information becomes available regarding state-wide priorities, available funding, and a more complete design.

Table 12: Transportation Sub-section 1: Projects in design or on Long-Range Plan or Transportation Improvement Program

Category 3: Regional Bicycle and Pedestrian Connections				Connects to PDA	Connects to PPA	MAPC Comment
Municipality	Muni_ Map_ID	Name	Project Description			
Stoneham	A	Tri-Community Bikeway in Woburn	This project is currently on the TIP and construction will begin in 2015. Woburn envisions it as a bikeway/greenway. FST company is doing the design.	Yes	No	This is a good example of a regional bike trail. It is moving forward in the TIP.
Winchester	15, I	Tri-Community Bikeway	The proposed project involves the federally-funded construction of a bikeway from the Wedgemere and Winchester Center MBTA stations in Winchester northerly to Horn Pond in Woburn and Recreation Park in Stoneham, a total distance of approximately 7 miles. The objective of this project is to provide non-motorized access to commuter rail property, schools, recreation and commercial areas along the length of the bikeway and, subsequently, reduce congestion and improve air quality by converting some motorized traffic to non-motorized. Plans are at the 75% level.	Yes	Yes	This is a good example of a regional bike trail. It is moving forward in the TIP.
Woburn	G	Woburn Loop Bikeway	Design at 25%. The design will connect with the Tri-Community Bikeway.	Yes	No	Trail segment that will connect PDA in Woburn to the Tri-Community Bikeway.
Woburn	H	Tri-Community Bikeway	There are efforts to connect the bikeway and the Loop. This project is on the state's Transportation Improvement Plan.	Yes	Yes	This is a good example of a regional bike trail. It is moving forward in the TIP.
Category 4: Bridges				Connects to PDA	Connects to PPA	MAPC Comment

Municipality	Muni_ Map_ID	Name	Project Description			
Woburn	B	New Boston Street Bridge	This project is included in the MPO's Long Range Transportation Plan. It is scheduled for 2016-2020.	Yes	No	New Boston Street Bridge would create a replacement of an existing bridge that had to be taken down. This would re-establish a connection to Anderson CR station and the industrial area in Woburn. This provides access to one of the largest PDAs in the NSPC area.
Category 5: Regional Roadways and Intersections				**Connects to PDA**	**Connects to PPA**	**MAPC Comment**
Municipality	**Muni_ Map_ID**	**Name**	**Project Description**			
Burlington	H	FFY 2013-2016 TIP: Middlesex Turnpike/Mitre Extension (Phase II)	The proposed full depth reconstruction includes Middlesex Turnpike and the Mitre Extension: from the Mitre Extension intersection with Route 62 and Network Drive to 800 feet north of the Plank Street/Middlesex Turnpike/Crosby Drive intersection.	Yes	No	Major roadway project, already in the TIP, connects to several PDAs.
Winchester	G	Signal & intersection improvements on Church St. & Rt. 3	Route 3 is a state numbered highway. The improvements of lights at three to four intersections are key in the better management of the traffic corridor issues.	Yes	Yes	Route 3 is a roadway which traverses multiple municipalities and connects to several PDAs and PPAs.
Woburn	A	Montvale Avenue widening	This project is included in the State's Long Range Transportation Plan. It is scheduled for 2016-2020.	Yes	No	Montvale Avenue is a regional connector that is mentioned by both Woburn and Stoneham. It's also being improved using TIP funds.

