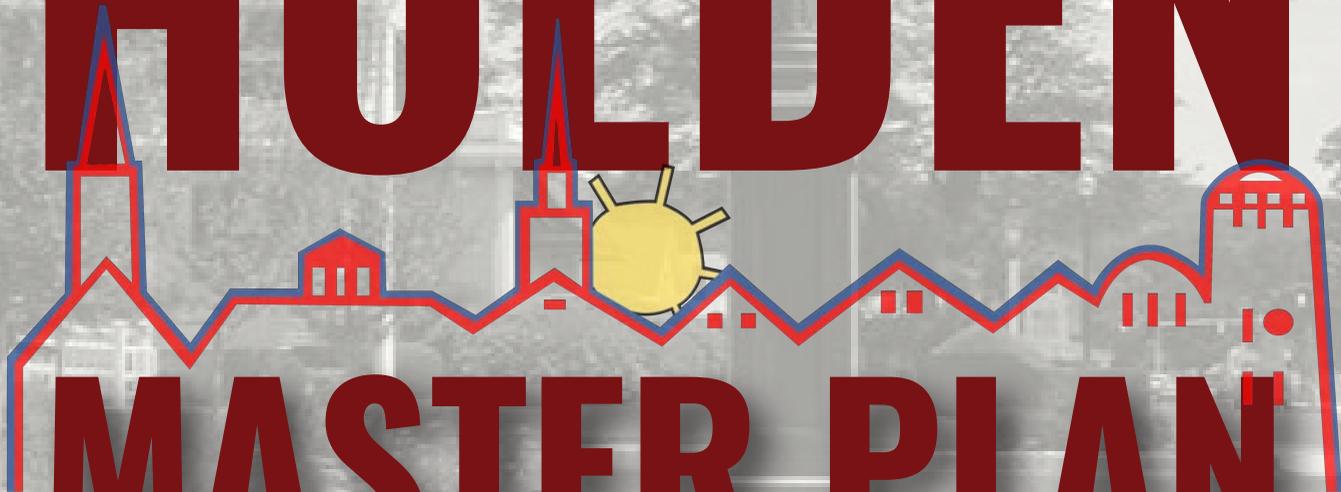


2019 UPDATE



HOLDEN



MASTER PLAN

CENTRAL MASSACHUSETTS
REGIONAL PLANNING COMMISSION



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Acknowledgments

The Town of Holden would like to thank the following individuals for their significant participation in preparing this Master Plan. By attending numerous meetings and community events, offering exceptional insight, contributing hours of volunteer time, and working diligently for over a year, these individuals have developed a thoughtful plan for Holden.

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Visioning Day September 22, 2018, Wachusett Regional High School

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Bab Dyer	
Gerry Kersus	



Special thanks to Abby Fournoy for providing child care and event photography.

HOLDEN'S

IMAGINE HOLDEN TOMORROW...

a community of caring and involved citizens who live in a town with a distinctly New England character that preserves its historic buildings and rural atmosphere. A Town that is walkable with sidewalks and other paths connecting neighborhoods to the center, and that preserves a small town feeling where people know each other and see each other frequently.



IMAGINE HOLDEN TOMORROW...

a Town defined by its abundance of open space with passive and active recreation areas and natural features connected by walking and biking trails, and accessible and enjoyed by a large number of residents as well as visitors, who see Holden as a biking and hiking destination.

IMAGINE HOLDEN TOMORROW...

with an attractive Town Center that has aesthetically pleasing buildings and signs and a variety of shops and restaurants along Main Street. The Town Center will also provide opportunities for gathering such as a Town Common. Additional gathering spots will be provided throughout the community in the form of pocket parks and other meeting places. The Town will also have more to do in terms of recreation and entertainment, with a variety of places to go and things to do.



VISION



IMAGINE HOLDEN TOMORROW...

where the needs of all segments of the population are met including housing and healthcare facilities and services for seniors, and safe and enjoyable activities for teenagers.

IMAGINE HOLDEN TOMORROW...

where traffic flows well, intersections are not congested, and access to and within the Town is improved.



IMAGINE HOLDEN TOMORROW...

a Town with excellent and responsive Town government. Public services are provided in state of the art facilities. The citizens are involved in Town governance and are aware of decision making because of good communication and accurate dissemination of information on the part of Town officials.



IMAGINE HOLDEN TOMORROW...

a Town that is guided by the vision created by its citizens and actively implements it. A Town that is proactive, tries to anticipate change, and is engaged in shaping its future in positive ways.



2.0 EXECUTIVE SUMMARY

The Town of Holden ("the Town") has spent 2018 assessing its progress towards a communal vision first outlined in 2008. In 2019, the Town charted a path for the next decade to continue bringing Holden towards the future it envisions.

A Master Plan lays out a community's vision for its shared future and creates a road map of goals and actions. It should be used as a resource and manual for Town officials in creating projects. The Master Plan should be used for assessing funding requests and evaluating the importance and priority of initiatives.

The Master Plan itself will not create or protect anything. Residents, volunteers, municipal employees, and other stakeholders need to organize, plan, commit, act, and seek funding to ensure the future of this Town. Without action, the Town may change in unanticipated or undesirable ways. Use this Master Plan as a living document, and this Town will see its vision come to fruition.

Participation

Our community drove the planning process. The Master Plan is not the product of Holden's Town government or the planning consultant. This living document is a true reflection of Holden's community constructed by the Steering Committee. All Steering Committee meetings were open to the public and conducted with the goal of inclusivity and meaningful participation. This project employed best-practice methods and uniquely creative tools to involve the broadest possible section of Holden in the planning process. The Committee took the public vision expressed to them and, with the help of CMRPC, crafted a path to achieve that vision.



Holden Days Master Plan Booth (CMRPC, 2018)

Project Kick-Off Letter: January 13, 2018

**Visitation Day with Stakeholders:
May 23, 2018**

**Community Survey: June 18 – July 18, 2018,
extended August 1, 2018**

Visioning Day: September 22, 2018

Vision Survey: November 2 – 30, 2018

**Holden Bucks at Tree Lighting:
December 1, 2018**

**Holden Bucks at Town Meeting:
December 3, 2018**

**Adoption at Planning Board Meeting:
July 16, 2019**

**Public outreach: Website, Facebook, On-the-
Ground Outreach, Mailers, Radio Show, etc.**

Radio Interview (CMRPC, 2018)

CHAPTER SUMMARIES

The following is a high-level summary of each chapter and the overarching goals for each topic. Readers should consult the full text to understand the existing conditions, issues and opportunities, and full breadth of each goal and action item.

POPULATION AND HOUSING

Housing in Holden is principally rural in character, typified by large lot, low density development. The exceptions to these patterns are the smaller residential lots in and around the Village Center. Holden residents have expressed an appreciation for the small-town, rural character of the community and have a desire to preserve it. This has resulted in a reluctance to aggressively pursue new housing development.

At the same time, residents have also expressed concerns about a range of issues, many of which can be attributed to the rapid pace of housing production and population growth. These challenges include a rapid increase in housing development, overall increases in municipal service demand, increased numbers of children in the school system, and skyrocketing housing cost burdens. Holden will need to strike a careful balance between preserving historic homes, open space, and agricultural assets with carefully attracting housing and business growth. The Town aspires to remain both rural in character and sustainably vibrant for years to come.

The primary goals for Housing and Population identified in the plan include:

1. Take a proactive rather than responsive approach to emerging issues in housing.
2. Preserve town character by encouraging development in community-determined locations and styles.
3. Ensure that growth prioritizes preservation of open space and uses low-impact development methods.
4. Encourage a varied and inclusive housing stock.
5. Concentrate development along major corridors where infrastructure already exists.
6. Expand housing options by prioritizing denser, mixed-use, pedestrian-oriented development.

NATURAL RESOURCES

Natural resource management is critical to the protection, restoration, and promotion of scenic landscapes and wildlife in Holden. The Town takes pride in its natural resource maintenance that supplies clean drinking water to residents, allows passive and active outdoor recreation opportunities, provides scenic views, enriches working farms, and gives Holden its unique character. Holden is characterized by extensive woodlands, a network of streams and wetlands,

and many natural resource areas. These include: Quinapoxet River, Asnebumskit Brook, Worcester Brook, Poor Farm Brook, Holbrook Hill, Sergeant Hill, Christian Hill, Davis Hill, Holt Hill, Smith Hill, Kendall Hill, Stonehouse Hill, Maple Spring Pond, Chaffin Pond, and several reservoirs. The Town of Holden highly values its significant natural resources and will continue to maintain them for the use of future generations.

The primary goals for Natural Resources identified in the plan include:

1. Protect natural resource areas from environmental degradation, ssdisturbances, and development.
2. Expand appropriate public access to the Town's natural resources.
3. Improve public awareness of Holden's natural resources.

HISTORIC & CULTURAL RESOURCES

Holden's natural and built environments provide connections to its past, while Town leaders act to preserve the historic, architectural, and aesthetic character of the Town. The Town's cultural identity is enhanced by its arts community, commitment to preserving local history, and active community groups. It is significant to recognize the role that cultural and historic resources play in building a healthy community. In a Town as rich in historic and cultural resources as Holden, it is imperative to inventory and document such resources in order to provide a framework for preservation. This plan is a tool for residents to consider Holden's resources and their role in reinforcing the Town's rural identity and sense of place.

The primary goals for Historic and Cultural Resources identified in the plan include:

1. Preserve and maintain Town-owned and privately-owned historic assets.
2. Preserve the community's rich heritage using protective regulatory tools in key areas of Town.
3. Ensure there are adequate cultural opportunities for Holden residents of all ages and abilities.

OPEN SPACE & RECREATION

Open Space and Recreation planning is crucial for preserving resources while enhancing recreational opportunities and experiences for the community. It provides a guide for future actions to ensure consistency with the preservation of open space and the enhancement of recreational uses. Building off the Town's Open Space and Recreation Plan (OSRP) completed in 2009, this plan identifies, updates, and incorporates the recreational resource inventory information. Incidentally, Holden is in the initial phases of preparing to update its 2009 OSRP.

The primary goals for Open Space and Recreation identified in the plan include:

1. Preserve important land resources, scenic views, and agricultural resources.
2. Protect lands for active and passive recreation.
3. Establish a wider, more connected open space network.
4. Efficiently manage and maintain open space and recreation areas.
5. Conserve Holden's surface and groundwater for wildlife, recreation, and other uses.
6. Educate community members about conservation tools.
7. Improve public awareness of Holden's open space and recreation resources.

ECONOMIC DEVELOPMENT

Central Massachusetts possesses a rich history of farming, community, and entrepreneurial spirit. In Holden, much of this history has been preserved, and is reflected in its abundant farms, mill buildings, and Town Center. Holden residents cherish (and fiercely defend) this character. Yet, many residents also desire additional amenities. Commercial conveniences and preservation are not mutually exclusive. Targeted economic development strategies can support an increase in desirable amenities while protecting and contributing to the existing character of the Town. Holden residents would like to expand their local selection of restaurants, small-scale home businesses, small retail shops, boutiques, art galleries, agricultural services, clean energy, and light industry. As these sectors already play a significant role in the Town's economy, a strategy that encourages such business types and land uses is realistic and provides a solid vision to guide economic development policy.

The primary goals for Economic Development identified in the plan include:

1. Encourage a strong, diversified tax and employee base.
2. Offer a variety of quality goods and services to meet the demand of residents, workers, and visitors.
3. Concentrate development in the Main Street corridor where infrastructure exists.
4. Develop a walkable, mixed-use village center that has residential, commercial, historic, and public space components.
5. Evaluate and promote adaptive reuse of vacant properties and industrial sites.
6. Provide incentives and opportunities for small-scale businesses and other desirable enterprises.
7. Foster a local workforce that complements Holden's employer needs.

TRANSPORTATION

Due to its limited transit service and small-town character, the dominant mode of transportation in Town is the automobile. Holden features access to several major regional roadways, including I-190 passing north/south through the east, and Interstate Routes 290 and 90 to the south. Although Holden no longer receives fixed-route transit service provided by the Worcester Regional Transit Authority (WRTA), it receives paratransit services operated by the Holden Council on Aging (COA), under contract with the WRTA.

Holden is located in the Central Massachusetts Regional Planning Commission (CMRPC) planning region and is also a member of the Central Massachusetts Metropolitan Planning Organization (CMMPPO) for transportation planning purposes. Holden's transportation network is evaluated in

this document, including an inventory of existing roadway conditions, infrastructure maintenance, traffic volumes, safety, bicycle and pedestrian accommodations, freight rail and trucking, and public transportation.

The primary goals for Transportation identified in the plan include:

1. Maintain and improve the condition of Holden's transportation network.
2. Explore options to alleviate traffic on Main Street (Route 122A), arterial and collector streets.
3. Enhance multimodal transportation access, including transit, pedestrian, and other types.

PUBLIC FACILITIES & SERVICES

Public facilities and services are the most tangible representation of any local government, and are arguably the most important. Respondents to the Holden Master Plan survey agree, with 99% saying that local services are important or very important to their quality of life, and 96% in concurrence about local facilities. Holden's facilities are generally adequate or better in function, scope, condition, and efficiency for a community of Holden's current size and budget, and residents' strong desire for quality services. Holden's Town-owned public works infrastructure – water, sewer, drainage, and electric – faces a number of challenges from recent steady growth, but still serve Holden's needs today. With adequate capacity to support moderate residential and commercial expansion, improvements may be required as the Town continues to grow and evolve. Existing assets will need to be adapted to

changes in technology, to meet the needs of future residents of all abilities, and facilitate economic development.

The primary goals for Town Facilities and Services in the plan include:

1. Ensure public facilities meet the needs of Holden's population.
2. Maintain long-term funding mechanisms to provide for future public facility needs.
3. Improve the sustainability and resilience of Town operations.
4. Deliver infrastructure that meets existing and future Town needs.
5. Uphold the high quality of Holden's educational system and facilities.

LAND USE

The Land Use element is essentially a blueprint for the Town of Holden's future development. It describes land use patterns, their patterns of change, and what zoning regulations/districts are in place to guide development now and into the future. Land use can be complex, as there is a need to maintain and preserve the Town's rural character; its historic, cultural and natural resource assets; ensure adequate infrastructure; and a desire to spur economic development to increase the Town's finances. Land use is a careful balance of trying to weigh all of these issues.

The primary goals for Land Use identified in the plan include:

1. Concentrate development around existing infrastructure.
2. Facilitate adaptive reuse of existing buildings to complement the rural character of the Town.
3. Ensure consistency between Holden's long-range plans and Town and state regulations.
4. Take a proactive and responsive approach to emerging issues in land use.

IMPLEMENTATION

Implementation ensures that the goals of the Master Plan can become a reality. This is usually facilitated by a committee or working group with a diverse membership. The Plan's recommendations are assigned action items and a proposed timeline.

It is important that the Town carefully review, adjust, and make changes as situations change. This can be done without disturbing the overarching goals of a chapter or the Plan itself.

3.0

INTRODUCTION

The Central Massachusetts Regional Planning Commission (CMRPC) was selected by the Holden Master Plan Steering Committee (MPSC) to update Holden’s Master Plan from 2008. The project ran from January 2018 through July 2019. The plan lays out a vision for the community’s future over the next ten years, or more, and creates a roadmap of goals and actions. The main topics of this Master Plan include:

1. Population and Housing
2. Natural Resources
3. Historic and Cultural Resources
4. Open Space and Recreation
5. Economic Development
6. Transportation
7. Town Services and Facilities
8. Land Use

What is a Master Plan?

A Master Plan is a statement of intent and is intended to serve a whole community, guiding its overall character, physical form, and evolution. It describes

where, how, and at what pace a community wants to develop physically, economically, and socially. A Master Plan serves as a guide for local officials and Town Meeting members when they make decisions about zoning, budgets, and capital improvements. This “living document” acts as a guiding force for any planning that is to occur within the Town in the future. However, the plan and its recommendations do not automatically advance any specific item. Many of the topics and actions can, and should, be coordinated and implemented together.

Why does Holden Need a Master Plan?

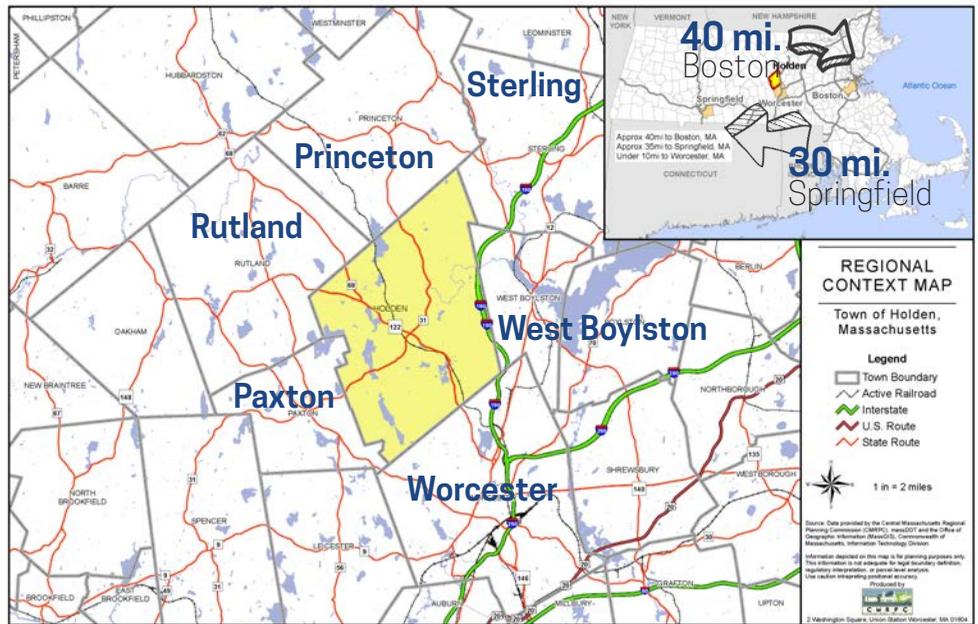
In accordance with Massachusetts General Laws, Chapter 41, Section 81D, Planning Boards are required to prepare a Master Plan for their communities. These roadmaps are living documents which must be updated periodically to reflect the evolving conditions and desires of communities. CMRPC has been commissioned to assist the Town in updating Holden’s Master Plan to reflect changes in community trends since 2008, achievements under the original Master Plan, and to establish new community objectives and action items.

COMMUNITY PROFILE

Incorporated 1741

Located on the northwestern edge of the City of Worcester, the Town of Holden is a bedroom community that retains the charming characteristics of a small New England town while providing access to urban amenities and jobs.

Holden offers much to residents. The presence of two key urban protected water reservoirs significantly aids Holden in preserving large swaths of land. Cultural amenities include the Gale Free Library, Senior Center, Town pool, fields and recreation centers, community events, classes, and more.



Map 3 - 1 Regional Context of Holden



Rural farming community evolved to **textile mill villages**

Villages developed 1860-1900 including Chaffins, Quinapoxet, Eagleville, and Jefferson are still known to residents today.



Strong housing growth
Predominately **single-family homes**

2018 Median Sale Price: **\$290,000**
Cost-burdened Households: **25%**



Creation of the **Quabbin and Wachusett Reservoirs** for the City of Boston lead to the decline of the majority of Holden's manufacturing industry



Median Family Income: **\$102,000**

Median **monthly housing costs** are lower than the metropolitan areas of Boston, Worcester, or Springfield at **\$1,687**

Post World War II, became a **"bedroom community"** for commuting workers



Foremost industries: **education, healthcare, and social services**

19,003 current residents (historic high)

Quality of education continues to draw in new families with school-aged children

The largest employers in town: **Clariant Corporation, Pepsi Bottling Company, Alden Labs, Big Y, Town of Holden, and the Wachusett Regional High School**



Older families and retirement age residents are the fastest growing cohort, as is the case across the state



The majority of residents **work outside of Holden**

Average Commute: 28 minutes

Community Development Plan 2004

Facilities Study 2006

History of Holden's Community Planning

2007 The Holden Town Common: Past, Present, and Future

Master Plan 2008

2011 Route 122A Access Plan

Central Thirteen Prioritization Plan 2012

Open Space and Recreation Plan

2015 Holden Village Center Zoning Initiative: Phase I, II, and III

Hazard Mitigation Plan 2017

2018 Fiscal Impact Assessment and Growth Management Plan

Master Plan Update 2019

Capital Plan

Wastewater Flow and Buildout Analysis

Municipal Vulnerability Preparedness

Town and School Building Assessments

PRIOR PLANNING EFFORTS

Holden has been proactive in developing municipal plans that touch on all parts of Town life. Much like this Master Plan, these documents are only effective when they are put into practice. The Town should review, update, and implement its existing plans. This includes reviewing the timelines, relevance, and oversight of municipal plans. This Master Plan is first and foremost an update of the original **Master Plan (2008)**. The Master Plan is a long-term guiding document for the Town and volunteers to refer to during decision-making processes. It provides an outline of existing conditions, issues, and recommendations for key topics of concern.

Capital Plan (2019)

Holden develops a rolling comprehensive analysis of the Town's capital assets every year that outlines expected maintenance, replacement, and new investment necessary among the Town's capital assets over the next five years.

Long Range Transportation Plan (LRTP) (2019)

The Long Range Transportation Plan (LRTP) focuses on the region's current transportation system and how to plan for and maintain it over a 20-year horizon. The WRTA's Comprehensive Service Analysis (CSA) within the LRTP recommended the implementation of a new WRTA Route (Route 32) to connect Holden with Worcester.

Fiscal Impact Assessment and Growth Management Plan (2018)

As a component of the Master Plan process, the Town requested a Fiscal Impact Assessment and Growth Management plan. The Buildout Analysis details the physical amount of remaining possible development under existing zoning. The Fiscal Impact Assessment details the impact of complete build out on the tax base of the Town.

Gienapp Design Associates Town and School Building Assessments (2018)

This recent report was commissioned by the Town to aid in development of a 10-year capital improvement and maintenance plan for various local facilities. The document included a comprehensive review of 18 buildings across a number of categories, ranging from American with Disabilities Act (ADA) access and other code requirements to structural needs and building systems evaluations. Improvements for each structure were prioritized by level of urgency, and estimated costs for improvements were provided.

Weston & Sampson Wastewater Flow and Buildout Analysis – Phase 1 (2018)

The purpose of Weston & Sampson's report was to help Holden gain a better understanding of existing and future wastewater needs and to quantify potential future flows from buildout of properties within the existing service area. Weston & Sampson concluded that capacity should be reserved for roughly 25% in expanded flows to account for long-term buildout of buildable lots and existing properties with betterments. The report also included an evaluation of Holden's sewer pump stations and recommendations for maintenance and upgrades.

Holden Hazard Mitigation Plan (2017)

The historical development pattern of Central Massachusetts makes the likelihood of devastating impacts from a natural disaster more likely. This plan identifies the natural hazards facing the Town of Holden, assesses the vulnerabilities of critical facilities, infrastructure, residents, and businesses, and presents recommendations on how to mitigate the negative effects of probable natural hazards.

Holden Village Center Zoning Initiative: Phase I, II, and III (2015)

Since 2015, the Holden Planning Board has been working with CMRPC on a three-phase project to create a village center zoning district. Phase III (currently underway) includes finalization of the study area, creation of zoning bylaw text amendments, public outreach, and presentation

of the new village center zoning district for consideration at Annual Town Meeting.

Open Space and Recreation Plan (2012)

The Open Space and Recreation Plan (OSRP) provides an overview and analysis of the Town's significant natural and scenic resources, inventory of conservation and recreation lands, and tangible steps to improve open space and recreation opportunities in Holden. OSRP's in Massachusetts require an update every seven years to maintain such eligibility. The last officially adopted OSRP was finished in 2009. In 2012 an update was drafted but not adopted. The Town will need to update the OSRP in 2019.

Central Thirteen Prioritization Plan (2012)

The Central Thirteen Prioritization Plan was completed by CMRPC in 2012 and was a collaborative approach to classify local priorities for development and preservation within thirteen (13) identified communities in central Worcester County, including Holden. Priority Preservation Areas (PPAs), Priority Development Areas (PDAs), and priority transportation improvements were identified and mapped for each town and subregion in a manner consistent with existing policies, master plans and guidelines, and the State's Sustainable Development Principles.

Route 122A Access Management Plan (2011)

In 2011, CMRPC prepared an Access Management Plan for Route 122A from Shrewsbury Street to Mt. Pleasant Avenue. An access management plan reviews the current and potential land uses along a corridor evaluating the ability for the current adjacent parcels to provide safe and efficient vehicle, transit, bicycle and pedestrian movement. The plan's recommendations were divided into short, medium- and long-term improvements in order to help local authorities consider both internal and external movements through the planning, design, permitting and project approval stages.

The Holden Town Common: Past, Present, and Future (2007)

In 2006, the University of Massachusetts Amherst Landscape Architecture and Regional Planning Department assisted the Town with the *Holden Town Common: Past, Present, and Future* report, which is a cultural landscape plan for Holden Town Common. The plan provided design concepts to stimulate growth in the Holden Town Center to meet goals identified in the community outreach process.

Lamoreux Pagano Associates (LPA) Facilities Study (2006)

Intended to update and expand upon an earlier study of the Town's buildings (1998), LPA's report focused on Holden's administrative buildings (Town Hall and Starbard Building), the Council on Aging, the Gale Free Library, and Municipal Light Department, and the Recreation Department. It included evaluations of physical building conditions as well as functional needs for each relevant department.

Community Development Plan, Town of Holden (2004)

The economic development and housing needs assessment highlighted the limited availability of undeveloped parcels along with increased housing demand pressure as significant limitations to economic development. A product of executive order EO 418, the plan identified four key locations to target for economic development.

Transportation Improvement Program (TIP)

The Transportation Improvement Program (TIP) lists all highway, bridge, transit, and intermodal projects in the Central Massachusetts planning region programmed to receive Federal-aid funding. Historically, Holden has received TIP designation for the following projects:

- Bridge maintenance of H-18-028 and 029, I-190 over River Street and Quinapoxet River
- Resurfacing and related work on Route 122A
- Pavement rehabilitation on Shrewsbury Street and Doyle Road, from Main Street to Brattle Street
- Resurfacing and related work on I-190
- Roadway reconstruction on Main Street (Route 122A) from the Route 122A/Route 31 intersection to Shrewsbury Street
- Traffic safety improvements at 3 locations on Route 122A
- Bridge replacement, BR#H-18-016, River St. over Quinapoxet River
- Bridge replacement, H-18-011, Mill Street over the Quinapoxet River
- Bridge rehabilitation, H-18-022, Princeton Street over Quinapoxet Reservoir
- Furnishing and installation of a safety fence and bridge joint repairs on H-18-029 = W-17-027, I-190 over Quinapoxet River
- Bridge replacement, H-18-008, Route 31 (Wachusett Street) over the Quinapoxet River
- Bridge replacement, H-18-020, River Street over Quinapoxet River
- Resurfacing and related work on Route 122A, from Route 31 to Route 68

HOLDEN TODAY

Holden Community Survey Results

What do
Residents think
of Holden?

HOLDEN'S GREATEST ASSET

1. Schools
2. Location
3. Reality of Small Town

HOLDEN'S GREATEST NEED

1. Growth Management
2. Road/Traffic/Sidewalks
3. Schools



Holden Tomorrow
planning our future together

FOR MORE INFORMATION: www.holdenmasterplan.com Town of Holden Master Plan Committee

PUBLIC PARTICIPATION

The project employed a number of outreach tools to inform the community, Town staff, and others about the master planning process. The goal was to encourage the community to engage in the process.

Promoting awareness of the Master Plan process in the community was key to the successful Community Survey, Holden Bucks event, and each of the public participation forums. Public elements of the project were covered by local media including the *Landmark*. Additionally, elements were promoted on the Master Plan's own website, Facebook page, and boosted through other uniquely Holden tools, like the Town's electronic signboard and flyers in the municipal light bill.



Visitation Day

On May 23, CMRPC staff traveled to Holden Town Hall for a kick-off meeting with Town officials, Master Plan Committee members, and community liaisons invested in the future of Holden. CMRPC staff broke out into small-group discussions with each of these representatives. The discussions informed CMRPC staff of the Town's current conditions, while providing an opportunity to discuss the direction of the Master Plan process in the coming months.

The following Town officials were interviewed:

- Town Planner, Pamela Harding
- Conservation Officer, Glenda Williamson
- Recreation Director, Denise Morano

- Fire Chief, Russ Hall
- Supervisor of Operations (DPW), Chris Demoranville
- Building Commissioner, David Lindberg
- Light Department Manager, Jim Robinson
- Superintendent (WRSB), Darryll McCall
- Town Clerk, Dale Hickey
- Library Director, Susan Scott
- Town Engineer, Isabel McCauley
- Water-Sewer Superintendent, Ryan Mouradian
- Assessor, Rose Scully
- Town Manager, Peter Lukes



Community Survey

A critical part of the Master Plan process is to collect opinions, thoughts, and input on a range of different subjects from as many Holden stakeholders as possible. The community survey was designed to understand how Holden community members perceive their Town's strengths and challenges, and to identify issues within the Town which will inform the goals and strategies for the Master Plan update (Appendix B).

A flyer was inserted in the municipal light bill, sent to every home and business address in Holden, announcing the launch of the survey. Participation was maximized by providing both an online link and a list of the following five pick-up/drop-off locations for hard copies:

- Town Hall
- Gale Free Library

- Senior Center
- U.S. Post Office
- Municipal Light Department

Reminders to complete the survey were posted in *the Landmark* and on the Holden Master Plan media pages. Additionally, CMRPC and the Master Plan Steering Committee hosted a Master Plan booth at the Holden Days Festival on August 25, 2018. In total, 979 responses were submitted by Town residents, indicating just over 5% of Holden residents completed the survey. The results were compiled into a booklet made publicly available online (Appendix B).



Holden Days

On August 25, 2018, the Steering Committee and CMRPC attended Holden Days to publicly release the results of the community survey. Now in its 39th year, Holden Days is a town-wide celebration that draws a large audience, including residents, businesses, and other organizations. CMRPC tabled at the event, engaging with visitors and discussing the Master Plan initiative. The survey results posters from Holden Days can be found in Appendix A.

Visioning Day

Visioning Day was hosted by CMRPC and the Master Plan Steering Committee at the Wachusett Regional High School on September 22, 2018 (Appendix A). Participants engaged in critical discussions of the strengths and weaknesses of the Town facilities and services, open space and recreation, housing, transportation, economic development, land use, natural, historical, and cultural resources. This first community event kicked off with an overview of the process and elements of a Master Plan, and what to expect in the subsequent months.

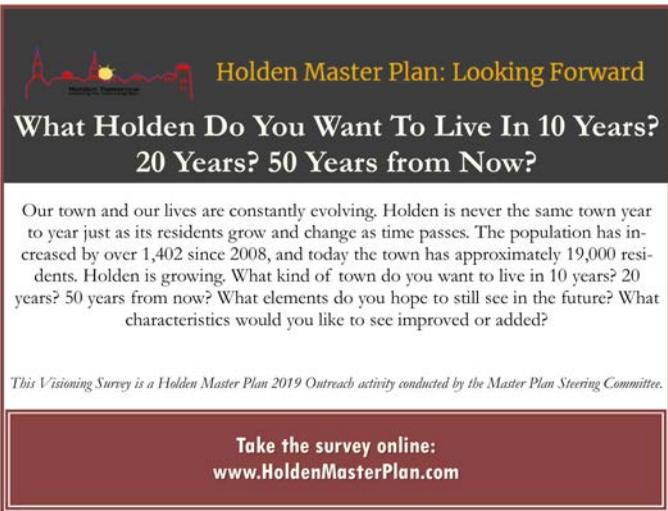
Each Steering Committee member facilitated a dialogue about one of the eight topics addressed in the Master Plan. Participants broke out to these sessions to discuss the topic and compile a list of strengths and weaknesses. Each session featured “Fact Sheets” to help inform residents as they circulated through the room.

Each group rotated three times allowing different groups to cover the same topic. After facilitators summarized the discussions to the room, participants were given five green and five red dots to identify primary strengths and issues under the topics. The results were tallied by CMRPC staff after the event and compiled into a booklet that was posted online (Appendix A).

Visioning Survey

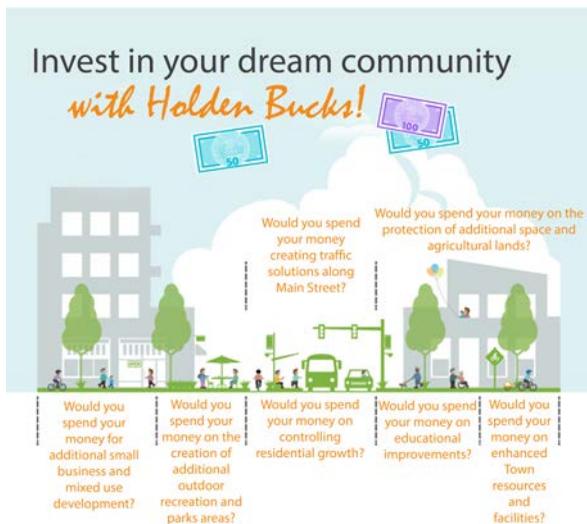
The Master Plan Steering Committee designed an online, follow-up survey to Visioning Day asking residents to dive deep into their aspirations for Holden. The goal for this Master Plan update was crafted using public input provided through both visioning mediums.





“Holden Bucks”

The Master Plan Steering Committee participated in the community event at Holden’s most popular winter-time activity – Tree Lighting! CMRPC crafted dollars for participants to “invest” in various aspects of Town. Festively-decorated boxes adorned the Master Plan booth located inside the church, right next to the free hot cocoa. Steering Committee members circulated through the crowd, handing out packets of \$500 “Holden Bucks” and encouraging attendees to participate by “spending” them.



Help inform the Holden Master Plan by spending your Holden Bucks on subjects that matter to you!

A similar event was repeated at the Winter Town Meeting to connect with a diverse set of citizens. “Holden Bucks” were well received by families and voters alike! The results were compiled into a chart and shared over social media.



Radio Show

CMRPC and the Steering Committee organized two community radio interviews on the *Jordan Levy Show* and *Talk of the Commonwealth with Hank* to share a detailed overview of the nature and significance of the process, and encourage listeners to attend Visioning Day or complete the survey. Members of the Committee, CMRPC’s Executive Director, and several of the project’s planners were interviewed by the radio hosts.



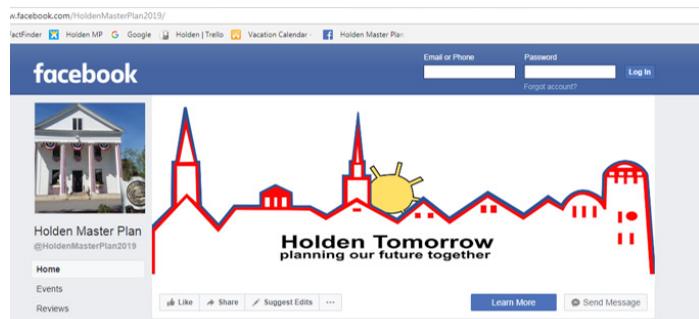
Website - www.holdenmasterplan.com

CMRPC staff developed a website as a focal point for a transparent and inclusive planning process. The website hosted all relevant information to emerge from the planning process, event details, prior planning efforts, and the results of many successful outreach methods.

Upcoming events were posted on the *Home, Events Calendar*, and *Public Participation* pages. General information on master plans, plus introductions to the CMRPC team and the Master Plan Committee,



were posted in the *Learn More* section. Historic information on Holden, including past studies, reports, and plans were easily accessible on the Documents and Data section, as well as news articles from local sources written about the Master Plan and the community events. A Contact section enabled anyone to reach out to CMRPC staff. The website also allowed residents to sign up for the Master Plan email list to receive direct reminders about participation opportunities. The final adopted plan, podcasts of the radio shows and other associated information can be found here.



Facebook

CMRPC created a Facebook page to share reminders for upcoming events, information on how and where to take the community survey, as well as pictures, videos, and news articles on Master Plan events.

Email List

The sign-up sheet on the website linked to a Googlegroup email list. By the end of the Master Plan, the email list had 90 members who received direct updates about ways to participate in the planning process.



Mailings

The Master Plan Steering Committee worked with the Holden Municipal Light Department to post event flyers to every household and business in Holden through the light bill. The Steering Committee used this outreach tool three times to ensure that every household was individually informed of the opening of the Community Survey, its closing, and Visioning Day. With nearly 1,000 responses to the survey, this tactic was clearly a success!



Electronic Sign

The Steering Committee coordinated with the Town Manager’s office to advertise several key outreach events using the Town’s Electronic Signboard at the intersection of Shrewsbury and Main Street.

Other Events

CMRPC’s planning staff attended a variety of events hosted by local organizations including Business After Hours events and Chamber Chats to boost awareness among stakeholders.



4.0

POPULATION AND HOUSING

INTRODUCTION

This section focuses on housing and population in the Town of Holden, looking at population growth, housing unit development, affordability, and other demographic and market trends. Analysis of demographic and housing market trends is important to the other topics in this master plan. Housing and population growth have ripple effects on areas from land use to capital expenditures. A careful examination of population and housing data will provide the community with a full understanding of the potential impacts of future development. Consistent with the community's vision for development, this chapter offers strategies to support six housing-related goals:

- Take a proactive and responsive approach to emerging issues in housing.
- Preserve Town character by encouraging development in community-determined locations and styles.
- Ensure that growth prioritizes preservation of open space and uses low-impact development methods.

- Encourage a varied and inclusive housing stock.
- Concentrate development along major corridors where infrastructure already exists.
- Expand housing options by identifying specific areas for denser mixed-use pedestrian-oriented development.

This chapter will analyze the current demographics, housing stock, market trends, and issues and opportunities facing Holden in the near future. It will conclude with a discussion of goals and possible actions for the Town to pursue to achieve their stated goals.

State, Regional, and Local Trends

The Commonwealth has identified a need to aggressively pursue housing development in order to meet the demands of population growth. The recent Department of Housing and Community Development (DHCD) Housing Choice program set a goal of producing 17,000 new housing units statewide per year between 2017 to 2025. Recent analysis shows that the Commonwealth

needs to produce around 500,000 new housing units by 2040 to “maintain the existing levels of employment without accommodating any significant job growth.” (Massachusetts Housing Partnership, 2019) This means that housing production will continue to be a key challenge facing Massachusetts and the Town of Holden for the next 10 years. The following population and housing trends support this finding and will inform the recommendations of this chapter.

Summary of Key Population Trends

- Holden’s population is growing rapidly. Since 2000, the Town’s population growth rate has exceeded the regional average. Holden’s population has begun to skew older, though not as dramatically as in some nearby communities.
- Older families and retirement-age residents represent Holden’s fastest growing cohort, while school-age populations and young families have grown more slowly.
- Healthy aging issues will become increasingly salient as Holden’s population of retirement-aged residents continues to grow.

Summary of Key Housing Trends

- Regionally, housing production has been strong over the past decade. In Holden, housing production slightly outpaced that of most adjacent communities.
- Holden possesses significant amounts of available land. Under the Town’s existing zoning regulations, there is substantial room for growth.
- Multi-family property is being developed at a slower rate, and at lower price points, than single-family homes. The limited supply of rental units is likely driving up prices for existing units and cost-burdening existing residents.
- Holden’s limited inventory of subsidized units is failing to bridge the affordability gap for owners and renters.
- 31% of Holden’s Subsidized Housing Inventory (SHI) is age-restricted and nearly two-thirds of

those units are set to have their deed-restrictions expire in 2020. Given the demographic patterns described previously, adding new elder-housing will be a key challenge in the coming years.

Summary of Key Market Trends

- Housing unit development has largely recovered from the 2007 housing crisis, with new unit growth coming within a few percentage points of pre-recession demand.
- Home prices recovered much of their pre-recession value, and market trends indicate home values are likely to continue to rise sharply in the near-term.
- The vast majority of new development is in single-family housing units, which account for more than 60% of the total new units added since 2007.
- In addition to increased overall value, the size and living area of homes built between 2007 and 2017 have increased, meaning fewer houses and people are being accommodated per acre of land.
- Costs in the rental market have increased, largely in response to the increase in home values and shortage of new multi-family units.

PRIOR PLANNING AND ENGAGEMENT EFFORTS

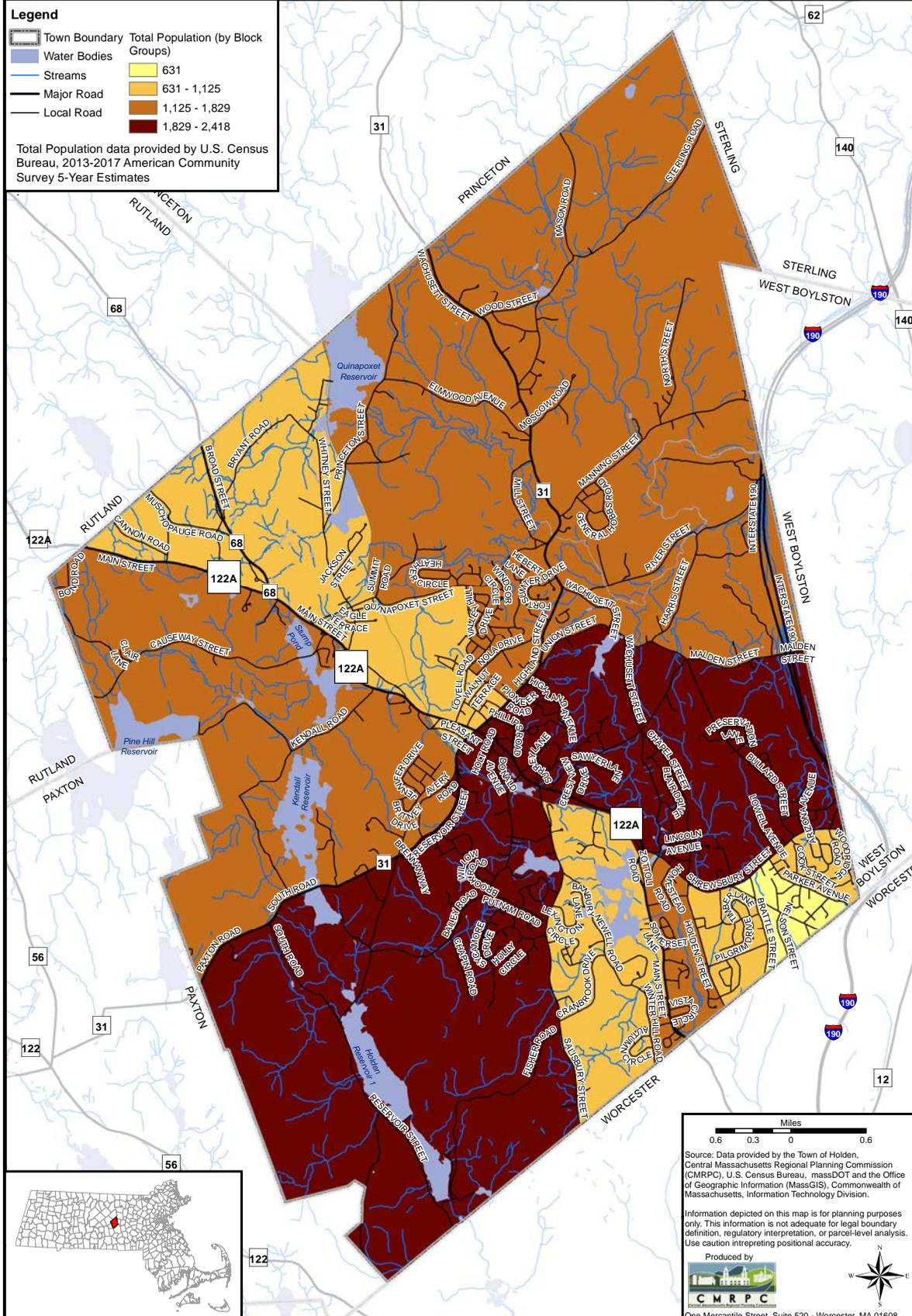
Master Plan (2008)

This Master Plan is an update to a 2008 planning effort. The 2008 Holden Master Plan established a number of goals and objectives that the Town has been working to implement. Since 2008, the Town has achieved or made substantial progress on the following housing goals:

- Rezone more land in the Main Street Corridor for multi-family housing and 10,000 and 15,000 square foot (sq. ft.) lots.
- Create “Village Zoning” in selected areas on

Map 4 - 1: Holden Census population map.

Census Population Map 2019 MASTER PLAN



Town of Holden, Massachusetts

Date: 1/10/2019 Document Path: H:\Projects\O_Holden_GIS\Subprojects\m134_master_plan\m134_MP_CensusPop_Map_1\171.mxd

Main Street to allow for housing in mixed-use commercial/residential development.

- Encourage use of cluster zoning to save open space in low-density areas.
- Provide “inclusionary zoning” options for larger developments.¹

Appendix A contains a benchmark review of progress toward the 2008 Master Plan action items. The following housing goals were identified from the 2008 plan, but have not been implemented as of 2019. These housing goals and actions were reviewed with the Master Plan Steering Committee. Where appropriate, they have been incorporated into the goals and actions of this section.

- Create a permanent Housing Committee or have the Affordable Housing Planning Committee (AHPC) broaden its scope.
- Encourage “friendly” and well-located affordable housing projects.
- Commit Town-owned property to affordable housing.
- Explore the utilization of Town-owned land for low income and/or affordable housing developments.
- Create zoning incentives to facilitate age-restricted affordable housing for seniors.
- Amend the Retirement Community Bylaw to encourage progressive living developments.

Table 4 - 1: Population Growth Rates by Decade, Holden and Worcester County (Source: US Census, 1930-2010)

Decade	Holden	Worcester County
1930 - 1940	1%	3%
1940 - 1950	52%	8%
1950 - 1960	69%	7%
1960 - 1970	24%	9%
1970 - 1980	6%	14%
1980 - 1990	10%	10%
1990 - 2000	7%	6%
2000 - 2010	11%	6%

¹ Inclusionary zoning is a mandatory approach that requires developers to make a portion of the housing units in their project affordable to low- and moderate-income households. Holden has not implemented inclusionary zoning requirements to date. Rather, several bylaws have incorporated density incentives to encourage creation of new affordable housing.

EXISTING CONDITIONS

Population

The following section analyzes recent trends in population growth, including population projections. CMRPC conducted a Build-out Analysis and Fiscal Impact Analysis (see Appendix C), which examined housing unit and population growth over the next 20 years. The data from those analyses has been incorporated where appropriate.

Summary of Key Trends

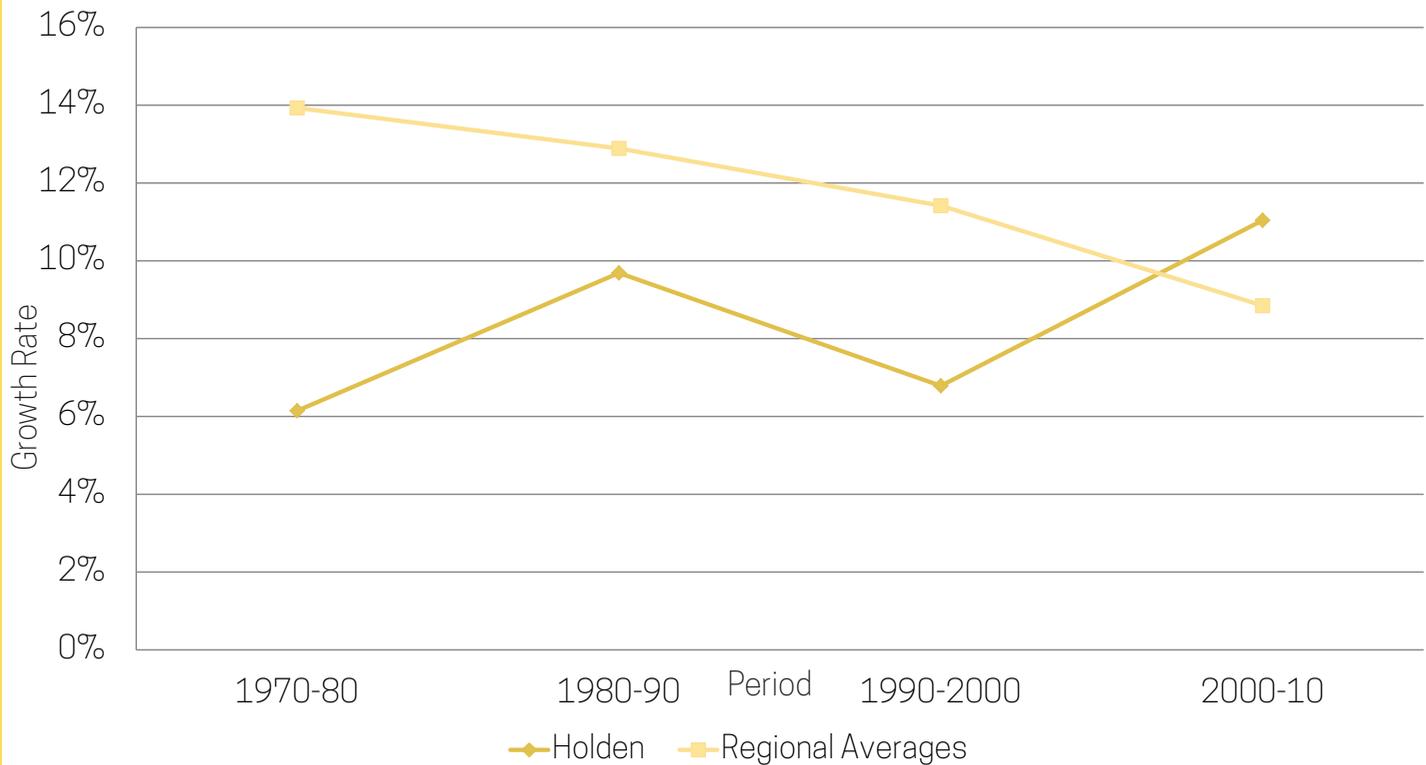
- Holden’s population is growing rapidly. Since 2000, the Town’s growth rate has exceeded the regional average.
- Holden’s population has begun to skew older, though not at as dramatic a rate as some other nearby communities. Older families and retirement age residents are Holden’s fastest growing population cohort, while school-age populations and young families have grown more slowly.
- Healthy aging issues will become increasingly salient as the population of retirement aged residents continues to grow.

Historic and Projected

A quiet, rural community in the 1930s and 1940s, Holden experienced a development boom after the Second World War. Between 1940 and 1970, Holden’s population grew an average of 48% per decade. Population growth tapered off in the 1980s, following the introduction of more stringent zoning controls. For the past 40 years, Holden’s population growth has been quite consistent, averaging 9% per decade since 1970. Table 4 - 1 summarizes Holden’s growth rates compared to Worcester County as a whole.

As shown in Table 4 - 1, Holden’s population is growing faster than the county-wide average, a noteworthy change from earlier decades. Between

Figure 4 - 1: Population Growth Rates per Decade, 1970-2010 and Worcester County (Source: U.S. Census, 1970-2010)



1970 and 1980, Holden grew by 6%, compared to a county-wide average of 14%. Between 1990 and 2000, that gap narrowed significantly, with Holden’s population rate 1% lower than the county-wide average. Between 2000 and 2010, Holden’s population growth outpaced that of Worcester County by 5%. Figure 4 - 1 depicts Holden’s rate of growth relative to the county-wide average.

absolute population has been significantly higher in Holden. The Town’s population represents 7.1% of the total comparison group population on average.

Figure 4 - 2 compares the relative growth rates of communities adjacent to Holden. Again, while Holden’s average rate of growth has historically lagged behind those of adjacent communities, its absolute population is significantly higher. By way of comparison, Rutland, which had an average growth rate of 25% between 2000 and 2010, represents only 2.6% of the total comparison group population.

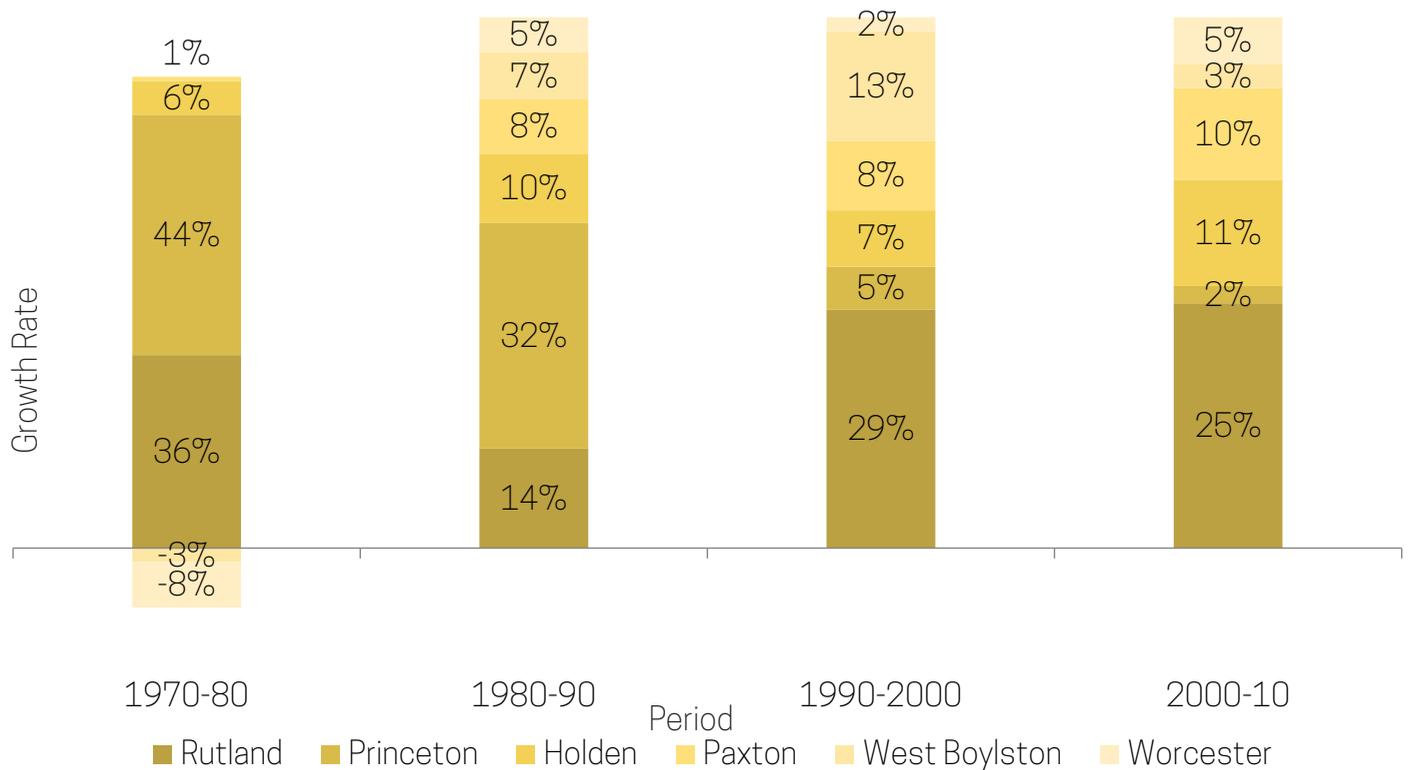
Table 4 - 2 compares Holden’s population to that of adjacent communities.² As the data shows, while growth rates have been somewhat sluggish compared to several adjacent communities,

Table 4 - 2: Population by Decade, Holden and Surrounding Communities (Sources: U.S. Census, 1970-2010; CMRPC Buildout Analysis, 2018; CMRPC Population Projections, 2018)

Town/Year	1970	1980	1990	2000	2010	% Change 1970-2010	2020	2030	2040
Holden*	12,564	13,336	14,628	15,621	17,346	38%	19,393	21,009	22,625
Paxton	3,731	3,762	4,047	4,386	4,806	29%	5,079	5,135	5,343
Princeton	1,681	2,425	3,189	3,353	3,413	103%	3,582	3,638	3,753
Rutland	3,198	4,334	4,936	6,353	7,973	149%	8,570	9,140	9,543
West Boylston	6,369	6,204	6,611	7,481	7,669	20%	8,105	8,512	8,766
Worcester	176,572	161,799	169,759	172,648	181,045	3%	188,064	194,372	197,196

² Holden projections are based on buildout analysis to maintain consistency. Other figures are based on CMRPC Transportation Department projections

Figure 4 - 2: Growth Rate per Decade, Holden and Adjacent Communities, 1970-2010
 (Source: US Census of Population, 1970-2010)



Median Age

The median age in a community is a good indicator of how the age distribution in a town changes over time. Holden, like most Massachusetts communities, has seen the median age rise steadily over the years. The median age in Holden increased from 37.3 years in 1990 to 42.2 years in 2010. (US Census, 1990-2010) In 2017, the median age is estimated at 41.7 years; however, this includes a margin of error, with the true value somewhere between 40.3 and 43.1 years. (American Community Survey (ACS), 2017) Figure 4 - 3 depicts the median age in Holden by decade from 1990-2010, along with the 2017 estimate.

Figure 4 - 4 shows the Median Age in 2017, comparing Holden with the surrounding communities. As the chart shows, the median age in Holden has been growing since 1990 but Holden residents are relatively young in relation to the comparison group. Holden’s median age of 41.7 years puts it somewhere in the middle; not as low as the relatively youthful City of Worcester, but younger than the Town of Princeton, which has an estimated median age of 45.8 years. (ACS, 2017)

Population changes by life-cycle group

Looking at population change by lifecycle group can help contextualize the median age patterns discussed previously. Lifecycle group refers to the age group categories typically used by the decennial census reports. Table 4 - 3 and Figure 4 - 5 summarize these trends for Holden. Since 1980, most life-cycle categories have seen positive growth in terms of absolute numbers. Only the Young Family (25-34 years) cohort sustained losses over the last 40 years. This cohort averaged -6% growth per decade. (US Census, 1980-2010; ACS, 2017) This change is important to note. Collectively, the three “Family” cohorts make up a majority of the main working-age population. Taken together, these cohorts grew by an average of only 5% per decade, with nearly all of the growth occurring in the Middle Family (35-54 years) cohort. This suggests that housing may be more readily available to more financially established households, leaving younger, less established families locked out of the market. Near Seniors, Seniors, and Advanced Elderly have seen the most growth, averaging 20%, 11% and 36% growth per decade, respectively. While this may at first seem like an alarming growth rate, it is important to put that number into some kind

Figure 4 - 3: Median Age Over Time, Holden, 1990-2017 (Sources: US Census of Population, 1990-2010; ACS, 2017)

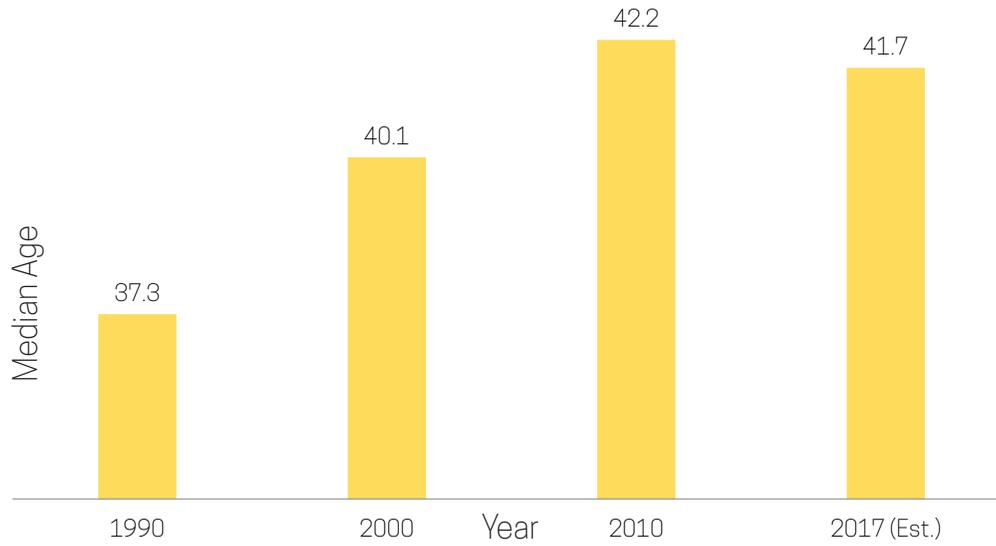


Figure 4 - 4: Median Age, Holden and Adjacent Communities, 2017 (ACS, 2017)

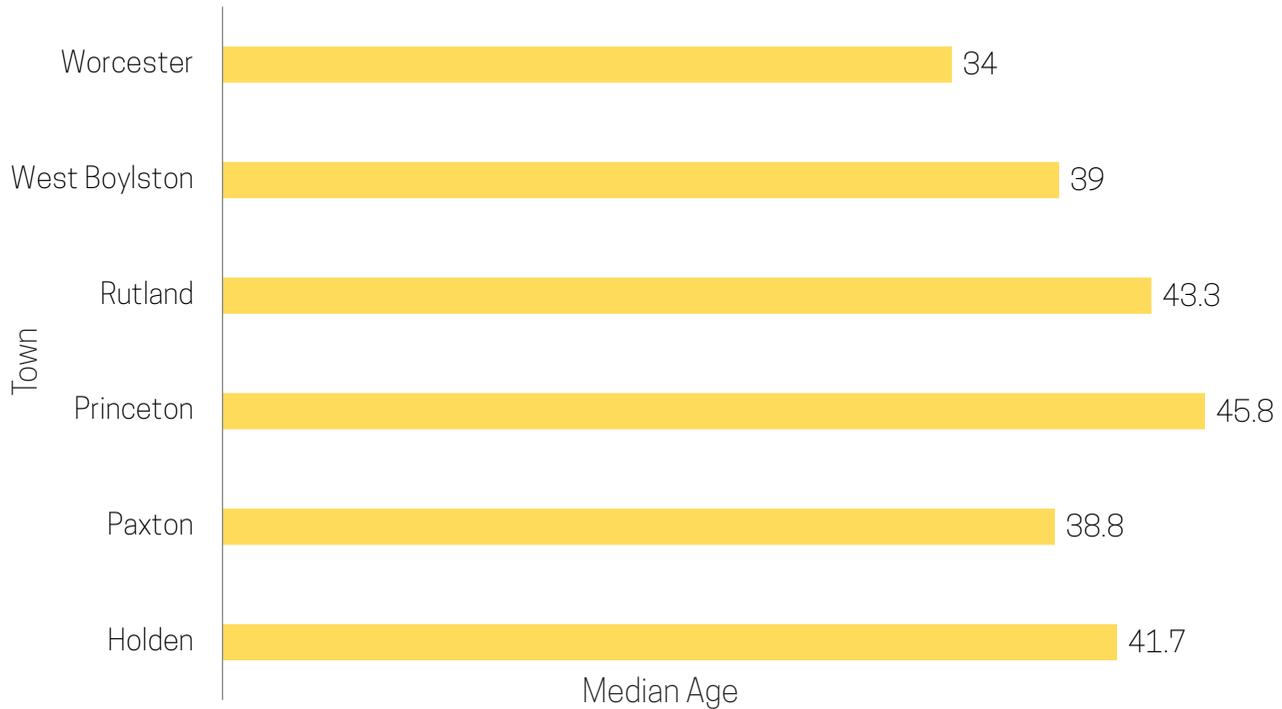


Table 4 - 3: Population Change per Lifecycle Group, 1980-2010 (Sources: US Census, 1980-2010; ACS, 2017)

Lifecycle Group	1980	1990	2000	2010	Average Growth Rate Per Decade	2017
Pre-School (0 – 4 years)	760	1,041	1,004	990	11%	999
School Age (5-19 years)	3,364	3,025	3,462	3,743	4%	3,964
Young Adult (20 – 24 years)	759	699	461	699	3%	815
Young Family (25-34 years)	1,861	1,909	1,595	1,531	-6%	2,135
Middle Family (35-54 years)	3,334	4,439	5,290	5,447	18%	5,070
Near Seniors (55-64 years)	1,521	1,327	1,591	2,415	20%	2,687
Seniors (65-84 years)	1,577	1,958	1,932	2,123	11%	2,564
Advanced Elderly (85+)	160	230	286	398	36%	324

of context. Figure 4 - 6 shows the percentage of each of the life-cycle group as a share of the total population for the years 1980 and 2010. As the chart shows, the absolute number of elderly

residents rose by 36% from 1980 to 2010; however, they comprised just 2.29% of the total population. This is just 1.09% more of the total population than they comprised in 1980.

Figure 4 - 5: Average Growth Rate per Decade by Lifecycle Group, 1980-2010 (Source: ACS, 2017)

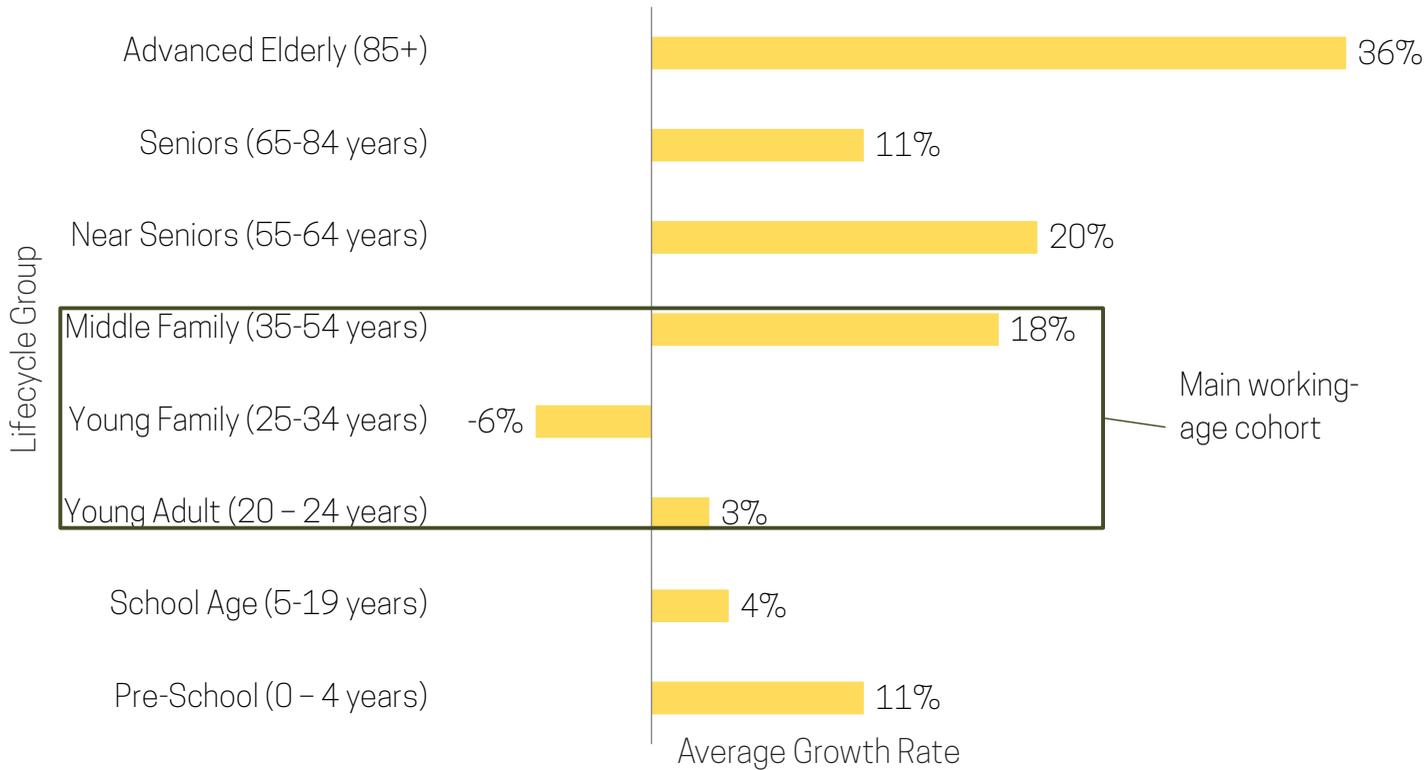
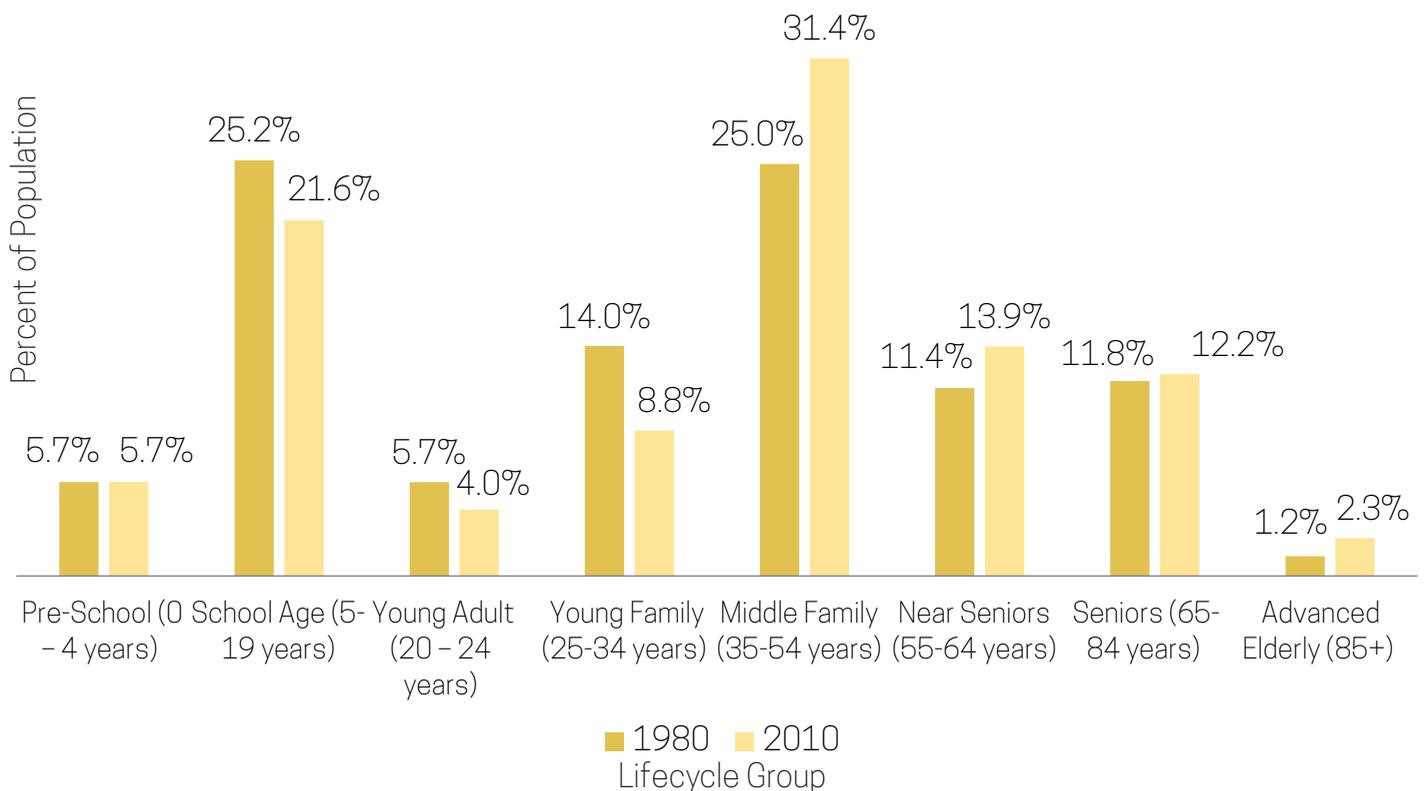


Figure 4 - 6: Percentage of Total Population by Lifecycle Group, 1980-2010 (Source: US Census, 1980-2010)



Cohort Data from the American Community Survey

Figure 4 - 7 shows the percentage of the total population by lifecycle group in 2017. Compared to 2010, the numbers appear to have shifted downward. Young Families, Near Seniors and Seniors all appear to have made modest gains, while the Middle Family cohort has dropped by as much as 4.7%. (ACS, 2017)

There are many factors that may be contributing to the apparent increase in older residents, and the decrease in Middle Family-aged residents. First, ACS data is not a hard count but an estimate based on inferences from the larger statistical area of which Holden is a part. This introduces a potentially significant margin for error. Beyond this, simple attrition may be a contributing factor. As time passes, individuals naturally age out of one cohort and occupy another. Thus, a drop in one cohort often translates into gains for another cohort. This may not be the case in Holden; the gains in the Near Senior cohort are not enough to account for all of the movement. The most likely explanation is some combination of these factors.

Households by Type in Holden 1990-2010

Household composition can be a key indicator of potential future housing need. Table 4 - 4 shows the breakdown of households by family type. As with the census period of 1990-2000, census period 2000-2010 saw marked drops in the total number of family households with corresponding increases in non-family households. The number of Family households decreased by approximately 2% per decade between 1990 and 2010; non-family households grew by roughly the same amount in that period. The average household size has been decreasing, from a high of 2.74 in 1990 to 2.69 in 2010. (US Census, 1990-2020) According to Holden’s Town Census household and population data, the medium household size in 2017 was 2.34 persons.

Housing Stock

This section examines the existing housing stock in Holden. The quantity of inventory, age, and other characteristics play an important role in immigration and population growth. The analysis will cover current and projected housing units; market trends; consumer trends and affordability metrics; and finally, a discussion of Holden’s subsidized

Figure 4 - 7: Percentage of Total Population by Lifecycle Group, 2010-2017 (Sources: US Census, 2010; ACS, 2017)

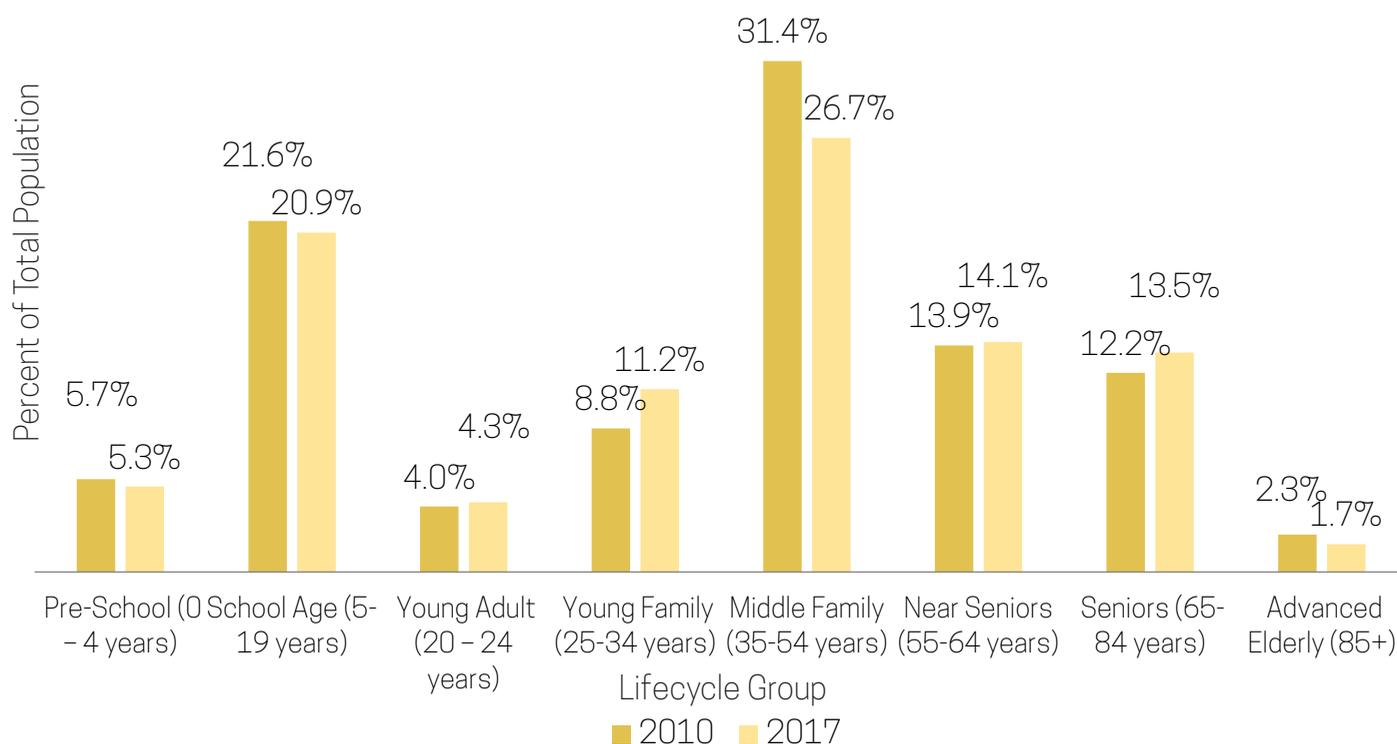


Table 4 - 4: Households by Type in Holden, 1990-2000 (Source: US Census, 1990 and 2000)

Year	1990	2000	2010	%Change 2000-2010
Total households	5330	5715	6394	11.88
Family households	4301	4422	4905	10.92
With own children under age 18	1997	2140	2234	4.39
Married couple families/ Husband-wife family	3890	3873	4170	7.67
With own children under age 18	1811	1852	1878	1.4
Female householder, no husband present	345	414	519	25.36
With own children under age 18	175	239	263	10.04
Male householder, no wife present	66	94	216	129.79
With own children under age 18	11	27	93	244.44
Non-family households	1029	1293	1489	15.16
Householder living alone	945	1112	1243	11.78
Householder over age 64 / 65 and older	543	554	602	8.66
Households with individuals under age 18	1999	2222	2347	5.63
Households with individuals over age 64 / 65 and over	1352	1503	1736	15.5
Average household size	2.74	2.71	2.69	-0.74
Average family size	3.14	3.13	3.1	-0.96

housing inventory, with a focus on compliance with Massachusetts General Law (MGL) Chapter 40B (The Comprehensive Permit Law).³

Summary of Key Trends

- Regionally, housing production has been strong over the past decade. In Holden, housing production slightly outpaced that of most adjacent communities.
- Holden possesses significant amounts of available land. Under the Town's existing zoning regulations, there is substantial room for growth.
- Multi-family property is being developed at a slower rate, and at a lower price point, than single-family homes. The limited supply of rental units is likely driving up prices for existing units and cost-burdening existing residents.
- Holden's limited inventory of subsidized units is

failing to bridge the affordability gap for owners and renters.

- 31% of Holden's Subsidized Housing Inventory (SHI)⁴ is age-restricted and nearly two-thirds of those units are set to have their deed-restrictions expire in 2020. Given the demographic patterns described previously, adding new elder-housing will be a key challenge in the coming years.

Current/Projected Households and Housing Units

The housing stock in Holden has been growing at a rate of approximately 15% per decade since 1970. Projections from the Buildout Analysis (see Appendix B) suggest this trend will continue. ACS estimates show that the Town's housing stock has hovered between 6,600 and 7,000 housing units since 2010. However, Town Census data shows the actual housing count to be much higher, at

³ The Comprehensive Permit Law is a Massachusetts law which allows developers of affordable housing to override certain aspects of municipal zoning bylaws and other requirements. It consists of MGL Chapter 40B, Sections 20 through 23, along with associated regulations issued and administered by the Massachusetts Department of Housing and Community Development. Chapter 40B was enacted in 1969 to address the shortage of affordable housing statewide by reducing barriers created by local municipal building permit approval processes, local zoning, and other restrictions. Its goal is to encourage the production of affordable housing in all communities throughout the Commonwealth.

⁴ The Subsidized Housing Inventory (SHI) is used to measure a community's stock of low-or moderate-income housing for the purposes of MGL Chapter 40B, the Comprehensive Permit Law. While housing developed under Chapter 40B is eligible for inclusion on the inventory, many other types of housing also qualify to count toward a community's affordable housing stock.

around 8,094 housing units, an increase from 2010 of approximately 22%. Buildout projections utilized this number as the baseline, accounting for the 25% increase in units between 2010 and 2020. Table 4 - 5 shows the growth in housing units per decade with projections from the buildout.

Table 4 - 5: Housing Units per Decade, 1970-2040
 (Source: US Census, 1970-2010; CMRPC Buildout Analysis, 2018)

Year	1970	1980	1990	2000	2010	2020	2030	2040
Housing Units	3,847	4,671	5,428	5,827	6,646	8,281	8,971	9,661
Growth per Decade		21%	16%	7%	14%	25%	8%	8%

Even with this growth, the Town has capacity to grow. Buildout projections estimated a Town-wide dwelling unit capacity of nearly 6,500 additional units based on current zoning regulations.

Housing Units by Age

The age of housing units can significantly impact cost of living. Older homes carry greater maintenance costs and a greater number of material problems. Communities with a higher percentage of older units can expect to see higher numbers of households with deferred maintenance and other needs. Holden's housing development

has been relatively consistent over time. Figure 4 - 8 illustrates this pattern.

Most of Holden's housing stock (around 53%) was built before 1970. An additional 30% of that stock was built between 1970 and 1990 while only around 17% were built after 2000 (ACS) (US Census of Housing, 2000; ACS, 2016). Buildings of this age can have a range of issues. Besides the need to align such properties with modern building codes, prior to 1980, hazardous materials such as lead paint and asbestos were commonly used in construction. Holden's large stock of older houses will likely carry higher costs for remediation and retrofit, which will greatly impact costs for current and future residents.

