FRAMINGHAM

Bicycle & Pedestrian Plan

2017

Prepared by the Division of Community & Economic Development

ACKNOWLEDGEMENTS

This first edition of the Town of Framingham's Bicycle and Pedestrian Plan has been made possible by a multitude of Town Departments, dedicated staff, and passionate residents—all of whom are bike and pedestrian enthusiasts.

Thank you to the following individuals and groups who helped to achieve the creation of this Plan and implementation moving forward (listed alphabetically):

Amanda Loomis

Boston Region Metropolitan Planning Organization

Eric Johnson

Erika Oliver Jerram

Eugene Kennedy

Framingham Bicycle & Pedestrian Advisory Committee

James Snyder

Marianne Iarossi

Peter Barozzi

Robert McArthur

Sam Scoppettone

Simon Alexandrovich

William Sedewitz

The Town of Framingham Community overall who have actively participated in this process via meetings, feedback, and input from their day to day experiences.

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*All images were taken by Town Staff unless otherwise noted.

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1 INTRODUCTION

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Section 1

INTRODUCTION

The Framingham Bicycle and Pedestrian Plan (Plan) documents the process and recommendations of the Town of Framingham's first effort to establish a comprehensive bicycle and pedestrian infrastructure plan. An interdepartmental staff Bicycle and Pedestrian Staff Working Group (Working Group) comprised of planners, engineers, and other professionals worked together with the community to create a vision, evaluation methodology, and ultimately create recommendations for improving multi-modal conditions and increasing connections for bicycle, pedestrian, and other non-vehicular transportation.

As Framingham embarks on an era of increased interest in bicycling and walking, the Working Group's efforts reflect both nationwide trends and locally identified needs. Increasing walkability and non-vehicular access creates numerous benefits for the community, including improved health, a cleaner environment, higher property values, and greater equity in transportation. It also enables growth without an excessive increase in congestion, allowing for the creation of critical mass to support greater use of transit. The improvements recommended in this Plan will benefit all areas of the community including residents, employers, employees, businesses, students, and visitors. These improvements will benefit young and old, disabled and able-bodied, the wealthy and poor. With long-term implementation, everyone in the Framingham community will have improved accessibility both within their neighborhood or district and across Town.

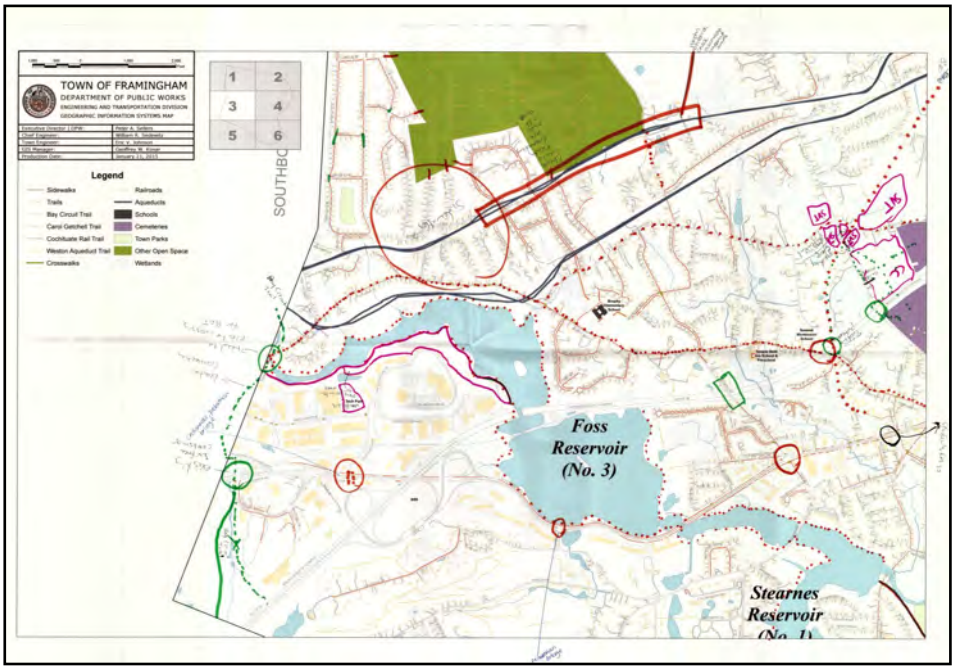
Bike path in New York. Source: Niznoz, flickr

The Town of Framingham has never before addressed bicycle and pedestrian facilities in a comprehensive way. This Plan aims to document existing facilities and connections that serve pedestrians and bicyclists; to identify desired paths, gaps, and safety concerns; create a methodology for evaluating assets; and then make recommendations for improvement or further study.

The 2014 Master Land Use Plan, Goals and Policies recommended investments in the existing roadway infrastructure to create "Complete Streets"

that prioritize walking, biking, and transit as well as the creation of a "fully connected network of pedestrian paths and sidewalks throughout the Town." The Town also prepared an Open Space and Recreation Plan (OSRP) in 2008, updated in 2013. Both the Master Land Use Plan and OSRP identified the importance and need for the development of a bicycle and pedestrian plan. The Town's Transportation Master Plan (currently under development) will additionally emphasize the importance of bicycle and pedestrian accommodation in the transportation network.

Framingham has an active Bicycle and Pedestrian Advisory Committee (FBPAC) that partners with staff and works tirelessly to improve bicycle and pedestrian facilities in Town. FBPAC is very engaged in these issues and strongly supports the preparation of this Plan in conjunction with the Working Group.



Marked up mapping from an outreach event. See *Section 6: Process* for more information

The Working Group included the following:

Community & Economic Development
Erika Oliver Jerram
Marianne Iarossi
Sam Scoppettone
Eugene Kennedy

Planning Board
Amanda Loomis

Public Works
William Sedewitz
Eric Johnson
Simon Alexandrovich
Peter Barozzi

Additional Staff Participants
James Snyder, Director, Parks & Recreation
Robert McArthur, Administrator, Conservation Commission

Special Thanks to the **Framingham Bicycle and Pedestrian Advisory Commission (FBPAC)** for ongoing feedback and enthusiastic encouragement.

2 VISION & PURPOSE

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Section 2

VISION AND PURPOSE

Vision

The vision for Framingham's Plan is to build a robust network of sidewalks, bicycle lanes, pathways, and trails that supports existing land uses and enables growth. The network will be accessible to all residents, employees, and visitors regardless of age, income, disability, or location. The Town will maintain a safe and comfortable bicycle and pedestrian network and continue to implement Complete Streets and other policies that support non-vehicular transportation and transit in Framingham.

Purpose

This Plan identifies non-vehicular transportation assets in Framingham, evaluates the gaps and needs to be filled in order to create a robust bicycle and pedestrian network throughout Town, and identifies specific projects that, when implemented, will increase accessibility for bicycle, pedestrian, and other non-vehicular users.

The Plan sets out a framework for Town staff and leadership to implement existing policies such as Complete Streets as well as recommend new ones. It also makes recommendations to create signage and education programs to begin to raise awareness of biking, walking, and other non-vehicular transportation options in Town.

This Plan intends to guide decision-making and planning efforts across Town Divisions. It has been created by an interdepartmental team of end-users, including Community & Economic Development (C&ED), Planning Board (PB), and the Department of Public Works (DPW). This Plan shall serve as a tool for departmental implementation for bicycle and pedestrian infrastructure in Framingham, such as in the following ways:

- C&ED can use for long-range planning, marketing, and integration into policy recommendations.
- The Planning Board will refer to this document when working with applicants on specific proposals and when making suggestions for project mitigation.
- DPW will use this to guide their capital planning and inform their implementation of the Town's Complete Streets policy (See Appendix A).

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3 DEVELOPMENT & DEMOGRAPHICS

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Section 3

DEVELOPMENT & DEMOGRAPHICS

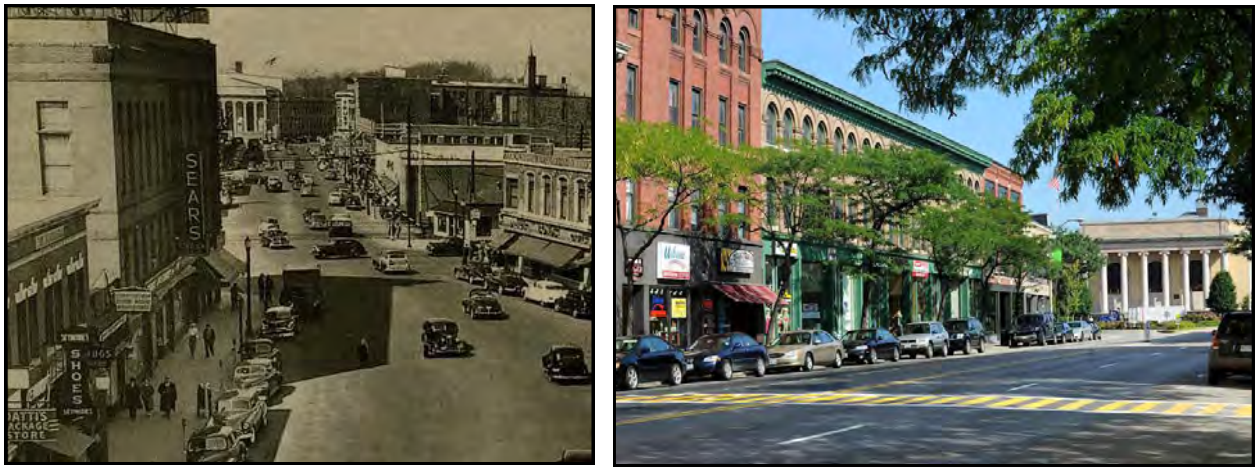
The Town of Framingham is a socially, ethnically, economically, and geographically diverse community that has experienced a vast number of changes to its land use and transportation system over the years.

Originally settled as a farming community, the Town was incorporated in 1700. The original Town Centre was located in the geographic center of Town along the Boston-Worcester Turnpike—now Route 9. In 1834, Framingham saw the first locomotive travel along the railroad tracks from Wellesley to Framingham and Unionville (now Hopkinton).[1] In 1871, the Framingham and Lowell Railroad was established, the two communities.[2] With the presence of new rail and the coming of the Industrial Revolution, factories were built on cheap swamp land on the south side of town. With the factories came a new commercial center, built around dense factory worker housing and the railroad, establishing walkable neighborhoods.

In the 1950s and 60s, new post-war auto-oriented neighborhoods began to replace the bucolic farms on the north side of Framingham, bringing new residents and explosive growth. Fast and dense development reinforced the use of the personal automobile, not allowing commuting and daily errands to be done by foot or bicycle.

In 1957, the Massachusetts Turnpike (Mass Pike) opened further increasing auto dependency. This new east-west corridor further reinforced the strong east-west orientation of the regional through-traffic and cut off local historic north south routes. This served to funnel all north-south traffic into several key arterials.

Economic development, including new retail growth in the Golden Triangle—the area at the Mass Pike Exit 13 between Route 9 and Route 30—and along Route 9, combined with the nationwide trend that saw the slow decline of manufacturing, led to disin-



Downtown Framingham. Left: 1950s (Source: Wordpress.com); Right: Today (Source: Allan Jung, MetroWest Daily News)

Millennials, or America's youth born between 1982 and 2000, now number 83.1 million and represent more than one quarter of the nation's population. Their size exceeds that of the 75.4 million baby boomers, according to new U.S. Census Bureau estimates released today. Overall, Millennials are more diverse than the generations that preceded them, with 44.2 percent being part of a minority race or ethnic group (that is, a group other than non-Hispanic, single-race white).

Profile of Millennials

- Aged 18 – 36, 77 million, or 24% of US population
- 62% prefer urban, mixed-use communities
- 66% are renters
- Declining auto ownership
- Boston: #3 market for wealthy millennials earning > $100K/yr
- Seeks simplicity, authenticity, walkability & transit choice

vestment in the denser, more walkable, historic Downtown area. This new growth was largely vehicle-oriented as planning and traffic engineering practice and zoning codes at the time established land use patterns that favored car travel in newer developments to the exclusion of walkable, bikeable areas.

As communities like Framingham confront the social and economic costs of prioritizing automobile traffic more than the human experience in their development, there is an opportunity to reconsider both the existing public realm and infrastructure as well as plan for future accommodation of all modes of transportation in new developments.

Demographics

The Framingham constituents that most require greater access to bicycle and pedestrian amenities are identified by ***age*** and ***income***.

Old and Young

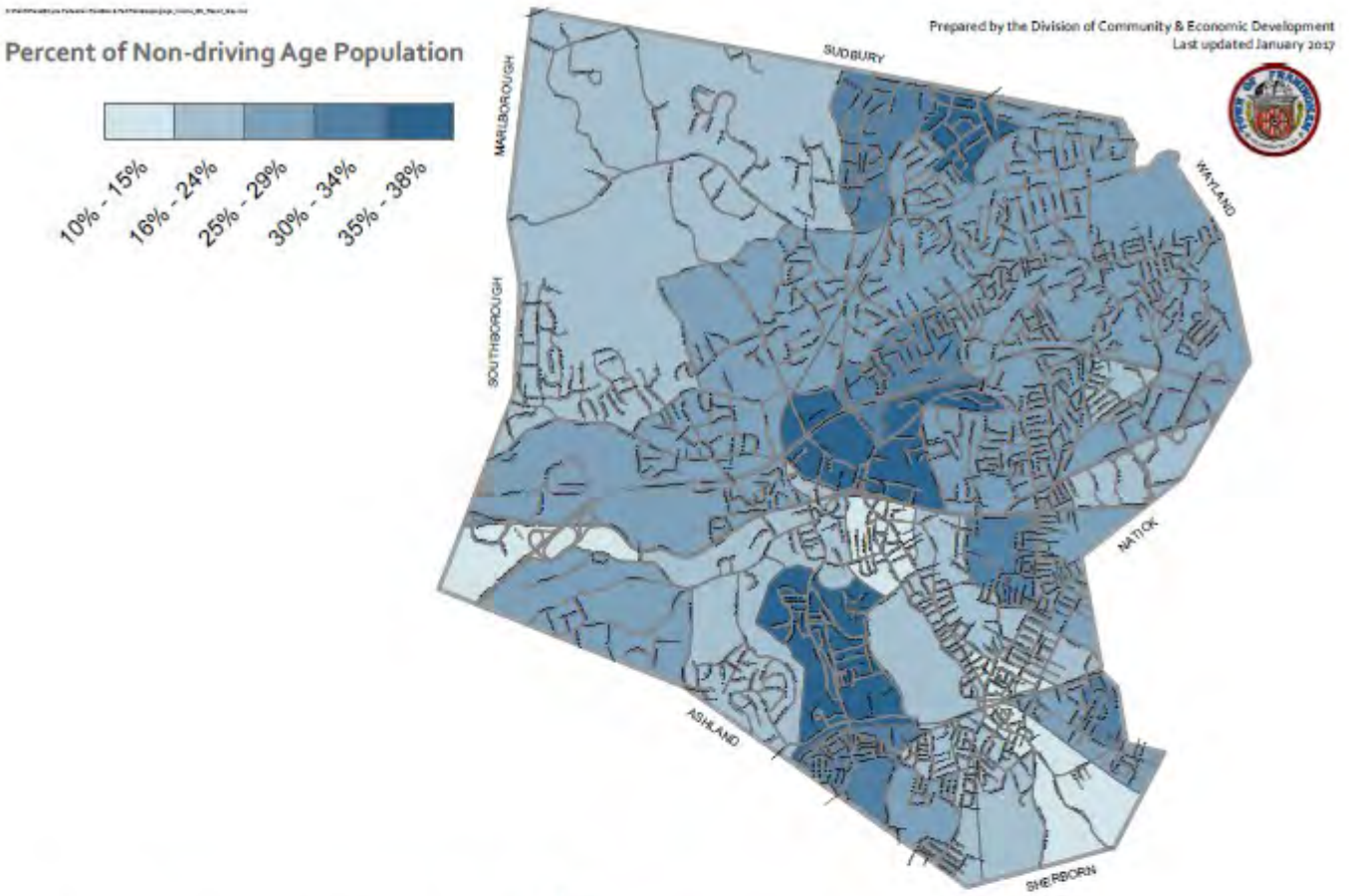
Framingham has a current population of 69,900[3] and there are two key populations that will benefit most from better bicycle and pedestrian connectivity in Town: the old and the young.

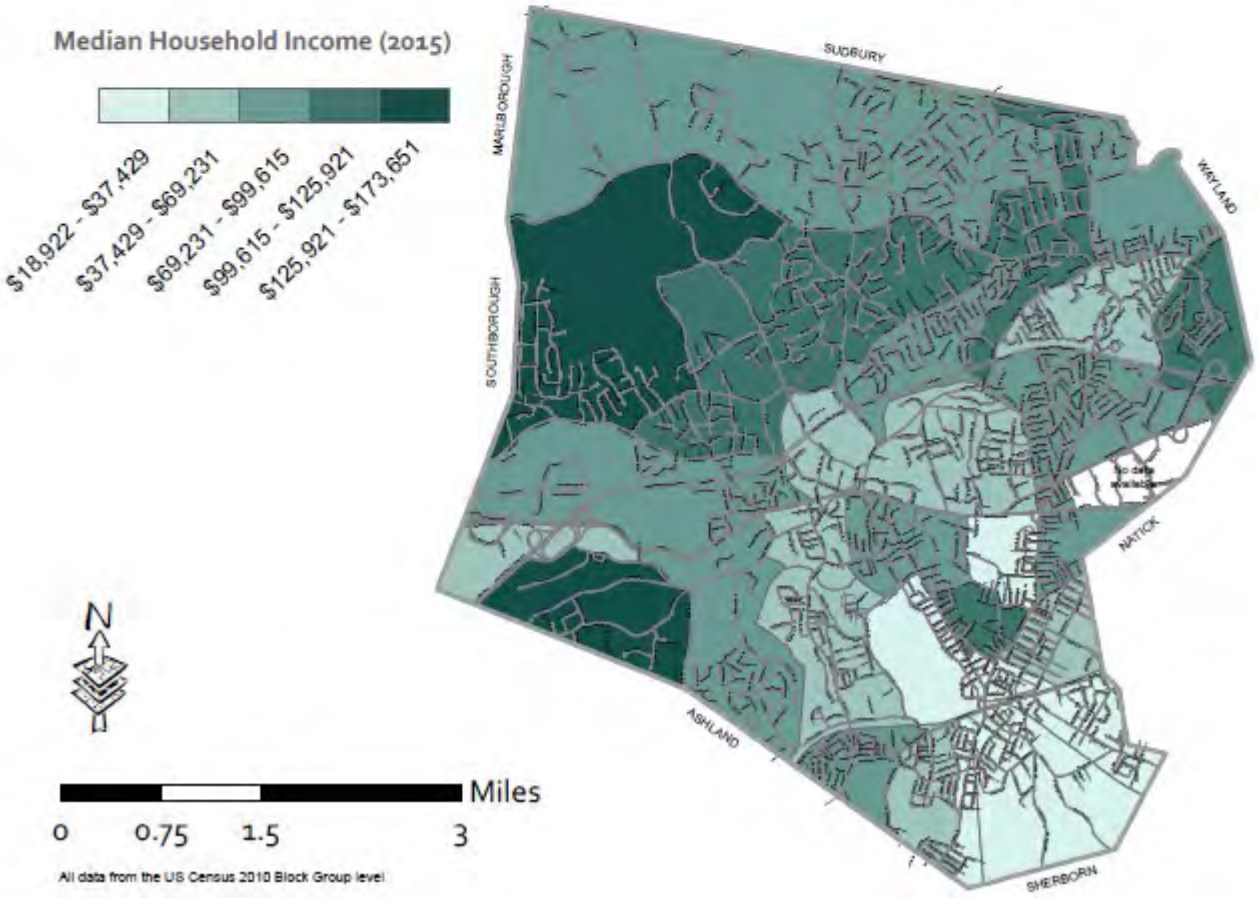
Like the rest of the country, the baby boom generation is now aging and the median age is 37.8 compared to 36.2 in 2000. They will require not only housing but walkable communities as they give up their cars but still value independence and community.