Table 13: Transportation Sub-section 2 – Projects still in conceptual phase

Category 1: Commuter Rail				Connects to PDA	Connects to PPA	MAPC Comment
Municipality	Muni_ Map_ID	Name	Project Description Provided by Municipal Staff			
Reading	H	MBTA rail extension	The MBTA is considering plans to extend double tracks through Reading that will continue on to Wilmington and has expressed interest in pursuing a multi modal path along ROW – Main Street Corridor Study (2011). This is one of the ways to improve connectivity in the region.	Yes	No	Multi-town transit connection. Double tracking can speed up service and help with frequency. Also connects to Reading 40R parcel in the Downtown area, good for housing.
Wakefield	A	Proposed new regional Commuter Rail stop and parking garage	Town staff believe a CR stop in this location would support current and future residential and mixed use development. This would be easily accessible from RT 128 and there is already a lot of parking in this area. If this were to be pursued, it could be designed to be walkable from the areas identified as priority development/redevelopment areas in #4 and #5.	Yes	No	Connects to multiple PDAs in both Wakefield and Reading.
Category 2: MBTA Bus Routes and Shuttle Bus Service				**Connects to PDA**	**Connects to PPA**	**MAPC Comment**
Municipality	**Muni_ Map_ID**	**Name**	**Project Description**			
Stoneham	H	Bus service from Stoneham to Haymarket Station	The town believes bus route 354 which runs from Woburn to Haymarket is a tremendous resource and has many riders. If similar bus service were provided to Stoneham, traveling down Route 28 into Haymarket, it would significantly improve service and ridership in town.	Yes	No	Regional service that could make stops in other municipalities on the way to Haymarket. This route would travel along Route 28 and could support several PDAs along the way.

Burlington	O	Service for Burlington through a Transportation Management Agency (TMA)	Expansion of Route 128 Business Council service up into the north to communities within and outside of the subregion including Burlington and Bedford.	Yes	No	Explore the potential expansion of Route 128 Business Council service up into the north to communities within and outside of the subregion including Burlington and Bedford. Secure resources to enable feasibility studies to guide the potential expansion of such service to other communities in the subregion. Support the funding of shuttle bus service by area employers or through public-private partnerships.
Category 3: Regional Bicycle and Pedestrian Connections				**Connects to PDA**	**Connects to PPA**	**MAPC Comment**
Municipality	**Muni_ Map_ID**	**Name**	**Project Description**			
North Reading	F	Bike/trail connectivity	The town would like to explore a bike/trail network in town that would connect with the Peabody Rail Trail that ends at Russell Street in Peabody. The North Reading Pedestrian Committee has examined the potential for a trail network that would connect to the Peabody Bike Trail.	Yes	Yes	This might make a good connection to PDAs and PPAs in North Reading and it also connects up to the Peadbody Trail.
Wakefield	G	Rails to Trails project		Yes	No	Regional trail project connects to multiple PDAs and connects up into Lynnfield.
Wakefield	H	Proposed trail	This proposed trail would provide connectivity between Crystal Lake and Breakheart Reservation and link with trails in Saugus.	Yes	Yes	Regional trail project that connects to multiple PDAs and PPAs, also connect into Saugus.

Wakefield	I	Proposed shared use path	This proposed shared use path would provide connectivity between the Greenwood Commuter Rail station to Oak Grove train station and also connect to an existing path in Melrose. Wakefield has found that many commuters travel to Oak Grove rather than Greenwood for their commutes. Increasing walkability to the CR station may increase ridership.	Yes	No	Regional trail that connects two transit stations and connects to a PDA in Wakefield.
Wilmington	I	Bike route		Yes	Yes	It does connect to a PDA and PPA, and it could facilitation connections to some of the housing subdivisions in the area as well.
Category 4: Bridges				**Connects to PDA**	**Connects to PPA**	**MAPC Comment**
Municipality	**Muni_ Map_ID**	**Name**	**Project Description**			
Wilmington	G	Butter's Row bridge replacement on Rt. 38	The proposed project consists of replacing Butter's Bridge off of main street over the MBTA tracks, with improvements to the approaching roadway.	Yes	No	Replacing the Butter's Row Bridge which crosses over the MBTA rail corridor from Main Street in Wilmington.
Category 5: Regional Roadways and Intersections				**Connects to PDA**	**Connects to PPA**	**MAPC Comment**
Municipality	**Muni_ Map_ID**	**Name**	**Project Description**			
North Reading	C	Haverhill Street	Haverhill Street is a major cut-through from Route 93 to Andover. In particular, the intersection of New Street, Chestnut Street, and Haverhill Street needs signal improvements. In addition to addressing traffic issues, there is a need for consistent sidewalks as well.	Yes	Yes	Connects to the Town Center in North Reading. They are looking to add pedestrian improvements along this street. Connects to a very small PPA, and the largest PDA in North Reading.