Figure 4 - 9 shows the average assessed value of housing units grouped by age. This comes from the most recent assessor's data available to CMRPC (2017). As the chart shows, the age of the unit has

Figure 4 - 8: Housing Units by Year Built (Source: MassGIS Assessor's Data, 2017)

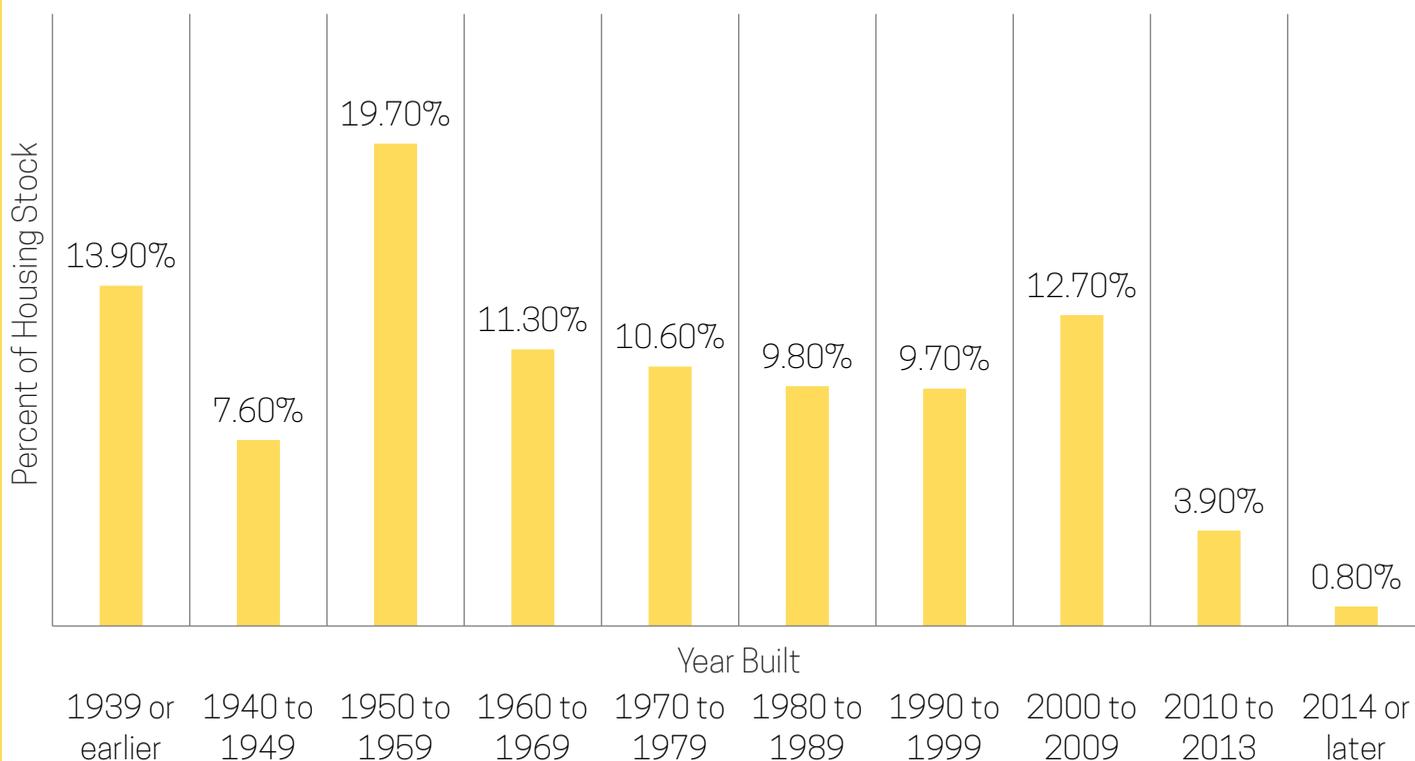
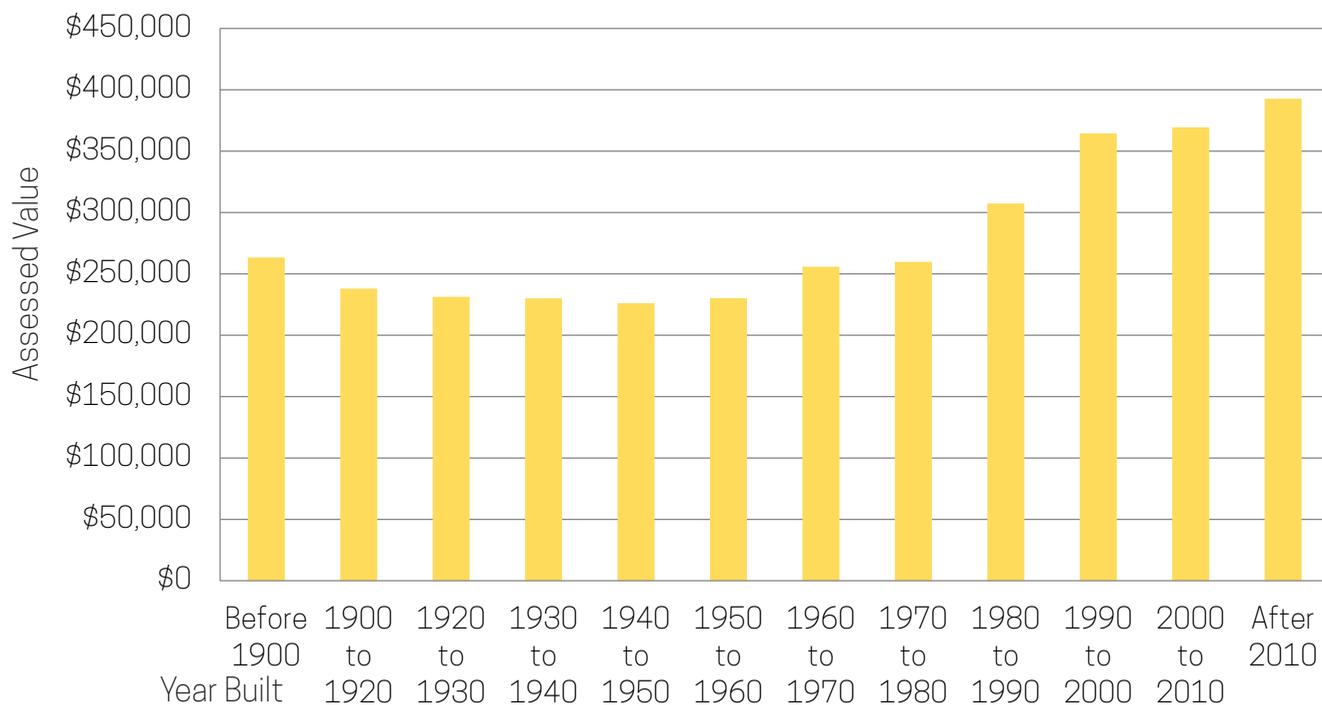


Figure 4 - 9: Total Assessed Value by Age of Structure (Source: Assessor's Database, 2017)



a significant impact on the value of a housing unit. Units built before 1980 had an average assessed value of \$242,000 while units built between 1980 and 2017 had an average value of \$359,000, a premium of nearly 48%. (Assessor's Database, 2017)

Average Living Space

Living space is also a factor in home value. Recent studies indicate that the average living space per person in the United States has risen steadily. Buildings in Holden reflect these national trends. Figure 4 - 10 shows the average gross living area in Holden in square feet by housing unit age.

While increased living space can contribute to quality of life, it can be problematic from a land management perspective. In Holden, the average household living area has increased while the number of persons in each household decreased. In 1970, there were 3.4 persons per household in Holden. By 2010, that number dropped to 2.7. According to Town census data, in 2017 the average household size in Holden reached 2.5 persons. This means that the amount of space devoted to each person has grown by an average of 17% each decade since 1970. This represents a highly inefficient use of scarce land resources.

Analysis of assessor's data shows that the trend toward larger homes paused during the recession. The average total unit size, including finished and unfinished space, of a single-family housing unit built pre-recession was approximately 5,300 sq. ft.; after the recession it was 4,300 sq. ft. However, as Figure 4 - 11 demonstrates, the trend toward larger more expensive homes has begun picking back up since 2006. At the same time, assessed values have begun going back up as well. This suggests the trend towards larger houses continues unabated.

This land use trend is further exacerbated by the unit mix in Holden. In 2017, approximately 83%

Table 4 - 6: Housing Units by Type, Size and Percentage of Total Units (Source: ACS, 2017)

Units in Structure	Total Units (Estimate)	% of Total Units
Total housing units	8,094	100
1-unit, detached	6,750	83%
1-unit, attached	453	6%
2 units	186	2%
3 or 4 units	243	3%
5 to 9 units	162	2%
10 to 19 units	130	2%
20 or more units	170	2%
Mobile Home	-	0%
Boat, RV, Van, etc.	-	0%

Figure 4 - 10: Average Gross Living Area of Residential Units, 1950-2017 (Source: Assessor's Database, 2017)

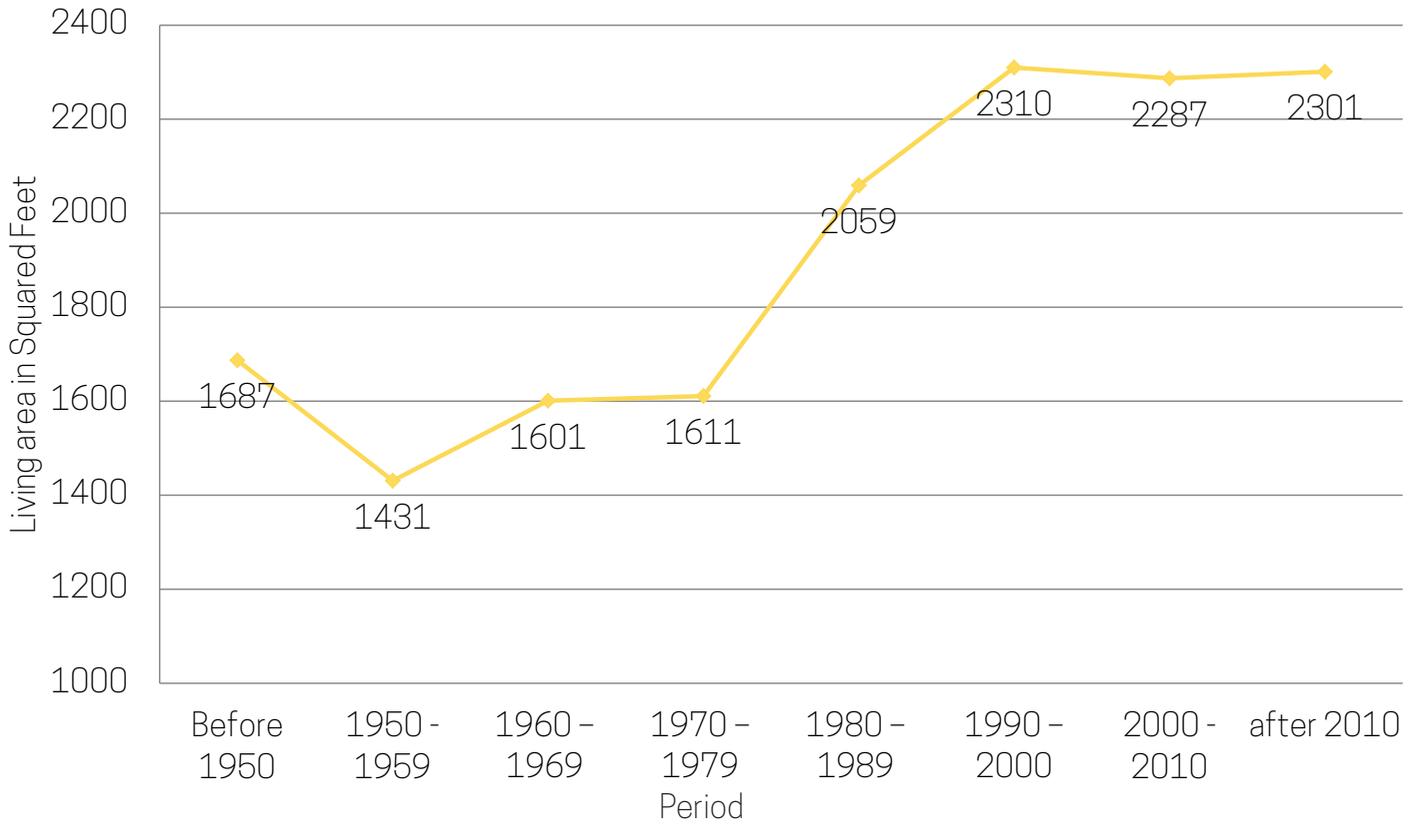


Figure 4 - 11: Average Home Size to Value Comparison (Source: Assessor's Database, 2017)

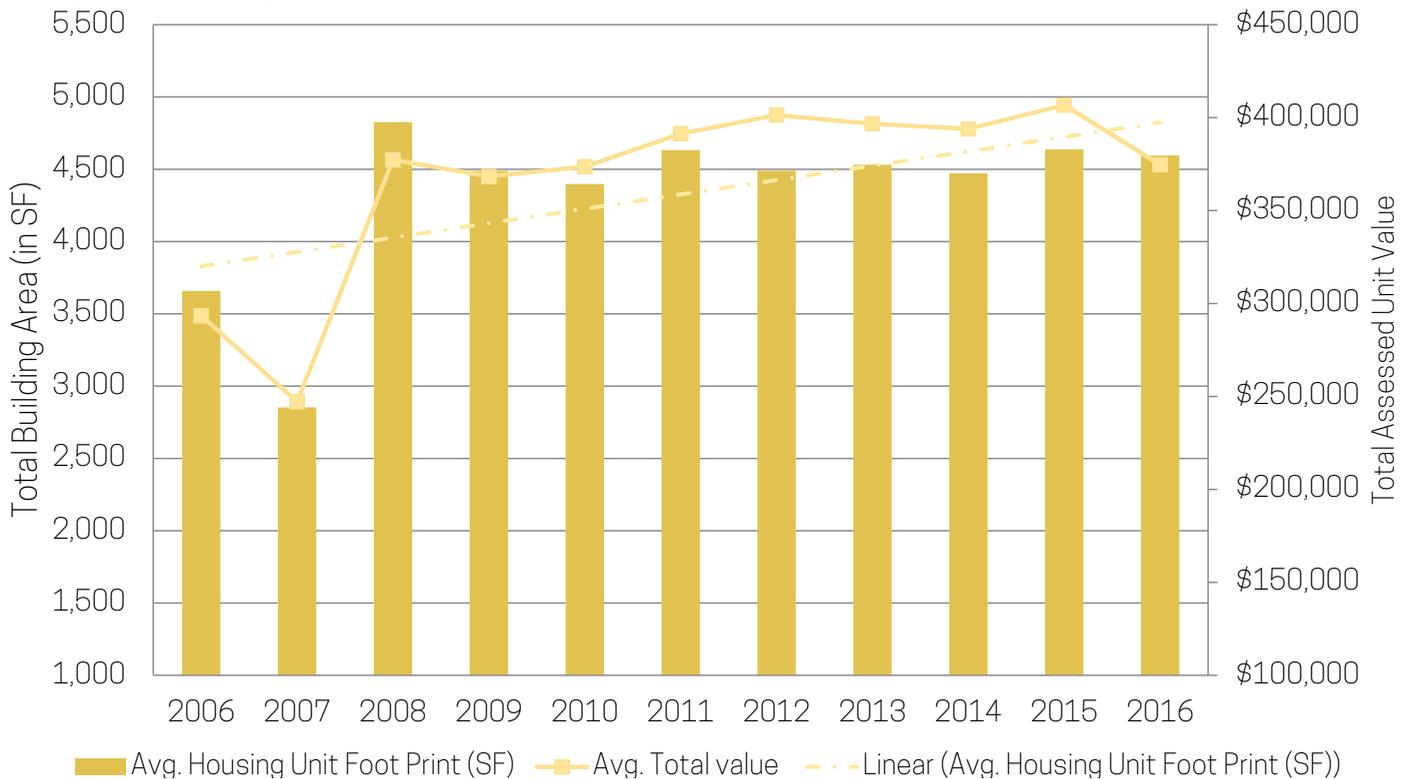


Table 4 - 7: Housing Statistics, Before and After 1980 (Source: Assessor’s Database, 2017)

Year Built	Average Housing Unit Foot Print (Sq. Ft.)	Average Living Area (Sq. Ft.)	Avg. Lot Size	Avg. Total value	Avg. Home value (Excluding Land)
Before 1980	3,490	1,685	1.4	\$241,815	\$146,964
After 1980	4,540	2,219	4.3 ⁵	\$358,510	\$262,824
Percent Increase	30%	32%	212%	48%	79%

⁵ The average lot size for 2000 to 2010 was 9.6 acres, which was affected by a number of condominium developments on large lots. If those are excluded, the average for this period is 2.5 acres.

of all housing units in Holden were single-family homes (Table 4 - 6) (ACS, 2017). Single-family units tend to be the costliest and utilize the most land resources. Analysis of Assessor’s data shows that single-family homes in Holden had an average living area of 1,817 sq. ft., an averaged assessed value of \$284,000, and an average lot size of 2.5 acres.

Table 4 - 7 presents these figures in two groupings, before 1980 and after. In nearly all metrics analyzed, single-family housing built after 1980 show a marked increase in size. The size of single-family homes grew both in terms of building size and in living area. Building size increased by an estimated 30% and living area increased by an estimated 32%. The Town also saw increases in value. Total assessed value for single-family houses increased 48% for units built after 1980, while the assessed value of the homes themselves increased by 79%. (Assessor’s Database, 2017)

Market Trends

This section looks at key indicators of housing market health in Holden. The analysis is divided into two primary areas: development trends and consumer trends. A third section explores trends in housing affordability.

Generally speaking, the housing market in Holden is strong. Home values in Holden and across the region have largely rebounded from the housing crisis of 2007 to 2009. Additionally, new housing units have been added at an accelerated rate. At the same time, there are indications that this growth will be slowing in the next few years. Sales began to slip in 2018 and growth in home values has slowed in Worcester County. This regional trend is reflected in the data discussed.

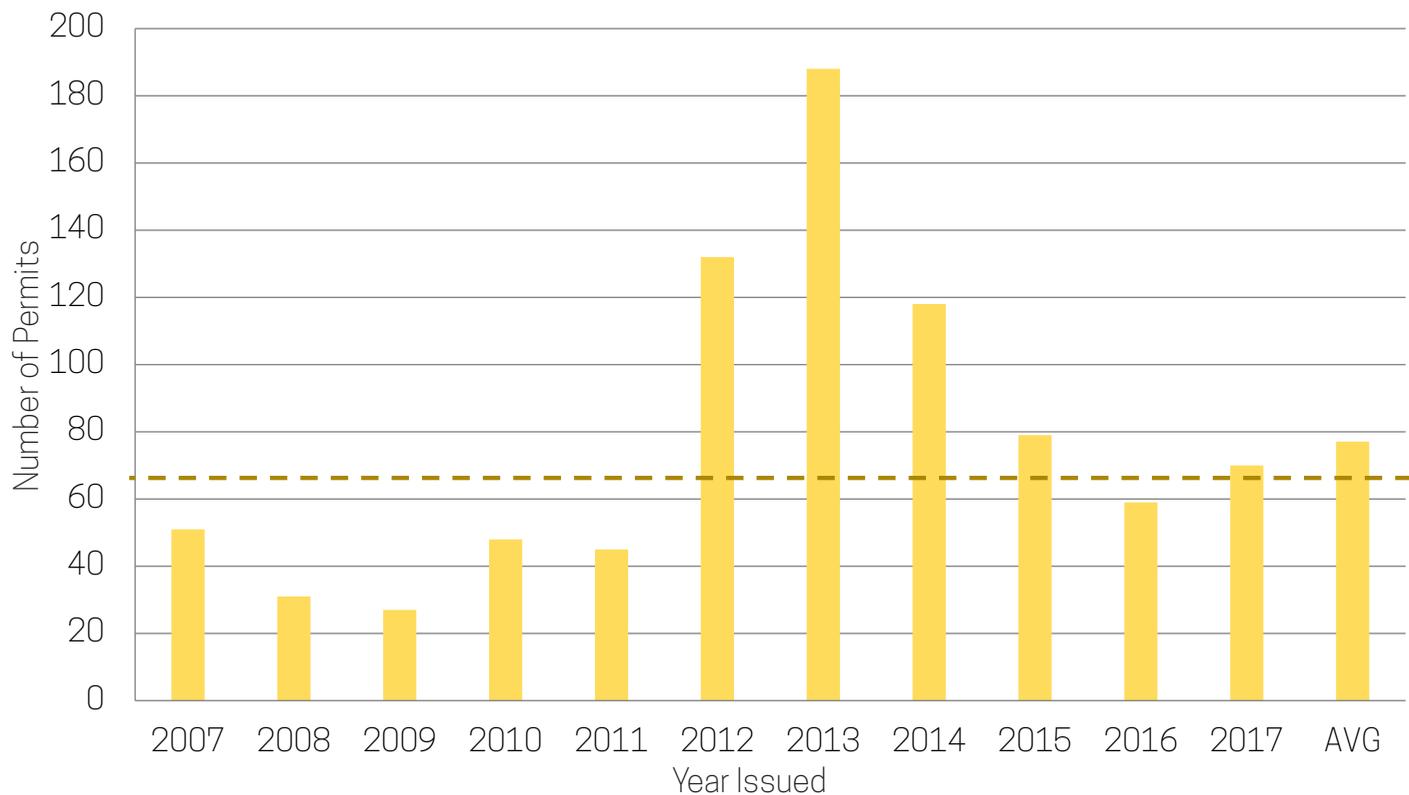
Summary of Key Trends

- Housing unit development has largely recovered from the 2007 housing crisis, with new unit growth coming within a few percentage points of pre-recession demand.
- Home prices have recovered much of their pre-recession value, though there is still ground to make up.
- The vast majority of new development is in single-family housing units, which account for more than 60% of the total new units added since 2007.
- In addition to increased overall value, the size and living area of homes built between 2007 and 2017 have increased, meaning fewer houses and fewer people are being accommodated per acre of land.
- Costs in the rental market have increased, largely in response to the increase in home values and shortage of new multi-family units.

Development Trends

Since 2012, new units of all housing types have been added at a much greater rate. (Department of Housing and Urban Development (HUD), 2018) Between 2007 and 2011, Holden added an average of 40 new housing units per year. Between 2012 and 2017 that average increased to 107 units; however, this includes two years of above average activity in multi-family housing development. Looking at only single-family housing, there is a much more consistent growth. In the past five years, however, this growth has slowed. In 2016 and 2017, new units have been added at a slower rate than the 10-year average. Figure 4 - 12 illustrates these trends.

Figure 4 - 12: Building Permits by Year, 2007-2017 with 10-year Average (Source: HUD, 2018)



As depicted, new units of all housing types peaked in 2013. In 2018, Holden added a total of only 45 new units, compared to 70 units in 2017. (HUD, 2018) It should be noted that the 2018 data was considered preliminary at the time of this report, and was thus excluded from Figure 4 - 12. This shows that some of the momentum may have already gone out of post-recession recovery. Whether this indicates the start of a retreat or simply a leveling off of growth is more difficult to ascertain.

Single-Family Development v. Multifamily

Separating out single from multi-family units, the peaks and troughs of Figure 4 - 12 is mostly driven by inconsistent growth in multi-family units. Multi-family units for the purposes of the following figures include two or three-family units along with other larger apartment types. Looking only at single-family units, development has been performing well above 10-year averages since 2013. Between 2007 and 2011, single-family homes were added at a yearly average of around 40 units per year; between 2012 and 2017 this average was 62 units per year. Figure 4 - 13 shows the total number of permits issued for new single-family units between 2007 and 2017 (HUD, 2018).

As shown in Figure 4 - 13, new single-family units have been added at a declining rate since their peak in 2013. While 2017 totals come close to matching the 2013 high, the comparative low numbers in 2018 suggest this is something of an anomaly against the general trend of declining unit growth.

On the other hand, comparing single-family unit growth against comparison group averages, developer interest in Holden appears relatively robust. Figure 4 - 14 compares new single-family units against the average number of single-family permits in the comparison group (Table 4-2). For most of the 10-year period examined, single-family housing development in Holden exceeded regional averages for all but two years. Only in 2016 did the number of permits approach regional averages for the past five years. (HUD, 2018)

Multifamily-Housing

Unit growth for multi-family housing in Holden has been inconsistent over the last ten years. Again, this analysis defines multi-family as any housing type other than single-family homes. This is based on definitions used for the HUD permit database from which the data is derived. Between 2007

Figure 4 - 13: Permits for New Single-Family Housing Units, 2007-2017 with 10-year Average (Source: HUD, 2018)

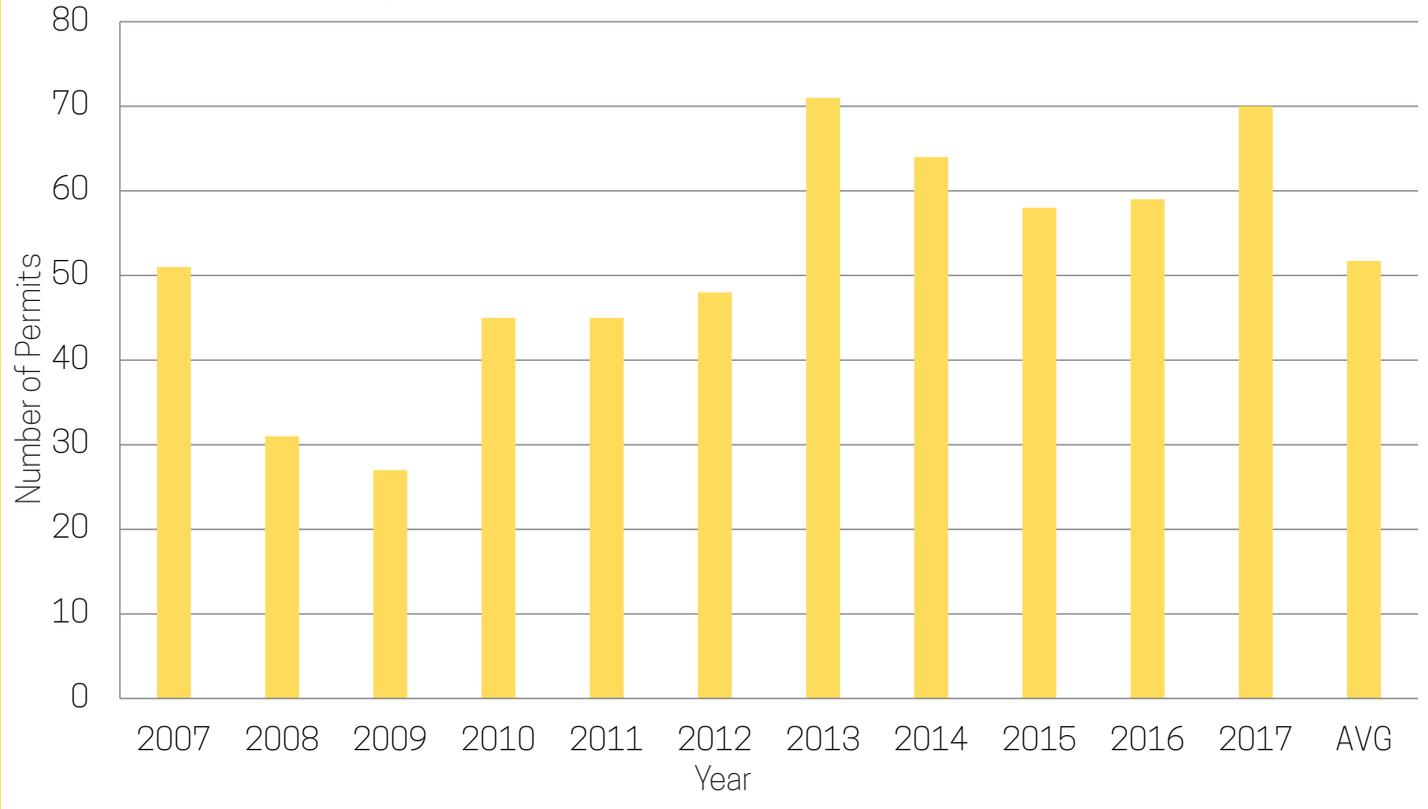
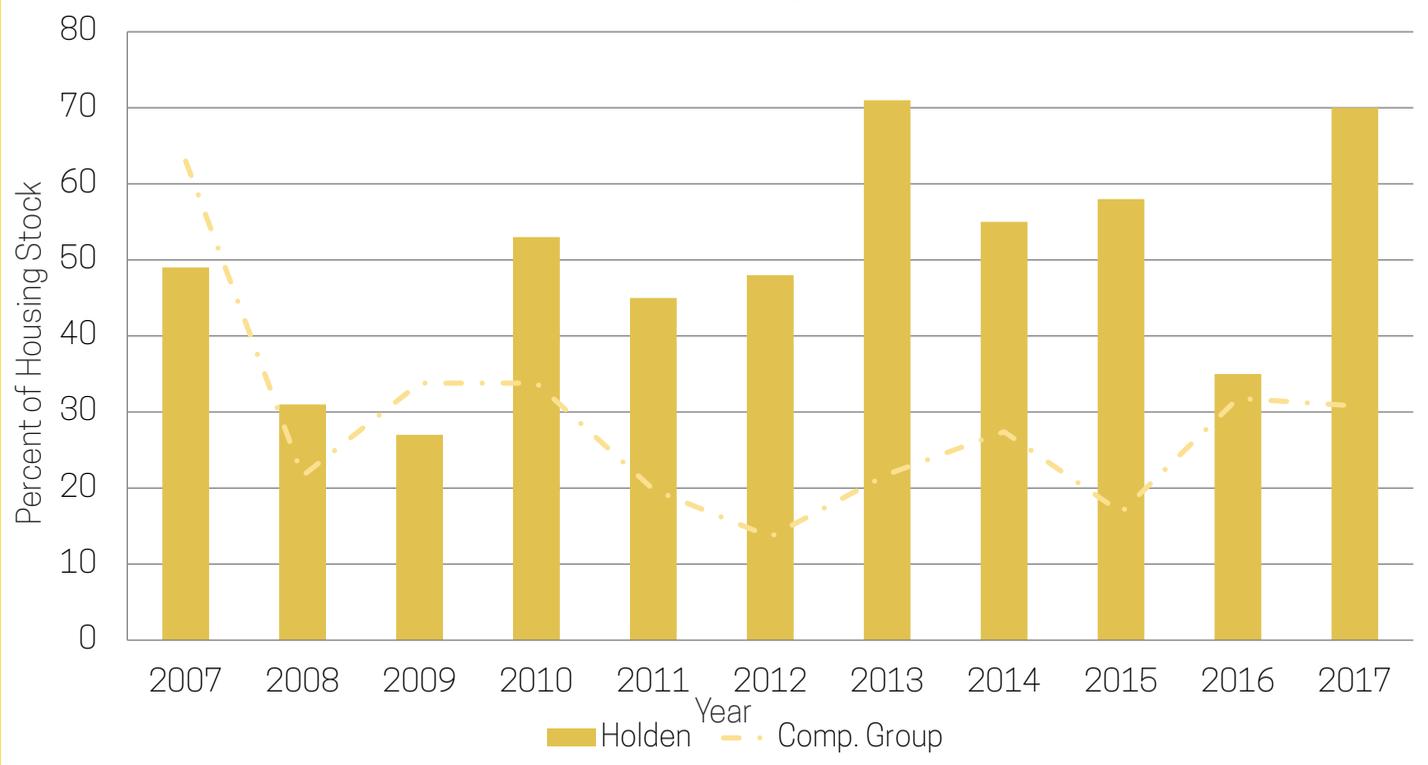


Figure 4 - 14: Single-Family Home Growth Compared to Regional Average (Source: HUD, 2018)



and 2011, Holden averaged just 0.6 new units per year; however, for the next five years this averaged jumped to 46 units, though nearly all of those units were added between 2012 and 2015. Figure 4 - 15 shows the total number of multifamily units added between 2007 and 2017. Data for 2018 was again excluded, as the counts were considered preliminary. The data indicates that no units were added in 2016, 2017, or 2018.

Holden added an average of 21 units per year, compared to nine units per year for adjacent communities during this same period. The only community in the comparison group that added more units on average was Worcester, which added 26 new units per year during the same period.

Consumer Trends

Consumer trends are one of the most important indicators of a community’s market health. This section looks at consumer activity through a number of different metrics. In broad terms, consumer demand for housing in Holden continues to be high. The community survey identified a number of factors which contributed to this, with school quality and Town character principal among them. Regionally, demand for housing has been softening as the market responds to the recent price inflation and tightened stock. This will likely have an impact on Holden’s housing market; however, the indicators

assessed in this analysis do not suggest a reversal in the housing market in the next few years.

Single-Family Median Sale Price

Across Massachusetts, single-family home value has grown dramatically since the recession. In Holden, the reported median sale price reached a high of \$295,900 in 2007. By 2011 this value had dropped by around 24%. Since then the recovery has proceeded fairly steadily. The 2017 median sale price has increased around 23% from its 2011 low and was only around 4% below the 2007 high. Although the data is incomplete, the 2018 median sale price of a single-family home was around \$290,000. (Warren Group, 2018) While still below the 2007 high, this price reflects the positive incremental nature of the recovery in Holden.

Figure 4 - 16 compares median single-family home prices to regional averages. Holden home prices kept pace with or performed slightly better than regional averages even during the height of the recession.

Figure 4 - 17 looks at the year-over-year change in home values normalized to a growth percentage. It shows that home values were highly volatile between 2007 and 2011 but have increased at a slow and steady rate since that time.

Figure 4 - 15: Permits for all New Multi-family Units, 2007-2017 with 10-Year Average (Source: HUD, 2018)

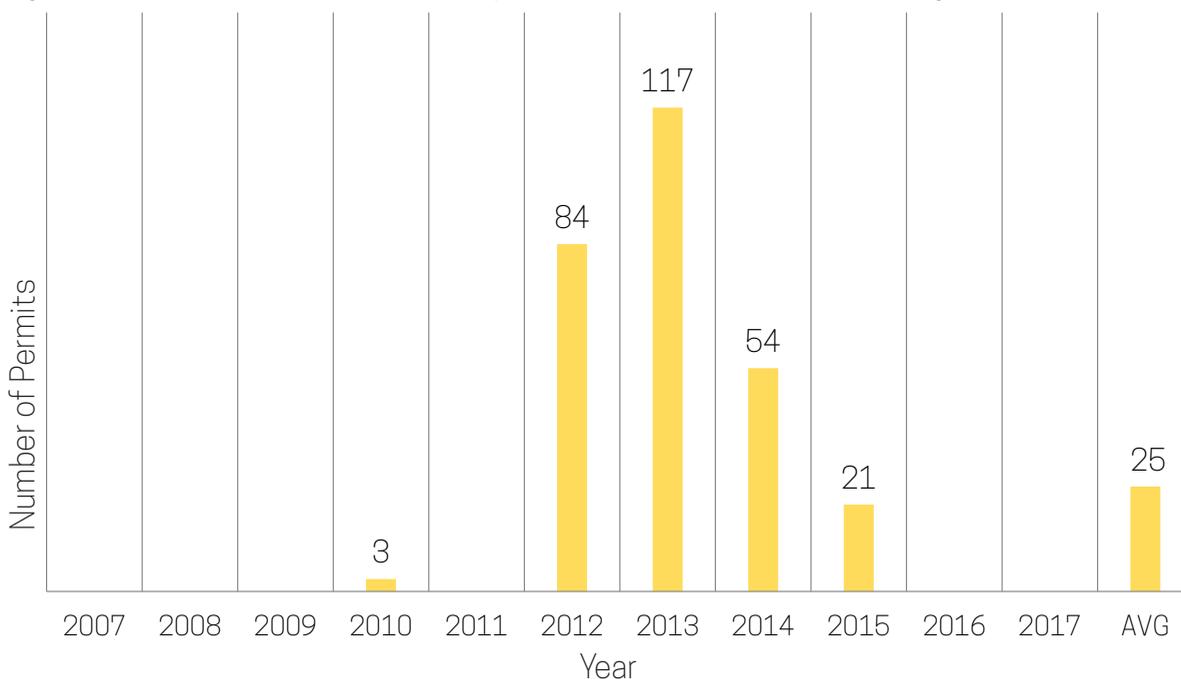
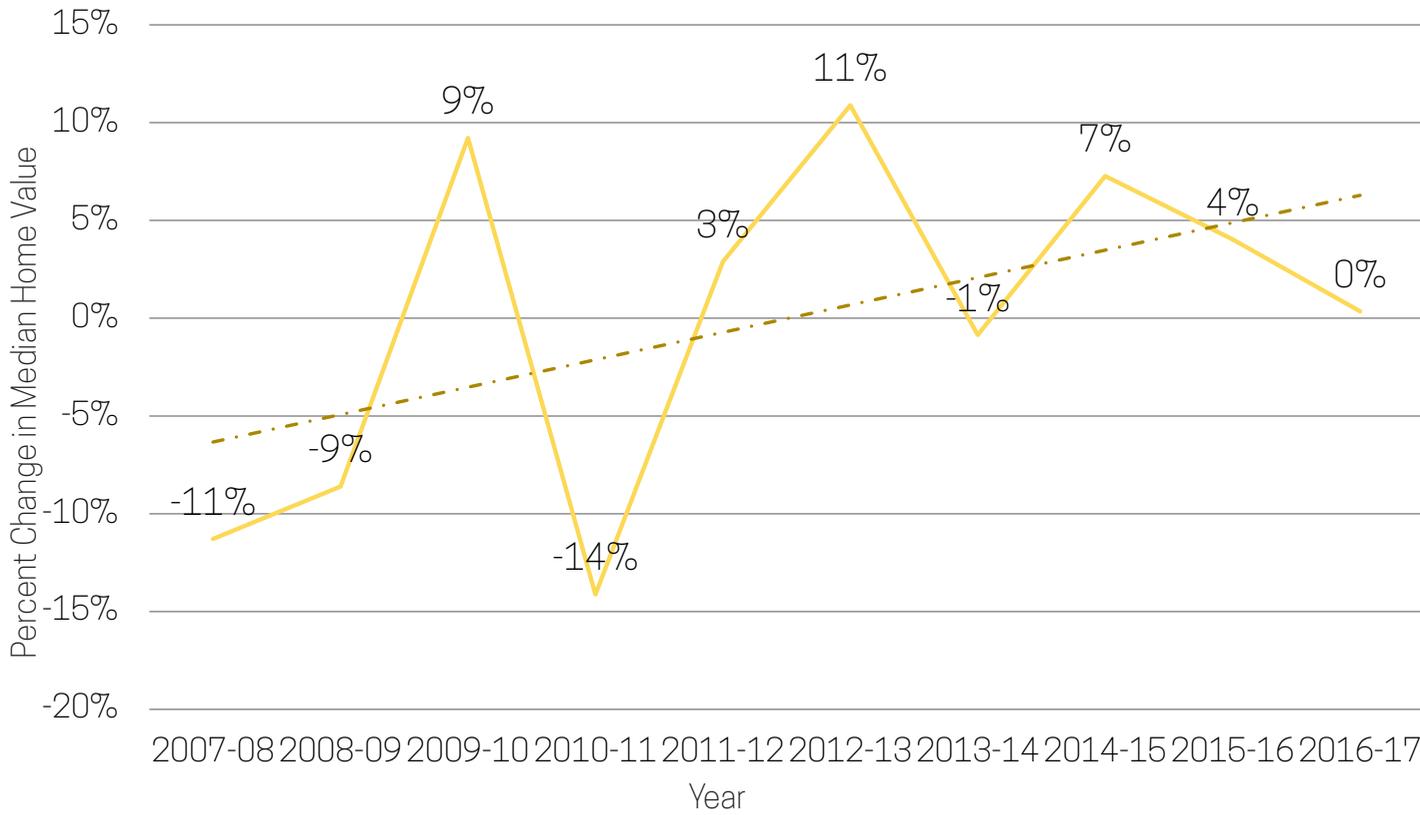


Figure 4 - 16: Median Sales of Single Family Homes, Price Over Time, 2007-2017 (Source: Warren Group, 2018)



Figure 4 - 17: Change in Median Home Value, 2007-2017 (Source: Warren Group, 2018)



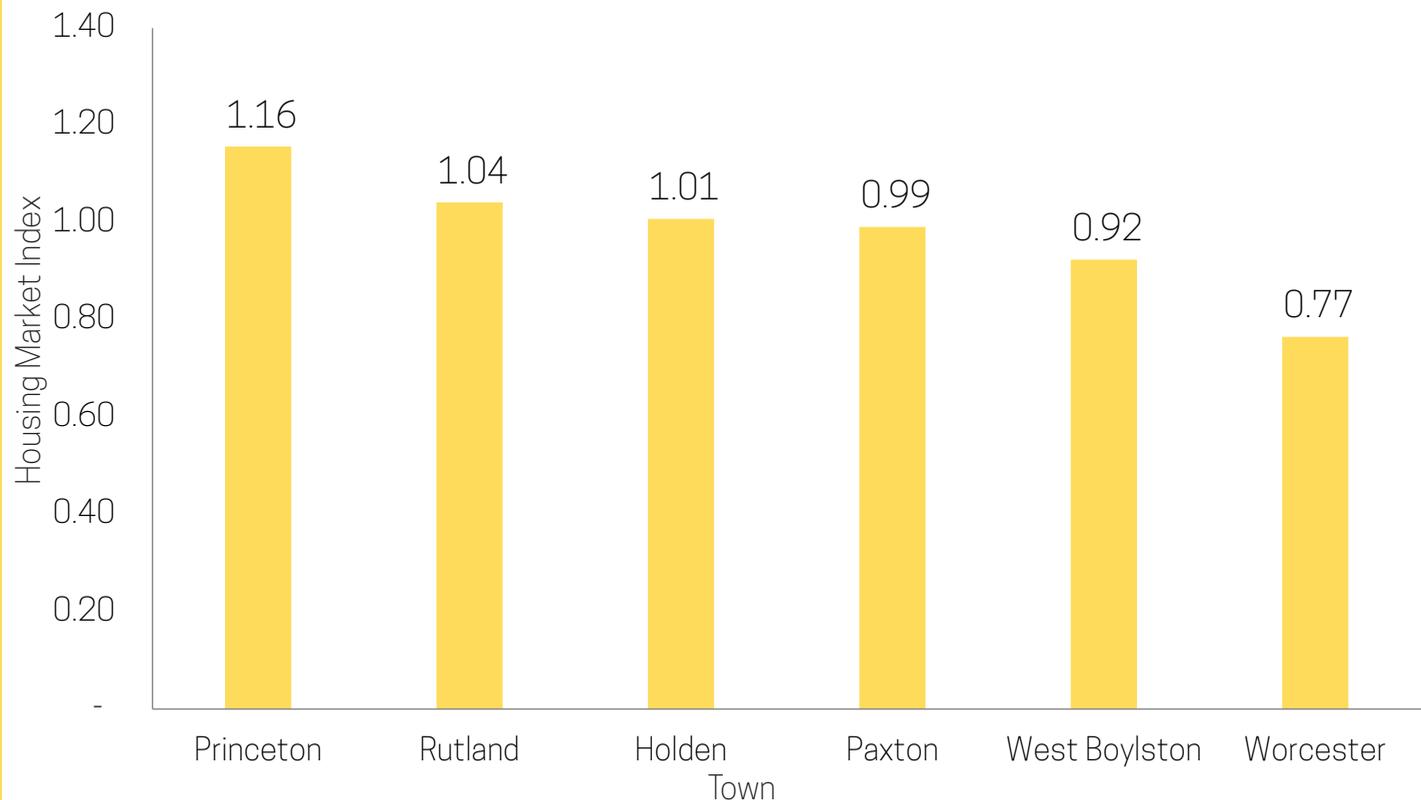
Housing Market Index

CMRPC has developed a tool to help visualize the total market activity within the region. The Housing Market Index (HMI) is a representation of market activity across a region over a period of time. Like any index, the values shown in the figure are compared against the average value for the region as a whole. Thus, an index value of 1.00 would equal the average market activity for the region.

The HMI incorporates five key metrics into a market index value grouped into positive and negative metrics. The negative metrics are subtracted from the positive metrics to arrive at the market index value. The positive metrics include Total Sales Volume, Median Sales Price, and Total Permitted Units. Sales Volume and Median price are included as positive consumer metrics, as they represent consumer investment in the housing market, while Total Permits indicate investment from housing developers. The negative metrics include Foreclosure Volume and Vacancy Rates, as these generally indicate a withdrawal from the single-family housing market.

Figure 4 - 18 shows Housing Market Index for

Figure 4 - 18: Housing market Index for Holden and Adjacent Communities, 2007-2017 (Source: CMRPC, HMI, 2018)



Holden and comparison communities. Again, a value of 1.0 equals the average Market Activity Value for the Region, so any value above 1.0 indicates greater than average market activity, while below 1.0 shows weaker than average market activity.

Holden's value of 1.01 shows that its total market activity for the period between 2007 and 2017 was just slightly above the regional average. Compared to adjacent communities, Holden performed on the higher end of the scale. Paxton, West Boylston and Worcester all possessed slightly weaker markets than Holden between 2007 and 2017. Worcester, while having more overall development and sales than the region, had significantly lower median sales price for the period indicated, thus accounting for its lower than average score.

Rental Market Activity

As of 2018, data provided to CMRPC by CoStar showed that rental activity is surprisingly robust in Holden. In 2017, the vacancy rate in multifamily units was 4.6%. In 2018, that rate dropped to 3%. A rate of around 6% is generally indicative of a healthy market. Values too far below this rate suggest that demand is outpacing supply. CoStar

listed approximately 250 active multifamily units in Holden (this number is likely to be low, as CoStar does not list all properties in a given area and one property listed did not have unit data). The price per unit for these properties has risen around 2.8% since 2017 to approximately \$1,518 per unit. (CoStar, Licensed to CMRPC, 2018) The breakdown of units per bedroom is as follows:

- 1-Bed \$1,235
- 2-Bed \$1,872
- 3-Bed \$2,291

This represents annual growth in rental prices of around 3.3%. Such a robust growth rate suggests that demand for rental units is at least as high as that for single-family housing. Given Holden’s proximity to Worcester and the high quality of the regional school system, the Town should anticipate increased demand for this housing type.

Housing Affordability

Housing affordability is a key challenge for Holden. HUD affordability standards set the basic limits for determining subsidized housing eligibility. For a 4-person household, the standards are listed in Table 4-8. The table shows us that a family earning 80% of Area Median Income (AMI) would have a total household income of around \$68,000.

Table 4 - 8: HUD Affordability Standards in Holden (Source: HUD, 2018)

30% of AMI	50% AMI	80% AMI
\$25,700.00	\$42,850.00	\$68,000.00

The Town of Holden uses a method approved by the DHCD to estimate the value of a three-bedroom, four-person household, which, by this calculation is

around \$189,000. Based on ACS 2017 estimates, roughly 11% of owner-occupied housing units in Holden had an estimated value below the \$200,000 threshold. In 2017 there were 8,094 housing units in Holden. ACS estimated 89% of all housing units were owner-occupied in that year, meaning that around 7,200 units of housing were owner-occupied. Assuming that 11% of those units fell below the \$200,000 threshold, the number of owner-occupied units that could be considered affordable to residents making up to 80% of AMI in 2017 would be less than 800.

Housing Cost-Burdened

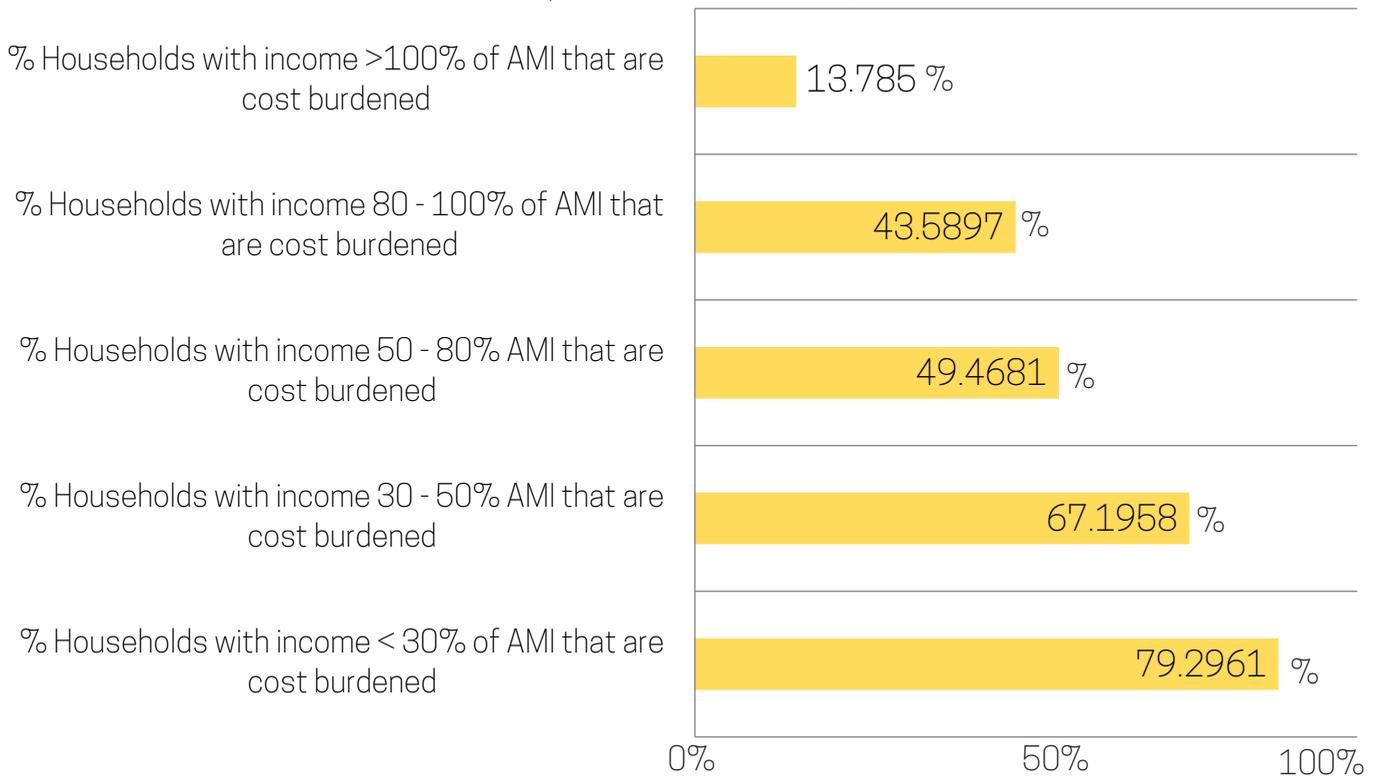
A cost-burdened household is defined by HUD to be any that is paying more than 30% of their household income on housing. Table 4 - 9 shows the percentage of households considered to be cost-burdened, per housing income category according to 2017 ACS estimates. This means around 14% of all households and around 28% of renting households at 50% of AMI are considered cost-burdened.

Figure 4 - 19 shows the percentage of Holden households in each of the AMI brackets that are considered cost-burdened. While each of the lower AMI brackets make up a fairly small percentage of the total housing market, the data below shows that within those brackets, a significant number of households are housing cost-burdened. While it may not be terribly surprising to see the significantly high proportions of cost-burdened households among families earning less than the AMI, the data shows that around 14% of household with incomes at the AMI are also cost-burdened. For comparative purposes, CMRPC examined data provided by the Metropolitan Area Planning Council

Table 4 - 9: Percent of Housing Cost-Burdened Households by Home Ownership Status (Source: ACS, 2017)

Household Income Category	All Occupied Units	Owner-Occupied Units	Renter-Occupied Units
Less than \$20,000	4%	4%	7%
\$20,000 to \$34,999	6%	5%	12%
\$35,000 to \$49,999	4%	3%	9%
\$50,000 to \$74,999	6%	6%	9%
\$75,000 or more	5%	6%	0%
Total	26%	24%	37%

Figure 4 - 19: Percent of Cost-Burdened Households by AMI Bracket (Source: ACS, 2017)



(MAPC) www.Housing.ma platform. (MAPC, 2018) This data shows that the nearest ten municipalities had an average cost-burden of less than 12% for households at 100% AMI.

The not insignificant number of cost-burdened households should be an area of concern for Holden. Cost-burdened households exist on the edges of financial stability. These households are more vulnerable to economic shocks and other shifts in the market. This makes them more likely to have to leave Town after a financial hardship or even experience homelessness.

Under the Massachusetts Comprehensive Permit Law, Massachusetts General Law (MGL) Chapter 40B, all Massachusetts municipalities have an obligation to strive to ensure that at least 10% of their housing stock is affordable to households earning up to 80% of AMI. As discussed earlier, in 2017 this threshold was \$68,000 in total household income for a four-person household. As of 2017, the percentage of Holden and the comparison group were as shown in Table 4 - 10.

In order to achieve the 10% threshold, Holden would need 255 additional subsidized units (based

on 6,624 total units in 2010, less 407 subsidized units in 2017). It is important to note, however, that these values are subject to change in 2020. SHI percentages are based on Census year full-time housing unit counts, thus the SHI percentage will be something of a moving target for the Town.

Table 4 - 11 shows the number of units needed to achieve this threshold using both 2010 housing unit data and 2020 estimates based on CMRPC's buildout estimates. To reach the Chapter 40B goal of 10% affordability, Holden would need to produce 255 subsidized units. By 2020, however, this number is estimated to jump to 421 provided the Town adds no additional units before Census 2020.

Table 4 - 11: Affordable Housing Gap, 2010 and 2020 (Source: CMRPC, 2018)

	2010	2020 (Estimated)
Total Housing Units	6,624	8,281
No. of SHU Needed for 10%	662	828
Existing Units	407	407
Gap	255	421
Percent	6.10%	4.90%

Summary of Subsidized Developments

The list outlines the key characteristics of the existing subsidized housing inventory for the Town of Holden.

Of Holden’s 407 subsidized housing units:

- 371 or 97% are rental units.
- 36 or 9% are ownership units.
- 284 units are deed restricted in perpetuity while 84 have upcoming expirations.
- 80 of these deed restricted units will expire by 2020. Thus, even if no additional units of housing are added between now and 2020, the

SHI percentage will drop to 4.04% with just the housing units as of 2017 and this single expiration in 2020.

- About 31% of the total subsidized units are age-restricted including the 80 units in the Colony Retirement Home whose affordability is set to expire in 2020.
- 58% of the units are non-restricted (the remaining 11% lack data at this time).

Table 4 - 12 shows the key characteristics of the Town’s SHI.

Table 4 - 10: Affordable Housing Unit Totals, 2017 (Source: Department of Housing and Community Development (DHCD), 2018)

Community	2010 Census Year Round Housing Units	Total Development Units	SHI Units	%
Holden	6,624	514	407	6.10%
Paxton	1,590	62	62	3.90%
Princeton	1,324	26	26	2.00%
Rutland	2,913	86	86	3.00%
West Boylston	2,729	413	223	8.20%
Worcester	74,383	10,076	9,977	13.40%

Table 4 - 12: Subsidized Housing Inventory, 2010 (Source: DHCD, 2018)

ID#	Project Name	Address	Type	SHI Units	Affordability Expires	Built with Comp. Permit?	Subsidizing Agency
1376	Checkerberry Village	9 Flagler Drive	Rental	48	Perpetuity	No	DHCD
1377	Colony Retirement Homes	68 Reservoir Street	Rental	80	2020	Yes	HUD
1378	Holden Commons	Towle Drive	Ownership	14	Perpetuity	Yes	DHCD
1379	Holden Commons	Towle Drive	Rental	8	Perpetuity	Yes	DHCD
1380	Holden Community Residence	1 Salisbury Street	Rental	4	2027	No	EOHHS[1]
4315	DDS Group Homes	Confidential	Rental	39	N/A	No	DDS[2]
7617	Stone Ridge Estates	Frontage on Main Street	Ownership	8	Perpetuity	Yes	DHCD
7668	Fisher Terrace	Fisher Road	Ownership	8	Perpetuity	Yes	MassHousing FHLBB[3]
9018	Winterberry Hollow	Newell Road/Salisbury Street	Rental	192	Perpetuity	Yes	DHCD
9119	Wachusett Woods	Highland Street	Ownership	6	Perpetuity	No	DHCD

[1] Massachusetts Executive Office of Health and Human Services (EOHHS)

[2] Massachusetts Department of Developmental Services (DDS)

[3] Federal Home Loan Bank of Boston (FHLBB)

ISSUES AND OPPORTUNITIES

The Town of Holden is, in general, well positioned to enjoy strong growth in the near-term. As stated earlier, the Buildout Analysis (Appendix B), estimated a total Town-wide capacity of 6,847 additional units. Further, the quality of the school system and general proximity to Worcester will likely continue to make Holden an attractive location for home buyers, renters and developers. There are a number of potential challenges which the Town will need to address. This section is organized into three principal sections: 1) a summary of key issues and opportunities gleaned from the community outreach events; 2) a summary of key takeaways from the Buildout and Fiscal Impact Analysis, particularly as they relate to land-use and housing; and 3) a summary of issues around housing affordability.

As detailed in the Community Outreach Chapter, CMRPC and the Town conducted a robust community engagement effort. This included an all-day workshop to discuss issues and opportunities on the various master-planning topics; a community survey; and other engagement strategies.

Of the 979 residents who participated in the Community Visioning Survey, more than 800 responded to questions about housing. Key takeaways from the survey related to housing and population are as follows:

- More than 80% of respondents considered aging-in-place to be Somewhat to Extremely Important.
- The most important housing types for Holden to add in the next 10 to 20 years are:
 - Medium-sized single-family housing
 - Housing for the elderly
 - Small market-rate homes geared toward seniors

CMRPC and the Steering Committee also conducted a Community Visioning Day. At the event, participants were asked to provide feedback on Holden's top Assets and Challenges. Results were voted on by all participants. The top results related to housing are presented in Table 4 - 13.

Table 4 - 13: Community Visioning Day Results, 2018

Assets	Score
Jefferson Mill Converted to Housing (Potential for Tax Income, w/out Adding Children To Schools)	9
People Want to Live Here & Attend Our Schools	7
Safety	5
Challenges	Score
Too Many Large Houses (Over-crowding Schools)	12
Traffic	9
No Easy Connections to Interstate	8

Housing Issues

Lack of subsidized housing units: The Town noted that there has been little development of new subsidized units in many years. This continues to create pressure on the Town's statutory SHI percentage, especially given the looming 2020 Census update. In addition, a number of units have deed restrictions that are set to expire in 2020. This, coupled with the increased baseline will push Holden further from its 10% SHI target. The Town will need to aggressively pursue new subsidized units in the next five years just to make up for those losses.

Wait-list for existing subsidized housing: The existence of a wait-list⁶ for existing subsidized housing units shows that demand for subsidized units may be exceeding supply. This pressure is only likely to increase given expected regional population growth and the looming reduction in total units.

Limited success finding eligible buyers for subsidized ownership units: The Town also noted

⁶ Data on wait-list times was not available from the Housing Authority. In previous years the anticipated time on the wait-list for Holden residents was typically estimated to be between eighteen months and two years. However, a new prioritization system implemented by the MA DHCD has complicated the picture. Residents from across the state can apply for an available slot. Although the new system gives

that ownership units in the Town seem to struggle to find qualified buyers. As of 2018, approximately 9% of the total unit count was for eligible ownership units. The Town blames this imbalance in part on the poor performance of previous subsidized projects. This makes ownership units far less attractive to developers and may put additional downward pressure on the subsidized housing stock.

Public resistance to new housing growth: Public sentiment toward new housing growth was generally negative. The survey indicated a general reluctance to embrace new growth citing fears over new costs in infrastructure and education as well changes to town character. While concerns over the impact of unregulated housing growth are in many respects valid, Massachusetts state law greatly limits the ability of communities to prevent it entirely. The state has set ambitious targets for housing growth across the Commonwealth. It is the object of this and other sections to meet these goals while actively preparing the community to mitigate any potentially harmful effects.

Housing Opportunities

Open-space Residential Development (ORSRD)

Option: The Town implemented an Open Space Residential Development option in 2008. This bylaw revision allows developers to receive a density bonus in exchange for setting aside 50% of the total land area as publicly usable open space. The option allows the Town to offset some of the land-use impacts from single-family development. As of 2019, the ORSRD option had seen high demand from developers and should continue to be promoted as a development preference.

Small lot development and Town-Houses: The Town also indicated it has been seeing more demand for smaller lot developments and Town-houses recently. More compact housing can often be more affordable, as developers are able to spread more profit generating units across fewer acres. Denser development patterns also offset land use impacts. The Town should consider allowing these units in more places, especially where Town-owned infrastructure already exists.

Buildout and Fiscal Impact Analyses

Developable Land: There is still strong potential for new development in the Town of Holden. The Buildout Analysis (see Appendix C) determined that there are an estimated 4,269 potentially developable acres in residentially zoned areas of Holden. Of this, a significant portion is under some form of partial constraint (high slopes, Aquifer Protection areas, etc.), which potentially reduces the total number of units the land could support. A partial constraint is one that will reduce the likelihood that a development will be practical, without eliminating the possibility entirely. Lands that fall under a partial constraint are reduced by a specified factor (see Buildout Analysis). That being said, a substantial amount of land remains available to meet future demand. For instance, current regulations of the R-40 zone would allow for the creation of as many as 3,000 new lots which would yield between 3,000 and 4,000 new housing units. This would generate an estimated 645,000 gallons per day (GPD) in water use, 1.5 million GPD in wastewater and 35 miles of new road. Table 4 - 14 shows the summary of growth potential and impact potential of all residential zones in the Town of Holden.

This data takes a number of variables into account. Land area calculations factor in regulatory constraints, natural features, the potential for odd-lots and other factors. Absolute development constraints are removed from the outset. These include land already built on, water bodies, wetlands and other regulations that prevent development. For a complete summary of the methodology, see the Buildout Analysis (Appendix C). It is important to note that this table represents an estimate of capacity. The impacts listed here are merely the maximum the Town should anticipate given the existing constraints. A more detailed linear growth estimate was conducted as part of the Fiscal Impact Analysis section (Appendix C).

Housing Affordability

Income/Affordability Gap: As stated elsewhere, as much as a quarter of households in Holden qualify as cost-burdened. This effect is most dramatic

priority to existing Holden residents, residency is only one in a hierarchy of factors the state now considers.

Table 4 - 14: Growth and Impact Potential, Residential Zoning Districts (Source: CMRPC, Buildout Analysis, 2018)

	BUILDABLE LOTS	UNIT COUNT	NEW STUDENTS	NEW POPULATION	WATER USE (GPD)	WASTEWATER GENERATED (GPD)	MUNICIPAL SOLID WASTE	RECYCLED SOLID WASTE	ELECTRICAL USE (kWh/day)	NEW ROAD MILES
Residential - R-1	1,052	1,168	411	2,735	177,770	417,494	4,963	2,044	28,028	12
Residential - R-2	623	629	222	1,474	95,782	224,943	2,674	1,101	15,101	7
Residential - R-10	199	301	106	704	45,765	107,478	1,278	526	7,215	2
Residential - Multi-Family (R-M)	81	646	228	1,514	98,384	541,112	2,747	1,131	15,511	1
Residential - Rural (R-40)	3,108	4,103	1,445	9,609	624,556	1,466,771	17,437	7,180	98,469	35

among renters earning less than 50% of AMI. The median income is just under \$102,000, which is considered affluent especially in terms of the overall region. Figure 4 - 20 shows a comparison of Household Median Income to AMI indexed to 100% AMI for 2017 for four-person family or \$85,700. (HUD, 2018)

This indexing allows us to quickly see how far above or below the AMI is for a given community. As the chart shows, Holden compares favorably to the adjacent communities.

The Affordability Index compares the value of a home a family earning 80% of AMI can reasonably afford without experiencing a cost-burden to the median housing price in that same community in 2017. As stated earlier in this chapter, a family earning 80% AMI can comfortably afford a home costing around \$255,000. Therefore, an index value of 1.00 means the median home value in 2017 is exactly equal to the 80% AMI affordability threshold. A value above 1.00 means the median home price in a given community is more expensive than this value, and below 1.00 indicates it is less expensive. Figure 4 - 21 shows Holden has a value

of 1.12, meaning its median home price in 2017 was 12% higher than what a family at 80% of AMI could afford.

While this value should be cause for concern, it should be noted that Holden's value is the third lowest among its adjacent communities. Only West Boylston and Worcester had index values lower than Holden, and only Worcester had a median home value below the affordability threshold. This indicates that few communities in the region have housing markets that can easily accommodate even moderately low-income households. Holden will need to continue to proactively add below-market units in order to close the affordability gap.

Figure 4 - 20: Income Index, Median Housing Income to Area Median Income, 2017 (Source: HUD, 2018; ACS, 2017)

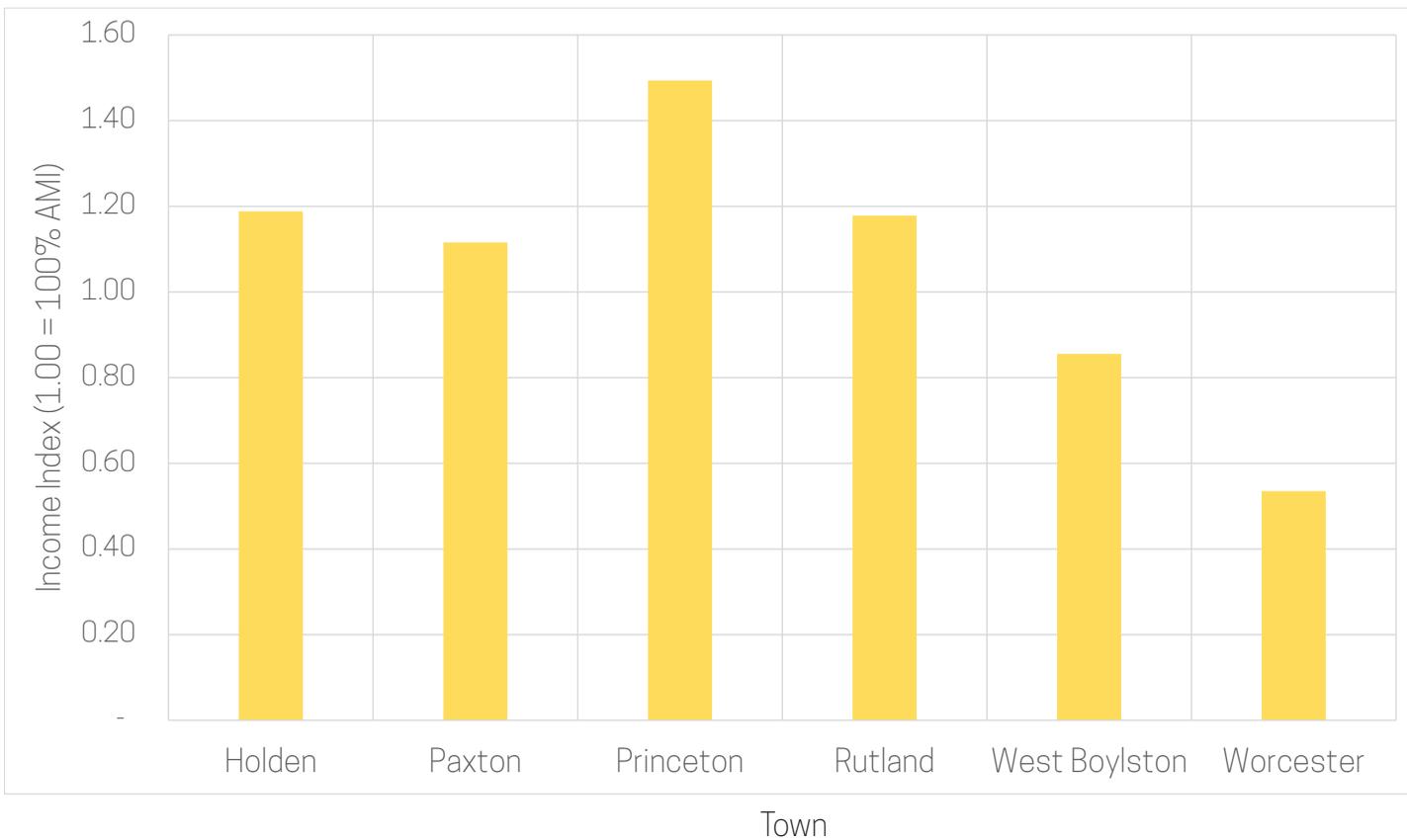
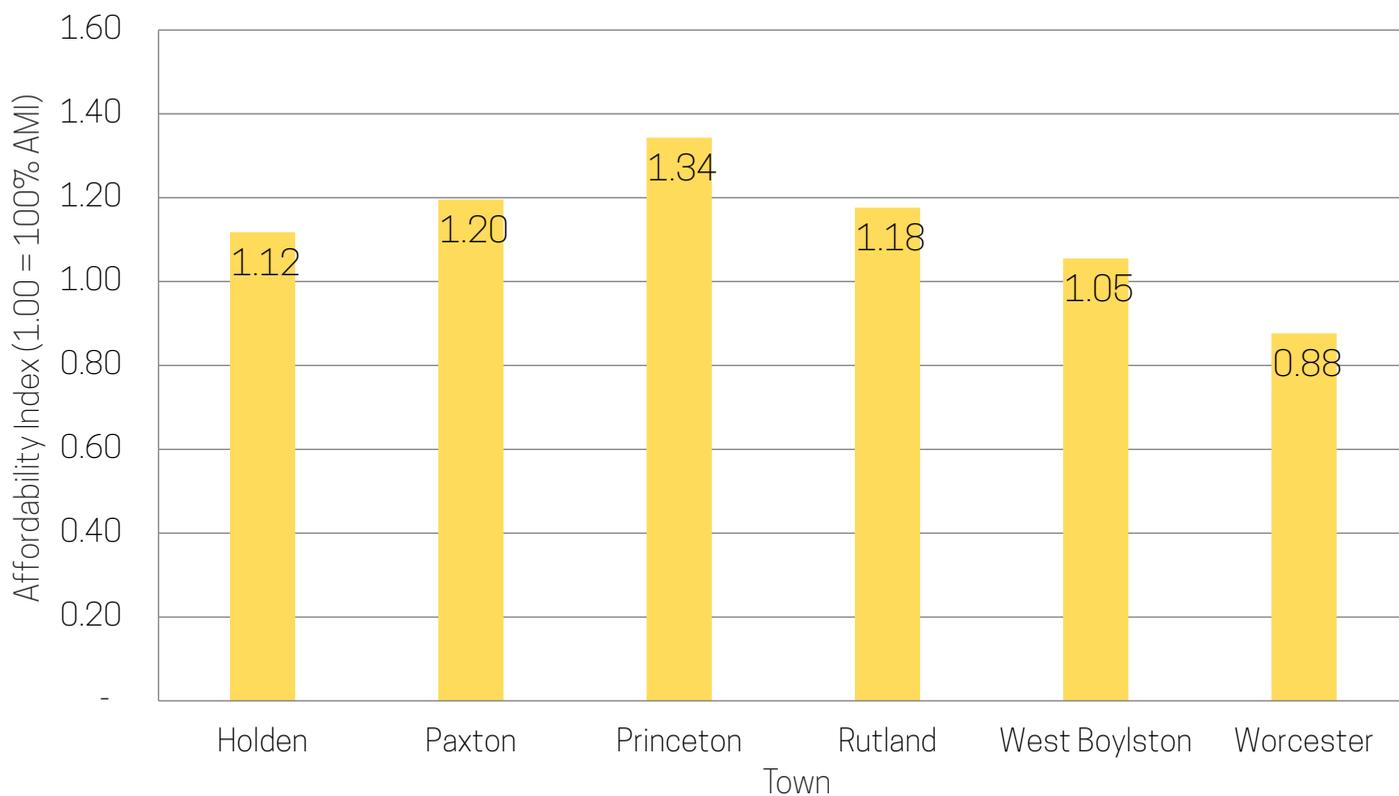


Figure 4 - 21: Affordability Index, Median Housing Price, 2017 (Source: Warren Group, 2017; HUD, 2018; Zillow, 2018; Redfin, 2018; Federal National Mortgage Association, 2018; Federal Home Loan Mortgage Corporation, 2018)



GOALS, OBJECTIVES, AND ACTION ITEMS

The Master Plan recommends the following action items based on the goals and objectives crafted with careful consideration of the public outreach results, analysis of current conditions, and progress achieved since 2008. The action items accompanying the objectives will also be reflected in the Implementation Chapter (Chapter 11).

Goal 4.1: Take a proactive rather than responsive approach to emerging issues in housing.

Objective 4.1.1 Stay actively informed on market trends and new opportunities to support growth in housing

- **Action Item 4.1.1.1** Encourage community leaders to attend meetings on housing trends hosted by CMRPC and other organizations (e.g. Mass Housing Partnership and Citizen Planner Training Collaborative (CPTC)).
- **Action Item 4.1.1.2** Work with CMRPC and local Chamber of Commerce to organize regular meetings with real estate professionals (e.g. Brokers' Breakfast) to identify pressing needs, trends, opportunities and threats to the local housing market.

Objective 4.1.2 Plan ahead for new housing development

- **Action Item 4.1.2.1** Complete a Housing Production Plan.⁷
- **Action Item 4.1.2.2** Conduct more robust school population projections and scenario planning to help the school district better plan for future capital expenditures.

Objective 4.1.3 Coordinate efforts to manage growth and direct funding opportunities from state and federal sources

- **Action Item 4.1.3.1** Create a new Holden Housing Partnership (HHP) standing committee OR a Municipal Affordable Housing Trust (MAHT) board to better coordinate planning for housing.
- **Action Item 4.1.3.2** Promote and support the activities of the HHP/MAHT by providing technical assistance, coordinating their work with other committees and facilitating smooth communications between Town functions.

Objective 4.1.4 Identify and pursue funding opportunities to expand affordable housing options

- **Action Item 4.1.4.1** Consider adopting a Municipal Affordable Housing Trust (MAHT).⁸
- **Action Item 4.1.4.2** Consider adopting Community Preservation Act (CPA) as a source of funding to support housing planning.⁹

⁷ A Housing Production Plan (HPP) is an important planning tool that allows a community to proactively assess the state of their local housing market, while also setting goals for reaching the statutory minimum set by MGL Chapter 40B (see "Subsidized Housing" section in this chapter). Once approved by the state Department of Housing and Community Development (DHCD), a well-executed HPP allows communities to address pressing housing needs and have more influence over the comprehensive permitting process. For more on the process and requirements of an HPP, see Appendix G

⁸ A Municipal Affordable Housing Trust (MAHT) is a more flexible mechanism for directing community resources to support the development of affordable housing. An MAHT allows communities to fund land acquisition, provide support and loans for housing rehabilitation, and financing housing construction among other activities. An MAHT can be funded through a variety of sources including local appropriations and Community Preservation Act (CPA) funds. See Appendix G

⁹ Community Preservation Act (CPA) is a mechanism for promoting greater housing affordability, diversity, and sustainability in participating communities. A community participating in the CPA program establishing a Community Preservation Fund derived from a property tax surcharge of between 1% and 3%. Such funds can then be earmarked towards building more affordable housing, encouraging historic preservation, open space preservation, and other activities. See Appendix G for more

Goal 4.2: Preserve Town character by encouraging development in community-determined locations and styles.

Objective 4.2.1 Ensure new development is concentrated in the most appropriate areas while preserving existing historical and cultural assets

- **Action Item 4.2.1.1** Identify new (update existing) Priority Development Areas (PDAs) and Priority Preservation Areas (PPAs) focused on existing housing stock.
- **Action Item 4.2.1.2** Continue to preserve historically valuable homes by supporting and/or expanding local historic preservation districts.

Objective 4.2.2 Continue to promote available Smart Growth development options to developers and home builders

- **Action Item 4.2.2.1** Develop handouts and other informational materials for distribution at Town Hall, online or at other housing related meetings.
- **Action Item 4.2.2.2** Leverage connections made through regular meetings with real estate professionals (e.g. action item 4.1.1.2) to provide up-to-date information on relevant regulations and available resources.
- **Action Item 4.2.2.3** Work with CMRPC and other state/regional agencies to widely disseminate information about available incentives for utilizing energy efficient materials and appliances in new/revamped housing units.

Goal 4.3: Ensure that growth prioritizes preservation of open space and uses low-impact development methods.

Objective 4.3.1 Protect open space and mitigate development impacts by building on and improving existing Smart Growth bylaws

- **Action Item 4.3.1.1** Work with local and regional developers to ensure the Town's Smart Growth and inclusionary/incentive bylaws continue to be an attractive option for new housing development
- **Action Item 4.3.1.2** Consider a Transfer-of-Development Rights (TDR) bylaw/policy to encourage preservation of open space.¹⁰
- **Action Item 4.3.1.3** Perform zoning diagnostic of other bylaws to identify areas for improvement.
- **Action Item 4.3.1.4** Review subdivision regulations to ensure design standards are in line with latest Low Impact Development (LID) standards.

Goal 4.4: Encourage a varied and inclusive housing stock.

Objective 4.4.1 Commit to producing at least a number of affordable units per year sufficient to meet DHCD "Safe Harbor" requirements

- **Action Item 4.4.1.1** Utilize the community outreach and needs analysis process in the HPP (action-item 4.1.2.1) to identify housing production goals that meet both state thresholds and local standards.
- **Action Item 4.4.1.2** Utilize the funding mechanisms available to the Holden Housing Partnership/MAHT to achieve housing production goals.

¹⁰ Transfer of Development Rights (TDR) – Transfer of Development Rights is a Smart Growth planning tool which allows the development rights on a parcel of land in one area of Town to be sold and used in another, more appropriate district. The result is that building can be denser than otherwise allowed in areas of Town where it is most appropriate, while land in less appropriate areas for development is preserved; all without financial loss to any party. Details on the TDR option can be found at the state Smart Growth website, (<https://www.mass.gov/service-details/smart-growth-smart-energy-toolkit-modules-transfer-of-development-rights-tdr>).

Objective 4.4.2 Ensure affordable housing stock is accessible to all age groups and levels of ability

- **Action Item 4.4.2.1** Explore the option to encourage or require Universal Design Standards for new affordable units created through incentive and/or inclusionary zoning, or funded through MAHT resources.
- **Action Item 4.4.2.2** Amend Continuing Care Retirement Community Bylaw to require the inclusion of progressive living options and ensure strong integration with surrounding neighborhoods/amenities.

Goal 4.5: Concentrate development along major corridors where infrastructure already exists.

Objective 4.5.1 Encourage smaller lot residential zoning in appropriate places, including cottage developments and Townhouses

- **Action Item 4.5.1.1:** Research and develop a prioritized list of appropriate potential zoning reform options to encourage smaller lot residential development in appropriate places, including cottage developments and townhouses.

Objective 4.5.2 Proactively pursue funding opportunities to mitigate the impacts on existing infrastructure

- **Action Item 4.5.2.1** Leverage available state/ local funding sources to improve infrastructure and mitigate water-use and traffic issues from denser developments, and/or plan effectively for housing.

Goal 4.6: Expand housing options by prioritizing denser, mixed-use, pedestrian-oriented development.

Objective 4.6.1 Promote development of more compact, walkable neighborhoods through zoning reform and other planning tools

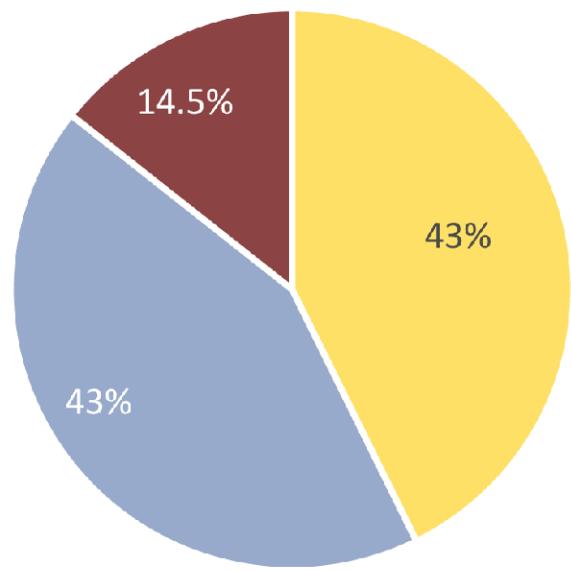
- **Action Item 4.6.1.1** Complete the Village Center Bylaw project.
- **Action Item 4.6.1.2** Consider adding a Traditional Neighborhood Development (TDR) option to the Town zoning bylaw in designated areas.
- **Action Item 4.6.1.3** Continue to proactively develop the Towns' Complete Streets Prioritization Plan and pursue funding opportunities with the state.
- **Action Item 4.6.1.4** Regularly update Town's pavement management plan and implement recommendations.

What does Holden think about Housing?

HOUSING

Holden Community Survey Results

IS HOUSING AFFORDABILITY AN ISSUE FOR YOU OR ANYONE YOU KNOW WHO LIVES IN HOLDEN?



- Yes
- No
- No opinion

Answers	Responses	
Yes	42.71%	372
No	42.94%	374
No opinion	14.35%	125

WHAT HOUSING TYPES ARE KEY TO HOLDEN'S FUTURE OVER THE NEXT 10-20 YEARS?

1. Medium-sized Single Family House
2. Housing for Elderly
3. Small Market-rate Homes Geared Towards Seniors



FOR MORE INFORMATION: www.holdenmasterplan.com Town of Holden Master Plan Committee

5.0

NATURAL RESOURCES

INTRODUCTION

Natural resource management is critical to the protection, restoration, and promotion of scenic landscapes and wildlife. Holden takes pride in its natural resources, which supply clean drinking water to residents, allow passive and active outdoor recreation opportunities, provide scenic views, enrich working farms, and gives Holden its unique character. Holden is characterized by extensive woodlands, a network of streams and wetlands, and many natural resources. Holden residents value these natural resources and place a high priority on maintaining them for the use of future generations.