By the time they reach their 60s, homeowners may make the transition to renting when they are no longer able or willing to dedicate time and effort to home maintenance. And by age 75, when the chances of having a disability and of living alone increase, rentals can provide single-floor living and other accessibility features that make it possible to age safely in place. For these reasons, increasing shares of renters in the oldest age groups live in large multifamily buildings with elevators and other amenities, typically in urban areas[4].

There is also nationwide data[5] showing that millennials outnumber baby boomers. This younger, more diverse generation values flexibility, diversity, and urban amenities, such as denser developments with access to services and entertainment, walkability, and transit. Therefore, the millennials, like the boomers, who value walking and bicycling would favor more dense neighborhoods like those in South

1 Herring, Stephen W. Framingham: An American Town. The Framingham Historical Society. 2000.
2 Wikipedia—Framingham and Lowell Railroad.
3 American Community Survey 2014
4 Harvard Joint Center for Housing Studies: "Rental Housing Demand". 2015 http://www.jchs.harvard.edu/sites/jchs.harvard.edu/files/ch_1_rental_housing_demand_from_americas_rental_housing_2015_web.pdf
5 https://www.census.gov/newsroom/press-releases/2015/cb15-113.html "Millennials Outnumber Baby Boomers and Are Far More Diverse, Census Bureau Reports"


Percent of Non-driving Age Population
10% - 15%
16% - 24%
25% - 29%
30% - 34%
35% - 38%
Prepared by the Division of Community & Economic Development
Last updated January 2017
SUDBURY
MARLBOROUGH
WAYLAND
SOUTHBOROUGH
NATICK
ASHLAND
SHERBORN


Median Household Income (2015)
$18,922 - $37,429
$37,429 - $69,231
$69,231 - $99,615
$99,615 - $125,921
$125,921 - $173,651
SUDBURY
MARLBOROUGH
WAYLAND
SOUTHBOROUGH
NATICK
ASHLAND
SHERBORN
N
Miles
0
0.75
1.5
3
All data from the US Census 2010 Block Group level

Framingham or near village centers.

In contrast to these trends, large areas of Framingham, particularly more rural and suburban areas on the north side have land use patterns that are incompatible with walking and biking. Large-lot zoning, non-connected subdivisions, high parking requirements and limited investments in sidewalks have created car-only enclaves that isolate younger and older residents in particular. As the public assumes the high cost of maintaining infrastructure to serve these low-density neighborhoods, resources are spread thin, and the older, more walkable areas of Town have experienced underinvestment. The map on the previous page shows the concentration of populations who are of non-driving age. We define non-driving age as under 16 and over 75.

Income Impacts Access to Amenities

On the south side, where denser development allows more walkability, the issues of access turn on income levels. Framingham overall has higher incomes than either Massachusetts or the United States. The Town's median household income according to recent Census data was $68,906, but in census tracts on the south side, where poverty is more concentrated, the median household income drops to just $41,841—only 61% of the Town-wide median income (see the map on the preceding page and Table 1). The rates of unemployment, poverty and "linguistically isolated residents" in this area are all double the Town-wide rates. All of these factors make vehicle ownership difficult, limiting access to education and jobs for these residents. At the same time, while the south side, itself is the most walkable and bikeable area of Town, the area struggles to attract and retain retail and service amenities and employers that residents could access by bike or on foot. Concentrated poverty results in insufficient market demand to sustain businesses.

There are also pockets of density in other areas of Town that lend themselves to better bicycle and pedestrian facilities—specifically in Framingham Centre around Framingham State University and the Centre Common, as well as in the Saxonville and Nobscot villages. See *Map M.3.2* in Section 8 for population density and neighborhood locations.

These facts and trends have direct implications for non-vehicular access and highlight the importance of creating a comprehensive bicycle and pedestrian network.

Economy & Employment

The Town of Framingham is host to 46,000 jobs. With an active working population of 36,600 employed (see Table 2), the Town is also considered a "net importer of jobs" resulting in many people commuting into Framing-

ham daily for work in addition to those who live here. As a regional retail center, traffic generated daily by the Golden Triangle (Shopper's World and the Natick Mall area between Route 9, Route 30 and Speen Street) increases the number of visitors, almost exclusively arriving in personal vehicles. The businesses in Framingham range from headquarters for household name companies like Bose, Staples, and TJX—the parent company for stores like T.J. Maxx and HomeGoods—to many small businesses, restaurants, and home businesses. The largest two categories of jobs in Framingham are "management, business, science, and arts" and "sales and office" occupations. These sectors attract a higher-educated, skilled workforce to Framingham.

Commuting

According to recent Census data, the mean travel time to work for Framingham residents is 27.1 minutes. Only 3.7% of Framingham residents took public transit and only 4% walked (see Table 2). Many workers commute to jobs within the MetroWest region where transit and non-vehicular access are limited, limiting options for travel. As Framingham becomes more densely developed, particularly in areas like Downtown where transit already exists, the critical mass of residents and existing infrastructure will increase the opportunities to make improved connections.

Table 1: Median Household Income

	Framingham	State	US
Median household income (dollars)	68,906	66,658	64,585

Table 2: Commute to Work Modes

Commuter mode[6]		
All workers 16 years and over	36,600	100%
Car, truck, or van -- drove alone	28,040	76.6%
Car, truck, or van -- carpooled	4,057	11%
Public transportation (excluding taxicab)	1,375	3.7%
Walked	1,488	4%
Other means	454	1%
Worked at home	1,186	3.2%

6 American Community Survey 2008-2012

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4 LONG RANGE PLANNING

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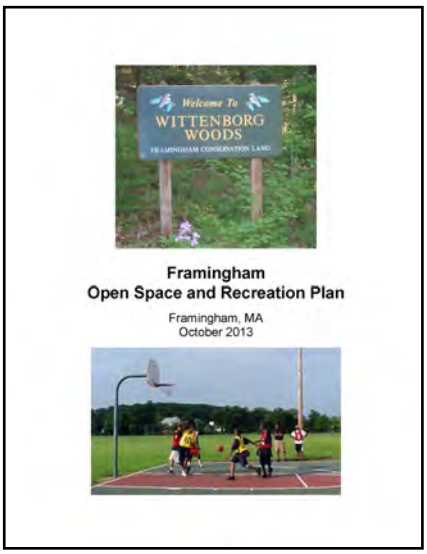
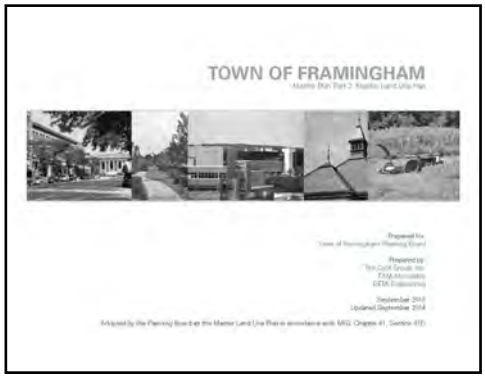
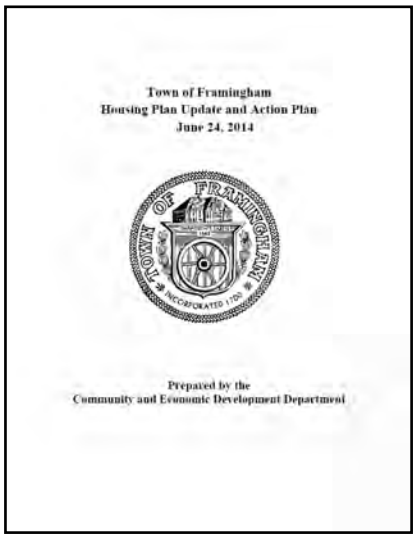
Section 4

LONG RANGE PLANNING







There are a number of existing local, regional, and state plans, programs, policies, and standards that inform this plan and the Town's bicycle and pedestrian initiatives going forward. Some key documents that guide this plan are:

- ***Framingham Open Space and Recreation Plan*** (2013)
- ***Framingham Master Land Use Plan*** *(*2014)
- ***Framingham Housing Plan*** (2014)
- ***Town Sidewalk Accessibility Study*** (2016)
- ***Framingham Transportation Master Plan*** (in process)
- ***MAPC's MetroWest Regional Open Space Connectivity Plan*** (2011) and ***Landline*** (2016)
- ***MassDOT Complete Streets Legislation*** (2014 MA Transportation Bond Bill)

Open Space and Recreation Plan

The Open Space and Recreation Plan (OSRP) was updated in 2013. The plan includes a Seven Year Action Plan that identifies a number of goals, objectives, and actions to serve as a guide for protecting, improving, and expanding Framingham's open space and recreation resources. Some goals reflect the need for bicycle and pedestrian amenities such as the following:

"Create and complete corridors, including bicycle lanes and trails, for non-motorized passage that serve as greenways and transit corridors, and provide access to passive and active recreation facilities, places of work, school, public transportation connections, or other points of interest in town."

As part of the 2013 update, an Open Space and Recreation survey was made available to the residents of Framingham. A total of 584 responses were received. Several of the questions pertained to bicycle and pedestrian facilities:

◊ ***Are there sufficient sidewalks or walkways in your neighborhood?***

Yes 64.1% (370 responses)
No 35.9% (207 responses)

◊ ***Should major roads in Framingham be striped for bike lanes?***

Yes 56.5% (315 responses)
No 43.5% (243 responses)

◊ ***Indicate approximately the number of times you or a family member participates in each recreational activity during an average year.***

This question included 45 activity choices. "Walking" or "Nature Walk" were the two most frequent activities cited by the respondents and six of the top ten responses pertained to walking or

bicycling activities. (This is based on the total number of respondents who indicated that they participated in the specific activity four or more times per year.)

Walking	499
Nature Walk	373
Visit State Park	342
Hiking	303
Bike - On Road	292
Run/Jog	282
Sightseeing	248
Use of Playground	246
Swimming - Beach	238
Bike - Bike Path	233

◊ ***Which of the following does the Town need more? (Check off the top three (3) facilities you feel are needed).***

Of the 27 activity choices, "Bike Trails" (51.6%) and "Hiking Trails" (32.8%) were the two most popular responses.

Master Land Use Plan

The Master Land Use Plan was completed in 2012 and updated in 2014. A survey was completed as part of the 2011 Master Land Use Plan process. While most of the questions deal with opinions on land use in Framingham (now and for the future), several questions were relevant to this plan:

◊ ***Would you support any of the following? (Check all that apply)***

The **Core Principles** of the 2014 Master Plan are:

Community Character – Support existing neighborhoods, village centers, landmarks, and natural features, as well as unique historic sites that contribute to why residents and visitors value Framingham.

Environmental Values – Maintain the quality of the environment, natural resource ecology, public health, living conditions, and property values.

Economic Development – Promote economic development through public investment and private redevelopment with a focus on infusions of new capital to improve the built and natural environment.

Downtown – Build a strong vibrant downtown with civic, retail, service, hospitality, and residential uses that provide a strong sense of place and helps define Framingham.

Network of Transportation – Create links both within the community and to major transportation systems outside the community to support Framingham as the region's hub.

Clear Planning and Development Processes – Develop clear and consistent standards for land use projects, both private and public, that enable projects to receive municipal review in a rational, managed process. Provide a hierarchy of review based on scale and intensity of the project while ensuring that projects enhance the quality of the built environment in Framingham.

Sustainable and Resilient Community – Consider how each action meets the needs of the present without compromising the needs of future generations.

Creation of bike lanes in roadways for alternative modes of transport

41.32%

Policies that encourage a walkable community

57.76%

◊ ***Please rate the following aspects/ characteristics that impact the quality of life in Framingham. (Trails and Bike Paths)***

Very Satisfied	*7.3%*
Satisfied	*23.4%*
Somewhat Satisfied	*29.6%*
Dissatisfied	*23.5%*
No Opinion	*16.2%*

Under Section 4.7: *Improving Transportation and Infrastructure*, recommendations include: "Provide a Rational Transit System"; "Link Land Use and Transportation Policies"; "Improve Intermodal links between public transit options"; "Establish a Complete Streets Policy"; and "Incorporate bicycle amenities throughout the Town." This plan builds on those principles and provides more detailed direction for decision makers on bicycle and pedestrian issues.

Housing Plan

The Town adopted a Housing Plan in 2007 and updated it in 2014. The plan provides 83 recommendations distributed across six general and nine targeted strategies. While focusing primarily on housing, the plan advocates for enhanced neighborhood conservation efforts including improving pedestrian access between the neighborhoods and commercial areas.

UMass Greenways Plan

Bachelors of Landscape Architecture students at the University of Massachusetts developed "Green Infrastructure for Framingham, Massachusetts: Greenway Planning and Cultural Landscape Design" in 2015. This town-wide greenways plan includes a series of conceptual designs for connecting natural, cultural, and recreational resources through bike and pedestrian paths.

Innovative concepts for connecting resources and neighborhoods were presented to Town staff by the students in the North, West, East, South, and Center areas of Framingham. This effort was used in the development of this Bicycle and Pedestrian Plan with the concepts considered as potential connections.

Town Sidewalk Accessibility Study

The Department of Public Works (DPW) established this study with the goal of evaluating pedestrian accessibility along roadways. A sidewalk inventory was created which included sidewalk and ADA conditions. Now finalized, the Town can use this study to identify top deficiencies and prioritize, plan, and budget to make necessary sidewalk improvements. The study was completed in 2016.

Transportation Master Plan

DPW is undergoing a three part transportation plan in conjunction with an economic development plan to identify effects on transportation systems of likely growth, and identify mitigation and improvements of the Town's roadways and bicycle/pedestrian pathways, traffic calming updates, other transportation, and neighborhood outreach efforts.

Part 1 of the Transportation Master Plan is currently underway. Part 2 is expected to commence in the near future along with the economic development plan. This comprehensive plan for the Town's transportation systems will provide a long-term "road map" of what is required for improvements and maintenance. The plan will include transportation systems owned and operated by the Town, as well as connections to railroads and state highways.

Regional Plans and Coordination

MAPC\MWRA

As the regional planning agency, the Metropolitan Area Planning Council (MAPC) has continued to promote regional connectivity of bicycle and pedestrian facilities. The 2011 *MetroWest Regional Open Space Connectivity*

Plan provided a context for linking Framingham's bicycle and pedestrian facilities to surrounding communities. In 2012, MAPC hosted a regional Greenways Summit that described the agency's vision for a future bicycle and trail network.

The nature of these facilities is such that their value is substantially enhanced by regional linkages. To be able to bike from Framingham to Lowell along the Bruce Freeman Rail Trail or to walk the Weston aqueduct from Framingham through Wayland to Weston would make these facilities much more valuable as recreational and possible commuter resources.

From 2010 to 2011, the Metrowest Regional Collaborative (MWRC is the subregional organization of MAPC which includes Framingham) and MAPC worked closely with Framingham and eight surrounding communities to identify open space resources and pedestrian and bicycle facilities. This information was collected for each community and, after several public meetings, was compiled into a Regional Connectivity Plan (see the map on page 25)[7]. The plan identifies the existing and proposed regional trail system. Key regional resources that have been identified include the Bay Circuit Trail (200 miles, Newburyport to Duxbury), the Bruce Freeman Rail Trail (25 miles, Lowell to Framingham when completed), the Cochituate Rail Trail (4 miles, Saxonville to Natick Center when completed), the Mass Central/ Wayside Rail Trail (104 miles, Boston to Northampton when completed) and the Upper Charles Trail (20 miles, Milford to Sherborn when completed).

More recently, MAPC is working on a comprehensive "Metro Boston Greenway Network", known as *LandLine*[8]. "LandLine is MAPC's vision to connect our greenways and trails into a seamless network. The plan has been developed in coordination with the LandLine Coalition, a group of 40 volunteers representing a number of local agencies and advocacy groups." MAPC has compiled an inventory of existing non-vehicular routes and are in the process of identifying ideal connections to complete routes and build the network into something more useful for recreation as well as commuting.

The potential for the Massachusetts Water Resources Authority (MWRA) aqueducts to contribute to a regional trail network was also identified. The MWRA is responsible for providing water to the Boston metropolitan region from reservoirs (Quabbin and Wachusett) in the central part of the state. The water is conveyed by several aqueducts to distribution points in Weston and Newton. Three aqueducts traverse Framingham. The oldest of these aqueducts, the Sudbury aqueduct, extends from the Foss Reservoir at Winter Street through downtown Framingham to Sherborn, Natick, Wellesley and Newton. The Weston and Hultman aqueducts extend from the Southborough Reservoir off of Pleasant Street across north Framingham to Wayland and Weston. The MetroWest Water Supply Tunnel, which was completed in 2003, provides the primary means of distributing MWRA water. The Hultman aqueduct recently completed a major overhaul in 2012 and is now the primary backup to the Metrowest tunnel.