North Reading	D	Route 28	Route 28 is in need of pedestrian improvements, including crosswalks and sidewalk repair and installation, particularly on the southbound side. Improvements are also needed to the Ipswich River bridge.	Yes	No	Regional roadway connection to adjacent towns. Roadway provides connections to identified PDAs.
Reading	C	Main Street, Southbound	Repairs needed to the street south of downtown. It is not programmed on the TIP yet. A signalized pedestrian crossing is being planned between Washington Street and Summer Ave.	Yes	No	Main Street (Route 28) runs through several communities and is a regional roadway connector. It also connects to several PDAs.
Reading	D	Hopkins and Main Street intersection	Potential opportunity for traffic improvements. Signal design is funded.	Yes	No	Main Street (Route 28) runs through several communities and is a regional roadway connector. It also connects to several PDAs.
Stoneham	B	Montvale Avenue	The lower section of Montvale Avenue is in a FEMA flood zone and floods during rainstorms. The town is interested in infrastructure improvements that will allow it to capture the water and pump it up north to the Golf Course and store it as a water supply.	Yes	No	Montvale Avenue is a regional connector that is mentioned by both Woburn and Stoneham. It's also being improved using TIP funds.
Stoneham	C	Route 28 infrastructure improvements (signals, sidewalks, lighting)	Route 28 is a cut through road from people in neighboring towns hoping to get to routes 95 and 128. The town would like signal improvements, i.e., better coordination of lights to manage rush hour traffic. The intersections at North, South, Montvale, and Pleasant streets are particularly problematic. The town would also like to improve/construct sidewalks along the northern stretch	Yes	No	Main Street (Route 28) runs through several communities and is a regional roadway connector. It also connects to several PDAs.

			of route 28 which would enhance access to all the varied uses in the commercial district (retail, restaurant, etc.) The town is also interested in LED streetlights along Route 28 between Marble Street and Elm Street.			
Stoneham	D	Montvale Avenue at Maple Street	This is a bad intersection and is in need of better road alignment between Unicorn Drive and Maple Street.	Yes	No	Montvale Avenue is a regional connector that is mentioned by both Woburn and Stoneham. It's also being improved using TIP funds.
Winchester	18, E	Montvale to Town Hall Corridor (1.5 miles)	The 1.5 mile stretch from Montvale Road to Town Hall, which is located at the intersection of Washington/Mt. Vernon streets and Skillings Road– has traffic issues. Town needs to examine what some of the opportunities to manage the traffic and potentially divert more of it to arterials are. Also, the intersection needs to be made smaller and more pedestrian/bicyclist friendly. Study and approach to resolution need to be examined. Site is also a place where more residential units can be concentrated to generate new tax revenues.	Yes	Yes	This roadway connects up to Woburn at Montvale Ave, it also is a major connection to Downtown Winchester, several PDAs and PPAs.
Woburn	E	Rt. 3/3A Corridor	Infrastructure improvements needed to improve traffic.	Yes	Yes	Route 3 is a roadway which traverses multiple municipalities and connects to several PDAs and PPAs.

Additional Infrastructure Investment Needs in the Subregion

Regional Water and Sewer Infrastructure Priorities

The water and sewer infrastructure needs of municipalities on the MWRA water and/or sewer system differ from the needs of municipalities that provide their own water supply and/or manage wastewater locally. Regardless of these differences, regional priorities include protecting surface and groundwater resources and watershed functions, providing critical drinking water supply, and providing infrastructure needed to support priority development areas consistent with MetroFuture smart growth goals. These regional priorities make I/I reduction, stormwater management, and improved water and sewer system capacity all issues of mutual concern.

This section outlines the different issues faced by municipalities in the MWRA network versus municipalities providing local supplies, and highlights some regional infrastructure investment priorities and opportunities that will strengthen local capacity.. Please see Appendix K for a more detailed description of local actions taken by municipalities to address Administrative Consent Orders (ACOs) and proactive measures to address I/I and stormwater management issues.