Through a robust community engagement process, residents shared their vision for Holden in the coming decades. Recurring themes identified through this process include preservation of existing natural resource areas, utilizing natural resources for recreational purposes, and pursuing creative funding opportunities and preservation programs. The following chapter will provide an overview of existing conditions related to natural resources, issues and opportunities, and strategies for action around three primary goals:

- Protect natural resource areas from environmental degradation, disturbances, and development.
- Expand appropriate public access to the Town's natural resources.
- Improve public awareness of Holden's natural resources.

PRIOR PLANNING AND ENGAGEMENT EFFORTS

Holden residents have been actively working to conserve and preserve essential land and water resources. Prior planning efforts around natural resources include the following:

Master Plan (2008)

The Town of Holden Master Plan (2008) outlines existing conditions, issues, and recommendations



Running Brook (CMRPC, 2019)

across a variety of topics. The recommendations identified in the Master Plan (2008) were divided into first, second, and third-level priorities. The following goals from the Master Plan (2008) pertain to natural resources. The completion status of the recommendations and action items from the Master Plan (2008) can be found in the Benchmark Review in Appendix E.

First Priority Goals:

- Protect natural resource areas from environmental degradation.
- Identify and permanently protect important, unprotected natural resource areas, including wildlife corridors.
- Protect important and scenic vistas and agricultural resources.

Second Priority Goals:

- Increase appropriate public access to watershed protection areas.
- Increase public access to ponds and streams for recreational uses.

Third Priority Goals:

- Provide special protections for slopes to preserve views and to reduce erosion and stormwater runoff.

The Open Space and Recreation Plan (OSRP)

The Town of Holden Open Space and Recreation Plan (OSRP) (2012) provides an overview and analysis of the Town's significant natural and scenic resources, an inventory of conservation and recreation lands, and tangible steps to improve open space and recreation opportunities in Holden. The OSRP (2012) was reviewed and accepted in draft form by the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA). The Town intends to update the plan in 2019 in order to maintain eligibility for grant programs administered by the Massachusetts Division of Conservation Services (DCS).¹

The Five-Year Action Program included in OSRP (2012) identified four goals for the protection and promotion of open space and recreational resources:

1. Preserving aesthetic and natural resources in Holden, including wildlife, wetlands, scenic vistas, unique natural areas, and historical resources.
2. Providing active recreation resources and facilities in Holden.
3. Promoting passive recreation and open space resources.
4. Developing and implementing funding sources.

The Central Thirteen Prioritization Plan

The Central Thirteen Prioritization Plan (Central Thirteen) was completed by CMRPC in 2012. Central Thirteen was a collaborative effort to classify local priorities for development and preservation in 13 communities in central Worcester County, including Holden. Priority Preservation Areas (PPAs), Priority Development Areas (PDAs), and Priority Transportation Improvements (PTIs) were identified in each Town and mapped accordingly, in a manner consistent with existing policies, master plans and guidelines, and the State's Sustainable Development Principles.² In Holden, 13 areas

¹ To remain eligible for DCS grant funding, Massachusetts municipalities must update their OSRP every seven years.

² The Commonwealth's Sustainable Development Principles consist of 10 strategies that promote sustainable development through integrated energy and environment, housing and economic development, transportation and other policies, programs, investments, and regulations.

were identified as local priorities for preservation, including:

- Reservoir Street
- Holden Reservoir
- Fisher Road
- Bullard Street
- Harris Street
- Quinapoxet River/River Street
- Muschopauge Road
- Cheney Graham Farm
- Hubbard Farm
- Muschopague Road Farm – JD Enterprises
- NHESP Estimated Habitats of Rare Wildlife
- Mass Central Rail Trail

Municipal Vulnerability Preparedness (2018)

In 2017, the Town of Holden was awarded a Municipal Vulnerability Preparedness (MPV) grant to undertake planning activities related to resiliency and climate change. Fuss & O’Neill assisted the Town with community resilience building workshops and prepared a baseline climate change and natural hazard vulnerability assessment for the Town. As presented in the Town of Holden Community Resilience Building Workshop: Summary of Findings (Fuss & O’Neill, 2018), the top priorities for improving Holden’s resilience to climate change are as follows:

- Conduct a study to investigate opportunities to provide green emergency power backup.
- Develop public education and outreach on appropriate operation and maintenance of stormwater best management practices on private properties.

Central Rail Trail (CMRPC 2019)



- Assess green infrastructure opportunities for stormwater management to develop a list of specific priorities, assess feasibility and cost, rank priority projects in terms of climate resilience potential, and develop concept designs for key projects.
- Determine status of forest management planning, particularly on lands owned by the Town and Commonwealth, in order to reduce wildfire threats and encourage management of invasive species.
- Assess mosquito, tick, and other pest control options; provide public education and outreach about associated risks.
- Work with FEMA to correct flood maps at Industrial Park to reflect accurate, current flood risks.
- Develop comprehensive invasive species management from inventory stage through management planning and implementation.
- Provide education and outreach on fertilizer impacts, via the Agricultural Commission, to inform landowners about the negative water quality impacts of nutrient pollution.
- Coordinate with Town departments to incorporate green infrastructure into planned road improvements.

EXISTING CONDITIONS

Holden is characterized by its abundant natural resources, which include wildlife habitats, large forest areas, agricultural areas, and watersheds. The Town's scenic landscapes consist of farmland and water resources that reflect the community's history as an agrarian Town. It is a Town priority to protect these valuable natural assets. Future development must be guided in a way that preserves not only protected natural areas, but also the connections between such areas.

Holden utilizes a variety of bylaws and regulations to protect the Town's natural resources. These include an Aquifer Protection District, regulations governing the public use of the waters of Eagle Lake, Water Use Restriction Bylaw, Stormwater Management and Erosion Control Bylaw, Illicit Discharge Control Bylaw, Wetland Bylaw, Water Protection Bylaw, and Right to Farm Bylaw. The Right to Farm Bylaw promotes the pursuit of agriculture and agriculture-based economic opportunities, and protects farmlands throughout the community. Bylaws such as Water Use Restriction and Stormwater Management are intended to preserve the quantity and quality of the Town's water resources. These bylaws and regulations play an important role in preserving Holden's natural resources and maintaining the Town's rural character.

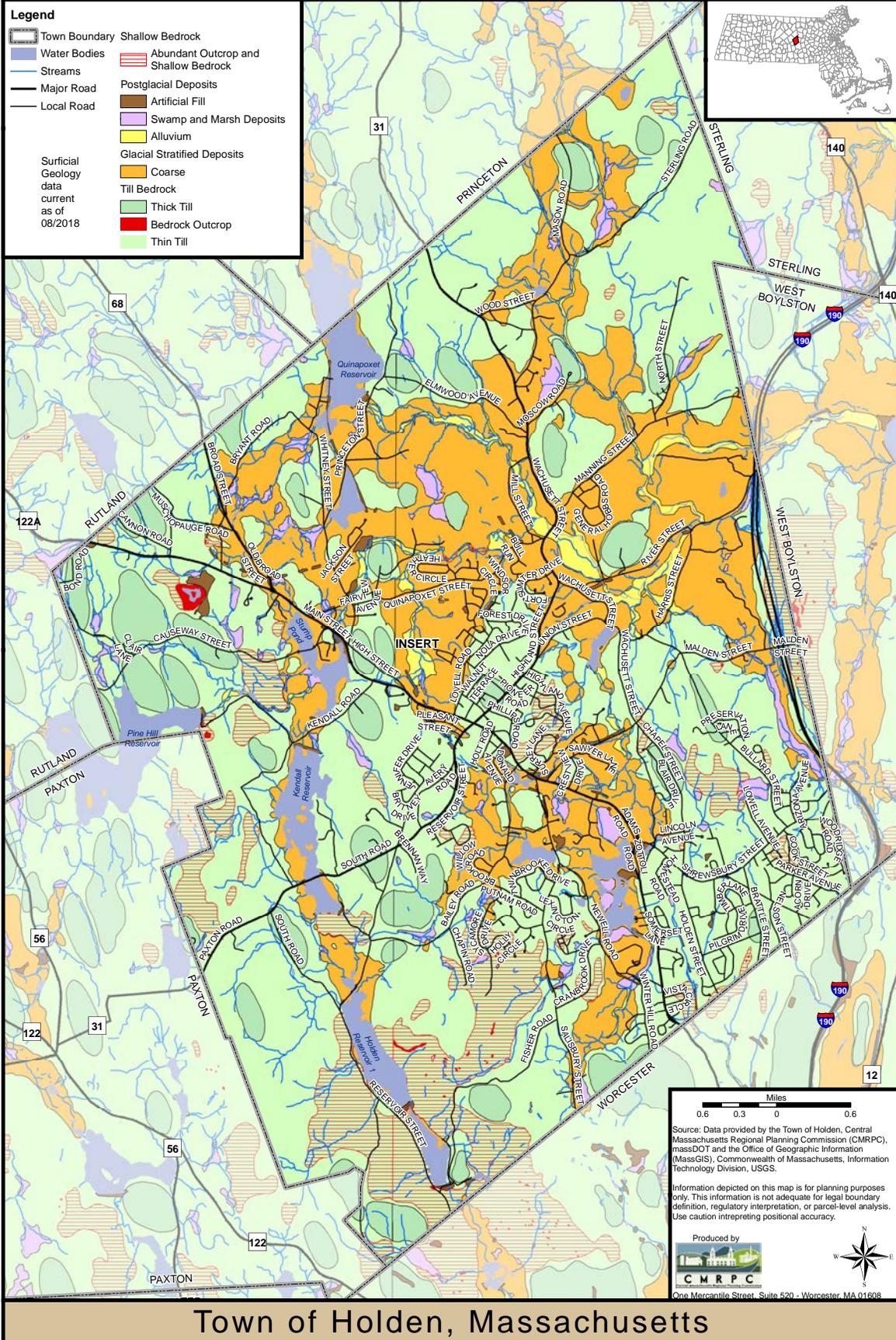
Geology, Topography, and Soils

Surficial geology is a significant consideration in development and preservation alike. Like much of New England, Holden was once covered by mile-thick glaciers. The advance of the glaciers scraped some hills down to bedrock and their retreat left deposits of till, a mixture of stones, sand, silt, clay, and other materials. These materials tend to have moderately or poorly drained soils and many stones and rocks. Additionally, after the glaciers retreated, floodplain alluvium deposits settled out onto flat areas and wetlands, such as areas along the Quinapoxet River. Generally, areas with such low-lying, water-borne deposits are not suitable for development. Holden's glacial history rendered much of the Town's soil as poorly drained or rocky, rendering development a challenge in many areas. The surficial geology of Holden is shown on Map 5-1.

The soils and limitations map (Map 5 - 2) shows most of Holden's soils fall into the Paxton-Woodbridge-Canton and Hinckley-Merrimac-Windsor soil classes. The development limitations of the dominant soil classes are listed. These limitations are from the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) descriptions of each soil class. Development limitations described by NRCS are frequently associated with the ability to utilize

Map 5 - 1: Surficial Geology

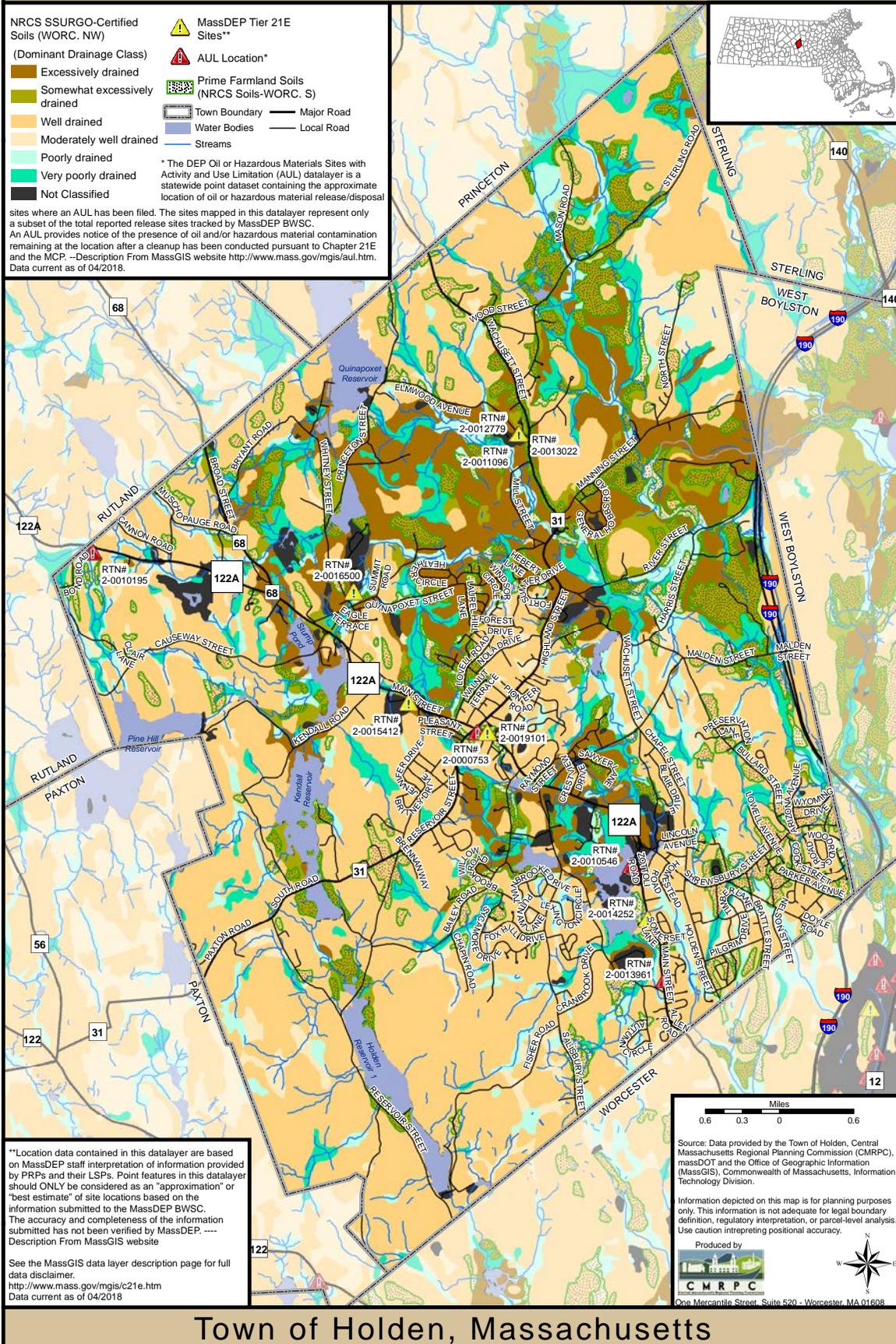
Surficial Geology 2019 MASTER PLAN



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Soils and Limitations Map

2019 MASTER PLAN



Town of Holden, Massachusetts

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such soils for on-site septic systems. Dominant soil classes in Holden are as follows:

Chatfield-Hollis Rock Outcrop complex: These soils have up to 90% rock outcrops and are generally unsuitable for septic systems or most types of construction.

Hinckley sandy loam: These soils have few limitations for development other than slope.

Deerfield sandy loam: These soils have moderate to severe limitations for development because of high water table.

Merrimac fine sandy loam: These soils have severe limitations for septic systems because of poor filtration due to high permeability. They present slight limitations for roads and residential or commercial development except in areas with slopes greater than 8%, which present an increasingly degree of development challenges.

Windsor loamy fine sand: These soils have severe limitations for septic systems because of poor filtration and slight limitations for roads, residential or commercial development. Areas with slopes greater than 8% have more limitations for development.

Agawam fine sandy loam: These soils have severe limitations for septic systems because of poor filtration and slight limitations for roads, residential or commercial development. Areas with slopes greater than 8% have more limitations for development.

Canton fine sandy loam: These soils have severe limitations for septic systems because of poor filtration and slight limitations for roads, residential or commercial development. Areas with slopes greater than 8% have more limitations for development.

Swansea and Freetown mucks: These soils have severe limitations for all types of development because of wetness. Development on such soils is generally prohibited by wetland regulations.

Severe to Moderate Limitations: These soils include Sudbury, Paxton, Walpole, and Woodbridge soil types and have severe to moderate limitations for development because of wetness and slopes.

The development limitations imposed by soils include high groundwater, which may limit the installation of septic systems and basements; stones or boulders, which may increase construction costs; as well as shallow soils over bedrock, which may limit construction and increase costs. The largest areas in Holden with few development limitations are the southwest and north of Town Center. As some of these areas north of the Town Center overlie sand and gravel deposits, they may present a hazard for contamination of groundwater if they are used for septic system absorption fields. Many of the soils in these areas readily absorb but do not adequately filter septic system effluent. Slope negatively impacts commercial development more than residential development. In many areas throughout Town, municipal sewers minimize the development limitations that would otherwise be imposed by some soil classes. Elevation and slope also constrain development.

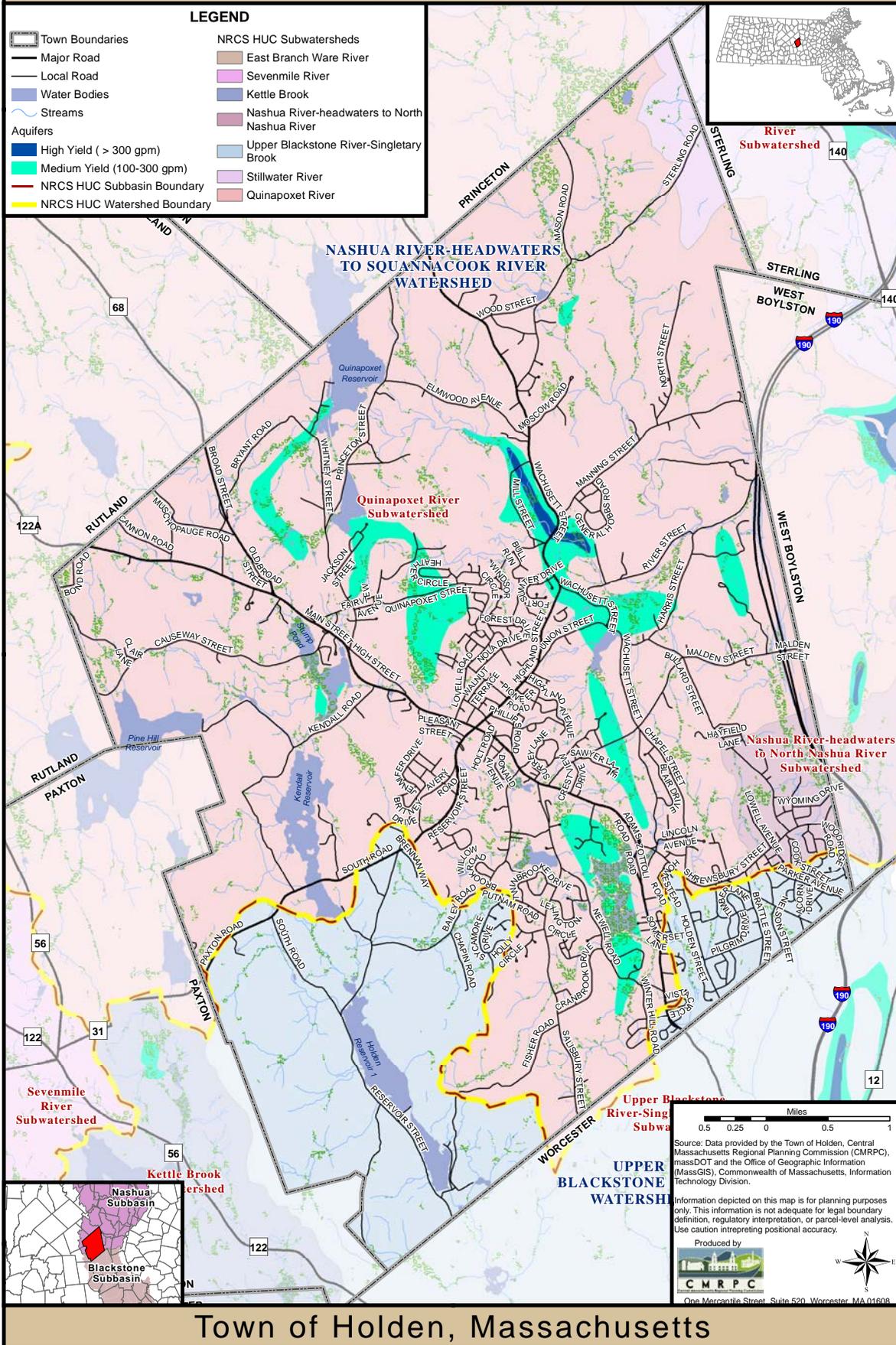
Typically, elevations in Holden range between 650 and 750 feet above mean sea level with gentle to moderate slopes that offer a variety of views of the landscape. Asnebumskit Hill at the Paxton/Holden border is the highest point in Holden at 1,395 feet above mean sea level. The lowest point in Holden is approximately 550 feet above mean sea level, where the Quinapoxet River flows into West Boylston. In the western and northern sections of Holden, slopes become slightly steeper, especially on some hillsides or riverbanks. Many types of development are limited on slopes over 15%, which equates to approximately 7% of the Town's total area.

Water Resources

In total, there are 362 acres of open water in Holden (Map 5 - 3). More than six miles of the Quinapoxet River meander through Holden, offering residents and visitors opportunities for active and passive recreation, education, and habitat preservation. The River begins at the Quinapoxet Reservoir and serves as part of the regional Metropolitan Boston water supply. Holden residents are not consumers of this potable water. The Quinapoxet River is a major tributary of the Wachusett Reservoir in West Boylston, part of the water supply system for the

Water Resources Map 1

2019 MASTER PLAN





City of Worcester Public Water Supply, No Trespassing Sign (CMRPC, 2019)

City of Boston and surrounding communities. The Department of Conservation and Recreation (DCR) manages protection of this water resource. In recent years DCR has increased land acquisitions in order to more effectively manage water quality. Through the Watershed Protection Act Regulations, DCR regulates development in close proximity to the rivers and streams that are tributary to the Wachusett Reservoir. Holden sits between the Nashua Watershed to the north, which includes most of the Town, and the Blackstone Watershed to the south and southwest, including the areas around Holden Reservoirs 1 and 2.

Notable ponds in Holden include: Dawson Pond, Chaffin Pond, Eagle Lake and Stump Pond, Maple Spring Pond, Cournoyer Pond, and Unionville Pond. The reservoirs (Quinapoxet, Pine Hill, Kendall, and Holden Reservoirs 1 and 2) are restricted from public access. Eagle Lake includes a Town beach and a shallow boat launch area, although the future of the lake as a recreational destination remains uncertain as of 2019. Other ponds, including Dawson, Maple Spring, Chaffin, and Unionville lack designated public access areas but are frequented by fishermen and other small boat users. Major streams in Holden include:

- Wadsworth Brook and Tatnuck Brook, which flow into Holden Reservoir 1 along with Silver Spring Brook and Scott Brook
- Poor Farm Brook, which flows into Chaffin Pond
- Chaffin Brook, which flows into Unionville Pond
- Warren Tannery Brook

- Asnebumskit Brook, which flows into the Quinapoxet River
- Cold Brook, which flows into Cournoyer Pond
- Trout Brook, which flows into the Quinapoxet River
- Ball Brook, which flows into Trout Brook

Beyond the Quinapoxet River and Reservoir, Holden contains four additional water supply reservoirs. These include Pine Hill Reservoir, Kendall Reservoir, and Holden Reservoirs 1 and 2, which are located in Holden and owned by the City of Worcester. The reservoirs in Holden are the backbone of the City of Worcester public water supply system, which provides water to the city's approximately 185,000 residents. The City of Worcester owns and protects important tracts of undeveloped Holden forestland within the watershed of the reservoirs. Water from a significant portion of the land that lies within the natural drainage basin of the Quinapoxet River is collected within a series of reservoirs. This water is then transmitted by man-made diversions in the City of Worcester water supply system. Outflows from Maple Spring Pond (also known as Peter Carr Pond) enter the Quinapoxet Reservoir. Water from the Quinapoxet Reservoir provides some flow to form the headwaters of the Quinapoxet River; however, in large part is pumped out of the Nashua River watershed to the City of Worcester reservoir system in the southern part of Holden. Additionally, water from Pine Hill Reservoir (located primarily in Paxton and Rutland), and Kendall Reservoir is directed in large part to Holden Reservoir 1, within the Worcester potable water system. Consequently, Eagle Lake and Stump Pond are the main source of water to Asnebumskit Brook.



Holden Reservoir No. 2 (CMRPC, 2019)

Approximately 80% of the Town is served by public water. The water supply in Holden encompasses groundwater sources owned and operated by the Town and interconnections with the City of Worcester water system. The result is a blend of groundwater from Town sources and surface water from Worcester sources. The drinking water supply in Holden is primarily drawn from wells. Public water is also drawn from the City of Worcester reservoirs, treated at the Worcester Treatment Plant, and piped into Holden homes. Muschopauge Pond, a previous source of drinking water, was taken offline at the end of 2000. It is currently utilized as an emergency water supply. The Town of Holden groundwater sources consists of five wells and two interconnections within the City of Worcester. Table 5 - 1 summarizes these drinking water resources. Additionally, there is a well field at Poor Farm Brook off Newell Road that has not received Massachusetts Department of Environmental Protection (DEP) approval due to potential wetland drawdown effects on wildlife.

The remaining portion of Holden’s drinking water supply is provided by Worcester reservoirs. Based upon the existing sources and the Intermunicipal Agreement with the City of Worcester, the Town’s water system is considered adequate relative to water supply. It has sufficient capacity to serve projected development demands through at least 2030; however, it is crucial that proposed development in Town be evaluated in terms of its potential impact on the watershed.

In 2018, the City of Worcester agreed to pay \$95,000 for conservation restrictions on nearly 50 acres of watershed off of South Road in Holden. This land contains the headwaters of the Wadsworth Brook, a tributary to Holden Reservoir No. 1. The conservation restriction acquisition is intended to protect Holden Reservoir No. 1 by preventing the development of those parcels, as any development in that area would degrade reservoir water quality. It will be important for the Town of Holden to continue to work regionally to protect its valuable water resources from threats such as contamination, drought, and overuse.

Title 5 Regulations

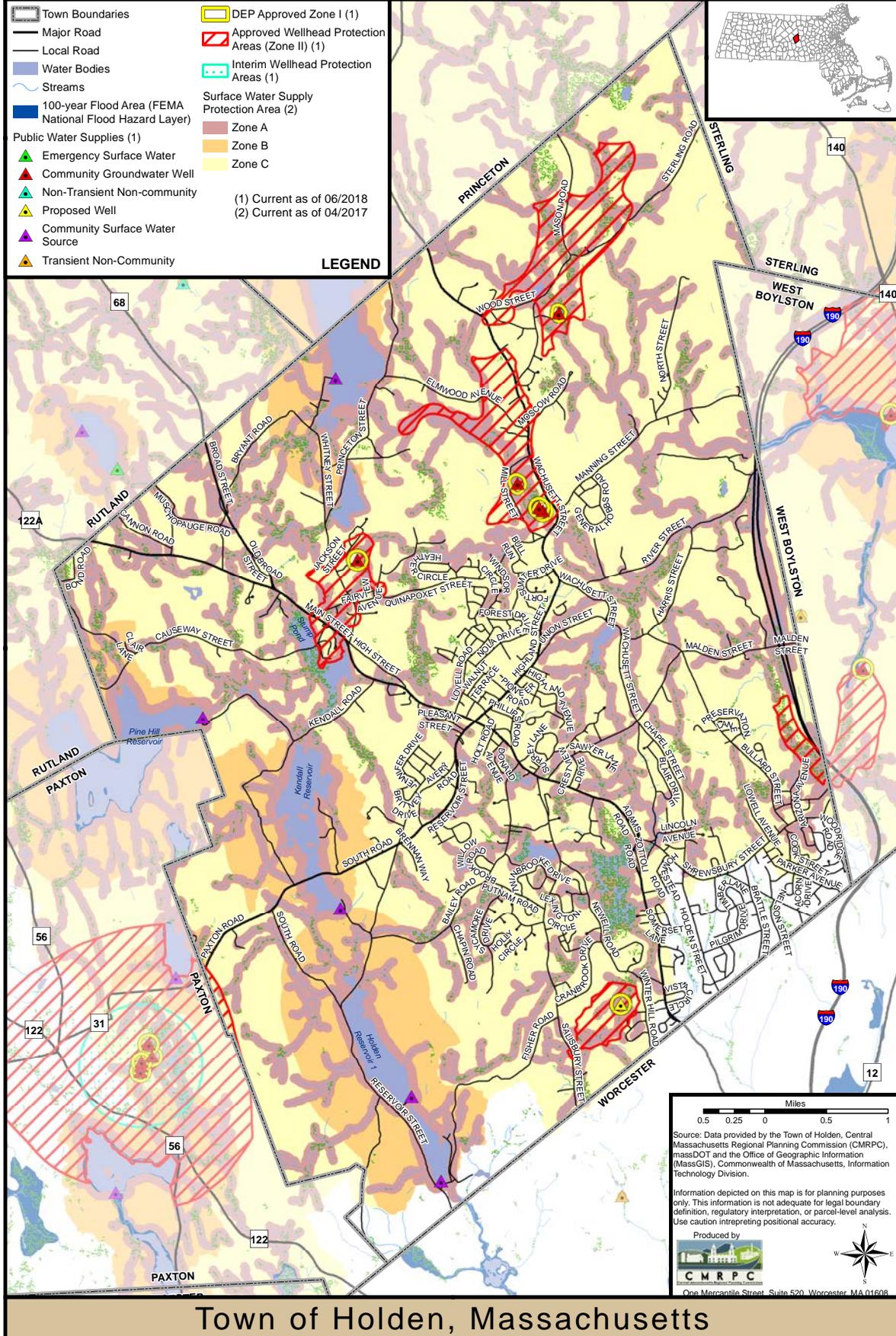
The Water Resources Map 5 - 4 shows the Title 5 buffer areas of the Massachusetts Environmental Code (310 CMR 15.00) around mapped streams, ponds, and wetlands. Not all streams and wetlands are mapped, and there are additional buffer areas around these unmapped areas. The buffer area spans 50 feet around all hydrologic features and wetlands, except within the drainage basin for a public surface water supply, a category encompassing the majority of Holden. In this case, the buffer zones are increased to 100 feet around wetland features, 200 feet around streams and ponds, and 400 feet around public surface water supplies, such as designated reservoirs. The purpose of these buffers is to prevent the contamination of water supplies from private septic systems. As most of Holden lies within the watersheds of the City of Worcester or DCR reservoirs, these municipal sewers eliminate the need for private septic systems, thereby protecting drinking water resources.

Table 5 - 1: Holden Drinking Water Supply Sources (Town of Holden Water Quality Report, 2017)

Source Name	DEP Source ID #	Source Type	Location of Source
Quinapoxet Wells	2134000-02G 2134000-06G	Two Gravel Packed Wells	Adjacent to Wachusett Street
Mill Street Well Field	2134000-03G	Tubular Well Field	Adjacent to Mill Street
Mason Road Well Field	2134000-04G	Tubular Well Field	Adjacent to Mason Road
Spring Street Well	2134000-05G	Gravel Packed Well	Adjacent to Spring Street
Brattle Street Interconnection	2134000-01P	Interconnection with Worcester	Brattle Street
Salisbury Street Interconnection	2134000-02P	Interconnection with Worcester	Salisbury Street

Water Resources Map 2

2019 MASTER PLAN



Wetlands

Wetlands play an important role in flood control and maintaining water quality. They provide necessary water storage, absorb stormwater runoff, and provide valuable wildlife habitat and scenic beauty. Table 5 - 2 shows the distribution of wetland types in Holden. Rather than expansive areas of wetlands, Holden is characterized by smaller, scattered wetlands.

Table 5 - 2: Holden Wetlands by Type (MassDEP, 2017)

Wetland Type	Acres	% Wetlands
All Wetlands	2209.00	100%
Forested Wetland	1,646.68	7.08%
Non-forested Wetland	429.20	1.85%
Aquatic Bed	122.26	0.53%
Unconsolidated Shore	10.65	0.05%

Enacted in 1996, the Massachusetts Rivers Protection Act was an amendment to the Massachusetts Wetlands Protection Act (1972). The amendment added a new wetland resource: Riverfront Area. In most municipalities, the Riverfront Area is 200 feet wide and is measured from each side of the river from the mean annual high-water line outward horizontally and parallel to the river. Since its establishment, the Rivers Protection Act has designated \$30 million for the acquisition of land bordering rivers and streams. The Holden Conservation Commission administers the State's Wetlands Protection Act regulations at the local level. The Commission also regulates wetlands in Holden under the authority of the Holden Wetlands Protection Bylaw, adopted by the Town in 2001 to provide additional protection to these significant natural resources. The Wetlands Protection Bylaw was revised and adopted again in 2011 to identify uncertified vernal pools as a wetland resource as well as require a 25 foot No Disturb Zone from the wetland line.

Aquifer Recharge Areas

A number of significant aquifers or groundwater recharge and source areas are located in Holden. Beneath the Quinapoxet well fields lies a small, high-yield aquifer consisting of coarse sand and gravel soils with a potential well yield of more than 300

gallons per minute (gpm). Medium-yield aquifers (100 to 300 gpm potential well yield) are located along Asnebumskit Brook and Warren Tannery Brook along Chaffin Brook and Unionville Pond. Additionally, a medium-yield aquifer is located along a portion of Trout Brook. The Quinapoxet aquifer and the medium-yield aquifers are host to the Town's existing water supply wells.

Hazardous Material and Underground Storage Tank Sites

The Soil and Limitations Map shows sites of known spills, releases of oil, hazardous materials, and underground storage tanks. It is important to be aware of these sites because they are potential sources of water supply contamination. As of 2019, seven DEP oil or hazardous material sites with activity and use limitation (AUL) exist in Holden. Contaminated sites are classified under DEP regulations based upon the degree of risk they pose to potential human and environmental receptors. Sites are classified in decreasing degree of risk as Tier 2, 1D, 1C, 1B, and 1A. Three Tier 1 sites are located on Elmwood Ave. Other sites include 359 Main Street (Tier 2); 156 Princeton Street (Tier 1D); 1146-1148 Main Street (Tier 1D); and 1401 Main Street (Tier 1D).

Additionally, there are nine known underground storage tank locations in Holden. Although most of the sites are located along Main Street, a few sites are located in other areas of Town.

Floodplains

Holden's hilly topography has resulted in a number of floodplains; however, most of the Town falls within areas of minimal flooding. Most water bodies in Town are described as Zone A- Area of 100-year flood. Base flood elevations and flood hazard factors are not available for this category. Some waterbody shorelines and low-lying areas are described as Zone B- Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one foot of where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. Most of Holden's land areas are described as Zone C- Areas of minimal

flooding. Holden has approximately 1,793 acres of land that lies within the 100-year floodplain.

Flood hazard areas described as Zone A and Zone B are listed in Table 5 - 3. Flood-prone areas serve as sponges that are able to soak up large amounts of water and protect downstream areas. Currently, development in Zone A and Zone B areas is restricted by environmental regulations. The Town of Holden participates in the Federal Emergency Management Agency (FEMA) National Flood Insurance Program, which allows property owners to insure against flood losses.

Exotic Weeds

In recent years, five water bodies in Holden have been found to contain populations of exotic weeds. These include Chaffin Pond, Dawson Pond, Eagle Lake, Stump Pond, and Unionville Pond. Exotic weeds are invasive because they have few natural predators and often crowd out native vegetation. If not controlled, exotic weeds can become a nuisance and impair water quality. This greatly impacts drinking water and water-based recreation opportunities.

As of 2019, Holden is engaged in limited efforts to control the spread of exotic weeds. Biannual drawdown helped control the milfoil in Eagle Lake but has not been conducted in three years. Weed

growth in Eagle Lake, particularly in the beach swimming area, has become an issue and calls for a comprehensive plan for clearing weeds. To take preventive measures, residents and businesses should be encouraged to minimize the use of fertilizers, which are contributors to weed growth. Additionally, efforts should be made to ensure that all septic systems are fully functional and that connections are made to the sewer system where feasible. The rapid spread of exotic weeds in Holden’s waterbodies necessitates implementation of a comprehensive plan to manage their growth, likely including resuming bi-annual winter drawdown or even dredging.

Vernal Pools

Vernal pools are small, seasonal wetlands that provide an important wildlife habitat, particularly for amphibians and invertebrates. Also known as ephemeral pools, autumnal pools, and temporary woodland ponds, they typically fill with water in the autumn or winter due to rising groundwater and rainfall. The pools remain through the spring and into summer then dry completely by the middle or end of summer each year, or every few years. There is currently one Vernal Pool Core in Holden, located along the northwest Holden/Princeton Town border. Vernal Pool Cores depict the top 5% most interconnected clusters of potential vernal pools in Town. Each cluster of pools is buffered to

Table 5 - 3: Flood Hazard Areas in Holden (FEMA, 2017)

Zone	Flood-Prone Areas	
Zone A (Area of 100-year flood)	Pine Hill Reservoir	Quinapoxet River
	Eagle Lake	Trout Brook
	Asnebumskit Brook	Unionville Pond
	Maple Spring Pond	Cedar Swamp Brook
	Kendall Reservoir	Holden Reservoirs 1 and 2
	Quinapoxet Reservoir	Chaffin Pond
Zone B (Area between limits of 100-year flood and 500-year flood)	Worcester Brook	Low-lying area between Mason and Moscow Roads
	Warren Tannery Brook	Low-lying areas near Pine Haven Drive, Chapel Drive, Lowell Avenue, and Mark Circle
	Dawson Pond	
	Poor Farm Brook	
	Low-lying area east of Kendall Reservoir	

create vernal pool habitat areas that include the pools themselves and the surrounding habitat. This allows for successful breeding, dispersal, overwintering, foraging, and migration. There are 27 Massachusetts Natural Heritage and Endangered Species Program (NHESP) Certified Vernal Pools in the Town of Holden, the most recent of which was certified in 2015. The Town also contains 118 potential vernal pools.

According to MassWildlife, a targeted approach towards clusters of vernal pools can be more effective than targeting individual pools. Clustering maximizes the resistance and resilience of vernal pool habitats and their resident species in the context of climate change. The Town of Holden Wetland Protection Bylaw restricts development within close proximity of vernal pools.

Vegetation and Wildlife Resources

Agricultural Land

The Town of Holden contains 99 acres of cultivated land, 524 acres of pasture, and 482 acres of grassland. The map depicts these land use types, which comprise 1,105 acres or 5% of the Town's total area. Agricultural land remains significant for maintaining diversity of wildlife in Holden. Small farm parcels are scattered throughout Town; however, the majority of agricultural land is located in the northern section of the Town, north of Main Street and River Street.

Agricultural land attracts grassland birds such as eastern meadowlarks and bobolinks. These species can still be found in hayfields, meadows, and pastures in Holden; however, as is the case in many Massachusetts towns, these populations are dwindling as a result of fields that are too small and too scattered. To maintain the existing habitats, the Town must avoid further loss or fragmentation of grasslands and croplands. Many other bird species use these fields to nest, hunt, and feed on seeds, insects, and small mammals. Migrant songbirds can be found feeding in farm fields in Holden and nearby Towns during migration periods. Many hawks and owls, such as American kestrels and northern harriers, rely on grasslands for hunting small mammals. Other species such as

voles, white-tailed deer, woodchucks, coyotes, and eastern cottontail rabbits also rely on agricultural areas. Snakes such as the eastern hognose snake and the northern brown snake can also be found in fields and pastures.

Open Land

Power line corridors and unused open land, such as agricultural fields that are no longer being cultivated, are used by many of the same species that favor agricultural land. Other species use these areas as their primary habitat. There are approximately 230 acres of power line corridors and open land in Holden (1% of the total area). Power lines and other utility right-of-ways are also often used as movement corridors for wildlife, providing a means of getting from one habitat to another. Map 5 - 6 depicts the Major Habitats in Holden.

Forest Land

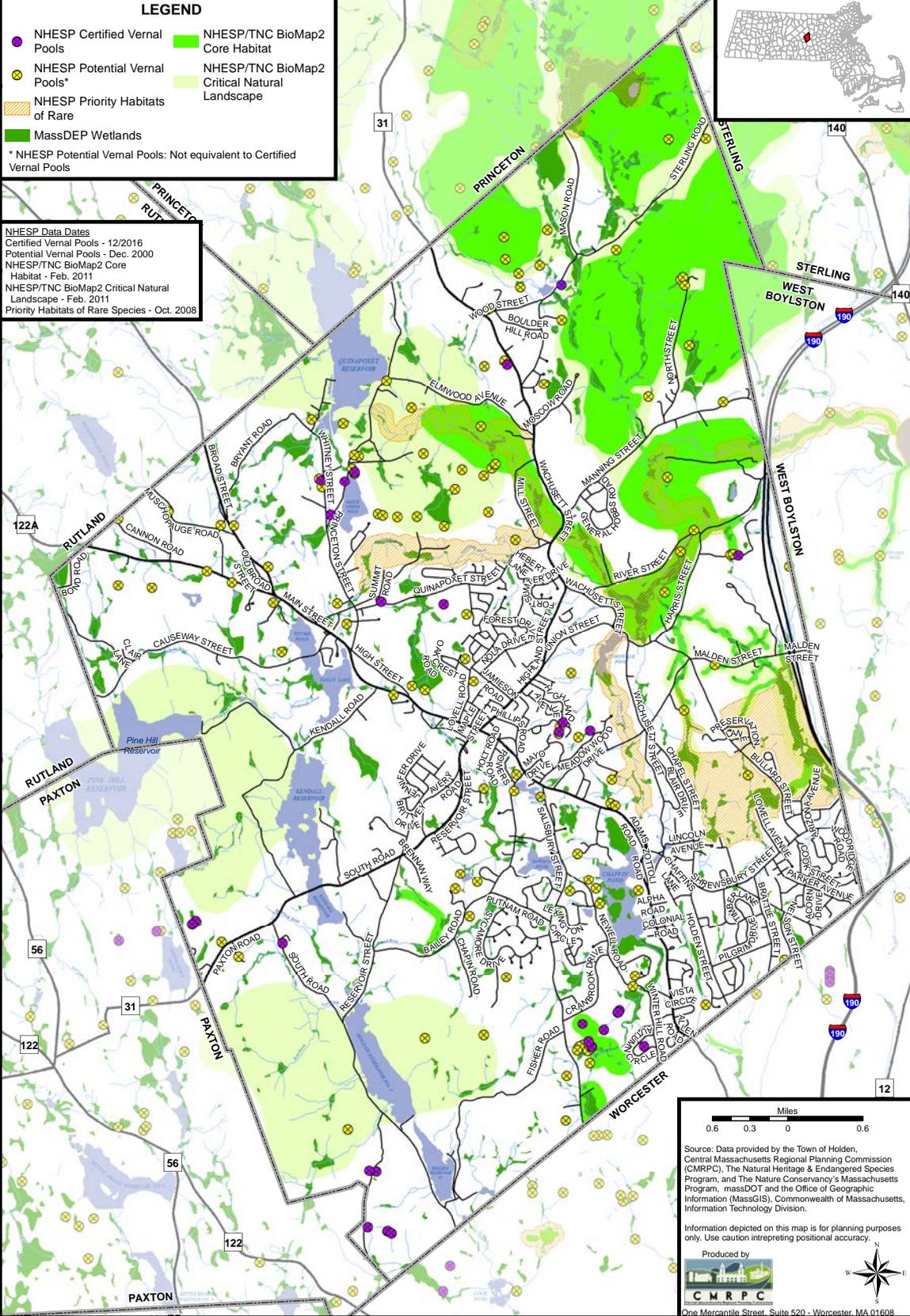
Holden continues to possess an abundance of forestland; however, residents have expressed concerns over large lot developments and expanding suburbs, and the resulting loss of natural resources. The Major Habitats Map shows 15,489 acres of forest in Holden (67% of the town's total area). Predominant forest types include Central Hardwoods-Hemlock-White Pine association, and to a lesser degree Swamp Hardwood association. The Central Hardwood Forest type is generally located on drier outwash soils and tills. Commonly found trees include red oak, hemlock, red maple, aspen, hickories, and gray birch. On more sandy soils, white pine trees can be located. For many decades, portions of forest owned by the City of Worcester surrounding Worcester reservoirs have remained uncut. These areas contain unusually mature and tall woodlots. Common forest shrubs and herbs include lowbush blueberries, wintergreen, clubmosses, and witch hazel. The Central Hardwood Forest habitat type is likely to be the most threatened because it is generally suitable for development. Table 5 - 4 shows the animals, birds, and mammals commonly found in Central Hardwood Forests.

Major Habitats Map 2019 MASTER PLAN

LEGEND

- NHESP Certified Vernal Pools
 - NHESP Potential Vernal Pools*
 - NHESP Priority Habitats of Rare
 - MassDEP Wetlands
 - NHESP/TNC BioMap2 Core Habitat
 - NHESP/TNC BioMap2 Critical Natural Landscape
- * NHESP Potential Vernal Pools: Not equivalent to Certified Vernal Pools

NHESP Data Dates
 Certified Vernal Pools - 12/2016
 Potential Vernal Pools - Dec. 2000
 NHESP/TNC BioMap2 Core Habitat - Feb. 2011
 NHESP/TNC BioMap2 Critical Natural Landscape - Feb. 2011
 Priority Habitats of Rare Species - Oct. 2008



Miles
0.6 0.3 0 0.6

Source: Data provided by the Town of Holden, Central Massachusetts Regional Planning Commission (CMRPC), The Natural Heritage & Endangered Species Program, and The Nature Conservancy's Massachusetts Program, massDOT and the Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division.

Information depicted on this map is for planning purposes only. Use caution interpreting positional accuracy.

Produced by

 One Mercantile Street, Suite 520 - Worcester, MA 01608

Town of Holden, Massachusetts

Date: 10/29/2018 Document Path: H:\Projects\O_Holden_GIS\Subprojects\m134_master_plan\m134_MP_Habitat_11x17.mxd

Table 5 - 4: Central Hardwood Forests Species (Holden Master Plan, 2008)

Class	Species
Amphibian	Spotted salamander American toad
	Redback salamander Eastern milk snake
	Wood frog Eastern garter snake
Bird	Red-tailed hawk Ovenbird
	Cooper's hawk Yellow-rumped warbler
	Mourning dove Baltimore oriole
	Downy woodpecker Pileated woodpecker
	Great-horned owl Red-eyed vireo
	Eastern wood pewee Broad winged hawk
	Blue jay Ruffed grouse
	American crow Black-capped chickadee
	White-breasted nuthatch Wood thrush
	Brown creeper Indigo bunting
Scarlet tanager Wild turkey	
Mammal	Virginia opossum Red Fox
	Eastern chipmunk Eastern coyote
	Woodchuck Raccoon
	Gray squirrel River otter
	Red squirrel White-tailed deer
	White-footed mouse Striped skunk

Swamp Hardwoods, found in the scattered wetland areas of Town and along streams, are dominated by red maples and often are referred to as Red Maple Swamps. This type of forest can also contain trees such as the American ash, cedars, and black gum. Wetland understory shrubs including alder, viburnums, and blueberries are common in Swamp Hardwoods. Additionally, herbs are abundant and include sedges, ferns, false hellebore, and skunk cabbage. This habitat is often home to a variety of species that do not occupy Central Hardwood Forests. Table 5 - 5 highlights some of the species that occupy Swamp Hardwoods but not Central Hardwoods Forests.

Table 5 - 5: Swamp Hardwoods Species (Holden Master Plan, 2008)

Class	Species
Amphibian	Northern spring peeper
	Gray tree frog
	Bullfrog
	Northern water snake
Bird	Northern ringneck snake
	Red-shouldered hawk
	Swamp sparrow
	Barred owl
	Cedar waxwig
	Yellow warbler
Reptile	Common grackle
	Common snapping turtle
	Painted turtle

Forest Fragmentation

Many species depend on large expanses of uninterrupted forest habitats (and the interior portion of such areas in particular) for a significant portion of their lifecycle. Ecologists concur that forest fragmentation is one of the biggest threats to natural communities and biodiversity in Massachusetts and New England. The loss of large uninterrupted tracts of forest is contributing to the decline of many species of birds and mammals, making it all the more urgent to protect large forest areas in Holden.

There are three relatively large forest areas in Holden. The Town's western boundary includes many protected watershed lands and is highly forested. A second large forest area runs along the northern boundary of the Town from North Main Street to Manning Street. This area includes many state-owned watershed lands. A third large forested area in Holden runs along the eastern boundary of the Town from Manning Street and closely approaches Shrewsbury Street. It also includes several state-owned watershed lands.

To reduce forest fragmentation, the Town should continue to partner with local land trusts and conservation non-profit organizations to identify, acquire, and protect important additional natural resources areas including forests.

Non-forested Wetlands

The 2016 land use map identifies 429 acres of non-forested wetlands in Holden (2% of the total area) and 730 acres of water (3% of the total area). Most of the Town's non-forested wetlands can be found upstream of Chaffin Pond and near Stump Pond and Eagle Lake. These wetlands include bogs, meadows, shallow marshes, deep marshes, shrub swamps, and ponds. Other non-forested wetlands are scattered throughout Holden.

Level Bogs: These lands are dwarf shrub peatlands, generally with pronounced hummock and hollow formations. Since they receive little overland water input and are not connected to the water table, wetland peatlands are acidic and nutrient-poor. Poutwater Pond bog in Holden is a level bog that provides habitats for rare plants including dwarf mistletoe.

Wet Meadows: These lands are characterized by sedges and cattails, a surface water depth of up to six inches in winter and early spring, and exposed but saturated soil surface in summer. They typically provide habitat to wildlife species including the northern leopard frog, big brown bat, star-nosed mole, and short-tailed shrew.

Shallow Marsh: These lands are characterized by persistent emergent vegetation, such as cattails, and water depths up to 1.5 feet. They provide preferred habitat for the following wildlife species: northern spring peeper, painted turtle, northern leopard frog, great blue heron, green heron, Wilson's snipe, Virginia rail, mallard duck, tree swallow, red-winged blackbird, American goldfinch, Virginia opossum, little brown bat, muskrat, mink, and raccoon.

Deep Marsh: These lands are characterized by emergent vegetation and floating-leafed plants such as water lilies, and water depths up to six feet. They provide preferred habitats for the following wildlife species: painted turtle, spotted turtle, red-spotted newt, wood duck, migrating pied-billed grebe, American coot, and the same mammal species found in Shallow Marshes.

Shrub Swamp: These lands are characterized by buttonbush, alder, silky dogwood, and red maple. Wildlife species that prefer these habitats include: American woodcock, yellow warbler, common yellowthroat, common grackle, song sparrow, swamp sparrow, American goldfinch, Virginia opossum, little brown bat, eastern cottontail, and raccoon.

Pond: Ponds are small bodies of water that are characterized by emergent vegetation such as cattails or floating-leafed plants, or both. Vernal pools are small seasonal ponds that often are not connected to streams or other water bodies. Thus, these standalone bodies of water depend on groundwater, snowmelt, and rainwater, and they usually become dry by late summer. Vernal pools are critical habitats for some salamander species, wood frogs, and a variety of other wildlife. Ponds and vernal pools also provide preferred habitat for the following species: pickerel frog, eastern painted turtle, little brown bat, big brown bat, mink, and beaver.

Rare or Endangered Species

The NHESP lists 11 occurrences of rare or endangered plants and animals in Holden, including the date of the most recently recorded local observation. As shown in Table 5 - 6, the three rare or endangered plants observed in Holden are dwarf mistletoe (a species of concern) and Houghton's flatsedge and pod-grass (an endangered species). Table 5 - 7 shows recent sightings of eight state-listed animal species, two of which are threatened (Blanding's Turtle and Bald Eagle) and six of which are of special concern (Eastern whip-poor-will, tule bluet, wood turtle, spine-crowned clubtail, brook snaketail, and water shrew). These plants and animals are particularly vulnerable to habitat

Table 5 - 6: Endangered Species Observations in Holden- Vegetation (NHESP, MassWildlife, 2018)

Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Observation
Vascular Plant	<i>Arceuthobium pusillum</i>	Dwarf Mistletoe	SC	2008
Vascular Plant	<i>Cyperus houghtonii</i>	Houghton's Flatsedge	E	2008
Vascular Plant	<i>Scheuchzeria palustris</i>	Pod-grass	E	1917

(E = Endangered; T = Threatened; SC = Special Concern)

Table 5 - 7: Endangered Species Observations in Holden- Wildlife (NHESP, MassWildlife, 2018)

Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Observation
Bird	<i>Caprimulgus vociferus</i>	Eastern Whip-poor-will	SC	2017
Reptile	<i>Emydoidea blandingii</i>	Blanding's Turtle	T	1999
Dragonfly/Damselfly	<i>Enallagma carunculatum</i>	Tule Bluet	SC	Historic
Reptile	<i>Glyptemys insculpta</i>	Wood Turtle	SC	2016
Dragonfly/Damselfly	<i>Gomphus abbreviatus</i>	Spine-crowned Clubtail	SC	2016
Bird	<i>Haliaeetus leucocephalus</i>	Bald Eagle	T	2017
Dragonfly/Damselfly	<i>Ophiogomphus aspersus</i>	Brook Snaketail	SC	2016
Mammal	<i>Sorex palustris</i>	Water Shrew	SC	2011

(E = Endangered; T = Threatened; SC = Special Concern)

destruction, invasive species, climate change, and human disturbances such as development or logging. Careful consideration should be given to species such as these when planning for Holden's natural resources.

Invasive Species

A major threat to the hardwood trees of Holden is the Asian longhorned beetle (ALB). Native to China, Japan, Korea, and the Isle of Hainan, the ALB is a destructive pest of hardwood trees that was first detected in the United States in 1996. The ALB attacks healthy hardwood tree species including maple, horse chestnut, birch, poplar, willow, and elm. The beetles lay eggs in and feed on the trees, eventually killing them. Each year a new generation of ALB is produced, making its threat to New England forests all the more severe. Should the pest expand into hardwood forests in the United States, the nursery, maple syrup, and forest product industries would experience severe devastation and economic losses.

The ALB was first detected in Worcester County in August 2008. Following its detection, DCR issued an order to prevent the insect's spread in Worcester County and Massachusetts. Orders consisted of identifying the affected areas, indicating an indefinite quarantine period, and regulating articles and activities. Treatment consists of removing the host trees and injecting pesticides into trees surrounding the host trees. In order to prevent the rapid spread of a beetle infestation, a 110-square-mile quarantine

zone that encompassed all of Worcester, West Boylston, Boylston, and Shrewsbury, and parts of Holden and Auburn, was established. More than 35,000 infested and high-risk host trees were removed. The last reported detection of the ALB in Holden occurred on December 29, 2014. While the beetle has not been officially eradicated in the area, the number of infested trees has significantly decreased. The loss of thousands of trees in Holden and other communities resulted in unrecognizable neighborhoods; however, efforts from the Worcester Tree Initiative (WTI) and DCR resulted in 30,000 trees replanted in the quarantine area. The Town should continue to pursue tree replanting efforts within the quarantine area if there are still significant gaps where trees used to be abundant.



Adult Asian Longhorned Beetle (Mass.gov)

Riparian Corridors

Riparian corridors are 100-meter natural corridors along waterways providing avenues of movement for some wildlife species and fulfilling other

ecological functions. These corridors are significant to people and the environment as they filter sediment from runoff before it enters rivers and streams, control erosion by absorbing and slowing stormwater runoff, provide a storage area for flood waters, provide food and habitat for fish and other wildlife, and preserve open space and aesthetic surroundings. If these corridors are disturbed or interrupted, damage to habitat and species population will result. Disruptions such as roads, parking lots, manicured lawns, or large commercial developments threaten the sustainability of these valuable wetland habitats. The preservation of riparian corridors should be prioritized by the community and enforced by the Conservation Commission.

Core Habitats

Holden has 10 areas identified by the state's BioMap2 Project as "core habitats" for conserving biodiversity for future generations. These core habitats include two exemplary or priority natural community cores, three forest cores, seven wetland cores, two aquatic cores, and seven species of conservation concern cores. The NHESP flagged these Core Habitats as "hotspots" for biodiversity. These areas are identified as the most viable natural communities and habitats for rare plants and animals and the most critical sites for biodiversity conservation across the State. Holden's BioMap2 core habitats consist of 3,361 acres. The protected core habitat consists of 2,538 acres, or 75% of the total core habitat. Summaries of the core habitats in Holden are included in Table 5 - 8 as well as a map of the core habitats included as Map 5 - 6.

Wildlife Management Areas

The Poutwater Wildlife Management Area (WMA) is a 378-acre property consisting of three parcels. The terrain is generally rough but moderately sloped. Access to the Poutwater WMA is located off of Mason Road and Sterling Road. There is an unmaintained dirt parking lot with five parking spaces located on Mason Rd near the Princeton Town border. Vegetation consists of mixed hardwood and conifer forest, while the small, northwestern parcel is dominated by thick shrub

swamp. A cold-water stream named Governor Brook flows through the northern parcel of the WMA and contains native trout. Additionally, wildlife in the WMA includes grouse, deer, gray squirrel, fox, turkey, and numerous non-game species. There are no special regulations at this wildlife management area. (Massachusetts Department of Fish & Game, MassWildlife Lands Viewer, 2018)

ISSUES AND OPPORTUNITIES

Maintaining the rural character of Holden while ensuring that it is a scenic and livable community requires a careful balancing of preservation, conservation, and development. The issues and opportunities in the following section were identified through analysis of previous reports, timely data, and the needs and concerns expressed by community members as part of the Master Plan public outreach process. The identification of these issues and opportunities is intended to help protect important land, water resources, and vegetation and wildlife, while encouraging connectivity and conservation.

Through community outreach efforts, Holden residents were able to voice their ideas, needs, and concerns about the Town's natural resources. Among the many responses, several themes stood out, including:

Concerns about valuable natural resources at risk of development

Appreciation of local water sources

Challenges protecting Eagle Lake

Better ADA Accessibility

Map 5 - 6: BioMap2 Core Habitat in Holden (BioMap2 Natural Heritage and Endangered Species Program)

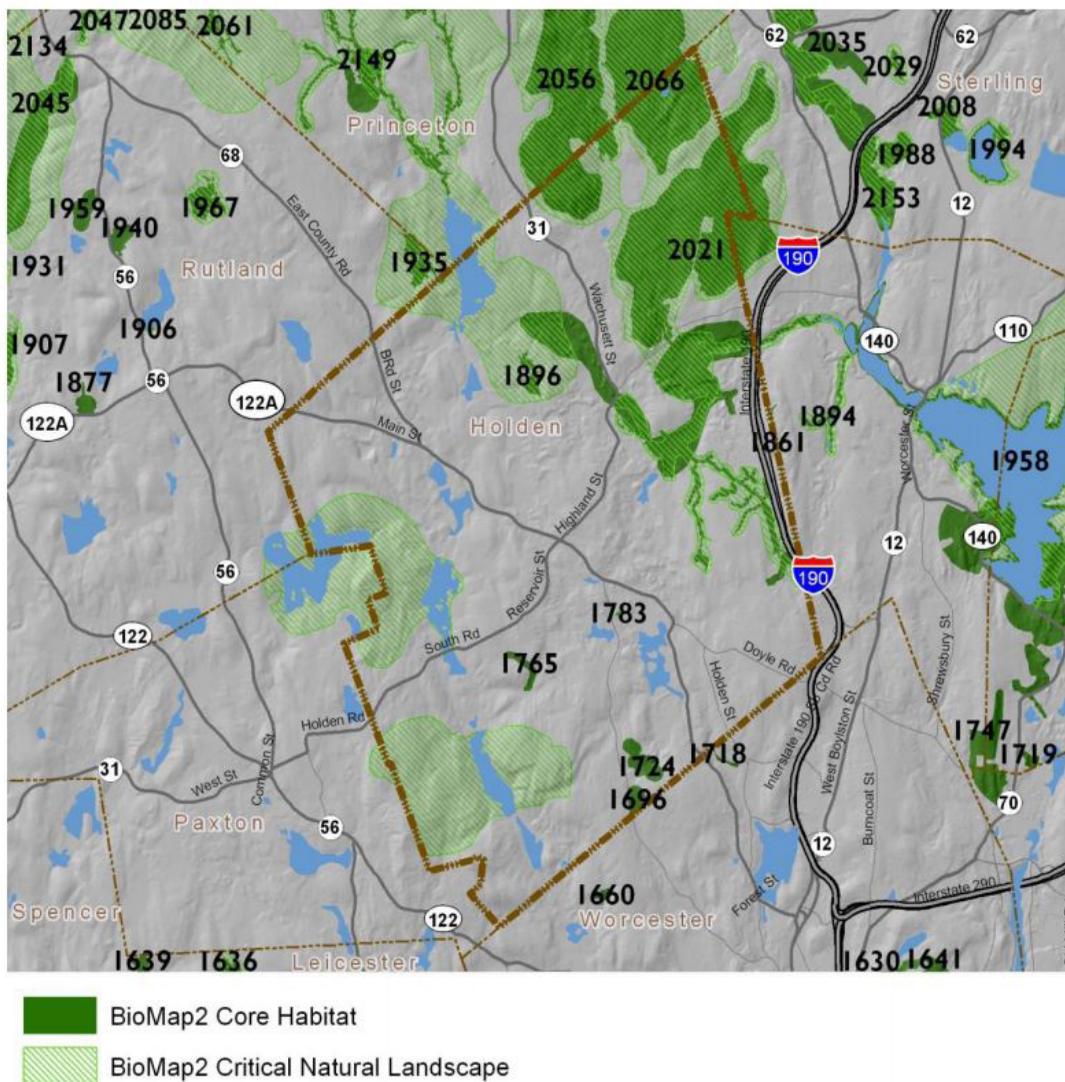


Table 5 - 8: BioMap2 Core Habitats in Holden (BioMap2 Natural Heritage and Endangered Species Program)

Core 1696	34-acre Core Habitat featuring a Species of Conservation Concern (four-toed salamander)
Core 1724	76-acre Core Habitat featuring a Species of Conservation Concern (four-toed salamander)
Core 1765	31-acre Core Habitat featuring a Species of Conservation Concern (spring salamander)
Core 1783	<1-acre Core Habitat featuring a Priority Natural Community (black gum swamp)
Core 1861	9-acre Core Habitat featuring a Species of Conservation Concern (Houghton's Flatsedge)
Core 1896	36-acre Core Habitat featuring Wetland Core
Core 1935	75-acre Core Habitat featuring Wetland Core
Core 2021	2,962-acre Core Habitat featuring Forest Core, Wetland Core, Aquatic Core, and Species of Conservation Concern (Brook Snaketail; Spring Salamander; Wood Turtle)
Core 2056	1,164-acre Core Habitat featuring Forest Core, Wetland Core, Vernal Pool Core, and a Species of Conservation Concern (Marbled Salamander)
Core 2066	1,057-acre Core Habitat featuring Forest Core, Wetland Core, Priority Natural Communities (Level Bog), and Species of Conservation Concern (Christmas Mistletoe; Four-toed Salamander)

The beauty and value of Holden’s natural resources were clearly highlighted by the community. The following issues and opportunities aim to preserve these natural resources into the future.

Eagle Lake

Eagle Lake is a highly valued natural resource in Holden whose future is in question. The lake contains the Town Beach and is one of the most popular recreational spots in Town according to the Community Survey. Half of the community survey respondents stated they had visited Eagle Lake Town Beach in the past year. Despite its local popularity, recent years have given way to many issues. While the lake is Town-owned, the dam is not, creating a controversy with few options that will appeal to all parties. There are approvals in place that will allow the Lake to be drained approximately 4.5 feet. The dam is owned by multiple parties, one of which is a non-profit land trust with limited funds and expertise to manage, maintain, and repair the dam. Another of the three parties refutes ownership. This makes addressing issues related to Eagle Lake a challenging process.

In 2017, the Eagle Lake Committee was formed to review options for Eagle Lake. The committee continues to pursue options to save the community’s prized resource. The Committee produced a report for the Town of Holden Board of Selectmen and Town Manager in 2018 that outlines issues and options in regard to Eagle Lake. Options presented in the report are summarized in the Open Space and Recreation chapter. In coordination with the owners of the dam, it is recommended that the Town work collaboratively with all interested parties to determine the most appropriate course of action in relation to the Eagle Lake dam. Potential courses of action include:

- Acquire and restore the dam
- Press the current owners to complete dam repairs
- Withhold permission to permanently lower Eagle Lake
- Revisit agreements with the City of Worcester regarding the amount of water diverted to

Worcester

- Remove the dam, thereby restoring the area to the natural, free-flowing state of a stream

Since Eagle Lake is a highly important resource to the community, public input should be sought throughout the decision-making process of the lake.

If the lake is not drawn down, there are a number of improvements beyond dam repairs that are necessary to restore Eagle Lake and the Town Beach to a healthier and more publicly accessible state. First, the spread of exotic aquatic weeds must be addressed. It is recommended that a comprehensive plan for controlling exotic weeds in Holden’s water bodies, including Eagle Lake, be created and implemented in the near future.

Additionally, the swimming facilities at the Eagle Lake Recreation Area are in need of restoration, as recommended in the Eagle Lake Committee Report. In order to make the lake more accessible for all of Holden’s residents, an improved and handicapped accessible launching point for kayaks and canoes should be installed. Eagle Lake and the Town Beach are Holden’s treasured natural resources; much-needed maintenance at these popular spots should not go unattended.

Scenic Landscapes

Residents of Holden value the rural, scenic amenities throughout the Town. The beautiful natural features and historic small-Town landscape attract visitors during all seasons and are one of the many benefits of residing in the Holden.

The Scenic Road Act (Massachusetts General Laws Chapter 40, Section 15C) states that after a road has been designated as a scenic road, any repair, maintenance, reconstruction, or paving work done with respect thereto shall not involve or include the cutting or removal of trees, or the tearing down or destruction of stone walls, except with the prior written consent of the Planning Board. By adopting the Scenic Road Act at Town Meeting and creating a scenic roads bylaw, the Town of Holden could act upon the need to retain and protect the scenic

character and historical charm of designated roadways. A scenic roads bylaw is a preservation planning tool that protects the picturesque qualities of mountains, hills, and rolling terrain. It does so through additional design criteria requirements for new construction within these scenic landscapes. This type of bylaw can also be adapted into a scenic overlay district or address specific portions of a viewshed. The Town may wish to explore adopting the Scenic Road Act and a scenic roads bylaw. Map 5 - 7 show six unofficial scenic routes in Holden identified during the Open Space mapping effort (2008) that could be potentially designated:

- Bryant Rd. and Whitney St.
- Reservoir St.
- River St.
- Causeway St.
- Mason Rd.
- South Road

Trails are one of the most important ways for visitors to relish in scenic landscapes. To encourage greater use of the trail system in Holden, a wayfinding program for recreational trails should be implemented. A comprehensive system of signage and maps would help residents and visitors orient themselves with the Town's trails and paths. It would also promote safety, inclusivity, and encourage users to not stray from trails, which can be a major disturbance to natural habitats. There are numerous local organizations the Town can partner with, such as Wachusett Greenways, to explore establishing a trail wayfinding program.

Access to scenic landscapes is a significant issue that the Town should promptly address. While there are great expanses of open space in Holden, these natural resources are not readily available to all residents and visitors. Improving various trails to be compatible with Americans with Disabilities Act (ADA) standards is a step the Town should consider in order to allow all residents to enjoy Holden's natural beauty. Additionally, ADA compliant parking spaces at trailheads and other recreation areas should be a prioritized investment in the next five years.

White Oak Land Conservation Society

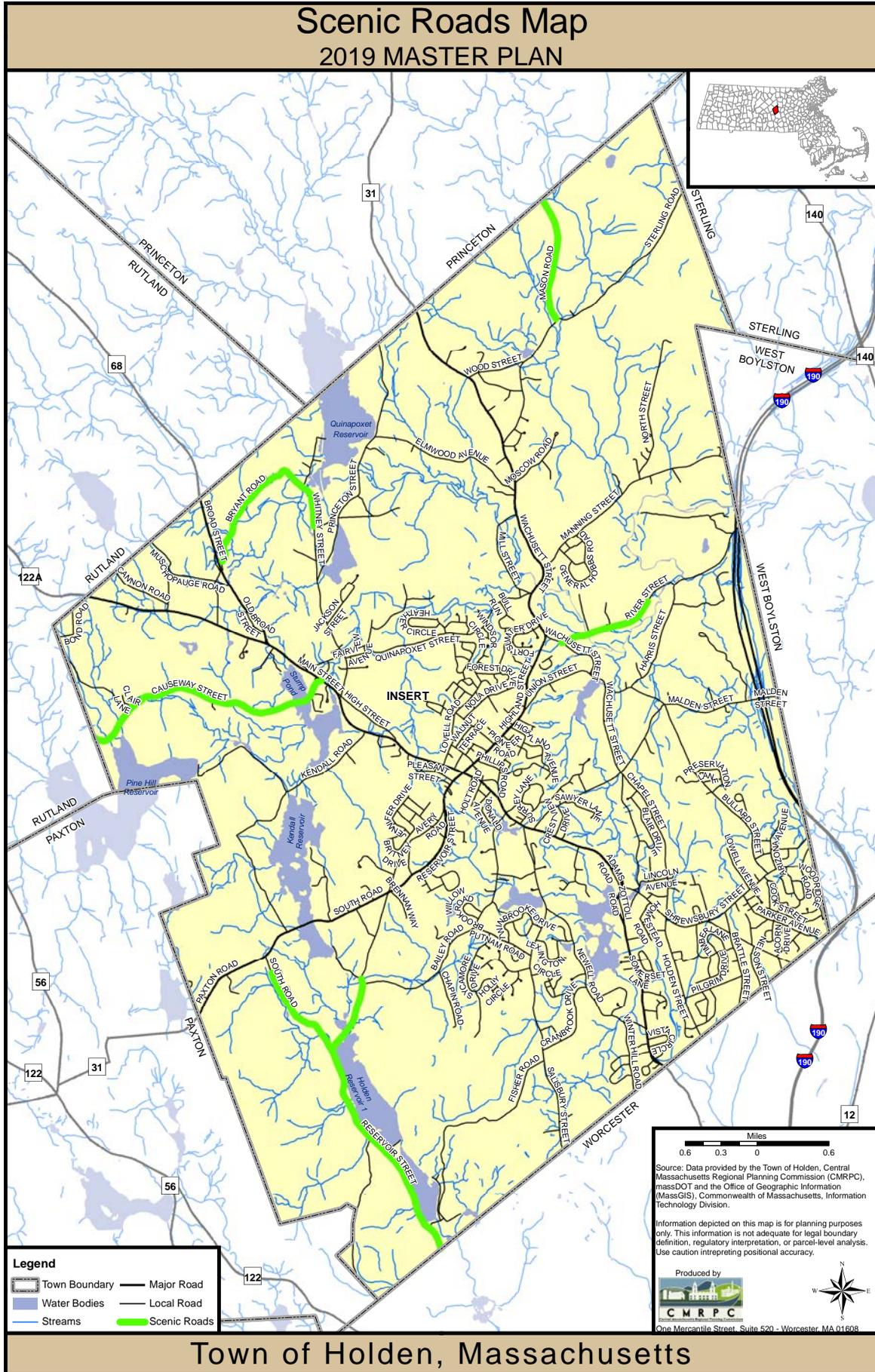
The White Oak Land Conservation Society (WOLCS) is a small non-profit organization created to purchase, hold, advocate for, preserve, or transfer critical open space parcels in the Holden area. The organization endeavors to acquire and maintain land for preservation of wildlife so that current and future generations can enjoy the mental and physical well-being that wilderness and the natural environment provide. WOLCS is a local organization that has many of the tools and resources to assist the Town of Holden in preserving its natural resources. WOLCS owns 369 acres of open space and 242 acres of Conservation Restrictions in Holden. Porcupine Hill, Potter Sanctuary, Oak Hills, Holbrook Forest, North Street are the largest open space properties. One of the greatest concerns among Holden residents is the rate of development occurring in Holden and the loss of open space. The Town has partnered with WOLCS to acquire Holbrook Woods and should utilize a partnership with the WOLCS as a means of preserving land from development, preventing forest fragmentation, and maintaining the rural characteristics of the Town. The existing partnership between the Town and WOLCS should continue as a means of preserving land from development, preventing forest fragmentation, and maintaining the rural characteristics of the town.

Greater Worcester Land Trust

The Greater Worcester Land Trust (GWLT) is a small non-profit organization created to purchase, hold, advocate for, preserve, or transfer critical open space parcels in the Greater Worcester Area. The organization endeavors to acquire and maintain land for preservation of wildlife. GWLT is a local organization that has many of the tools and resources to assist the Town of Holden in preserving its natural resources. Kinney Woods, Cascades West, and Holbrook Woods in Holden are all included in the Four-Town Worcester Greenway created by GWLT. One of the greatest concerns of residents is the rate of development occurring in Holden and the loss of open space. The Town should utilize a partnership with the Greater Worcester Land Trust as a means of preserving land from development and maintaining the rural characteristics of the Town.

Scenic Roads Map

2019 MASTER PLAN



Town of Holden, Massachusetts

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GOALS, OBJECTIVES, AND ACTION ITEMS

The Master Plan recommends the following action items based on the goals and objectives crafted with careful consideration of the public outreach results, analysis of current conditions, and progress achieved since 2008.

CAPITAL ITEMS

Install and improve ADA compliant parking spaces at trailheads and other recreation areas, and ADA-friendly trails to accommodate accessibility for all

Install ADA-friendly trails to accommodate accessibility for all

Develop and implement wayfinding program for recreational trails

Implement a comprehensive plan to control the spread of exotic aquatic weeds, likely including resuming bi-annual winter drawdown or potentially dredging

Continue tree replanting efforts following significant tree removal to eradicate ALB

Goal 5.1: Protect natural resource areas from environmental degradation, disturbances, and development.

Objective 5.1.1: Utilize zoning, regulatory, and legislative resources to enhance natural resource conservation efforts.

- **Action Item 5.1.1.1:** Review the zoning bylaws and update regulations to better protect priority preservation areas (PPAs) and farmland.
- **Action Item 5.1.1.2:** Pursue adoption of conservation-related bylaws and policies, particularly zoning incentives for preserving open space and natural resources. Examples may include increases in financial incentives for creative and environmentally appropriate project proposals from developers or amending bylaws to require low impact development in sensitive natural resource areas.
- **Action Item 5.1.1.3:** Create an Open Space and Natural Resource Committee to coordinate protection and preservation initiatives.
- **Action Item 5.1.1.4:** Update and adopt stormwater regulations to reflect new Department of Environmental Protection (DEP) guidelines.
- **Action Item 5.1.1.5:** Update the 2006 Town Forest Stewardship Plan.
- **Action Item 5.1.1.6:** Determine status of forest management planning, particularly on lands owned by the Town and Commonwealth, in order to reduce wildfire threats and encourage management of invasive species.
- **Action Item 5.1.1.7:** Continue to work with local land trusts and non-profits to identify and acquire important unprotected natural resource areas for permanent protection.

Objective 5.1.2: Collaborate with local, regional, and state conservation organizations on natural resource management.

- **Action Item 5.1.2.1:** Work with local land trusts and non-profits to identify and acquire important unprotected natural resource areas for permanent protection.
- **Action Item 5.1.2.2:** Work with Massachusetts Department of Fish and Game's Natural Heritage and Endangered Species Program (NHESP) to identify and certify vernal pools that have not been certified.

Objective 5.1.3: Encourage development and management practices that minimize destructive impacts on valuable natural resources.

- **Action Item 5.1.3.1:** Establish a best practices training program for site contractors, landscapers, facilities managers, and others to learn about techniques to reduce stormwater runoff and pollution, deal with invasive species, reduce the use of toxic pesticides and herbicides, and maintain lands in a way that enhances protection of native species.
- **Action Item 5.1.3.2:** Develop comprehensive invasive species management from inventory stage through management planning and implementation in order to address existing invasive populations that threaten natural features such as open space or forests as well as to anticipate new invasive species which are likely to move into the area as a result of climate change.
- **Action Item 5.1.3.3:** Provide education and outreach on fertilizer effects to inform landowners about the negative water quality impacts of nutrient pollution and the relation to algal blooms.
- **Action Item 5.1.3.4:** Assess mosquito, tick, and other pest control options.

- **Action Item 5.1.3.5:** Develop an education and outreach program to inform the public about health risks associated with mosquitoes, ticks, and other pests. Determine future risks to human health due to increases in type and quantity of pests and disease vectors resulting from climate change.

Goal 5.2: Expand appropriate public access to the Town's natural resources.

Objective 5.2.1: Increase public access to ponds, streams, and, where appropriate, watershed protection areas.

- **Action Item 5.2.1.1:** Identify water resource access opportunities; pursue property rights as appropriate.
- **Action Item 5.2.1.2:** Identify the accessibility status of existing water resources. Undertake maintenance and improvements as necessary to meet the access needs of all populations.

Objective 5.2.2: Increase public access to the Town's forests and open spaces.

- **Action Item 5.2.2.1:** Assess the accessibility status of existing hiking and biking trails. Undertake maintenance and improvements as necessary to meet the access needs of all populations.
- **Action Item 5.2.2.2:** Encourage community involvement in trail maintenance activities to keep trails well-maintained and increase longevity.

Goal 5.3: Improve public awareness of Holden's natural resources.

Objective 5.3.1: Expand youth awareness of local natural resources.

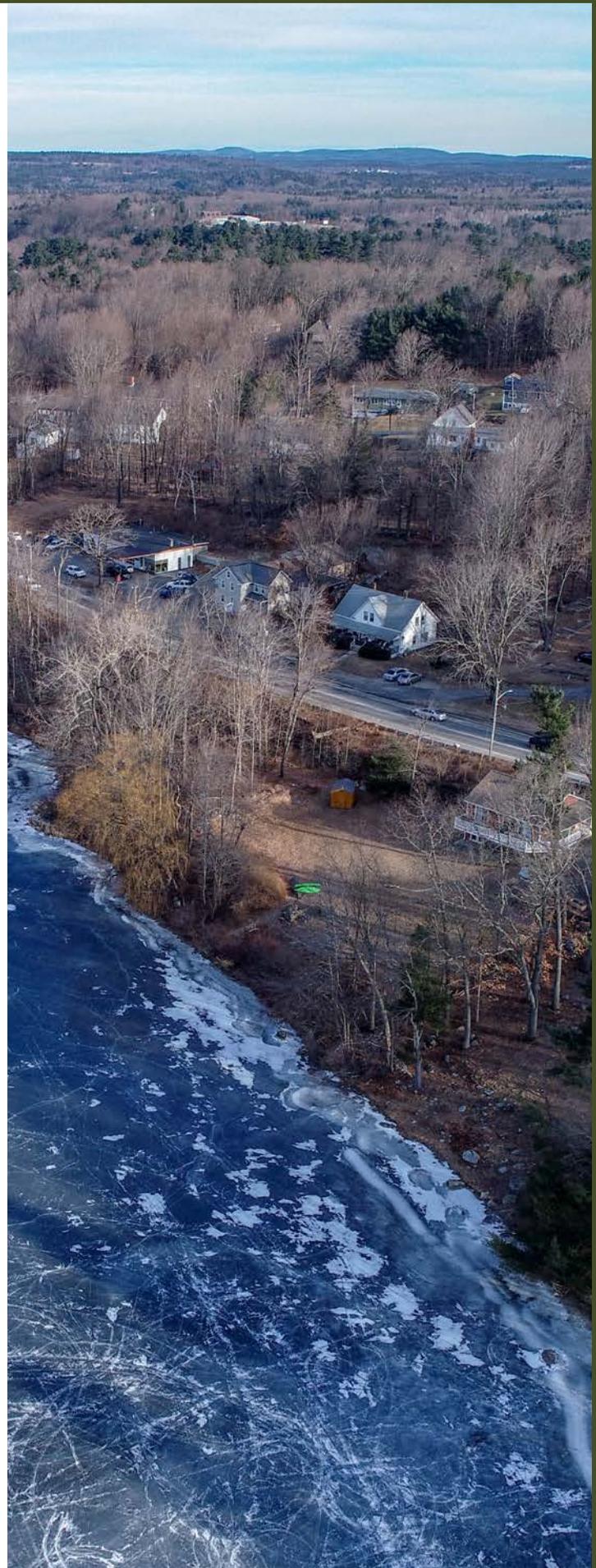
- **Action Item 5.3.1.1:** Continue and expand current watershed education programs with Dawson and Mayo Schools, and expand to include Davis Hill.

Objective 5.3.2: Expand opportunities for community service and involvement in natural resource conservation.

- **Action Item 5.3.2.1:** Partner with local conservation organizations including the White Oak Land Conservation Society, Greater Worcester Land Trust, and Mass Audubon to host community events such as bird counting, trail maintenance, and volunteer days.
- **Action Item 5.3.2.2:** Create an internship program in coordination with the Conservation Commission and Conservation Agent to involve students in local conservation issues and activities.

Objective 5.3.3: Educate the public about the importance of natural resource protection.

- **Action Item 5.3.3.1:** Collaborate with local land trusts and non-profit organizations to host workshops, produce signage, and create and distribute informational brochures along with other educational materials.