In 2012, the MWRA revised its public access policy to allow and encourage the public to use some of its aqueducts for passive recreation purposes. While the Hultman continues to be inaccessible to the public due to its status as a primary backup, Framingham has worked closely with the MWRA to open segments of the Weston and Sudbury aqueducts. The Existing Conditions Mapping in *Section 5: Existing Conditions* shows the aqueduct locations in Framingham and the segments currently open to the public.

MPO/TIP/LRTP

The Town of Framingham participates in regional transportation planning through the Metropolitan Planning Organization (MPO). The MPO prepares the regional Transportation Improvement Plan (TIP) and the Long Range Transportation Plan (LRTP) in order to allocate Federal and State highway funds across the Boston Region. The TIP is prepared in five year increments and updated annually. There is a significant element of local advocacy for projects in the plan—the State requires that Towns provide the

7 http://www.mapc.org/sites/default/files/MW_Regional_Open_Space_Connectivity-Final_Report_2.pdf
8 http://www.mapc.org/landline

initial design for any capital funding requests—though some projects are initiated by the Massachusetts Department of Transportation (MassDOT). In addition to TIP highway funding, there are state funds set aside specifically for transit and federal funds targeted to Congestion Mitigation and Air Quality Improvement (CMAQ), which primarily are allocated to bicycle and pedestrian projects. In recent years the Town has utilized CMAQ funds through the TIP program to complete the Cochituate Rail Trail and will apply for these funds wherever feasible.

Moving Together

Moving Together is an annual MassDOT conference bringing together those professionals working on increasing use of multi-modal forms of transit. In recent years staff from DPW and C&ED have attended this conference and have taken back valuable information to the Town. Framingham officials should continue to attend this event each year to learn the latest trends and ideas related to alternative transit modes and connect with others doing the same. More information is available online at http://www.umasstransportationcenter.org/assnfe/ev.asp?ID=2612.

Bay State Bike Week

Massachusetts is the only state in the nation to hold a statewide bike week. Every May, bicyclists and advocates coordinate bike related events in order to celebrate and encourage the mode of bicycling. This year, Bay State Bike Week will be held May 13-May 21, 2017. More information is available online at www.baystatebikeweek.org.

Massachusetts Bicycle and Pedestrian Advisory Board

This State advisory board serves to advance bicycle and pedestrian transportation in the Commonwealth. Established in 2004, they hold meetings every other month in various locations across the State and invite the public to attend. Members of Framingham's Bicycle and Pedestrian Advisory Committee attend these meetings and provide updates to Town staff. More information is available online at http://www.massdot.state.ma.us/planning/Main/SustainableTransportation/HealthyTransportation/MABicycleandPedestrianAdvisoryBoard.aspx.

Complete Streets Funding

The Board of Selectmen adoption of the Complete Streets Policy in January 2015 has dovetailed perfectly with the Bicycle and Pedestrian Plan effort. The State's Complete Streets incentive program, authorized by the 2014 Transportation Bond Bill, offers Massachusetts municipalities incentives to adopt Complete Streets policies and implement projects. The fund is broken into three tiers of eligibility and offers $12.5M total for FY16 and FY17 (the first round must be spent by June 30, 2017). Each municipality can apply for up to $50,000 in technical assistance or up to $400,000 for implementation. In this manner, MassDOT is encouraging the expansion of bicycle and pedestrian networks statewide. There is more information on how Framingham is approaching Complete Streets in Section 9 of this Plan.

MetroWest Moves

MetroWest Moves is a Mass In Motion initiative funded by the Massachusetts Department of Public Health to facilitate opportunities for people who live, work, and play in Framingham, Hudson, Marlborough, and Northborough to engage in healthy eating and active living. Through the MetroWest Moves coalition, Framingham partners with other communities to encourage bicycling and walking, and Complete Streets development, as active ways of living. More information is available online at www.MetrowestMoves.org.

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MetroWest Regional Open Space Connectivity Plan

Areas of Potential Open Space Interest

Areas identified by municipal staff and officials as having preservation value for environmental, recreational, or connectivity reasons

Existing Protected Open Space

Includes publicly owned land and private property with conservation easements or other protection such as Chapter 61 agricultural status

Project Description

The MetroWest Regional Open Space Connectivity Plan was funded by the District Local Technical Assistance Program. It illustrates how the open space and trails in each of the nine (9) MetroWest Regional Collaborative member municipalities can become linked into an interconnected regional network, crossing municipal boundaries and connecting to other trails and open space in the surrounding communities. The plan also identifies unprotected land of potential conservation interest that would enhance the connectivity and conservation value of the existing open space.

In 2010, open space data was collected from each of the 9 municipalities. MetroWest Regional Collaborative staff subsequently met with municipal staff, officials and community representatives to verify the open space and trails information as well as identify additional land of potential conservation interest and possible additional trails to enhance connectivity to key destinations, protect watersheds, and preserve natural habitat and wildlife corridors. Following the two public forums, MAPC updated both the individual town mapping and the MetroWest Regional Open Space Connectivity Plan to include comments and suggestions.

In 2011, with input from the municipalities, MAPC has updated its open space database to better define ownership and level of protection and funding source of existing open space. Previous plans were also updated with data collected during the 495 Development Compact project to include Priority Preservation Areas identified by the municipalities as well as those deemed to be Regionally Significant Priority Preservation Areas.

0 1 2 4 Miles

0 1 2 4 Kilometers

Produced by the Metropolitan Area Planning Council Data Services.
60 Temple Place, Boston, MA 02111 (617) 451-2770

Data Source:
Massachusetts Geographic Information System (MassGIS)
Metropolitan Area Planning Council (MAPC)
Executive Office of Transportation (EOT)
Ashland, Framingham, Holliston, Marlborough, Natick, Southborough, Wayland, Wellesley and Weston, MA

File Location: K:\DataServices\Projects\Current_Projects\MetroWest Open Space Connectivity\MetroWest_PriorityMapping.mxd

Date: January 2012

Regional Trail System

Major existing or potential trail routes.

Regionally Significant Priority Preservation Areas

Areas identifed during the "495 Metrowest Development Compact" project

Potential or Proposed Trails

Proposed trails identified by municipal staff or officials. Also possible trail connections requiring further investigation and public input.

Open Space
- Existing (Permanent or Limited Protection)
- Regionally Significant Priority Preservation Areas
- Areas of Potential Open Space Interest

Trails
- Existing Trails
- Potential or Proposed Trails
- Regional Trail System
- Potential Aqueduct Trails
- Perennial Stream
- Water Bodies
- Wetlands

Roads
- Highways
- State and US Routes
- Major Roads
- Side Streets

Existing Land Use (2005)
- Developed land
- Undeveloped land

Trains
- Commuter Rail Stations
- Train Tracks

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5 EXISTING CONDITIONS

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Section 5

EXISTING CONDITIONS

Geography

Geographically, Framingham's topography varies from hilly in the north to marshy, wet, and sandy on the south. The arterials historically followed flatter areas so the main north-south and east-west roads often neck down into bottlenecks such as the "double Y" area in Downtown where Union Avenue and Concord Street meet for the northern "Y", and Irving and Concord meet for the southern "Y." These examples can be seen in Map M.1 where "Downtown" is located. Newer developments have occurred piecemeal, requiring more space and less connectivity between developments. Large areas of post-war developments have been designed to prioritize automobiles, often to the detriment of pedestrian or bicyclist convenience. Arterial roads that once hauled carriages and wagons were widened to accommodate growing traffic. New residential neighborhoods were intentionally separated from commercial and civic amenities, and built without sidewalks. Zoning laws, which were enacted to ensure that new residential, commercial, and industrial areas were separate, and that development would remain at low density, predetermined the effects of sprawl.

In the meantime, planning practice has shifted emphasis from building communities to prioritize cars toward building communities to prioritize all types of roadway users. For example, in recent years Framingham has moved toward requiring that new developments accommodate pedestrian and bicycle access. The Town's LIFT bus system became the basis for the "Regional Transit Authority" system with a central hub in Downtown Framingham serving 13 communities. As mentioned earlier, in January 2015 the Board of Selectmen adopted a "Complete Streets" policy (See Appendix A) requiring DPW to consider how they will prioritize all modes of transportation before investing in planning or infrastructure.

This Plan will help Town staff implement the Complete Streets policy as well as aid planning and economic development efforts as discussions for future developments occur.

Existing Bicycle and Pedestrian Facilities

The Town of Framingham has 285 miles of roads and more than 200 miles of sidewalk[9]. Existing Town-wide bicycle and pedestrian amenities are shown on the images that follow, *Map M.1*, and Appendix B and include:

Sidewalks throughout Town, generally located in dense urban areas such as Downtown and lacking in more rural areas such as the northwest

9 This does not include trails and pathways not associated with roadways

Images shown include new downtown Framingham ADA accessible sidewalks, crosswalks, and other pedestrian elements.

quadrant;

Bike lanes on Water Street beginning at Hemenway Road and extending east to approximately 400 feet before the Water Street/Central Street intersection; and,

Off-road trails, both public and privately controlled, mainly located in the rural, less developed northwest quadrant. Larger, publically-accessible, regional trails include:

- Bay Circuit Trail
- Carol Getchell Trail
- Cochituate Rail Trail
- Sudbury Aqueduct
- Weston Aqueduct

Safety

Safety is of utmost concern and a main driver in improving bicycle and pedestrian facilities in Town. The Framingham Police Department records all bike and pedestrian accidents. The map on page 35 displays number of bike and pedestrian accidents over a 12-month and 5-year period. A majority of these accidents occur along Route 9, in downtown along Concord Street and Union Avenue, and in the vicinity of Shopper's World/Golden Triangle to the east near the Natick Town border.

Certain areas in Town which we can refer to as incomplete streets due to the fact that they do not accommodate all modes and users, are more dangerous than others. Some are unsafe for obvious reasons such as sidewalks abruptly ending. See the photos on page 32 for examples in Town.

Clockwise from upper left: Water Street Bike Lane; new sidewalk and intersection improvements in Saxonville village; Cochituate Rail Trail Saxonville access

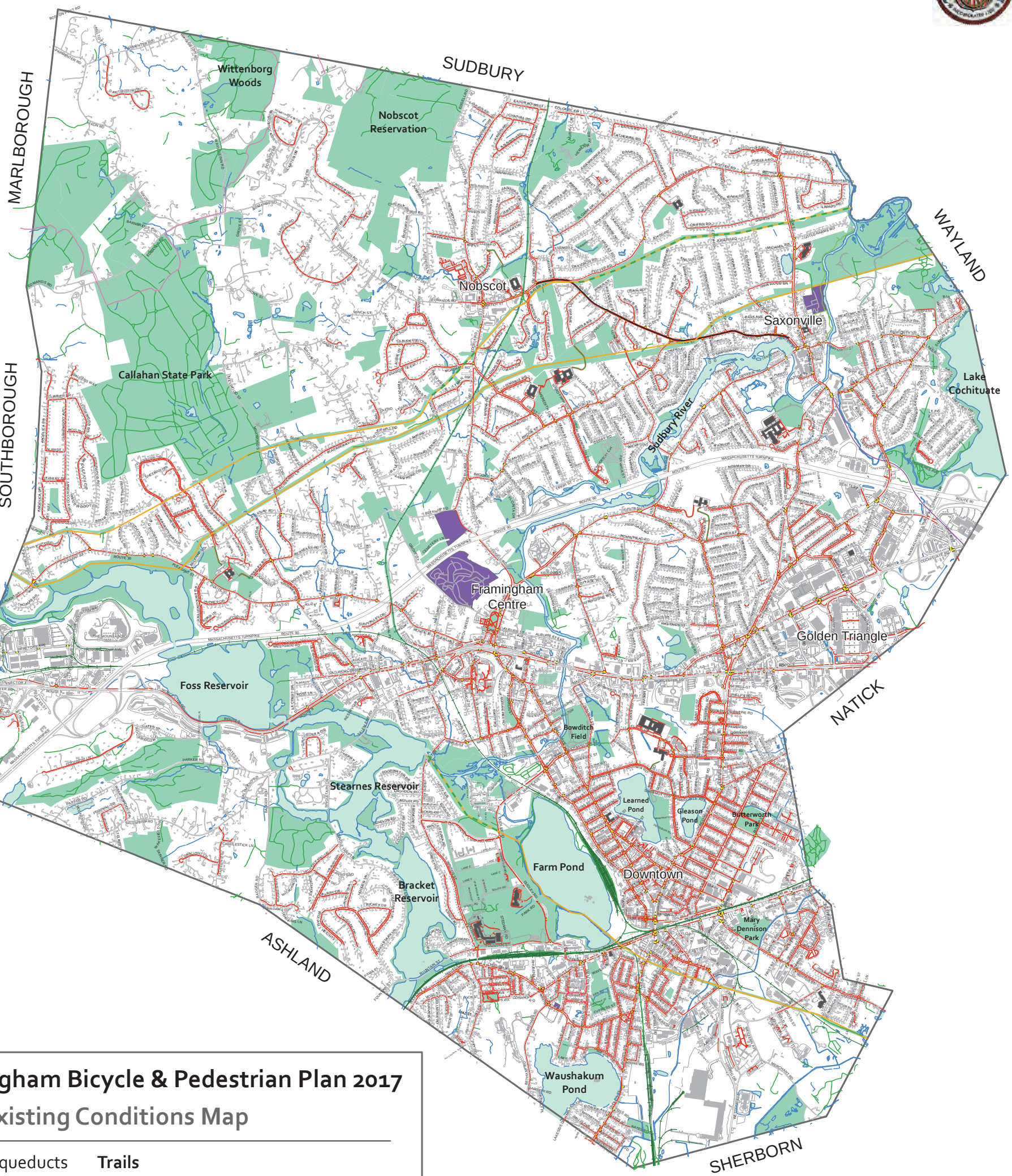
Sidewalk flush with parking lot; no bike lane markings or signage; utility pole poses safety hazard and limits accessibility

Poor condition and missing sidewalks; no bike amenities; wide intersections.

Missing bike rack facilities; an easy fix would clear the pedestrian walkway.

S:\PlanD\Plans\Bicycle Pedestrian Plan\Bike & Ped Plan\Mapping\Bike and Ped Map - M1 - Existing Conditions Map.mxd

Prepared by the Division of Community & Economic Development
Last updated February 2017



Framingham Bicycle & Pedestrian Plan 2017

M.1 Existing Conditions Map

- Aqueducts
- Railroads
- Bike Lanes
- Sidewalks
- Crosswalks
- Schools
- Cemeteries
- Water Body
- Open Space

Trails

- Other Trails
- Bay Circuit Trail
- Carol Getchell Trail
- Cochituate Rail Trail
- Opened Aqueduct Trails

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0 0.5 1 2 Miles

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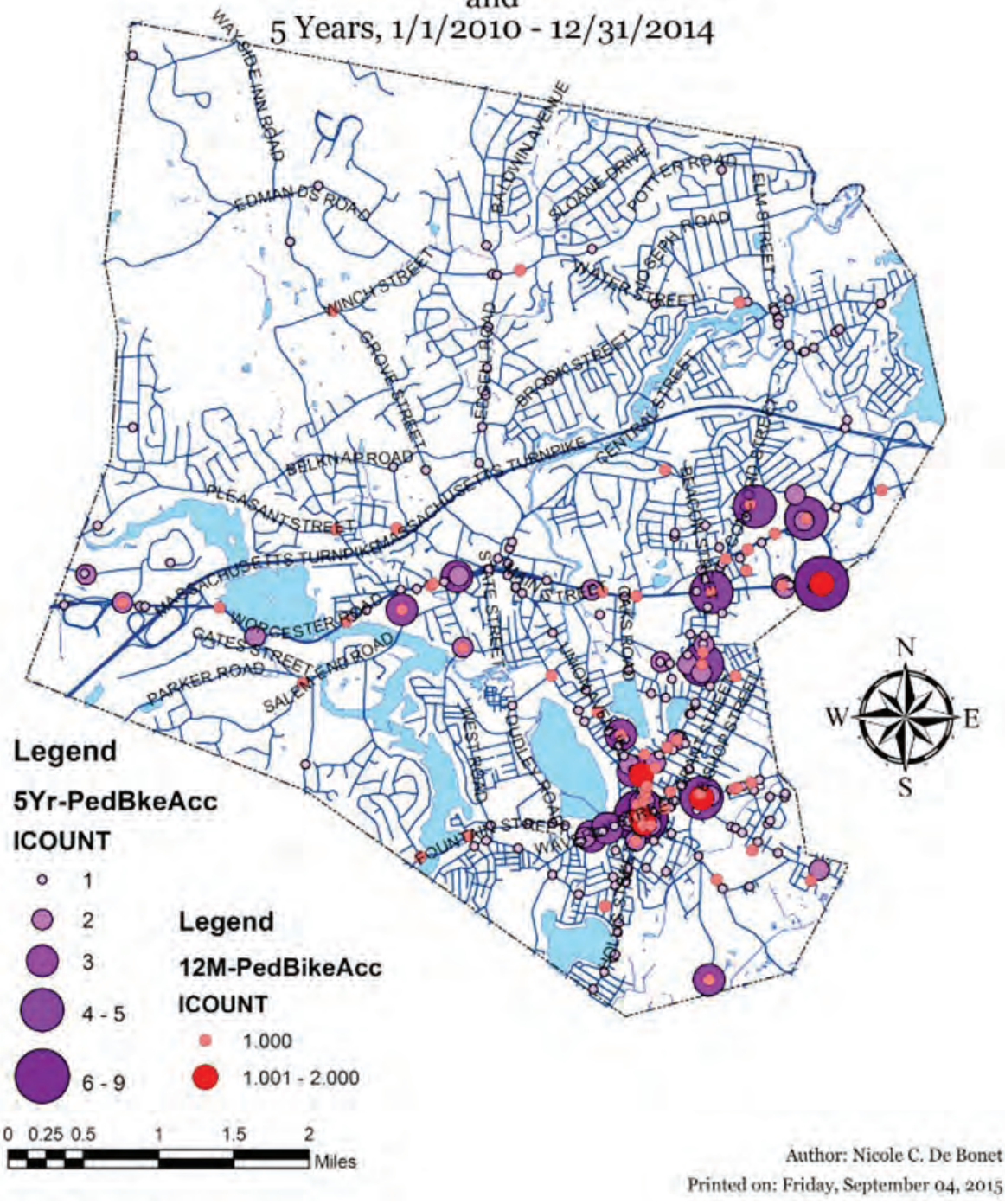
Bike and Pedestrian Accidents

12 Months, 9/1/2014 - 8/31/2015
and
5 Years, 1/1/2010 - 12/31/2014



Author: Nicole C. De Bonet
Printed on: Friday, September 04, 2015

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6 PROCESS

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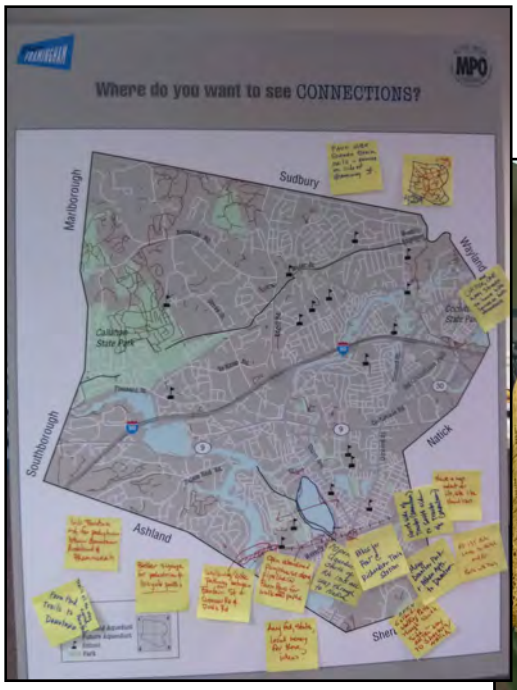
Section 6

PROCESS



LCW Bike & Pedestrian Plan Kick-off Meeting—September 2014

In the Summer of 2013, the Town's Community & Economic Development Division began discussing the idea of this Plan under Acting Director, Eugene Kennedy. An internal kick off meeting was held with DPW, Planning Board and C&ED staff to discuss approach and resources. The group, designated as the Working Group, decided at this point to complete the Town's first Bicycle and Pedestrian Plan in-house.