Challenges faced by Municipalities with Full or Partial MWRA Water and Sewer Service

A broad assessment of subregional sewer and water infrastructure issues indicates that three of the eight participating municipalities receiving MWRA water and/or sewer service face ACOs issued by the MassDEP requiring local actions to rectify issues including:

- Sewer surcharges for overflows/unauthorized discharges of sewage into waters of the Commonwealth (Burlington and Woburn);
- I/I that overloads a neighboring municipality's sewer system (Burlington);
- Remediation of improper operation and maintenance of the local wastewater collection system, resulting in decreased capacity to convey sewerage during periods of rainfall and high groundwater conditions (Woburn);
- Treatment of contaminated drinking water sources such as elevated flows of discolored water, elevated levels of iron and manganese; and pipe replacements to mitigate elevated flows (Woburn); and
- Identification and elimination of illicit connections between the sanitary and storm sewer systems (Stoneham).

Priorities and Strategies for Municipalities with Full or Partial MWRA Water and Sewer Service

I/I contributes significantly to the total wastewater flow treated by MWRA at Deer Island Treatment Plant. The MWRA reports annually on progress under the Regional I/I Reduction Plan as part of its National Pollutant Discharge Elimination System (NPDES) reporting. The MWRA also has an interest in regional coordination of I/I policy issues, and interacts with MassDEP and the Environmental Protection Agency on these matters. A Regional I/I Reduction Plan was approved in May 2001, which serves as a good guide for municipalities addressing these connection responsibilities locally. Regional I/I reduction plan goals include:

- Eliminate all sewer system backups;
- Minimize, with a long-term goal of eliminating, health and environmental impacts of sewer system overflows related to I/I;

- Remove all (and prevent new) inflow sources from separate sanitary systems;
- Minimize system-wide infiltration;
- Educate and involve the public;
- Develop an operation and maintenance program; and,
- Improve funding mechanisms for identifying and removing I/I.

Mapping of chronic problem areas and areas at risk for backups and sanitary sewer overflows (SSOs), as well as availability of funding resources to address I/I are of primary concern to most NSPC municipalities in the MWRA network including Burlington, Reading, Stoneham, Wakefield, Wilmington, Winchester, and Woburn. The following specific strategies outlined in the MRWA Region I/I Reduction Plan are of critical interest to the subregion:

- MRWA will provide technical assistance to MassDEP to develop a uniform format for reporting and recordkeeping of sewer backups and SSOs for use by MWRA and its member communities. The database from this effort may be linked to MWRA's Geographic Information Systems (GIS) mapping to better define chronic problem areas. **(Goal 2, Strategy A)**
- Once a central information database is established (see Strategy A), MWRA will periodically delineate areas that may be "at risk" for backups and SSOs that may be impacted by the MWRA-owned collection system. MWRA will evaluate potential improvements to the MWRA-owned collection system that may reduce the risk of sewer backups and SSOs. This strategy should be completed in the mid to long-term**. (Goal 2, Strategy B)**
- Once a central information database is established (see Strategy A) and member communities have delineated areas which may be "at risk" for backups and SSOs, MWRA and DEP will provide technical assistance to member communities to evaluate potential improvements to local infrastructure that may reduce the risk of sewer backups and SSOs. MWRA will assist communities to determine if impacts from the regional collection system are an issue. The schedule for this strategy is dependent on prior actions by DEP and member communities. **(Goal 2, Strategy C)**
- MWRA, in coordination with the MWRA Advisory Board, will continue to fund the I/I Local Financial Assistance Program to provide grants and loans to member sewer communities to fund local I/I reduction projects. Through September 2002, MWRA has authorized a total budget of $140.75 million to fund this program. Financial assistance is provided through 45 percent grants and 55 percent interest-free loans for eligible projects. **(Goal 3, Strategy E)**
- MWRA, jointly with DEP (and possibly other regional organizations), will organize periodic demonstration projects and/or workshops to bring together regulators, community representatives, vendors, environmental groups, consultants, contractors, etc. Workshops may cover topics such as: new or revised regulations, I/I reduction technologies, updates/progress on Task Force Report recommendations, etc. **(Goal 4, Strategy C)**

The MRWA I/I Local Financial Assistance Program provides funding for municipalities to rehabilitate wastewater collection systems. Learn more about this and other funding programs in Appendix G.