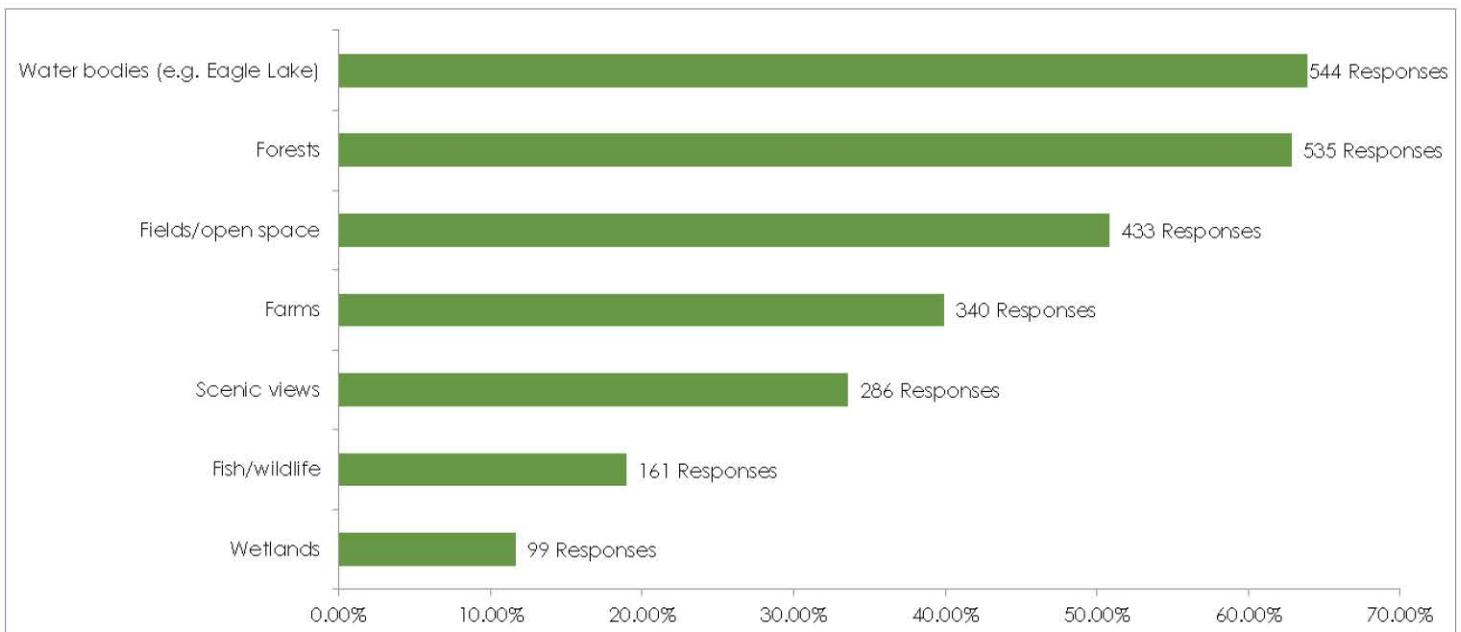




NATURAL RESOURCES

Holden Community Survey Results

HOLDEN'S MOST VALUED NATURAL FEATURES



Holden Tomorrow
planning our future together

FOR MORE INFORMATION: www.holdenmasterplan.com *Town of Holden Master Plan Committee*

6.0 HISTORIC & CULTURAL RESOURCES

INTRODUCTION

Holden's natural and built environments provide a connection to its past and preserve the historic, architectural, and aesthetic heritage of the Town. The Town's cultural identity is enhanced by its arts community, commitment to preserving local history, and active community groups. Holden still features historic elements dating from every period of its past. Driving through Town, visitors can see pre-colonial landscapes, colonial farm houses, industrial-era mill buildings, farm land dating back to the founding of Holden, and throughout it all, people living and enjoying their daily lives. Such resources play a significant role building a healthy community.

In a Town as rich in historic and cultural resources as Holden, it is imperative to inventory and document these assets in order to provide a framework for preservation. Consequently, this chapter traces the history of the Town, inventories Holden's historic and cultural resources, analyzes past conservation efforts and current conditions, identifies key issues and opportunities for protecting Holden's heritage, and provides recommendations to fulfill the following community goals:

- Preserve and maintain Town-owned and privately-owned historic assets.
- Preserve the community's rich heritage using protective regulatory tools in key areas of Town.
- Ensure there are adequate cultural opportunities for Holden residents of all ages and abilities.

PRIOR PLANNING AND ENGAGEMENT EFFORTS

Residents of Holden have been actively engaged in planning for the conservation and preservation of essential historic and cultural resources for many years. Prior Town planning efforts include the following:

Master Plan (2008)

The Historic and Cultural Resources Chapter of the 2008 Master Plan provides a condensed chronological history of Holden, an outline of major historic and cultural resource issues, a historic properties inventory, an overview of preservation efforts, and recommendations for protecting the Town's historic and cultural treasures. The recommendations identified in the 2008 Master Plan regarding historical and cultural resources were divided into first and second priority status (Community Preservation Associates, et al., 2008). The completion status of the recommendations and actions from the 2008 Master Plan can be found in the Benchmark Review in the Appendix E.

First Priority Goals:

- Develop a plan to preserve historic assets and encourage knowledge of Holden's history.

Second Priority Goals:

- Investigate the creation of historic districts at Jefferson, Quinapoxet, and Chaffinville to supplement the two existing historic districts.

- Review and possibly expand cultural opportunities for youth.
- Protect cultural landscapes around the Red Barn, Alden Laboratories, and historic farms.
- Expand and enhance the Holden Common (Town Hall area).

EXISTING CONDITIONS

History and Overview

Pre-Colonial Period (Before 1675)

The tribes of the Nipmuc Indians were the original inhabitants of Holden and the surrounding southern New England lands between present-day Boston and Springfield. In 1674, a negotiation took place between Daniel Gookin, representing the General Court, and members of the Pakachoge and Tatessit tribes to purchase the land that is now Holden. Establishment of the Town and farms was delayed due to King Phillip's War (1673-1675) until 1683, when Gookin, Captain Daniel Henschman, and a

Jefferson Mill (Built 1850) on Main Street (CMRPC, 2019)



group of others set out to begin work on the land. However, continued attacks from local tribes drove away these early pioneers from the area until the early 18th century. (Massachusetts Historical Commission, 1984)

Colonial Period (1675-1775)

By the 1720s, the first permanent settlers came to the eight-square mile area known as “North Worcester.” Limestone was discovered by Jonas Rice of Marlborough, who subsequently set up kilns. Soon afterward, surveys were utilized to divide the land into lots, and four roads were built. A meetinghouse was built near the corner of Main and Highland Streets in 1737. Named after the Honorable Samuel Holden, a London merchant and benefactor of the New England colonies, Holden became a Town in 1741. (Massachusetts Historical Commission, 1984)

There are several landscapes and structures that survive from the Colonial period. According to the Town’s inventory of historic resources, the oldest remaining building is the Rogers House (1733) on Boyden Road. Other Colonial period buildings are included in Table 6 - 1. (Massachusetts Historical Commission, 1984)

Federal and Early Industrial Periods (1775-1870)

A decline in farming followed the completion of the Erie Canal in 1825 and the opening of the west to large-scale agriculture. The early 19th century saw emergence of textile mills, including cotton and woolen mills, on Holden’s many waterways, creating a series of small mill villages within the larger Town. In 1809, the first cotton mill was established on the Quinapoxet River (near the junction of Wachusett and Bullard Streets) by Eleazer Rider & Sons (of West Boylston). The Riders also built several tenement houses and established Holden’s first mill village – Unionville. A second textile mill specializing in dyeing wool and coloring yarn was built by Royal Chaffin in the south part of Holden in 1817. Soon after, other mills developed at Lovellville (1820), North Woods (or Ruralville, 1827), Eagleville (1826), Quinapoxet (1831), Dawsonville (1862), and other locations along Holden’s waterways. (Massachusetts Historical Commission, 1984)

Many of Holden’s historically significant buildings and landscapes date to the Federal and Early Industrial periods. One of Holden’s prominent Federal period (1775-1830) landscapes is the Park Avenue Burying Ground (1826). Other examples of Federal period buildings are included in Table 6 - 1 as well as the full historic inventory in Appendix D.

Mill complexes accompanied by housing and other amenities were constructed in the Early Industrial period (1830-1870) in Holden. The only remaining mill complex, the Jefferson Manufacturing Company on Main Street (1850), stands at Jefferson. There remain many examples of mid-19th century architecture in both vernacular and high styles, which are listed in Table 6 - 1. (Massachusetts Historical Commission, 1984)

Late Industrial Period (1870-1915)

In 1871, the railroad was constructed in Holden and eventually offered stops at Chaffins, Dawson, and North Woods, as well as the Center, Jefferson, and Quinapoxet. The growing immigrant population in Holden (primarily from Ireland, Canada, and Sweden) dominated the manufacturing labor force; in 1885, 40% of the workforce was foreign-born. There are many residential buildings from the late industrial period that remain in Holden. Several prominent late industrial buildings are listed in Table 6 - 1.

Early Modern & Modern Periods (1915-present)

By the end of the 19th century and into the early 20th century, Holden served as a desirable rural retreat with a number of summer hotels, as it was located near an urban area and conveniently on a

Rogers House (Built 1733) on Boyden Road (CMRPC, 2019)



Table 6 - 1: Major Historic Properties in Holden by Time Period (MACRIS, 2018)

Historic Period	Structure/Landscape	Location	Year
Colonial Period (1675-1775)	Rogers House	Boyden Road	1733
	Old Burying Ground	Main Street	1742
	Hancock Common	Main Street	1750
	Jonathan Lovell Farm Barn	Malden Street	1752
	Abbott Tavern	Reservoir Street	1763
	Thomas Davis House	Mason Road	1770
	Elisha Hubbard Farm	Wachusett Street	1775
Federal Period (1775-1830)	Davis-Flagg House	Main Street	1779
	First Congregational Church	Main Street	1789
	Nathan Chaffin House	Salisbury Street	1793
	Blake Farm	South Road	1800
	Bassett-Brewer House	Union Street	1813
	Old First Baptist Church	Highland Street	1819
	Park Avenue Burying Ground	Park Avenue	1826
Early Industrial Period (1830-1870)	Jefferson Manufacturing Company	Main Street	1850
	Miles Funeral Home	Main Street	1854
	Grove Cemetery	Main Street	1854
	Eagle Lake Woolen Company Worker Housing	Jefferson	1860s
	St. Mary's Cemetery	Main Street	1867
Late Industrial Period (1870-1915)	Charles L. Hendricks House	Walnut Street	1884
	Damon Memorial Building	Highland Street	1888
	Charles Pomeroy House	Walnut Street	1903
	William Howe Warren House	Maple Street	1910
	Marjery A. Rice School	Phillips Road	1911
	Benjamin H. Robbins House	Highland Street	1913
Early Modern & Modern Periods (1915-present)	Dr. Gardner Cobb House	Stone House Hill Road	1920
	William H. George House	Walnut Terrace	1937
	River Street Bridges	River Street	1937
	Princeton Street Bridge	Princeton Street	1937
	Alden Laboratories Rotating Test Boom Control House	Shrewsbury Street	1937

railroad line. Beginning in 1892, the Metropolitan District Commission began acquiring lands in Holden to protect the Wachusett Reservoir for drinking water supply. While several mills stood on these lands, the buildings were slowly demolished and the lands preserved as open space. In 2019, only the Jefferson Mill Village remains. The area consists of several historic sites, including the original mill building, manufacturing buildings, mill

housing, Catholic Church and cemetery, and mill owner houses. There are still remnants of the mill buildings and dams at 10 other mill sites in Town. Several notable examples of 1920s-1940s architecture remain, as well as several bridges that were constructed over the Quinapoxet River by the Works Progress Administration in the 1930s.

In the 20th century, Holden began to evolve into a commuter town and bedroom community for Worcester and Boston as the community's agricultural activity declined along with the mill industry. Contributing to this trend was the construction of US Interstate 190, located east of Holden. In late 1950s, 1960s, and 1970s, Holden became a suburb and saw the demolition of many residential properties along Route 122A to make way for newer, commercial structures. Demolition has slowed since the 1970s. The Chaffins School was replaced by the electric department building, and a medical arts building replaced an 18th century home on Boyden Road. (Massachusetts Historical Commission, 1984)

Historic Resources Inventory

A complete inventory of the Town's historic structures is stored in the Jane Wilson Local History Room of the Gale Free Library, and can be found in the Massachusetts Cultural Resource Information System (MACRIS), maintained electronically by the Massachusetts Historical Commission. A complete copy of Holden's inventory of historic resources

Holden Center Historic District Welcome Sign (CMRPC, 2019)

from MACRIS is included in Appendix D. Notable historic resources within Holden are included in Table 6 - 2, with some represented in Map 6 - 1.

Local Historic Districts

Holden has established two local historic districts (LHDs) in accordance with the Historic District Act and Massachusetts General Law (MGL) Chapter 40C. (MHC, 2003) Local historic districts have three major purposes as stated in MGL Chapter 40C: to preserve and protect the distinctive characteristics of buildings and places significant in the history of the Commonwealth and its cities and towns; to maintain and improve the settings of those buildings and places; and to encourage new designs compatible with existing buildings in the district. The two districts include Holden Center Historic District and Boyden Road Historic District. (MHC, 2003)

Holden Center Historic District

The Holden Center Local Historic District is located along Main Street at the intersection of Routes 122A and 31, starting at Miles Funeral Home and



Table 6 - 2 Major Historic Resources in Holden (MACRIS, 2018)

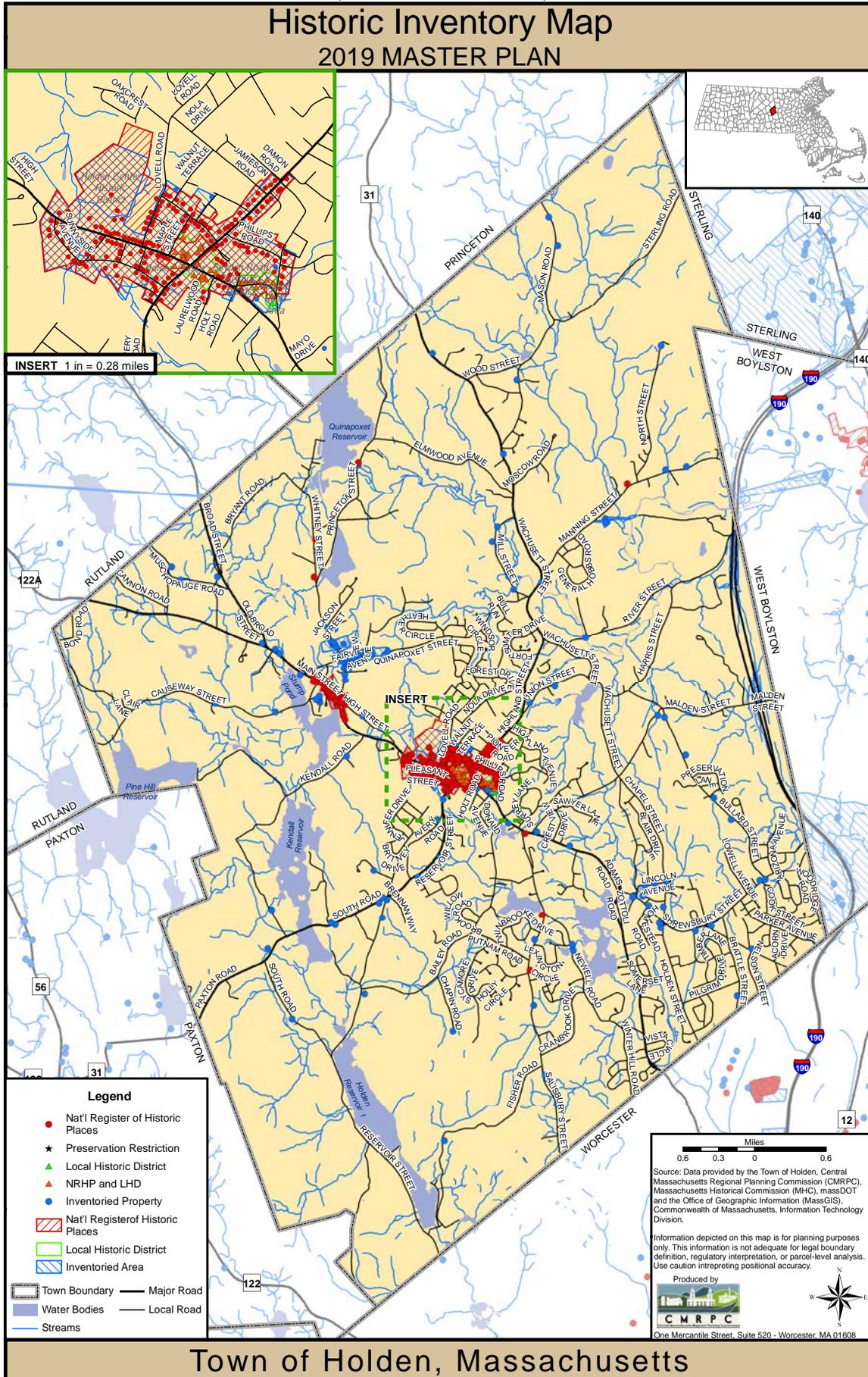
Historic Structures	Old Meeting House Site Holden Park Bandstand	Hancock Common Jefferson Manufacturing Company	Quabbin Aqueduct Reservoir Street Bridge
Historic Areas	Holden Center Jefferson Mill Village	Holden Center Local Historic District Boyden Road Local Historic District	Eagleville Historic District
Historic Buildings (located on the following streets)	Avery Road Bascom Parkway Boyden Road Brattle Street Bullard Street Candlewood Drive Causeway Street Chapel Street Chapin Road Davis Way Deane Ave Doyle Road Fairview Ave Fruit Street High Street Highland Street Hilltop Ave Holden St	Kendall Road Laurelwood Street Lincoln Ave Lovell Road Main Street Malden Street Manning Street Maple Street Mason Road Mayo Drive Mill Street Mixer Road Muschopauge Road Newell Road North Street Park Ave Parker Ave Parsons Road Phillips Road	Pleasant Street Preservation Lane Princeton Street Quinapoxet Street Reservoir Street River Street Salisbury Street Shrewsbury Street South Road Spring Street Stone House Hill Road Sunnyside Ave Union Street Wachusett Street Walnut Street Walnut Terrace Whitney Street Woodland Road
Monuments	Knights Templar Monument Alonzo Knopp Learned Tablet Hancock Common Marker	Drinking Fountain at Grove Street Cemetery Quinapoxet Dam Marker Roll of Honor Memorial	WWI and WWII Monument
Historic Archaeological Sites	Canada Mills Dawson Mill Fairbanks/Chaffins Mill	Lovellville Mill Quinapoxet Mill Shoddy Mill	Unionville Mill
Burial Grounds	Old Burying Ground Park Avenue Burying Ground	Grove Cemetery Saint Mary's Cemetery	

the Hendricks House and extending to the “Old Burial Ground” and the First Baptist Church. This district also runs along Highland Street from the Damon Memorial Library and the Butler House to the Old Burial Ground and the Mobil Station. Established

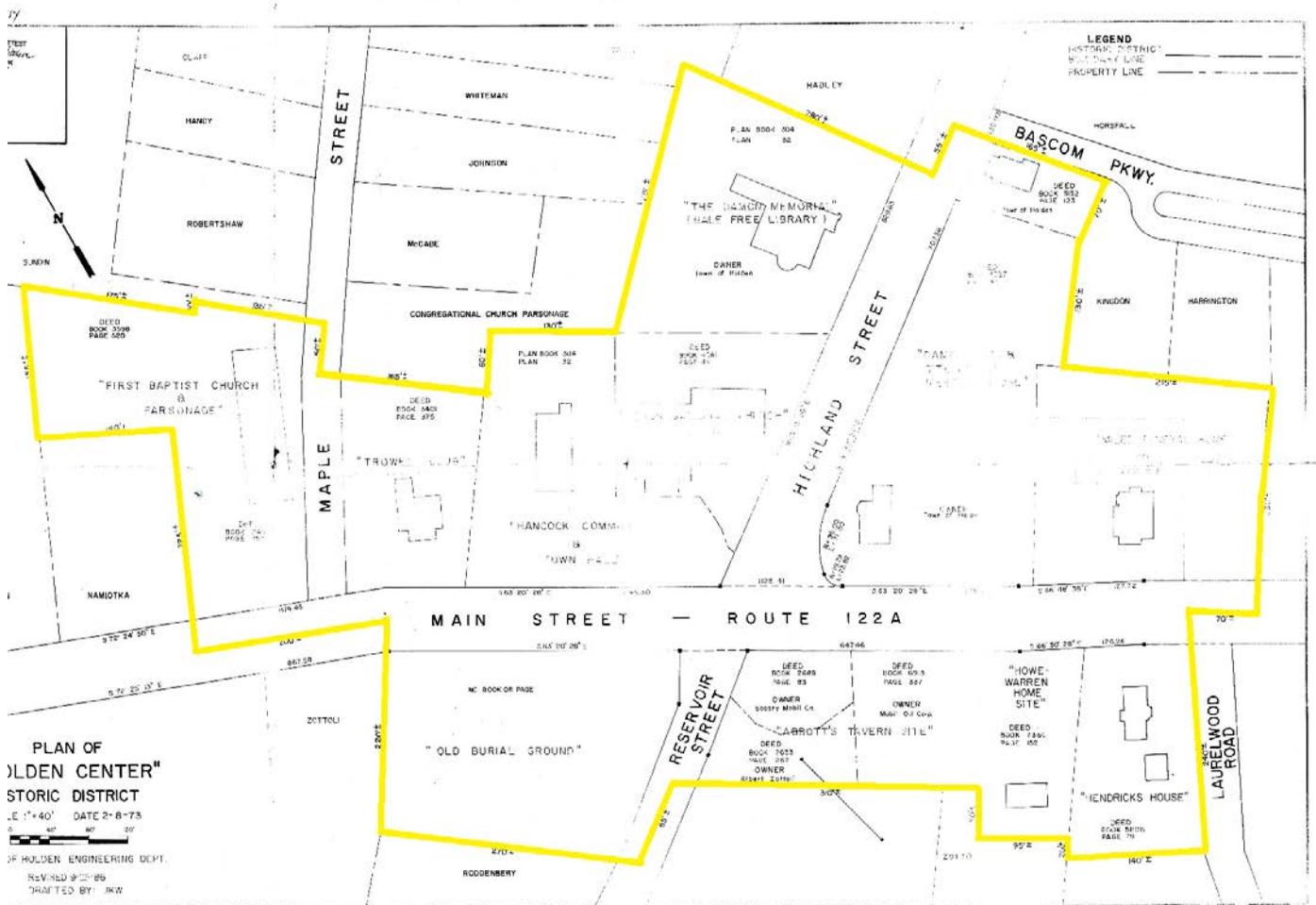
as a local historic district in 1973, the original district included nine buildings. In 1977 the district was listed on the National Register of Historic Places and in 1995 it was expanded to incorporate residential portions of the village significant to

Map 6 - 1: Historic Inventory

Historic Inventory Map 2019 MASTER PLAN



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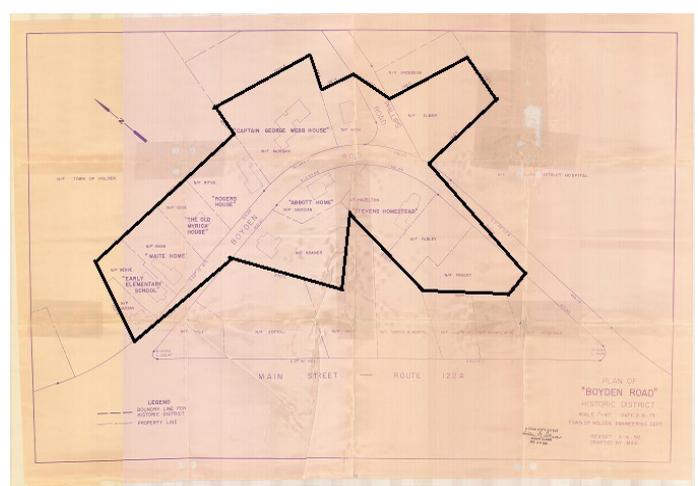
Holden’s history. The district currently consists of 17 historic properties. Notable properties include the 1836 Town Hall, the 1789 First Congregational Church, the 1835 First Baptist Church, the 1880 Old Post Office, and the 1759 Old Burial Ground.

Boyden Road Historic District

The Boyden Road Local Historic District encompasses all of Boyden Road. This area was established as a local historic district in 1990. A notable property includes the Rogers House (28 Boyden Road). Rogers House is thought to be the oldest building in Holden (est. sometime before 1733) and was added to the National Register of Historic Places in 1982. Other properties include the Early Elementary School (8 Boyden Road), the Waite Home (12 Boyden Road), the Old Myrick House (20 Boyden Road), Captain George Webb House (36 Boyden Road), Boyden House (61 Boyden Road), Stevens Homestead (51 Boyden Road), Abbott Home (35 Boyden Road), as well as residences at 25 and 42 Boyden Road.

Local Historic District Guidelines

As outlined by the State, local historic districts are intended to “preserve the outward appearance and harmonious exterior relationships of groups of buildings, structures, and site.” The Holden Historic District Commission promotes the preservation and protection of the historic appearance and characteristics of buildings and grounds within



its two districts. Its purview includes alteration, rebuilding, reconstruction, restoration, removal, or demolition. Original materials and features are to be kept and not changed. If a replacement is necessary it should match the original in material and design. Guidelines include the following:

- No artificial siding is to be allowed including, but not limited to vinyl, aluminum, asphalt and artificial brick.
- No vinyl or aluminum clad windows are to replace wood windows.
- New openings on visible facades are discouraged except to restore original or pre-existing conditions.
- Restoration of missing design features should be documented by photographic, physical or historical evidence.
- Deteriorated architectural features are to be repaired rather than replaced whenever possible.
- Wherever possible, new additions or alterations to structures are to be done in such a manner that the essential form and integrity of the structure would not be unimpaired.
- The use of new materials not originally found on the property is discouraged.
- The removal of artificial siding is strongly encouraged.

Further instructions for property owners contemplating exterior changes to a property within either historic district can be accessed by consulting the Guide to Holden's Historic Districts (Holden Historic District Commission) or by contacting the Town of Holden Director of Office of Planning and Development to discuss proposed changes.

National Register Historic Districts

It is essential to know that there are two kinds of historic districts in Massachusetts, Local Historic Districts and National Register Districts. Although the same area may be designated as both a local historic district and a National Register District,

there are substantial differences between the designations. The National Register of Historic Places is a listing of buildings, structures, sites, objects, and districts significant in our nation's history, culture, architecture or archaeology and that are worthy of preservation. It is a Federal designation, administered by the Secretary of the Interior through the Massachusetts Historical Commission as the State Historic Preservation Office. Listing in the National Register provides formal recognition of the property's significance, potential tax incentives for owners of income-producing property, and limited protection from state or federally funded, licensed, or assisted projects. National Register listing in no way limits the owner's use of the property, and places absolutely no restrictions or conditions on changes made by a private property owner unless there is state or federal involvement in a project, or unless some other regional and/or local regulation is in effect. Nominations to the National Register are usually initiated by a property owner or by the local historical commission, and do not require any local government approval. A local historic district, on the other hand, is established locally through town meeting or city council vote. It provides a regulatory review process for all changes to exterior architectural features visible from a public way. (MHC, 2003)

The Town of Holden established two National Register Historic Districts and listed several individual properties on the National Register of Historic Places, in addition to the properties included in the two Local Historic Districts. In 1995, a 290-property National Register District was created along Highland, Main, Reservoir, Pleasant, and Walnut Streets, and Woodland, Phillips, and Lovell Roads. The two local historic districts, Holden Center and Boyden Road, lie within the boundary of this National Register District. In 2010, the Eagleville Historic District, which encompasses a historic mill village, was also listed on the National Register. The individual properties in Holden listed on the National Register include four farms: the Brown-Davis-Frost Farm (Whitney Street, 1995), Paddock Farm (Salisbury Street, 1996), Stony Farm (Salisbury Street, 1995), and the Willard-

Fisk Farm (Whitney Street, 1996). The two other properties are houses: the Hubbard-Dawson House (Main Street, 1995), and the Manning-Ball House (Manning Street, 1995).

Cultural Destinations

Holden Common

Originally laid out in 1750 as a linear common, as opposed to a typical square-shaped Town green, Holden or “Hancock” Common remains an integral part of the Town as the central location for community activities and leisure (Map 6-2). Over the years, the widening of Main Street through several highway improvement projects eroded the size of the Common; however, its original configuration of civic and religious buildings and lines of trees remain. Numerous activities and events are hosted on the Common throughout the year including the annual Holden Days celebration in August.

Gale Free Library and Jane Wilson Local History Room

Gifted to the Town in 1888 by Samuel C. and Susan Damon Gale as both a library and high school, the Library remains not only historically significant but also a popular community space for residents. Prior to the Library’s construction, Holden residents had to join the local library association for a fee and borrow books from a small collection housed at Town Hall. Located at 23 Highland Street, the Romanesque style building, was designed by Stephen C. Earle, architect of the Worcester Art Museum. It was constructed by local craftspeople using Holden granite from a quarry on Kendall Road and brown sandstone from Longmeadow, Massachusetts for the sills, lintels, and arches. In 1926 the High school moved into its own facility.

The Local History Room, organized by (former) library director Jane A. Wilson contains vital records and books documenting Holden’s history, including Holden’s historic resource inventory, as well as burial information for three of the Town’s four cemeteries. The Friends of Gale Free Library (FGFL) was founded in 1989 to support the Library through a variety of fundraising projects, including memberships, special activities, and book sales designed to supplement Town appropriations .



Gale Free Public Library (1888) on Highland Street (CMRPC, 2019)

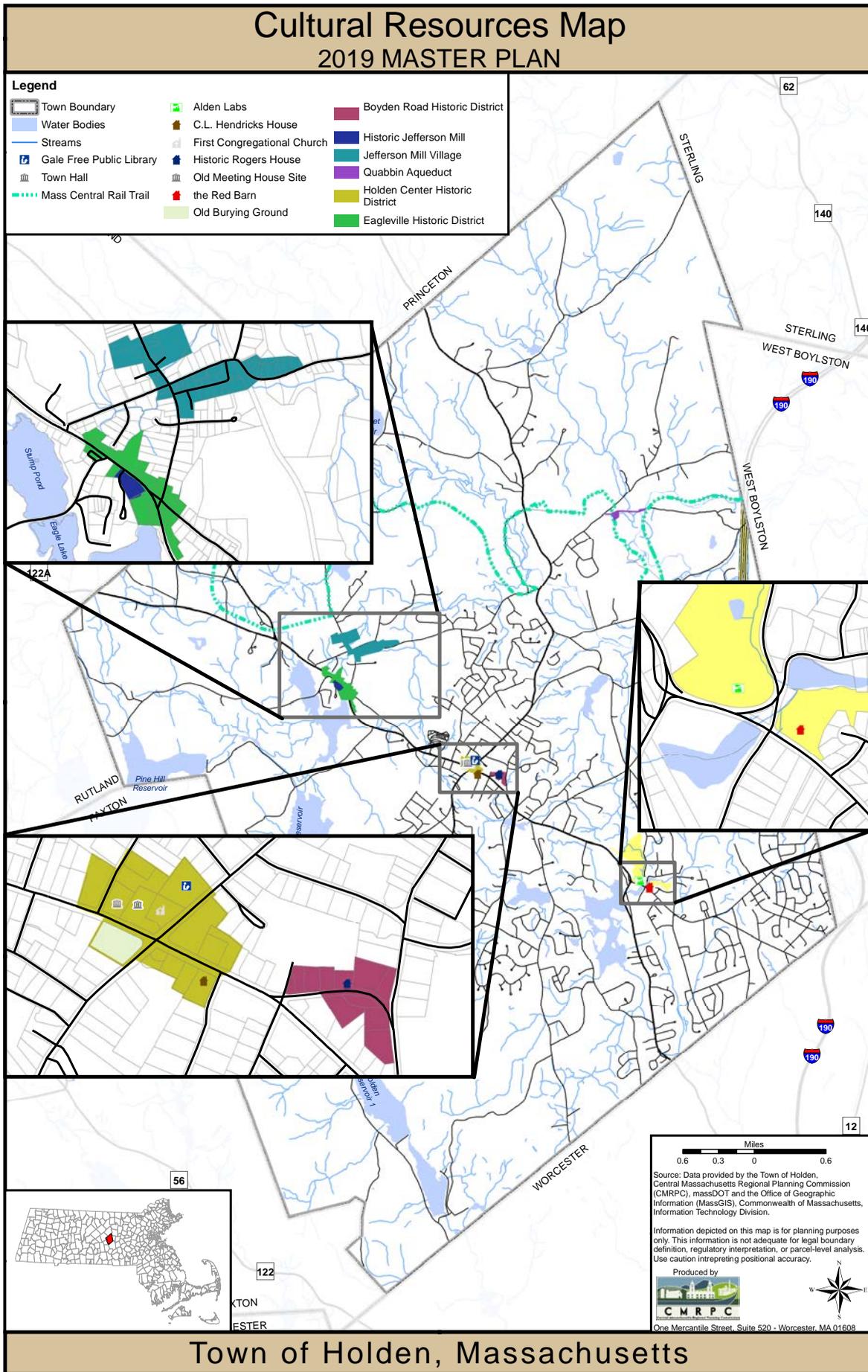
C.L. Hendrick House

The historic Hendricks House at 1157 Main Street currently serves as the headquarters for the Holden Historical Society. It is the primary repository of Holden-related artifacts and memorabilia. The house was originally built for Charles L. Hendricks and his family in 1884 and remained in the Hendricks family until the property was purchased by the Town in 1975. At the 1975 Annual Town Meeting in Holden, voters appropriated funds to purchase the property of Miss Jennie L. Hendricks for use as a historic site.

The house is located at the center of Town and just outside the boundaries of the Holden Center Historic District. The exterior of the house and barn remain fundamentally unaltered since their construction in 1884-1885. The Holden Historical Commission has been entrusted to manage the property and determine best practices for restoration. With guidance from the Commission, *C.L. Hendrick House (1884) on Main Street (CMRPC, 2019)*



Map 6 - 2: Cultural Resources



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members of the Holden Historical Society, other organizations, and individuals have helped restore the property, holding exhibits, and conducting tours. The Hendricks House is intended to be a visible and important reminder of Holden's past.

The Red Barn

The Fairbanks Barn, commonly known as the "Red Barn," is maintained by the Friends of the Red Barn, Inc., which sponsors activities and events promoting an understanding of New England's agricultural history. Located on Shrewsbury Street at the intersection of Wachusett Street, the barn was built in the mid-19th century for Winslow Fairbanks on Fairbanks Farm where he lived with his family. The farm remained in the family for two generations and was considered among the best and most productive farms in Holden.

The farm was acquired by Worcester Polytechnic Institute in the 1920s and the barn was used for storage by Alden Laboratories. Meanwhile, the nearby farmhouse served as housing for Worcester Polytechnic Institute (WPI) Civil Engineering students attending their summer programs until the building was demolished in approximately 1938. In 1994, WPI sold 14.6 acres of the farm to Cleland Blair, Sr., a developer in Rutland who subsequently

subdivided part of the land for houses. In 2000, Blair gave the barn and 7.7 acres to the Friends of the Red Barn, Inc. Today, the Red Barn and its grounds are host to fun and educational events sponsored by the Friends of the Red Barn, such as Farm Days, which are free and open to the public .

Springdale Mill Historic Site

This site is located on the Mass Central Rail Trail (MCRT) just west of the I-190 bridge in Holden. The historic mill site offers a self-guided tour with a brochure and markings along the trail to follow. This site was once a thriving woolen mill located at the end of Springdale Road and it includes the remains of a mill-workers' village. A Springdale Mill Celebration is held annually each September at the site after a short parade led by the Wachusett Greenways MCRT train engine. This family-friendly event features live music, crafts, activities, and food. Visitors to the historic mill site are asked to stay on the trail and off the stones, attend to younger children, park or walk bikes, and not to leave anything at the site or remove anything from the site.



Fairbanks Barn (the "Red Barn") (CMRPC, 2019)

ISSUES AND OPPORTUNITIES

Preservation and maintenance of Holden's historic properties and cultural destinations is an ongoing challenge for residents, but an imperative battle to fight. Particularly in terms of funding, many small communities struggle to allocate resources to protect local historic and cultural treasures. There are many tools that municipalities can take advantage of to provide supplemental assistance in ensuring historic and cultural resources are preserved for future generations. The Town of Holden has an active and engaged community that should consider various opportunities for the Town to address historical and cultural preservation issues.

The Master Plan Update process offered multiple opportunities for the Holden community to contribute input on how they value their Town's historic and cultural resources. Several themes emerged from outreach efforts:

The need to highlight the breadth of cultural resources available.

Continued protection of Town favorites such as Eagle Lake, Gale Free Library, the Mass Central Rail Trail, and the Red Barn.

Regular maintenance and improvements.



Springdale Mill Celebration Bicycle Race 2014, (Courtesy of Wachusett Greenways)

Community Planning Tools Community Preservation Act

Codified as Massachusetts General Law (MGL) Chapter 44B, the Community Preservation Act (CPA) is a valuable tool for communities invested in protecting their open space and historic sites, creating affordable housing, and developing outdoor recreational facilities. CPA funds are generated through two sources: a voter-approved surcharge of up to 3% on annual real estate taxes, and an annual disbursement from the statewide Community Preservation Trust Fund administered by the Department of Revenue, which distributes funds each November to communities that have adopted CPA. At least 10% of the annual revenues must be used for each of the three core areas: open space, historic resource, and affordable housing. The remaining 70% can be used for any combination of the previously described uses and for recreational uses. Municipalities must adopt CPA by ballot referendum. Upon adoption of the Act, the community creates a local Community Preservation Coalition (CPC) to make recommendations on CPA projects to the Town's legislative body (for Holden this would be Town Meeting).

The Town of Holden attempted to pass the Community Preservation Act (CPA) in 2004 but it was voted down at Town Meeting. CPA remains a strategic means of generating funding to protect important natural, cultural, and historic resources. It is recommended that the Town consider attempting to pass CPA again, as Towns that have adopted CPA find it to be a valuable funding source for many heritage landscape projects. The large number and variety of CPA projects across the state makes this tool worthy of re-consideration. As of 2018, seven communities in the CMRPC region have adopted Community Preservation Act, including Sturbridge, West Boylston, Northborough, Northbridge, Upton, Grafton, and Mendon. Hundreds of projects in the aforementioned Towns have been funded since 2001 using funds allocated from CPA. Examples of projects include the restoration of a roof on Old Town Hall in Grafton, refurbishing old tennis courts in Mendon, restoring and preserving permanent Town records that date back to 1733 in Sturbridge, and historic cemetery preservation in West

Boylston. A full list of completed projects utilizing CPA funds in Massachusetts can be viewed using the Community Preservation Projects Database on the Community Preservation Coalition website. (Community Preservation Coalition, 2019)

Demolition Delay Bylaw

Demolition delay ordinances or bylaws are tools for communities to protect historic buildings and structures. Enacted by a majority vote at Town Meeting, a demolition delay ordinance or bylaw provides a review procedure requiring a delay in the demolition of historically significant buildings. This process provides a time period in which Towns can consider alternatives to demolition of historic buildings and structures. During this process of establishing a demolition delay bylaw, the Local Historical Commission collaborates with the Massachusetts Historical Commission (MHC) to develop a bylaw that would appropriately fit the Town's needs. The Local Historical Commission should also work with other local groups to coordinate public education outreach and widely publicize the advantages of a demolition delay bylaw to the community. Typically, demolition delay bylaws apply to structures that were built over 50 years ago. The most common delay of demolition is six months, although many communities have discovered that a 1-year delay is more effective.

The Demolition Delay Bylaw is a tool that can help protect historic

structures within the Boyden Road Historic District, the Holden Center Historic District, and other historically significant buildings throughout the Town. In order to ensure adequate protection of the community's historic assets, the Town should explore the adoption of a Demolition Delay Bylaw that will extend time for the consideration of alternatives to demolition.

Historic Districts

National Register Districts and Local Historic Districts are both effective tools for helping with historic preservation in communities, but there are distinct differences between the two types of districts. A National Register District is a part of the National Register of Historic Places, which is a list of the individual buildings, sites, structures, objects, and districts deemed important in American history,

culture, architecture, or archaeology. A National Register District is a federal designation and provides national recognition that the area is significant to the history of the community, state, or nation. A property listed in the National Register of Historic Places does not limit the way the owner handles their property, as long as there is no state or federal involvement in a project and no pertinent local or regional regulations. National Register Districts in Holden as of 2019 include Holden Center Historic District and Eagleville Historic District. The Town is encouraged to identify additional potential National Register listings.

CPA Example Using Holden Tax Rate

A home is assessed at \$380,000.

After subtracting the first \$100,000 in residential property value (assuming the community has adopted this optional and very popular SPC exemption), the homeowner's net value to be surcharged equals \$280,000.

After applying the FY2019 tax rate of \$17.45 per \$1,000, the amount subject to the CPA surcharge would be about \$4,900.

With a 1.5% CPA surcharge applied, the CPA surcharge for this homeowner would be approximately \$73 per year. This \$73 would be transferred to the municipality's Community Preservation fund by the Town Accountant.

Local Historic Districts also recognize the historical importance of a property to a community; however, these districts are much more effective at preventing changes than National Register Districts. If a property owner wishes to make changes to exterior architectural features visible to public view, then a locally appointed Historic District Commission must review the proposed changes. A public hearing is held by the Historic District Commission in order to determine whether the changes are appropriate. To assist property owners in Local Historic Districts, many Historic District Commissions choose to prepare Historic District Design Guidelines. The two existing local

historic districts in Holden have a Historic District Commission and Design Guidelines (Holden Historic District Commission) to promote thoughtful consideration of exterior changes for property owners. The Town should explore other areas of the Town for potential creation of additional local historic districts to supplement the two existing districts.

There is currently no comprehensive funding plan for maintenance of historically significant properties within the Boyden Road Historic District and the Holden Center Historic District. In order to ensure adequate funds are allocated to help preserve these historic and cultural resources, it is recommended that a plan be created and implemented to address impending maintenance and repair issues. While maintenance is generally approached on an “as needed” basis, preventative planning that anticipates repair can result in thoughtful decision-making and substantial savings.



Starbard building historical plaque. (CMRPC, 2019)

GOALS, OBJECTIVES AND ACTION ITEMS

The Master Plan recommends the following action items based on the goals and objectives crafted with careful consideration of the public outreach results, analysis of current conditions, and progress achieved since 2008. The action items accompanying the objectives will also be reflected in the Implementation Chapter (Chapter 11).

CAPITAL ITEMS

Implement future maintenance funding plan for historically significant properties within the two historic districts

Goal 6.1: Preserve and maintain Town-owned and privately-owned historic assets.

Objective 6.1.1: Evaluate, prioritize, and fund maintenance and preservation of historic structures using timely and proactive measures.

- **Action Item 6.1.1.1:** Develop and implement a plan outlining routine maintenance activities and funding sources for Town-owned historic properties.
- **Action Item 6.1.1.2:** Seek public and private funding to enhance maintenance and preservation of historic resources.
- **Action Item 6.1.1.3:** Implement annual Town budget item to address maintenance of Town buildings within the Holden Center Historic District.
- **Action Item 6.1.1.4:** Budget annual maintenance funding for the center of Holden to keep it historically appropriate and economically viable.
- **Action Item 6.1.1.5:** Expand green spaces in the Town Common area.

Objective 6.1.2: Utilize zoning, regulatory, and legislative resources to enhance preservation efforts.

- **Action Item 6.1.2.1:** Prepare zoning bylaw amendments and design guidelines to ensure zoning districts protect historic structures in terms of uses, scale, placement, and design.
- **Action Item 6.1.2.2:** Educate Town leaders on the significance of historic preservation and ways to address preservation issues.

Objective 6.1.3: Encourage greater collaboration between local preservation groups.

- **Action Item 6.1.3.1:** Develop formal communication channels with and between local preservation groups to ensure awareness of current issues and activities in Holden, including routine distribution of meeting agendas and minutes, scheduling of occasional group meetings to share resources and ideas, and development of joint activities.
- **Action Item 6.1.3.2:** Work with regional, state, and national preservation groups such as Preservation Massachusetts, Inc. and the National Trust for Historic Preservation to seek out technical and financial assistance on preservation issues.
- **Action Item 6.1.3.3:** Pursue partnerships with local college and university programs that could provide preservation assistance to the Town.

Goal 6.2: Preserve the community's rich heritage using protective regulatory tools in key areas of Town.

Objective 6.2.1: Ensure protection of historically significant structures located outside of the protective boundaries of the Town's historic districts.

- **Action Item 6.2.1.1:** Explore adoption of a Demolition Delay Ordinance or Bylaw to protect architecturally and historically significant buildings from demolition.

- **Action Item 6.2.1.2:** Explore the adoption of Community Preservation Act (CPA) as a sustainable funding source.

Objective 6.2.2: Capitalize on Holden’s existing local historic districts and investigate the creation of new historic districts.

- **Action Item 6.2.2.1:** Initiate a public process to establish Local Historic Districts at Jefferson, Quinapoxet, and Chaffinville to supplement the Town’s two existing historic districts.
- **Action Item 6.2.2.2:** Build awareness of Local Historic District (LHD) benefits.
- **Action Item 6.2.2.3:** Encourage property owners in the two historic districts to consult with the Holden Historic District Commission prior to making facade changes.

Objective 6.2.3: Preserve the scenic, historic, and aesthetic characteristics of the Town’s public right-of-way.

- **Action Item 6.2.3.1:** Explore the adoption of a Scenic Roads Bylaw that will help the Town maintain and enhance its small-Town character.

Goal 6.3: Ensure there are adequate cultural opportunities for Holden residents of all ages and abilities.

Objective 6.3.1: Review and expand cultural opportunities for youth.

- **Action Item 6.3.1.1:** Establish a Town committee with youth representation to review cultural opportunities such as arts education, special events and programs, public art, or talks on local history.

Objective 6.3.2: Ensure cultural landscapes in Holden are thoroughly protected.

- **Action Item 6.3.2.1:** Explore bylaws to preserve cultural landscapes such as the Red Barn, Alden

Laboratories, and historic farms (e.g., Scenic Vista Protection Bylaw, Scenic Overlay District Zoning, Corridor Protection Overlay District Zoning, Shade Tree Act Bylaw).

Objective 6.3.3: Expand community outreach initiatives related to the Town’s cultural and historic resources.

- **Action Item 6.3.3.1:** Partner with the school department to involve Holden Public Schools in education programs on historic preservation.
- **Action Item 6.3.3.2:** Consider developing heritage education initiatives, such as guided community tours, history days, and historic house tours to attract visitors and build appreciation for local history and culture.
- **Action Item 6.3.3.3:** Continue to promote local history and culture at special Town events.

Objective 6.3.4: Provide efficient public access to historic resources information.

- **Action Item 6.3.4.1:** Provide a link on the Town of Holden website to the Town’s existing historic resource inventory.
- **Action Item 6.3.4.2:** Make information on Holden’s cultural and historic character, districts, cemeteries, and other heritage assets widely available to residents and visitors in formats that are attractive and easy to understand.
- **Action Item 6.3.4.3:** Identify and prioritize additional historic sites to be included in the National Registry of Historic Places.
- **Action Item 6.3.4.4:** Develop a comprehensive database of historic resources that includes local historic districts, National Register properties, and other inventoried properties, and integrate the database with Holden’s Geographic Information System (GIS) to be made accessible for other public uses.
- **Action Item 6.3.4.5:** Develop branded wayfinding and signage to promote the Town’s historic and cultural assets.



7.0 OPEN SPACE & RECREATION

INTRODUCTION

Holden's beloved character is made possible by the expansive open space and recreation opportunities carefully maintained by the Town. Without due planning, the pressure for Holden to grow can undermine the very recreational opportunities, resources, and experiences that the community values. Holden features miles of hiking and biking trails that run through the Town forests and around agricultural fields, waterbodies for fishing, swimming, and boating, and an impressive selection of recreation facilities and classes. This Master Plan chapter aims to provide a guide for future actions to ensure the continued preservation of open space and the enhancement of recreational opportunities in Holden. The planning process identified key trends impacting the availability of open space and recreation opportunities in Holden:

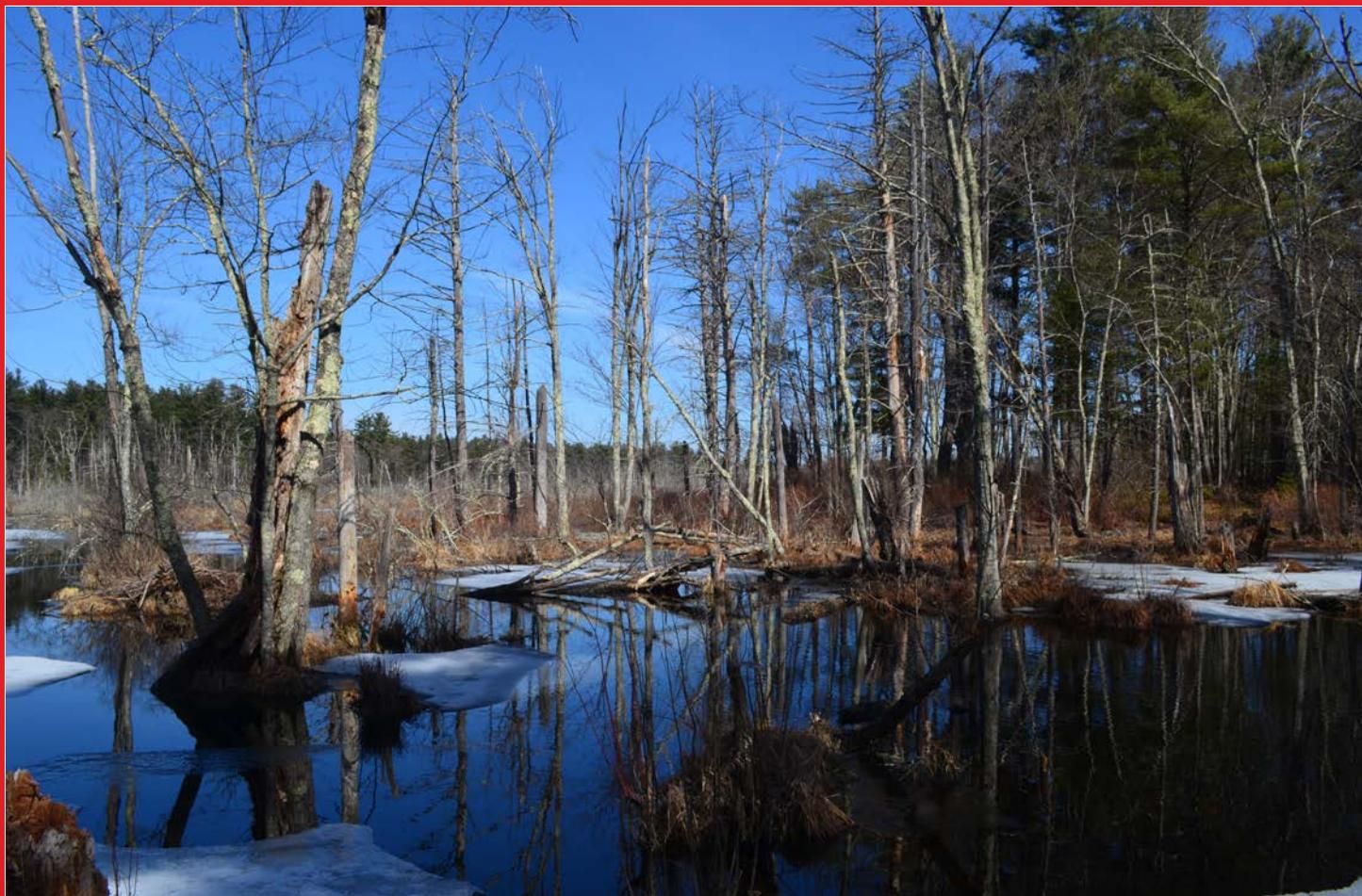
- Population expansion calls for additional recreational opportunities.
- Population expansion places pressure on the

preservation of open space resources.

- Environmental and policy conditions are calling for more resilient municipalities which is dependent on the maintenance of open space habitat networks.

Consequently, the chapter incorporates and builds off of the natural resources inventory included in the Town's Open Space and Recreation Plan (OSRP) completed in 2012, and identifies, updates, and incorporates other relevant information to the Town's open space and recreation resources. It is noted that the Town is currently in the initial phases of preparing to update its OSRP¹. As Holden continues to work towards maintaining an up-to-date Open Space and Recreation Plan, funding opportunities to meet designated goals included in this and other plans will become more accessible and feasible. Once this process is complete the Town will be well equipped to think strategically and plan for its future.

¹ Open Space and Recreation Plans are approved by the Massachusetts Division of Conservation Services (DCS) for a period of seven years.



Poutwater Wildlife Management Area (CMRPC, 2019)

Open space is undeveloped land that is either publicly or privately owned. It encompasses areas that are often in a predominantly natural state or those lands in states that have been altered in order to maximize resource-based uses such as farms, orchards, silviculture, hiking trails, and other similar uses. Examples of publicly-owned open space would be Department of Conservation and Recreation (DCR) land, the Mass Central Rail Trail, Water District land, and some state and municipally-owned undeveloped land. Examples of privately-owned open space include farms, forest lands, and passive recreation areas. Open space lands do contribute to recreation opportunities. However, these recreation activities are categorized largely as being passive activities, such as hiking, which have little to no development impacts on the landscape.

Recreational open space is land used for active recreational purposes. Recreation facilities provide opportunities for a range of athletic and

family-oriented activities, increasing engagement and social cohesion throughout the community. Land used for active recreation does not qualify technically as open space because these parcels are often developed and consequently are covered in part with paved surfaces in order to provide facilities such as tennis courts, basketball courts, and parking areas. In addition, athletic fields require active management regimes which tend to include significant fertilizer applications and tend to be installed with fencing and outbuildings, furthering their development impact on the landscape. Since this plan deals with both open space and recreation, it presents an approach to obtain the benefits of developing new and maintaining existing recreational facilities, without losing scarce valued environmental assets.

In order to promote and encourage adequate access and amount of open space and recreation facilities in Holden, the Holden Master Plan Committee has developed the following goals to be included in this Open Space and Recreation chapter. A more

complete description of these goals and their associated actionable objectives can be found at the end of this chapter.

- Preserve important land resources, scenic views, and agricultural resources.
- Protect lands for active and passive recreation.
- Establish a wider, more connected open space network.
- Efficiently manage and maintain open space and recreation areas.
- Conserve Holden's surface and groundwater for wildlife, recreation, and other uses.
- Educate community members about conservation tools.
- Improve public awareness of Holden's open space and recreation resources.

PRIOR PLANNING AND ENGAGEMENT EFFORTS

Master Plan (2008)

In the 2008 plan, the Open Space and Recreation Chapter laid out a series of goals and objectives related to needs as identified by Town officials and residents. Four major goals related to open space and recreation were derived from this planning process. While some of objectives associated with these goals have been addressed over the last decade, others remain incomplete. The Town included the following recommendations for open space and recreation in the 2008 Plan. The goals are presented as first priority, second priority, and third priority. To date seven of the goals have been completed. Appendix A contains a benchmark review of the goals from the 2008 Holden Master Plan. (Community Preservation Associates, et.al., 2008)

Completed Goals:

- Inventory unprotected open space.
- Encourage additional use of tax incentives for private open space.
- Pursue adoption of conservation related bylaws and policies.
- Develop an indoor recreation facility for winter use.
- Designate funds in an Infrastructure Investment Fund (IIF) sub-account for the preservation of open space.
- Develop an outreach plan for owners of unprotected land.
- Protect important habitat areas.
- Pursue creation of an Open Space Fund.

Incomplete or In Progress Goals

- Create an Open Space and Recreation Plan and submit to the State for approval.
- Protect land in open space opportunity areas to help preserve Town's character.
- Expand trail systems with a vision of creating an interconnected Town-wide system.
- Create skate park/ice skating rink.
- Increase utilization of Eagle Lake.
- Seek permanent protection of Chaffins Recreation Association (CRA) Field.
- Seek permanent protection of the Fox and Coon Club property.
- Increase awareness and use of protected Open Space by public.
- Pursue creation of new trails and linkage between existing protected Open Space Lands.

Holden Hazard Mitigation Plan (2017)

New England weather is renowned for its mercurial and dramatic nature. Late summer hurricanes, major winter blizzards, and summer droughts are all part of climactic atmosphere in Central Massachusetts. These occur frequently enough to be familiar scenes to residents of Holden. The intersection of these natural hazards with the built environment can transition these routine events

into classified natural disasters. Since many towns historically developed along waterways as a corridor for transportation and power, they have evolved into riverine floodplains. The historical development pattern of Central Massachusetts makes the likelihood of devastating impacts from a natural disaster more likely. This plan identifies the natural hazards facing the Town of Holden, assesses the vulnerabilities of the area's critical facilities, infrastructure, residents, and businesses, and presents recommendations on how to mitigate the negative effects of typical natural hazards.

The 2017 Hazard Mitigation Plan recommends that future open space and recreation planning incorporates hazard mitigation activities and recommendations.

Holden Municipal Vulnerability Preparedness Plan (2018)

In 2017, the Town of Holden was awarded a \$16,000 Municipal Vulnerability Preparedness (MVP) program grant. Through the MVP program, Holden began the process to plan proactively for resiliency and implement key climate change adaptation actions. This planning process is critical to protect vulnerable infrastructure and critical environmental areas in Town, such as open space. This process involved the development of an MVP Core Team, which met on March 20, 2018 to determine initial concerns and worked to identify stakeholders within the municipality and set goals for the process. Those stakeholders were then invited to participate in a Community Resilience Building (CRB) workshop on May 7, 2018. The CRB methodology is an "anywhere at any scale" format that draws on stakeholders' wealth of information and experience to foster dialogue about the strengths and vulnerabilities within the Town. Workshop participants interacted at both large and small group levels, using an iterative process to gather input, synthesize ideas across groups, and ultimately develop a set of priority resilience and adaptation actions.

During the Community Resilience Building workshop, participants were asked to identify the top four natural hazards of concern for the Town

of Holden. Discussion of the top hazards built on earlier conversations that took place at the MVP Core Team Meeting, as well as Town conversations that have formed the basis for the Town's Hazard Mitigation Planning. Summer precipitation events were identified as one of the Town's top hazards. Winter storms and Nor'easters with associated wind and ice were identified as a second hazard. Impacts of extended drought, such as those seen during summer 2016 were identified as a third hazard. Finally, heat effects, particularly the increase in extremely hot days (over 90 degrees Fahrenheit) predicted over the next several decades, were seen as a fourth major hazard. Open space in Town was identified as a major environmental concern and challenge related to climate resilience. (Fuss & O'Neill, 2018)

Town of Holden Open Space and Recreation Plan (OSRP) (In Progress)

The Open Space and Recreation Plan (OSRP) provides an overview and analysis of the Town's significant natural and scenic resources, inventory of conservation and recreation lands, and concrete steps to improve open space and recreation opportunities. The Plan was initiated in 2009



and was conditionally approved by the Office of Energy and Environmental Affairs (EEA) in 2012 and has since expired. (CMRPC, 2009) The Town of Holden intends to update its OSRP in the coming year. Recommended objectives include water resource and land protection, preservation of the Town's rural character, increased outreach and education, and developing connections between existing networks and already protected land. The 2012 OSRP identified four goals for the protection and promotion of open space and recreational resources, including:

- Preserve aesthetic and natural resources in Holden, including wildlife, wetlands, scenic vistas, unique natural areas, and historical resources.
- Provide attractive recreation resources and facilities in Holden.
- Promote passive recreation and open space resources.
- Develop and implement funding sources.

EXISTING CONDITIONS

Open space areas and recreation facilities provide numerous social and ecological benefits. They contribute to quality of life and community character, provide a center for community activities, protect and enhance nearby property values, attract businesses, and can otherwise minimize excessive Town spending. Well maintained and managed open space can significantly improve quality of life by protecting water supplies, providing natural means of stormwater infiltration, reducing localized flooding, improving air quality, and through many other means.

Protecting open space is an ongoing process requiring management plans, active pursuit of additional properties to conserve, and ensuring adequate resources are established to maintain and purchase these areas. When possible, this process should be done at a landscape level, thereby allowing decision making processes to encapsulate regional

needs and maximize benefits of increased wildlife corridors and expanded connectivity. Working to conserve lands with these thoughts in mind will increase biodiversity and increase habitat patch size. Preserving and protecting large contiguous patches can be expected to result in greater core habitat area, thereby increasing the ecological integrity.

Holden contains an abundance of open space resources. Map 7 - 1 depicts Holden's open space inventory. Currently, there are over 10,321 acres of permanently protected open space and recreation lands in Town (Table 7 - 1).

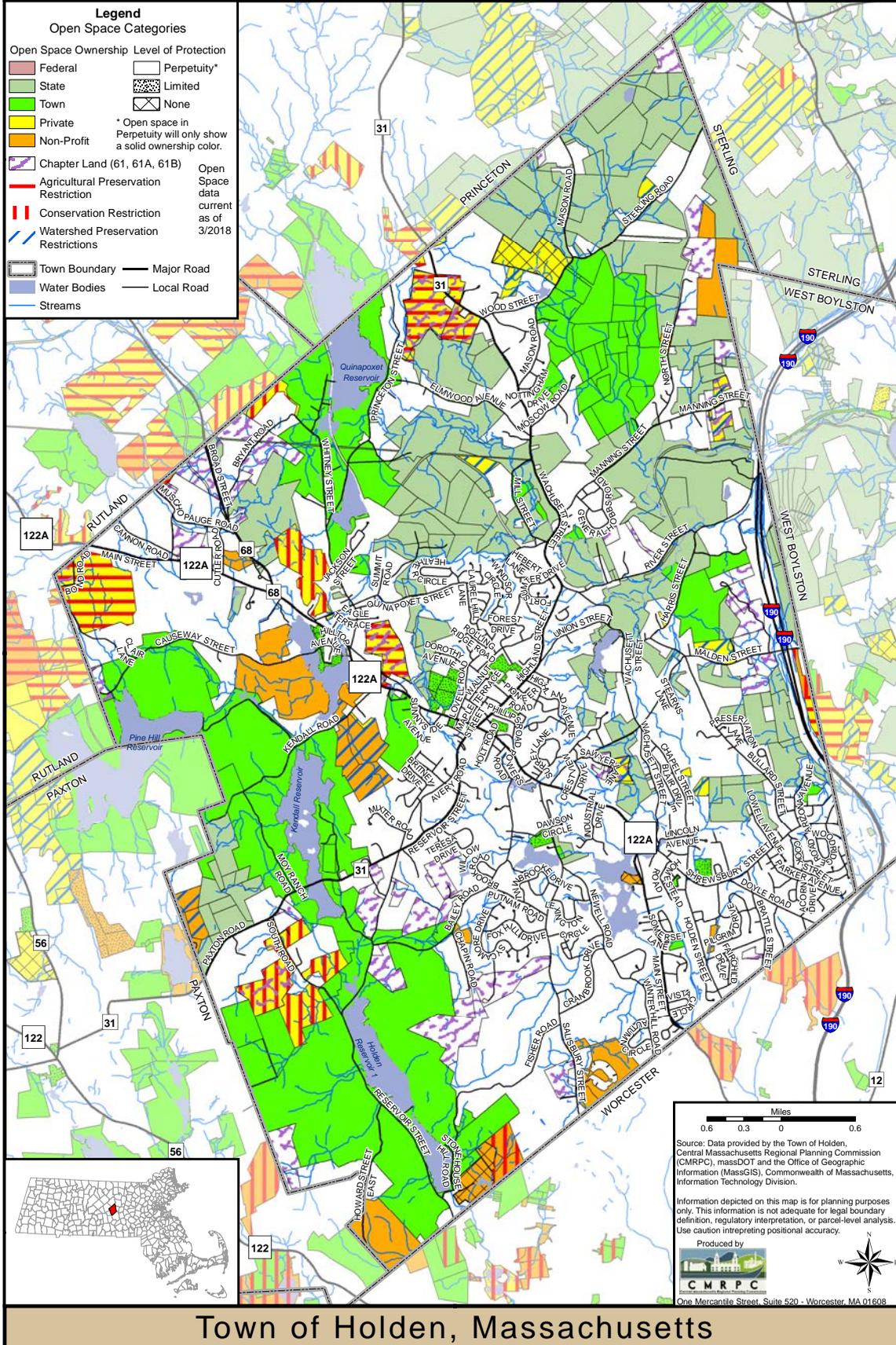
Table 7 - 1: Acres of open space in Holden, grouped by type of protection. (MassGIS and Holden assessing, 2018)

Protection Type	GIS Acres	Percent of GIS Acres
Perpetuity	10,458.69	97.49%
None	156.57	1.46%
Limited	110.36	1.03%
Unknown	2.78	0.03%
Grand Total	10,728.40	100.00%

Over 110 acres of open space have limited protection, and slightly more than 150 acres make up the open space that is not protected. The majority of open space in Holden is protected in perpetuity. Lands legally protected in perpetuity are designated as such in a deed or other official documentation. Table 7 - 2 indicates level of access and level of protection for all open space in Holden.

Of the 10,728 acres of open space in Holden, the majority (41.15%) is municipally owned (Table 7 - 3). Lands that are owned by a municipality are held by Holden and the City of Worcester. Land held by the City of Worcester accounts for 9.74% of municipally owned open space in Holden. The State of Massachusetts owns the second largest amount of open space (39.99%). Private landowners own slightly less than 10% of all open space. Meanwhile, land trusts and nonprofits make up 8.53% and 0.66% respectively.

Open Space Map 2019 MASTER PLAN



Date: 6/12/2019 Document Path: H:\Projects\O_Holden_GIS\Subprojects\m134_master_plan\m134_MP_05_OpenSpace_1x17.mxd

Table 7 - 2: Acres of open space, grouped by amount of access and protection. (MassGIS and Holden assessing, 2018)

Level of Protection	GIS Acres
Limited	
Full Public Access	92.39
Limited Public Access	17.98
None	
Limited Public Access	156.57
Perpetuity	
Limited Public Access	4,692.16
Full Public Access	4,446.17
No Public Access	1,227.96
Unknown	92.41
Unknown	
Full Public Access	2.78
Grand Total	10,728.40

Table 7 - 3: acres of open space in Holden, grouped by ownership. (MassGIS and Holden assessing, 2018)

Owner Type	GIS Acres	GIS Acres (% of Total)
Municipal	4,415.02	41.15%
State	4,290.53	39.99%
Private	1,037.51	9.67%
Land Trust	914.78	8.53%
Private Non-Profit	70.57	0.66%
Grand Total	10,728.40	100.00%

Open Space Destinations

In addition to protected and semi-protected rural lands, Holden is home to a number of open space and recreation destinations. These sites are noted for their active and passive recreation opportunities, natural beauty, as well as their contributions to preserving natural resources in the Town.

Mass Central Rail Trail

The Mass Central Rail Trail (MCRT) is maintained by Wachusett Greenways. This trail was constructed on the former rail road bed in large part by volunteers. The trail is used for hiking/walking, biking, cross country skiing, and snow shoeing, handicap accessible. Wachusett Greenways also hosts Historical Mill tours. In 2006 the Holden

Department of Public Works (DPW) spent many man and equipment hours on the Rail Trail between River Street Holden and West Boylston at the Wachusett Reservoir. The 104-mile Massachusetts Central Rail Road between Boston and Northampton was destroyed by a hurricane in 1938 and was never rebuilt. The MCRT is envisioned as a non-motorized recreational rail that will follow the entire length of this right-of-way, which encompasses 25 communities and divides the state.

Approximately 47 miles of the MCRT are now open, with more trails scheduled to open. Long trails such as the MCRT provide many aspects that can lead to increased quality of life, such as recreation opportunities and alternative transportation corridors. Currently, 13 of the trail's existing 47 miles of trail are located in Sterling, West Boylston, Holden, and Rutland. A trail section that starts in the Oakdale part of West Boylston and continues along the Quinapoxet River for 3.4 miles and ends in Holden was completed in 2003. Wachusett Greenways is planning to make this 3.4-mile section part of a trail network in central Massachusetts that stretches over 30 miles from Sterling, through West Boylston, Holden, Rutland, west to Coldbrook Springs in Oakham, and eventually through South Barre to Hardwick. A separate trail in Holden, also spearheaded by Wachusett Greenways, connects Trout Brook Park conservation land with Sterling Road. It is approximately 3.5 miles in length and was completed prior to 2003.





Porcupine Hill sign (GMRPC, 2019)

Porcupine Hill and Potter Hill Sanctuary

The Potter Sanctuary and Porcupine Hill properties are located off Paxton Road in Holden. Parking is provided in two locations, each of which is marked by a blue White Oak sign, on the right side of the road when heading toward Paxton from Holden. These parcels were formerly the Nature Training School owned by the EcoTarium (formerly the Worcester Science Center). This land totals 86 acres and provides nice walking trails, which range from flat to gently sloping.

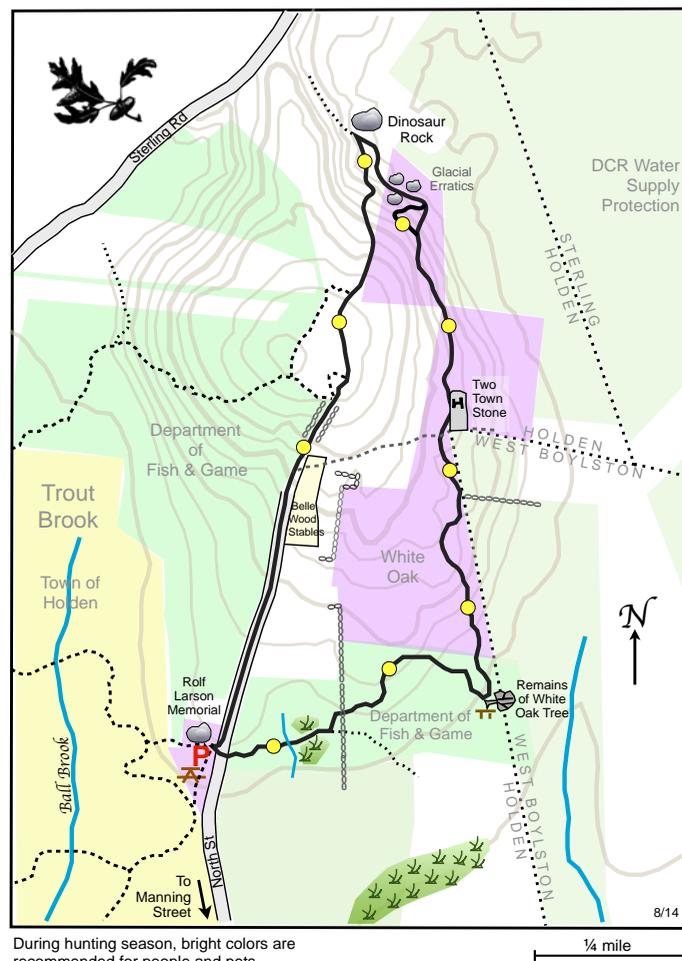
Oak Hills

Oak Hills is located off Salisbury Street just northerly of Jordan Road. Parking is located in a small parking lot off Salisbury Street, marked by a blue White Oak sign on the 10-acre White Oak Waterman property. The Oak Hill land consists of a number of smaller parcels and a large parcel obtained by White Oak when the Oak Hills open space subdivision was created. This open space totals approximately 90 acres with several trails over variable terrain, including a nice loop trail circling the property.

North Street

The North Street property consists of two parcels containing approximately 95 acres of forested land. This land formerly contained a large white oak

White Oak Trail North Street, Holden



White Oak Trail Map (White Oak Trust, retrieved 2019)

tree, for which the organization was named, along the trail. The White Oak Trail begins on the right (east) side of North Street across the street from a small parking lot with a map kiosk and crosses a number of protected open space properties, finally terminating at the end of North Street.

Holbrook Forest

The Holbrook Forest parcel is located off Fisher Road in Holden containing a small parking lot and map kiosk marked by a blue White Oak sign. This property contains a flat trail which connects to substantial additional open space including Kinney Woods and the recently acquired Holbrook land located off Salisbury Street. There is available parking for five vehicles located on site, and there is signage for Holbrook Forest on Salisbury Street.

Asnebumskit Ridge Trail sign (CMRPC, 2019)



Holden Town Forest

The Holden Town Forest, located on Harris Street, is managed by the Holden Conservation Commission and covers 153 acres. The Town Forest was deeded by a former resident as a wooded lot. It has attractive hiking trails which continue onto adjacent DCR land. The gradients are likely too steep for those with disabilities. There is limited off-street parking available.

Asnebumskit Trail

The Asnebumskit Trail and parking lot are located off South Road in Holden, and marked by a blue White Oak sign. The trail exists within an easement which was granted through the Durham conservation restriction. This trail is quite steep, but provides a connection to additional open space in the City of Worcester and the Town of Paxton.

Recreation Areas, Facilities, and Programming

The Holden Recreation Department provides exceptional and creative programs, services and facilities (such as Town Pool, ball fields and playgrounds) that foster community spirit and involvement while enhancing the quality of life for people of all ages in Holden. Recreation Department staff host a number of programs throughout the year. In order to register for programming, residents must purchase recreation passes. Passes are made available to non-residents as well.

Before and After School Programs

Before and after school programs are offered by the Recreation Department at the Davis Hill Elementary School, the Dawson Elementary School, and The Mayo Elementary School. The programs provide activities for children from 7:30 to 9:00 AM and again in the afternoon from school dismissal until 6:00 PM.

Example Classes and Activities

The Holden Recreation Department offers a variety of class and activities to the public. To illustrate the variety of age groups and activities targeted, select examples of these opportunities are presented below.

Babysitter Training: Babysitter's Training Class, called BLAST - Babysitter Lessons and Safety Training - for boys and girls ages 11 - 14. This is an American Academy of Pediatrics course that covers how to handle the basics of infant and childcare, how to react responsibly to medical emergencies and injuries, perform first aid for common childhood injuries and illnesses, and set up and run your own babysitting business.

Kids Cake Decorating: This is a unique and fun event where children will learn basic cake decorating skills that can be used well after the event is over. Children aged 10 to 15 years old will be provided with a six-inch vanilla cake to decorate and a box to take it home. Instruction will be provided by a Certified Wilton Method Instructor from Let's Cake Decorate. Cake, frosting and use of decorating tools are included in the price. No prior experience is necessary.

Kids Night In: This program for children in grades 2 to 6 will incorporate two activities that are needed for a fun and relaxing "Night In". This is a great way for children to take time to relax and recharge. The first hour will include making a craft of relaxing eye masks and having a small snack. The second hour will be playful yoga designed to help children build strength,

flexibility, concentration, focus, compassion, and self-esteem through Yoga postures. Kids will have fun as they improve their posture, coordination and balance.

Example Fitness Classes and descriptions

In addition to the educational and life-skill classes described, the Recreation Department offers a wide array of fitness classes as well. (Holden Recreation Department, 2019) These include a range of yoga, various cardio and strength workouts, and other organized workout activities.

Cardio Kickboxing and Kettlebell: The instructor will incorporate the benefits of kickboxing and the use of kettlebells in one class. Participants should feel empowered and get moving with non-contact, cardio kickboxing moves. Kettlebells will be used in between choreographed kickboxing moves to work major muscles, melt away fat, tone core and increase strength.

Cardio, Core, and Yoga (CCYO): This combination class will keep participants motivated because each week the program is a new challenge. It will include a cardio portion; a core toning workout; and the remainder of the class will be yoga. Resistance bands, weights, small balls, chairs and noodles are incorporated to keep these classes fresh and fun. The instructor will also discuss facts about what burns fat calories. All fitness levels are welcome. Participants of all levels of fitness abilities will benefit from CCYO.

Kid's Yoga – Let's Play: These classes are fun and full of imagination, cultivating compassion and kindness. The classes will increase creativity and confidence, the ability to stay in the present moment with full awareness, increase focus, learn how to stay grounded and centered, tapping into peace, strength, inner power and flexibility. We will explore movement and stillness to cultivate mindfulness, balance and calm. We will use breathing visualization to soothe

and restore the connection between body, mind and spirit.

Summer Camps

Sport skills camps include tennis, swimming, basketball, and general sports and games. Other offerings include poolside crafts and drama. The Recreation Department offers half-day and full-day summer programming for youth as well, which include a variety of the activities listed throughout the course of the day. (Holden Recreation Department, 2019)

Organized Sports:

Organized sports (such as basketball, soccer, volleyball, and golf lessons) are coordinated by the Recreation Department and hosted at local schools.

Recreation Facilities

Table 7 - 4 details recreation facilities and locations in Holden. This table is beneficial in illustrating the distribution of different recreation facilities throughout Town. As shown, there are several areas throughout Town that provide access to a variety of active recreation facilities and associated equipment. These include a variety of playgrounds, ball fields, and swimming locations. Different amenities at Dawson Recreation Area include an outdoor pool and tennis courts.

The National Recreation and Park Association (NRPA) recognizes the importance of establishing and using park and recreation standards as:

- A national expression of minimum acceptable facilities for the citizens of urban and rural communities.
- A guideline to determine land requirements for various kinds of park and recreation areas and facilities.
- A basis for relating recreational needs to spatial analysis within a community-wide system of parks and open space areas.
- One of the major structuring elements that can be used to guide and assist regional development.

- A means to justify the need for parks and open space within the overall land-use pattern of a region or community.

The purpose of these guidelines is to present park and recreation space standards that are applicable nationwide for planning, acquisition, and development of park, recreation, and open space lands, primarily at the community level. (National Recreation and Park Association, 2019) These standards should be viewed as a guide. They address minimum, not maximum, goals to be achieved. The standards are interpreted according to the particular situation to which they are applied and specific local

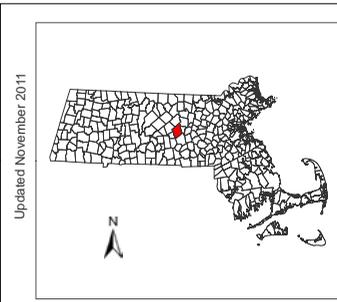
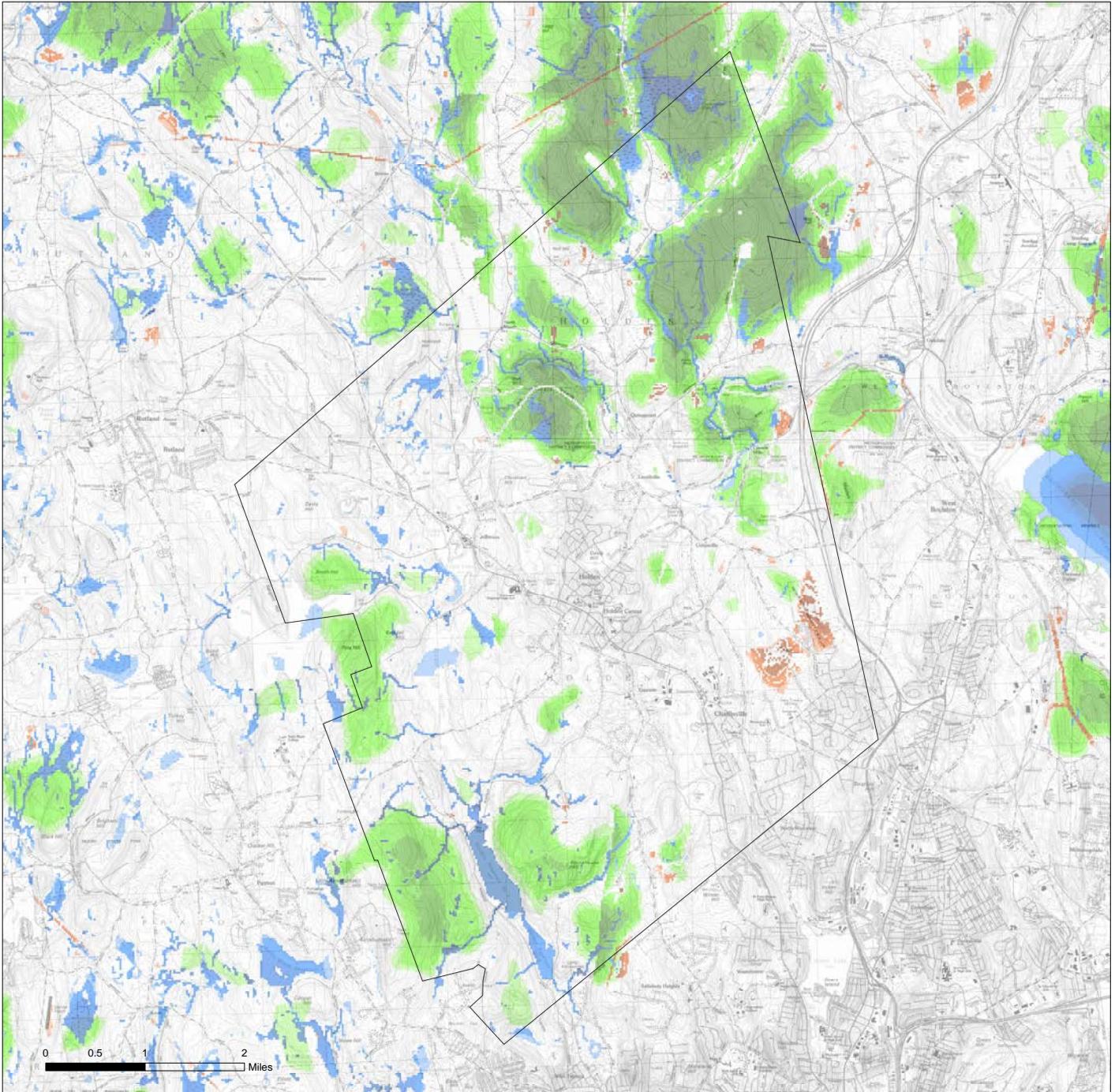
needs. A variety of standards have been developed by professional and trade associations which are used throughout the country. The standard derived from early studies of park acreages located within metropolitan areas was the expression of acres of park land per unit of population. Over time, the figure of 10 acres per 1,000 population came to be the commonly accepted standard used by a majority of communities. Other standards adopted include the “percent of area” approach, needs determined by user characteristics and participation projections, and area use based on the carrying capacity of the land. The fact that some of the standards have changed substantially is not an indication of their obsolescence. Changes are a measure

Table 7 - 4: Recreation facilities and locations in Holden

Site Name	Owner	Location	Facilities
Trout Brook Conservation Area	Holden	Manning St.	Soccer field, trails, picnic area, pavilion, lodge, restrooms
Mason Park	Holden	Off Mason Street	Trails
Town Forest	Holden	Harris St.	Trails
Jefferson Park	Holden	Princeton Street	Benches
Kimball Park	Holden	Wyoming Drive	Trails
Winthrop Oaks	Holden	S. Main & Colonial Dr.	Playground
Mayberry Park	Holden	Bullard & Shrewsbury	Benches
Eagle Lake Town Beach	Holden	Causeway Street	Picnic area, swimming beach, changing rooms, beach volleyball court, playground, basketball court, nature trail
Dawson Recreation Area	Holden	Salisbury Street	Two outdoor pools, changing rooms, soccer field, baseball field, playground, paddleball court, 2 basketball courts, 4 tennis courts
Municipal Light Department	Holden	Holden Street	Soccer field, playground, basketball court
Chaffin Men’s Club Fields	Non-profit	Main Street	2 baseball fields
Eagle Lake Sanctuary	Non-profit	Causeway St.	Trails
Davis Hill School	Holden	Jameson Rd.	Baseball field, softball field, 3 soccer fields, 2 playgrounds
Dawson School	Holden	Salisbury Street	Playground, 2 baseball fields
Senior Center	Holden	Main Street	Baseball field
Jefferson School	Holden	Main Street	Softball field, playground
Mayo School	Holden	Bullard Street	Baseball field, 2 playground, soccer field
Mountain View School	Holden	Shrewsbury Street	Baseball field, softball field, soccer field, 2 tennis courts, 1 basketball court
Wachusett Regional HS	Reg. Dist.	Main Street	Track, football field, baseball field, softball field, 4 tennis courts

Map 7 - 2: CAPS Index of Ecological Integrity (IEI)

CAPS Index of Ecological Integrity (IEI) Town of HOLDEN, MA



**IEI, Index of Ecological Integrity
Top 50% of the Landscape**



**UMass
Extension**
CENTER FOR AGRICULTURE

The IEI, or Index of Ecological Integrity, delineates the relative wildlife habitat and biodiversity value of any point on the landscape based on landscape ecology principles and expert opinion. The IEI is calculated by the Conservation Assessment and Prioritization System (CAPS) computer program developed at the University of Massachusetts, Amherst. Depicted on this map are those areas representing 50% of the landscape with the highest IEI values; the darker the color the higher the integrity value. For more information see: <http://www.masscaps.org>.