In the summer of 2014, discussions began with the Central Transportation Planning Staff (CTPS) of the Metropolitan Planning Organization (MPO) about hosting a "Livable Communities Workshop" (LCW) as a public kick-off event for this process. This event, taking place in early September 2014, was well attended and generated significant interest and feedback. CTPS completed their final report in July 2015. The results have been used to inform the analysis described in this report in *Section 8: Analysis and Prioritization*.

Concurrently, the Planning Board staff worked on crafting a "Complete Streets" Policy for the Town, which the Board of Selectmen adopted on January 6, 2015[10]. At Annual Town Meeting in April 2015, Town Meeting voted to participate in MassDOT's Complete Streets certification program, allowing opportunities for grant funding. The development of the Plan was critical to the Town's ability to partake in the initial $12.5 million and any future State funding allocated

10 https://smartgrowthamerica.org/program/national-complete-streets-coalition/policy-development/policy-atlas/

Timeline of Milestones to Date

2013

July 19 – Working group kick-off discussion
July 26 – Working group meeting to review schedule, goals and outline.
August 9 – Working group meeting to discuss next steps and tasks

2014

May 22 – Working group meeting to discuss Livable Communities opportunity and Complete Streets process
July 31 – Working group discuss data collection and external research – prep for LCW
July/August – Working group prep meetings with CTPS for LCW
September 4 – Public Meeting: Livable Communities Workshop
December 19 – Working group recap/regroup

2015

January 6—Board of Selectmen adopts Complete Streets policy
February 13 – Working group charrette to discuss LCW
June 1 – Working group meeting to discuss Complete Streets grant opportunity
July 14 – Public Meeting: Meet with FBPAC
September 30 – Working group charrette to review data collected/maps and next steps for creating action plan.

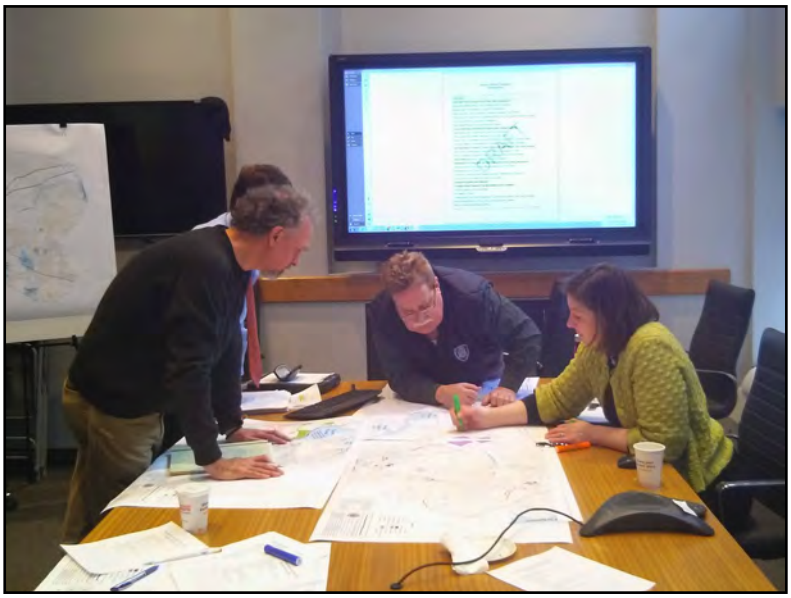
2016

January/February – Staff attends "Complete Streets 101" training – Complete Streets Grant Guidance released. Framingham CS Policy, adopted in January 2015, submitted to MassDOT for review.
February 02 – Working group meeting – review matrix methodology
March 8 – Working group meeting – finalize matrix, review evaluation methodology
April 11 – Working group meeting – finalize prioritization
April 12 – Public Meeting: meet with FBPAC
May 4 – Public "Open House"
June 7 – Public Meeting: update to the Board of Selectmen
September 9 – Notice to proceed on first Complete Streets project: the Dudley Road Multi-Use Path

through this program.

In February 2015, the Working Group held an "internal charrette" using information generated at the September 2014 LCW in order to identify additional problem areas and potential projects from staff's point of view. Those discussions resulted in a rigorous data collection and prioritization process described in *Section 8: Analysis and Prioritization*. The prioritization process helped Framingham advance its first MassDOT Complete Streets project ahead of the completion of this Plan. Future projects have been identified and will be implemented as funding is available, or incorporated into roadway projects or private developments.

In May 2016, the Working Group held a Bicycle and Pedestrian Plan Update Open House. Members of the public were welcome to attend to learn the latest on this effort. The open house was well attended and many community participants expressed excitement and interest in this Plan.



Working Group Internal Charrette—February 2015

Open House Update—May 2016

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7 GOALS

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Section 7

GOALS

Public comments and recommendations received at the LCW in September 2014 demonstrated areas of need in Town. The MPO analyzed the feedback received, which resulted in seven bicycle and pedestrian goals.[11] The goals of the Town of Framingham Bicycle and Pedestrian Plan are:

1. ***Identify the Assets***
   The pedestrian and bicycle networks consist of all public roadways (except the Mass Pike) and the public multiuse paths.
2. ***Connect Assets into a Usable Bicycle and Pedestrian Network***
   The usefulness of these systems depends on the completeness and connectivity of the system elements.
3. ***Maintain the Bicycle and Pedestrian Network***
   Like all physical assets, bicycle and pedestrian facilities gradually deteriorate and require regular cleaning, maintenance, and periodic reconstruction.
4. ***Design for Bicycle and Pedestrian Safety***
   Standards of safe design are well known and should be implemented uniformly across the two systems.
5. ***Communicate Bicycle and Pedestrian Routes through Education and Signage***
   Information is an important tool to improve efficiency and safety.
6. ***Provide Seamless Links to Transit***
   Transit services and terminals are integral parts of the bicycle and pedestrian systems.
7. ***Include Bicycle and Pedestrian Access in Land Use Planning***
   Land use and related planning efforts affect the attractiveness of the bicycle and pedestrian modes.

11 Metropolitan Planning Organization, Framingham Livable Community Workshop Report. July 30, 2015.

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8 ANALYSIS & PRIORITIZATION

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Section 8

ANALYSIS & PRIORITIZATION

Inventory

The September 2014 LCW and February 2015 staff charrette provided valuable input into a variety of bicycle and pedestrian issues in Town, including an initial list of roadways that need bicycle and pedestrian investments. Policy, education, and outreach related recommendations were also suggested and are included in *Section 10: Recommendations*. All roadways that were mentioned in those meetings are shown in *Map M.2 Desire Map*.

Regional arterials are those major roadways mentioned most frequently which serve as regional connections throughout town and neighboring communities. Edgell Road, Concord Street, and Waverly Street are some examples of regional arterials. Inter-city connectors are those secondary roadways that may not serve the Town and region but are important for smaller neighborhood connections. Salem End Road, Dudley Road, and Beaver Street are some examples of inter-city connectors. Trails are off-road connections which can serve as transportation corridors and recreational amenities, such as areas around the reservoirs and the Bruce Freeman Rail Trail. It is important to note that CSX—controller of many rail lines in Town—policy prohibits "rails with trails" design for safety reasons; meaning they do not allow trails alongside their active rail lines.

In terms of data collection and prioritization, the Working Group decided to focus first on arterial roads and some inter-city connector roads. The remaining inter-city connectors and trails are to be evaluated later.

The following list shows the roadways that were evaluated further as part of this process. Since the characteristics of each roadway change along its length, they were broken into logical segments.

Beaver Street
Bishop Street
Central Street
Cochituate Road
Concord Street
Dudley Road
Edgell Road
Edmands Road
Elm Street
Fountain Street
Grove Street
Irving Street
Merchant Road
Mt. Wayte Avenue
Old Connecticut Path
Pleasant Street
School Street
School Street
Speen Street
Union Avenue
Water Street
Waverly Street
Wayside Inn Road
Western Avenue

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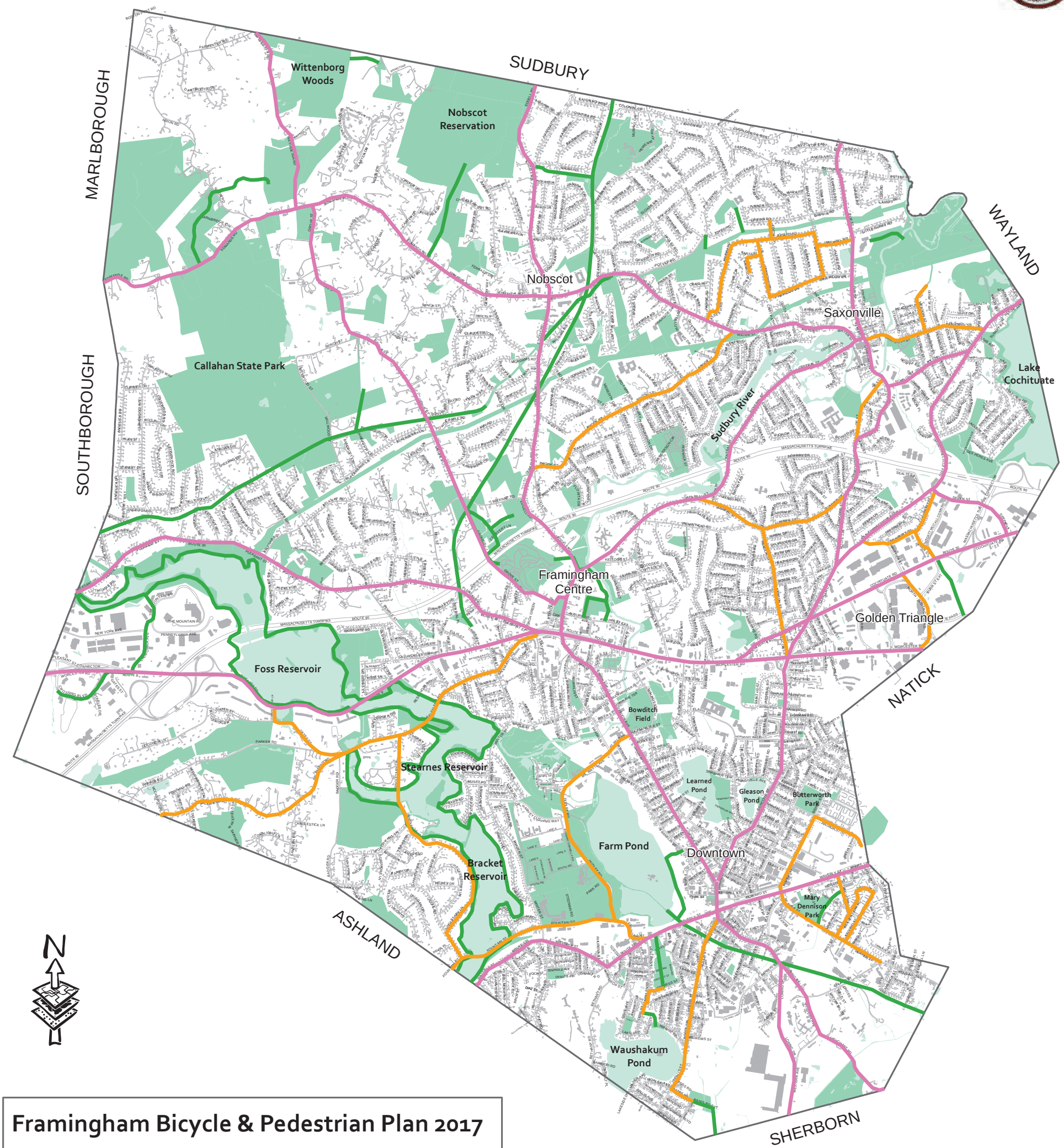
Last updated February 2017



Framingham Bicycle & Pedestrian Plan 2017

M.2 Desire Map

- Regional Arterials
- Inter-city Connectors
- Trails

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Data Collection Points

Travel Direction

- 1-way or 2-way?
- Multiple Lanes? Direction?

Parking (1 side, 2 sides, none)

Segment Length (feet)

Pedestrian Environment

- Sidewalks (1 side, 2 sides, none)
- Westbound/Southbound Complete?
- Eastbound/Northbound Complete?
- Handicap ramps?
- Number of crossings
- Benches?
- Number of street trees
- Average distance between crossings
- Curbcut percentage

Right-of-Way (ROW) Distances

- Total ROW
- Curb-to-Curb
- Sidewalk
- Buffer
- Shoulder
- Parking
- Travel Lanes
- Parking
- Shoulder
- Buffer
- Sidewalk
- Remaining

Analysis

The aforementioned roadways were measured and analyzed for a number of criteria including right of way width of each segment, lane width, presence of sidewalks, presence of amenities like handicap ramps, benches, and street trees, distance between crossings and impact of curb cuts.

As part of this analysis, staff identified preliminary recommendations for bicycle and pedestrian improvements for each of the roadway segments based on Complete Streets design principles.

The Full Arterials Data and Analysis Table can be found in Appendix C.

Prioritization

In order to prioritize this list of roadways and determine a logical implementation process, the Working Group evaluated each segment based on a series of Quantitative and Qualitative criteria, and utilizing a numerical rating of 0-3 for each of the roadway segments.

Quantitative Criteria

(Maps M.3.1 and M.3.2)

Accident Data

Accident data provided by the Framingham Police Department includes five year accident totals involving bicycles or pedestrians. The map shows us where bicycle and pedestrian safety improvements are needed because these locations are clearly dangerous to non-motorists.

Environmental Justice

"Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."[12] Three Criteria that denote an environmental justice community include: 1) Block group whose annual median household income is equal to or less than 65 percent of the statewide median ($62,072 in 2010); or 2) 25% or more of the residents identifying as minority; or 3) 25% or more of households having no one over the age of 14 who speaks English only or very well - Limited English Proficiency (LEP). More information on how Massachusetts addresses these issues can be found here: www.mass.gov/eea/agencies/massdep/service/justice/

Destinations

A full list of the destinations included can be found in Appendix D. The list includes:

- Cemeteries
- Religious Institutions
- Government
- Cultural
- Commercial Centers
- Historic Structures
- Hospital/Medical Services

12 www.epa.gov/environmentaljustice

13 In 2015, MetroWest Moves worked with MAPC on a prioritization tool that was used to inform the final list of arterials that were considered in this effort. The utility score from this effort is based on trip generation from schools, shopping, and parks. More information on this effort can be found here: http://metrowestmoves.org/wp-content/uploads/2016/05/MetroWest-Moves-Meeting-Minutes-7.21.15.pdf

Recreation Amenities
Transit
Trails

Destinations within 1/4 mile of each segment were considered.

Population Density

The population of people per acre was considered as any bicycle and pedestrian improvements would have more of an impact in dense areas.

Qualitative Criteria

(Maps M.4.1 through M.4.4)

The following criteria were more subjective and based on the opinion of the segment reviewer.