<u>Challenges Faced by Municipalities with Limited or No MWRA Sewer or Water Service</u>

For those municipalities that receive no sewer service or partial service, Title 5 (310 CMR 15.000) directs local Boards of Health as the primary regulatory authorities of septic systems. MassDEP is involved in certain approvals including innovative/alternative technology approvals, shared systems, and variance requests. Subregion municipalities with limited or no sewer and/or water service from the MWRA are also located within the Ipwsich Watershed, one of the most stressed watersheds in the country due to decreased flows from numerous reasons, including increased water use resulting

from increased development. The Ipswich River was deemed one of the 10 most endangered rivers in America by the American Rivers organization.. The Watershed System provides drinking water to subregion municipalities including Lynnfield, North Reading, and Wilmington. Challenges faced by all subregion municipalities in this watershed include capturing and treating stormwater locally to maintain water levels and preserve water quality, and managing and remediating I/I and wastewater treatment problems. An outline of strategies to address these challenges is outlined below.

Additional Strategies for Municipalities

Promote sustainable land development and local stormwater capture, treatment, and retention through the use of Low Impact Development (LID) and Green Infrastructure (GI) techniques. LID and GI promotes sustainable land development, starting with a site planning process that first identifies critical natural resource areas for preservation and subsequently ensures that project design maintains natural drainage flow paths, minimizes land clearances, and reduces impervious surfaces. LID/GI also includes strategies for treating stormwater at the site level so that water is captured, treated, and retained within the watershed rather than engineering the discharge of the water away from the source. View available resources on LID in Appendix L.

Invest in new technology to improve local capacity for wastewater treatment. Title 5 has approved innovative systems as alternatives to the conventional septic system. Alternative technologies currently approved for general use include recirculating sand filters and humus/composting toilets. An extensive list of innovative/alternative technologies that have received nitrogen reduction credit and have provisional use approvals or piloting use approvals are listed on the MassDEP website.[6] Property owners or developers seeking to use a new wastewater treatment technology not currently approved for use in Massachusetts are encouraged to submit a proposal to MassDEP and the local Board of Health.

Explore the use of Smart Sewering. Smart sewering is an approach for enabling wastewater treatment in areas currently without sewer, but are consistent with smart growth goals. Smart sewering is an approach to wastewater treatment, developed by the Charles River Watershed Association, which promotes targeted development without the vast impacts from sprawl. This approach can promote economic development in town centers when combined with zoning that supports mixed uses and greater density. Smart sewering also yields significant environmental benefits including water quantity and quality protection, and the potential for permanent protection of critical lands. The approach includes a variety of financing mechanisms to make a sewering program feasible and affordable for a town, including the exploration of opportunities for revenue generation and energy production.

In 2012, CRWA undertook a pilot project with the Town of Littleton to explore the economic feasibility of providing sewer service within two newly created village zones. The Town of Littleton and CRWA's analysis explored opportunities for public/private partnerships to design, build, and operate a plant to process and treat wastewater, septage, and food waste. In this model, energy is generated and treated wastewater effluent is recharged back into the ground where it was originally pumped or reused as nonpotable water for toilet flushing, cooling, and irrigation and/or for drinking water supply. With funding from, and partnership with, MAPC, CRWA is currently working to promote the concept of smart sewering in other communities across the Region. The Towns of Sherborn and Wrentham, both developing suburban communities, were chosen for this project as they both exemplify development pressures within the Region. The anticipated outcome of the project is to

[6] http://www.mass.gov/eea/agencies/massdep/water/wastewater/summary-of-innovative-alternative-technologies-approved.html

demonstrate that Smart Sewering is technically and economically viable; particularly in community areas where there is no current sewer system, but there is a perceived need.

Engage joint procurement of services to streamline maintenance of local septic systems and preserve water resources. Several municipalities have identified local development priorities in areas that include town centers and Commuter Rail station areas where there is currently no sewer service. For these municipalities, which rely on septic systems and package sewage treatment plants, maintenance of local systems involves pumping septic tanks every three to five years, which is performed by septic haulers. A regional effort that could benefit these municipalities could be a joint procurement to identify a septic hauler that can provide services at a negotiated competitive price.