Coastal beaches and rocky intertidal shores are included as Coastal Wetland and Aquatic.

These maps were funded by grants from The Nature Conservancy and the Federal Highway Administration via a grant administered by the Massachusetts Department of Transportation, the Massachusetts Department of Environmental Protection and the U.S. Environmental Protection Agency under section 104 (b) (3) of the U.S. Clean Water Act. Data sources include the Office of Geographic and Environmental Information (MassGIS).

Prepared in cooperation with the Massachusetts Department of Transportation Office of Transportation Planning, and the United States Department of Transportation, Federal Highway Administration. The contents of this report reflect the views of the author(s), who is (are) responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of the Massachusetts Department of Transportation or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

of the growing awareness and understanding of both participant and resource (land, water, etc.) limitations.

Inventory of Open Space

Regional Open Space

The amount of open space lands as designated by the available MassGIS data later shows a number of contiguous open space lands in Towns adjacent to Holden. In particular, there are wide spans of open space that cross over into Sterling, Princeton, Rutland, and Paxton. These areas of open space create the potential for linkages of protected lands that can be used for recreational and wildlife habitat protection depending on ownership and permitted uses.

In November 2011, the Landscape Ecology Program at the University of Massachusetts Amherst (UMass) completed its first comprehensive, statewide assessment of ecological integrity using the Conservation Assessment and Prioritization System (CAPS). (University of Massachusetts Amherst, 2019) (McGarigal, 2011) CAPS is an ecosystem-based (coarse-filter) approach for assessing the ecological integrity of lands and waters and subsequently identifying and prioritizing land for habitat and biodiversity conservation. The Landscape Ecology Program at UMass defines ecological integrity as the ability of an area to support biodiversity and the ecosystem processes necessary to sustain biodiversity over the long term. CAPS is a computer software program and an approach to prioritizing land for conservation based on the assessment of ecological integrity for various ecological communities (e.g., forest, shrub swamp, headwater stream) within an area. This process results in an Index of Ecological Integrity (IEI) for each point in the landscape based on models constructed separately for each ecological community. IEI maps depicting the top 50% of lands with the highest ecological integrity have been completed for all cities and towns in Massachusetts.

Map 7 - 2 is the CAPS Index of Ecological Integrity for the Town of Holden. Based on the CAPS product and resulting map for Holden, there are areas of

particularly high ecological integrity located in the northern and southern most corners of Town. The areas located in the northern sections of Holden are linked to additional parcels with high calculated IEI leading into Princeton, Sterling, and parts of West Boylston.

Town Owned Land

There are 61 parcels of Town-owned open space in Holden totaling 1,045 acres (Table 7 - 5). Of all Town-owned open space, 932 acres are protected in perpetuity. Areas protected in perpetuity include the Holden Town Forest (151.39), Winthrop Oaks Conservation Area (6.25 acres), Trout Brook Conservation Area (664.89 acres), Kimball Park

Table 7 - 5: Town-owned open space in Holden, categorized by protection level, with acreage per location. (MassGIS, Holden assessing, 2018)

Location and Protection Level	GIS Acres
Limited	110.36
Grove Cemetery	41.33
Davis Hill Elementary School Playground	16.57
Eagle Lake Town Beach	12.8
Mountainview Middle School Athletic Fields	12.55
Dawson Elementary School Playground	12.25
Holden Jr High School Athletic Fields	6.39
Jefferson School	5.18
Park Avenue Cemetery	2.01
Center Cemetery	1.28
Perpetuity	932.31
Trout Brook Conservation Area	664.89
Holden Town Forest	151.39
Holbrook Forest	24.08
Holden Water Supply Land	18.44
Mill Street Water Supply Land	17.24
Town Wells	16.02
1706	11.62
Kimball Park	9.56
Town Forest	7.86
Winthrop Oaks Conservation Area	6.25
Former Rice School Athletic Facilities	2.56
Dawson Recreation Area	2.4
Unknown	2.78
Former Chaffins School Playground	2.78
Grand Total	1,045.46

(9.56 acres), Dawson Recreation Area (2.39 acres), the former Rice School Athletic Facilities (2.56 acres), Town wells (16.024 acres), Holden water supply land (18.44 acres), and Mill Street water supply land (17.24 acres). Several parcels include hiking and walking trails, as well as field space for active recreation. These parcels and others should continuously be considered for updated recreation facilities and passive recreation opportunities. In comparison, 110 municipally owned acres of open space only have limited protection. These parcels

include Grove Cemetery, Davis Hill Elementary School Playground, and seven other parcels. A breakdown of protection areas and their acreage can be found in Table 7 - 5.

State Owned Land

The Commonwealth of Massachusetts owns roughly 4,290 acres in Holden. A breakdown of protection areas and their acreage can be found in Table 7 - 6. This land is split in ownership between the Department of Fish and Game (DFG) and the

Table 7 - 6: State-owned open space in Holden, including department, level of protection, and acreage. (MassGIS, Holden assessing, 2018)

Property	Access	Municipal OS	% of Total Muni. OS
City of Worcester		3283.93	75.85%
Worcester Water Supply Land	Full Public Access	1711.72	39.54%
Kendall Reservoir Water Supply Land	Full Public Access	992.17	22.92%
Quinapoxet Reservoir	No Public Access	282.15	6.52%
Maple Spring Pond	No Public Access	231.18	5.34%
Kendall Reservoir	Full Public Access	53.57	1.24%
Holden Reservoirs	Full Public Access	13.14	0.30%
Town of Holden		1045.46	24.15%
Trout Brook Conservation Area	Full Public Access	664.89	15.36%
Holden Town Forest	Full Public Access	151.39	3.50%
Grove Cemetery	Full Public Access	41.33	0.95%
Holbrook Forest	Full Public Access	24.08	0.56%
Holden Water Supply Land	Unknown	18.44	0.43%
Mill Street Water Supply Land	No Public Access	17.24	0.40%
Davis Hill Elementary School Playground	Full Public Access	16.57	0.38%
Town Wells	No Public Access	16.02	0.37%
Eagle Lake Town Beach	Limited Public Access	12.8	0.30%
Mountainview Middle School Athletic Fields	Full Public Access	12.55	0.29%
Dawson Elementary School Playground	Full Public Access	12.25	0.28%
Unidentified	Full Public Access	11.62	0.27%
Kimball Park	Full Public Access	9.56	0.22%
Town Forest	Unknown	7.86	0.18%
Holden Jr High School Athletic Fields	Full Public Access	6.39	0.15%
Winthrop Oaks Conservation Area	Full Public Access	6.25	0.14%
Jefferson School	Limited Public Access	5.18	0.12%
Former Chaffins School Playground	Full Public Access	2.78	0.06%
Former Rice School Athletic Facilities	Full Public Access	2.56	0.06%
Dawson Recreation Area	Full Public Access	2.4	0.06%
Park Avenue Cemetery	Full Public Access	2.01	0.05%
Center Cemetery	Full Public Access	1.28	0.03%
Grand Total		4329.39	100.00%

Department of Conservation and Recreation’s Division of Water Supply Protection (DCR WSP). The DCR WSP manages nearly 3,877 acres in total. This land is split between the Quabbin Aqueduct and the Wachusett Reservoir Watershed. All land managed by DCR WSP in Holden is protected in perpetuity and allows limited public access. The Department of Fish and Game manages the remaining 400 plus acres of State-owned open space in Holden. These lands are located at Poutwater Pond and the Quinapoxet River. These lands are protected in perpetuity as well. However, unlike open space in Holden managed by the DCR WSP, DFG lands are publicly accessible.

Land Trusts

Land trusts in Holden own a total of 914 acres of open space. The White Oak Land Trust owns over 40% of all open space owned by Land Trusts. A complete breakdown of ownership can be found in Table 7 - 7.

Table 7 - 7: Open space locations in Holden owned by land trusts, with acreage given. (MassGIS, Holden assessing, 2018)

Land Trust Name	GIS Acres	Percent of GIS Acres
White Oak Land Conservation Society	369.16	40.36%
Massachusetts Audubon Society	358.36	39.17%
Greater Worcester Land Trust	181.73	19.87%
Ellen Maynard Trust	5.52	0.60%
Grand Total	914.78	100.00%

Conservation Restrictions

A conservation restriction (CR) is a permanent deed restriction, recorded with the Registry of Deeds that binds all current and future owners of the property placed under a CR. The conservation restriction (or easement) is a restriction to particular specified uses or from development. The restriction runs with the land and is recorded in a deed instrument. Conservation Restrictions can be placed on a parcel of land for a specified number of years or in perpetuity. This restriction identifies the property’s important ecological features and the public benefit derived from preserving the

natural condition of the land. This tool aims to retain the property in its natural state or in agricultural, farming, or forest use; to permit public recreation; or to restrict development activities. The property owner retains ownership of the land and may sell or pass on the preserved land with all restrictions in place. Any title search of a property will reveal the existence of a CR and all future owners will be bound by it. Conservation restrictions, sometimes called development restrictions, must be granted voluntarily, however, the Conservation Commission and/or Planning Board can encourage this mechanism as a way of maintaining privately owned land in a natural state. When a landowner places a property under a CR, he or she has permanently protected that property and ensured that the CR last forever, legally known as “in perpetuity.” The restrictions placed on the property through the CR allow the landowner to determine how the property will be used into the future. The CR allows the property owner to retain title, pass the property on to heirs, or even sell the property.

A landowner can determine which part(s) of their property would be restricted in the future by the easement. It is quite possible, or even common, to withhold some land (i.e., 1 to 2 building lots for children) from the easement, and yet protect the remainder of the property from development (this is an example of conservation-based development). The details of what rights are restricted and what are permitted, and where these restrictions will apply, are worked out between the landowner and the holder of the easement when drafting the CR. In addition to knowing the property will remain protected against development, the owner can derive tax benefits from the CR. These can include reduction of federal income taxes (if the CR is donated), reduction of estate or inheritance taxes, and possible deduction in real estate taxes.

There are currently 12 parcels in Holden that contain conservation restrictions, totaling 401 acres of permanently protected land. The majority of land (163 acres) is held by the Town of Holden Conservation Commission (Table 7 - 8).

Table 7 - 8: Conservation restriction parcels in Holden, organized by property owner (massGIS, Holden assessing, 2018)

Conservation Restrictions	GIS Acres
City of Worcester	75.52
Holden Reservoir Watershed CR	74.69
Nicks Woods	0.83
City of Worcester Department of Public Works and Parks	44.68
Wadsworth Brook Conservation Area	24.13
McShea CR	10.97
Robbins CR	9.57
City of Worcester Water Department	26.77
Muschopauge Brook Project	26.77
Town of Holden Conservation Commission	163.99
Holden Hills Country Club CR	98.22
Kinney Woods	52.45
Malden Hill Conservation Area	13.33
White Oak Land Conservation Society	160.38
Durham CR	84.33
Brooks CR	32
Holbrook Forest	24.08
Dearborn/Gustafson CR	19.98
Grand Total	471.34

Agricultural Preservation Restrictions

The Agricultural Preservation Restriction (APR) program allows for farmland to be protected from future development. An APR is a specific type of Conservation Restriction that is administered by the Massachusetts Department of Agricultural Resources (MDAR). Established by the Legislature in 1977, this program is the cornerstone of the Commonwealth's farmland protection efforts. This voluntary program which is intended to offer a non-development alternative to farmland owners of "prime" and "state important" agricultural land who are faced with a decision regarding future use and disposition of their farms. Towards this end, the program offers to pay farmland owners the difference between the "fair market value" and the "agricultural value" of their farms in exchange for a permanent deed restriction which precludes any use of the property that will have a negative impact on its agricultural viability. The main objective of the APR program is to protect productive farmland

through the purchase of deed restrictions and revitalize the agricultural industry by making land more affordable to farmers and their operations more financially secure. If the Town adopts the Community Preservation Act (CPA) (discussed in **6.0 Historic and Cultural Resources**) it can use funds to purchase Agricultural Preservation Restrictions, document agricultural resources, repair barns, and acquire farmland.

Additional tools for supporting the preservation of farmland that Holden could utilize include: Agricultural Preservation Overlay Districts, which preserve farmland by requiring clustering of residential properties on smaller lots; Scenic Roads Bylaws and Scenic Overlay Districts, which promote and protect farm views; adaptive Reuse Bylaws that encourage adaptive reuse of barns if the structures are no longer in agricultural use; and Transfer of Development Rights, which direct growth away from farmland that should be preserved to locations suited to higher density development.

There are 10 APRs in place in Holden totaling over 452 acres detailed in Table 7 - 9. These properties do not offer public access. A list of open space lands organized by type of restriction can be found in Table 7 - 10.

Lands Not Protected from Development

Private open lands can be offered various levels of protection. The designation of private parcels as Forest lands (Chapter 61), Farm lands (Chapter 61A), or Private Recreation lands (Chapter 61B) restricts the use of land in exchange for significant reduction in taxes. Lands that are taxed under the exemptions allowed by MGL Chapters 61, 61A, or 61B have extremely limited protection because it can be taken out of the program if the owner sells the property or if the owner changes their mind.

Should the owner decide to sell the property and take it out of restricted status, the Town has the right of first refusal to purchase the land. This right of first refusal lasts up to a year after removal from the Chapter programs. Land may be taken out of Chapter 61, 61A or 61B classification by notifying the Town and paying a withdrawal penalty

Table 7 - 9: Open space land in Holden, organized by type of restriction (MassGIS, Holden assessing, 2018)

Protection	GIS Acres	% of GIS Acres
Agricultural Preservation Restriction	451.99	36.21%
Dourdeville Denise APR	4.11	0.33%
Malden Brook Farms APR	15.83	1.27%
Maynard Farm	5.52	0.44%
Oldakowski Jozefa APR	122.42	9.81%
Perkins APR	5.11	0.41%
Robinson APR	38.17	3.06%
Sandstrom APR	260.83	20.89%
Conservation Restriction	471.34	37.76%
Brooks CR	32.00	2.56%
Dearborn/Gustafson CR	19.98	1.60%
Durham CR	84.33	6.75%
Holbrook Forest	24.08	1.93%
Holden Hills Country Club CR	98.22	7.87%
Holden Reservoir Watershed CR	74.69	5.98%
Kinney Woods	52.45	4.20%
Malden Hill Conservation Area	13.33	1.07%
McShea CR	10.97	0.88%
Muschopauge Brook Project	26.77	2.14%
Nicks Woods	0.83	0.07%
Robbins CR	9.57	0.77%
Wadsworth Brook Conservation Area	24.13	1.93%
Easement Conservation Restriction	1.39	0.11%
Worcester Water Supply Land	1.39	0.11%
Watershed Protection Restriction (WPR)	323.65	25.93%
Davenport WPR	15.01	1.20%
Dourdeville & Carnright WPR	3.84	0.31%
Dresser & McCandless WPR	14.54	1.16%
Eagle Lake Wildlife Sanctuary	134.9	10.81%
Fleming WPR	17.82	1.43%
Foley WPR	1.86	0.15%
Heath WPR	16.35	1.31%
Kaplan WPR	17.71	1.42%
Keskula WPR	25.84	2.07%
Lundquist & Swanson WPR	3.72	0.30%
Porcupine Hill Sanctuary	40.22	3.22%
Stafford WPR	12.4	0.99%
Wisner WPR	19.43	1.56%
Grand Total	1248.38	100.00%

tax. However, such land may not be sold for, or converted to, residential, commercial or industrial use while taxed under the classification without written notification of the municipality in which it is located. The Town has 120 days to exercise its right of first refusal option to purchase the land. Should this time period pass and/or the Town states in writing that it will not act on its option, the land may be developed for alternative use(s), removing it from its “open” status as forest, farm or recreation land.

Chapter 61 Forest lands: Forest lands require a minimum of 10 contiguous acres under a minimum 10-year management plan certified by the State Forester. Once the application has been received and approved, the classification statement functions as a lien upon the land for taxes levied under the provisions of MGL Chapter 61. The landowner must refile every 10 years or the land shall be removed from classification by the Town Assessor. A much-reduced property tax is payable once per year during the management period.

Chapter 61A Farm Lands: Farm land requires a minimum of five contiguous acres “actively devoted” to agricultural or horticultural use. These classifications include animals, fruits, vegetables, and forest products. To qualify as “actively devoted” a minimum of 500 dollars in gross sales income during the prior two years is required. One must apply to the Town Board of Assessors for consideration, and the status must be renewed every year. A reduced property tax is applied if approved. Holden possesses 697 acres of Chapter 61A farmland.

Chapter 61B Private Recreation: Private Recreation land must have a minimum of five acres that is left wild and/or maintained for wildlife habitat. It must be available for recreational purposes to the public or a private non-profit group. Landowners can enact a fee for this use. One must apply to the Town Board of Assessors for consideration and the status must be

renewed every year. A reduced property tax results if approved.

General Vegetation and Wildlife

Holden’s vegetation ranges from standard field crops, such as hay, feed corn and sweet corn to a variety of natural species including typical forest mixed wood species and typical vegetation associated with wetlands, swamps and bogs. Farming has greatly diminished in the Town. There are very few if any active vegetable farms and there are a few livestock farms on the outskirts of the Town. Woodlands are comprised of oaks, maples, white and red pines, hemlocks, spruce, hornbeam, ash, chestnut, walnut, beech, birch, and alders. Low-bush blueberries, mountain laurel and wild lily of the valley can be seen at higher elevations and mosses, ferns, and jewelweed abound in low-lying areas.

The Asian longhorned beetle (ALB) (*Anoplophora glabripennis*), an insect native to China, Japan, Korea, and the Isle of Hainan, is a destructive pest of hardwood trees. It attacks many healthy hardwoods trees including maple, horse chestnut, birch, poplar, willow and elm. In addition, nursery stock, logs, green lumber, firewood, stumps, roots, branches, and wood debris of a half inch or more in diameter are subject to infestation. The beetles lay eggs in the tree and feed on the tree, eventually killing the tree. A new generation of ALB is produced each year. If this pest moves into the hardwood forests of the United States, the nursery, maple syrup, and forest product industries would experience severe economic losses. In addition, urban and forest ALB infestations will result in environmental damage, aesthetic deterioration and a reduction in public enjoyment of recreational spaces.

An infestation of ALB has been identified in areas of Worcester, Holden, West Boylston, and Shrewsbury, Worcester County, Massachusetts. DCR issued an Order to prevent the spread of ALB, suppress, control and eradicate ALB in any area of Worcester County and Massachusetts on August 8 and August 20, 2008. (Massachusetts Department of Conservation and Recreation, 2008) These orders identify the affected areas, indicate an indefinite quarantine period, regulated articles and regulated

activities. Treatment includes the removal of host trees and injection of pesticides to surrounding host trees. Eradication efforts have begun but it is still vital to monitor and prevent the spread of the beetle which could result in detrimental effects to protected open space in Town. The status of the ALB is currently monitored by the United States Department of Agriculture.

Please see **5.0 Natural Resources: Invasive Species** section for a more detailed discussion.

Environmental Challenges **Stormwater**

Increased development has resulted in erosion and sedimentation depositing into many of Holden's water resources, leading to eutrophication and thereby significantly increasing vegetation growth and decreasing amounts of dissolved oxygen. In effect, this process acts as a limiting factor to sustainable fish populations. The Town has worked with the White Oak Land Conservation Society to drawdown Eagle Lake during winter months to reduce vegetation. This measure will only address the situation temporarily. As a preventative solution, the Town is pursuing the adoption of Stormwater Management Regulations which will increase the erosion controls, stabilization efforts, and filing requirements for all construction projects within the Town.

Through its recent MVP planning process, the Town identified the need to develop public education and outreach on appropriate operation and maintenance (O/M) of stormwater best management practices on private properties. Identifying a legal authority to enforce established O/M requirements emerged as a top priority. The MVP process also highlighted the need for consistent and regular maintenance of stormwater Best Management Practices (BMPs) and related infrastructure. Should these features not be maintained properly, they run the risk of not functioning which can lead to increased risk for flood events and reductions in water quality. Untreated stormwater can have significant environmental effects for tributaries receiving flows if that stormwater carries sediment loads, pathogens, or other pollutants of concern. Other important stormwater-related items the Town might choose

to engage in include assessing green infrastructure opportunities for stormwater management and developing a list of specific priorities as well as reviewing and updating Town regulations and update as necessary to support green infrastructure and low-impact development and encourage green infrastructure to be incorporated into all roadway projects.

Chronic Flooding

Culverts and stormwater infrastructure are recognized as a vulnerability Town-wide. The Quinapoxet Culvert/Tannery Brook Culvert is of particular concern, and there is a general recognition that many culverts were not designed to accommodate historic patterns of precipitation and runoff, which are rapidly transforming as a result of climate change. As precipitation events become more intense and less predictable, undersized culverts are expected to pose a greater threat of failure and flooding.

Sedimentation

The Holden Conservation Commission's Wetlands Bylaw aims to protect the wetlands, water resources and adjoining land areas in Holden by controlling activities determined by the Holden Conservation Commission likely to have significant or cumulative effect upon resource area values, including but not limited to public or private water supply, groundwater, flood control, erosion and sedimentation control, storm damage prevention and storm flowage, water quality, water pollution control, fisheries, wildlife habitat, rare species habitat including rare plant species, agriculture, aquaculture, and recreation values deemed important to the community.

In the Fall of 2018, the Town of Holden received permission to temporarily empty the water in Trout Brook Pond in order to remove sediment and debris. This project served to increase the ecological integrity of an important open space area in the Town of Holden.

ISSUES AND OPPORTUNITIES

The issues and opportunities in the following section were identified through a review and analysis of priorities identified in previous reports, current data, as well as needs expressed as part of the Master Plan public outreach efforts. Through these outreach efforts, Holden residents voiced their ideas, needs, and concerns about open space and natural resources in Town. Map 7 – 3 depicts open space opportunities identified in this planning process. Among the many responses, several themes stood out, which include:

Desire for better outreach including maps, wayfinding, and other information about open space access

Desire for indoor recreation facilities

A general shortage of fields regionally, and that all fields in Holden are fully utilized
Concerns about valuable open space at risk of development

Better Americans with Disability Act (ADA) accessibility

Eagle Lake

In conversations with Town residents and staff, the status of Eagle Lake emerged as a top factor impacting the current status of open space and recreation opportunities in Holden. Eagle Lake was formed more than 200 years ago when the Asnebumskit Brook was dammed in order to power a nearby water mill located close to Jefferson Mill. Despite its heavy industrial use and source of power to a saw and gristmill, the lake was considered an important natural resource and source of beauty to residents and visitors. Over time and as a result of other damming projects, the flow of water into Eagle Lake was significantly reduced. This reduction

in flow is likely responsible for the then observed amounts of silt and mud that formed.

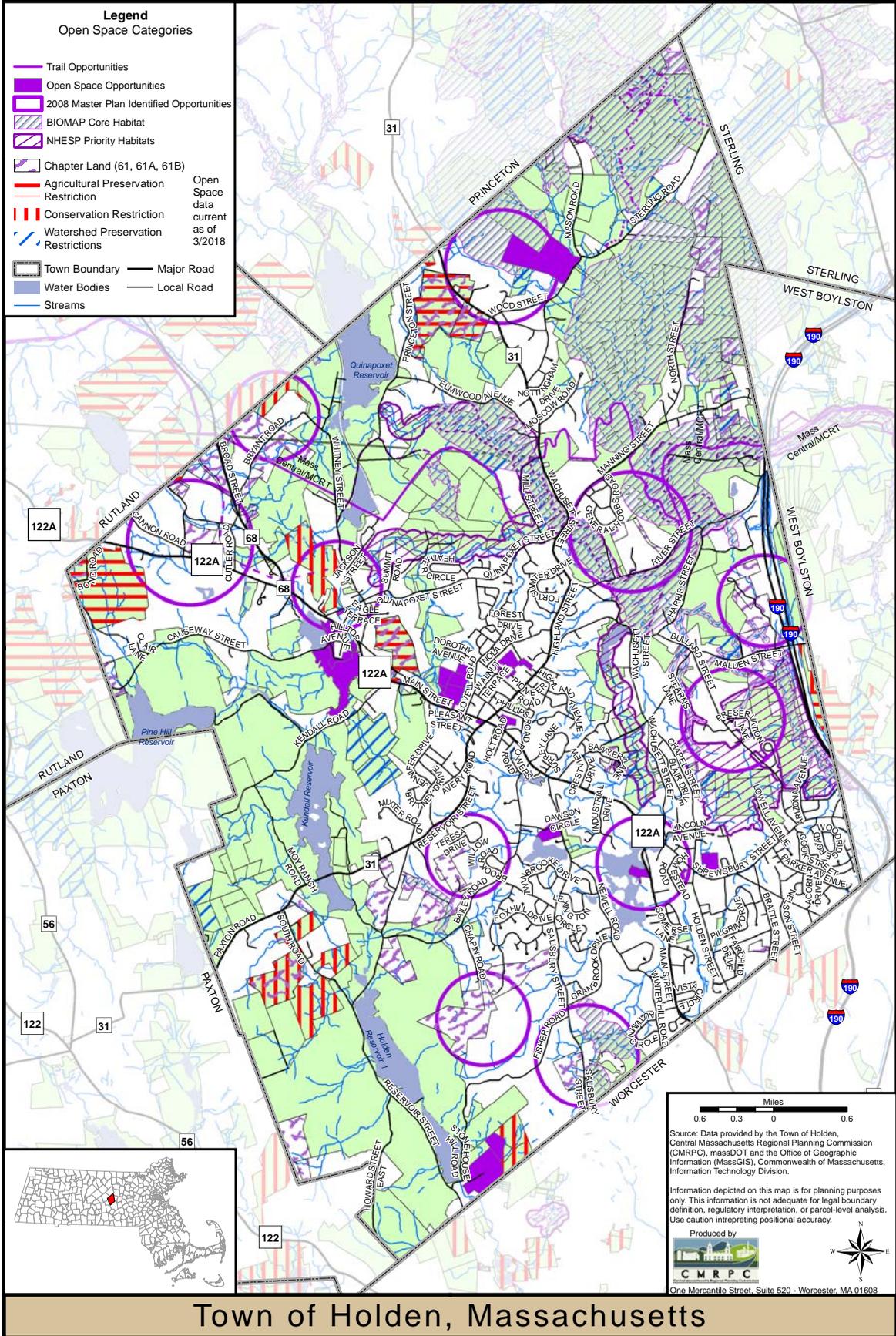
By the mid-1970s, ownership of the Eagle Lake Recreation Area and surrounding infrastructure were acquired by Jefferson Industries. During this time period, actions were made to further reduce the water level in Eagle Lake. Simultaneously, the integrity of the mill dam had deteriorated significantly. After concerned citizens began to speak out in opposition of proposed development projects on the site, the Town bought Eagle Lake in 1985. Ownership of the Dam infrastructure was split between the White Oak Land Conservation Society and Jefferson Industries, with Jefferson industries retaining ownership over the downstream portion of the dam. In 1993, the Town engaged in a significant project to mitigate leakage and general threat to Town infrastructure associated with Eagle Lake.

As recently as 2017, the White Oak Land Conservation Society filed a Notice of Intent to permanently draw down Eagle Lake by 4.5 feet. This action followed a Notice and Dam Safety Order issued by the Office of Dam Safety. In response, the Holden Conservation Commission issued an Order of Conditions, indicated that lowering Eagle Lake by 4.5 feet would reduce its total volume by 88%. Extensive community input and volunteer efforts coordinated by the Friends of Eagle Lake and the White Oak Land Conservation Society resulted

in significant maintenance to the dam in order to meet requirements. To advocate on behalf of Town residents, the Eagle Lake Citizens Committee was approved by the Board of Selectmen on September 5, 2017. The Committee was chartered with three main goals:

1. To identify recreational value of the Town's Eagle Lake and Eagle Lake Recreation Area.
2. To identify costs for restoring Recreation Area and ongoing maintenance costs.
3. To address Eagle Lake Dam concerns.

Open Space Opportunities Map 2019 MASTER PLAN



Town of Holden, Massachusetts

Date: 6/12/2019 Document Path: H:\Projects\O_Holden_GIS\Subprojects\m134_master_plan\m134_MP_06_OpenSpaceOpportunities_11x17.mxd

These efforts resulted in a number of suggestions and strategies which are summarized below. (Holden Eagle Lake Committee, 2018). In coordination with the owners of the dam, it is recommended that the Town be involved in determining and pursuing the most appropriate course of action.

Lake Preservation and General Lake Health

1. Town withhold permission to permanently lower Eagle Lake, since the Town has responsibility to safeguard and defend Town property (Eagle Lake and Recreation Area).
2. Revisit agreements with City of Worcester regarding the amount and timing of water diverted to Worcester. Consider enforcing such agreements or renegotiate. Employ assistance or influence from downstream entities, such as West Boylston and Department of Conservation and Recreation (formerly Metropolitan District Commission), the authority responsible for the Wachusett Reservoir receiving drinking water from Eagle Lake.

Eagle Lake Recreation Area Condition

1. Town restore Eagle Lake Recreation Area, thereby preserving recreation areas for our growing population. An appropriate annual budget should be set for maintenance (DPW) and programs (Recreation Department) to reflect the value to the Town and its citizens.

Eagle Lake Dam Infrastructure

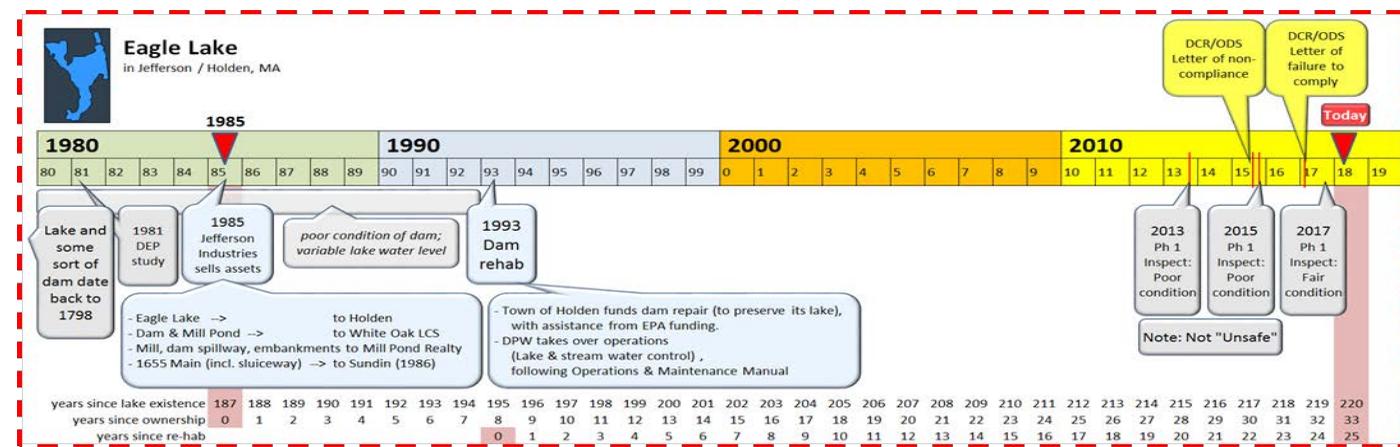
1. Town to press current dam owners to complete the Office of Dam Safety (ODS)-mandated repairs identified in the 2015 Dam Safety Order (and 2013/2015 inspection reports), as well as any additional repairs identified in the most recent inspection report in November 2017.

Additional options to discuss include restoration of the stream habitat and the creation of relevant recreational facilities in the restored area.



Eagle Lake (CMRPC, 2019)

Figure 7 - 4: Eagle Lake dam conditions from 1980 to today (Holden Eagle Lake Committee, 2018)



Open Space Priorities

Holden is fortunate to have so much permanently protected land, but unplanned development could reduce opportunities to protect significant habitats and make connections between already protected open spaces. Holden will have to begin to aggressively protect existing open space and add to its permanently protected areas if it wishes to maintain its character.

The best strategies for maintaining the Town's character and environmental health will be:

- To facilitate preservation of farmland through the state's APR program.
- To protect rare landscape elements, such as wetlands, vernal pools, riparian zones (the areas along streams, rivers, and wetlands), state designated "priority habitats," BioMap2 areas, and large forested tracts.
- To retain large contiguous or connected areas that provide habitat for a diversity of wildlife (Guidelines published by the Environmental Law Institute call for at least 20% to 50% of a town to be protected natural habitat. They also recommend 137 acres (55 hectares) as a minimum contiguous size for a natural area Environmental Law Institute, 2003).
- To protect riparian buffers in order to preserve/improve water quality and wildlife habitat (The Environmental Law Institute recommends a 330-foot (100-meter) riparian buffer to provide for wildlife habitat functions. A 25-meter buffer will provide nutrient and pollutant removal and a 50-meter buffer will provide bank stabilization).
- To minimize the introduction and spread of invasive, non-native species (Many non-native species of plants and animals are known to disrupt the functioning of native ecosystems and contribute to a decrease in biodiversity).

The Open Space Opportunities Map included in this chapter highlights areas in Town that ought to be considered for future acquisitions as well. This map prioritizes areas of interest indicated in the 2008 Master Plan, lands currently enrolled in Chapter Programs, and core and primary habitats. The map highlights 11 areas of Town where Town funds might be used to purchase additional lands for continued conservation preservation efforts or increased recreation facilities.

As the Town continues to pursue an updated OSRP additional funds will become accessible for purchasing these and other lands for open space and recreation. The Town has also established an Open Space Stabilization Fund in order to provide the Town means to purchase properties for open space as they enter the market. Over the past three years the Town has allocated roughly \$50,000 each year in its annual budget to this fund. The Open Space Stabilization Fund has not yet been used.

Current and Future Demand

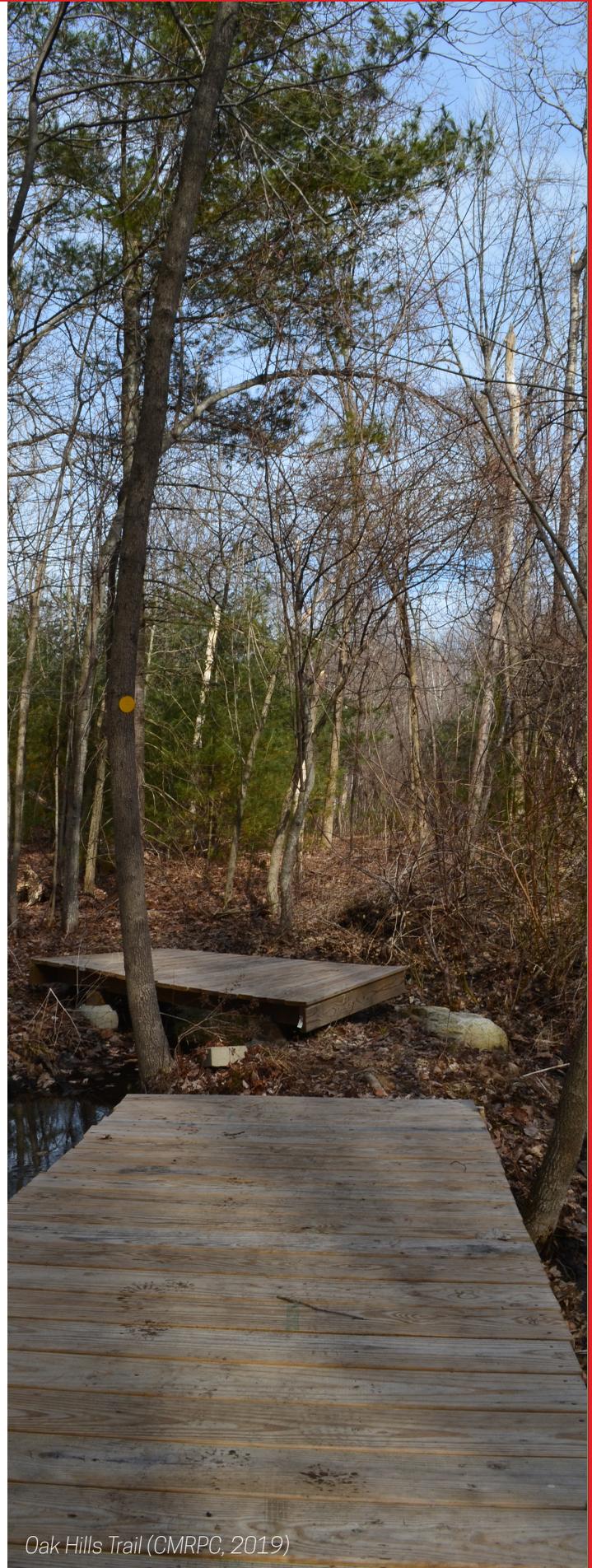
As part of the master planning process, CMRPC distributed a survey to all Town residents. Only 3.34% of survey respondents indicated that recreational services represent Holden's greatest need. Select survey questions focused specifically on open space and recreation needs in Town. Survey respondents indicated that water bodies, fields and open space, and forested lands are the three most important natural features in Holden. Local water resources are primarily used for boating, fishing, and general viewing as based on survey results. To this end, when asked what opportunities Holden residents would like to see more of in Town, nearly half (48.59%) reported that additional canoeing and kayaking locations would be beneficial. Over 60% of those surveyed answered that additional hiking trails are the most needed additional recreational opportunity in Holden. Dedicated bikes routes and indoor sports facilities both ranked highly for this question as well. As Holden's population continues to grow, particular emphasis should be

² BioMap2 is a program of the Natural Heritage and Endangered Species Program of MassWildlife and is designed to guide strategic biodiversity conservation in Massachusetts by focusing land protection and stewardship on the areas that are most critical for ensuring the long-term persistence of rare and other native species and their habitats, exemplary natural communities, and a diversity of ecosystems.

placed on ensuring that adequate open space and recreational facilities are supported in order to meet community needs. The NRPA Standards for Recommended Recreation Facilities can be found in Table 7 - 10.

There are currently 18 general sports fields in addition to multiple sport-specific fields located in Holden. The Town has a field management plan to ensure field longevity and condition. Fields are “rested” in a cycle that allows them to be replenished and not overused. Two fields are offline at any given time. While no specific recommendations regarding building new fields are included at this time, it is recommended that the Town continue to monitor field use and changing need in order to meet demand and continue to provide adequate and necessary community resources.

Several capital improvements that are currently recommended include: painting pickleball lines on two tennis courts at Dawson Recreation Facility; painting and applying sealcoat to the basketball courts at Dawson Recreation Facility; renovating soccer and baseball fields at the Mayo Facility; and installing landing impact material on playgrounds.



Oak Hills Trail (CMRPC, 2019)

Table 7 - 10: NRPA Recommended Recreation Facilities

Activity/ Facility	Recommended Space Requirements	Recommended Size and Dimensions	Recommended Orientation	No. of Units per Population	Service Radius	Location Notes
Badminton	1620 sq. ft.	Singles – 17'x44' Doubles – 20'x44'	Long axis north-south	1 per 5000	¼ -½ mile	Usually in school, recreation center or church facility. Safe walking or bike access.
Basketball			Long axis north-south	1 per 5000	¼ -½ mile	Same as badminton. Outdoor courts in neighborhood and community parks, plus active recreation areas in other park settings.
Youth	2400-3036 sq. ft.	46-50'x84'				
High School	5040-7280 sq. ft.	50'x84'				
Collegiate	5600-7980 sq. ft.	50'x94' with 5' unobstructed space on all sides				
Handball (3-4 wall)	800 sq. ft. for 4-wall 1000 for 3-wall	20'x40' Minimum of 10' to rear of 3-wall court. Minimum 20' overhead clearance	Long axis north-south. Front wall at north end.	1 per 20,000	15-30 minute travel time	4-wall usually indoor as part of multi-purpose facility. 3-wall usually outdoor in park or school setting
Ice Hockey	22,000 sq. ft. including support area	Rink 85'x200' (minimum 85'x185') Additional 5000 sq. ft. support area	Long axis north-south if outdoor	Indoor – 1 per 100,000 Outdoor – depends on climate	½ - 1 hour travel time	Climate important consideration affecting no. of units. Best as part of multi-purpose facility.
Tennis	Minimum of 7,200 sq. ft. single court (2 acres for complex)	36'x78'. 12' clearance on both sides 21' clearance on both ends.	Long axis north-south	1 court per 2000	¼-1/2 mile	Best in batteries of 2-4. Located in neighborhood/community park or adjacent to school
Volleyball	Minimum of 4,000 sq. ft.	30'x60'. Minimum 6' clearance on all sides	Long axis north-south	1 per 5000	¼ -½ mile	Same as other court activities (e.g. badminton)
¼ Mile Running Track	4.3 A	Overall width – 276' Length – 600.02' Track width for 8 to 4 lanes is 32'.	Long axis in sector from north to south to north-west-south-east with finish line at northerly end.	1 per 20,000	15-30 minutes travel time	Usually part of high school, or in community park complex in combination with football, soccer, etc.

Beach Areas	N/A	Beach area should have 50 sq. ft. of land and 50 sq. ft. of water per user. Turnover rate is 3. There should be 3-4 A supporting land per A of beach.	N/A	N/A	N/A	Should have sand bottom with slope maximum of 5 % (flat preferable). Boating areas completely segregated from swimming areas.
Baseball						
Official	3.0-3.85 A minimum	Baselines – 90' Pitching distance 60' ½' foul lines – min. 320' Center field – 400'+	Locate home plate to pitcher throwing across sun and batter not facing it.	1 per 5000 Lighted 1 per 30,000	¼ - ½ mile	Part of neighborhood complex. Lighted fields part of community complex.
Little League	1.2 A minimum	Baselines – 60' Pitching distance – 46' Foul lines – 200' Center field – 200' – 250'	Line from home plate through pitchers mound run east-north-east.			
Field Hockey	Minimum 1.5 A	180' x 300' with a minimum of 6' clearance on all sides.	Fall season – long axis northwest to southwest. For longer periods north-south	1 per 20,000	15-30 minutes travel time	Usually part of baseball, football, soccer complex in community park or adjacent to high school.
Football	Minimum 1.5 A	160' x 360' with a minimum of 6' clearance on all sides.	Same as field hockey.	1 per 20,000	15-30 minutes travel time	Same as field hockey.
Soccer	1.7 – 2.1 A	195' to 225' x 330' to 360' with a minimum 10' clearance all sides.	Same as field hockey.	1 per 10,000	1-2 miles	Number of units depends on popularity. Youth soccer on smaller fields adjacent to schools or neighborhood parks.
Golf-driving Range	13.5 A for minimum of 25 tees	900'x690' wide. Add 12' width for each additional tee.	Long axis southwest-northeast with golfer driving toward northeast.	1 per 50,000	30 minutes travel time.	Part of a golf course complex. As separate unit may be privately owned.

Softball	1.5 to 2.0 A	<p>Baselines – 60’</p> <p>Pitching distance- 46’ men. 40’ women.</p> <p>Fast pitch field Radius from Plate – 225’ between foul lines.</p> <p>Slow Pitch – 275’ (men) 250’ (women)</p>	Same as baseball	1 per 5,000 (if also used for youth baseball)	¼ - ½ mile	Slight differences in dimensions for 16” slow pitch. May also be used for youth baseball.
Multiple Recreation Court (basketball, volleyball, tennis)	9,840 sq. ft.	120’ x 80’	Long axis of courts with primary use is north-south	1 per 10,000	1-2 miles.	
Trails	N/A	<p>Well defined head</p> <p>Maximum 10’ width</p> <p>Maximum average grade is 5% not to exceed 15%.</p> <p>Capacity Rural trails – 40 hikers/day/mile. Urban trails – 90 hikers/day/mile.</p>	N/A	1 system per region	N/A	
Archery Range	Minimum 0.65 A	<p>300’ Length x Minimum 10’ wide between targets.</p> <p>Roped clear space on sides of range minimum 30</p> <p>Clear space behind targets minimum of 90’x45’ with bunker.</p>	Archer facing north = or – 45 degrees.	1 per 50,000	30 minutes travel time	Part of regional or metro park complex.

Combination Skeet and Trap Field (8 Stations)	Minimum 30 A	All walks and structures occur within an area approximately 130' wide by 115' deep.	Center line of length runs northeast-southwest with shooter facing northeast.	1 per 50,000	30 minutes travel time	Part of regional/metro park complex
		Minimum cleared area is contained within 2 superimposed segments with 100-yard radii (4 acres).				
		Shot-fall danger zone is contained within 2 superimposed segments with 300-yard radii (36 acres).				
Golf			Majority of holes on north-south axis		½ to 1 hour travel time	9 hole course can accommodate 350 people/day.
Par 3 (18 hole)	50-60 A	Average length vary 600-2700 yd.		--		
9-hole standard	Minimum 50 A	Average length -2250 yards		1/25,000		18 hole course can accommodate 500-550 people/day.
18-hole standard	Minimum 110 A	Average length 6500 yards		1/50,000		Course may be located in community or district park, but should not be over 20 miles from population center.
Swimming Pools	Varies on size of pool and amenities. Usually ½ to 2 A site.	Teaching- minimum of 25 yards x 45'	None-although care must be taken in siting of lifeguard stations in relation to afternoon sun.	1 per 20,000	15 to 30 minutes travel time	Pools for general community use should be planned for teaching, competitive and recreational purposes with enough depth (3.4m) to accommodate 1m and 3m diving boards.
		even depth of 3 to 4 ft.		(Pools should accommodate 3 to 5% of total population at a time.)		
		Competitive - minimum of 25 m x 16 m.				
		Minimum of 27 square feet of water surface per swimmer.				
		Ratios of 2:1 deck vs. water.				Located in community park or school site.

GOALS, OBJECTIVES, AND ACTION ITEMS

The Master Plan recommends the following action items based on the goals and objectives crafted with careful consideration of the public outreach results, analysis of current conditions, and progress achieved since 2008. The action items accompanying the objectives will also be reflected in the Implementation Chapter (Chapter 11).

GOAL 7.1: PRESERVE IMPORTANT LAND RESOURCES, SCENIC VIEWS, AND AGRICULTURAL RESOURCES.

Objective 7.1.1: Develop a systematic approach to ensuring high quality and plentiful open space and recreation opportunities.

- **Action Item 7.1.1.1:** Undertake strategic purchases of open space to increase local and regional landscape connectivity and enhance the ecological integrity of Holden's landscapes.
- **Action Item 7.1.1.2:** Identify priority recreation areas in need of upgrade, repair, maintenance, or further evaluation; fund necessary improvements.
- **Action Item 7.1.1.3:** Use the first right of refusal process to identify and evaluate lands that are withdrawn from Chapter 61, 61A, and 61B; implement permanent restrictions as appropriate.

GOAL 7.2: PROTECT LANDS FOR ACTIVE AND PASSIVE RECREATION.

Objective 7.2.1: Continue actions that enable the town to acquire and fund open space and recreation opportunities.

- **Action Item 7.2.1.1:** Finalize updates to the Town's Open Space and Recreation Plan.
- **Action Item 7.2.1.2:** Seek funding through the Parkland Acquisitions and Renovations for

CAPITAL ITEMS

Restore Eagle Lake Recreation Area swimming facilities.

Install improved launching point for kayaks and canoes at Eagle Lake.

Install landing impact material at playgrounds.

Renovate the soccer/baseball field at Mayo Elementary School.

Implement the recommendations in the CMMPO Regional Bicycle Plan in coordination with all planned roadway improvements.

Install and improve ADA compliant parking spaces at trailheads and other recreation areas, and ADA-friendly trails to accommodate accessibility for all.

Install ADA-friendly trails to accommodate accessibility for all.

Develop and implement wayfinding program for recreational trails.

Communities (PARC) program to develop a new outdoor recreation facility or park.

- **Action Item 7.2.1.3:** Seek funding through the Local Acquisitions for Natural Diversity (LAND) program to develop additional passive recreational opportunities.
- **Action Item 7.2.1.4:** Continue to encourage the use of Agricultural Preservation Restriction (APR), Chapter 61A, and deed restrictions to retain farmland and ensure its viability.
- **Action Item 7.2.1.5:** Explore Community Preservation Act (CPA) as a means of purchasing APR, documenting agricultural resources, repairing barns, and acquiring farmland.

GOAL 7.3: ESTABLISH A WIDER, MORE CONNECTED OPEN SPACE NETWORK.

Objective 7.3.1: Maximize wildlife habitats and increase wildlife biodiversity through an expansion of properties used for open space.

- **Action Item 7.3.1.1:** Promote preservation of important landscape resources.
- **Action Item 7.3.1.2:** Protect large forested areas to avoid fragmentation and maintain biodiversity.
- **Action Item 7.3.1.3:** Identify key privately-owned open space parcels (including those with limited public access; pursue acquisition or access rights).

Objective 7.3.2: Expand recreation areas to provide adequate access and use opportunities for all populations.

- **Action Item 7.3.2.1:** Identify key privately-owned parcels suitable for recreation; pursue acquisition or access rights.

GOAL 7.4: EFFICIENTLY MANAGE AND MAINTAIN OPEN SPACE AND RECREATION AREAS.

Objective 7.4.1: Develop a system to monitor the maintenance and upgrade needs of open space and recreation facilities.

- **Action Item 7.4.1.1:** Increase opportunities and areas for passive recreation such as community gardens and walking and biking trails.
- **Action Item 7.4.1.2:** Increase opportunities and areas for active recreation such as ballfields, additional hiking and biking trails, playgrounds, and summer recreational programs.
- **Action Item 7.4.1.3:** Continue to revisit and work towards implementing the goals of the current Open Space and Recreation Plan.
- **Action Item 7.4.1.4:** Evaluate phased growth and housing production to ensure that future development is manageable.

GOAL 7.5: CONSERVE HOLDEN'S SURFACE AND GROUNDWATER FOR WILDLIFE, RECREATION, AND OTHER USES.

Objective 7.5.1: Improve natural resource management strategies to make Holden more resilient.

- **Action Item 7.5.1.1:** Preserve Holden's surface and groundwater for wildlife, recreation, and other uses through strategies that protect riparian buffers.
- **Action Item 7.5.1.2:** Minimize the introduction and spread of non-native species.
- **Action Item 7.5.1.4:** Incorporate nature-based solutions into future planning and development.
- **Action Item 7.5.1.5:** Develop public education and outreach on appropriate operation and maintenance (O/M) of stormwater BMPs on

private properties. Identify legal authority to enforce established O/M requirements.

- **Action Item 7.5.1.6:** Continue to apply for the 604(b) Water Quality Management Grant to preserve and enhance existing water quality.

GOAL 7.6: EDUCATE COMMUNITY MEMBERS ABOUT CONSERVATION TOOLS.

Objective 7.6.1: Regularly engage with Holden residents on topics related to the environment to encourage conservation and public support.

- **Action Item 7.6.1.1:** Develop an education campaign or program to build awareness of available natural resources and benefits.
- **Action Item 7.6.1.2:** Collaborate with land trusts and other environmentally-focused organizations to promote conservation benefits.

GOAL 7.7: IMPROVE PUBLIC AWARENESS OF HOLDEN'S OPEN SPACE AND RECREATION RESOURCES.

Objective 7.7.1: Increase interactions with Holden residents to promote sustainable use of open space and recreation areas in town.

- **Action Item 7.7.1.1:** Develop an outreach campaign to promote and increase awareness of the benefits provided by protected open space.
- **Action Item 7.7.1.2:** Continue to develop partnerships between conservation groups, land trusts, and the Town of Holden.



What does Holden think about Open Space and Recreation?

OPEN SPACE & RECREATION

Holden Community Survey Results

WHAT FUTURE DO YOU WANT FOR EAGLE LAKE?

“Buy the dam at Eagle Lake, the town already owns the beach and the water. The 2 month pool is a waste of taxes”

“Eagle Lake used to be cleared for skating.

“A healthy Eagle Lake”

“Save Eagle Lake!”

“Replace the playground equipment at Eagle Lake that the rec department removed without town permission”

“Clean lake swimming, the way Eagle Lake Used to be”

“Bring Eagle Lake Back!”

“Water activities/Beachfront. None of our ponds in Holden have a sandy beach front that could accommodate summer water/beach fun. We only have overgrown ponds for fishing or small boating. Eagle Lake is an asset that should be saved, used, maintained etc.”



Holden Tomorrow
planning our future together

FOR MORE INFORMATION: www.holdenmasterplan.com Town of Holden Master Plan Committee

8.0 ECONOMIC DEVELOPMENT

DEVELOPMENT

INTRODUCTION

Central Massachusetts possesses a rich history of farming, community, and entrepreneurial spirit. In Holden, much of this history has been preserved and is reflected in its abundant farms, mills, buildings, and Town Center. Holden residents cherish (and fiercely defend) this character. Yet, many residents also desire additional amenities. Luckily, commercial conveniences and preservation are not mutually exclusive. Targeted economic development strategies can support an increase in desirable amenities while protecting and contributing to the character of the Town. Strategies that leverage the Town's existing cultural, commercial, and civic assets will support economic goals such as:

- Encourage a strong, diversified tax and employee base.
- Offer a variety of quality goods and services to meet the demand of residents, workers, and visitors.
- Concentrate development in the Main Street corridor where infrastructure exists.
- Evaluate and promote adaptive reuse of vacant and/or underutilized commercial properties and industrial sites.
- Develop a walkable, mixed-use village center



Howes in Holden (CMRPC, 2018)

that has residential, commercial, historic, and public space components.

- Provide incentives and opportunities for small-scale businesses and other desirable enterprises.
- Foster a local workforce that complements Holden's employer needs.

These goals were identified through the course of extensive outreach including community visioning events, surveys, and prioritization tools. Prior to pursuing any interventions, it is important to understand prior planning efforts in these areas,

as well as present-day conditions. The following sections will orient the reader to the Town's planning efforts, provide a baseline from which to benchmark the success of future economic development strategies, and establish a context for issues and opportunities relating to the preferred development strategies.

PRIOR PLANNING AND ENGAGEMENT EFFORTS

Holden's economic planning and engagement efforts include the following initiatives:

Community Development Plan, Town of Holden (2004)

In 2004, the Town of Holden completed a Community Development Plan that included an economic development and housing needs assessment. The Plan highlighted the limited availability of undeveloped parcels and increasing housing demand as significant limitations to economic development. The Plan identified four key locations to target for economic development:

- The "Holden Sand and Gravel" Site
- The Holden Hospital Area
- The Rice School
- The Route 122A Commercial Corridor

The Plan also indicated an opportunity for new industrial, office, or mixed-use development in the northeast quadrant of Town near Interstate 190. Overall, many of the goals identified in the plan were achieved, including disposition of the Rice School. The former Holden Hospital was sold in 2009 and is now part of the Oriol Nursing Home. The Town also undertook a comprehensive planning process to address residential growth management and the Town's long-range fiscal challenges. In 2018, Holden completed a Buildout and Fiscal Impact

Analysis (included in Appendix C). Goals identified in Community Development Plan (2004) that are relevant in 2019 include:

- Invest disposition sale proceeds to support other economic development initiatives.
- Evaluate the sale of other surplus Town property with commercial development potential.
- Use Tax Increment Financing (TIF)¹ to help pay for additional traffic and streetscape improvements to Route 122A.

The Holden Town Common: Past, Present, and Future (2007)

In 2006, the University of Massachusetts Amherst Landscape Architecture and Regional Planning Department assisted the Town with a study of the Town Common. Entitled "Holden Town Common: Past, Present, and Future," the study is a cultural landscape plan. In October 2006, the consultant team conducted a visioning workshop to collect resident input on the future development of Holden. Major goals identified at this event included:

- Preserve small town atmosphere.
- Enhance open space.
- Encourage commercial development.
- Improve town center.
- Create community gathering spaces.

The Holden Town Common, Past Present and Future (Holden Town Common, 2007) provided "clear recommendations on how to stimulate this growth in the Town Center in a way that is consistent with the objectives" as defined in the October workshop. The plan provided design concepts to:

- Extend the old Town Common at the heart of Town Center.
- Establish stronger pedestrian links between civic spaces.
- Encourage new commercial development consistent with the Town's historic building style
- Improve pedestrian circulation.

¹ Tax increment financing (TIF) is a public financing method that is used as a subsidy for redevelopment, infrastructure, and other community-improvement projects.

- Decrease impervious cover to include green space.
- Establish a design review board to develop guidelines that respect the integrity of the existing building styles.

Master Plan (2008)

The Town of Holden Master Plan (2008) yielded additional goals and strategies for economic growth. Through the course of related public outreach activities, residents identified a desire for carefully controlled commercial development, including shopping and services, especially along Main Street and the Main Street corridor. The Master Plan (2008) cites traffic along Main Street as a significant challenge, and projects deeper congestion as a result of commercial growth on Main Street. Economic goals from the plan included:

- Rezone land behind existing commercial development on Main Street from Residential to Commercial.
- Rezone select commercial and residential areas along Main Street to “Village” and permit mixed-use in the new district.
- Encourage development of small office space with business support services to attract existing home occupations into commercial space on Main Street.
- Use design review of commercial and mixed-use projects to better assure quality development consistent with the existing character of Holden.
- Develop design standards and guidelines to ensure new businesses contribute to the Town’s historic architecture and character.
- Implement a business recruitment program to get the types of businesses Holden residents want on Main Street, and conduct a storefront improvement program to upgrade the appearance of existing businesses.

Many of these goals have been achieved or are underway. A mixed-use Village district is in place. In 2019, Holden was assessing and working to

refine this bylaw. The Planning Board incorporated architectural review into their site plan regulations. Goals relevant in 2019 include establishment of a business recruitment program; encouraging the relocation of home-based businesses to Main Street; and creation of a storefront improvement program.

Holden Village Center Zoning Initiative: Phase I, II, and III (2015 - Present)

Since 2015, the Holden Planning Board has been working with the Central Massachusetts Regional Planning Commission on the creation of a village center zoning district. The process is comprised of three phases. Phase I concluded in 2015 and included the development of the Model Village District Bylaw. Phase II began in October of 2015 and included analysis and customization of the model for Jefferson Village. Phase III (currently underway) includes finalization of the study area, creation of zoning bylaw text amendments, public outreach, and presentation of the new village center zoning district for consideration at the 2020 Annual Town Meeting. Key findings from Holden Village Center Phase II (Village Center Phase II, 2018) include:

- Development of the Jefferson Mill area is limited by several factors including the layout and design of Route 122A. In this area, the travel speed of vehicles is greater than in a true village center area. The speed, road layout, and lack of sidewalks, crosswalks and pedestrian amenities will limit and/or restrict to some extent the future of this area as a true village center.
- Additional constraints include Eagle Lake, which significantly reduces the amount of developable land along the east side of Route 122A.
- The Village Center District should be established as a new zoning district. Creating a new Village Center District will provide more flexibility and better allow the Planning Board to tailor the district to the specific uses it might want to encourage, discourage, or prohibit.

The new district should allow for the development

of the Jefferson Mill in line with what was previously approved by Special Permit.

In conjunction with feedback provided by residents through outreach activities, these plans provide a framework with which to benchmark progress and identify next steps. The following section provides an overview of existing conditions.

EXISTING CONDITIONS

History and Overview

Holden’s economic activity can be traced to the colonial period. The Town was settled in 1723 and several years later the Town’s first sawmill was constructed. Until the 1820s, economic activity centered on agriculture and related trades such as tanning and lumber processing. Changes in cotton and textile technology enabled economic growth in the early 19th century. By 1832, Holden was home to nine textile mills, two boot/shoe manufacturers, and a significant home-based textile sector. Boot/shoemaking and agricultural production peaked mid-way through the 19th century, while textile production peaked around the turn of the century. Most of the Town’s textile production took place in Jefferson Village. The historic Jefferson Mill consisted of two mill buildings, a store, offices, and worker housing. The agricultural sector also peaked around the turn of the 19th century. Dairy served as the dominant agricultural product, with vegetables and orchards also being significant. The amount of land used for permanent pasture or haying increased until approximately 1900.

In the early 1900s, many Holden mills burned down or closed. Construction of the Wachusett Reservoir in 1905 further impacted industrial activity in Holden. Although located outside of Holden, the Metropolitan Water Board deemed much of the Town a watershed protection area. As a result, Holden lost 3,500 acres of farmland and most of its remaining industrial sites. Although WWI yielded a slight up-tick in manufacturing, industrial activity

continued to decline. “By the early 1930s, nearly 600 people were employed in agriculture. Of these, nearly 90% were part-time farmers, composed of [former] industrial laborers.” Holden’s industrial base contracted further when, in 1940, Jefferson Manufacturing Company’s stockholders liquidated the company. This was the last large manufacturing operation in Holden. (Massachusetts Historical Commission, 1984)

Present day Holden is characterized by its country charm. The Town has retained its historic Town Center and abundant natural resources. It is also home to several major employment sectors (healthcare and education foremost among these). Well-educated and high earning, its residents are attracted to the Town’s excellent schools and proximity to employment opportunities in Worcester and the broader metro area. It is the second most affordable Worcester suburb. Residents enjoy the variety of services and small shops along Main Street/ Route 122A, but traffic in the corridor presents a significant challenge. Route 122A serves as the primary single access route to Worcester for communities west of Holden. In terms of other infrastructure, the Town is fully served by public water and sewer but development is limited by a shortage of available land.

Conditions Income and Employment

Holden is an Established Suburb (Metropolitan Area Planning Council, 2008) with an upper-income demographic profile. On a subregional basis, household incomes are significantly higher than the statewide average (\$70,954) (Table 8 - 1). In Holden, the medium household income (MHI) is 142% of

Table 8 - 1: Median Household Income (US Census, 2010 and American Community Survey (ACS), 2016)

Town	2010	2016	% Change
Holden	88,405	100,599	13.79%
Paxton	100,333	93,654	-6.66
Princeton	102,853	121,500	18.13
Rutland	81,295	95,347	17.29
Sterling	102,115	104,187	2.03
West Boylston	79,906	74,005	-7.38
MA	64,509	70,954	9.99

the statewide average, greater than in many nearby communities. Town-wide, income is also increasing. From 2010 to 2016, MHI increased by nearly 14%. Comparing Holden with the five adjacent towns, only Princeton and Rutland experienced higher income

growth during this period. In Holden (and potentially some nearby communities), increasing incomes are partly attributable to Holden's excellent public schools and the new residents they attract. More than 70% of survey respondents indicated that the

Figure 8 - 1: Percent of Employment by Category 2000-2016 (US Census, ACS 2000- 2016)

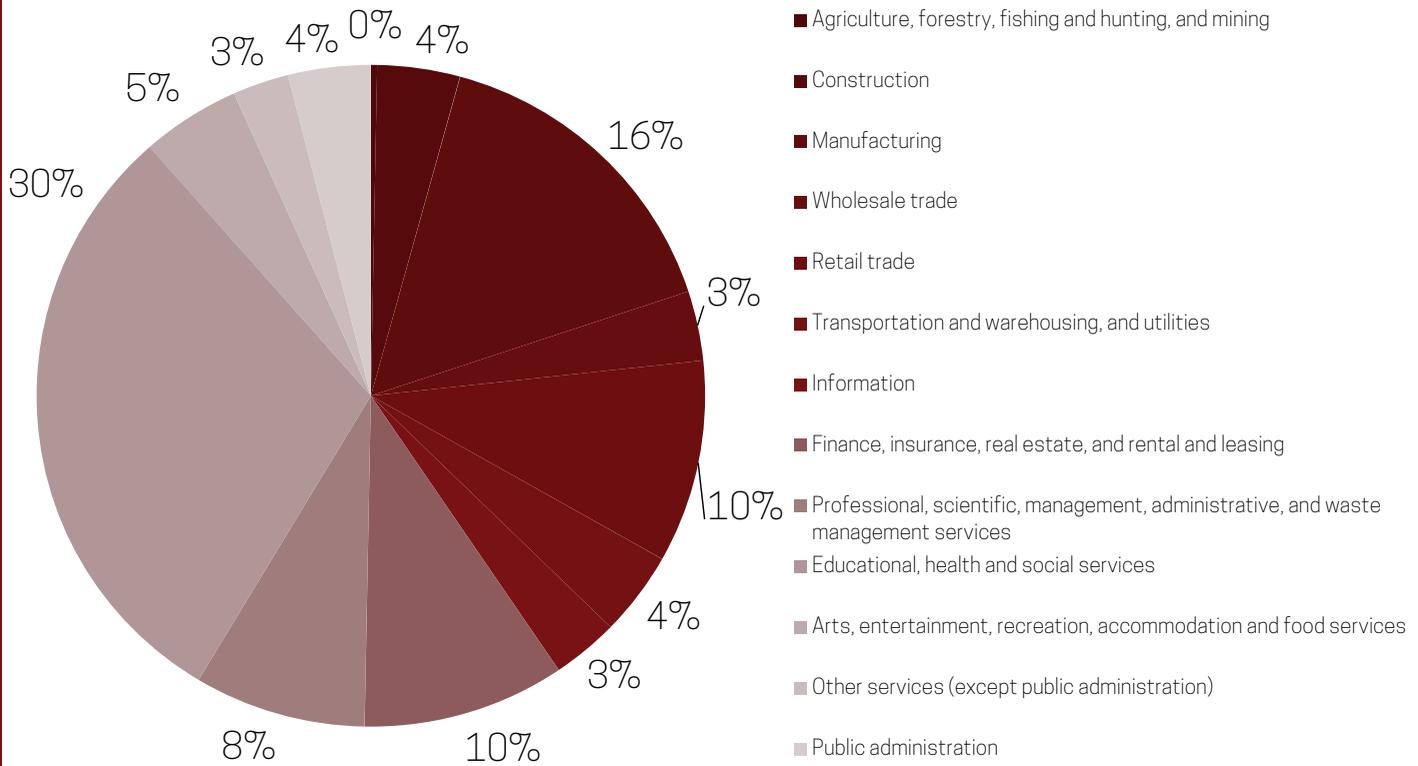
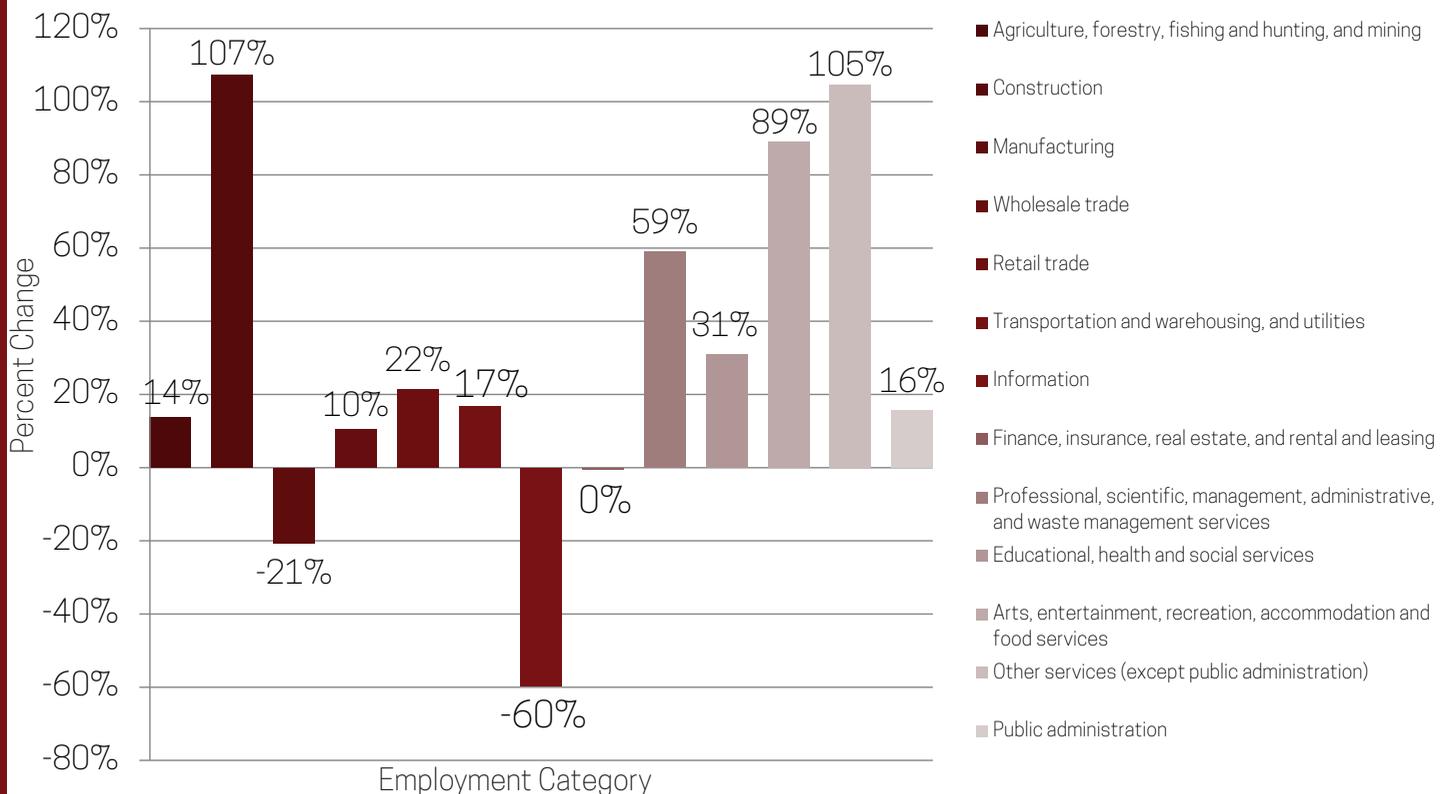


Figure 8 - 2: Percent Change in Employment by Category 2000-2016 (US Census, ACS 2000- 2016)



quality of the Wachusett Regional School District (WRSD) factored into their decision to live in Holden.

Although most residents send their children to Holden schools, a majority of adults work outside the Town. The average commute time for residents is 28 minutes. Approximately 40% of workers employed outside of Town work within 20 miles of home, indicating Worcester is a major employment center for Holden residents.

For Holden residents, the top three employment sectors are education, health and social services (32%); professional, scientific, management, administrative, and waste management services (11%); and manufacturing (10%) (Figure 8-1). Employment in all categories increased between 2000 and 2016 except manufacturing (which decreased 21%) and information (60%) as seen in Figure 8 - 2. Sectors that saw the largest increases included construction (107%); other services (104%); arts, entertainment, recreation, accommodation and food services (89%); professional, scientific, management, administrative, and waste management services (59%); and educational, health and social services (31%). The strength of this growth speaks to the business development climate and demand pressure in Holden.

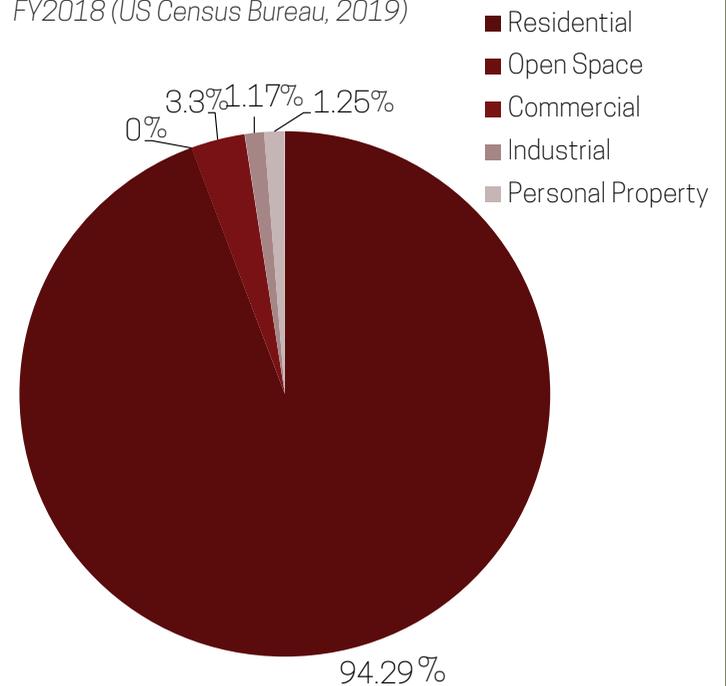
Tax Base

Holden’s tax base is primarily residential as can be seen in Table 8 - 2. Dwellings account for 94% of the local property taxes, as shown in Figure 8 - 3, and comprise 8,000 residential properties (including single-family homes, multi-family homes, and apartment buildings). Commercial and industrial properties total 150 and account for

Table 8 - 2: Percent of Tax Levy by Class, Holden FY2018 (US Census Bureau, 2019)

Type	FY18	FY17	FY16	FY15	FY14
Residential	94.29	93.95	93.79	93.55	93.58
Open Space	0	0	0	0	0
Commercial	3.3	3.37	3.38	3.6	3.63
Industrial	1.17	1.35	1.38	1.47	1.51
Personal Property	1.25	1.34	1.45	1.38	1.27

Figure 8 - 3: Percent of Tax Levy by Class, Holden FY2018 (US Census Bureau, 2019)



approximately 4.5% of Holden’s tax base. Personal property includes 400 non-real estate accounts and contributes 1.25% of local property taxes. (Town of Holden, 2017) Consistent with most of the communities adjacent to Holden, property is taxed at a single rate across types. In Fiscal Year (FY) 2018, the tax rate per \$1,000 of assessed value was \$17.61.

Table 8 - 3: FY2018 Tax Rates (Commonwealth of Massachusetts, 2018)

FY2018 Tax Rates	
Holden	\$17.61
Paxton	\$20.43
Princeton	\$17.28
Rutland	\$18.13
Sterling	\$17.54
West Boylston	\$18.72
Worcester	Residential: \$18.91 Commercial: \$34.03

This rate is relatively consistent with most of the adjacent towns. In keeping with statewide trends, Holden’s tax rate increased at a slow but steady pace over the last decade. Since 2009 the tax rate has increased by a total of approximately 29%. Despite this increase, FY18 saw the highest amount of new growth (\$818,443) in decades.

Business Overview

Holden is home to many small businesses and several large employers. To get a sense of the Town's business community and climate, CMRPC reviewed data from the 2012 US Economic Census; ESRI Business Analytics; and Doing Business As (DBA) records filed with the Town. Together, these datasets provide a holistic view of the Town's business community.

ESRI Business Analytics is an excellent source of "ballpark" estimates. According to this dataset, Holden contains 481 businesses, including 100 retail trade businesses; 37 finance, insurance, and real estate businesses; 22 farm or mining operations; and 190 service-based enterprises. (ESRI, 2019) Collectively, these businesses employ approximately 4,513 individuals.

Another perspective is provided by Holden's DBA certificates. The Town's 2018 DBA filings consist of 344 business. Such filings are required under Massachusetts General Law (MGL) Chapter 110 Section 5, which states that "any person conducting business under any business name other than the real name of the person conducting the business must file a Doing Business As certificate with the Town Clerk's office." They can provide insights into a Town's smaller enterprises, as corporations and partnerships already registered with the Secretary of the Commonwealth operating a business under their registered name are exempt from the DBA filing requirement. Of Holden's 344 DBAs, 270 filed using a Holden address. Thus, Holden contains an estimated 481 businesses, 43% or greater of which are locally-owned.

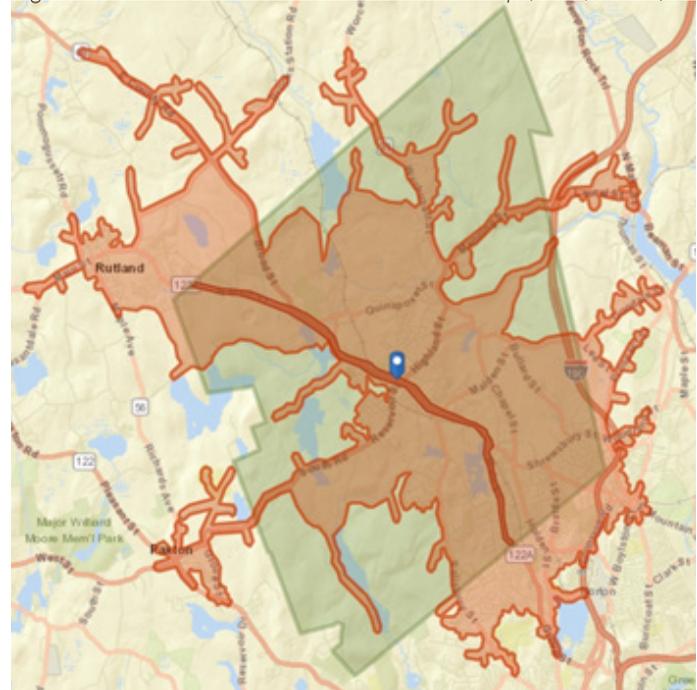
Finally, comparing data from the three most recent US Economic Censuses (2012, 2007, and 2002) reveals trends in the business climate. Generally, wages are up among Holden employers; however, businesses are also employing fewer people. Between 2002 and 2012 (or 2007 and 2012 where 2002 data was unavailable), most industries recorded a decrease in the number of employees. Only accommodation and food services registered a significant increase, growing by 28% from 2002 to 2012. Manufacturing employment declined

significantly, decreasing 55% during the same period. Employment in the healthcare and social assistance sectors also declined significantly, decreasing by 19% between 2002 and 2012.

Retail Leakage

One way to assess retail sector health is measuring the supply and demand of retail goods. Typically, retail supply and demand are measured based on drive times. On average, people are willing to drive 10 minutes to purchase convenience goods. Although this number varies depending on the person, the products, and other factors, ten-minute drive times are a standard measure of whether an area has everything its residents need for everyday living. Figure 8 - 4 depicts a 10-minute drive time from Holden Town Hall. Similarly, figures exist for

Figure 8 - 4: Holden 10 Minute Drive Time Map (ESRI, 2018)



how much money people typically spend on items. If local stores are not selling a certain amount of a product, it is extremely likely that residents are purchasing that item from a business outside of town. Generally, such "leakage" out of the local economy is the result of goods not being available at stores within town. High degrees of leakage can indicate that new businesses providing such goods within the trade area could be viable.