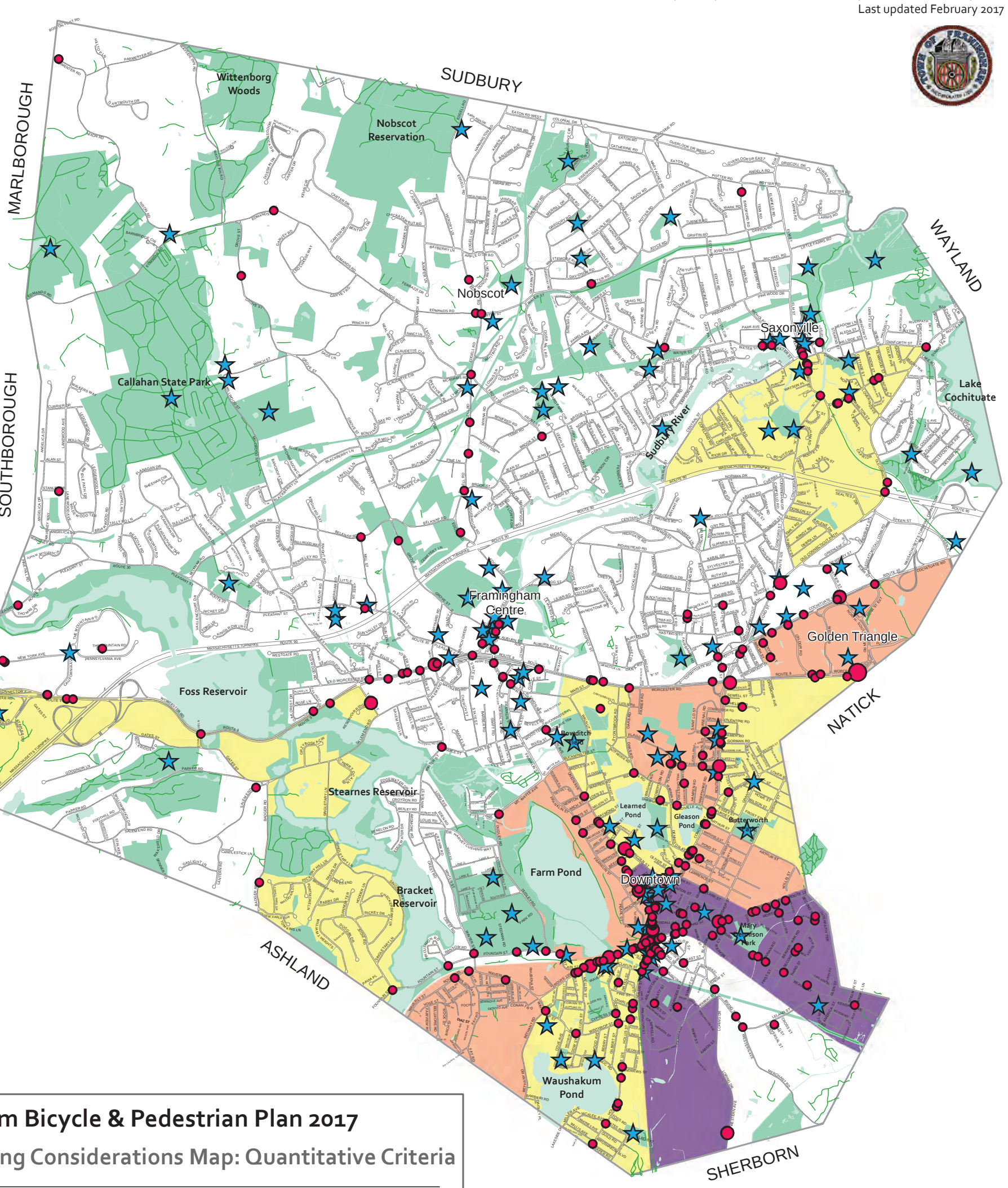
- MAPC "utility" score[13]
- Benefit of the project relative to the estimated cost
- Whether DPW has the roadway on their capital projects queue
- Conditions for bicycle users
- Conditions for pedestrian users

Staff assigned numerical weights to each of the quantitative and qualitative criteria, based on the importance of each factor for the overall ranking. Some scores, such as bicycle and pedestrian conditions were weighted more and factors such as the MAPC utility score were given less weight. Environmental justice, accidents, cost benefit, population density, and number of destinations were all weighted the same. More information on the weighting and ranking can be found in Appendix E.

Once scored and sorted, the resulting list (see Appendix F for full Prioritization List and *Map M.5 Roadway Prioritization*) formed the basis for Framingham's Five Year Plan. Through discussions about the top 20 highest-scoring projects, including the timing of other DPW projects, potential funding sources, and project feasibility, the projects shown in the following table and *Map M.6 Action Plan (Complete Streets)* were deemed most feasible in the first five years. It is important to note that although Union Avenue ranked high through this process and is a Town priority, the Town is aggressively working on improving this corridor as a Complete Street via the FY2021 TIP (see Section 4 for more information on the TIP); therefore, Union Avenue is not included on the following Bicycle and Pedestrian Five Year Plan. It is also important to note that Maps M.5 and M.6 do not perfectly align because due to limited Town resources, staff utilized the results of M.5 and the prioritization to create an Action Plan for the immediate future.

S:\PlanD\Plans\Bicycle Pedestrian Plan\Bike & Ped Plan\Mapping\Bike and Ped Map - M3.1 - Ranking Considerations Map (Quantitative).mxd

Prepared by the Division of Community & Economic Development
Last updated February 2017



Framingham Bicycle & Pedestrian Plan 2017

M.3.1 Ranking Considerations Map: Quantitative Criteria

5 yr Bike/Ped Crash Count
- 1-2
- 3-5
- >5

Destinations

Trails

Environmental Justice Criteria
- Area meets 1 EJ criteria
- Area meets 2 EJ criteria
- Area meets 3 EJ criteria

US Census 2010 Data

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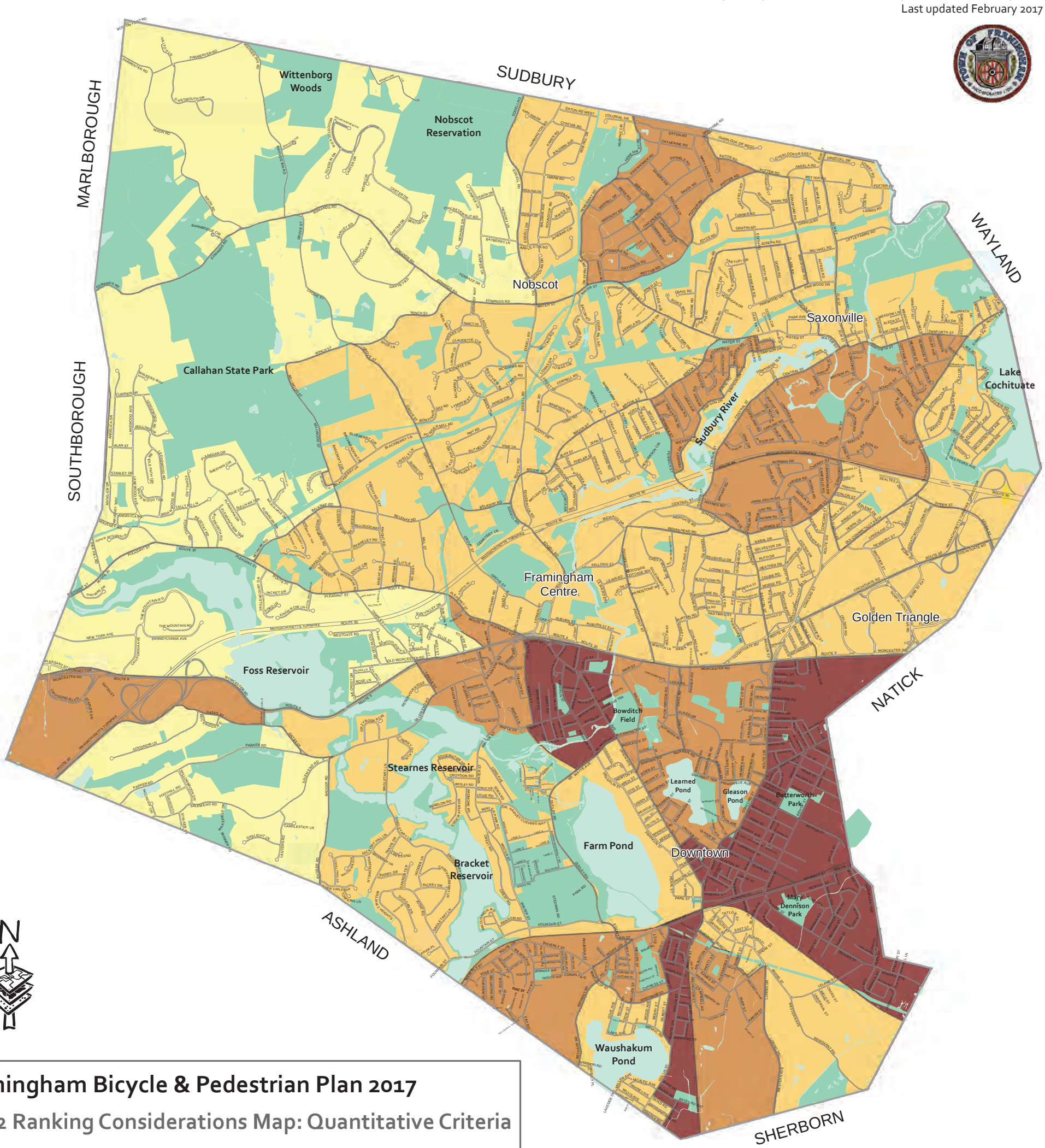

Framingham Bicycle & Pedestrian Plan 2017

M.3.2 Ranking Considerations Map: Quantitative Criteria

Population Density

People per acre

- 0.0 - 2.0
- 2.1 - 5.0
- 5.1 - 10.0
- >10

US Census 2010 Data

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Miles

0 0.5 1 2

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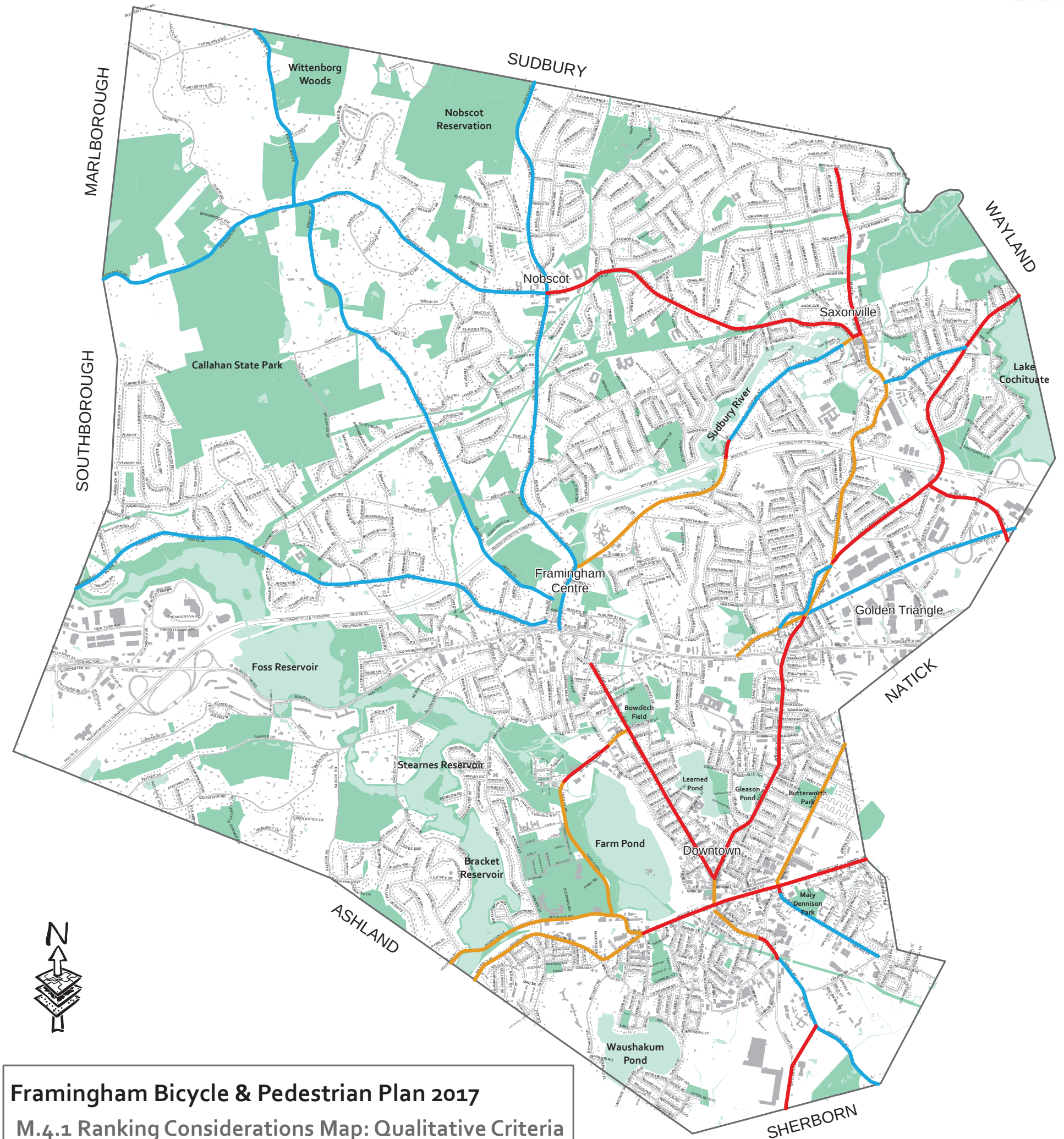
Last updated February 2017



Framingham Bicycle & Pedestrian Plan 2017

M.4.1 Ranking Considerations Map: Qualitative Criteria

Estimated Cost Relative to Likely Benefit

- 1 - High (less feasible)
- 2 - Moderate
- 3 - Low (most feasible)

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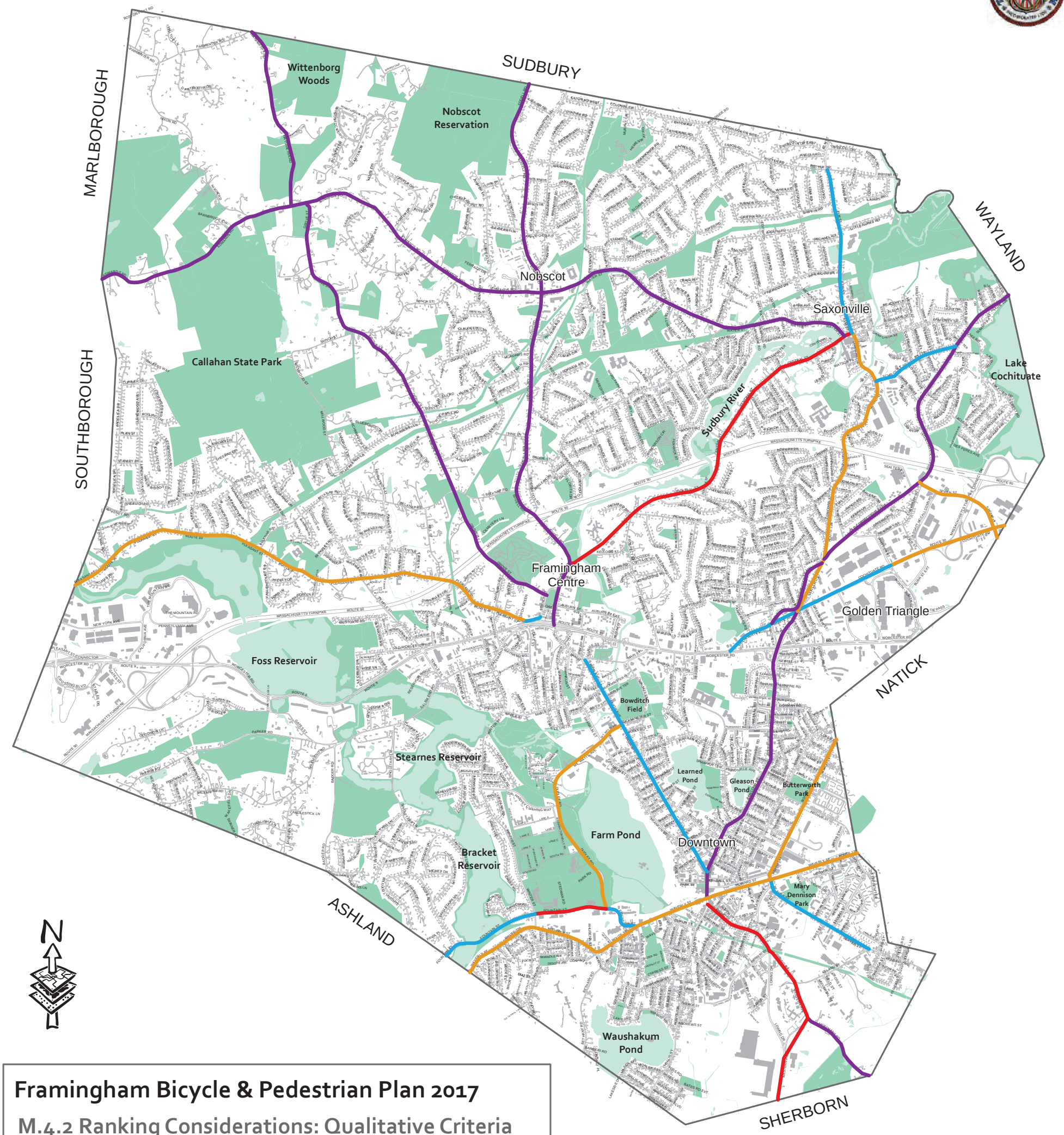

Framingham Bicycle & Pedestrian Plan 2017

M.4.2 Ranking Considerations: Qualitative Criteria

DPW Planned Project

- 0 - No right-of-way improvements anticipated at this time
- 1 - Right-of-way improvements anticipated >2023
- 2 - Right-of-way improvements anticipated 2020-2022
- 3 - Right-of-way improvements anticipated 2017-2019

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Miles

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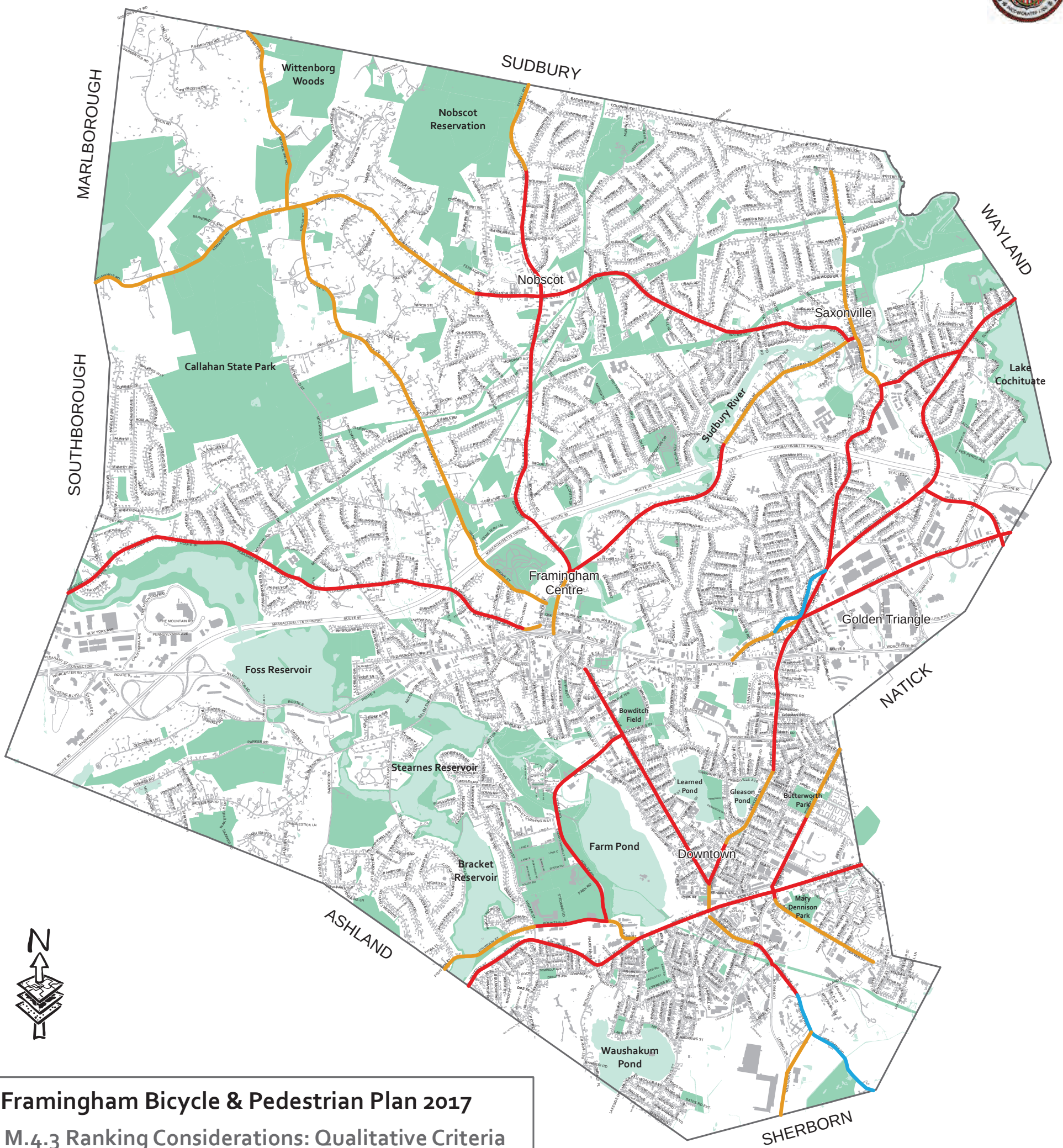