Consider developing a stormwater drainage fee and/or utility. Proper stormwater management that treats and returns stormwater to its natural watershed will greatly assist municipalities in ensuring efficient and reliable drinking water and wastewater services. The development of such as fee removes the burden of the municipality itself bearing the full burden of paying for critical stormwater management infrastructure. Additionally, new NPDES Municipal Storm Sanitary Sewer (MS4) permit requirements being issued by EPA include new mandates for stormwater management, including the use of LID/GI. The reality that stormwater is a burden all property owners bear—based on their level of impervious surfaces on the property – is an important factor in developing a fee system. MAPC has recently developed a Stormwater Financing/Utility Toolkit that provides critical, updated information to municipal officials regarding fee options, rate structures, administration, approval, and education regarding the concept[7]. Learn more about the Toolkit by visiting the project page: http://www.mapc.org/stormwater-utility-funding-starter-kit.

Consider proactively implementing water conservation policies and system optimization measures. In addition to the measures included in the MWRA I/I Reduction Guidance, communities should determine whether water conservation requirements are implemented and enforced, as well as whether there are opportunities for optimizing water supplies. The Sustainable Water Management Initiative completed by the state includes a Framework Report that will guide MassDEP's permitting of water withdrawals under the Water Management Act (WMA). It also calls for potential changes to the WMA regulations. The Framework sets the stage for the development and implementation of new water policies that will support ecological needs while meeting the needs of economic growth. MAPC conducted a pilot project in the Neponset River Watershed that applied framework principles, which resulted in an analysis of minimization and mitigation options for communities within impacted groundwater categories. Learn more about the recommendations emerging from the pilot project by visiting the project page: http://www.mapc.org/neponset-water-management.

[7] http://www.mapc.org/node/1522/view

Moving Forward

This project provided a unique opportunity to engage residents, community advocates, and local, regional, and state government in a dialogue about regional priorities for the NSPC subregion. The identification of regional priorities holds the potential for creating more vibrant communities by focusing development, preservation, and infrastructure in ways that maximize housing and economic opportunity, advance public health and quality of life, and protect natural resources. Advancement of these priorities involves collaborations involving municipal partners, MAPC, and the Commonwealth.

Next Steps for Municipalities

Municipal stakeholders including municipal staff and members of municipal boards, committees, and commissions and community advocates can use the information emerging from this report to augment existing and forthcoming local planning projects. The identified priorities can support existing master planning, community development, economic development, housing, and open space and recreation planning. The contextual information on the characteristics of the subregion including demographic projections on population, housing, and employment change can provide the background to inform continued local planning, inter-municipal knowledge-sharing and inter-municipal collaboration. Municipalities are encouraged to pursue funding and technical assistance through MAPC and the Commonwealth and to partner with municipal neighbors in the NSPC subregion

Next Steps for the Region

The Metropolitan Area Planning Council (MAPC) is committed to assisting municipalities in implementation activities related to advancing identified regional priorities in the subregion. MAPC can provide technical assistance to assist municipalities in advancing development and preserving activities. Assistance may include zoning changes that will help streamline permitting, transit-oriented development planning, economic development planning, and housing planning. The NSPC subregion will continue to be a space where municipal staff, members of municipal boards, committees, and commissions and community advocates can collaborate to refine strategies and develop projects for advancing identified regional priorities in the areas of development, preservation, and infrastructure investment. For example, the identified list of priority transportation projects that are supportive of regional development and preservation priorities will serve as a basis for subregion dialogues with Metropolitan Planning Organization (MPO) staff as part of the annual TIP and UPWP development process. NSPC will also prioritize programs that pertain to advancing regional priority development, preservation, and infrastructure investment goals.

Next Steps for the Commonwealth

The Commonwealth has articulated a priority for concentrating investments in key areas of the region that maximize housing and economic opportunity. The identified regional priorities are highlighted as those priorities that would be a best return on investment in the NSPC subregion. There may also be opportunities to bundle state investments in improvements that would advance several priority areas and infrastructure needs identified in the region; MAPC is a ready partner in working with the state and municipalities in identifying these opportunities. The Commonwealth can demonstrate commitment to the process undertaken to identify these regional priorities by supporting these priorities through state programs including the MassWorks Infrastructure Program and the Community Innovation Challenge Grant and continuing support for the District Local Technical Assistance (DLTA) program, which enables MAPC to support implementation at the local level.