Many of the highest leakage rates in Holden are in industry groups that may not be desirable (or appropriate targets given the challenges faced by certain types of brick and mortar stores in the era of e-commerce). Examples include office supply, stationary, and gift stores; electronic shopping and mail order houses; electronics and appliance stores; and department stores. However, a number of retail types consistent with priorities of residents (and potentially appropriate for today's online marketplace) have moderate to high leakage factors, including:

- Clothing & Clothing Accessories Stores (\$34,972,340 leakage per year)
- Food Services and Drinking Places (\$40,967,315 leakage per year)

- Food and Beverage Stores (\$49,815,595 leakage per year)
- Miscellaneous Store Retailers- e.g., florists, gift stores, etc. (\$17,452,401 leakage per year)
- Furniture and Home Furnishings Stores (\$12,161,167 leakage per year)

Such enterprises may be appropriate targets of business recruitment strategies. Table 8 - 4 shows the overall supply, demand, and leakage in Holden, along with breakouts for retail trade and food and drink. Figure 8 - 5 depicts the leakage factor by business type in more detail.

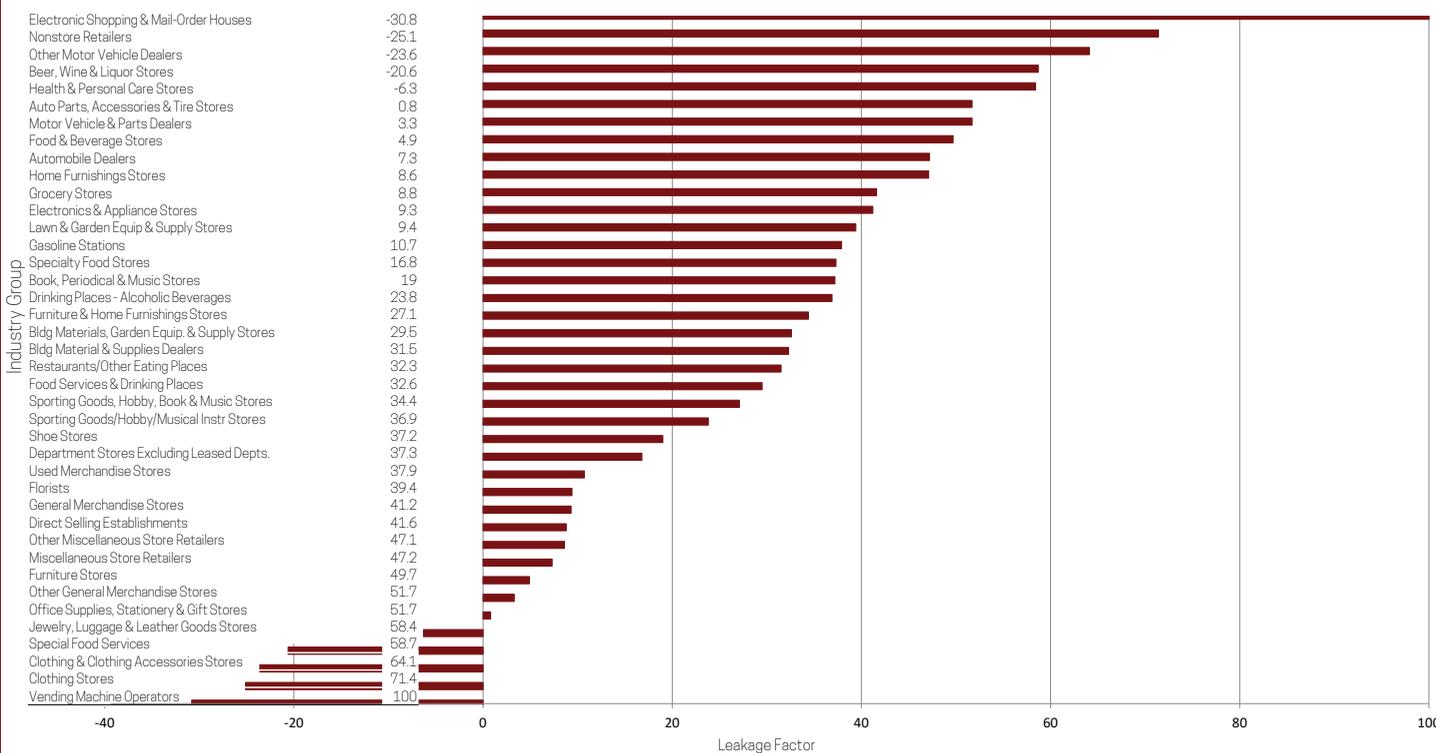
Commercial Business

The Town of Holden contains two commercially-oriented districts: Commercial (C) and Business

Table 8 - 4: Total Annual Retail Supply, Demand, and Leakage- 10-minute drive time from Town Hall (ESRI, 2018)

	Demand	Supply	Leakage
Total Retail Trade	\$523,924,627	\$164,056,635	\$359,867,992
Total Food & Drink	\$58,432,335	\$17,465,020	\$40,967,315
Total Retail Trade and Food & Drink	\$582,356,962	\$181,521,655	\$400,835,307

Figure 8 - 5: Retail Supply, Demand, and Leakage- 10-minute drive time from Town Hall, (ESRI, 2018)



Office-Professional (BOP). The Commercial District is primarily located along Rte. 122A, with additional areas located along Rte. 31 (south of the train tracks) and near the Rutland border. The District allows a variety of use by-right business uses including: personal service establishments; stores usually selling one or a combination of two or more of the following: dry goods, apparel and accessories, furniture and home furnishing small wares, hardware and food for home preparation; various consumer or commercial establishments (e.g., Beauty Salon; Travel Agent; Dog Grooming; Barber Shop; Florist; Baker; Bookstore). It permits mixed-use development by Special Permit. Restaurants also require a Special Permit.

The Business Office-Professional (BOP) District comprises a small area along Mayo Drive. More restrictive than the Commercial District, the BOP District allows several by-right uses including business offices, personal service establishments, home occupations, banks, and several other commercial uses by-right. The District also permits mixed-use development by Special Permit. A full list of allowed uses for the C and BOP districts are included in the Land Use chapter.

Currently, commercial development is largely concentrated along Rte. 122A/ Main Street. Development consists of a mix of stand-alone businesses and strip developments, which include independent businesses and chain stores. The Town also contains an emergent boutique retail and food-based business cluster, especially in and near Town Center. These businesses contribute to Town character, attract visitors, and provide spillover revenue to nearby businesses. Such businesses may not be subject to the 10-minute drive time rule, as they serve as a destination. Examples of specialty retail and food-based businesses include a stand for homemade ice-cream, a brew pub, coffee houses and breakfast places, and vintage boutiques.

Agricultural Business

With 978 acres and 4.2 % of the Town's land designated as agricultural, Holden contains a significant number of working farms and related

businesses. These enterprises contribute to the Town's country character and help preserve its historic legacy. Residents indicate that agriculture is a favorite aspect of the local economy and should be promoted. It is also an important business sector, providing self-employment, family employment, and jobs outside the household. The Town's agricultural sector includes pick-your-own produce farms, farm stands, farm-to-table catering, and businesses selling prepared products. These uses are allowed in varying capacity according to zoning district; however, the Town's Right to Farm bylaw encourages the pursuit of agriculture, promotes agriculture-based economic opportunities, and protects farmlands within the Town of Holden by allowing agricultural uses and related activities to function with minimal conflict with abutters and Town agencies. It applies to all jurisdictional areas within the Town.

Holden has an Agricultural Commission that serves and promotes agriculture within the town. In addition to advising other boards on matters related to agriculture, the Commission engages in projects and actions to promote the business of farm-related activities and traditions, and the preservation of farmland in town.

Industrial Business

The Town of Holden contains two Industrially-zoned districts: the Industrial District (ID) and the Industrial-Quarry District (IQ). The Industrial District (ID) is primarily located off of Main Street on Industrial Drive. The primary area consists of a 70-acre industrial park comprised of nine parcels. A pocket of ID-zoned land also exists off of Princeton Street at the former Electronic Controls Corporation (ECC) facility. Within this district, uses allowed by-right include manufacturing, construction, and quarrying. Uses allowed by special permit include business offices, personal service establishments, wholesale trade, registered marijuana facilities, and motor freight transportation and warehousing.

Infrastructure at the Holden Industrial Park includes water, sewer, and fiber. The area is located within a flood zone and the back portion of the park



Specialty Food-based Business (CMRPC, 2019)

experiences flooding issues. All pad-ready sites have been developed, and all buildings are occupied; however, not all parcels are fully built out. The park is well-diversified in terms of the types of businesses it houses. Businesses located within The Park include several of Holden's largest employers, including Pepsi Bottling Company. The Industrial Park maintains a "Proactive Key Account Program" that provides the Town with timely access to information about what is going on with tenants and businesses in The Park. Owners of property within The Park attest to a high degree of communication and responsiveness with and from Town officials and staff.

Across Town, the former ECC site is unoccupied and unutilized. The 17-acre site served as an electroplating manufacturing facility from the 1950s until 2005. (US Environmental Protection Agency, 2019) Prior to this use, the site was home to a historic mill. It is located near Town wellheads and requires environmental remediation.

The Industrial Quarry consists of four locations:

- Between 122A to the North and Causeway Street to the south, west to the Rutland border
- North of Unionville Pond in between Union Street and River Street, with Wachusett Street to the east and Snowberry Lane to the west
- Located south of Chaffin Pond, with Main Street to the east and Newell Road bordering the south and west
- Off of Wachusett Street to the east and just south of Elmwood Ave

Uses allowed by right in the IQ district are relatively consistent to those allowed in the ID district. In IQ, processing and treating of mixed and quarried raw materials is also allowed by-right, while manufacturing uses require a special permit. Full lists of allowed uses for the ID and IQ districts are presented in the Land Use chapter.

Town Center

Holden's Town Center emerged as a transportation crossroads in the 1700s. (Greer, Leonard, & Weiland, 2007) Today, Rtes. 122A and 31 intersect in this area, making it a major thoroughfare. Rte. 122A (Main Street) is also the Town's primary commercial corridor. Commercially-zoned, it contains a mix of local and franchise businesses. Landmarks include the historic Town Common, Town Hall, the First Congregational Church, Damon House, Gale Free Library, Starbard Building, and the First Baptist Church.

The intersection of Rte. 122A and Rte. 31 experiences more than 20,000 daily vehicle trips. (CMRPC, 2013 and 2016) Traffic backs up at the intersection light, contributing to congestion. In part, the traffic stems from limited Worcester access routes for towns west of Holden. Given



Holden Industrial Park (CMRPC, 2019)

that Rtes. 122A and 31 are state highways, traffic mitigation strategies are subject to Massachusetts Department of Transportation (MassDOT) regulations and standards.

Parking is not a major issue in Town Center at this time. Most businesses possess adequate parking. As a State highway, no parking is allowed on Main Street; however, several parking overflow options exist. These include lots at the Town Hall, Damon House, and Senior Center (when the building is closed on weekends). In the not too distant future, parking may become a more significant issue. Vacancies and the number of months on market are increasing for commercial buildings along Main Street that do not have on-site parking. The Town also lacks appropriate parking for community events and food trucks. Holden is taking proactive measures to address these emerging challenges. The Town recently adopted a Tier 1 Complete Streets policy. A Tier II prioritization plan for sidewalks and other multi-modal infrastructure is in

development. (Refer to the Transportation Chapter for additional details)

Jefferson Mill Area

Holden's Jefferson Mill Building is located at 1665 Main Street. The area is a nationally registered historic district. Some portions of the site are zoned Commercial. This zoning district does not readily support desirable new uses such as small multi-family housing, restaurants, or offices. Other areas of Jefferson Mill area are zoned Village. The Village zoning district allows a variety of land uses that integrate different elements such that each complements the function of each other use, thus improving the quality of the Village as a whole. Consequently, Holden's Village District is more restrictive than C or BOP districts. It requires a minimum of three of the following permitted land uses, one of which must be residential:

- Residential
- Restaurant
- Theater or Auditorium
- Recreational Facility
- Parking (open lots, and attached or detached single or multi-space garages)
- Business and Professional Office
- Retail Establishment (not including production facilities, but allowing on-site assembly)
- Personal Service Business
- Hotel or Motel
- Community Facility

The Jefferson Mill area is a focus of Town development efforts. In 2017, permits were reissued to develop condominiums on the site. The project stalled due to uncertainty around Eagle Lake, which is located nearby. There has been no site work to date, and the Village District zoning has not spurred development as expected. Consequently, a new Village Center District zoning bylaw for the area is in development. The purpose of this district is to create a walkable, mixed-use center that has residential, commercial, historic, and public space components that enhance the quality of life in the Town. The Village Center District will generally

support denser, mixed-use development including retail, office, and residential uses.

Processes and Procedures

Among the major factors that developers look for when considering a town for development, municipal processes and procedures are the ones over which the Town has the most control. Development is shaped by not only the strictness or lenience of regulations but the degree to which processes are streamlined and efficient. Overall, Holden's processes and procedures are working well; however, these processes need to be continually reviewed and refined.

Holden has taken efforts to improve its permitting process. Permitting bodies such as Building Inspection, Zoning Board of Appeals, Planning Board, and Conservation Commission share a department (Planning and Development Office, formerly Growth Management Department) and are co-located. The application and issuance of many permit types (including building, plumbing, gas, sewer hookup, and others) is conducted online. In the near future, online permitting will be expanded to include the Board of Health. Special permit granting authority is split between the Planning Board and Zoning Board of Appeals. In some towns, this presents a challenge for applicants. In Holden, staff indicates the split structure is working adequately. Although the Town does not employ a fast track permitting process or combined permitting application, Boards have held joint permitting meetings in the past. Similarly, roundtable review (review meetings attended by multiple departments) is occasionally used, but the Town does not hold standing meetings of review staff to meet with developers at all stages of project conception.

In terms of other best practices, the Town does not maintain dedicated economic development staff and the Economic Development Commission is not active. To date, the Town has not utilized Tax Increment Financing (TIF) or other development incentives. Staff indicates that the permitting process is sufficiently clear but no guidebook exists. Finally, the Town does not utilize Design Guidelines outside of Site Plan Special Permit requirements.

ISSUES AND OPPORTUNITIES

As detailed in the Executive Summary, the Town conducted outreach activities to identify the needs and priorities of those who live and work in Holden. Through these activities, residents expressed an overwhelming desire to preserve Holden's small-town, country character. On the other hand, residents expressed a strong demand for shopping convenience and stable taxes. Residents particularly favor growing such amenities through the following types of development.

These sectors already play a significant role in the Town's economy. A strategy that supports and encourages such amenities is realistic and provides a solid vision to guide economic development policy.

Small-scale businesses in existing buildings, with development concentrated along Main Street

Restaurants; small-scale home businesses; small retail shops, boutiques, and art galleries

Agricultural businesses and services

Support and promotion of existing local businesses

Clean energy generation, consumer services, and light industry

Town Center Traffic

Town Center is a cherished part of Holden's character, and residents' preferred area for commercial activity. Yet, traffic in the area is a preeminent concern. Increasing business activity in Town Center will likely yield additional vehicle trips. Thus, strategies to mitigate congestion and improve multimodal transportation options such as walking and biking are a vital component of Holden's economic development planning. Strategies to mitigate Town Center traffic include access (curb cut) management, addition of a left turn only lane, and encouraging multi-modal access. These topics are addressed in detail in the Transportation Chapter.

Built environment

Although Town Center is well-defined, aesthetic improvements would further brand the area and help encourage patronage from nearby towns. A facade improvement program could incentivize investment in building exteriors. Such programs provide financial incentives such as matching grants², tax incentives, or design assistance. In complement, passage of the Community Preservation Act (CPA)³ could fund improvements of eligible historic buildings. State and Federal Historic Tax Credits⁴ are also available for some historic redevelopment projects. Establishment of a Town Center Tax Abatement District could also spur investment. In such districts, property owners who invest in their properties are eligible for tax relief. The strategy can be used to encourage existing owners to rehabilitate properties regardless of whether current rental rates are sufficient to render investment cost effective. In support, branded wayfinding and pedestrian-level aesthetics would contribute to the character of Town Center. Such amenities could include themed signage, lighting, flower boxes, and other elements. Municipalities can fund downtown design elements

through Massachusetts Downtown Initiative (MDI) grants and other sources. Longer-term, expanded design standards could contribute to improved walkability and preserve the cultural and historic assets of the area. The Town may also want to advance a Town Common redesign, either through seeking consensus on the scenarios outlined in the UMass Student Design Studio Project or hiring a design consultant. The design should address traffic flow and connectivity between different types of spaces, especially green spaces.

Vacancy

Given residents' desire for additional commercial amenities concentrated in Town Center, strategies to address vacancy and target new business are essential. Addressing vacancy requires a multi-pronged approach. Strategies include tenant attraction, temporary activation, and tools to incentivize landlords. Identifying the reason for the vacancy is critical. Some sites possess challenges such as limited parking or inadequate infrastructure. Others may be vacant due to an owner's perception of commercial leasing rates, unfamiliarity with permitting processes, or limited marketing skills. Identifying the cause of the vacancy and working to address it therefore requires staff or volunteer time. The Town should consider appointing a part-time small business liaison or hiring an economic development coordinator who can work in partnership with the Wachusett Area Chamber of Commerce and Economic Development Commission to address vacancies. Strategies to address vacancy include:

Vacancy database or registry: Typically, municipal employees possess a working knowledge of vacant commercial properties. Maintaining a formal list of vacancies ensures that all development employees possess up-to-date information on current and upcoming vacancies. It also streamlines distributing

² Matching grants are funds that are set to be paid in equal amount to funds available from other sources. Matching fund payments usually arise in situations of charity or public good. In the United States, many projects in the various states and communities are partially funded with federal grants with a requirement for matching funds.

³ The Community Preservation Act (CPA) is a Massachusetts state law (M.G.L. Chapter 44B) passed in 2000. It enables adopting communities to raise funds to create a local dedicated fund for open space preservation, preservation of historic resources, development of affordable housing, and the acquisition and development of outdoor recreational facilities.

⁴ An income tax credit is available for the rehabilitation of historic, income-producing buildings that are determined by the to be "certified historic structures." Federal and State Programs are available.

property information to prospective business owners, real estate agents, Chambers of Commerce, and real estate websites (another important strategy). To complement, some towns require property owners to notify the municipality within a defined period after a property becomes vacant. Such registries help municipal staff stay apprised of commercial vacancies and are a means of establishing constructive dialogue with property owners. Once a landlord has registered a vacancy, the Town should work with the property owner to identify and address the cause of the vacancy.

Business lead tracking: As Holden’s development and planning staff receive inquiries from potential business owners, these leads should be tracked. In most municipal settings, municipal employees will often receive calls about specific properties or business ideas but cannot immediately match the interested party with a suitable property. Formally tracking business leads will ensure that opportunities are not overlooked when they emerge later on. It will also ensure that staff is actively reviewing leads.

Home-based businesses: Home-based businesses can be a source of commercial tenants. As a component of business lead tracking, the Town should maintain a list of home-based businesses and engage with such residents when seeking to fill space in Town Center. Another source of tenants is businesses located in nearby communities; successful businesses operating within the region may be interested in expanding or opening a nearby branch.

Social Media: The importance of social media in marketing vacant properties should not be overlooked. Many towns use their Facebook and Twitter pages to notify the public of vacancies. Some towns also crowdsource tenants. A 2018 report entitled *Storefront Vacancies Best Practices* prepared for the City of Cambridge suggests the use of websites where residents can identify vacancies and vote on

preferred uses (Larisa Ortiz Associates, 2018). Used in conjunction with more traditional online platforms (Town website, Facebook, etc.), crowdsourcing tenants could be an effective strategy for addressing vacancy.

Temporary Use Permits: To activate vacant space, the Town should consider adopting a pop-up retail ordinance that allows and streamlines temporary uses, especially in Town Center. Given Town Center’s limited scale, one prominent vacancy (or several less prominent ones) could diminish the area’s vitality. Temporary uses allow storefronts to remain active in the absence of long-term tenants. Common temporary uses include art galleries, seasonal retail, pilot businesses, and cause-based uses.

Vacancy Tax: Vacancy taxes are sometimes assessed when a property is not leased, redeveloped, or sold within a defined period following vacancy registration. An overview of several Vacant Property Registry and Special Tax programs is included in the *Storefront Vacancies Best Practices* report prepared for the City of Cambridge. (Larisa Ortiz Associates, 2018) This policy is best pursued as part of a comprehensive vacancy reduction strategy that includes providing technical assistance to property owners.

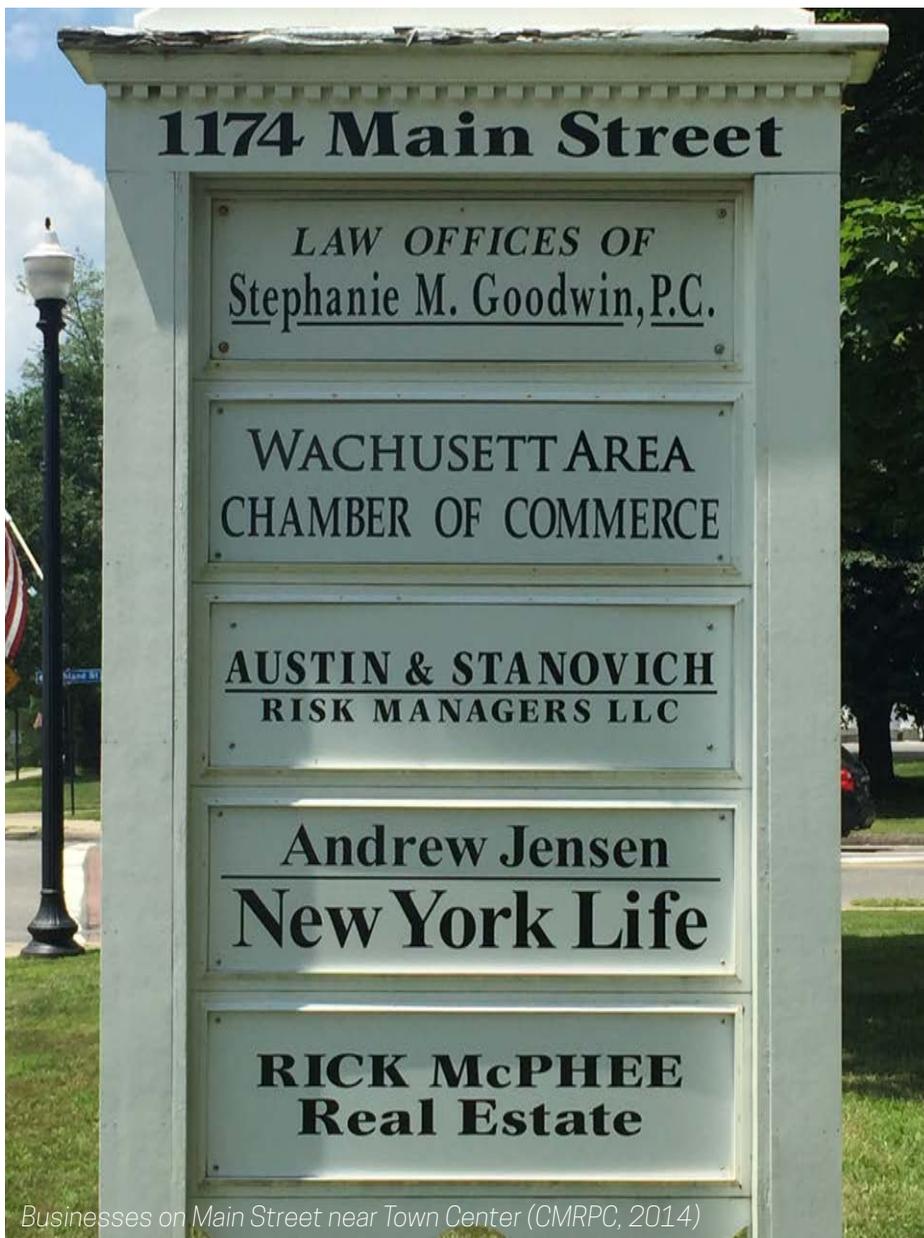
Parking

Although a majority of 2018 survey respondents indicated that parking is not an issue in Holden, the issue should be addressed proactively. As noted in the Transportation Chapter, parking in Town Center is strained during Holden Days and other Town events. The Town’s Planning and Development Office staff indicates that vacant buildings lacking parking are increasingly difficult to fill. The Town should work to identify off-site parking solutions for vacant commercial buildings on Main Street that lack adequate parking. The Town should also review its parking standards to ensure that shared parking is adequately provided for. A shared parking bylaw would support the Town in its effort to locate tenants for hard to fill properties, providing a framework for discussions with property owners proximate to vacant buildings.

Zoning

To encourage the establishment of new small-scale businesses, restaurants, and mixed-use development, the Town should review and potentially expand by-right uses in Town Center. Select areas on Main Street could be rezoned from Commercial and Residential to “Village,” which permits mixed-use. Additionally, the Village District requires a special permit for restaurants and stores selling a combination of goods, and personal service establishments. It does not permit consumer service establishments, such as bookstores or beauty salons. Allowing these uses by-right in the Village District could facilitate development of new businesses desired by residents, potentially

in a mixed-use context. In the Commercial District, restaurants are permitted by special permit. Allowing this use by-right in the Commercial District could facilitate the establishment of additional restaurants in Town Center. Additionally, creation of additional dwelling units in the Main Street Corridor could further “activate” the area. To do so without compromising the commercial character of the area, the Town could encourage accessory apartments in the commercial area. Currently, The Board of Appeals may authorize an Accessory Apartment by Special Permit in any residential district, provided certain conditions are met. It could be beneficial to explore expansion of this provision to include commercial areas.



Businesses on Main Street near Town Center (CMRPC, 2014)

Eagleville Historic District / Jefferson Mill

With Jefferson Mill as its centerpiece, Eagleville Historic District is a significant economic asset. Located less than two miles from Town Center and proximate to Eagle Lake Recreation Area and Holden Hills Country Club and golf course, the historic mill village is an ideal location for mixed-use development. The mill property could potentially support second-story residential, first floor office and commercial space, and restaurants or similar amenities in several of the smaller buildings. The Jefferson Mill parcel consists of nearly three acres and multiple buildings, the largest of which comprises of approximately 600,000 square feet (sq. ft.). Efforts to encourage developments consistent with a walkable village center, with mixed-use residential, commercial, historic, and public space components, are underway. However, the scope of development will be limited by Eagle Lake, which abuts the area to the east. The layout

and design of Rte. 122A is also a constraint. Near the mill, vehicle travel speeds are greater than in a typical village center area.

Village Center

The Town is currently engaged in strategies to facilitate its vision for the Jefferson Mill area. The Town adopted a Village Center zoning for the area. Due to a variety of factors, including large parcel area requirements and uncertainty surrounding Eagle Lake, this zoning provision has not been utilized. Accordingly, the Town is in the process of finalizing and adopting a new Village Center Zoning Bylaw and District that will replace the previously adopted overlay. The new district will help protect and strengthen the traditional New England character of the area. Specific goals of this new district include:

- Build upon the historic development patterns in existing village centers to create attractive, walkable neighborhoods.
- Encourage adaptive reuse of abandoned, vacant, or underutilized buildings or structures where appropriate.
- Allow for a mix of new land uses that are appropriate to both the needs of the community and the scale of surrounding neighborhoods.
- Provide incentives to develop larger parcels at higher densities and in a coordinated, planned approach.
- Maintain a consistently high level of design quality throughout the district.

The Village District Bylaw should allow for and anticipate the redevelopment of properties over time. This could entail construction of new buildings that are closer to the road, and multiple uses that articulate and enhance the village center. The ability to mix uses and allow for small scale residential density on smaller lots should be encouraged and allowed.

Commercial Zoning

In the vicinity of Jefferson Mill, commercially-zoned properties are fairly limited. To encourage additional

commercial uses in the area, the Town could expand rezoning efforts beyond the Village Center Bylaw initiative. The Town should assess whether there are any parcels proximate to Jefferson Mill but outside the boundaries of the proposed Village Center District that should be rezoned from Residential to Commercial. As noted in the section on Town Center, the Town may also want to expand the by-right uses allowed in the Commercial District.

Encourage Housing Development

To encourage housing development in the Jefferson Mill area, the Town could explore Urban Center Housing Tax Increment Financing (UCH-TIF). The Urban Center Housing Tax Increment Financing (UCH-TIF) Program is a statutory program authorizing cities and towns to promote housing and commercial development. The UCH-TIF Program provides real estate exemptions on all or part of the increased value (the “Increment”) of improved real estate. Tax increment financing may be combined with grants and loans from local, state and federal development programs.

Infrastructure

The Town’s effort to improve pedestrian and bicycle access through the recently adopted Complete Streets policy and prioritization effort will help facilitate the area’s redevelopment. Currently, it lacks the sidewalks, crosswalks and pedestrian amenities consistent with a typical village center.

Eagle Lake

Despite recent issues surrounding Eagle Lake and ownership/maintenance of its dam, the Eagle Lake Recreation Area is an important component of the area’s redevelopment as a village center. The site consists of 362 acres of trails, mature forests, and low-impact recreational activities such as boating, kayaking, and fishing. Proximity to this open space and recreation area is a marketable amenity, and will be especially attractive to those seeking the live-work-play experience offered by mixed-use development. Whether in its current form or restored to its natural state through removal of the dam, the Town can leverage the Eagle Lake Recreational Area for economic development purposes.

Commercial Businesses and Specialty Retail

Holden residents indicated a strong desire for additional small businesses, including retail and restaurants. With a retail, food, and drink leakage of \$400,835,307, sufficient demand exists to support a variety of new commercial enterprises. A two-pronged strategy that focuses on supporting existing businesses and courting new ones will maximize outcomes.

Existing Businesses

Existing businesses are assets that should be supported, nurtured, and preserved. To ensure that the existing small businesses are not displaced by big-box, low-cost retailers, the Town should amend the Zoning Bylaws to prohibit or deter big-box retail development. Such uses were rated as highly unfavorable by a majority of residents, and they provide a significant threat to the small business community.

Numerous strategies to support small businesses exist; however, most require staff and or volunteer time. As stated in the section on Town Center, the Town should consider appointing a small-business liaison from among its staff, or hire an Economic Development Coordinator. This person could work with the Economic Development Commission and Wachusett Area Chamber of Commerce to undertake activities to support small businesses and cultivate others.

Municipalities can play an active role in promoting local businesses. Many Economic Development Commissions and Coordinators actively promote new businesses, authoring press releases and sharing updates with the local media. Some municipalities provide businesses with an opportunity to promote themselves through Cable Access, allowing for brief presentations at the beginning of televised meetings. An especially creative example of public/private partnership, one community initiated a “Business Matters” campaign where a Town official visited a local business with a reporter every week, with highlights of the visits and businesses shared by the local media. Business-to-business cultivation is also a means of

supporting existing small businesses. Oftentimes, local businesses would prefer to purchase from other local enterprises, but lack an awareness of local purchasing opportunities. A local business guide, or publicly available list of businesses, can generate greater awareness of local purchasing opportunities. Cooperative capitalism strategies such as joint marketing and cross-business promotion are also effective tools for increasing revenue.

Such initiatives are commonly undertaken by small business merchants associations. The Economic Development Commission or municipal development staff could work to encourage formation of small business or merchants association.

New Businesses

The development of new businesses can be encouraged through ensuring the Town has pro-business processes and procedures, and effective marketing. Pro-business policies include Round Table review, the elimination of unnecessary special permit requirements, development support services, and other strategies that are detailed in the section on Processes and Procedures. Marketing strategies can take many forms. As a starting point, the Town should review the leakage analysis in conjunction with feedback provided by residents to identify business types that are undersupplied and desirable. Holden residents indicated they want more small-scale specialty retail, restaurants, galleries, and art boutiques. When promoting vacant sites, whether through social media or traditional platforms, preferred uses can and should be articulated. Additional strategies for promoting uses are provided in the sections on Town Center and Industrial Business.

Agricultural Businesses

Agriculture is an important component of Holden’s character, and a preferred economic development strategy among Town residents. More than three-quarters of Community Vision Survey respondents indicated that an increase in agricultural businesses was desirable or highly desirable. Yet, across the Commonwealth, farmland (in acres and number of

Plant sale near Town Hall (GMRPC, 2019)



farms) is declining (Tota, 2019). Multiple factors are contributing to this decline, including demographic preferences and farm viability. Ensuring that Holden's farms remain viable (and perhaps even increase in number) requires a strategy that pairs new business practices with preservation. Tools to preserve farmland are detailed in the Open Space and Recreation Chapter; the following strategies will help Holden farms adapt traditional business models to meet 21st century consumer demands.

- Online presence: It is essential for farms to maintain an up-to-date, user-friendly website. Social media and email alerts are also important to stay connected to existing customers and expand customer bases.
- New revenue models: Many farms are expanding traditional offerings to include experiential learning, outdoor activities and competitions, farm-to-table dining, and other events. Cooperative capitalism (i.e., where businesses collaborate on opportunities, rather than compete) is also generating new revenue streams for many Central Massachusetts farms. Local

examples of cooperative capitalism include the Back 40 Farm Festival hosted by Lilac Hedge Farm.

- Land Leasing: Farm owners can also lease land to other agricultural producers, Issue Requests for Proposals (RFP)s to gauge interest from the local farming community, or utilize New England Small Farm Institute's New England Land Link, which is an online clearinghouse for parties interested in leasing out or utilizing farm land.

Holden's Agricultural Commission and Holden's professional development staff should work with the Farm Bureau, US Department of Agriculture (USDA), Central Mass Grown, and local farms to support and encourage these strategies.

Industrial Business

In the Community Vision survey, 52% of respondents indicated the Town should explore the potential for new light industrial development. Growing this sector will help diversify the tax base and contribute to a stable residential tax rate. Given Holden's existing land use patterns and the value its residents place on open space and agriculture,

efforts to expand light industry should focus on maximizing the success of existing industrial areas and developments, including the Holden Industrial Park and former ECC site.

The Industrial Park is Holden's preeminent industrial asset. Although the buildings in the Park are fully occupied, business owners in the Park would like to have a plan in place for when tenants provide notice of an impending departure. Owners would like the Town to develop and disseminate a complete listing of commercial properties for sale or lease, in order to enlist community-wide support in filling properties. This strategy is proving effective in communities across the country; crowd-sourcing development is an emerging strategy for not only addressing vacancies but soliciting desired business types. Additionally, the Park owners suggest building the awareness of realtors who handle commercial properties so that interest is created before the Park and other areas experience a need. This is a tried-and-tested strategy, implementation of which could fall to the Economic Development Commission or an economic development coordinator. Additionally, the Town should continue to explore expanding uses allowed within the Industrial District.

Although the Industrial Park is currently fully occupied, it recently experienced its first vacancy in many years. In response, the Town met with property owners to explore expanding uses in the Park, consumer services in particular. Initially, property owners felt the expanded uses were incompatible with existing uses. Today, property and business owners in the Park are supportive of expanded uses, including a potential brewing company. Expanding the types of uses allowed within the Park will allow the Town and Park flexibility to adapt to changes in the market. Increasingly, vacant and underutilized industrial properties are accommodating new uses and smaller-scale tenants. Retail malls are proving ideal for medical facilities and indoor sports venues. Vacant mill buildings are finding new life by accommodating many small tenants. Makerspaces, co-working and incubator spaces, small-batch artisan manufacturing, and other uses are filling once vacant industrial sites. Expanding allowed

uses in the Industrial District will provide the Town and property owners with greater flexibility and resilience.

The former ECC site (156 Princeton Street) is unutilized. Consisting of 17 acres and a two-story brick and cinder block facility, the site may still be suitable for industrial activities. Adjacent to residential properties and proximate to the Asnebumskit Brook, the site may be better suited to industries with lower levels of traffic and environmental impacts. Currently, the property contains industrial contamination. In 2007, the EPA conducted a partial cleanup of the site, removing toxic substances left behind by the former owners, and cordoning off a waste lagoon. (US Environmental Protection Agency, 2019) Additional remediation is necessary, especially given the site's proximity to Town wellheads. The Town should seek funding to conduct further testing and remediation. The highest and best use of the site will be largely determined by the degree of contamination and what type of use restriction is placed on the site. At a minimum, the site may be viable for renewable energy generation, which residents expressed a desire for in the Community Vision Survey.

Processes and Procedures

According to Town staff, Holden's permitting process is very effective; however, it should be constantly evaluated and available electronically when possible. To compete for quality new businesses (or retain existing ones), it is necessary to be not only business friendly, but more business friendly than nearby communities. There are several strategies not used in Holden that can support aspiring entrepreneurs, improve the desirability of project applications, and speed up development timelines.

Human Resources

Holden's Economic Development Commission (EDC) is inactive and the Town lacks a dedicated economic development coordinator. To attract new businesses (and ensure that existing businesses thrive and do not relocate out of town), the Town must adopt a proactive approach to economic development. Without a dedicated committee

or staff to monitor conditions and implement strategies, the Town is limited in its ability to undertake the economic recommendations of this plan. Holden should work to reactivate the Economic Development Commission and establish a new vision to guide its efforts. In addition, the Town would benefit from the addition of, at a minimum, a part-time economic development coordinator. Towns throughout the region are working to establish part-time (and full-time) economic development staff positions, and many are seeking inter-municipal job share arrangements. Opportunities for seed/ pilot funding exist, including the Commonwealth's Community Compact Cabinet Efficiency & Regionalization grant.

Economic Development Functions

Currently, municipal economic development functions are provided by Holden's Planning and Development Office staff. Formalized and assigned to a dedicated staffer, these functions will likely increase in magnitude: proactive economic development generates new leads, new business, and new projects. Whether the responsibility of a dedicated economic development person or the community development team, the following strategies will allow the Town to stay reasonably competitive (i.e., business friendly):

- Track business leads or expressions of interest. In many towns, business leads fall through the cracks if a suitable site is not readily available.
- Maintain an inventory of vacant commercial and industrial sites. Match vacant sites with businesses looking to locate in Holden.
- Ensure the Town website is up-to-date with relevant documents such as zoning bylaws, RFPs, permitting forms, and contact information.
- Create marketing materials including an economic development website, Town brochure or video, and economic development social media presence.
- Establish a single point of contact to shepherd aspiring business owners through the permitting process and help troubleshoot issues.
- Conduct outreach to ensure existing businesses

feel supported and have the resources to thrive (and expand) in Holden.

- Identify and apply for grants.
- Spearhead and work with future local business association.
- Seek leads from the Holden Chamber of Commerce, commercial real estate brokers, and state agencies.
- Collaborate with newspapers and other media outlets to promote new businesses.
- Provide resources to new and home-based businesses (and help home-based businesses locate commercial space).
- Spearhead and implement a facade improvement program.
- Join and participate in Main Street America programs.
- Host Open for Business meetings.

Roundtable Review

Roundtable review meetings are a favorite tool of many economic development practitioners (and developers). By holding standing, formal appointment meetings that are open to prospective developers at all stages of the development process, Towns can increase the desirability (and success) of development proposals. Such meetings allow prospective business owners to communicate with community development staff as well as staff from fire, highway, police, and other review departments, from the initial stages of a project through to implementation. Currently, Holden conducts inter-departmental review meetings for any substantial site plans and subdivisions. Transitioning to a standing meeting of all relevant staff could enhance communications between the Town and developers and enable the Town to mitigate potential issues early on.

Zoning Combined Permitting

Best practices support combining Roundtable Review with Zoning Combined Permitting. This process allows the combination of multiple special permit and/or site plan approval applications into a single application and requires a single

public hearing. Doing so can significantly improve permitting timeframes and, perhaps equally important, enhance the Town's image as an easy place to do business.

Design Guidelines

The Town should work to establish design guidelines outside of site plan review. Design standards that promote walkable places and preserve and enhance the cultural and historic assets of the area will help ensure that development is consistent with the vision expressed by residents. Technical assistance is potentially fundable through the Massachusetts Executive Office of Energy and Environmental Affairs Planning Assistance Grant Program.

Permitting Guidebook

The Town should consider creating an up-to-date permitting guidebook to help prospective business owners navigate the permitting process. This strategy may reduce staff time dedicated to answering basic questions about permitting.

Incentives

The Town should determine whether there is political will to utilize Tax Increment Financing and other development incentives. Promoting the potential availability of Tax Increment Financing and other development incentives can help the Town brand itself as business friendly and generate interest from developers and prospective business owners.

GOALS, OBJECTIVES AND ACTION ITEMS

The Master Plan recommends the following action items based on the goals and objectives crafted with careful consideration of the public outreach results, analysis of current conditions, and progress achieved since 2008. The action items accompanying the objectives will also be reflected in the Implementation Chapter (Chapter 11).

CAPITAL ITEMS

Implement wayfinding and pedestrian-level improvements (i.e., flowerboxes) in the Town Center area

Goal 8.1: Encourage a strong, diversified tax and employee base.

Objective 8.1.1: Increase Holden's capacity to provide economic development support services.

- **Action Item 8.1.1.1:** Convene regular meetings of the Economic Development Commission and establish a new vision to guide the Commission's efforts.
- **Action Item 8.1.1.2:** Consider hiring a dedicated economic development coordinator to undertake proactive and responsive economic development activities.

Objective 8.1.2: Enhance the predictability and ease of navigating local permitting processes.

- **Action Item 8.1.2.1:** Consider establishing Zoning Combined Permitting and Round Table Review to streamline application and review processes for developers.

- **Action Item 8.1.2.2:** Establish a single municipal point of contact to shepherd developers and prospective business owners through the permitting process.

Goal 8.2: Offer a variety of quality goods and services to meet the demand of residents, workers, and visitors.

Objective 8.2.1: Increase the number and variety of retail and service establishments in Holden.

- **Action Item 8.2.1.1:** Consider using and promoting the availability of Tax Increment Financing and other development incentives.
- **Action Item 8.2.1.2:** Market Holden as a desirable place to do business; consider creating an economic development website, Town brochure or video, and stronger social media presence.
- **Action Item 8.2.1.3:** Review the Town’s leakage analysis in concert with Community Vision Survey to identify suitable retail targets; market accordingly.
- **Action Item 8.2.1.4:** Continue working with the Wachusett Area Chamber of Commerce, commercial real estate brokers, and state agencies to identify prospective business interests.

Goal 8.3: Concentrate development in the Main Street corridor where infrastructure exists.

Objective 8.3.1: Encourage and support investment in the Main Street corridor.

- **Action Item 8.3.1.1:** Identify funding mechanisms for a facade improvement program.
- **Action Item 8.3.1.2:** Identify off-site parking solutions for vacant commercial buildings on Main Street that lack adequate parking.

- **Action Item 8.3.1.3:** Explore Community Preservation Act (CPA) as a means of funding improvements in historic Main Street buildings.
- **Action Item 8.3.1.4:** Explore strategies for establishing a tax abatement district in the Main Street corridor.
- **Action Item 8.3.1.5:** Expand opportunities for mixed-use development by rezoning select areas along Main Street from Commercial or Residential to Village.

Objective 8.3.2: Build on Town Center’s existing character through aesthetics and design.

- **Action Item 8.3.2.1:** Pursue branded wayfinding and pedestrian-level aesthetic improvements in Town Center.
- **Action Item 8.3.2.2:** Develop design guidelines (outside of site plan review) that promote walkable places, preserve and enhance Town Center’s cultural and historic assets.
- **Action Item 8.3.2.3:** Prepare a design for Town Center that better connects existing open and green spaces to the pedestrian infrastructure.

Goal 8.4: Develop a walkable, mixed-use village center that has residential, commercial, historic, and public space components.

Objective 8.4.1: Employ Smart Growth design principles in the Village Center.

- **Action Item 8.4.1.1:** Explore the Urban Center Housing Tax Increment Financing (UCH-TIF) Program as a means to encourage housing in the Jefferson Mill area.
- **Action Item 8.4.1.2:** Build upon the historic development patterns to create an attractive walkable village centers.
- **Action Item 8.4.1.3:** Encourage adaptive reuse of abandoned, vacant, or underutilized buildings or structures where appropriate.

- **Action Item 8.4.1.4:** Allow for a mix of new land uses that are appropriate to both the needs of the community and the scale of surrounding neighborhoods.
- **Action Item 8.4.1.5:** In the Jefferson Mill area, provide incentives to develop larger parcels at higher densities and in a coordinated, planned approach.

Objective 8.4.2: Proactively plan for and facilitate growth in Eagleville

- **Action Item 8.4.2.1:** Prepare a design for Jefferson Mill area that leverages Eagle Lake by connecting existing open and green spaces to pedestrian infrastructure.
- **Action Item 8.4.2.2:** Pursue branded wayfinding and pedestrian-level aesthetic improvements in Jefferson Mill area.

Goal 8.5: Evaluate and promote adaptive reuse of vacant properties and industrial sites

Objective 8.5.1: Reduce commercial and industrial vacancies.

- **Action Item 8.5.1.1:** Explore vacancy registry and tax policy models.
- **Action Item 8.5.1.2:** Assess the need for a pop-up retail ordinance that streamlines issuance of temporary use permits for uses such as food trucks, seasonal retail, pilot businesses, and other uses.
- **Action Item 8.5.1.3:** Widely market vacant and available properties; consider traditional platforms as well as social media and emerging online tools.
- **Action Item 8.5.1.4:** Continue to explore expanded uses in the Industrial District.
- **Action Item 8.5.1.5:** Work with the Industrial Park property and business owners to create an action plan for addressing future vacancies in the Park and other areas.

- **Action Item 8.5.1.6:** Establish an inventory of available commercial and industrial space; routinely update and make publicly available.
- **Action Item 8.5.1.7:** Seek funding for additional testing and remediation at the former Electronic Controls Corp. (ECC) site.

Goal 8.6: Provide incentives and opportunities for small-scale businesses and other desirable enterprises

Objective 8.6.1: Support existing and prospective small businesses.

- **Action Item 8.6.1.1:** Amend the zoning bylaw to eliminate undesirable commercial uses such as “big box” retail.
- **Action Item 8.6.1.2:** Convene frequent meetings with the local business community to discuss challenges and desired resources; encourage the establishment of a small business or merchants association.
- **Action Item 8.6.1.3:** Help businesses promote their goods and services by providing access to municipal platforms.
- **Action Item 8.6.1.4:** Support collaborative capitalism. Encourage local businesses and community partners to organize and take part in “buy local” initiatives.
- **Action Item 8.6.1.5:** Encourage development of small office space with business resources (e.g., co-working spaces) to draw existing home occupations into commercial space.

Objective 8.6.2: Support agricultural businesses.

- **Action Item 8.6.2.1:** Assess opportunities to support and encourage the use of social media and online tools by local farms.

- **Action Item 8.6.2.2:** Encourage new and collaborative revenue models including festivals, workshops, active recreation and sports, and farm-to-table dining.
- **Action Item 8.6.2.3:** Encourage joint marketing and peer engagement through organizations such as Central Mass Grown.
- **Action Item 8.6.2.4:** Assist farms with identifying tenants for underutilized land.

Goal 8.7: Foster a local workforce that complements Holden's employer needs.

Objective 8.7.1: Leverage public/private partnerships to ensure an adequate labor supply for local businesses.

- **Action Item 8.7.1.1:** Engage with the local business community to identify unmet labor and workplace transportation needs.
- **Action Item 8.7.1.2:** Work with the WRTA to explore opportunities for workplace transportation.
- **Action Item 8.7.1.3:** Collaborate with the Wachusett Regional School District and local employers to identify internship and apprenticeship opportunities.



Local Golf Course (CMRPC, 2019)



Business Sign in Town Center (Credit: CMRPC Staff 2018)

What does Holden think about Economic Development?

ECONOMIC DEVELOPMENT

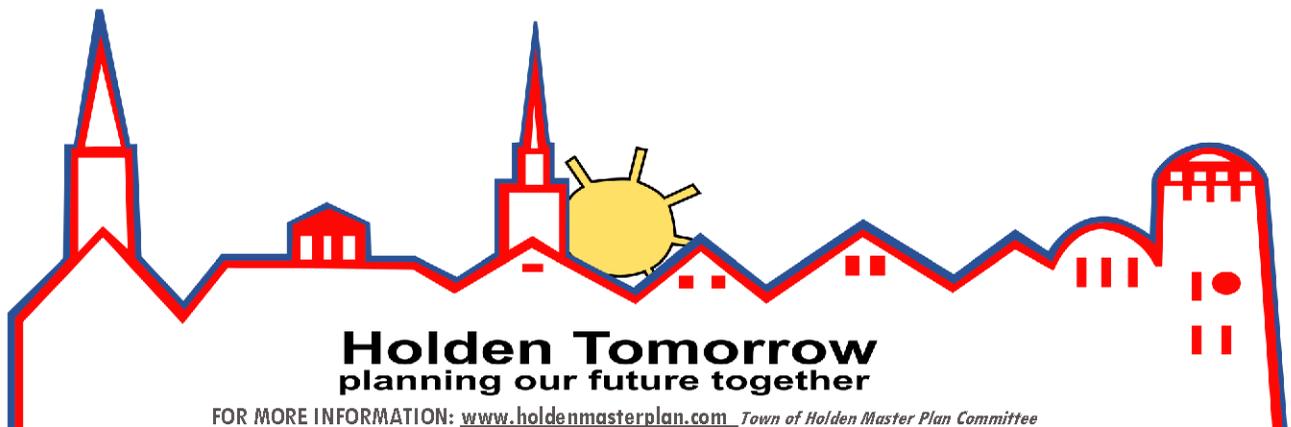
Holden Community Survey Results

TOP 3 DESIRED BUSINESS TYPES

1. Small retail shops, boutiques, art galleries
2. Agriculture-based business and services
3. Clean Energy (commercial solar)

MOST UNDESIRED BUSINESS TYPES

1. Shopping malls, big box retail, outlet shopping
2. Hotels, motels, resorts
3. Rental housing



Holden Tomorrow
planning our future together

FOR MORE INFORMATION: www.holdenmasterplan.com *Town of Holden Master Plan Committee*

9.0

TRANSPORTATION

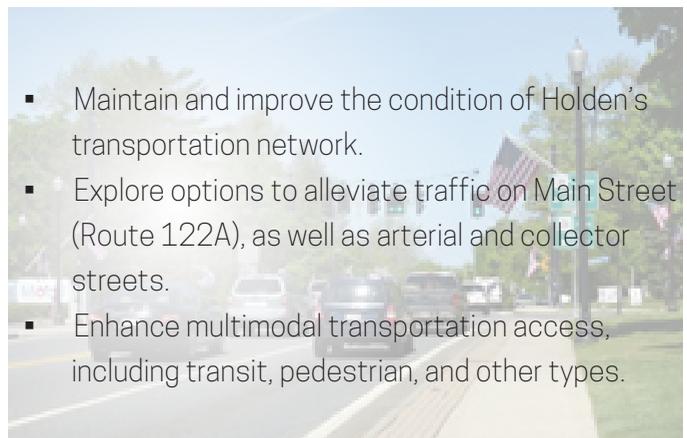
INTRODUCTION

Holden is surrounded by the Towns of Princeton, Rutland, Paxton, West Boylston, Sterling, and the City of Worcester. The Town features access to several major regional roadways, including Interstate-190 (I-190) which passes north-to-south through the eastern border of Town, and Interstate 290 (I-290) and Interstate-90 (I-90) to the south towards Worcester. Holden no longer receives fixed-route transit service provided by the Worcester Regional Transit Authority (WRTA). The same year as the original Master Plan was written, WRTA Route 32 was eliminated. WRTA Route 14 was re-purposed in 2013 to remain within Worcester. Holden receives paratransit services operated by the Holden Council on Aging (COA), under contract with the WRTA. Service is available to residents who qualify; those who are 60 years of age or older, or persons with a disability (regardless of age). Due to its limited transit service and small-town character, the dominant mode of transportation in Town is the automobile. Holden is located in the Central Massachusetts Regional Planning Commission

(CMRPC) planning region and is also a member of the Central Massachusetts Metropolitan Planning Organization (CMMPO) for transportation planning purposes. This chapter is an evaluation of Holden's transportation network including an inventory of existing roadway conditions, infrastructure maintenance, traffic volumes, safety, bicycle and pedestrian accommodations, freight rail and trucking, and public transportation. The objective of this chapter is to provide recommendations in order to fulfill the following goals:

Main Street (CMRPC, 2018)

- Maintain and improve the condition of Holden's transportation network.
- Explore options to alleviate traffic on Main Street (Route 122A), as well as arterial and collector streets.
- Enhance multimodal transportation access, including transit, pedestrian, and other types.



PRIOR PLANNING AND ENGAGEMENT EFFORTS

Route 122A Access Management Plan (2011)

In 2011, CMRPC prepared an Access Management Plan for Route 122A from Shrewsbury Street to Mt. Pleasant Ave. An access management plan reviews the current and potential land uses along a corridor by evaluating the ability for the current adjacent parcels to provide safe and efficient vehicle, transit, bicycle and pedestrian movement. The Plan's recommendations were divided into short, medium- and long-term improvements in order to help local authorities consider both internal and external movements through the planning, design, permitting, and project approval stages. Recommendations from the Plan include coordination with property owners to consolidate/eliminate multiple driveways into one wherever possible and application of driveway design standards and guidelines in the development review process.

Route 31 Corridor Profile Study (2014)

In 2014, CMRPC completed the Route 31 Corridor Profile Study. The study detailed the current conditions (traffic volumes, congestion, safety, and drainage), environmental considerations, and current land uses of the area. The profile focused on Route 31 from the Paxton town line to its intersection with Route 122A, and included an extension area on Manning Street from Route 31 to the West Boylston town line for data purposes. The study recommended improved sidewalk connectivity, drainage improvement, and signalized intersection improvements at the Route 122A intersection.

CMMPO Transportation Improvement Program (TIP) (2019)

The Transportation Improvement Program (TIP) is a planning document that lists all highway, bridge, transit, and intermodal projects in the Central Massachusetts Metropolitan Planning Organization (CMMPO) region. The TIP is a federally mandated requirement for all Metropolitan Planning Organizations (MPOs). The TIP is a prioritized listing of all transportation investments in an MPO's planning area for the next 5 federal fiscal years. Potential TIP projects are scored and selected by CMMPO staff and CMMPO Advisory Committee before being endorsed by the CMMPO. Projects that are included in the TIP are programmed to receive federal-aid funding. Currently there are 2 Holden projects listed on the CMMPO 2019-2023 TIP. Listed in TIP year 2019 is Massachusetts Department of Transportation (MassDOT) Project #607908, which is a bridge maintenance project for bridges on I-190 over River Street and the Quinapoxet River. Listed in TIP year 2022 is MassDOT Project #608815, which is a road resurfacing project on Route 122A planned from Shrewsbury Street to Route 31.

Long Range Transportation Plan (LRTP) (In Progress)

The Long-Range Transportation Plan (LRTP) is a planning document that describes the region's current transportation system and how that system should be maintained or modified over a 20-year period. The federal planning provisions passed in August of 2005 require the CMMPO to update the LRTP every 4 years, since it presides over a region that does not meet federal air quality standards for ozone. The LRTP document was last updated in 2016 and the current update is now under development for 2019. Consistent with recommendations from the WRTA's Comprehensive Service Analysis (CSA), the LRTP recommends implementing a new WRTA Route (Route 32) to connect Holden with Worcester. No other project specific information related to Holden was included in the Plan.

EXISTING CONDITIONS

The local road network is among the most expensive and important investments towns can make in transportation. According to the Master Plan Community Survey 69% of residents drive alone to work and 16% of residents highlighted “road/traffic/sidewalks” as Holden’s greatest need. Not only do Town residents rely on the road network for transportation around Town, but commercial and industrial uses also rely on the road network for the transportation of goods and services. The following section describes the current conditions of the Town’s overall transportation network including travel characteristics, traffic volumes and congestion, bridges, roadway safety, sidewalks and pedestrian mobility, and transit.

Travel Characteristics

Commuting data provides insight into the connection between residence and employment, especially as it relates to transportation infrastructure improvements. Journey-to-work information is collected by the United States Census Bureau. The most recently available commuting flow data comes from the American Community Survey (ACS) 5-Year estimates for 2009 to 2013. The top 10 municipalities of origin and top 10 municipalities of destination were selected. Similar information was collected through the Master Plan Community Survey and during the Master Plan community events. Figure 9 - 1 displays the Residence Location of Holden Workers and Figure 9 - 2 displays the Workplace Location of Holden Residents.

The majority of Holden residents currently work in Worcester or Holden, which was the same trend identified in the Master Plan (2008). The arterial routes 122A (Main Street) and 31 (Reservoir Street and Highland Street), and Shrewsbury Street provide access to the retail and employment centers in Holden. Traffic generators in town include the Holden Health Care Center, the U.S. Post Office, Alden Research Laboratory, Inc., local businesses, restaurants, an industrial park, and the Wachusett Regional High School. Motorists traveling to and

from these generators experience congestion and delay on Main Street and Shrewsbury Street.

Since 2000, the number of Holden residents working in Worcester has dropped, while the number of residents working in Town has increased. This reversed the trend from 1990 to 2000 when 531 fewer residents worked in Town. Locations further east in the Metro-West area - such as Boston, Westborough, and Framingham - have also become important locations of employment for Holden residents. Since 1990, Holden has been a strong employment center for its residents as well as those living in Worcester and Rutland. Although Holden still sees strong commuting numbers from Worcester and Rutland, those rates have slightly declined from 1990 and 2000. This generates less commuting time for local workers as confirmed by the survey results. The Master Plan Community Survey demonstrated that majority of residents’ travel ten or less miles to get to work. Approximately 25% of respondents reported that they drive 1 to 10 miles followed by retirees/unemployed (18%) and people who travel 30+ miles (16%).

Of the top 10 places of residence for Holden workers, the top 5 are towns directly adjacent to Holden, followed by 5 towns located to the south west. The changing patterns seen in places of residence versus employment demonstrate that people are traveling farther for work, predominately commuting from surrounding towns into larger metropolitan areas. These findings indicate that transportation decisions may need to focus on inter-city transit or explore expanded options for residents, particularly employed residents.

Registered Motor Vehicles in Holden

Data on motor vehicle registration is available from MassDOT through the Massachusetts Department of Revenue - Division of Local Services. Table 9 - 1 compares the number of registered vehicles locally and statewide over the last two and a half decades and calculates change in registration rates. Since 2005, the number of registered motor vehicles has decreased in Massachusetts overall and has slightly increased (4%) in Holden during the same time period (Figure 9 - 3).

Figure 9 - 1: Journey to Work, Residency of Holden Workers (Top 10 Locations)

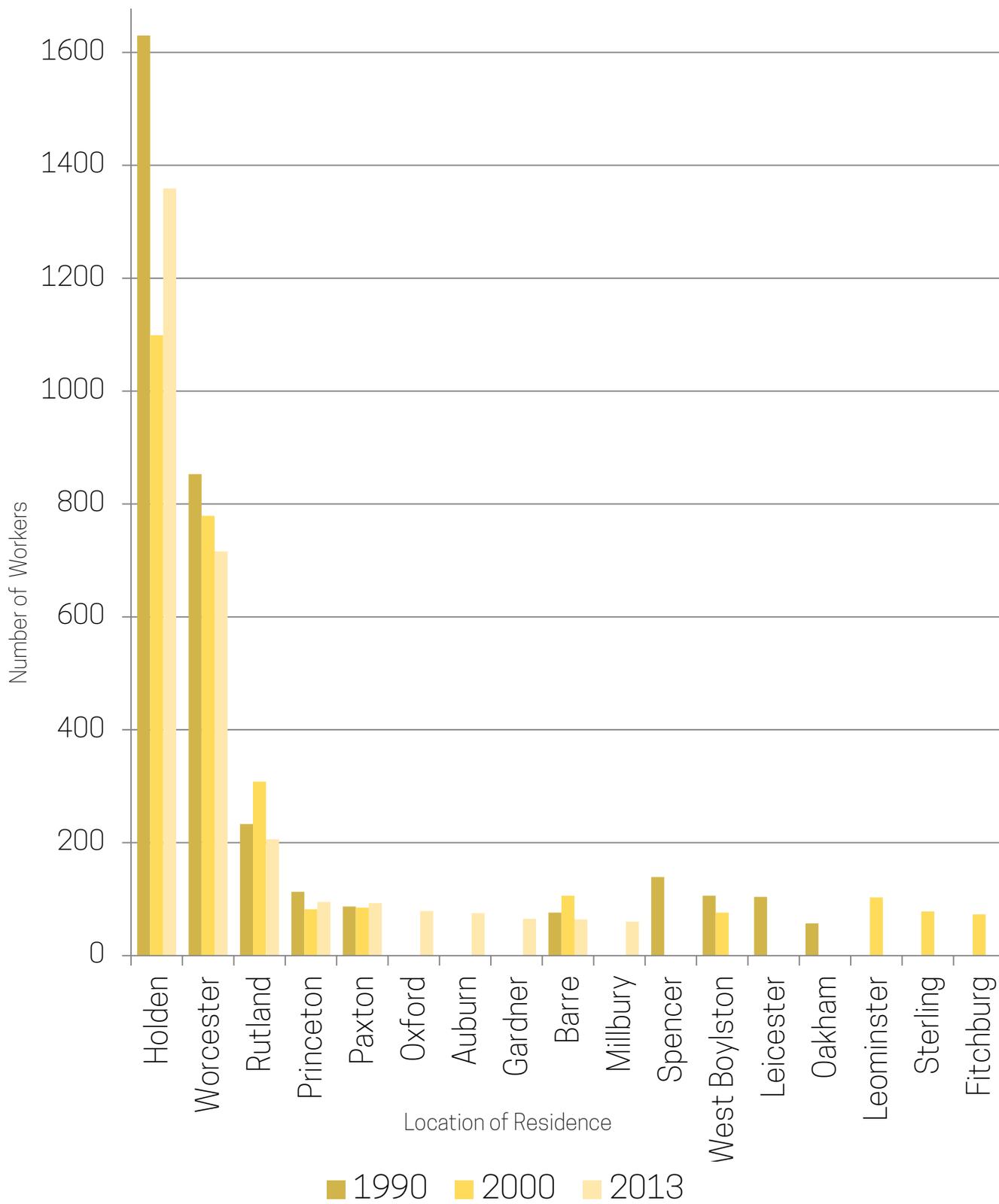


Figure 9 - 2: Journey to Work, Workplace Locations of Holden Residents (Top 10 Locations)

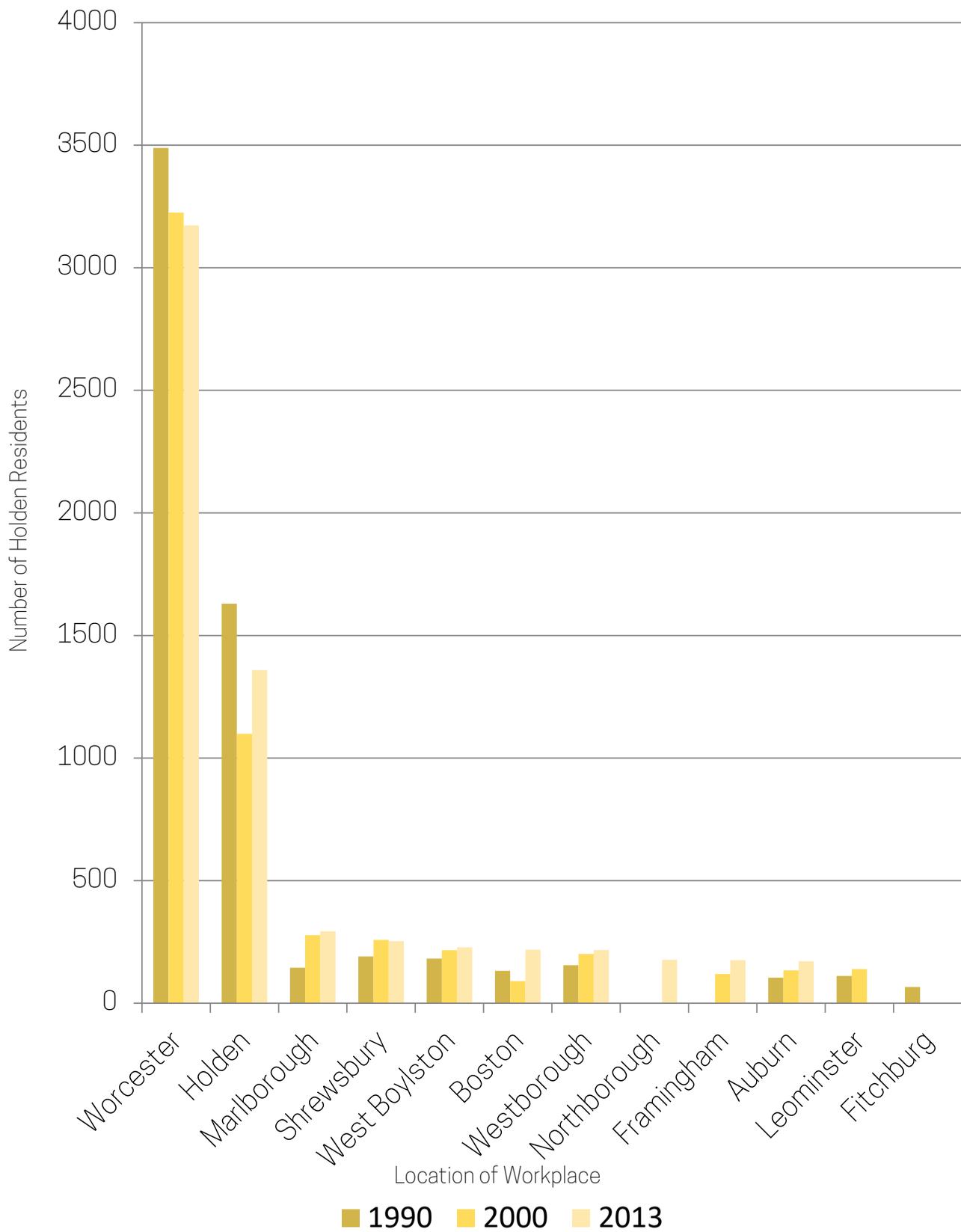
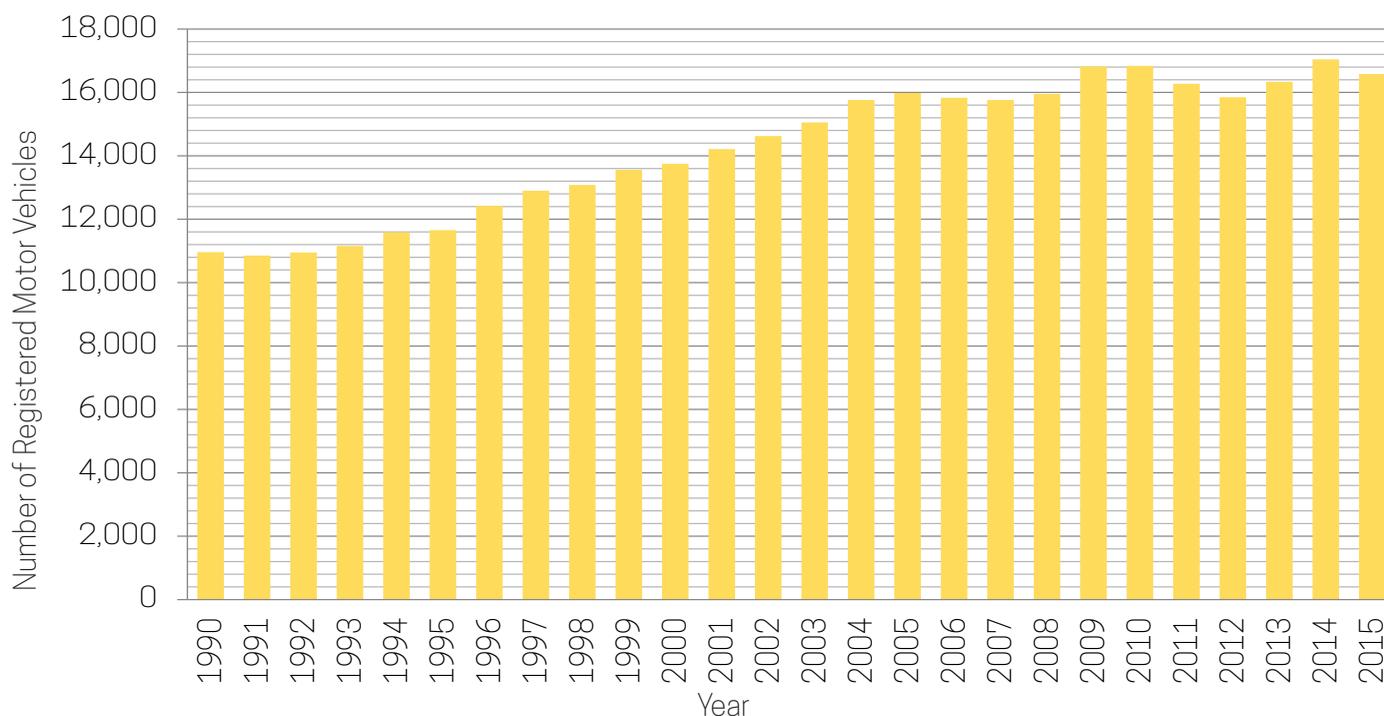


Table 9 - 1: Registered Motor Vehicles in Holden (Town of Holden, 2018)

	1990	2005	% GROWTH*	2015	% GROWTH
Massachusetts	4,074,063	5,639,105	38%	5,295,952	-6%
Holden	10,961	15,988	46%	16,584	4%

*Note: Growth rates between 1990 and 2005 are sourced from the 2008 Holden Master Plan

Figure 9 - 3: Registered Motor Vehicles in Holden (Town of Holden, 2018)



Road Jurisdiction

The ownership, or jurisdiction, of a road is key for attributing responsibility to the correct entities. The MassDOT Road Inventory File (RIF) is the official State database of public and private roadways in Massachusetts. The RIF contains the most complete digital information on roadway ownership for all communities in Massachusetts, includes information on classification and layout. This information helps determine the amount of local aid dollars each town receives. The official source of road ownership is the Town Clerk, who is responsible for sending updated information to MassDOT for any inclusions or exclusions when a new roadway is accepted as a Town road.

According to the most current version of the MassDOT Road Inventory File dated June 15, 2018, the ownership by road miles in the Town of

Holden includes approximately 117 miles of locally accepted roadways, compared to 12 miles of state-owned roads. As shown in Table 9 - 2, there are approximately 36 miles of unaccepted roadways in town, which includes private dirt roads or roadways owned by the Massachusetts Department of Conservation and Recreation (DCR). Map 9 - 1 displays the jurisdiction of all roadways across town.

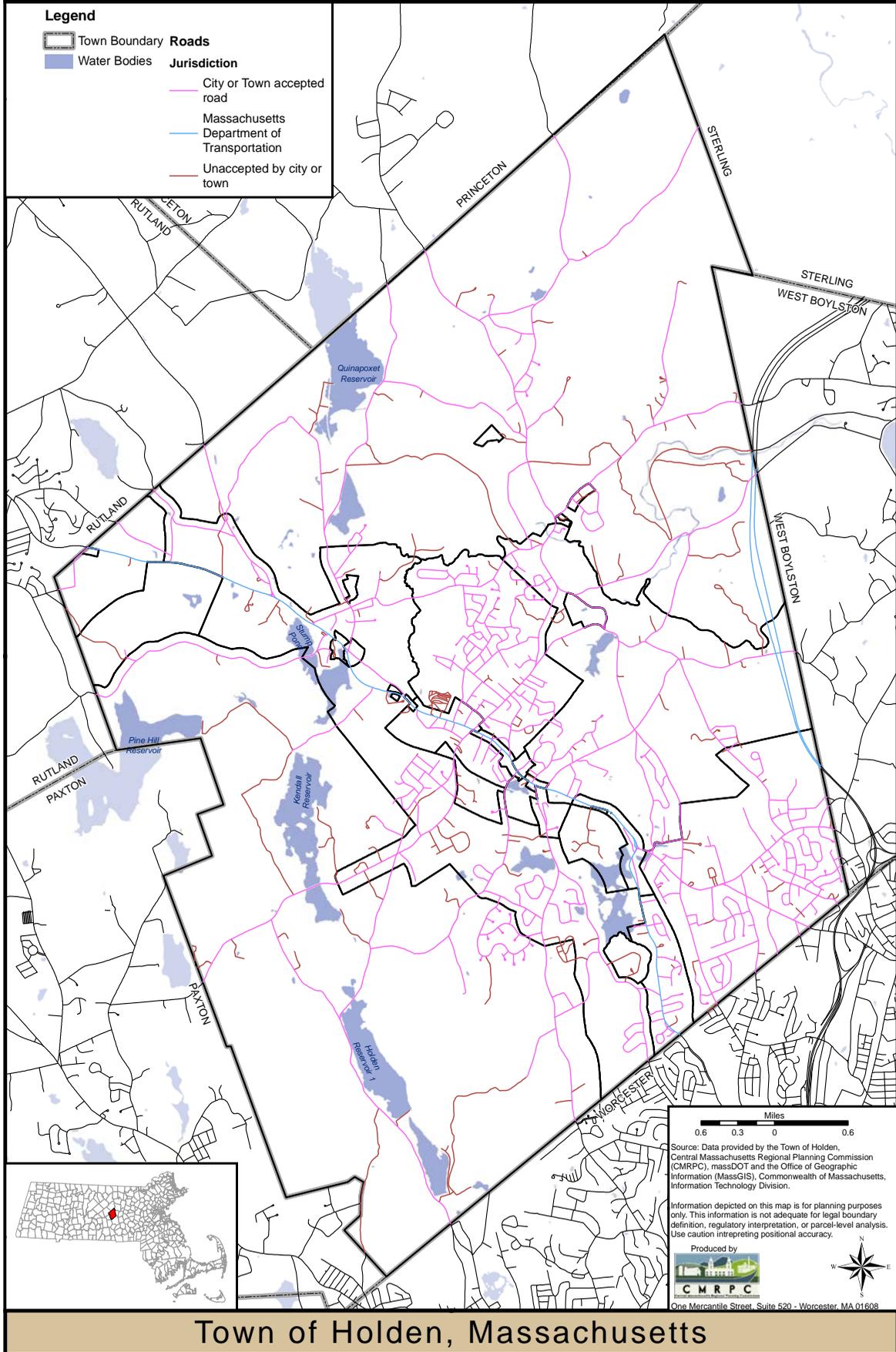
Table 9 - 2: Road Jurisdiction in Holden (MassDOT, Town of Holden, 2018)

Jurisdiction	Road Miles
Holden Accepted	117.24 miles
MassDOT	12.18 miles
Unaccepted by Holden	36.42 miles

*Note that many of the miles of unaccepted road may be private dirt roads or DCR roads

Map 9 - 1: Holden Roadway Jurisdiction Map

Roadway Jurisdiction Map 2019 MASTER PLAN



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Roadway Functional Classification

Highway travel involves movement through a network of roads. Functional classification is the process of categorizing roads and highways into different functional groups based on the service they provide. This classification determines how travel can be routed throughout a road network in a logical and efficient manner. According to the Federal Highway Administration, roads are classified into a hierarchy of 4 categories:

- Principal Arterials
- Minor Arterials
- Collectors (Major, Minor)
- Local Roads

Roads higher in the hierarchy, such as Principal Arterials or Minor Arterials, are designed to provide greater mobility and typically have higher design speeds. Arterials are typically used for longer through-travel between major trip generators (larger cities, recreational areas, etc.). In contrast, roads lower in the hierarchy, such as Local Roads, provide local access to private property or low volume public facilities and typically feature lower design speeds. Collectors provide a less developed level of service at a lower speed for shorter distances. They collect traffic from local roads and connect them with arterials, as well as connect smaller cities and towns with each other and to arterials. Arterials and Collectors have further sub-classifications of “Urban” or “Rural” and “Major” or “Minor” based on population density characteristics. Map 9 - 2 displays the functional classification of all roadways across Town.

According to the most current version of the MassDOT Road Inventory File dated June 15, 2018, the functional classification by road miles breaks down in the Town of Holden as shown in Table 9 - 3.

Federal-aid eligible roads are those qualified to receive financing from federal sources. Funds are allocated

Table 9 - 3: Functional Classification by Road Miles in Holden (MassDOT, 2018)

Functional Classification	Miles of Roadway
Principal Arterial	7.00 miles
Minor Collector	3.05 miles
Minor Arterial	17.05 miles
Major Collector	13.11 miles
Local Roads	120.61 miles
Interstate	4.99 miles
Total	165.84 miles

from the federal government to state governments, to be distributed for roadway improvement projects through the Transportation Improvement Program (TIP). Functional classification, in conjunction with urban/rural designation, determines whether a roadway qualifies for receipt of these funds. Eligibility includes all interstates, urban/rural arterials, urban collectors, and rural major collectors. Rural minor collectors and local roads - the majority of Holden’s roads – are not eligible for these funds. Additionally, MassDOT is required by the Federal Highway Administration to advertise High Risk Rural Roads (HRRR) projects. A high-risk rural road is any road with a functional classification of rural major collector, minor collector, or local rural road with significant safety risks for lane departure crashes. As of 2017, MassDOT identified 25 locations statewide for HRRR projects. Of these high-risk rural roads, 13 locations are located in the CMRPC region, including Worcester Road/Gregory Hill Road (Route 31). This road is identified as a HRRR from 0.4 miles South of Ball Hill Road to East Princeton Road (3.337 mi). Map 9 – 2 depicts Holden Roadway Functional Classifications.

Regional and Local Road Network

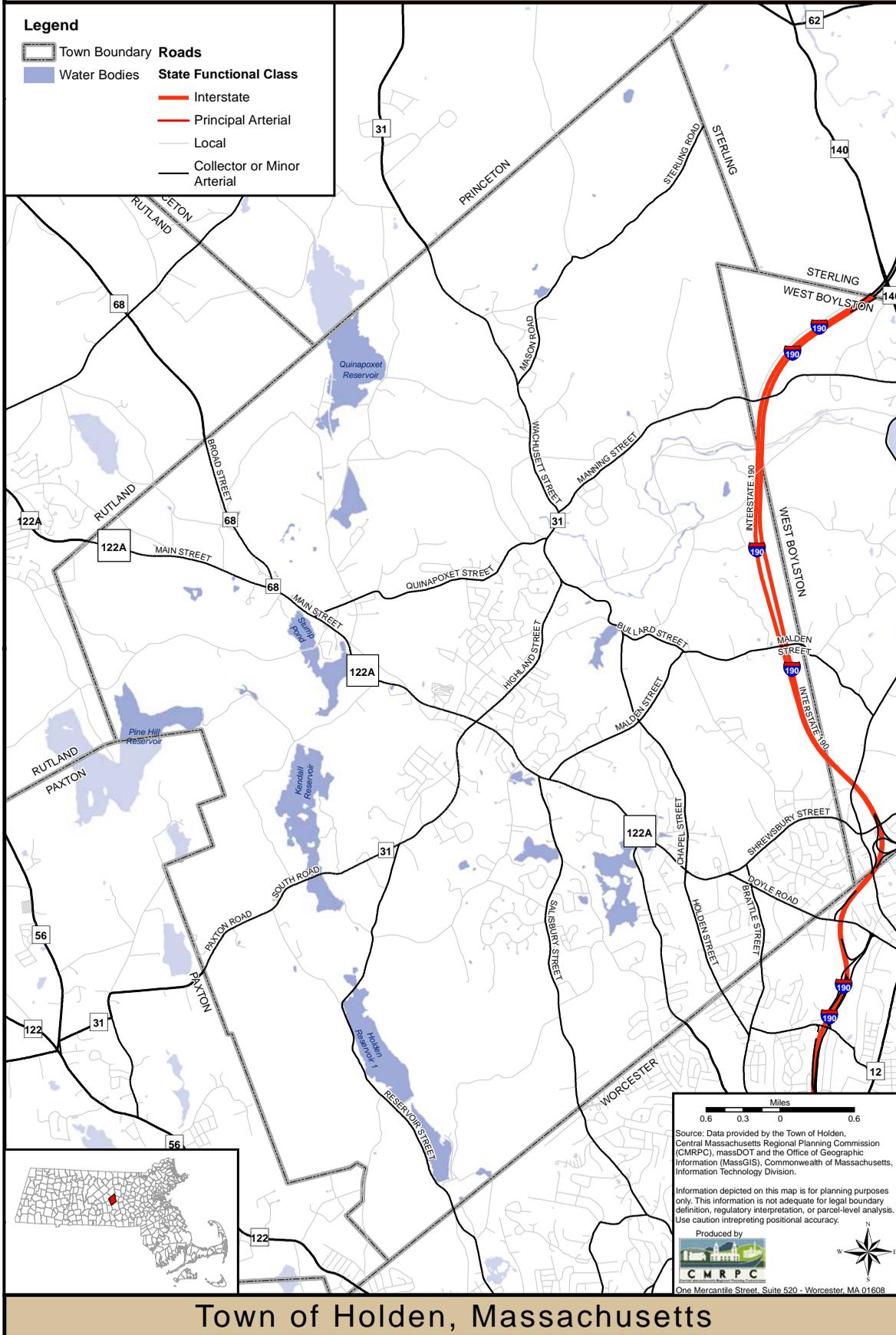
This section will provide a setting of the regional and local roadway network with a brief narrative of each vital link in Holden. Roads included:

Interstate 190

The only Interstate Highway that provides a direct connection to Holden, I-190, is a spur of I-90. Its southern portion ends at I-290 in Worcester and its northern section ends at MA Route 2 in Leominster. While there are no interchanges in the Town of Holden, exit 2 at Ararrat Street is the exit most commonly utilized to get to and from Holden by I-90. Exit 3 in Worcester at West Mountain Street and exit 5 at MA Route 140 in West Boylston also provide nearby connections to Holden for those traveling on the Interstate.