Framingham Bicycle & Pedestrian Plan 2017

M.4.3 Ranking Considerations: Qualitative Criteria

Bike Conditions

- 0 - Excellent
- 1 - Good
- 2 - Fair
- 3 - Poor

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0 0.5 1 2 Miles

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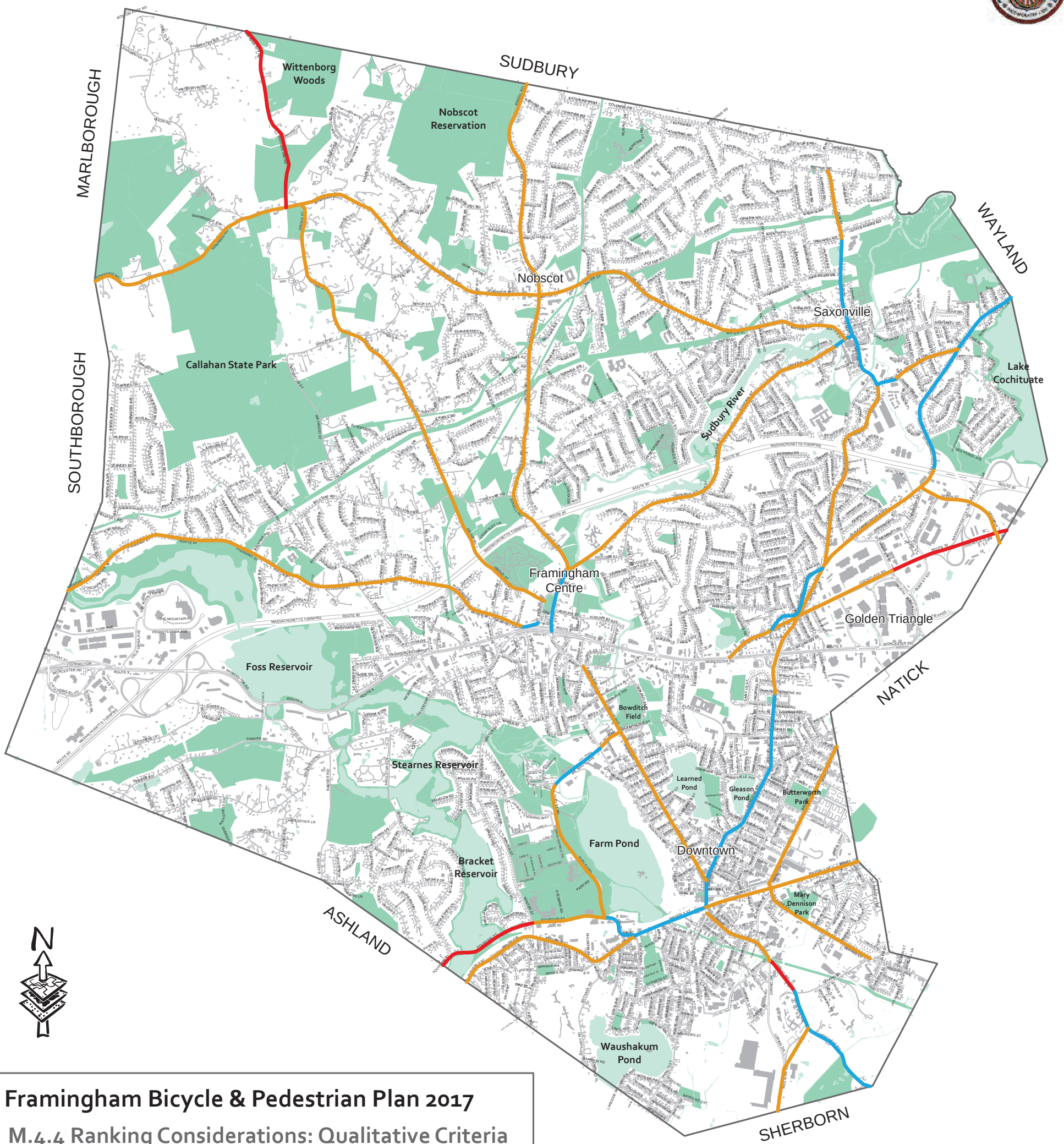
Last updated February 2017



Framingham Bicycle & Pedestrian Plan 2017

M.4.4 Ranking Considerations: Qualitative Criteria

Pedestrian Conditions

- 0 - Excellent
- 1 - Good
- 2 - Fair
- 3 - Poor

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0 0.5 1 2 Miles

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Prepared by the Division of Community & Economic Development
Last updated February 2017

Framingham Bicycle & Pedestrian Plan 2017

M.5 Roadway Prioritization Map

Total Ranking Score

- 25 - 53
- 54 - 60
- 61 - 70
- 71 - 92

1:24,000

0 0.5 1 2 Miles

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The Five Year Plan

The Five Year Plan is shown on *Map M.6* and includes the following priorities (subject to change in future funding years):

YEAR 1[14]

- **Mt Wayte Avenue/Dudley Road**—Multi-use path parallel to Dudley Road on Town-owned park land.
- **Blandin Avenue** – Not on original prioritization because it was not identified as a major arterial but added because improvements are planned to the roadway. This project calls for connecting Irving to Beaver, new sidewalks (partial), possible restriping and signage.
- **Beaver Street** – From Waverly Street to Kendall Lane. This project calls for restriping and signage, and possible sidewalk improvements.

YEAR 2

- **Speen Street** – Complete sidewalk on at least one side of the street. Consider adding pedestrian crossings where possible. Protected shoulder lanes or two-way bike path.
- **Fountain Street** – Adjust curb lines to allow enough space for bike lanes since existing curb-to-cub width is too narrow to accommodate them. Incorporate this into road reconstruction project. Recommend installing sidewalks on both sides of road including appropriately spaced crosswalks.
- **Waverly Street** – Waverly Street was evaluated in four segments:

  Waverly Street from Ashland Townline to 1067 Waverly St.: Add buffer strip to eastbound sidewalk. 5-ft marked bike lanes on both sides.

  Waverly Street from 1059 Waverly St. to Fountain St.: 5-ft marked bike lanes in both directions; continuous markings, with shared-lane markings at intersections with turning lanes. Add additional pedestrian crossings approximately every 500 feet. Redesign Fountain St. intersection with bike turning. Tighten turning radii where feasible. "No parking" signs.

  Waverly Street from Fountain St. to Concord St.: Buffered green painted bike lanes to displace street parking. More frequent pedestrian crossings. "No parking" signage. Bike lanes would end at turning lanes, replaced by shared-lane markings. Curb extension to narrow crossing of Concord.

  Waverly Street from Concord St. to Natick Townline: Buffered green painted bike lanes to displace street parking. More frequent crossings. Potential pedestrian bridge between Bishop and Concord over rail tracks. "No parking" signage. Bike lanes would end at turning lanes, replaced by shared-lane markings. Review need for turning lanes and reduce crossing width if possible.

YEAR 3

- **Concord Street**—Concord Street was evaluated in seven segments:

  Concord Street from Waverly St. to Union Ave.: Reconstruction in progress. Potential improvements include bike amenities, calibrating crossing signals, common improvements, etc. Add flashing pedestrian signal at Concord/Kendall intersection. Add "High Pedestrian and Bike Activity" (or something similar) sign for Concord Street drivers turning right onto Waverly Street.

  Concord Street from Union Ave. to Clark St.: Reconstruction in progress. Potential improvements include bike amenities, calibrating crossings. 2-way protected bike track from the North should terminate at Lincoln, getting people at least as far as the library.

  Concord Street from Clark St. to Hartford St.: Replace parking on one side with a 2-way bike track, buffered by curbing or bollards. Could test with paint and cheap materials before performing expensive reconstruction. Green paint at intersections. Signage. Add perpendicular pedestrian crossings at Clark, Lawrence, Pond, Mansfield, Arthur, Essex. Calibrate signals to reduce pedestrian wait at Hartford.

  Concord Street from Hartford St. to Valentine Rd.: Calm southbound traffic coming over Rte. 9 by narrowing lane width, and adding gateway signage identifying residential neighborhood. Consider two-way buffered bike path on northbound side. Evaluate possible additional pedestrian crossings, e.g. at Valentine. Evaluate need for turning lanes and consider removal. At minimum, paint shoulder lanes with "bike lane" signage.

  Concord Street from Valentine Rd. to Cochituate Rd.: On overpass, reduce lane width to 12' from 14'. Buffered shoulder lanes, or continue two-way bike path on northbound side. Between Fairbanks and Cochituate, consider reducing to 3 lanes to accommodate bikes. Possible shared-use markings; traffic calming a priority.

- **Bishop Street** was evaluated in two segments—

  Bishop Street from Waverly to Arthur: Restripe to include bicycle lanes in two directions. Reconstruct the sidewalk and install missing sidewalks on both sides of

14 Water Street restriping was originally part of our Year 1 projects but DPW staff were able to complete that project with current funding

the roadway. Provide a planted buffer. Install pedestrian-scale lighting. Install bulb outs at all intersections.

Bishop Street from Arthur to Hartford: Restripe to include bicycle lanes. Narrow drive aisles. Decrease shoulder. Upgrade all crosswalks to be handicap accessible. Add pedestrian and bicycle signage.

- **Western Ave** was evaluated in two segments—

Western Avenue from Leland St. to Herring Dr.: New sidewalk on southbound side for employees or visitors to MCI who may wish to walk. Share the road signage. Reduce lane width to 11' or 12'.

Western Avenue from Herring Dr. to Sherborn: Bike/pedestrian symbols in shoulder lanes to indicate shared. Possible buffered shared use path in future.

YEAR 4

- **Old Connecticut Path** was evaluated in four segments—

Old Connecticut Path from Wayland Town Line to Lovering Ave/ Pinecrest Rd: Install signage. Include bulb-out and crossing for the beach. Install bicycle lane on both sides of the street. Finish missing sidewalk from Brossi Circle to Wayland Town Line.

Old Connecticut Path from Lovering Ave/Pinecrest Rd to Mass. Turnpike: Installation of a bicycle lane. Complete handicap access ramps for crossings not upgraded. Narrow drive aisle. Install bulb-outs at crosswalk intersections. Provide bicycle signage and striping.

Old Connecticut Path from Mass. Turnpike to Concord Street: Install signage. Include bulb-out and crossing for the beach. Install bicycle lane on both sides of the street.

Old Connecticut Path from Concord St to Worcester Road: Roadway similar to the Carriage Road in Newton - could be used as a bicycle and running path if the roadway was restricted to local traffic. Would widen roadway for a bicycle/pedestrian path rather than a formal sidewalk. Drainage appears to run off to side of roadway.

YEAR 5

- **Central Street** was evaluated in seven segments—

Central Street from Concord St to Water St: Shorten crossing; remove island; curb extensions; benches; sharrows; bike boxes; add crossings at Water St. and Concord St.; automatic pedestrian signals; street trees.

Central Street from Water St. to Purchase St.: Shorten crossing by up to 10' by removing center island; install curb extension on northwest corner at Water; sharrows; bike box; ensure automatic pedestrian signals.

Central Street from Purchase St. to Johnson St.: Add pedestrian crossing at west side of Purchase intersection. Extend sidewalks and add buffers. Sharrows and "share the road" signs.

Central Street from Johnson St. to Wickford Rd.: Sharrows and "share the road" signage. Add sidewalk buffer between Wickford and Paxton. Curb extensions at Copeland 100-ft crossing. Add crossing at Hallett Rd. Curb extension at Wickford.

Central Street from Wickford Rd. to Mass. Turnpike: Reduce auto lane widths and stripe shoulder bike lanes.

Central Street from Mass. Turnpike to Prospect St.: Narrow traffic lanes and stripe bike lanes. Add perpendicular crossing at Simpson Park. Shorten parallel crossings with curb extensions or islands where possible. Add handicap ramps. Pave island at Summer St.

Central Street from Prospect St. to Edgell Rd.: Narrow traffic lanes and stripe bike lanes. Add perpendicular crossings at Edgell Rd. and Michaud Dr. Shorten parallel crossings with curb extensions or islands where possible. Add handicap ramps where missing.

- **Pleasant Street** was evaluated in two segments—

Pleasant Street from Vernon Street to Southboro Town Line: Signage; installation of a bicycle lane along with 1' buffer. The right of way far exceeds the curb-to-curb to allow for additional traffic calming and bicycle lanes.

Pleasant Street from Vernon Street to Church Green: Provide bicycle lanes/sharrow; decrease parking lot to one-way flow; decrease drive aisle in parking lot; relocate west bound entrance to parking lot to the most western bound of the parking lot; provide signage; install benches and bicycle racks.

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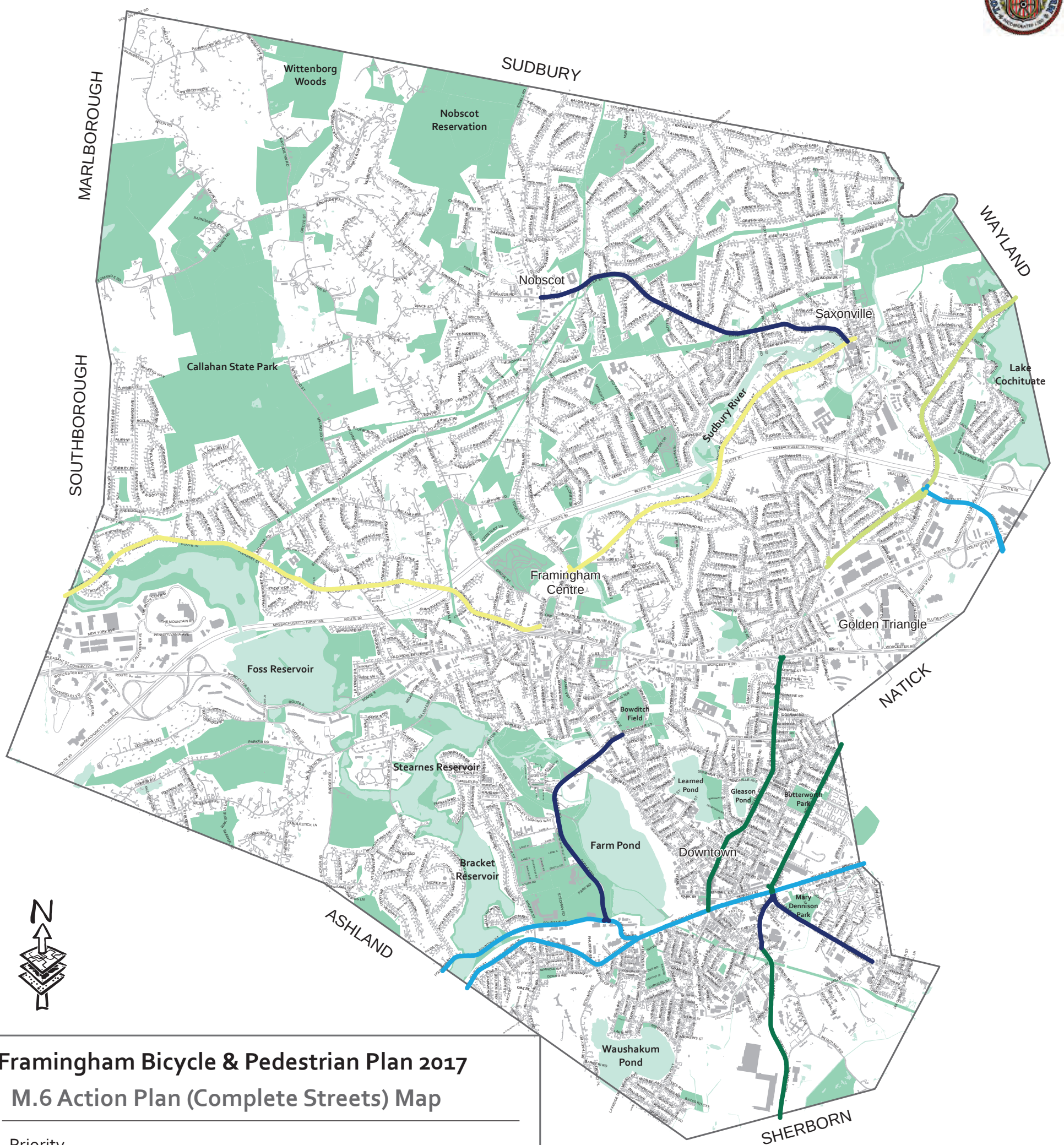
Prepared by the Division of Community & Economic Development
Last updated May 2017



Framingham Bicycle & Pedestrian Plan 2017

M.6 Action Plan (Complete Streets) Map

Priority

- 1 - Water St, Mt. Wayte Ave/Dudley Rd, Beaver St/Blandin Ave
- 2 - Speen St, Fountain St, Waverly St
- 3 - Concord St, Bishop St, Loring Dr/Western Ave
- 4 - Old Connecticut Path
- 5 - Pleasant St, Central St

*Action Plan subject to change based on funding availability, public support, etc.

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9 COMPLETE STREETS

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Section 9

COMPLETE STREETS

On January 6, 2015 the Framingham Board of Selectmen voted to approve and adopt the Town's First Complete Streets Policy. It was one of the first in the state and was ranked 9th best nationwide by Smart Growth America in 2015. "Complete Streets" is the concept that public ways should equitably prioritize the safety and convenience of pedestrians, bicyclists, motorists, transit riders, and the handicapped, with the goal of encouraging physical activity, reduced congestion, less pollution, and vibrant public spaces. More information and the full policy can be found in Appendix A and online at: http://www.framinghamma.gov/bikeped

Design Standards and Regulations for Complete Streets

An individual's decision to use a car for any given trip is influenced by a myriad of government policies and financial

EXCERPT FROM THE TOWN'S COMPLETE STREETS POLICY

ADOPTED JANUARY 2015

Complete Streets principles will contribute toward the safety, health, economic vitality, and quality of life in the Town of Framingham by providing accessible and efficient connections between residential, educational, commercial, recreational, civic, and retail destinations by improving multimodal environments throughout the Town's urban, suburban, and rural neighborhoods. Complete Streets are designed and operated to provide safety and accessibility for all users of Framingham's roadways, trails, and transit systems, including pedestrians, bicyclists, transit riders, motorists, commercial vehicles, and emergency vehicles and for people of all ages and of all abilities. The use of Complete Streets has been shown to have a positive impact on public health concerns, including improvements in air quality, promotion of physical activity, and enhanced access to healthier food options.

The purpose of Framingham's Complete Streets Policy is to enhance existing, create new, and strengthen connections between all transportation modes to accommodate all users through implementation of physical elements. The Town of Framingham will formalize the plan, design, operation, and maintenance of streets so that they are safe for all users of all ages and abilities. This Policy shall direct decision-makers to consistently plan, design, and construct streets to accommodate all anticipated users including, but not limited to pedestrians, bicyclists, motorists, emergency vehicles, and freight and commercial vehicles. In short, all transportation and development projects shall incorporate a Complete Streets philosophy that expands transportation choices for all users.

incentives. In addition to zoning regulations and parking policies, design standards for streets and roadways influence local government investment in the public realm, often prioritizing the mobility needs of motorists over those who might enjoy taking short trips by foot or by bicycle[15].

Public officials must make decisions about how to move people into and out of Framingham, but also within the Town, and within neighborhoods. These decisions must strike the right balance between mobility and quality of life for residents. The Complete Streets principles described in this plan are a useful framework for making these decisions.

Framingham will not be "reinventing the wheel" with implementing Complete Streets. Countries such as Denmark and the Netherlands have decades of experience designing streets for all users and have much success to show for their efforts, with some of the highest rates of bicycling in the world. Closer to home, American cities and professionals in the design, planning, and engineering community are increasingly embracing Complete Streets concepts. Many cities and states are changing their street design practices and regulations on parking to encourage a "mode shift"[16] in how people choose to get around. Professional organizations and advocacy groups have also released their own guidelines and resources for implementing Complete Streets.

RESOURCES FOR IMPLEMENTATION

State and Federal Design Guidelines

MassDOT *Project Development & Design Guide* (latest edition): http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/ManualsPublicationsForms/ProjectDevelopmentDesignGuide.aspx

MassDOT *Separated Bike Lane Planning & Design Guide*: http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/ManualsPublicationsForms/SeparatedBikeLanePlanningDesignGuide.aspx

Third-party

National Association of City Transportation Officials *Urban Bikeway Design Guide* (latest edition)

National Association of City Transportation Officials *Urban Street Guide* (latest edition)

Institute of Transportation Engineer's (ITE) *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach* (latest edition)

American Association of State Highway and Transportation Officials (AASHTO), *A Policy on The Geometric Design of Highways and Streets* (latest edition)

Complete Streets Defined

A Complete Street is one that allows pedestrians, cyclists, motorists, and public transit to move comfortably and safely. This does *not* mean that each street must be wide enough to provide separate space for each type of user.

Motorists travel more slowly on narrow shared streets because pedestrians, bicyclists and constrained space make potential collisions more likely. Real-world examples show that pedestrians and bicyclists are often comfortable sharing space with motorists be-

15 The Institute of Transportation Engineers' manual is commonly used to model the expected traffic impacts of development, and to design improvements to local streets to accommodate additional traffic.
16 A mode shift is a term sometimes used to describe a change in the predominant way people choose to move from place to place in a given context.

cause of the slow speed of travel, and because the crossing distance is so short. No expensive curbing, bicycle lanes, or signalization are necessary for this context. Some residential streets are narrow enough, with slow and infrequent traffic, that sidewalks are not even necessary.

With a larger right of way, separation of buildings, and faster traffic flow, pedestrians and bicyclists feel less comfortable sharing space with motor vehicles. Thus, the faster and more frequent the traffic, the more separation and safety measures are needed for other modes of travel. A sidewalk or painted bicycle lane next to fast-moving traffic may not be enough for non-drivers to feel safe.

Road vs. Street – How public space functions

The implementation of Complete Streets will depend on context. Although design guidelines and manuals exist for many situations, the design chosen for a particular public space depends on a community's priorities for that space. In any Complete Streets implementation, decision-makers need to ask, "whom is this space designed to serve," and "what level of service is expected for different types of users?"

"Road" is a word that we typically use for a way that provides a connection from Point A to Point B. Roads tend to be longer than streets, and they tend to prioritize automobiles. "Street" is a word that historically has a more urban context, meaning the common ways between buildings in a more densely developed area. Streets are more complex spaces than roads in their function. When buildings are closer together and there may be many residential, commercial, industrial, and recreational activities occurring within a small area, it becomes more feasible (and more efficient) to move around by foot or bicycle.

Narrow shared streets are common in much of the world and function well. Source: Google Earth

Streets must balance the needs to all users, taking into account the needs of adjacent land uses and development goals of an area. Motorist convenience and parking needs should be weighed against the benefits of encouraging walking, biking, and transit ridership, keeping in mind that auto congestion and parking needs are lessened when people have safe and convenient alternatives for travel. Automobiles also

take up more space than any other mode of transportation, leading to the highest costs.

More than just sidewalks and bike lanes

Complete Streets is a design perspective that prioritizes all users equitably. More than simply providing accommodation in the form of sidewalks or bicycle lanes, it involves employing multiple treatments to achieve more balance and provide viable alternative modes of travel. Equally important is considering how the whole space affects each user, in terms of both safety and convenience. In addition to various paving materials, pavement markings, curbing, and other types of barriers, appropriate signalization and signage is important to help users of public ways understand how to navigate. Finally, Complete Streets involves providing amenities for pedestrians, bicyclists, and transit riders that will encourage them to use the space, including seating, bicycle parking, bus shelters, and beautification elements like street trees.

Source: New York City Department of Transportation

Excellence in the Pedestrian Environment

The following sections provide specific examples of Complete Streets interventions that could help Framingham become more walkable, bikeable, and encourage mass transit.

Minimize distances when crossing vehicular traffic

Pedestrians' comfort is lessened when making long crossings. Wider lanes and roads tend to have faster moving traffic, and even when stopped, such vast expanses of pavement leave pedestrians feeling exposed. Below are some of the strategies for reducing long crossings:

Minimize number of auto travel lanes and turning lanes

Often roadway designers will widen the right of way in order to accommodate more traffic or reduce motorist wait times, by adding travel or turning lanes. One side effect of this approach is that it lengthens pedestrian crossings. Investments to accommodate more auto traffic are often made without serious consideration of the impact

to other users of the public way[17]. When we discourage walking in this way, it reinforces motor vehicles as the default transportation mode of choice.

Curb extensions or bulbouts

Roadways with parking on either side are often great candidates for curb extensions (also called "bulbouts" or "bumpouts"), which are typically installed at intersections or at midblock crossings. The curb is extended out to occupy a small portion of the parking lane, while still allowing most of each block to be occupied by parked vehicles. Since a typical parking lane is roughly 8 feet in width, installing curb extensions on Union Avenue in Framingham would shorten the crossing by 16 feet, making it significantly more comfortable. Curb extensions have the added benefit of narrowing the roadway, which serves as a visual cue for drivers to slow down.

One disadvantage to curb extensions is that they are relatively expensive to install and to modify once in place. Permanent curb extensions can be complicated and are not always compatible with bike lanes. Many cities are turning to less permanent materials for curb extensions, such as a painted surface with bollards.

Reduce turning radius

Some intersections have extremely rounded corners, constructed to enable faster turns and larger vehicles. This geometry can make pedestrian crossings unnecessarily long, while allowing vehicles to make turns at dangerously high speeds. Similar in function to a curb extension, reducing turning radii at street corners means making turns more square, and can have the added benefit of additional sidewalk space.

Refuge islands

Although the Town should avoid allocating additional space to motor vehicles, and shortening pedestrian crossings from end to end should be studied first, there are some crossings that are already long where curb extensions are not feasible, either because removing a traffic lane would cause unacceptable delays, or because a minimum turning radius must be maintained to

Curb extension at Framingham Public Library

17 The common traffic data concept of "Level of Service" or LOS is used exclusively for motorized vehicle volumes, not for bicyclists, pedestrians, or transit riders.

As part of the Concord St. reconstruction, the turning radius at the corner of Concord St. and Lincoln St. was reduced to shorten crossing of Lincoln St. (sidewalk formerly followed the fence at left).

accommodate larger vehicles. In such situations, a curb-protected island may be provided to break up the long crossing with a resting space.

Provide Accommodations that Correspond to How People Walk

A pedestrian-friendly community does not just *accommodate* pedestrians. It *prioritizes* them and encourages people to walk by making it convenient as well as safe. In Framingham, there are many places where there are safe pedestrian accommodations, but where pedestrians are nevertheless inconvenienced. Below are some best practices that should be followed wherever the Town wishes to prioritize pedestrian activity, such as Downtown-area neighborhoods and the Saxonville and Nobscot villages.

Appropriately spaced crossings in locations where people want to cross

In pedestrian-oriented areas, pedestrians should not be expected to go very far out of their way to find a crosswalk or a safe place to cross the street. People have a tendency to choose the path of least resistance, so they will jaywalk unless a nearby crossing is accessible. Where people regularly desire to cross, they should be accommodated to the extent possible. Many cities have prohibited cul-de-sacs and established maximum block lengths, which are typically 300 to 600 feet[18]. Crossings should not be spaced further

18 See Page 155, "Block Length Standards" in Steiner and Butler, *Planning and Urban Design Standards,* American Planning Association (2007).

than that. Also, when considering new buildings and parking, crosswalks should align with entrances and natural desire lines wherever possible.

Encourage automatic crossing signals in pedestrian-oriented areas such as downtown and village centers

In most pedestrian-friendly cities and town centers, pedestrians are automatically prioritized in the public way. Pedestrians signals should be adjusted if necessary to automatically illuminate the pedestrian crossing. Pedestrians are inconvenienced when they must press a button and wait through an entire cycle of a traffic light in order to cross. For convenience of travel, pedestrians should cross with the direction of traffic, unless a high amount of pedestrian traffic makes an automatic all-way crossing feasible. All-way crossings (where pedestrians cross in all directions at once) are potentially safer, but if they must be triggered by a button, many pedestrians are unlikely to wait an entire cycle of the light to cross.

Signals should provide a comfortable amount of time to cross the street

Pedestrian signals often provide barely enough time for people to cross a street. Many people, especially the elderly or disabled, or even just "out-of-shape" individuals, may feel hurried and experience anxiety about the short amount of time in which to cross safe-

A recently installed refuge island at Concord St., School St., and the Cochituate Rail Trail.

A common pedestrian signal in Boston with no push button. Source: www.bikepedimages.org/ Laura Sandt

A generous pedestrian signal in Prague, Czech Republic (Photo: ŠJů, Wikimedia Commons)

Incomplete intersection with crossings in one direction only (Franklin St. at Proctor St.)

ly. Pedestrian signals should be adjusted to provide ample crossing time for those at a slower pace. In areas of high pedestrian traffic, signals should provide more than enough time for one individual to cross.

Ensure continuous sidewalks with ample room to pass

Where sidewalks are necessary for safety, or to encourage people to walk, they must provide continuous connections, as well as appropriately located crossings (i.e. if sidewalk ends on one side of the street but continues on the other). Driveway openings should be minimized and constructed with a maximum width, in order to reduce interruption to the pedestrian experience.

Maximize connections, intersection density to give people choices

Safe streets are not walkable if they do not provide convenient access to places people want to go. Neighborhoods should maximize intersection density and trail connections to give people direct connections to where they want to go. In Framingham, there are many neighborhoods where walking to your neighbor's house on the next street over could involve a circuitous route. The ideal block length is between 300 and 600 feet[19] between intersections.

Provide amenities in the public way

Streets are not just for moving from

19 See note 18.

point A to point B. They play an important function in the social fabric of a community, and they provide outdoor open space in which to congregate and play. The design of streets can also define the character and identity of a neighborhood. Design features and amenities can really make a difference in whether people choose to walk.

Street trees and landscaping

Well-maintained street trees and landscaping within the public right of way and within view of the right of way can dramatically improve the quality of life and the visitor experience in a neighborhood, encouraging people to step outside and enjoy themselves. Where possible, street trees should be provided between the sidewalk and the curb within a planted strip. This provides a visual and physical buffer between pedestrians and vehicular traffic that helps pedestrians feel safer and more relaxed. Landscaping along the property line at the street edge, such as bushes or stone walls, provides definition to the pedestrian pathway as well as beautification that people may find enjoyable.

Public Seating

In order to activate public spaces with people on foot, there must be seating, and ideally many different options for seating. Since designers don't always know where people will want to sit, it is best to give people choice. Many plazas and streets now incorporate movable tables and chairs. People will be more likely to walk places if they can stop and take a break at a bench. In order to make our downtown and village centers desirable destinations, people must see that other people enjoy being in those spaces. Without seating, pedestrians are more likely to move on and congregate somewhere else, either indoors, or elsewhere in town.

While some people object to the types of people they see using public seating, such as the homeless, removing seating altogether in an attempt to create a more attractive environment can prevent *everyone* from enjoying the public space, and make public spaces seem underutilized or empty. Providing more seating options allows more people to feel comfortable using

Waverly Street: The block between South St. and Marble St. is over 1,000 ft. The block on the north side between Concord St. and Bishop St. has no intersections for approximately 2,000 ft. This hinders pedestrian connections in the Downtown area.

A recently installed landscaped strip with trees provides an effective visual screen to an unsightly empty lot in Saxonville. The new sidewalk incorporates brick edging and elegant street lamps to enhance the visual environment.

a space. Activating key public spaces with appropriate seating is an important tool in the economic development toolbox.

Textured pavement

The type of pavement itself can be used to define a neighborhood and give it an identity that people may enjoy. Decorative brick, stone, or painted designs can provide a visually pleasing environment. The Concord Street reconstruction project has incorporated brick edging and textured red crosswalks. Such elements give the appearance of elegance and care, sending the message that the Town wants this area to be inviting, and that the pedestrian environment is a priority.

Appropriately scaled lighting

Light fixtures that are decorative, or low to the ground and spaced close together can provide a pleasant environment for pedestrians, in contrast to the tall, utilitarian flood lamps—often called "cobra-heads"—that are featured on many streets. Warm colored light is preferable to bright white or blue light, which can appear particularly harsh at night and may be more bothersome to residents in their homes.

Outdoor vendors, performers, public art

Activating public space and encouraging foot and bicycle traffic is also facilitated by temporary installations and amenities like markets, food trucks, performances, and public art. Street fairs that occasionally close off the street to vehicular traffic can encourage people to enjoy and take pride in their civic space, and to interact with others and build community. Public art could involve murals, fixed sculpture installations, or temporary projects that transform public space in creative ways.

A food truck on Western Ave. in Cambridge

Minimize front yard parking and curb-cuts

The Framingham Zoning Bylaw currently does not allow parking within the required front setback between a building and the street, and it limits pavement to a single driveway no more than 18 feet in width. The purpose of this rule, in addition to encouraging landscaping adjacent to the public way, is to minimize where vehicles can cross over the pedestrian sidewalk, causing a potential conflict. Where pedestrians must constantly worry

about being struck by vehicles turning and entering, their comfort is not a priority. Many cities and towns encourage alleys in the construction of neighborhoods, so that vehicles may be stored to the rear of buildings. This also helps minimize the number of points where vehicular collisions can occur. While it is difficult to incorporate alleys into existing neighborhoods, new developments should incorporate parking to the side or rear of structures.

Discourage large front yard setbacks

Pedestrians generally do not feel comfortable in wide open spaces where shelter or trees are not easily accessible. Large front yards may give a neighborhood an appearance of tranquility and open space, or a semi-rural feel that many people prefer. However, as a pedestrian, a large open lawn on one side, and a large open roadway on the other side leaves one feeling exposed unless the sidewalk is bounded by trees or tall bushes. Large distances between buildings also reduce the likelihood that people will choose to walk for functional purposes (i.e. other than exercise or dog-walking). Finally, when large front yards are required, property owners are often left with little to no open space to the rear of the structure, and there may be nowhere to park vehicles except the front of the building. Encouraging structures to be placed close to the street, while maintaining a modest setback for landscaping, creates a more walkable environment.

Handicapped accessibility

There are strong regulations for accommodating handicapped individuals, and the Town has dedicated staff in the Department of Inspectional Services (Building Department) to ensure that projects comply with all ADA requirements. Sidewalks must be kept clear of obstructions to provide a minimum three-foot-wide path. Utility poles, equipment cabinets, trees, furniture, and snow can all block sidewalks and create unsafe conditions where the handicapped may be forced into dangerous street traffic. Many of the same principles that provide greater comfort to pedestrians would also ensure greater safety for handicapped persons. When developments are

Pavement and parking between a structure and the street, as shown on Pearl St.

When parking lots are located to the front of buildings, it typically results in less convenience and comfort for pedestrians. This building, in the center of Nobscot, has two curb cuts and requires pedestrians to traverse a large parking lot to reach the building, with no walkways provided.

A green painted bike lane and left turn box in Cambridge grabs motorists' attention and shows cyclists the safest way to navigate the intersection.

Framingham's first bicycle shoulder lanes were created on Water Street in 2016, with enforceable "no parking" signage to keep the way clear

more compact, discourage automobile traffic, and encourage a walkable orientation, the costs to conform with ADA requirements are also less than a lower-density design.