Roadway Functional Classification Map

2019 MASTER PLAN



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Route 122A (Main Street)

Massachusetts State Route 122A (Main Street) is a major north-south road running from the Worcester City line to the Rutland Town Line. A significant outside and crosstown connection, Route 122A is the most heavily traveled roadway in Holden (see Table 9 - 6). From the Worcester City line to its intersection with Shrewsbury Street, Main Street is a predominantly residential road with some light industrial and commercial use. The road's cross section is on average 27 feet wide with 2-foot shoulders. From its intersection with Shrewsbury Street to its intersection with MA Route 31 (Highland Street/Reservoir Street), Main Street is a 43-foot-wide road with 8-foot shoulders and sidewalks on both sides. As a state-owned road, no parking is allowed on Main Street. This section of road is dominated by commercial establishments and experiences high congestion during peak periods. From its intersection with MA Route 31 until it reaches the Rutland Town Line, Main Street is a residential road 40-feet wide with 8-foot shoulders on both sides and a single sidewalk on the eastern side of the road terminating at the intersection with MA Route 68 (Broad Street). Route 122A is listed in TIP year 2022 as MassDOT Project #608815, which recommends resurfacing the road from Shrewsbury Street to Route 31.

Route 31 (Highland Street, Reservoir Street, Wachusett Street)

Massachusetts State Route 31 is a major north-south road running from the Paxton Town Line to the Princeton Town Line. From the Paxton Town Line, Route 31 is a narrow predominately-residential road with very narrow shoulders. There are crosswalks and Yield to Pedestrian markings, but no sidewalks or curb ramp accommodations at present. Beginning at the "Holden Commons," plaza sidewalks are present on the east side of the road, switching to the west side at 75 Reservoir Street. Route 31 continues in this layout until it intersects with Route 122A. From its intersection with Route 122A until the Princeton Town Line, Route 31 is a predominately residential road. A sidewalk is present on the west side of Route 31 from the Route 122A intersection until its intersection with Nola Drive.

Route 68 (Broad Street)

Massachusetts Route 68 begins in Holden at Route 122A and continues to the Rutland Town Line. From there, it continues to Gardner before terminating in Boylston. In Holden, Route 68 is a sparsely populated road with a few houses and one commercial nursery, extending only a total of 1.5 miles into Town. There are no pedestrian or bicycle accommodations but the layout of the shoulders of the road are sufficiently wide to accommodate pedestrian and bicycle mobility.

Manning Street

Manning Street is an east-west street in Holden connecting Route 31 to I-190 and Route 140 in West Boylston via the Raymond Huntington Highway. For its entire length, Manning Street is a rural road. It includes a few areas of housing, including one subdivision. The Central Mass Rail Trail crosses Manning Street and has a parking lot accessible from this intersection.

Salisbury Street

Salisbury Street is a north-south road providing connections for Holden to the Salisbury Street neighborhood of Worcester to the south and Main Street to the north. Salisbury Street is a narrow road with limited shoulders. There is a sidewalk along most of the road, but only on the west side. The combined Holden Town pool and recreation area is located along Salisbury Street.

Shrewsbury Street

Shrewsbury Street is an east-west road providing connections from 122A to I-190 via Doyle Road and Mountain Street West in Worcester. Shrewsbury



Main Street and Industrial Drive (CMRPC, 2018)

Street begins at the West Boylston Town Line and is predominantly a residential street for its entire length with many residential neighborhoods to its north and south. There is limited sidewalk infrastructure on Shrewsbury Street with the section existing on the north side from the West Boylston Town Line to the Mount view Middle School. The possibility of conducting traffic flow improvements to Shrewsbury Street is currently being investigated with the intention to place the project on the TIP list for construction in 2024.

Road Network Conditions

In 2017, Vanasse Hangen Brustlin, Inc. (VHB) completed a Pavement and Sidewalk Management Study for Holden utilizing the Road Manager pavement module designed by VHB. This system inventoried and surveyed road conditions for the entire Town of Holden. A Pavement Management System (PMS) assessment is a planning tool used to collect and monitor current information, as well as evaluate and prioritize pavement maintenance, rehabilitation, and repair strategies. When implemented properly, a PMS provides decision-makers with information to better understand the long-term consequences of short-term budgeting decisions. The Town’s PMS is currently managed by the Holden Highway staff within the Department of Public Works (DPW), with strong support from VHB. Over time, all data management will be turned over to the Holden Highway staff. The Highway staff are responsible for delivering safe, well-maintained public roads for efficient transportation in the community. An inventory of roadways in Town was prepared by the Holden DPW and is included in



Appendix C. The inventory provides information regarding roadway length, width, sidewalks, and latest maintenance actions. Many roads in town were built 15 to 20 years ago as new subdivision streets. Today, some of Holden’s roads are reaching the end of, or have surpassed, their functional lifespan. New residential developments steadily add to the number of miles of roadway for which the DPW is responsible.

As part of developing the PMS, VHB surveyed the condition of all roadways in Holden. This survey includes data on pavement, sidewalk, and Americans with Disabilities Act (ADA) ramp conditions. The pavement condition survey conducted by VHB categorizes road segments into treatment “bands” based on a Pavement Condition Index (PCI). The PCI rates the condition of each pavement segment on a scale of 0 to 100, which determines the types of needed repairs. As shown in Table 9 - 4, the road conditions and the associated PCI scores are ranked according to five major treatment bands.

Table 9 - 4: Holden Pavement Management System Treatment Band Descriptions (Holden Pavement and Sidewalk Management Report, VHB, 2017)

Treatment Band	PCI*	Description
Base Rehabilitation	0-60	Poor condition – in need of base improvement. Typical repairs are reclamation or full depth reconstruction.
Structural Improvement	61-72	Deficient condition – pavement surface structure in need of added strength for existing traffic. Typical repairs are overlay with or without milling.
Preventative Maintenance	73-85	Fair condition – pavement surface may be in need of surface sealing, full depth patch and/or crack sealing
Routine Maintenance	86-92	Good condition – may be in need of crack sealing or minor localized repair.
Do Nothing	93-100	Excellent condition - in need of no maintenance

*These are only general PCI ranges for reference purposes, and represent only one pavement type. There are several fields considered by the strategy table when assigning repair types to each individual street.

The Network PCI for the Town of Holden is 85, an overall indication that the roadways in Town are in fair-to-good condition and require mostly preventative maintenance. This finding aligns with the Master Plan Community Survey results in which 48% of residents reported they found the overall road conditions in town adequate, compared to 10% who reported the conditions are overall poor. Figure 9 - 4 displays the number of miles in each pavement condition band and Map 9 - 3 shows the pavement conditions of all roadways in Town as determined by VHB.

Each pavement treatment band is associated with a specific cost of repair determined with the assistance of MassDOT and the Town of Holden. Based on the most recent survey, it is estimated that the current backlog of maintenance for all roadways in Town will cost \$6,781,000. Since the costs of repairs increase as the road deteriorates, it is significantly more cost effective to repair roadways early on or preventatively, rather than waiting until they reach more costly repair categories.

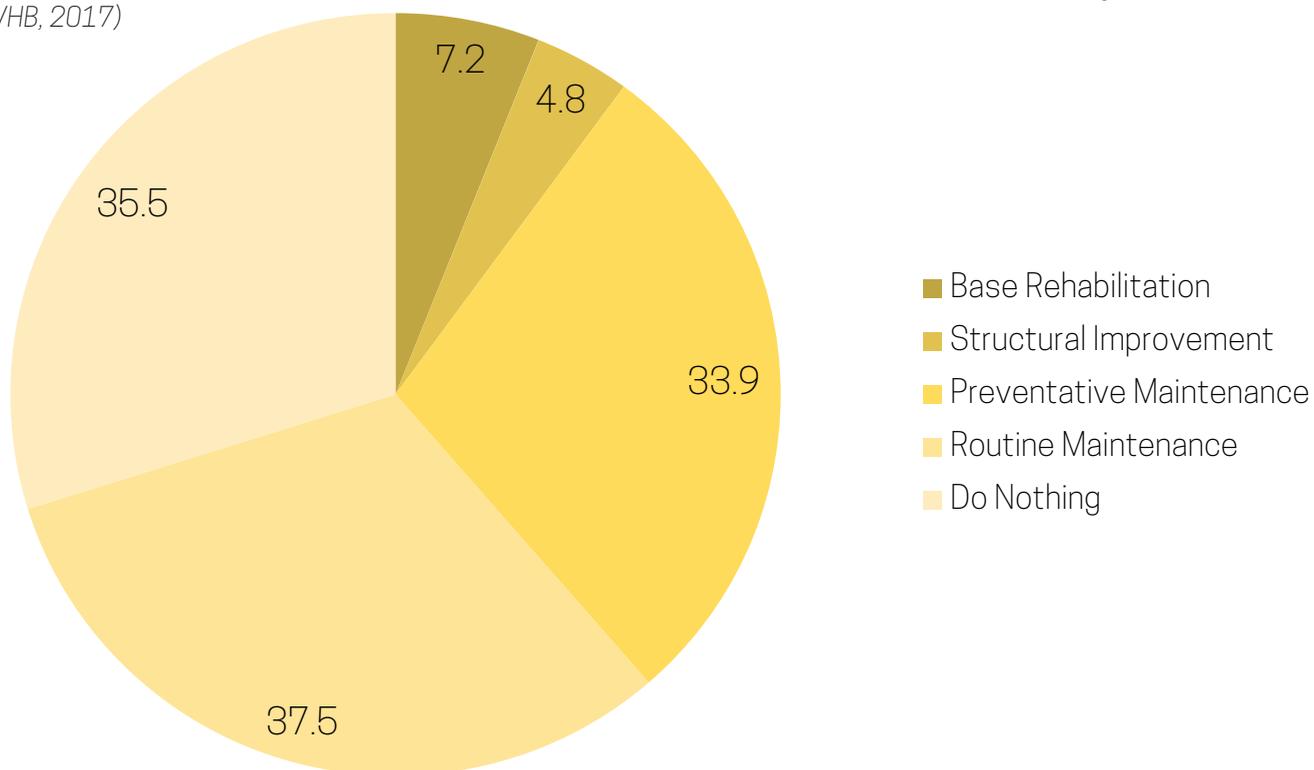
Heavy Vehicles

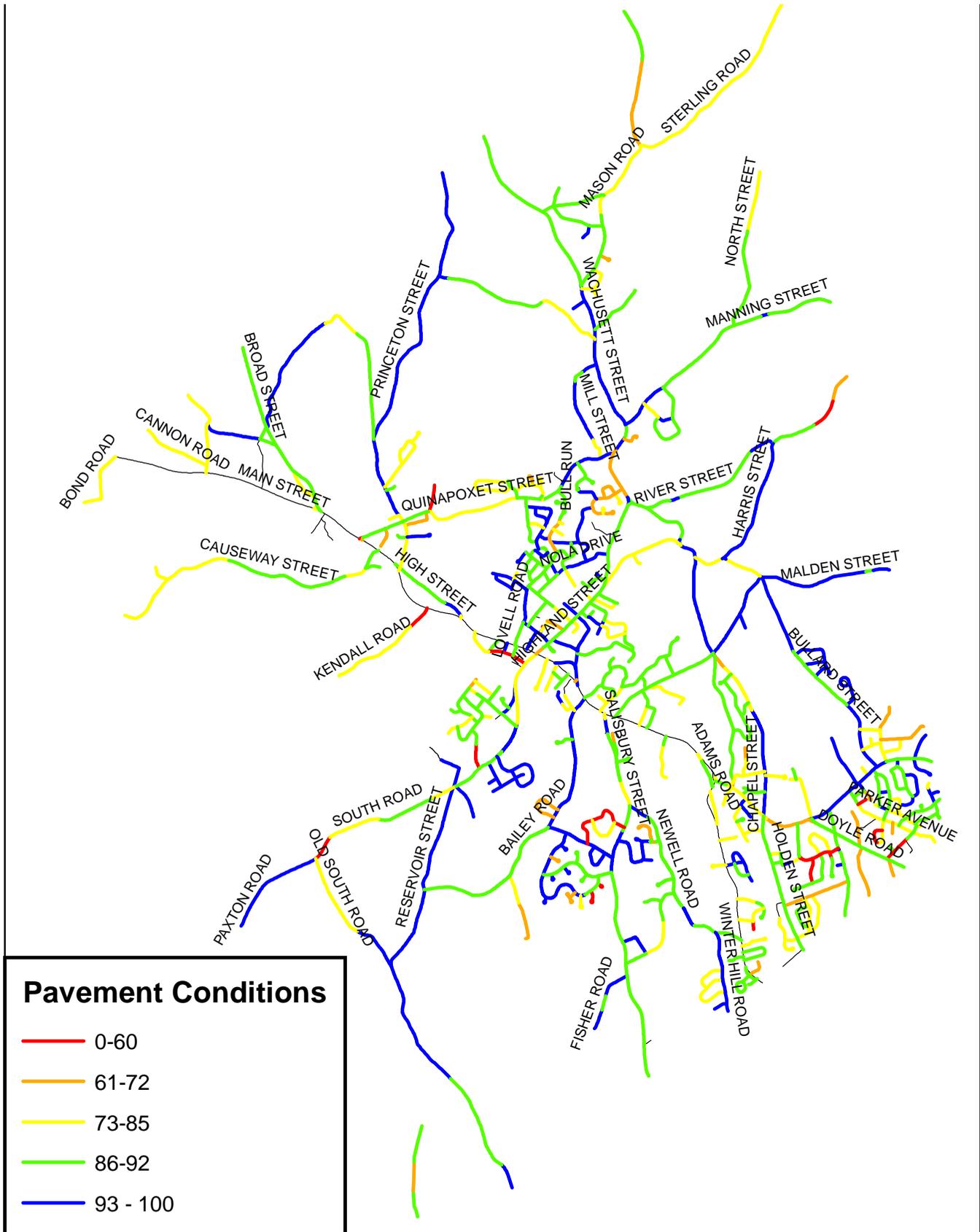
CMRPC collects vehicle classification data during traffic counts. The most current data shows that four roads in town carry heavy vehicles as 9 to 14% of their total traffic volume. Those roads include Main Street (Route 122A), Highland Street (Route 31), Reservoir St (Route 31), and Shrewsbury Street (Route 122A).

Bridges

The MassDOT Bridge Inspection Management System (BIMS) is the statewide dataset for bridge structures and their inspection status. The database features information on MassDOT and municipality-owned bridges with spans greater than 20 feet. Inspections are completed bi-annually. Information on MassDOT and municipality-owned bridges with spans between 10 and 20 feet, and culverts with spans of 4 to 10 feet, are not available at this time, but data collection efforts are underway. The BIMS identifies 29 total structures in Holden, 14 of which are owned by MassDOT and 15 owned by the Town. Of all bridges in Town, 1 is structurally deficient. 9 are in unknown condition with no current inspections. The bridge identified as being structurally deficient is the Salisbury Street Bridge over the Providence and

Figure 9 - 4: Holden Pavement Condition and Treatment Band in Miles (Holden Pavement and Sidewalk Management Report, VHB, 2017)





**Pavement Conditions Map
Holden, MA**



0 0.75 1.5 2.25 3 Miles



Worcester Rail Road. As previously noted, there currently are 2 projects listed on the CMMPO 2019-2023 TIP. Listed in TIP year 2019 is MassDOT Project #607908, which is a bridge maintenance

project for bridges on I-190 over River Street and the Quinapoxet River. Table 9 - 5 shows all the bridges in the MassDOT BIMS database located in the Town of Holden.

Table 9 - 5: Holden Bridges Inventory (MassDOT, Town of Holden, 2018)

Facility Carried	Year Built	Year Reconstructed	Type of Service	Length	Bridge Owner	Structurally Deficient	Structure Category	Feature Intersected	Bridge Inspection Date
Hwy Mill St	1989		Highway	15.2	Holden	No	Bridge (NBI)	Water Asnebumskit River	5/5/2015
Hwy Princeton St	1954		Highway-Pedestrian	7.9	Holden	No	Bridge (NBI)	Water Asnebumskit Brook	6/14/2016
Hwy Princeton St	1930	2009	Highway	27	Holden	No	Bridge (NBI)	Water Quinapoxet Res Outlet	9/1/2015
Hwy Union St	1850	1950	Highway	5.5	Holden	Unknown	Culvert	Water Wachusett Brook	No Current Inspection
Hwy Old Broad St	1930		Highway	2.1	Holden	Unknown	Culvert	Water Brook	No Current Inspection
St 31 South Rd	1850	1900		1.8	Holden	Unknown	Culvert	Water Kendall Resrvr	No Current Inspection
Hwy River St	2017		Highway	28.2	Holden	No	Bridge (NBI)	Water Quinapoxet River	2/21/2017
Hwy Stonehouse Hill	1993		Highway	27.5	Holden	No	Bridge (NBI)	Water Reservoir Out	9/1/2015
Hwy Manning St	1969		Highway-Pedestrian	9.8	Holden	No	Bridge (NBI)	Water Trout Brook	10/3/2016
Hwy Mt Plsant Av	1985		Highway-Pedestrian	7.7	Holden	Yes	Bridge (NBI)	Water Asnebumskit Brook	10/4/2016
Hwy River St	2004		Highway-Pedestrian	25.6	Holden	No	Bridge (NBI)	Water Quinapoxet River	12/2/2016
Hwy Malden St	1964		Highway	5	Holden	No	SHORT SPAN BRIDGE	Water Wachusett Brook	7/15/2015
Hwy Wachusett St	1950		Highway	3.4	Holden	Unknown	CULVERT	Water Chaffin Pond Otl	NO CURRENT INSPECTION
Hwy Shrewsbry St	1850	1937	Highway	6.1	Holden	Unknown	SHORT SPAN BRIDGE	Water Chaffin Pond Otl	NO CURRENT INSPECTION

Table 9 - 5 Continued

Hwy Mill St	2009		Highway	13.3	Holden	No	BRIDGE (NBI)	Water Quinapoxet River	2/12/2016
St122 A/ Main St	1930	1950	Highway	1.8	MASSDOT	Unknown	CULVERT	Water Traprock Brook	NO CURRENT INSPECTION
St122 A/ Main St	1938		Highway	1.2	MASSDOT	Unknown	CULVERT	Water Swamp	NO CURRENT INSPECTION
St122 A/ Main St	1940		Highway	1.8	MASSDOT	Unknown	CULVERT	Water Chaffin Pond Otl	NO CURRENT INSPECTION
St122 A/ Main St	1948	1986	Highway-Pedestrian	12.2	MASSDOT	No	BRIDGE (NBI)	Water Asnebumskit Brook	7/13/2015
St 31 Reservoir St	1983		Highway-Pedestrian	15.5	MASSDOT	No	BRIDGE (NBI)	Rr Pwrr	12/1/2015
St122 A/ Main St	1900	1949	Highway	20.1	MASSDOT	No	BRIDGE (NBI)	Rr Pwrr	3/23/2016
Hwy Salisbury St	1907	1958	Highway-Pedestrian	27.4	MASSDOT	Yes	BRIDGE (NBI)	Rr Pwrr	3/23/2016
Hwy Malden St	1979		Highway-Pedestrian	94.2	MASSDOT	No	BRIDGE (NBI)	I 190	9/16/2015
I 190 Sb	1979		Highway	33.8	MASSDOT	No	BRIDGE (NBI)	Hwy River St	6/8/2016
I 190 Nb	1979		Highway	33	MASSDOT	No	BRIDGE (NBI)	Hwy River St	6/8/2016
I 190 Sb	1979		Highway	254.2	MASSDOT	No	BRIDGE (NBI)	Water Quinapoxet River	8/15/2016
I 190 Nb	1979		Highway	254.2	MASSDOT	No	BRIDGE (NBI)	Water Quinapoxet River	8/19/2016

Traffic Volumes

Congestion costs the traveling public time and money. Although slower travel speeds tend to decrease fatalities and serious injuries, congestion also inhibits the efficient movement of emergency vehicles. Holden is located near several major regional roadways, including I-190 and Interstate Routes I-290 and I-90. Good transportation access serves the community in terms of economic development. However, access to Holden and the surrounding region is constrained by increasing congestion. As congestion intensifies on the major

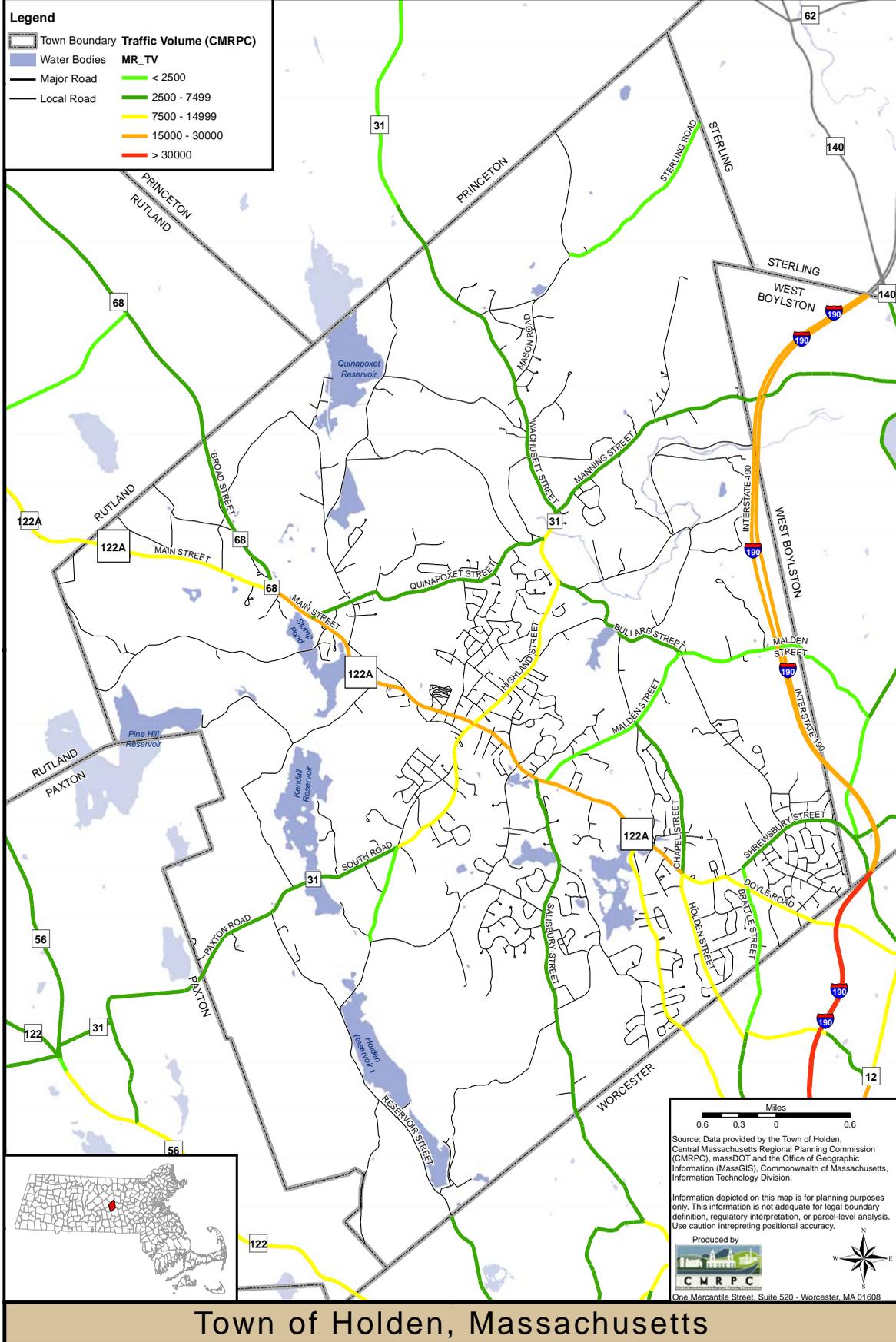
roads, traffic spills over into local neighborhood streets.

Traffic counts are collected regularly in the Town of Holden by CMRPC on Federal-aid-Eligible roadways and other select local roadways. This data is shown on Table 9 - 6 and Map 9 - 4. The highest volume road in Holden is Main Street (Route 122A) followed by Shrewsbury Street, Doyle Road, Highland Street (Route 31), and Reservoir Street (Route 31).

Table 9 - 6: Traffic Volume in Holden (CMRPC, 2018)

Date	Street	Location	Northbound/ Eastbound	Southbound/ Westbound	Total
7/30/2014	Boyden Rd	North Of Main St (Rt. 122a)	321	203	524
8/16/2018	Brattle St	At Worcester City Line	1,012	944	1,956
6/9/2016	Brattle St	Between Shrewsbury St & Doyle Rd	652	508	1,160
10/13/2010	Broad St (Rt68)	At Rutland Town Line	1,910	1,935	3,845
4/30/2013	Bullard St	Between Wachusett St & Malden St	1,424	1,747	3,171
7/7/2010	Bullard St	North Of Shrewsbury St	1,418	1,196	2,614
8/8/2018	Chapel St	North Of Shrewsbury St	1,698	1,907	3,605
6/9/2015	Doyle Rd	At Worcester City Line	6,015	6,491	12,506
10/24/2016	Doyle Rd	South Of Shrewsbury St	5,514	5,556	11,070
6/14/2016	Highland St (Rt31)	North Of Main St (Rt. 122a)	3,462	4,474	7,936
8/16/2018	Holden St	At Worcester City Line	3,764	4,691	8,455
10/13/2010	Main St (Rt122a)	At Rutland Town Line	5,346	5,305	10,651
8/16/2018	Main St (Rt122a)	At Worcester City Line	3,724	3,865	7,589
6/14/2016	Main St (Rt122a)	North Of Reservoir-Highland St (Rt. 31)	8,707	7,866	16,573
6/16/2016	Main St (Rt122a)	North Of Shrewsbury St	10,025	10,856	20,881
6/14/2016	Main St (Rt122a)	South Of Broad St (Rt. 68)	7,466	8,313	15,779
8/13/2013	Main St (Rt122a)	South Of Reservoir-Highland St (Rt. 31)	9,537	10,695	20,232
7/9/2013	Malden St	At West Boylston Town Line	929	1,001	1,930
11/4/2010	Malden St	North Of Main St (Rt. 122a)	869	785	1,654
4/30/2013	Malden St	North Of Wachusett St	774	764	1,538
6/16/2016	Mount Pleasant Ave	East Of Main St (Rt. 122a)	2,088	1,811	3,899
5/7/2013	Paxton Rd (Rt31)	At Paxton Town Line	2,746	2,820	5,566
11/4/2010	Quinapoxet St	East Of Princeton St	1,541	1,693	3,234
7/12/2012	Reservoir St	At Worcester City Line	1,148	1,113	2,261
5/7/2013	Reservoir St	South Of South Rd (Rt. 31)	1,208	1,124	2,332
5/7/2013	Reservoir St (Rt31)	North Of Reservoir St	3,866	3,872	7,738
5/2/2013	Reservoir St (Rt31)	South Of Main St (Rt. 122a)	6,434	6,108	12,542
8/16/2018	Salisbury St	At Worcester City Line	2,389	2,417	4,806
6/14/2016	Salisbury St	South Of Main Street (Rt. 122a)	3,362	3,321	6,683
8/16/2007	Shrewsbury St	At West Boylston Town Line	2,353	2,464	4,817
9/7/2017	Shrewsbury St	East Of Chapel St	6,994	6,981	13,975
4/30/2013	Shrewsbury St	East Of Doyle Rd	2,126	2,143	4,269
10/13/2010	Sterling Rd	At Sterling Town Line	182	182	364
6/14/2016	Wachusett St	East Of Highland St (Rt. 31)	2,622	2,461	5,083
4/30/2013	Wachusett St	North Of Malden St	1,892	2,082	3,974
10/13/2010	Wachusett St (Rt31)	At Princeton Town Line	1,302	1,346	2,648
6/14/2016	Wachusett St (Rt31)	Between Manning & Quinapoxet St.	5,311	5,643	10,954
5/2/2013	Wachusett St (Rt31)	North Of Manning St	2,380	2,381	4,761
5/2/2013	Wachusett St (Rt31)	South Of Quinapoxet St	4,502	4,314	8,816
7/30/2014	Woodland Rd	North Of Main St (Rt. 122a)	1,664	612	2,276

Average Daily Traffic Map 2019 MASTER PLAN



Town of Holden, Massachusetts

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Congestion Management Processes

CMRPC is responsible for maintaining the region's Congestion Management Process which includes the following tasks:

- Development of congestion management objectives.
- Establishment of measures of multimodal transportation system performance.
- Collection of data and system performance monitoring to define the extent, duration, and causes of congestion.
- Identification of congestion management strategies.
- Implementation activities, including identification of an implementation schedule and possible funding sources for each strategy.
- Evaluation of the effectiveness of strategies.

To complete this process, CMRPC conducts extensive data collection throughout the region including for the Town of Holden. CMRPC utilizes a variety of methods to collect this information, such as Travel Time and Delay Studies, Intersection Turning Movement Counts (TMC), and the Regional Travel Demand Model. The following section describes each method's activities.

Travel Time and Delay Studies

In 2016, CMRPC conducted a Travel Time and Delay Study along Route 122A in Holden. The results found that, on average, congestion adds 1.6 minutes to commutes when traveling northbound and 6.7 minutes when traveling southbound. Map 9 - 5 and Map 9 - 6 shows the average speeds observed during AM and PM peak hour over the course of the study.

Turning Movement Count (TMC) Intersections Encountered Delay

For all intersections where Turning Movement Counts are obtained, it is possible to analyze the total delay encountered during peak hour periods. Net delay is calculated from "average delay encountered for entering vehicles" byproduct data collected during intersection Line of Sight (LOS) research. Signalized intersections have delays of varying levels in all

directions factored into the calculation. "Stop" sign-controlled intersections have delay calculated only for those vehicles arriving on the minor approaches required to stop as well as vehicles on the major approaches waiting to make a left turn. Generally speaking, signalized intersections often exhibit more total delay. However, a busy stop-controlled location that may not presently meet the criteria for signalization can face substantial delays if volumes on the minor approaches predominately seek to cross the major approaches. Traffic signals establish orderly traffic flows and increase safety by providing the opportunity for traffic volumes to proceed on both the major and minor intersection approaches, thus balancing encountered vehicle delay. When two heavily traveled streets cross at a major signalized intersection, significant delays are often generated due to the high traffic volumes. Once signal operations are optimized, geometric improvements can then be considered, such as the construction of widened or additional travel lanes.

The below list includes selected intersections in Holden with their observed delay in minutes. These values represent the *total* number of minutes that drivers, *as a group*, wait at the intersection during the peak morning or afternoon travel periods.

- Shrewsbury Street / Doyle Road / Mount View Drive (5,795)
- Route 122A / Route 31 (2,815)
- Route 122A / Shrewsbury St (2,069)
- Chapel St / Holden St / Shrewsbury St (1,877)

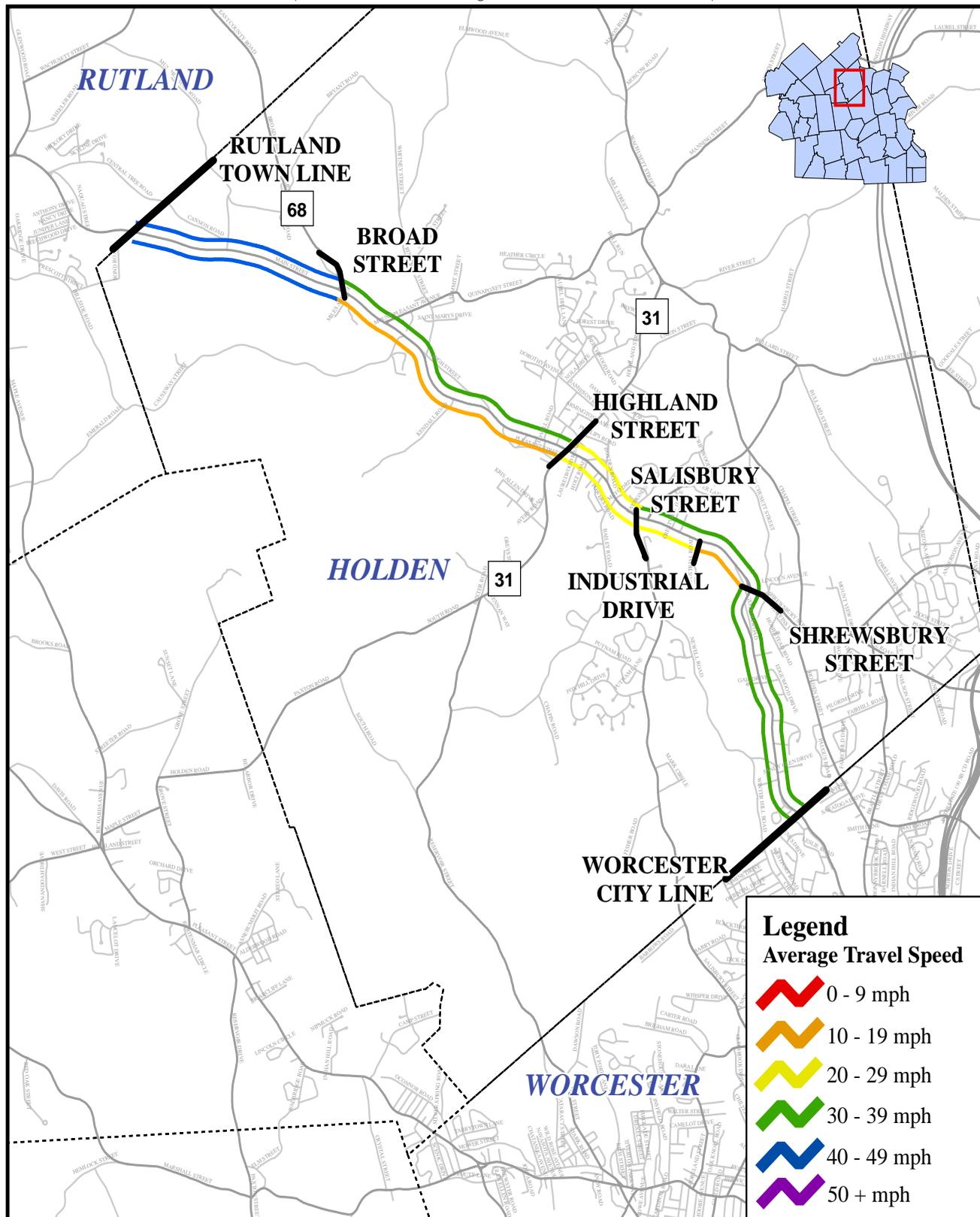
Regional Travel Demand Model

The final way that congested roadways are identified by CMRPC is through the regional travel demand model – a computer program to calculate current congestion based on roadway design, and to project areas that will experience congestion in the future.

Based on the most recent run in 2017, CMRPC's travel demand model identifies the following roadways in Holden as currently congested:

- Route 122A from Route 140
- Shrewsbury Street from Doyle Road to Main Street

Map 9 - 5: Holden Morning Peak Hour Travel Times Map



0 0.75 1.5 Miles

The information depicted on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis. Use caution interpreting positional accuracy.
 Produced by the Transportation Staff at
 Central Massachusetts Regional Planning Commission,
 2 Washington Sq., Worcester, MA 01604-4016

Source Data: Travel Time Segment Study Data provided by CMRPC.
 Major Roads provided by MassDOT. Town Bounds provided by MassGIS.

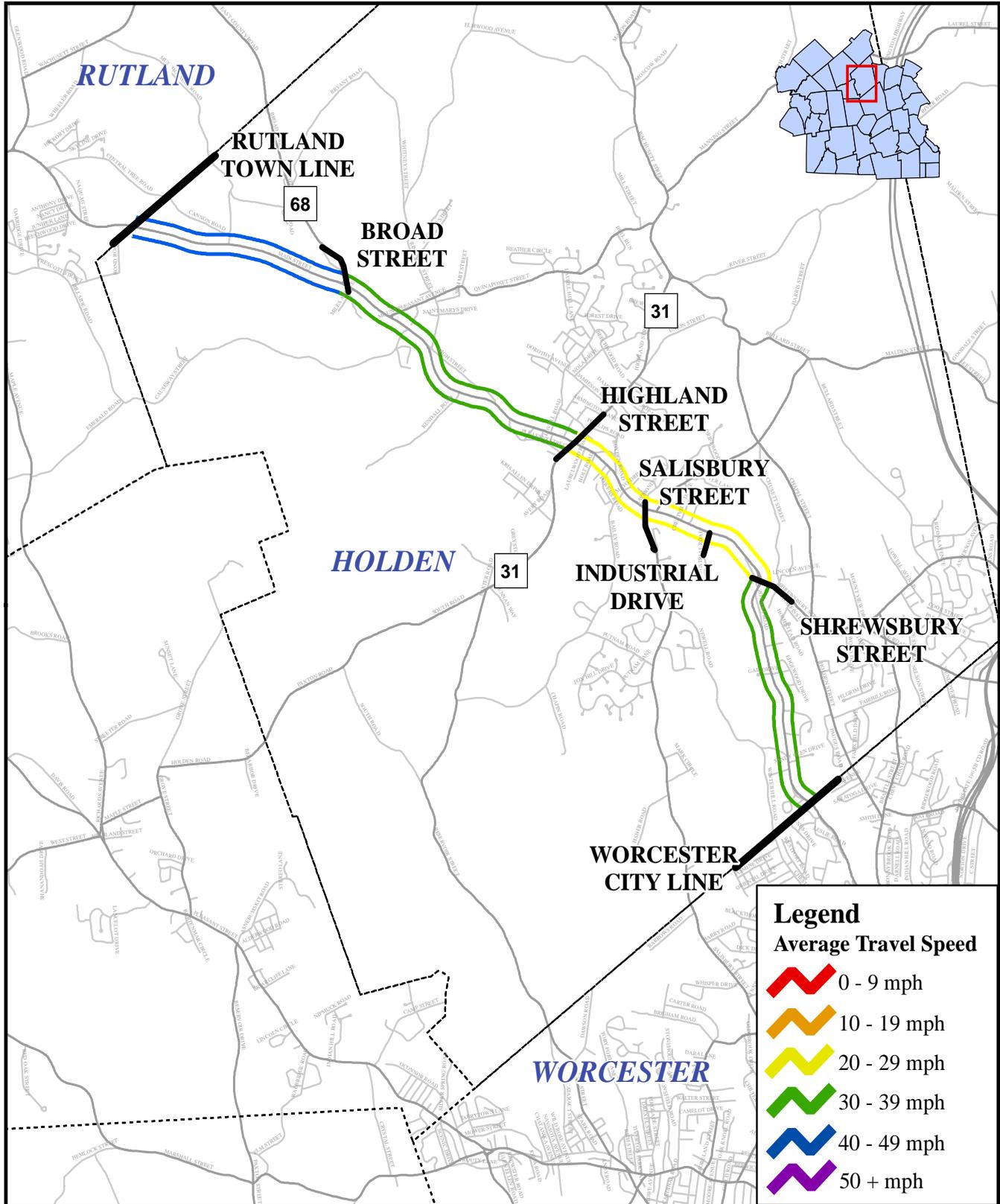
**CONGESTION MANAGEMENT PROCESS (CMP)
 2016 TRAVEL TIME & DELAY STUDY**

**Town of Holden
 Route 122A
 AM PEAK HOUR**



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Map 9 - 6: Holden Afternoon Peak Hour Travel Times Map



Legend
Average Travel Speed

- 0 - 9 mph
- 10 - 19 mph
- 20 - 29 mph
- 30 - 39 mph
- 40 - 49 mph
- 50 + mph

0 0.75 1.5 Miles

The information depicted on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis. Use caution interpreting positional accuracy.
Produced by the Transportation Staff at
Central Massachusetts Regional Planning Commission,
2 Washington Sq, Worcester, MA 01604-4016

Source Data: Travel Time Segment Study Data provided by CMRPC.
Major Roads provided by MassDOT. Town Bounds provided by MassGIS.

**CONGESTION MANAGEMENT PROCESS (CMP)
2016 TRAVEL TIME & DELAY STUDY**

**Town of Holden
Route 122A
PM PEAK HOUR**



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Doyle Road from Shrewsbury Street to the Worcester City Line is projected to be congested by the year 2040.

Freight Rail and Trucking

Genesee & Wyoming Inc. (G&W), owns and operates the Providence and Worcester Railroad (P&W). G&W is based in Darien, Connecticut. The company owns and maintains interest in 120 railroads in the United States, Canada, and other parts of the world. The P&W operates freight service in central and southern New England. The P&W line runs from Worcester to Gardner and cuts through the central portion of Holden. The railroad enters Holden from the north just to the west of the Quinapoxet Reservoir and crosses Route 122A and Route 31 downtown. The rail line crosses Salisbury Street, then again crosses Route 122A near Chaffin Pond, before continuing on to the Worcester city line. At-grade railroad crossings are locations where railroads and roadways intersect at the same level, leading to potential safety hazards.

The following 6 at-grade G&W crossings are located within Holden, listed from north to south.

- Princeton Street (Lights only)
- Quinapoxet Street (Gates)
- Sunnyside Avenue (Lights only)
- Pleasant Street (Lights only)
- Bailey Road (Lights only)
- Industrial Drive (Gates)

Of the at-grade crossings in Holden that do not currently have gates, none of them are at high volume roads. The at-grade crossings are located on lower volume local roads concentrated in the northern and central parts of Town. Flashing beacons

The 2008 Master Plan recommended investigating the need to install crossing gates at Industrial Drive. Since then, crossing gates have been installed and/or improved. The at-grade crossing located on Industrial Drive has the highest average car volume.

and crossbuck signs are located at each of the crossings; the crossings at Quinapoxet Street and Industrial Drive also have drop-down gates.

Transportation Safety

Transportation planning in the CMMPO region is rooted in encouraging an efficient, economical, and safe multimodal transportation system. Thus, improving safety on all public roads is one of many considerations in the transportation planning process. The safety information reported below includes data provided by MassDOT for the period of 2013 to 2015 regarding automobile crashes and for the period of 2006 to 2015 regarding non-motorist crashes.

Generally, crashes in the Central Massachusetts region during the period of 2013-2015 have increased 5% compared to the previous reporting period 2011 to 2015. The total number of fatalities is also higher (6.8%), with a relevant spike in pedestrian fatalities. The region had a total of 215 identified pedestrian crash clusters with a total of 1,167 crashes.¹ There were 673 total crashes recorded in Holden from 2013 to 2015, which

comprised mainly property damage only crashes (472) and non-fatal injury crashes (195), followed by fatal injury crashes and incidents that were not reported. There were also no intersections in Holden on the Statewide Top 200 High Crash Locations list for the 2013-2015 reporting period.

The intersection of Main Street (Route 122A) and Reservoir Street was identified as a Highway Safety Improvement Program (HSIP)-Eligible Automobile Crash Cluster.² This intersection reported 35 total crashes between 2013 and

¹ Crash clusters are a result of consolidating nearby crash locations and creating an imaginary buffer of a 25-meter radius for automobiles and 100-meter radius for non-motorist crashes. The resulting polygons are merged and generate crash clusters.

² The Highway Safety Improvement Program (HSIP) is a federal-aid program designed to significantly reduce traffic fatalities and serious injuries on all public roads. A HSIP-eligible crash cluster is defined by MassDOT as "one in which the total number of 'equivalent property damage only' crashes are within the top 5% in the region." An HSIP-eligible project is "any strategy, activity, or project that corrects or improves a hazardous public road location or feature, or addresses a highway safety problem."

2015, including 28 non-injury crashes and 7 injury crashes. In terms of non-motorized accidents, from 2006 to 2015, MassDOT has record of 19 pedestrian crashes, a majority of which were non-fatal injuries (15), followed by 2 fatal injuries and 2 property damage only accidents. Using the Crash Cluster method, 1 Pedestrian - Motor Vehicle Crash Cluster was identified on Highland Street. Over the same period, there were 18 bicycle-related crashes, mostly consisting of non-fatal injuries except for 1 property-damage only accident at the corner of Highland Street and Damon Road. Based on this data, there were 3 bicyclist-motor vehicle crash clusters identified on Reservoir Street, Main Street (Route 122A), and Highland Street (Route 31).

Table 9 - 7 lists the locations of all crash clusters in Holden between 2013 and 2015. Only those locations with more than 1 accident and an EPDO rating greater than 5 in the 3-year span are listed. Note that only Main Street (Route 122A)/Reservoir Street was identified as a HSIP-Eligible Auto Crash Cluster while the other sites listed are standard, non-motorized crash clusters. As shown on Map 9 - 7, the data indicates that the highest accident locations in Holden tend to occur along the Main Street-122A corridor in the southeast portion of Town. The intersection of Main Street and Industrial Drive displays the highest crash location. The highest traffic volumes in Town are correspondingly located along this corridor.

Bicycle and Pedestrian Mobility

Providing accommodations for all transportation user types enables greater accessibility and mobility throughout the community. For instance, providing sidewalks and controlled crossings in

areas where pedestrian activity is significant or encouraged are common strategies to ensure user safety. Additionally, any segment of roadway in Town that has a paved shoulder of at least 4 feet in width is generally considered appropriate for bikeway accommodations. In Holden, pedestrian and bicycle facilities are used for both commuting and recreational purposes. This section discusses the current level of pedestrian and bicycle facilities in Holden including sidewalks, trails, paths, and bicycle accommodations.

Complete Streets

A Complete Street is one that provides for safe and accessible travel for all modes of transportation for people of all ages and abilities. While it is true that many areas have transportation systems that favor automobiles over other forms of movement, there is a growing desire to “complete” streets in a manner that serves a greater number of transportation modes. Planners, engineers, public health officials, and municipal leaders are working to build roads that are safer, more accessible, and convenient for all users. Networks of complete streets make it easier for people who rely on transit to access jobs, and providing safe places to walk encourages walking and bicycling for both transportation and recreation.

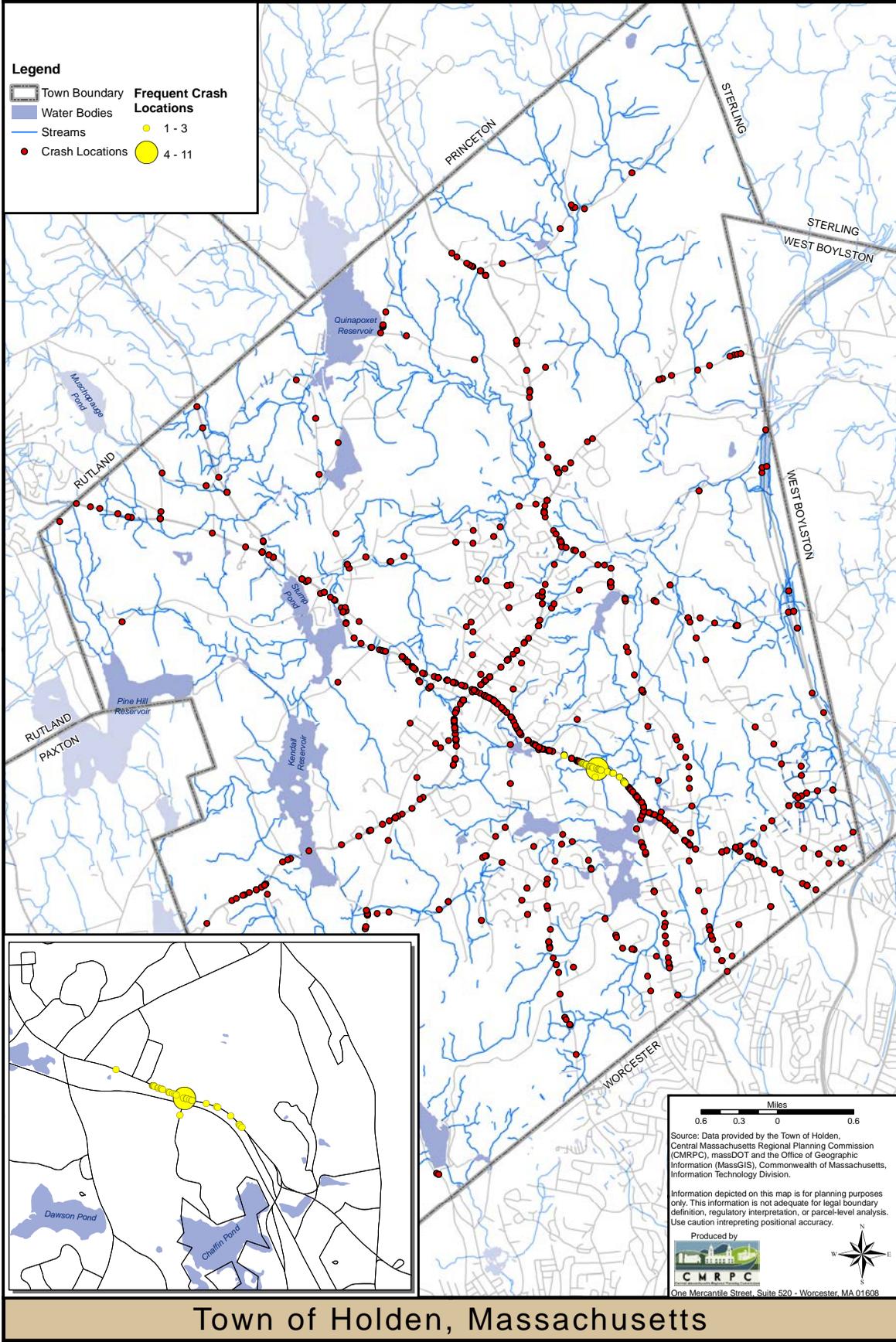
In 2013, the Town of Holden partnered with CMRPC staff to perform a Neighborhood SAFE survey, or a preliminary field assessment of conditions surrounding Town Hall and Davis Hill Elementary School on Jamieson Road. Neighborhood SAFE combines elements of Safe Routes to School (SRTS) Assessments and Road Safety Audits (RSAs) to provide communities with guidance on

Table 9 - 7: Crash Clusters in Holden (2013-2015) with EPDO greater than 5

Location	Total Crashes	EPDO	Crash Type
Main St (Route 122A) / Reservoir Street	35	63	Automobile* (HSIP-Eligible)
Reservoir St	3	15	Bicycle
Highland St (Route 31)	2	10	Pedestrian
Main St (SR 122A)	2	10	Bicycle
Highland St (SR 31)	2	6	Bicycle

*Note that only Main St (SR 122A) / Reservoir St. was identified as an HSIP-Eligible Auto Crash Cluster while the others listed are standard, non-motorized crash clusters.

High Accident Intersections Map 2019 MASTER PLAN



Town of Holden, Massachusetts

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infrastructure issues and improvements. The assessment functioned as a precursor to Complete Streets development in town, allowing Town officials and other decision-makers to better understand the area's infrastructure and safety conditions in order to determine impediments to safe bicycling and walking.

The assessment focused on an approximately 0.5 mile radius surrounding the center of Town and the Davis Hill Elementary School. This location was selected for the initial Neighborhood SAFE project for multiple reasons: a prior request from the Town for CMRPC to host a Walkable Communities Workshop, the nearby high-crash intersection of MA-31/MA-122A, and the walkable neighborhoods around Davis Hill Elementary and the Town Center. Particular emphasis was placed on walking and biking accessibility for school-aged children. The 2013 Neighborhood SAFE assessment highlighted gaps within the sidewalk network including physical disconnections, varying sidewalk materials and width, and lack of curb-cuts on certain intersection corners which negatively impacted the travel route for walking school-age children. The study recommended a combination of infrastructure improvements, further study, traffic enforcement, and policy development.

Adopting a Complete Streets approach demonstrates a community's intention to improve quality of life for all members of the community, regardless of their neighborhood. According to the National Complete Streets Coalition, by adopting a Complete Streets policy, communities direct their transportation planners and engineers to routinely design and operate the entire right-of-way in a manner safe and access for all users, regardless of age, ability, or mode of transportation. This means that every transportation project will make the street network better and safer for drivers, transit users, pedestrians, and bicyclists – making the Town a better place to live.

In July 2017, the Holden Board of Selectmen voted to adopt a Complete Streets Policy as developed by the DPW Director John Woodsmall and DPW Senior Civil Engineer Isabel McCauley. The successful

adoption of the Complete Streets Policy completed the first step in Tier I of the MassDOT Complete Streets Program. The policy encourages Town officials to examine every infrastructure project from a Complete Streets perspective, assessing where bicycle and pedestrian mobility best practices could apply and where improvements are needed. In fact, the policy formalized the DPW's existing work such as sidewalk and ADA ramp reconstruction.

Since the adoption of the policy, Holden's DPW Department has collaborated with the Planning and Development Department and other municipal departments to implement some of the concepts outlined in the Complete Streets Policy. Holden's Complete Streets Policy is also currently being incorporated into a revision of the Town's Subdivision Control Regulations. Holden is in the process of completing a Tier II Complete Streets Prioritization Plan, which assembles a listing of complete streets projects. Once approved, the Complete Streets Prioritization Plan will allow the Town to become eligible for Tier III Complete Streets infrastructure funding. The Town will also be eligible for construction project funds after the Tier II Plan has been approved by MassDOT. Complete Streets are context sensitive in that there is no one design that fits all situations and locations. Each Complete Street project is unique and should respond to community character and need. A Complete Street may include infrastructure such as sidewalks, bike lanes or widened shoulders, transit only lanes or other amenities, crosswalks, median refuge islands, accessible pedestrian signals and roundabouts, and other traffic, pedestrian, and bicycle accommodations.

Employing a Complete Streets approach to municipal transportation networks allows for a balanced approach that considers the needs of all system users - resulting in a system that is integrated and provides safe and convenient access. By working toward a network of Complete Streets, Holden can potentially improve: safety, system efficiency, public transit, livability, transportation options, public health, energy, environmental conditions, and economic development.

Sidewalks

Sidewalks are provided in Holden along most arterial/collector roadways and some local roadways. As previously noted, VHB surveyed the condition of all roadways in Holden in 2017 as part of its Pavement and Sidewalk Management Study. VHB performed sidewalk and ADA ramp data collection efforts in tandem with the pavement data collection. The inventory includes information on the corresponding sidewalks and ADA ramps, such as the location of sidewalks along roads, cross slope, sidewalk width, type of material, ADA compliance or accessibility level, and general condition. In 2017, there were a total of 63.9 miles of sidewalks and 367 total ramps surveyed in the Town and 275 locations identified as missing ramps.

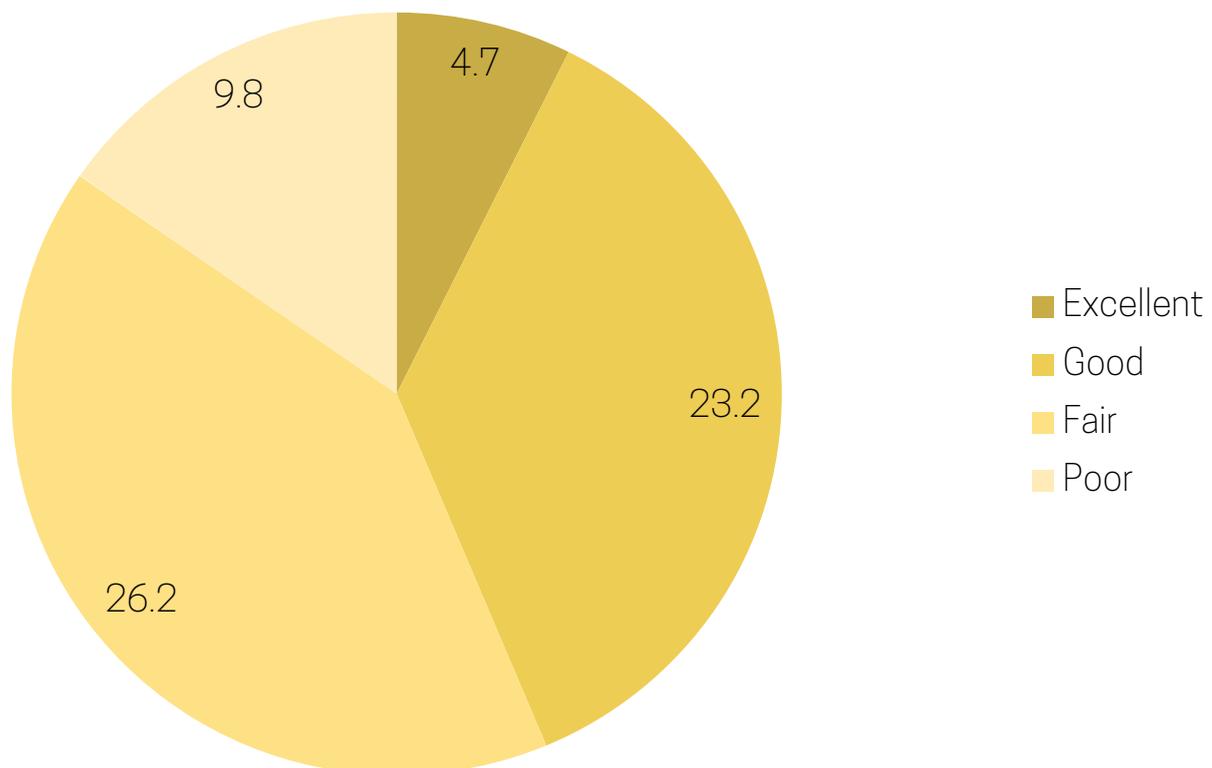
Similar to the pavement segments, the sidewalk segments are given a ranking of Excellent, Good, Fair, and Poor. Figure 9 - 5 displays how the condition of Holden’s sidewalks are distributed. Similar to the

According to the 2019 Master Plan Survey results, sidewalks, crosswalks, pedestrian mobility (66%) and dedicated bike lanes (39%) received the majority of votes from residents when asked which types of transportation options the town should explore.

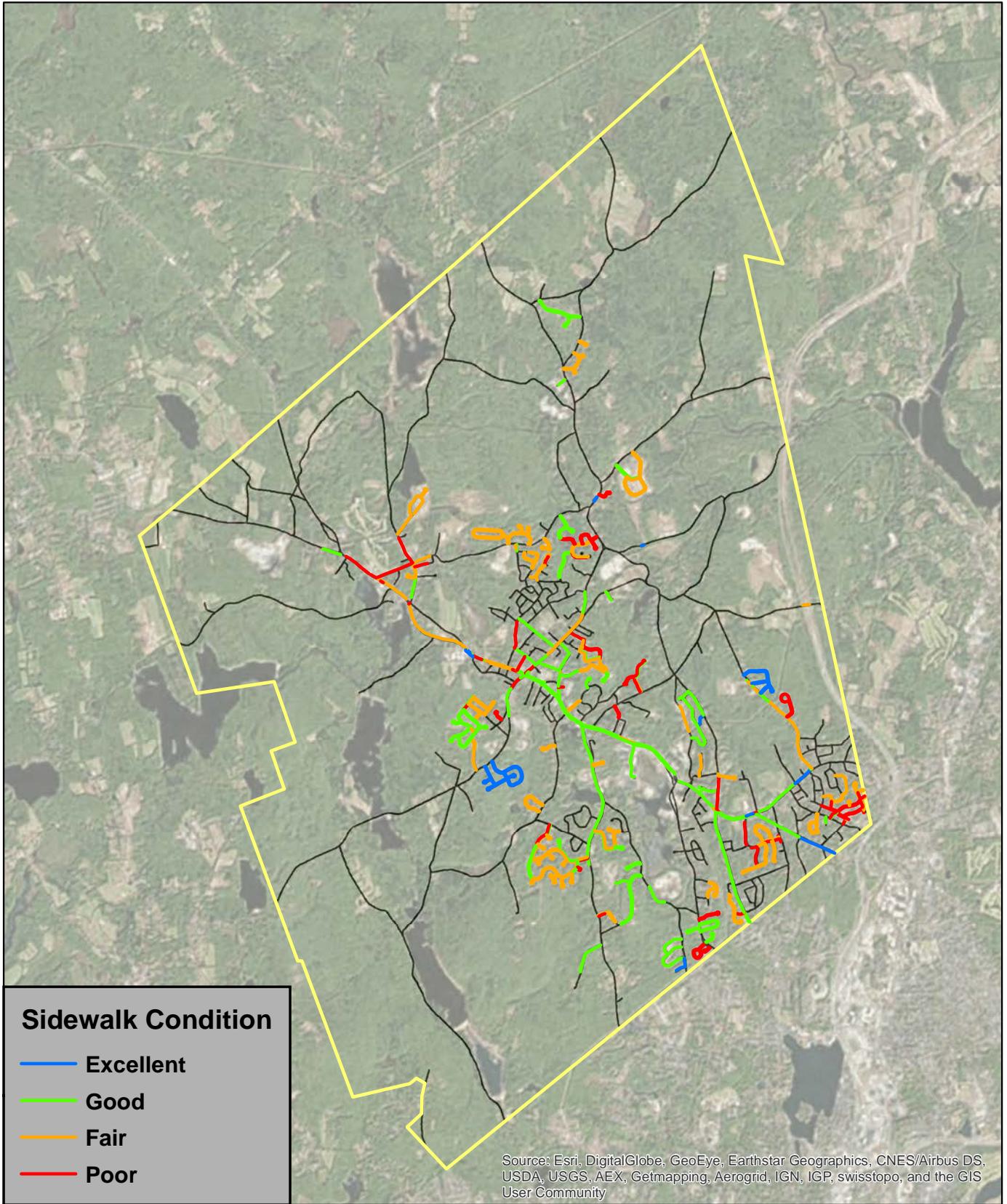
pavement conditions in town, the majority of sidewalks are in Fair (41%) to Good (36%) condition, followed by Poor (15%) and Excellent (8%). An inventory was also completed for the conditions of ADA ramps along these sidewalks using the following categories: Excellent, Good, Fair, Poor, and Missing. As noted, existing sidewalks are predominately missing ramps at appropriate locations. This amounts to 275 missing ramp sites or 43% of necessary ramps. The ADA ramps currently installed correspond with the conditions

of the pavement and sidewalks, so were found in primarily good (24%) to fair (17%) condition. Map 9 - 8 displays the Town’s sidewalk conditions and Map 9 - 9 displays the Town’s ramp conditions as determined by VHB. Similar to pavement, repair costs for sidewalks and ramps can be estimated. According to the study, the estimated repair backlog for sidewalks in Holden will cost \$1,858,300 and the estimated backlog for ramp repairs will

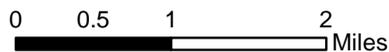
Figure 9 - 5: Sidewalk Condition in Miles (CMRPC, 2018)



Map 9 - 8: Holden Sidewalk Conditions Map



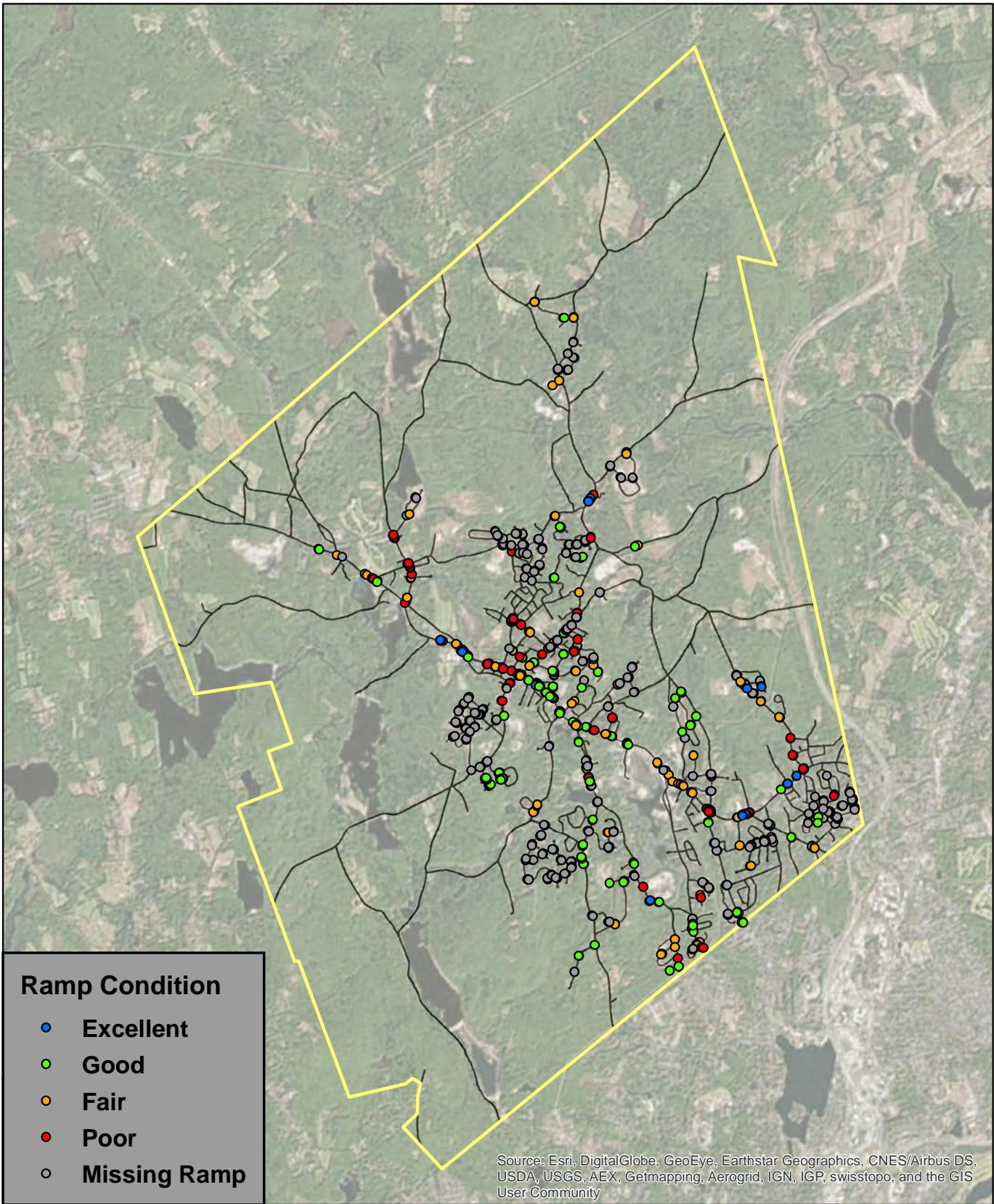
Holden Sidewalk Condition Map



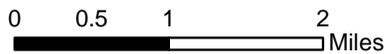
Produced by VHB on May 25, 2017



Map 9 - 9: Holden Ramp Conditions Map



Holden Ramp Condition Map



Produced by VHB on May 25, 2017



cost \$693,000. A more detailed analysis of the sidewalks and ramps in Holden can be found in the Holden Pavement and Sidewalk Report (2017).

Sidewalks in town are currently evaluated on a case-by-case basis as there is no formal sidewalk replacement plan in place. Standard Town procedures require that when a roadway is resurfaced, where necessary, any corresponding sidewalks are reconstructed in conjunction. During the winter season, the Public Works Department is responsible for plowing sidewalks along Boyden Road, Chapel Street, Doyle Road, Flagler Drive, Highland Avenue, Holden Street, Jamieson Road, Lovell Road, Main Street (Route 122A), Maple Street, Mt. Pleasant Avenue, Princeton Street, Quinapoxet Street, Reservoir Street, Salisbury Street, Shrewsbury Street, Walnut Street, Phillips Road, and Woodland Road. The sidewalk routine and winter maintenance in town is conducted following three prioritization tiers as described:

- Tier 1: Sidewalks That Are Roughly Within Half-Mile of a School
 - Tier 1 sidewalks are always maintained and/or plowed first by the Holden DPW.

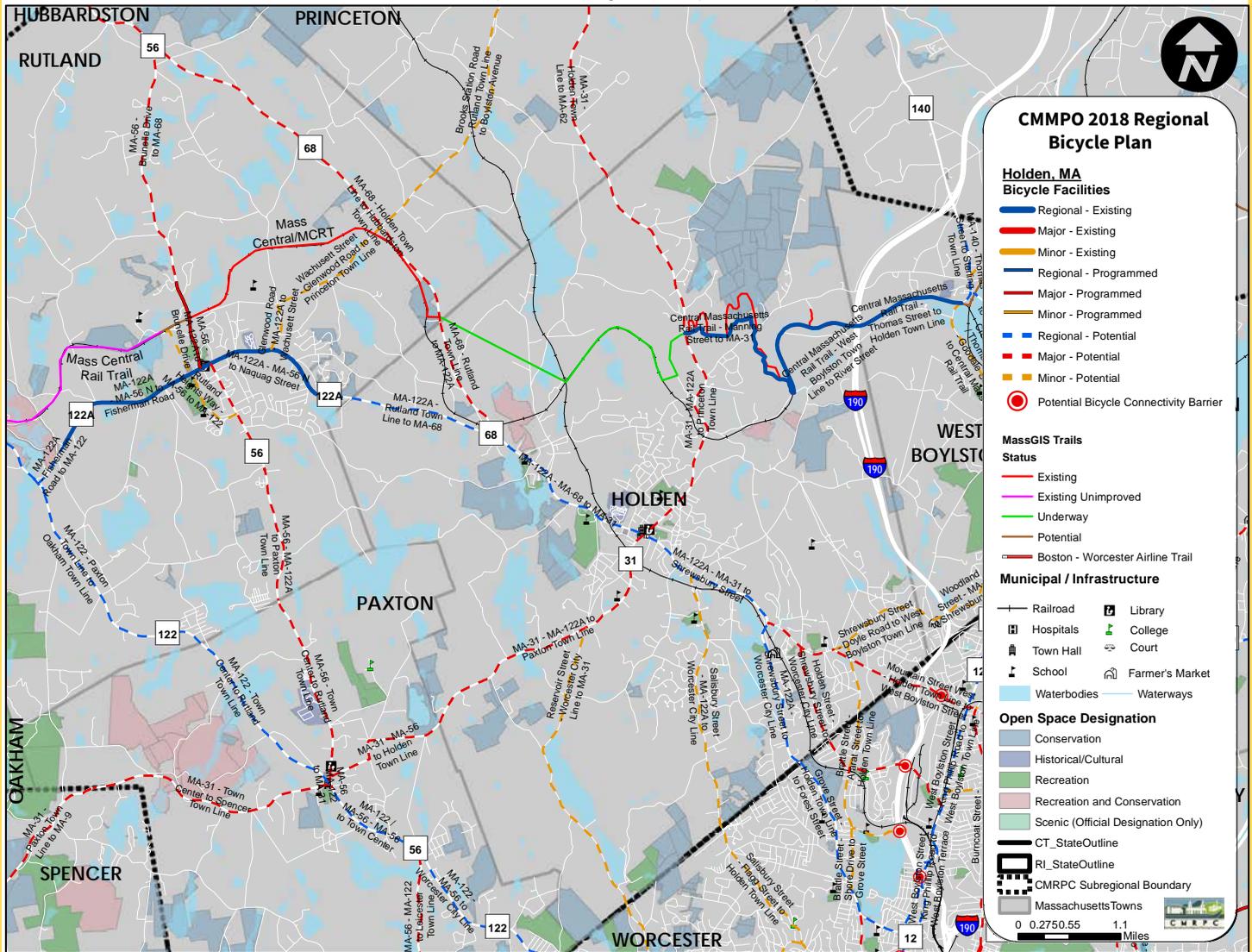
- Schools that fall under Tier 1 prioritization may be delayed if the DPW cannot maintain or clean up the sidewalks in time. There is no responsibility on the property owner to clear sidewalks within a certain timeframe.
- Tier 2: Denser Neighborhoods
- Tier 3: Remaining Sidewalks

The Master Plan (2008) recommended a sidewalk program to install new sidewalks and maintain existing sidewalks at critical locations such as elementary schools. Since then, all sidewalks were inventoried, surveyed, and ADA Compliance was accounted for as part of the PMS implementation.

Table 9 - 8: Holden Bicycle Facilities (CMMPO, 2018)

Facility Name	Location	Miles	Status	Priority
Massachusetts Central Rail Trail (MCRT) - Manning St. to MA-31	Multi-Use Pathway	1.06	Existing	Regional
MCRT - River St. to Manning St.	Multi-Use Pathway	0.96	Existing	Regional
MA-122A - MA-31 to Shrewsbury St.	Paved Road	1.71	Potential	Regional
MA-122A - MA-68 to MA-31	Paved Road	2.05	Potential	Regional
MA-122A - Rutland Town Line to MA-68	Paved Road	1.57	Potential	Regional
MA-122A - Shrewsbury St. to Worcester City Line	Paved Road	1.62	Potential	Regional
Doyle Rd. - Shrewsbury St. to Worcester City Line	Paved Road	0.83	Potential	Major
Holden St. - Shrewsbury St. to Worcester City Line	Paved Road	1.06	Potential	Major
MA-31 - MA-122A to Paxton Town Line	Paved Road	3.27	Potential	Major
MA-31 - MA-122A to Princeton Town Line	Paved Road	4.54	Potential	Major
MA-68 - Rutland Town Line to MA-122A	Paved Road	1.4	Potential	Major
Shrewsbury St. - MA-122A to Doyle Rd.	Paved Road	0.91	Potential	Major
Brattle St. - Shrewsbury St. to Worcester City Line	Paved Road	0.81	Potential	Minor
Reservoir St. - Worcester City Line to MA-31	Paved Road	3.38	Potential	Minor
Salisbury St. - MA-122A to Worcester City Line	Paved Road	2.81	Potential	Minor
Shrewsbury St. - Doyle Rd. to West Boylston Town Line	Paved Road	1.05	Potential	Minor

Map 9 - 10: Regional Bicycle Plan Map



Bicycle Facilities

Bikeways are facilities that promote and accommodate bicycle travel. Bikeway is a term for any road, street, path, or other way which is, in some manner, specifically designated for bicycle travel. Bicycle facilities do not have to be designated for exclusive use by bicycles, and may or may not be shared with other modes of transportation. Bikeways include on-street facilities that accommodate the use of bicycles within the right of way, whether they are intended to share a lane with motor vehicle traffic or are provided designated lanes. As shown on Map 9 - 10 and Table 9 - 8 there are 2.02 total miles of existing bicycle facilities in Holden, compared to 27.01 total miles of potential bicycle facilities.

Multi-Use Pathways

Regional and multi-use corridors connect various centers of activity throughout the region to one another. They are envisioned to provide connectivity between jurisdictions across a larger geographic area. Connected facilities that are usable for all groups and ages will also lead to a greater range of appeal. Separated, multi-use pathways such as rail trails, greenways, are helpful to users who do not have the experience level of daily cycling commuters, as well as those that use alternative mobility devices. These corridors may be located along arterial and collector roadways or take the form of multi-use pathways, such as the Massachusetts Central Rail Trail (MCRT). The MCRT is a public trail proposed along a 104-mile former railroad corridor from Northampton to Boston. The former rail line runs through the northern section of

Holden connecting to Rutland and West Boylston. As noted in Table 9 – 8, the existing bicycle facilities in town include two segments of the MCRT near Manning Street (1.06 miles) and River Street (0.96 miles), which function as regional connections to neighboring towns. To date, there are approximately 5.2 miles of the rail trail built in Holden, extending from MA-31 to the West Boylston Town line (see Table 9 - 9). There are 4 miles of rail trail being considered for multi-use regional connections from the Rutland town line to MA-31. It is important that the Town coordinate with MassDOT and DCR to ensure that regional multi-use trails and pathways are advanced to meet the needs of subregional and regional travel via alternative modes. For detailed information on MCRT and its uses, see Chapter 7: Open Space and Recreation.

Transit

In Massachusetts, there are 15 Regional Transit Authorities (RTAs) and the Massachusetts Bay Transportation Authority (MBTA) that provide public transportation services to their member communities. Holden is a member community of the Worcester Regional Transit Authority (WRTA) and receives paratransit services for eligible residents. Holden no longer receives fixed-route transit service provided by the WRTA. The same year as the original Master Plan was written, WRTA Route 32 was eliminated. WRTA Route 14 was repurposed in 2013 to remain within Worcester.

Route 32 served Worcester and Holden, including the Holden Industrial Park, Town Hall, and Wachusett Regional High School, with limited trips during the peak commuting hours. Route 32 was eliminated due to low performance and budget restrictions. Route 14 served Worcester and Holden, ending at the intersection of Brattle Street and Shrewsbury

Street. Due to low performance, the WRTA altered the route to remain within Worcester and no longer operate west of the intersection of Pullman Street and Mountain Street West in Worcester.

Holden receives paratransit services operated by the Holden Council on Aging (COA), under contract with the WRTA. Service is available to residents who qualify; those who are 60 years of age or older, or persons with a disability (regardless of age). In-town transportation is available Monday through Friday from 9:30 AM to 1:30 PM. Out-of-town transportation (one town out from Holden) is available Monday through Friday with hours varying between 8:45 AM to 2:30 PM. Transportation is provided on a reservation basis and rides are scheduled on a 48-hour advanced notice.

In Fiscal Year 2018, the Holden Council on Aging (COA) provided over 2,100 passenger trips.³ On average, the COA completes 175 passenger trips per month, or nearly nine passenger trips per day of service (see Figure 9 - 6). Of the nine individual COA's that provide paratransit services within the WRTA service area, Holden ranks eighth in total passenger trips provided in FY 2018. Holden ranks 3rd of the same 9 communities in total population.

Over the past 10 years, the Holden Council on Aging has provided an average of 2,800 passenger trips annually (see Figure 9 - 7). With a high of 3,780 trips in FY 2010 and a low of 2,102 trips in FY 2018, passenger trips decline by an average of 6% each year. The WRTA, along with peer agencies locally and nationally, have been experiencing a period of declining ridership over the past few fiscal years. Much of the ridership decrease is focused on the fixed-route system versus the paratransit system. Historically, WRTA paratransit ridership does not

Table 9 - 9: Holden Multi-Use Facilities Recommendations (CMMPO, 2018)

Facility Name	Location	Miles	Status	Priority
MCRT	MA-31 to West Boylston Town Line	5.2	Existing	Regional Multi-Use
MCRT	Rutland Town Line to MA-31	4	Considered	Regional Multi-Use

³ Holden Council on Aging; Worcester Regional Transit Authority
<https://www.mass.gov/service-details/chapter-90-past-apportionment>

Figure 9 - 6: Holden COA Passenger Trips (FY 2018)

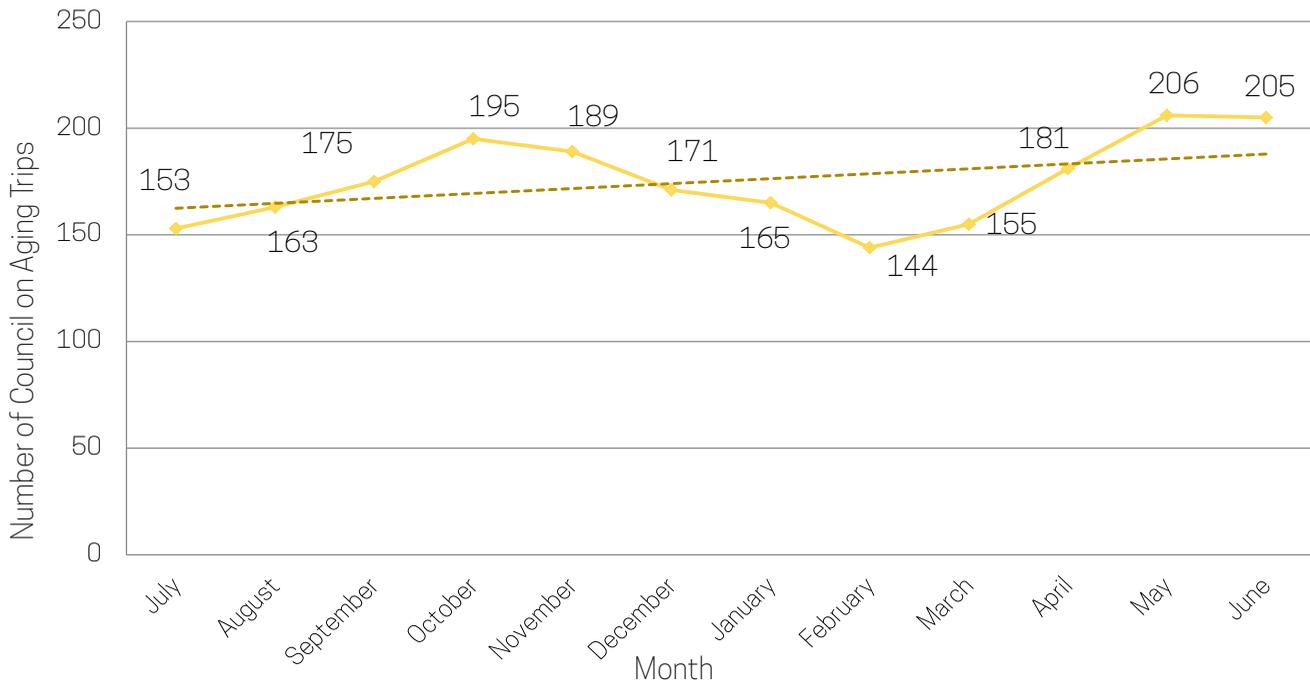
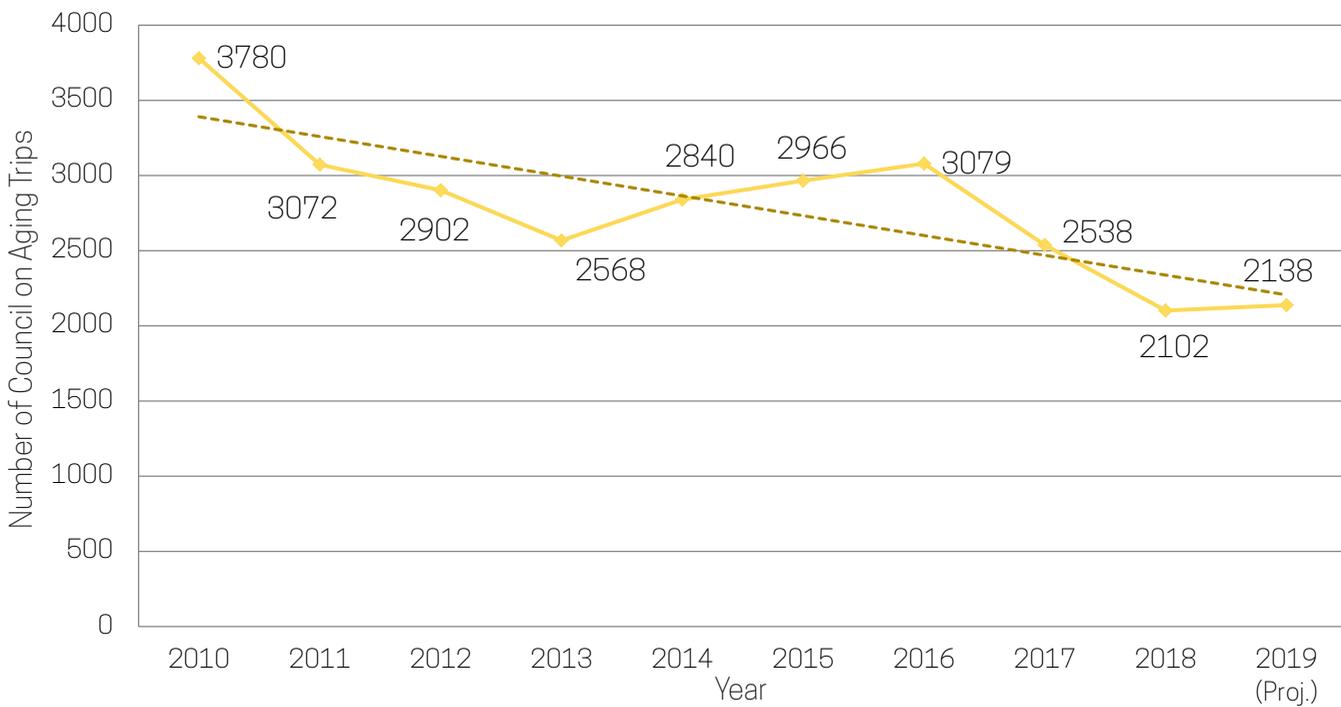


Figure 9 - 7: Holden COA Passenger Trips (Holden COA, 2018)



fluctuate greatly, ranging between 3% annual increase or 4% annual decrease.