Excellence in Bicycle Amenities

Bicycle rights and the responsibility of motorists

Bicycles belong in the travel lane! In most situations where separated bicycle facilities are not provided, roadway designers intend for cyclists to share the travel lane with autos. Sidewalks are typically not designed for pedestrians and bicyclists to comfortably pass. In these situations, and when shoulder lanes are not at least 5 feet in width or have obstructions such as parked vehicles, bicyclists must share the traffic lane. By law, bicyclists are entitled to use a full traffic lane, especially when needed to avoid obstructions or the "door zone" between parked cars and the flow of the traffic.

Where bicycling is to be encouraged, and where it is not feasible to provide separate accommodation, traffic calming techniques should be used to avoid high speeds. Pavement markings and signage should clearly indicate to motorists that the right-of-way is intended to be shared. For pedestrian safety and comfort, it may also be necessary to enforce prohibition of bicycles on sidewalks, especially in Downtown and the village centers.

Bicycle paths must be context sensitive according to "Level of Stress"

Shoulder lanes

Some bicycle advocates assume that bicycle shoulder lanes are an appropriate and necessary treatment on any given roadway. But depending on the context, shoulder lanes may be neither safe nor necessary. Shoulder lanes should be at least 5 feet in width for a one-way path, in order to avoid obstacles such as storm drains or debris. Shoulder lanes must not allow parked vehicles to block the path, and must be posted with "no parking" signage, with adequate enforcement provided. Painted bicycle markings are typically used to designate the space is reserved for bicyclists. In areas where extra visibility is needed, shoulder lanes may be painted a solid color such as bright green or blue. If space permits, a painted buffer can help distinguish a bicycle lane from a normal shoulder parking lane and provide additional separation.

Protected paths

On busy roadways such as Concord Street, Waverly Street, or Union Avenue, bicycle paths should be separated from traffic by a physical barrier such as bollards, curbing, removable plastic posts, or by a lane of parked cars. Research shows that bicyclists are significantly more likely to use a bicycle path if it is physically protected from vehicular traffic[20]. Many of the busy streets in Framingham are not congested with

20 See PeopleForBikes, "Protected Bike Lane Statistics," http://www.peopleforbikes.org/statistics/category/protected-bike-lane-statistics

Example of an inexpensive protected bicycle path in Chicago with removable plastic posts that help ensure vehicles do not park or use the bike lane to pass. Source: People For Bikes

A typical shared lane marking where there is insufficient width for a dedicated bicycle lane. Asheville, NC. Source: www.bikepedimages.org / Lyubov Zuyeva

parked vehicles. A suggested solution in these cases may be to consolidate parking on one side of the street, with protected bicycle paths on both sides.

Shared lane markings ("Sharrows")

On narrow roads or where space is constrained in congested areas, speeds may be slow enough, or traffic infrequent enough that separated bicycle paths are not necessary or warranted. In Downtown Framingham, for example, motorists typically move slowly, and installing bicycle lanes would significantly worsen traffic conditions. Bicyclists are relatively safe riding in traffic, as many currently do, compared to faster-moving roadways. Shared lane markings in the street would make clear that the street is meant to be shared, and that bicyclists do not belong on the sidewalks. Shared lane markings are also appropriate at intersections where shoulders are replaced by turn lanes, or where bicyclists need to merge for left turns.

Shared-use paths

In rural conditions or parkland where people tend to use the roadway for recreation and longer-distance transportation, a multi-use path off the road may be appropriate.

Intersection Treatments

Intersections are among the most dangerous locations for bicyclists in the roadway. Turning cars and trucks may not see a cyclist, and it can be difficult for bicyclists to navigate left turns.

Covered bike parking at retail plaza

MBTA bus shelter. Source: MBTA.com

Green painted lanes within intersections can show where bicyclists are meant to travel. Bike "boxes" may be placed ahead of the vehicle stop line to allow bicyclists to have a head start or make left turns.

Provide a continuous network of bike-friendly streets and paths

Bicycle paths, no matter how well protected, are unlikely to stimulate a large number of people to bicycle if they are not connected to other paths. One or two streets with bicycle paths will not encourage a significant number of riders to change how they move about on a daily basis. In order to meet the Town's broader goal of encouraging functional walking and bicycling, for work and other practical needs, a complete network of bicycle infrastructure must be developed.

Adequate facilities for bicycle parking

The Town of Framingham already requires new developments to incorporate bicycle parking. Additional facilities must also be provided in public places. Outdoor bike parking should be covered where possible, to provide additional convenience for riders. Racks must be able to accommodate large tires, such that the frame can be locked to the rack (not just the wheel).

Transit and Shared Transportation Encourages Walking and Bicycling

People who regularly use transit are also likely to walk and bicycle more, since they rely less on a personal vehicle for their mobility needs. Often transit users walk or bike for the first or last leg of their trip. Transit-friendly streets are a critical component of complete streets. People cannot walk or bike everywhere, so encouraging walking and biking means providing alternatives to driving alone for longer-distance trips, and for commuting to centers of employment. People will not use transit if it is not comfortable, easy to understand, and convenient.

Comfortable, clean train stations and bus shelters

Simply put, people don't want to wait for a ride in the rain or snow. Bus shelters that are clean, comfortable, and attractive encourage more ridership, and they make it clear to new riders where the bus stops. Reserved bus pull-off areas can be incorporated into new developments and street redesigns. Sidewalks need to be wide enough to accommodate bus shelters.

Clear signage, schedules

With mobile technology, it is easier than ever to view bus schedules and route information, but physical signage is imperative to helping passengers

navigate where they need to go. Bus stop signs should note the route number. Shelters typically feature system maps and schedules.

Shared vehicles

With services like Zipcar, Turo, Uber, and Lyft operating in Metro Boston, it is easier than ever to access a vehicle without having to own one. For people who use transit on a regular basis and occasionally need a vehicle, shared-access vehicles make a lot of financial sense. These services are therefore an excellent complement to transit. There are indications the market for automobiles is increasingly shifting toward access as a service, and away from personal ownership. This shift has the incidental benefit of reducing the need for parking and reducing congestion on our streets. Studies have shown that every car-share vehicle such as a Zipcar eliminates several personal vehicles from our streets, alleviating congestion and reducing costs[21]. In an effort to free valuable public and private space, many cities have reserved on-street and off-street parking spaces for shared-use vehicles.

MBTA bus signage. Source: Wikimedia Commons | Pi.1415926535

Parking spaces reserved for shared-access vehicles. Source: flickr.com | Timothy Vollmer

21 E. Martin and S. Shaheen, "Impacts of Car2go on Vehicle Ownership, Modal Shift, Vehicle Miles Traveled, and Greenhouse Gas Emissions: An Analysis of Five North American Cities." Transportation Sustainability Research Center, University of California, Berkeley, July 2016. https://goo.gl/WttklS

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10 RECOMMENDATIONS

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Section 10

RECOMMENDATIONS

Goal	Objective or Best Practice	Type	Lead	Funding Source	Timeframe	Status
1. Identify the Assets	1.1 Update the Town's sidewalk inventory & GIS data	Data collection	DPW, C&ED	Internal	Short term	
	1.2 Sidewalk condition inventory	Data collection	DPW	Internal	Short term	COMPLETE—DPW hired a consultant to perform a sidewalk inventory. The report was completed in 2016.
	1.3 Update the Town's trails GIS data	Data collection	C&ED, ConCom	Internal	Short term	
	1.4 Consider an online comment board to solicit ideas for specific bike and pedestrian roadway improvements and treatments	Data collection	C&ED, PIO	Internal	Medium term	
2. Connect Assets into a Usable Bicycle and Pedestrian Network	2.1 On narrow and restricted roadways where sidewalks on both sides are not feasible, sidewalks on one side of the roadway shall be sufficient	Policy	DPW	Internal	Ongoing	
	2.2 Prioritize arterial roadways for bike & pedestrian implementation	Planning	DPW, C&ED	Internal	Short term	Ongoing – In preparing for the first round of Complete Streets funding, DPW, PB, and C&ED created a Five Year Action Plan that will require continued review
	2.3 Prioritize secondary roadways for bike & pedestrian implementation, and as alternatives to major arterials	Planning	DPW, C&ED	Internal	Medium term	
	2.4 Apply through the MassDOT Complete Streets Funding Program in FY17 and FY18 to secure funding for the Dudley Road Multi-use Path Phases 1 & 2	Grant	DPW, C&ED	Max $400,000 per round	Short term	FY17 COMPLETE – The Town submitted a successful application for $400,000 to fund the first phase of the Dudley Road project. Construction of this phase will be complete by 6/30/2017.
	2.5 Complete/extend bicycle & pedestrian connections in high priority areas as outlined in the Prioritization Plan (Appendix F) and Five Year Action Plan (Section 8) according to feasibility and funding	Capital/Grant	DPW	Chapter 90, Complete Streets, MassWorks, TIP	Ongoing	
	2.6 In determining design and feasibility for bicycle and pedestrian improvements, prioritize low-cost "quick build" temporary or semi-permanent installations using paint and other simple materials that do not require reconstruction or repaving of roadways. This approach can provide expedited public benefit without significant cost, and can be easily reversed.	Policy, Planning	DPW, C&ED	Internal, Complete Streets	Ongoing	

Goal	Objective or Best Practice	Type	Lead	Funding Source	Timeframe	Status
	2.7 Continue to increase public access to aqueduct system: • Sudbury Aqueduct – Open all segments and provide connections through downtown streets • Weston Aqueduct – Open remaining segments from Southborough to Wayland • Complete linkages between Weston and Carol Getchell trail and Cochituate Rail Trail	Capital/Grant	P&R	Parks & Rec/Grants	Long term	Weston Aqueduct – An additional segment from Edgell Rd to Lyman Rd was opened to the public in late 2016.
	2.8 Implement Danforth Green Reuse Plan and its trail amenities	Capital/Grant	P&R, ConCom	N/A	Long term	
	2.9 Acquire CSX corridor and design and construct Phase 3 of the regional Bruce Freeman Rail Trail	Capital/Grant	C&ED, DPW, ConCom, BOS	DCR Recreational Trails Program, DCS LAND or PARC Grant, NPS Land & Water Conservation Fund, PeopleForBikes Community Grant Program, Friends of the BFRT	Long term	
	2.10 Support enactment of the Community Preservation Act to provide funding that supports acquisition and development of pedestrian facilities	Policy	all	N/A	Medium term	
3. Maintain the Bicycle and Pedestrian Network	3.1 Implement public reporting system of maintenance issues (e.g. Commonwealth Connect), promote it to bicyclists and pedestrians, and ensure complaints are adequately addressed	Data collection	DPW, PIO	N/A	Medium term	
	3.2 Suggest DPW walk roads once a year to identify problems for bicycling and walking and note for plan inclusion	Policy	DPW	N/A	Ongoing	
	3.3 Investigate creating a snow removal policy requiring owners to clear sidewalks or face fines; develop plan for enforcement. Consider a pilot project in certain districts or neighborhoods. Refer to MAPC's Snow Removal Policy Toolkit at www.mapc.org/resources/snow-removal-policy for relevant resources.	Policy	DPW	Internal	Medium term	
	3.4 Snow removal should clear the entire length of sidewalks and future dedicated bicycle paths. The Town of Framingham should ensure that snow removed from roadways is not dumped onto the sidewalks or bicycle paths.	Policy	DPW	Internal	Ongoing	
	3.5 Broken glass on roadways and off-road paths is a major deterrent to both bicyclists and pedestrians. Road sweepers should be utilized on paved multiuse paths, public roadways, and shoulders of state-owned highways on a regularly scheduled basis. These efforts should complement ongoing municipal street cleaning.	Policy	DPW	Internal	Ongoing	

Goal	Objective or Best Practice	Type	Lead	Funding Source	Timeframe	Status
	3.6 Trash and recycle bins, and other street furniture on public sidewalks should be easily accessible in Downtown and other pedestrian-oriented areas, and shall be appropriately maintained	Policy	DPW	Internal	Ongoing	
	3.7 Pedestrian walk signals shall be evaluated for opportunities to maximize pedestrian convenience. Four-way and push-button walk signals are discouraged in priority pedestrian areas, as they can cause unnecessary delays.	Policy/Planning	DPW, C&ED	Internal, Complete Streets	Ongoing	
4. Design for Bicycle and Pedestrian Safety	4.1 Encourage and increase Safe Routes to School programming across Framingham schools	Program	SD, C&ED	N/A	Short term	
	4.2 Install bike lockers/storage boxes at key areas to prevent theft of bicycles, such as train station and downtown	Capital/Grant	MWRTA, PB	N/A	Ongoing	
	4.3 Transform underutilized asphalt (roadways or parking areas) into grass and other uses (plazas with planters, seating areas, buffered bicycle lanes, widened sidewalks).	Capital/Grant/ Policy	C&ED, PB, DPW	Placemaking grants	Ongoing	
	4.4 Encourage major employers to provide covered and secure bicycle parking and shower and locker facilities for their bicycle commuters	Policy/Planning	C&ED, PB	Internal	Ongoing	
	4.5 Encourage and implement enhancements to bicycle and pedestrian safety such as protected bicycle paths, bump-outs to shorten crossing times, and painted markings to increase space in the right-of-way devoted to non-motorists	Planning/Grant/ Policy	C&ED, DPW, MAPC, PB	MAPC, Placemaking grants	Ongoing	
	4.6 Encourage Framingham officials to continue attending the MassDOT Moving Together annual conference. Refer to Section 4 of the Plan for more info.	Education	C&ED, PB, DPW	N/A	Ongoing	
5. Communicate Bicycle and Pedestrian Routes through Education and Signage	5.1 Create an informational map packet for trails and/or bike routes	Education	C&ED, ConCom	Internal, DCR Recreational Trails Program, NPS Rivers, Trails, and Conservation Assistance Program	Short term	
	5.2 Identify neighborhood based walking routes, trails, connections, & linkages for outreach to encourage walking and include these routes in information packets, such as: • Sudbury River/Sudbury Aqueduct from Winter to Dudley to Franklin • Framingham Centre – Central St/Sudbury River/ Auburn St/Grove St Cemetery • Weston Aqueduct/Carol Getchell Trail/Saxonville/ Cochituate Rail Trail • Foss Reservoir/Pleasant Street/Tech Park	Education	C&ED, ConCom, P&R, PB	Internal	Medium term	

Goal	Objective or Best Practice	Type	Lead	Funding Source	Timeframe	Status
	5.3 Create a smartphone app to further promote where residents and visitors can walk and bike in Town	Data collection	PIO, C&ED	N/A	Long term	
	5.4 Promote Rules of the Road education in schools (curriculum, handouts, Police, etc.) and via the Town's social media (Facebook, Twitter, website, etc.)	Education	PIO, Police Dept	N/A	Medium term	
	5.5 Improve signage along bicycle routes	Capital/Grant	Bike route owner	N/A	Ongoing	
	5.6 Encourage bicycle training (repairs, Rules of the Road, etc.) through engagement of FBPAC and MassDOT, MassBike, or other agencies' programs	Education	FBPAC	N/A	Ongoing	
6. Provide Seamless Links to Transit	6.1 Bring a rental bike program, such as Hubway, to Town (pilot program from train station/downtown to colleges)	Program	C&ED, P&R	N/A	Medium term	
	6.2 Expand MWRTA bus service, including increased frequency and more convenient routes to major employers and activity centers	Planning	MWRTA	N/A	Long term	
	6.3 Provide more bicycle and pedestrian amenities (lockers, bike racks, street furniture, shelters, and signage) at transit terminals	Capital/Grant	MWRTA, PB	PB mitigation	Ongoing	
7. Include Bicycle and Pedestrian Access in Land Use Planning	7.1 Require parking behind buildings in order to retain a high quality bike & pedestrian environment along roadways	Policy	PB, BD, ZBA	Internal	Ongoing	Bylaw regulations requiring parking to side or rear of buildings was passed at Town Meeting (October 2015). Planning Board may grant waivers. Greater enforcement needed.
	7.2 Map existing bicycle racks across Town and increase inventory in key areas: Town Hall, parks, Framingham Centre Common, downtown, train station, schools, etc.	Data collection	DPW, C&ED, PB	Internal	Long term	
	7.3 Manage parking to promote alternative modes of transportation through examining parking regulations. Consider pilot projects in key districts. • Reduce or cap required off-street parking • Park-and-rides • Incentives for parking reduction programs • Require bicycle racks in new developments • Close curbcuts to increase connectivity • Require back-in angled parking where feasible to avoid collisions • Price on-street parking as necessary to discourage long-term parking in front of storefronts • Encourage long-term parkers to use off-street garages • Time limits must be enforced in busy areas • Convert parking to bike lanes	Policy	PB, C&ED	Internal	Long term	

Goal	Objective or Best Practice	Type	Lead	Funding Source	Timeframe	Status
	7.4 Investigate utility easements, alleyways, and paper streets that were never constructed as potential rights-of-way for connections	Planning	PB, C&ED	Internal	Short term	
	7.5 Encourage and permit annual, monthly, daily Park(ing) Days which encourage local business owners to transform a downtown parking space into a temporary public park, café, and on-street bike parking. May be limited through the permit process to certain Applicants.	Planning	C&ED, BD	Internal	Ongoing	
	7.6 Establish minimum intersection density, maximum block length, and/or a connectivity index to ensure new subdivisions connect to adjacent neighborhoods and provide a minimum standard of pedestrian and bicycle connectivity. Enforce maximum length for dead-end streets.	Policy	PB, BD	Internal	Short term	
	7.7 Reduce required minimum front yard setbacks except in rural scenic areas, in order to encourage walkable neighborhoods. Pedestrians are more comfortable when less exposed, and when distances between structures are shorter.	Policy	PB	Internal	Short term	
	7.8 Establish a Bicycle and Pedestrian Plan Implementation Working Group to meet on a quarterly basis to implement this Plan. Revisit and update this Plan every five years.	Planning	C&ED	Internal	Ongoing	

BD—Department of Inspectional Services (Building Department)

BOS—Board of Selectmen

C&ED—Community & Economic Development

ConCom—Conservation Commission

DPW—Department of Public Works

FBPAC—Framingham Bicycle and Pedestrian Advisory Committee

MAPC—Metropolitan Area Planning Council

MWRTA—MetroWest Regional Transit Authority

P&R—Parks and Recreation

PB—Planning Board

PIO—Public Informational Officer

SD—School Department

ZBA—Zoning Board of Appeals