The WRTA completed a Comprehensive Service Analysis (CSA) plan of its fixed-route network in 2015. The plan examined the existing service provided by the WRTA, identified potential areas of future expansion, and provided recommendations on how to improve service. Holden was identified as one of 5 communities in the CSA that are areas of potential high transit demand not currently served by WRTA fixed-route service. The area of potential high transit demand identified in the plan largely focuses on the population and employment needs of the Main Street corridor (Route 122A) from Shrewsbury Street to Wachusett Regional High School. Map 9 - 11 displays the level of potential transit demand across town, indicating higher demand in the southern portion of Town, primarily within the Town Center.

Nearly half of the Master Plan Community Survey respondents reported they would not use public transportation if it were available in Town because they prefer to use their own vehicle or have access to alternative modes of transportation. This is compared to 13% of respondents who would use public transportation, if available in Town, and 34% of respondents who were unsure and would need more information first. In 2018, the Tufts Health Plan Foundation and the University of Massachusetts Boston published the Massachusetts Healthy Aging Data Report. In the report, Community Profiles of all municipalities across the Commonwealth discuss 179 indicators of individual and community health, with state comparisons for each variable. According to the Holden's 2018 Healthy Aging Profile, nearly 89% of residents age 65 and older own a motor vehicle compared to 82% statewide. Additionally, there are approximately 30% of licensed drivers age 61 and older, compared to 29% statewide. This data, combined with the survey results, show that Holden residents are dependent on automobiles and prefer to drive themselves to their destinations.

Currently, there are no plans to provide fixed-route transit service to Holden. However, WRTA planning

staff continue to monitor the Town and work with the community to determine the potential need/demand as part of its long-range planning efforts.

Transportation Network Companies (TNCs)

In Massachusetts, rideshare companies such as Uber or Lyft are referred to as Transportation Network Companies (TNCs). The current form of rideshare services are provided as a curb-to-curb on-demand ride service, in which customers request a ride through a smartphone application. Trips are operated in a privately-owned vehicle, and are generally not shared services. In 2017, the Massachusetts Department of Public Utilities (DPU) released trip count data provided by TNCs, as required by law. Nearly 9,000 TNC trips originated within Holden, and over 10,000 TNC trips traveled to Holden as its destination. (Massachusetts Department of Public Utilities (DPU), 2018) Compared to other Massachusetts communities with a similar population size, Holden ranked in the lower third of total TNC trips completed in 2017 (see Figure 9 - 8).

From the Master Plan Community Survey results, just over half of residents (51%) indicated that they have never used rideshare applications such as Uber or Lyft, compared to nearly a third of residents (31%) who sometimes use rideshare. One out of ten (10%) respondents would consider using rideshare as a transportation option. As TNCs continue to evolve, additional data from future Massachusetts DPU Rideshare reports will be needed to determine the local impact to Holden. In some of the country's largest metropolitan areas (Boston, San Francisco), TNCs have increased both traffic volume and vehicle miles traveled, and created competition for taxicabs and public transportation.⁴

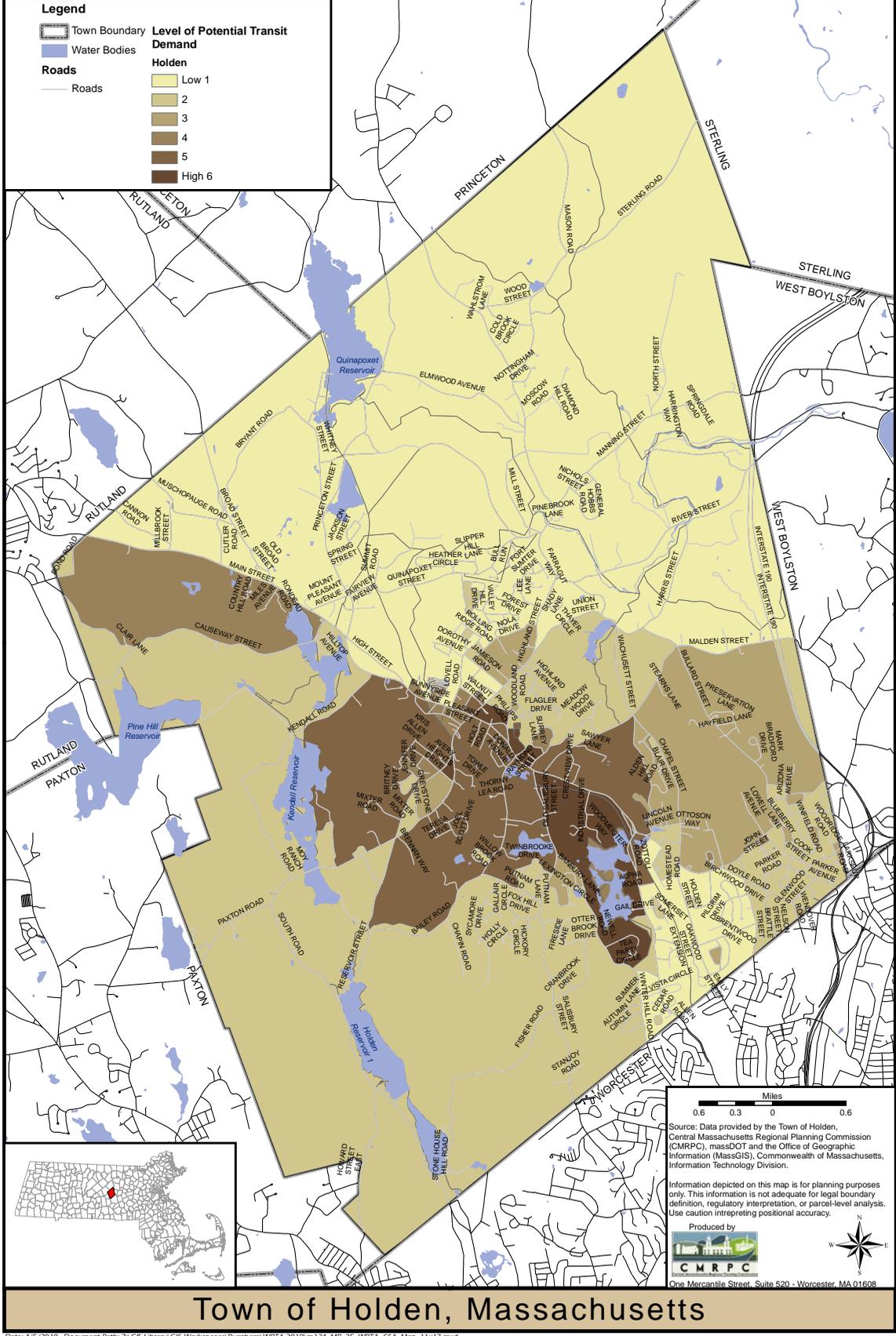
Road Network Funding

Local road networks are a multi-million-dollar taxpayer investment that directly influences a municipality's economy and quality of life. Therefore, the prioritization of pavement system maintenance is very important. The Massachusetts

⁴ Schaller, Bruce "The New Automobility: Lyft, Uber and the Future of American Cities." Schaller Consulting. Brooklyn, New York (2018) <http://www.schallerconsult.com/rideservices/automobility.pdf>

Map 9 - 11: Holden Transit Demand Map

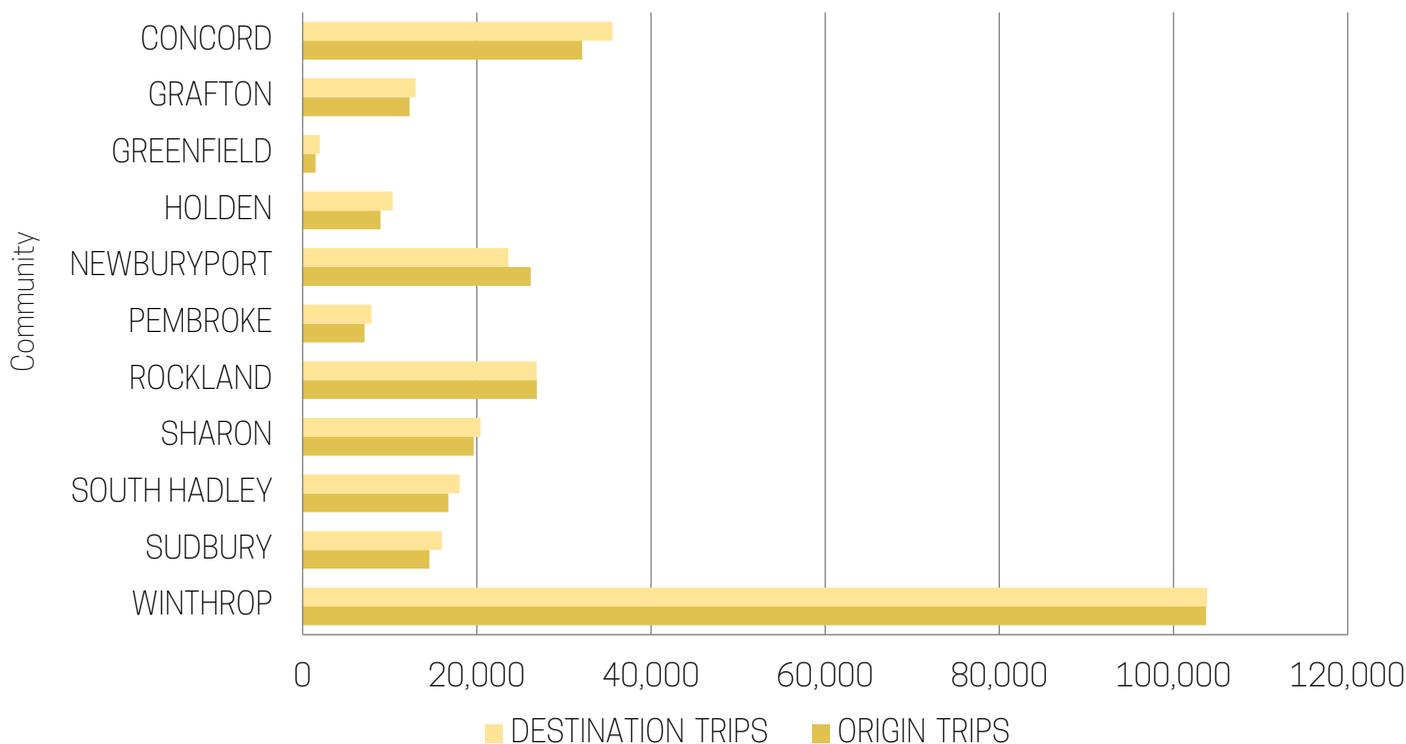
Level of Potential Transit Demand 2019 MASTER PLAN



Town of Holden, Massachusetts

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Figure 9 - 8: Rideshare Trip Counts by Community (DPU, 2017)



Chapter 90 Program is a State funding program directed by MassDOT that reimburses towns for “maintaining, repairing, improving and constructing town and county ways and bridges which qualify under the State Aid Highways Guidelines adopted by the Public Works Commission.” The funds may be used for construction and preservation work to extend the life of capital facilities, bikeways, salt sheds, road building equipment, and garages for the storage of road building equipment. Chapter 90 funds are allocated annually and based on a formula developed by the Legislative Rural Caucus of the Transportation Committee. This formula uses 3 weighted categories to determine the percentage of the total allocation each town will receive. The categories include: Roadway mileage (58.33%), Population (20.83%) and Employment (20.83%).

Based on this formula, with a population of 17,346 people, employment figure of 3,863 people, and a road network of 116.81 miles, Holden received approximately \$613,619 of Chapter 90 funds in FY 2017. Figure 9 - 9 shows Holden’s Chapter 90 apportionments over the past 10 years (note that the spike in 2015 represents extra funding provided as a result of extreme winter conditions).

(MassDOT, 2019) For FY 2019, the statewide funding pool was \$200,000,000 and Holden’s portion of that total was \$615,739.⁵ In October of 2018, Governor Baker released an additional \$40,000,000 in Chapter 90 funding, of which Holden received \$123,148, bringing the FY2019 Chapter 90 funding to \$738,887. Figure 9 - 10 shows the Chapter 90 funds allocations to the surrounding towns for FY 2019. Since budgets are often limited, it is necessary for a municipality to identify a series of factors when making pavement management decisions, including the current condition of the roadway network, prioritization schedule of repairs, best practice techniques, and most importantly, the projected long-term consequences if the repairs are delayed or deferred. If a new road is accepted by the Town, the road mileage portion of the calculation will increase, and with it, potentially, increasing the Town’s Chapter 90 funding. For this to happen, any time a new road is accepted by the Town, the MassDOT RIF must be updated. However, to prevent unforeseen liabilities, Holden should first ensure that any newly accepted roads are built to the proper standards.

⁵ <https://www.mass.gov/service-details/chapter-90-past-apportionment>

Figure 9 - 9: Town of Holden Chapter 90 Funding by Year (CMRPC, 2018)

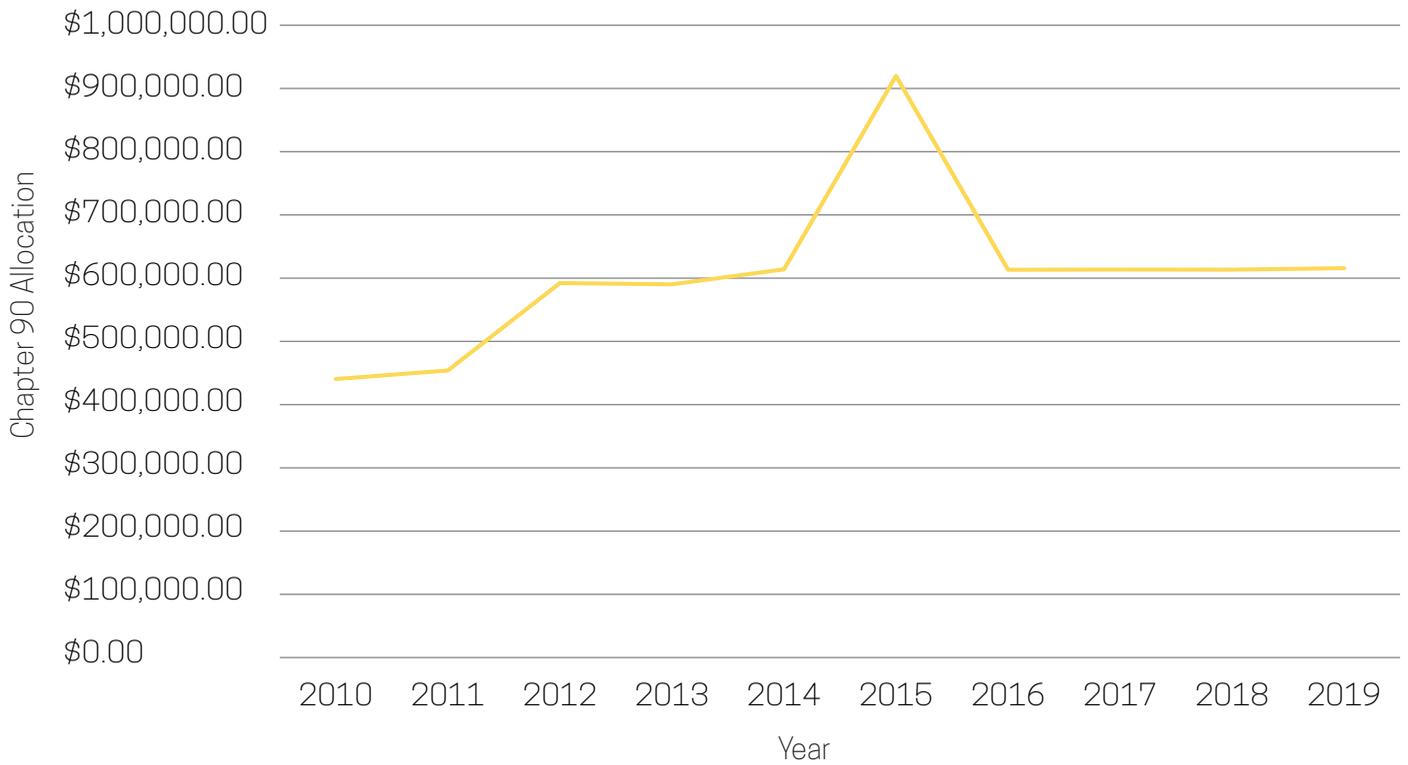
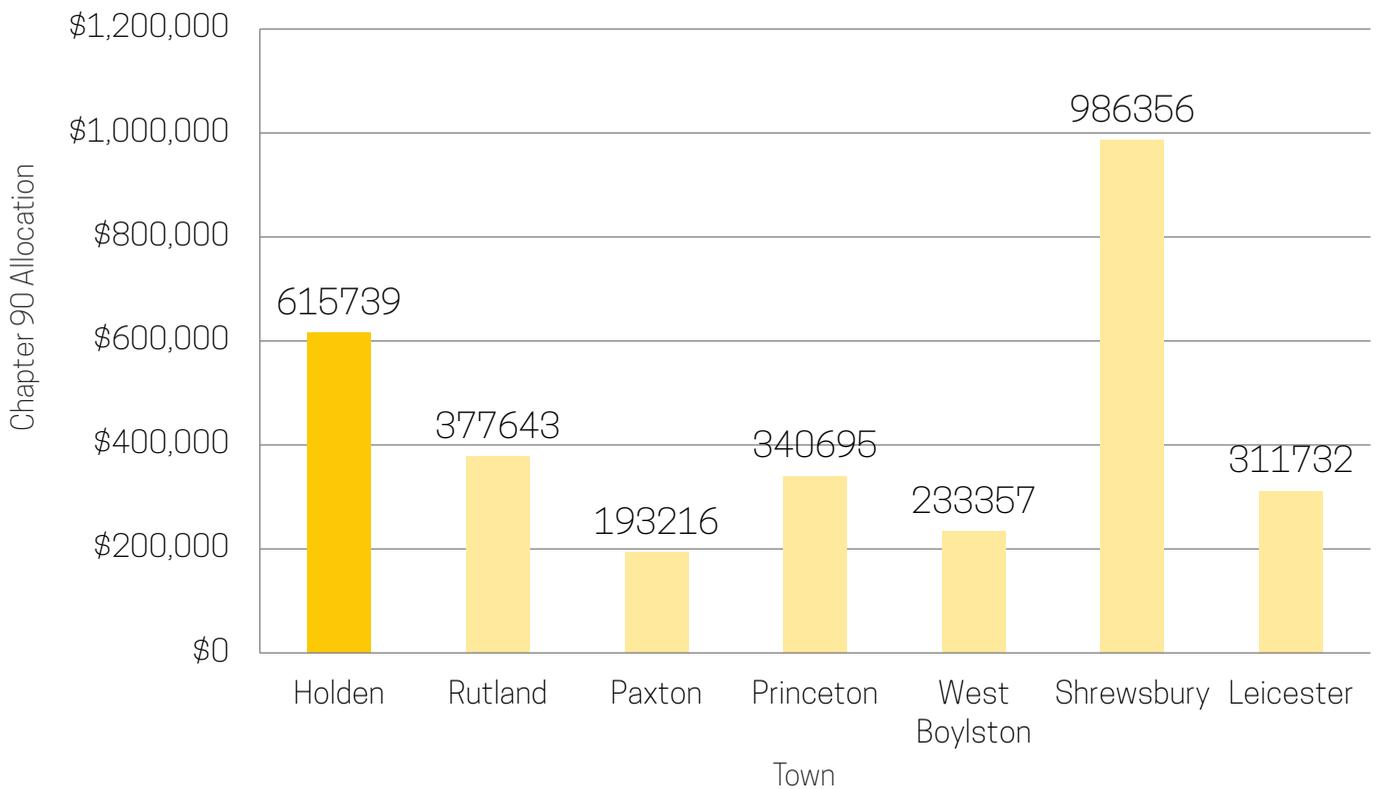


Figure 9 - 10: Chapter 90 Funding for Surrounding Towns (MassDOT, CMRPC,



ISSUES AND OPPORTUNITIES

The issues and opportunities in the following section were identified through a review and analysis of priorities identified in previous reports, current data, as well as needs expressed through the Master Plan public outreach efforts. Through these outreach efforts, Holden residents were able to voice their ideas, needs, and concerns about transportation in town. Among the many responses, several themes stood out, which include:

- The need to maintain the current transportation infrastructure.
- The need to increase safety and the availability of pedestrian and bicycle facilities around town, particularly in the Town Center area.
- The potential expansion of transit access through the Worcester Regional Transit Authority or the Pioneer Valley Transit Authority.

Traffic Congestion and Safety

A combination of safety data and community observations evidence that the Town Center, or intersection of Route 122A/31, is a frequent crash location. Residents who completed the Master Plan Survey reported that the intersection of Main Street and Route 31 is the most difficult area to navigate, followed by the Main Street/Shrewsbury Street intersection and the Chapel Street/Holden Street intersection along Shrewsbury Street (see Map 9 - 12 and Table 9 - 10). The current traffic signal for Main Street southbound only provides a solid green light and lacks a turn-only green arrow. Residents reported this as a significant issue because vehicles cannot safely make the left onto Highland Street while other cars travel northbound on Main Street due to typical speeds.

The Intersection of Route 122A/31 is an HSIP-eligible intersection and could benefit from HSIP target funding as have various areas and intersections throughout the region in the past. Communities that wish to pursue HSIP funding for a project to improve safety at any of the locations included in the regional priorities list will need to perform a Road Safety Audit (RSA). The Federal Highway Administration defines a Road Safety Audit (RSA) as the formal examination of an existing or future road or intersection by an independent, multidisciplinary team. The purpose of an RSA is to identify potential safety issues and possible opportunities for safety improvements considering all roadway users.

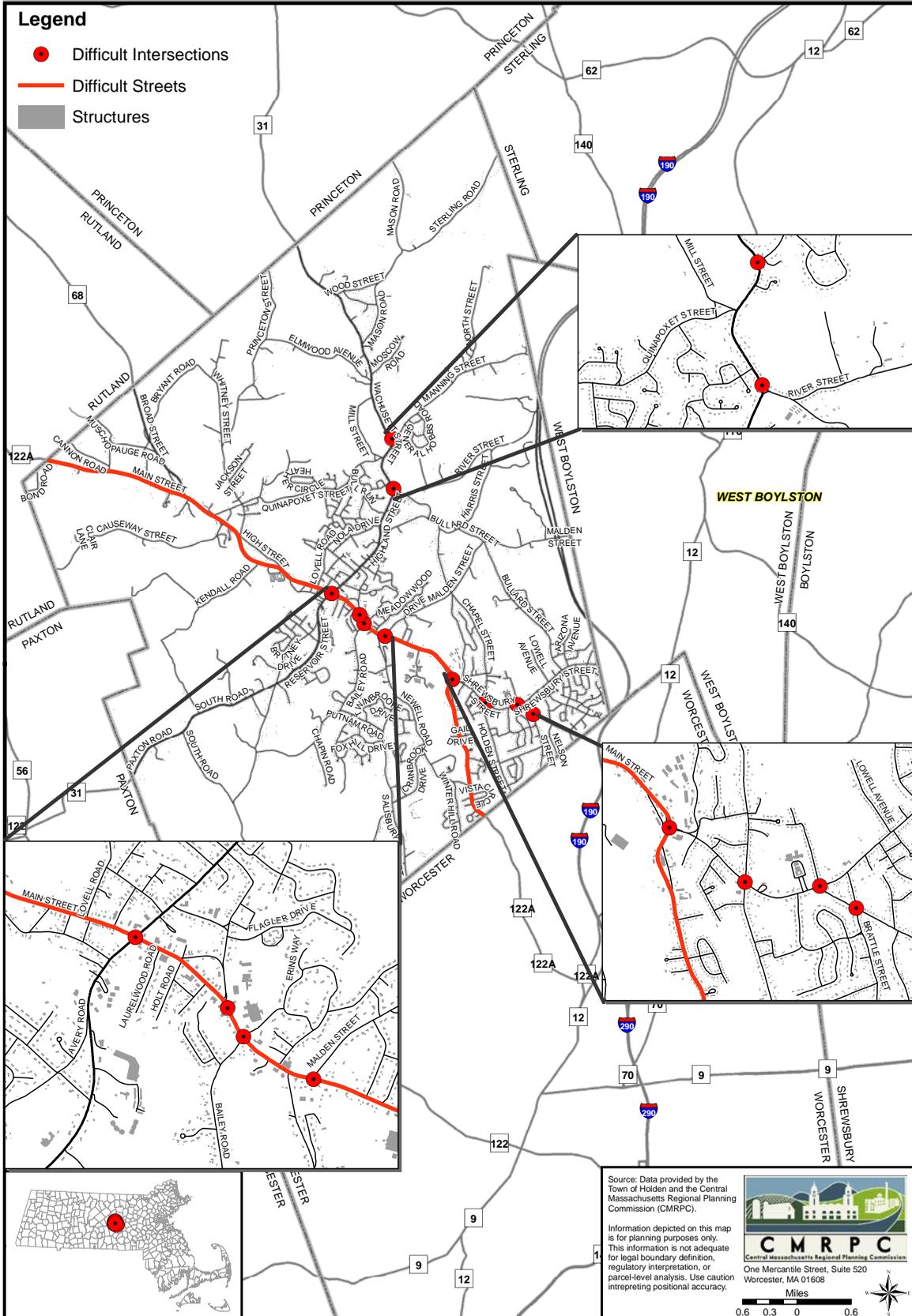
Table 9 - 10: Most Difficult Areas/Intersections in Holden (Holden Master Plan Survey Results, 2018)

	No. Resident Responses
Main St and Route 31	135
Main St and Shrewsbury St	56
Chapel St and Holden St along Shrewsbury St	37
Mayo Dr and Bailey Rd along Main St	20
Manning St and Route 31	19
Post Office	16
Wachusett St and Highland St	14
Shrewsbury St and Doyle Rd	12
Brattle St and Doyle Rd	12
Malden St and Main St	12

Most Difficult Areas/Intersections Survey Results 2019 MASTER PLAN

Legend

- Difficult Intersections
- Difficult Streets
- Structures



Source: Data provided by the Town of Holden and the Central Massachusetts Regional Planning Commission (CMRPC).

Information depicted on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis. Use caution interpreting positional accuracy.



CMRPC
Central Massachusetts Regional Planning Commission
One Mercantile Street, Suite 520
Worcester, MA 01608



Town of Holden, Massachusetts

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As previously noted, the most recent CMRPC travel demand model (2017) identified 3 roadways in Holden as currently or projected to be congested including: Route 122A from Route 140 (Shrewsbury Street to Mount Pleasant Avenue), and Shrewsbury Street from Doyle Road to Main Street. Additionally, Doyle Road from Shrewsbury Street to the Worcester City Line is projected to be congested by the year 2040. As shown on Table 9-10 these areas also reflect those reported by residents in the Master Plan Survey as a difficult to navigate, such as the Doyle Road and Brattle Street intersection.

Currently the Town is in the initial development stages of a potential TIP project: Shrewsbury Street from Main Street to Doyle Road, including a small portion of Doyle Road to Brattle Street (approx. 1.3 miles). This project includes resurfacing and the new roadway design will include components of a complete street such as accommodations for vehicles, pedestrians, and bicyclists throughout the corridor. The project is in the concept stages and the Town will be seeking PNF/TIP development from CMRPC. Holden is also working with MassDOT regarding a loop detection system at both approaches on Route 31.⁶ Other potential next steps include further study and identification of potential alternative designs for the Town Center including (but not limited to) a roundabout or rotary, or hybrid of both. Additionally, once MassDOT approves Holden’s Complete Streets Tier 2 Prioritization Plan, the Town will be eligible to apply for Tier 3 infrastructure funding to implement traffic and safety improvements such as installation of traffic light signalization, intersection reconstruction, traffic calming measures, pedestrian signal timing, and more.

Regarding parking, the majority of residents who took the

survey do not believe there are parking issues in Town. However, there are a moderate number of residents that reported parking challenges and identified specific areas that offer limited availability or make parking difficult in Town:

- Town Center/Main Street corridor especially during Holden Days and other Town events
- Senior Center
- Wachusett Street
- School parking
- Small business parking
- Challenges with the overnight parking ban

Currently there is a small provision in the Holden Zoning Bylaw under parking requirements and standards that allows for reduction in the number of parking spaces for a proposed development. Although the provision is not often utilized, Walgreens and Holden Dental located on Main Street incorporated this provision in their developments. In order to better understand the observed parking challenges, it is recommended that the Town work with a consultant to conduct a parking study. This would include data collection and assessment

of existing parking supply and demand for public and private lots, as well as on-street parking. In addition to collecting the baseline data of existing parking supply, staff would coordinate a utilization study or parking occupancy counts, which can be scheduled during Special Town Events and/or a regular session to examine parking demand in various parts of Town. CMRPC has experience with conducting parking studies previously for Downtown Worcester, and staff are currently working with the Town of Westborough on Phase I and the City of Worcester on Phase II of their parking studies. Note that the inventory data collection for Westborough

Residents who took the 2019 Master Plan Survey reported the following Top 3 Holden Priority Transportation Issues:

Congestion (88%)

Road/Bridge Conditions (74%)

Transportation Access for Aging Populations (61%)

⁶ Loop detection systems are detectors on stoplights that support traffic flow.

was conducted through District Local Technical Assistance (DLTA) funds. Both Worcester and Westborough have received EEA grants to support a Phase II comprehensive zoning analysis to update and implement the State's Smart Parking Toolkit in their parking requirements/traffic regulations.

Transportation Access for Youth And Seniors

Residents expressed concern over transportation access for youth and seniors within the community, especially regarding the safety implications. For instance, the Early Childhood Center (ECC) located on Main Street nearby Mt. Pleasant Avenue experiences safety issues with the traffic light in front of the building. The area is very challenging to navigate; it is safer to turn onto Main Street southbound, and turnaround somewhere else, if you want to take Main Street northbound from the school. The traffic light is for the school and is only activated with the crosswalk signal, not with the flow of traffic. The intersection of Main Street/Princeton Street has curvature issues and is another extremely difficult intersection for community members, and particularly students, to navigate. In 2014, there was a severe accident on Main Street and Princeton Street where a student was critically injured in front of Pizza 17 while exiting Princeton Street onto Main Street. Several Wachusett Regional School District buildings are located along Main Street and experience heavy traffic flow, as there are many vehicles going in and out of the school buildings. Additionally, increased student enrollment has often resulted in delayed school arrival/dismissal periods.

The Massachusetts Safe Routes to School (SRTS) Program promotes healthy, active transportation modes for children and their parents in their travel to and from school. The SRTS Program works to increase safe biking and walking among elementary and middle school students by using a collaborative, community-focused approach that bridges the gap between health and transportation. SRTS utilizes the 6 E's to implement its program: Education, Encouragement, Enforcement, Evaluation, Engineering, and Equity. The Massachusetts SRTS Program is sponsored by MassDOT with funds from the Federal Highway Administration, and SRTS

partner schools may qualify for infrastructure project grant funding. Funding is only available to schools that have been partnered with the SRTS Program for at least 6 months.

Once schools become a Safe Routes to School Partner, MassDOT will conduct assessments of the relevant infrastructure, after which Partner Schools will become eligible to apply for capital improvement projects. All proposed projects must be within 2 miles of a school and that school must serve at least 1 grade that falls between Kindergarten and the 8th grade. School partners also receive year-round pedestrian and bicycle safety education instruction, as well as engagement initiatives tailored to meet each school's health, safety, and environmental priorities. Since the SRTS Program was launched in 2006, 29 infrastructure project grants were awarded across the Commonwealth, totaling over \$16 million in construction funds to improve safer routes for children to walk and ride bicycles to and from school. Currently, neither the Town of Holden nor the Wachusett Regional School District have any schools partnered with the SRTS program.

Regarding older adults, more than half of Master Plan Community Survey respondents (61%) reported that Transportation Access for Aging Populations is one of the Top 3 Transportation Priorities in Town. It recommended that the Town improve connectivity of public spaces between the Holden Senior Center and the 80-unit age-restricted housing development at 68 Reservoir Street/Route 31. The housing development and Senior Center are only 0.4 miles apart from one another, but the current route of travel for pedestrians is tough to navigate and does not provide many areas to pause for older adults. Currently, residents traveling from Reservoir Street are forced to cross the street at least 3 times to get to the Senior Center. A new sidewalk on Reservoir Street on the same side as the housing development would be an immediate need, as well as a crosswalk and rapid flashing beacon in front of the Senior Center entrance on Main Street. These improvements can be funded through the Complete Streets program.

As previously noted, the Holden COA ridership data indicates that this particular service is performing lower than other towns. On average, the Holden COA

completes about 175 passenger trips per month, or nearly 9 passenger trips per day of service. Of the 9 individual COA's that provide paratransit services within the WRTA service area, Holden ranks eighth in total passenger trips provided in FY 2018; however, Holden ranks third amongst the same 9 communities for total population. The WRTA, along with peer agencies locally and nationally, have been experiencing a period of declining ridership over the past few fiscal years. Much of the ridership decrease is focused on the fixed-route system as opposed to the paratransit system. Historically, WRTA paratransit ridership does not fluctuate greatly, ranging between 3% annual increase or 4% annual decrease.

Holden was identified as 1 of 5 communities in the WRTA Comprehensive Service Analysis (CSA) Plan (2015) as an area of potential high transit demand that is not currently served by WRTA fixed-route service. The area identified in the CSA Plan largely focuses on the population and employment needs of the Main Street corridor (Route 122A) from Shrewsbury Street to Wachusett Regional High School.

Based on the Master Plan Survey Results, when asked about additional municipal services or facilities, public transportation or bus service to Worcester received wide support. One respondent indicated additional transportation options for residents who can no longer drive because the "elder vans are very limited as to where they will go." Another respondent noted that the senior classes during the evening at the Senior Center, in addition to employed seniors, could benefit from increased transportation access. However, within the Transportation section of the Master Plan Survey, nearly half of respondents reported they would not use public transportation if it were available in town because they prefer to use their own vehicle or have access to alternative modes of transportation. This is compared to 13% of respondents who would use public transportation, if available in town, and 34% of respondents who were unsure and would need more information first. The survey results show that Holden residents are dependent on automobiles and prefer to drive

themselves to their destinations. Yet there remains about a third of respondents who are open to the idea of public transportation if Holden, the WRTA, and/or CMRPC provided more information on what this would look like in Holden.

There is a unique opportunity for the Holden COA to engage with the WRTA and explore opportunities to maximize the uses of its existing local paratransit service. Through further study and analysis, the Town and Senior Center can work with the WRTA to identify potential improvements to support the COA van service and increase local ridership, such as identification of additional routes and/or local destinations. Due to the general interest in increased public transportation, the Town may want to conduct public outreach in order to increase visibility and resident awareness around COA vans and general public transportation (CMRPC can assist). Following this, the Town may want to consult with the WRTA to pilot a small program using the existing infrastructure to test the community's usage and response.



Holden's Current Reliance on Automobiles (CMRPC, 2019)

GOALS, OBJECTIVES AND ACTION ITEMS

The Master Plan recommends the following action items based on the goals and objectives crafted with careful consideration of the public outreach results, analysis of current conditions, and progress achieved since 2008. The action items accompanying the objectives will also be reflected in the Implementation Chapter (Chapter 11).

Goal 9.1: Maintain and improve the condition of Holden's transportation network.

Objective 9.1.1: Maintain high quality roads.

- **Action Item 9.1.1.1:** Continue the existing road survey program using the Pavement Management System (PMS) tool to help determine road maintenance and funding needs.

- **Action Item 9.1.1.2:** Continue internal tracking of roadway conditions within the existing Pavement Management System (PMS) tool.

Objective 9.1.2: Maintain a connected and accessible sidewalk system that is useful to everyone.

- **Action Item 9.1.2.1:** Continue a sidewalk and Americans with Disabilities Act (ADA) ramp survey program using the Pavement Management System (PMS) tool to help determine sidewalk/ramp maintenance funding needs.
- **Action Item 9.1.2.2:** Continue internal tracking of sidewalk/ADA ramp conditions using the PMS tool.
- **Action Item 9.1.2.3:** Review Holden's policies, programs, services, and facilities and develop an ADA/Section 504 Self-Evaluation and Transition Plan.

Objective 9.1.3: Maintain safe bridges that accommodate necessary traffic.

- **Action Item 9.1.3.1:** Continue to develop and then implement a bridge inventory and capital plan.

CAPITAL ITEMS

Implement Road Maintenance Program as outlined in Pavement Management System

Improve ADA Ramps and Sidewalk Repair, Replacement and Expansion as outlined in Pavement Management System and Complete Streets Policy

Implement transportation (sidewalk and ramp) aspects of ADA/ Section 504 Transition Plan

Implement future Bridge Capital Plan and Replacement

Ensure that sidewalks and bike lanes areas are clear of obstructions so that all users may safely use them; may require relocation of utility structures

Add marked bike facilities to roadways with excess shoulder capacity

Implement the recommendations in the CMMPO Regional Bicycle Plan in coordination with all planned roadway improvements

- **Action Item 9.1.3.2:** Develop a bridge capital plan.

Goal 9.2: Explore options to alleviate traffic on Main Street (Route 122A), arterial and collector streets.

Objective 9.2.1: Explore options to improve road safety on state-owned Main Street (Rt. 122A) for all users.

- **Action Item 9.2.1.1:** Coordinate with MassDOT, owner of Main Street (Route 122A), to conduct an updated assessment of the area including a Road Safety Audit, traffic study or other survey work.
- **Action Item 9.2.1.2:** Ensure that signage, poles, and other structures do not impede safe multi-modal access.
- **Action Item 9.2.1.3:** Expand public education campaigns that promote the rules of the road so that all transportation system users are aware of their responsibilities.
- **Action Item 9.2.1.4:** Work to incorporate Safe Routes to School materials and practices into local education systems.
- **Action Item 9.2.1.5:** Consolidate driveways when possible to reduce access points and provide better visual cues including clear markings for exit and entrance only.

Objective 9.2.2: Explore options to improve road safety on arterial and collector streets for all users.

- **Action Item 9.2.2.1:** Ensure that signage, poles, and other structures do not impede safe multi-modal access.
- **Action Item 9.2.2.2:** Expand public education campaigns that promote the rules of the road so that all transportation system users are aware of their responsibilities.
- **Action Item 9.2.2.3:** Work to incorporate Safe Routes to School materials and practices into local education systems.

Goal 9.3: Enhance multimodal transportation access, including transit, pedestrian, and other types.

Objective 9.3.1: Develop a Complete Streets Tier II Prioritization Plan.

- **Action Item 9.3.1.1:** Review the priority locations and recommendations identified for Holden in the 2018 Central Massachusetts Metropolitan Planning Organization (CMMPO) Regional Bicycle Plan.
- **Action Item 9.3.1.2:** Review the walk-to-school zones for sidewalk gap installation or upgrades.
- **Action Item 9.3.1.3:** Review the on-road and multi-use recommendations for potential bicycle facilities in Holden and ensure that the recommended segments are prioritized in future construction activity.
- **Action Item 9.3.1.4:** Ensure that local planning processes reflect and are consistent with the recommendations of the Regional Bicycle Plan.

Objective 9.3.2: Connect existing neighborhoods including commercial areas and schools with a system of pathways.

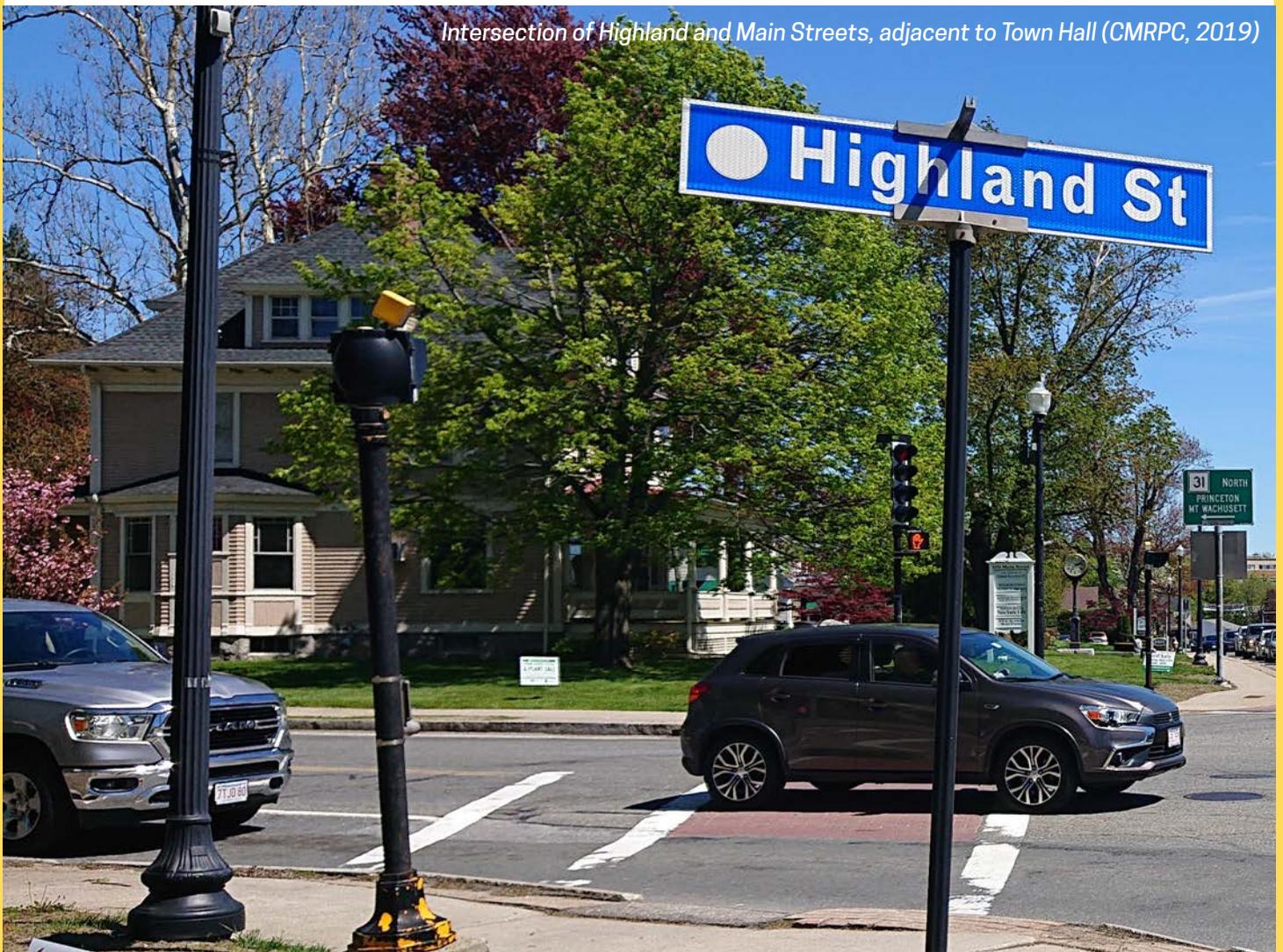
- **Action Item 9.3.2.1:** Identify areas for sidewalk reconstruction and/or expansion.
- **Action Item 9.3.2.2:** Utilize the MassDOT Complete Streets Funding Program process to pursue infrastructure funding and continue to close the gaps in the pedestrian network.
- **Action Item 9.3.2.3:** Examine arterial and collector streets with excess shoulder capacity to determine how they can be converted into Complete Streets with bicycle facilities.
- **Action Item 9.3.2.4:** Ensure that Regional Multi-Use Trails and Pathways are advanced to meet the needs of sub-regional and regional travel via alternative modes.

Objective 9.3.3: Conduct a “Transportation Needs” survey throughout the community in order to promote transit and help future transit planning efforts.

- **Action Item 9.3.3.1:** Collaborate with CMRPC, WRTA to study current transit uses, and identify opportunities for a future transit planning study.
- **Action Item 9.3.3.2:** Work with CMRPC, WRTA to improve existing paratransit services provided by the WRTA in partnership with the Council on Aging.
- **Action Item 9.3.3.3:** Explore best practices to assist carpooling commuters; identify key travel patterns as well as needs.
- **Action Item 9.3.3.4:** Explore partnerships with organizations to provide carpool lots.

Objective 9.3.4: Build resilience into the transportation system by planning for emerging trends.

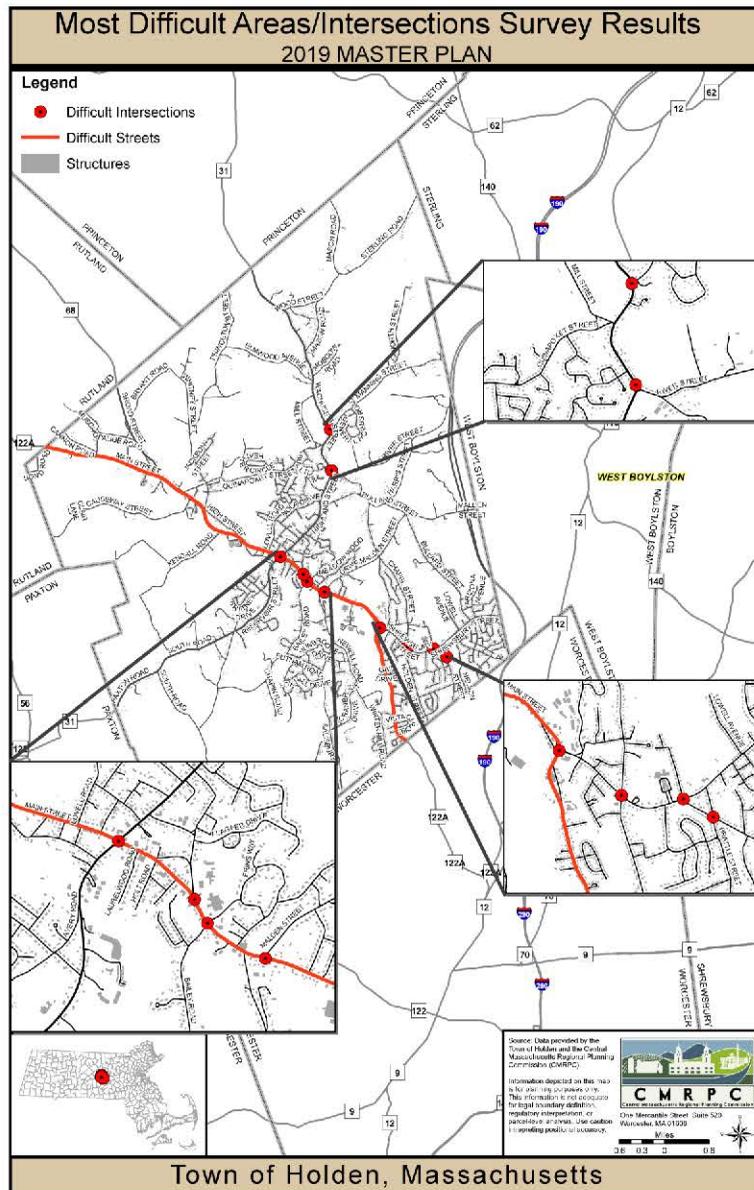
- **Action Item 9.3.4.1:** Account for electric vehicle charging stations in parking lot design.
- **Action Item 9.3.4.2:** Build space for ride share pick-up and drop-off in commercial thoroughfares.
- **Action Item 9.3.4.3:** Anticipate the impact of autonomous vehicles; consider revising parking standards to include a maximum, rather than minimum, number of parking spaces.
- **Action Item 9.3.4.4:** Coordinate with Town Departments to incorporate green infrastructure into planned road improvements.



What does Holden think about Transportation?

TRANSPORTATION

Holden Community Survey Results



Holden Tomorrow
planning our future together

FOR MORE INFORMATION: www.holdenmasterplan.com Town of Holden Master Plan Committee

10.0 PUBLIC FACILITIES & SERVICES

INTRODUCTION

Public facilities and services are the most tangible representation of any local government, and are arguably the most important. Respondents to the Holden Master Plan survey agree, with 99% saying that local services are important or very important to their quality of life, and 96% feeling similarly about local facilities. This chapter summarizes the current state of Holden's public facilities and services. Improvements that may be required as the Town continues to grow and evolve are also noted. Existing assets will need to be adapted to changes in technology and to meet the needs of future residents and economic development. The recommendations issued at the end of this chapter will support achievement of five primary goals:

- Ensure public facilities meet the needs of Holden's population.
- Maintain long-term funding mechanisms to provide for future public facility needs.
- Improve the sustainability and resilience of Town operations.
- Deliver infrastructure that meets existing and future Town needs.

- Uphold the high quality of Holden's educational system and facilities.

As detailed in the following sections, Holden facilities are generally adequate or better in function, scope, condition, and efficiency for a community of Holden's current size and budget, and residents' strong desire for quality services. Several major capital projects have been completed or approved to address deficiencies identified in the 2008 Master Plan. Challenges remain at other facilities, including Chaffins Fire Substation (Fire Station No. 2) and the Town's two administrative offices (the historic Town Hall and Starbard Building). Holden's Town-owned public works infrastructure faces a number of challenges from recent steady growth; however, it is also generally in good condition, with adequate capacity to support moderate residential and commercial expansion. Staffing levels appear to be generally sufficient; however, staffing for the Fire Department, Municipal Light Department, and other departments should be evaluated for current and future needs.

PRIOR PLANNING AND ENGAGEMENT EFFORTS

Holden Master Plan (2008)

The Town of Holden 2008 Master Plan provides an outline of existing conditions, issues, and recommendations for Public Facilities and Services. The major recommendations identified in the Master Plan (2008) regarding facilities and services include:

- Develop a priority capital improvement plan for new, expanded, or upgraded public facility needs for Holden over the next 10 to 15 years.
- Establish long-term funding mechanisms to provide a funding base for future public facility needs.
- Establish a Prioritization and Funding Plan for municipal facilities.
- Continue to monitor and evaluate committed reserved wastewater flow, evaluating capacity deficits and surpluses.
- Provide young people with a place to go with appropriate and popular activities for after-school hours.
- Provide services for the increasing senior population as well as the new “kind” of senior emerging as the baby boomers “come of age,” which may require new kinds of services and activities at the Senior Center.
- Confirm and update population projections and demand projections over time to confirm adequacy of water supply system, recognizing that water usage is adequate for the foreseeable future but is not under Town control.
- Establish a Capital Planning Committee.
- Replace the DPW Garage and Fire Department sub-station.

Town of Holden Town and School Buildings Assessments

The Town of Holden Town and School Building Assessments report was completed by Gienapp Design Architecture on October 3, 2018 (Gienapp Design Architecture, 2018). Gienapp’s team conducted site visits and interviewed department heads to identify facility needs. The study identified deficiencies and future needs, estimated project costs, and assigned priorities to each project. The report findings informed many of the recommendations included in this chapter.

EXISTING CONDITIONS

The existing conditions assessments offered below were based on interviews with Town staff, other information provided by the Town, and review of the draft Town of Holden Town and School Buildings Assessments report (Gienapp Design Architecture, 2018).

History and Overview

In the late 1990s, Holden faced a growing number of facility-related problems that endangered the Town’s ability to provide effective services to residents. Its schools were aging, its public safety facilities were deteriorating, its water and sewer systems were thought to be near capacity, and it lacked adequate facilities for youth and seniors. Holden’s residents and Town government responded with a burst of public building projects over the next decade-plus:

- A new Mayo Elementary School (1998)
- A new Davis Hill Elementary School and a renovated Dawson Elementary School (both 2000)
- A new Senior Center and Municipal Light Department building (both 2001)
- An upgraded Dawson Recreation Area (2003)
- An expanded and renovated Wachusett Regional High School (2009)

- A new Public Safety Complex (2010)
- A converted Recreation Department office and fitness studio (2014)
- A new Mountview Middle School (2016)
- Approval of a new Public Works headquarters (2018, to be completed ca. 2020)
- Various upgrades and expansions of public utilities throughout the period

This extended run of projects successfully addressed many of the most urgent problems facing the Town's capital assets and related services. Exceptions include the aging and deteriorating Town Hall and Starbard Building, where local administrative functions are based, and the inadequate Chaffins fire substation (Holden Fire Station No. 2) on Adams Road, which will soon lose its co-tenant when the DPW barn relocates to its new facility on Industrial Drive. The need to maintain and replace building systems (HVAC, roofs, fire protection, etc.) reaching their designed lifetimes or due to code changes at the many facilities completed between 1998 and 2003 presents another challenge for the next several years. Map 10 - 1 depicts the major public facilities in Town.

Governance, Staffing, and Civic Engagement

Planning and Budgeting

Planning and budgeting for capital projects, ranging from Town buildings and vehicles to parks and some public works improvements, is overseen by the Town Manager's office. Each fall, all Town departments complete a five-year capital needs assessment and submit requests for priority items to be included in the annual capital budget. Requests are reviewed by the Town Manager's office. The capital budget is then subject to the normal budget review process, including review by the Finance Committee and approval by voters at Holden's Annual Town Meeting.

Boards, Committees, and Commissions

To oversee its staffed departments and facilities, Holden operates more than 30 elected and appointed boards, committees, and commissions. This number is roughly average for the area. Rutland has approximately 15 such entities; West Boylston has more than forty; Paxton has approximately 20; and Princeton has just under 30. Based on responses to the Master Plan survey, residents are familiar with a few of the more prominent governing and advisory bodies such as the Board of Selectmen, but they lack understanding of some that are more narrowly focused. The Cultural Council, Infrastructure Investment Fund, Cable Advisory Committee, and Veterans Advisory Committee are the least well understood. The Town's elected and appointed boards, committees, and commissions are summarized in Table 10 - 1.

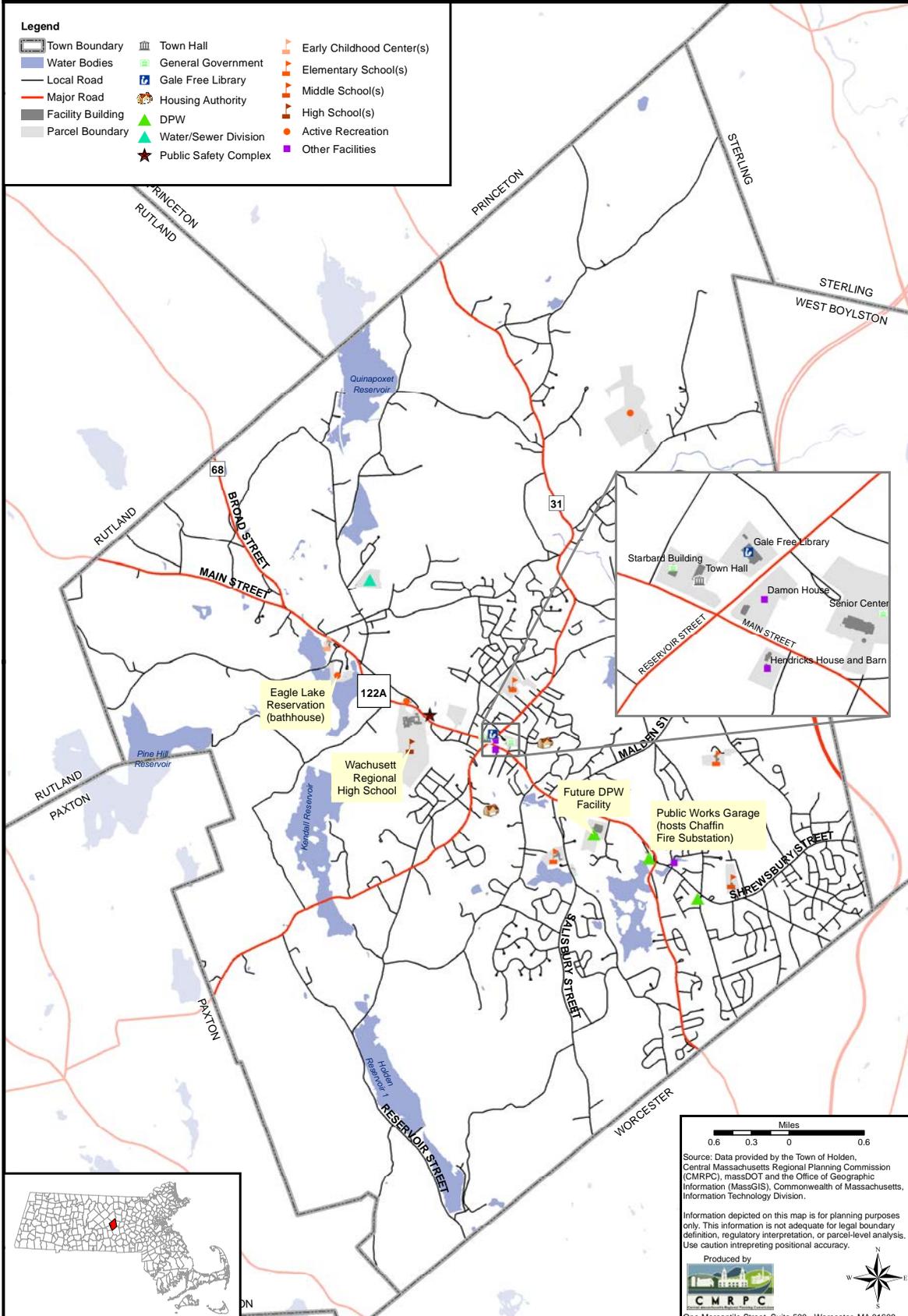
Governance and Administration

Holden's executive branch is the Board of Selectmen, composed of five elected members who serve as the main policymakers for the local government and for overseeing local services. Represented since the 1950s by a professional Town Manager in most day-to-day matters, the Selectmen are ultimately responsible for making and implementing Town policies, for appointing members to several unelected boards and commissions, and for executing certain contracts, among many other tasks. The Selectmen also serve as the Light Commission and Water & Sewer Commission. Other elected boards such as the Library Trustees and Wachusett Regional School District Committee are charged with setting and/or regulating specific policies per state statute or local by-law independent of the Board of Selectmen. The appointed boards often (but not always) serve in more advisory roles; several boards are appointed by the Town Manager rather than by the Selectmen. The annual Town Meeting each spring (as supplemented by any special meetings) serves as Holden's legislative branch.

Major Public Facilities Map 2019 MASTER PLAN

Legend

- | | | |
|-------------------|-----------------------|---------------------------|
| Town Boundary | Town Hall | Early Childhood Center(s) |
| Water Bodies | General Government | Elementary School(s) |
| Local Road | Gale Free Library | Middle School(s) |
| Major Road | Housing Authority | High School(s) |
| Facility Building | DPW | Active Recreation |
| Parcel Boundary | Water/Sewer Division | Other Facilities |
| | Public Safety Complex | |



Miles
0.6 0.3 0 0.6

Source: Data provided by the Town of Holden, Central Massachusetts Regional Planning Commission (CMRPC), massDOT and the Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division.

Information depicted on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis. Use caution interpreting positional accuracy.

Produced by
 CMRPC
One Mercantile Street, Suite 520 - Worcester, MA 01608

Town of Holden, Massachusetts

Table 10 - 1: Holden Boards, Committees, and Commissions (Town of Holden, 2019)

Name	#	Elected or Appointed	Core Purpose(s)
250th Permanent Gift Committee	4	Appointed (by Town Manager)	Oversees seasonal concerts and other events at bandstand
Agricultural Commission	7	Appointed (by Selectmen)	Advises other boards and commissions on projects, policies and acquisitions related to agriculture; promotes farm businesses and events
Board of Assessors/Fence Viewers	3	Appointed (by Town Manager)	Responsible for listing and valuation of personal and real property; certifies property tax rate
Board of Health	3	Appointed (by Town Manager)	Regulates food safety, septic systems, and other health topics; conducts various public health activities; some functions regionalized through Central Mass. Regional Public Health Alliance
Board of Registrars of Voters	3	Appointed (by Selectmen)	Maintains the voter registration database and annual street listing
Board of Selectmen, Light, and Water/Sewer Commissioners	5	Elected	Executive branch of the Town government; appoints many other officials; represented in day-to-day activities by Town Manager; serves as Light and Water/Sewer Commission(s)
Cable Advisory Committee	6	Appointed (by Town Manager)	Provides oversight of operations and policies at the local access cable TV station (HCTV)
Community Garden Committee	4	Appointed (by Town Manager)	Leads effort to develop community gardens for residents to purchase plots
Conservation Commission	7	Appointed (by Town Manager with Selectmen approval)	Regulates protection of natural resources with particular emphasis on wetlands and other open spaces
Council on Aging/Senior Citizens Committee	7	Appointed (by Town Manager)	Advocates and provides services for local seniors; provides oversight of operations and policy at the Senior Center
Cultural Council	7	Appointed (by Selectmen)	Promotes access to education, diversity and appreciation of arts, humanities and sciences; distributes grants from Mass. Cultural Coalition
DPW Facilities Committee	7	Appointed (by Town Manager)	Temporary study committee; selects site and develops plan for new DPW headquarters
Eagle Lake Committee	7	Appointed (by Selectmen)	Studies recreational opportunities at the lake and reviews funding options for improvements; develops plan for ownership and maintenance of dam
Education Options Review Committee	7	Appointed (by Selectmen)	Reviews options to enhance school performance in a cost-effective fashion
Finance Committee	9	Appointed (by Moderator)	Arm of Town Meeting; reviews Town expenses and borrowing; makes recommendations to Town Meetings and to boards and commissions
Help at H.O.M.E.	6	Appointed (by Town Manager)	Oversees fundraising and disbursement of charitable funds from the Welcome Aldrich Relief Fund for at-need residents

Table 10 - 1 Continued

Name	#	Elected or Appointed	Core Purpose(s)
Historic District Commission	7	Appointed (by Selectmen)	Promotes preservation of historic assets in the Holden Center and Boyden Road historic districts; reviews construction and maintenance in these areas
Historical Commission	5	Appointed (by Town Manager with Selectmen approval)	Promotes historic preservation through planning and education; inventories local historic assets
Housing Authority	5	Elected	One member is appointed by the Governor; oversees State-owned public housing and federal voucher programs in Holden; assisted in day-to-day operations by Housing Authority's Executive Director (position is currently outsourced to Worcester Housing Authority)
Infrastructure Investment Fund	6	Appointed (by Moderator)	Oversees investments of the special Fund in capital projects
Memorial Day Parade Committee	5	Appointed (by Town Manager)	Plans and oversees the annual Memorial Day parade; raises funds for parade operations
Montachusett Regional Vocational/ Technical School District (Monty Tech)	1	Appointed (by Moderator and Selectmen)	1 of 22 regional members; advises Monty Tech operations, policies and procedures
Municipal Electric Power Advisory Board	7	Appointed (by Town Manager)	Oversees operations, staffing and infrastructure of the Holden Municipal Light Department
Planning Board	7	Appointed (by Town Manager)	Regulates land use; reviews site plans and subdivision requests; periodically reviews zoning and oversees long-range plans including master plan
Recreation Committee	5	Appointed (by Town Manager)	Advises Recreation Director on programming and policies; sponsors annual Christmas celebration
Trustees of Gale Free Library	6	Elected	Governing body of the Gale Free Library
Veterans Advisory Committee	7	Appointed (by Town Manager)	Advises Town Manager on veterans-related matters
Wachusett Regional School District Committee	11	Elected	Oversees regional school policies and budgeting. Holden elects 11 of 22 total members.
Water/Sewer Advisory Board	3	Appointed (by Town Manager)	Oversees operations, staffing and infrastructure of DPW water and sewer services
Zoning Board of Appeals	5	Appointed (by Selectmen)	5 members, 2 alternates. Hears appeals on building permits and discretionary zoning-related permits, including special permits and variances

Staffing

Holden’s residents are served by more than 140 regular Town employees as well as seasonal workers in several departments. A breakdown of full-time personnel by department is provided in Table 10 - 2.

Table 10 - 2: Employees by Town Department (Town of Holden, 2019)

Department/ Position	Posted Office Hours Week	Staffing Level
Police	40; on-call	34
Public Works	39	34
Municipal Light	41.5	20
Fire/EMS	40; on-call	20 (+ call FFs)
Gale Free Library	52 to 55 (seasonal)	7
Town Manager	39	4
Treasurer/Collector	39	4
Planning & Development	39	4
Recreation	40	3
Town Clerk	39	3
Information Technology	39	3
Senior Services/ Council on Aging	40	3
Assessing	39	2
Accounting	39	1
Veterans’ Agent	By appointment	1
Health	16	1 (CMRPHA)
Community Television (HCTV)	40	1

General Government Buildings Town Hall

Constructed in the early 1800s and rebuilt in the 1870s, Holden’s historic Town Hall has been upgraded and expanded multiple times in the decades since. It remains an important civic facility that hosts several departments including Building, Health, Planning, the Town Clerk, and a portion of the Public Works staff. While the 11,000 sq. ft. building (with 7,000 sq. ft. of occupiable space) is an iconic community landmark, it has a number of deficiencies that reduce its effectiveness for modern municipal operations. The recent Gienapp Design building assessment highlighted various concerns ranging from mild (repairs to doors and the elevator wall) to fairly substantial (aspects of the HVAC system as well as basement drainage and moisture management). According to Town staff, the Town Hall also has less-than-ideal office, storage and meeting space. Depending on costs, upgrades to these items could trigger the requirement for expensive renovations to meet current handicapped access, fire protection, and other codes. (Gienapp Design Architecture, 2018)



Starbard Building

Together with the Town Hall, the Starbard Building (built in 1797) serves as the administrative home of the local government. The Town Manager's office and financial departments including the Treasurer/Collector, Assessor, and Accountant are housed here. As with the Town Hall, a number of maintenance issues are present, including plumbing, ventilation, and various code issues. Of particular concern to the Gienapp Design team was the poor condition of some structural components. (Gienapp Design Architecture, 2018) Structural shoring was recommended to support the building. More office and storage space would be appreciated by the Town staff housed in the building.

Senior Center

Constructed in 2001, the Senior Center is one of Holden's more modern public facilities. At the Center, the Council on Aging (COA) provides services including cultural and educational programming, on-site meals, socializing, exercise and recreational activities, various social services, and transportation. The Center is open five days a

week. Aside from services offered at the Center itself, the COA offers an outreach program and coordinates the local Meals on Wheels Program.¹ Activity at the Center has been stable or increasing slightly, with unduplicated yearly elderly clients generally in the 1,250 to 1,350 range, as well as 90 to 100 additional non-elderly users. Capacity is generally adequate, but staff expressed concerns that it may become an issue as the "Boomer" generation ages in the next several years. The building is in excellent condition; however, as systems begin to reach their designed lifespans in the next few years, repairs will be required. A portion of the roof is set to be replaced in 2019. The building is energy efficient and is equipped with solar panels. The Center has three full-time staff, four part-time van drivers, and three part-time office staff. It operates two vans, one of which is owned by the Town for in-Holden trips, and one of which is owned by the Worcester Regional Transit Authority. The Senior Center serves as a warming/cooling shelter for Holden residents during extreme temperature events.



Starbard Building (CMRPC Staff, 2019)

¹ The Meals on Wheels (MOW) program delivers lunch to homebound seniors who are unable to provide their own meals, and who meet certain guidelines. Special dietary considerations are available for those with chronic health conditions such as diabetes and heart disease. This daily check in by a volunteer driver may be the only social contact an elder has and helps reduce the isolation often experienced by disabled seniors. Drivers are trained to identify and report observations or emergencies that might indicate a medical problem or the need for more intervention.



Gale Free Library (CMRPC Staff, 2019)

Gale Free Library

This impressive 1888 landmark was substantially expanded and renovated in 1989. The staff is generally pleased with the facility, and based on Master Plan survey results it is perhaps the most-visited and most-loved of all Town buildings. The library is open 52 to 55 hours per week (variable by season), including expanded nighttime hours, and is staffed by seven full-time equivalent employees. Staffing is considered adequate for now but as the town grows and evening hours foster greater numbers of visitors, additional staff may be required. Programming includes regular story hours, movie nights, crafts, and a popular summer reading program. In 2017, library circulation approached 229,000 and most days saw 500 to 700 visitors. Program participants totaled about 8,600 including 7,000 youth participants.

The library is generally considered to be in good condition, but as with any building its age, there are improvements that could be made. For instance, the

Gienapp Design study recommends replacement of aging components of the HVAC system, and library staff would like the rooftop appliances to be raised to reduce noise. (Gienapp Design Architecture, 2018) Additional needs highlighted by the library staff range from upgrades to computers and software to potential conversion of some shelf space (no longer needed due to the increasingly digital collection) to a small tutoring or meeting space. Maintenance of the window frames is also required but historic preservation considerations add expense and difficulty to the project, so it has been deferred. The Town's Information Technology (IT) department upgraded wireless internet connectivity at the library in 2017 for open use by visitors. Past concerns about inadequate parking and large meeting room space are no longer applicable – neither frequently exceeds its capacity. The library is governed by the Trustees of the Damon Memorial Library.



Safety and Emergency Services and Facilities

Public Safety Complex

The Police-Fire-Emergency Management Services (EMS) facility was built in 2009 to 2010 and serves as Holden's Emergency Operations Center (EOC). The 43,000 sq. ft. building is considered very suitable for its purposes and it is expected to be more than adequate for another 40 years. The two-level facility has separate parking bays for Fire/EMS and for Police vehicles, and is equipped with holding cells. Relatively new, no major maintenance issues have been encountered at the complex as of 2019. In collaboration with the Municipal Light Department, the Police and Fire Departments are investigating solar generating options. The building is heated with a geothermal system. Additional storage is available at the adjacent Fire Station Annex.

In 2019, the Fire Department was staffed with 16 full-time firefighters and 22 call firefighters as well as a Chief and Deputy Chief. All are trained to the paramedic level. According to department leaders, in years prior to 2019, it was a challenge to recruit younger firefighters, and call firefighters are not as available as in the past due to regular jobs outside of Holden and the greater Worcester region. Additional full-time firefighters are now being recruited through funds from a Federal Emergency Management Agency (FEMA) grant. Fire/EMS call volume has been increasing, especially for EMS services. Overall, more than 2,100 calls were received in 2017, of which 1,536 were EMS calls. An increase in EMS calls of roughly 10% over the previous five years is suspected to be linked to the aging population and an increase in senior housing. The vehicle fleet includes four ambulances (one of which is a spare), four fire engines, one tower truck, one forestry truck, two command vehicles, and one shift supervisor vehicle (a small SUV). Ambulances are replaced on a three-year cycle. The tower truck and one fire engine are set to be replaced in the next few years.

While most of the developed part of Holden is covered by the municipal water system and its hydrants, some outlying areas rely on alternative water sources for firefighting such as a dry hydrant on South Road or cisterns at some subdivisions. Mutual aid from Fire District No. 8 is generally called in to assist with rural fires. Holden was classified as a 04/4X community in its 2017 ISO Public Protection Classification report, indicating a relatively high level of protection despite the limitations of water service coverage in town. (ISO, 2017) This classification, based on training, facilities, water supply and other factors, is often used by insurance companies to set rates for property owners in a community.

The Holden Police Department is staffed with 17 officers, nine dispatchers, four sergeants and lieutenants, two administrative support staff, the Chief, and an animal control officer. The vehicle fleet is updated with two new cruisers purchased each year through the capital budget. The Police Department handles dispatch for all Town emergency services as well as those from the Towns of Princeton and West Boylston through a regional services agreement. Additional mutual aid for law enforcement is available through the Central Massachusetts Law Enforcement Council (CEMLEC). Holden continues to be among the safest communities in Worcester County and Massachusetts overall in terms of violent crime, with an incident rate of 52 per 100,000 residents in 2017, compared to a statewide rate of 353.

Chaffins Fire Substation (Fire Station No. 2)

In addition to its base at the Public Safety Complex, the Fire Department maintains a satellite station at the Department of Public Works' Adams Road garage. Presently the substation is unmanned due to insufficient staffing. Starting in July 2019, the station will be staffed during daytime hours. It houses two engines and in July 2019 will add an ambulance. The substation is considered unsuitable for modern use for a variety of reasons. Of particular concern is the roof – the Gienapp Design study highlighted significant structural concerns. (Gienapp Design Architecture, 2018) However, the location is ideal for quick response times to the

southern part of town. The Fire Department would like to keep a presence in the area even after the DPW services provided on the same site are moved to Industrial Drive.

Public Schools

Holden is one of five participant communities in the Wachusett Regional School District (WRSD), along with Paxton, Princeton, Rutland and Sterling. As part of the WRSD agreement, each community is responsible for capital projects costing \$35,000 or more at schools serving local children only. In Holden, the four schools that serve primarily local students include Mountview Middle School (grades 6 to 8) and the three elementary schools (Kindergarten to Grade 5). Costs for capital projects at the regional high school and early childhood center are shared among the five-town region. The student/teacher ratio in the WRSD is 15.5/1, compared to 13.1/1 for all Massachusetts schools. The District employs approximately 460 teachers (FTE) and 640 other staff.

Enrollment

Enrollment in the district has fluctuated within a fairly narrow range in the past decade, declining slightly from 7,258 students in 2008 to 7,147 in 2018. Over the ten-year period, enrollment was as high as 7,490 (2011). The Massachusetts School Choice program allows parents to send their children to schools in communities other than the city or town in which they reside. Tuition is paid by the sending district to the receiving district. Districts may elect not to enroll school choice students if no space is available. "School Choice" students from outside the WRSD peaked at 250 in 2012. WRSD no longer accepts new "School Choice" students in order to preserve capacity for children from District towns. Holden is currently the fastest-growing community in the district. As such, the WRSD expects enrollment pressure to continue rising in the Holden-only schools despite the overall recent decline. Holden students currently represent 46.5% of all students in the district and 44.6% of students at the regional high school. According to WRSD estimates, Holden children will likely represent 50% of district students in the next few years. Approximately 91% of Holden children

attend WRSD schools. The remaining students are home-schooled or attend private schools.

Performance

Academic performance indicators for the District are strong. For all grades combined, WRSD students meet or exceed 2018 next-generation Massachusetts Comprehensive Assessment System (MCAS) standards in English Language Arts at a 67% rate and Math at 64%, compared to 51% and 48% respectively statewide (See Table 10-3). These scores generally compare favorably to neighboring districts using the same test. (Department of Elementary and Secondary Education, 2018) One current focus for the district is on social and emotional development. For example, additional school counselors have been added at the middle schools.

Classroom capacity is an increasing concern. The new Mountview Middle School, completed in 2016 to replace a school built for 600 students, is already at or near its design capacity of 800. The Wachusett Regional School Committee recently proposed to provide universal full-day kindergarten in Holden’s three elementary schools. The District’s other primary schools (and the vast majority of schools around the state) already offer this option. Initial WRSD analysis indicates that a new school would have to be built to add sufficient long-term capacity for universal full-day kindergarten. One scenario involves building a new grade 5 to 6 school, shifting the three existing K-5 schools to K-4, and converting the middle school from grades 6 to 8 to grades 7 to 8. As an interim solution, additional classroom space would be added internally at the Mayo Elementary School to allow for all-day kindergarten there.

Table 10 - 3: MCAS Scores by District (Department of Elementary and Secondary Education, 2018)

Subject	Leicester	Leominster	Nashoba	Quabbin RSD	Spencer-EB RSD	Wachusett RSD	West Boylston	Worcester	Statewide
English Lang. Arts	36	43	73	44	41	67	57	35	51
Math	35	46	72	45	36	64	57	29	48

School Specific Issues

Wachusett Regional High School (WRHS)

Built in 1952 and renovated and expanded in 2009, the high school is owned by the WRSD and capital projects are funded by the District. WRHS is generally in good condition. Some systems including HVAC are aging and will require replacement in the short- or medium-term. There are relatively minor Americans with Disabilities Act (ADA) access concerns, primarily with doorways.

Condition and Capacity

WRSD schools serving Holden students are generally in good condition. All have been built, expanded, and/or extensively renovated since the late 1990s. This clustering of school construction in a relatively short period will present a challenge to administrators of future decades, when multiple buildings may require near-simultaneous replacement. In the short term, Holden’s students enjoy fine facilities. System lifecycle upgrades are expected to be the primary capital needs at existing schools.

Mountview Middle School

Built in 2016, Mountview Middle is in excellent condition. There have been some challenges in adjusting to the level of environmental control technology in the building’s operational systems, especially the humidity-control system; however, the building is generally efficient and effective. Capacity is already a concern as Holden enrollments continue to grow along with the Town’s population. The facility serves as Holden’s primary emergency shelter.

Mountview Middle School (CMRPC, 2019)



Dawson Elementary School

Built in the late 1950s and renovated in 2000, Dawson Elementary is in good condition overall; however, a number of building systems require replacement in the short- or medium-term and some other maintenance is needed to fully meet various current code requirements. Additional restrooms are desirable as well.

Davis Hill Elementary School

Built in 2000, the Davis Hill Elementary is in good condition overall. Some building systems require replacement in the short- or medium-term and some other maintenance is needed to fully meet current code requirements. Ice dams on the roof are a recurrent problem in severe winter weather. According to Gienapp Design's study, there are also concerns with drainage and water pressure (Gienapp Design Architecture, 2018).

Mayo Elementary School

Built in 1998, the Mayo Elementary is in good condition overall, but some building systems require replacement in the short- or medium-term and some other maintenance is needed to fully meet current code requirements. There is a drainage problem in the elevator shaft, likely related to post-construction foundation settling.

Wachusett Regional School District Office/Early Childhood Center

Built as the Jefferson Elementary School in the early 1900s with renovations and additions in the 1940s and limited renovations around 2000, this facility is owned by the WRSD and includes both the District office and classroom space for pre-kindergarten students, most of whom are part-time. The building is in fair condition at best, with some portions of the building not substantially updated since the 1940s. There are a variety of building systems and other issues that should be addressed in the next several years.



Public Works Facilities

Highway Garage

The current highway garage was built in the early 1960s and includes a later addition. It is considered by staff to be wholly inadequate for contemporary operations. Parking and service bays at the facility are insufficient. The structure has integrity issues and the building is ADA noncompliant. Space is inadequate for current operations, staff, and vehicles. This facility is to be replaced with a planned \$18 million facility on Industrial Drive within two to three years (construction funding was approved at Holden's 2018 Fall Town Meeting). The Chaffin Fire Station is part of the same facility. Plans for future use of the current facility after the relocation of operations to Industrial Drive are undetermined as of 2019.

Water/Sewer Division

The Water/Sewer Division operates a 2,500 sq. ft. facility on Spring Street. Built in 1950s, it has three maintenance bays for the Division's nine vehicles. Consequently, most vehicles are parked outside. As with the Highway Garage, this facility will be replaced and its operations housed at the new \$18 million facility on Industrial Drive within 2 to 3 years. Plans for future use of the current facility after the

opening of the Industrial Drive building are to be determined.

Municipal Light Department Office

Built in 2001, the Holden Municipal Light Department (HMLD) building is located on the former Chaffin School site. This large facility (approx. 15,000 sq. ft.) has a garage area and a two-level office area. It is equipped with an elevator and other ADA access features. The building is generally in excellent condition but some systems such as the boiler and hot water heater are approaching the end of their designed lifespans and will need replacement in the next few years. The HMLD office serves as Holden's backup Emergency Operations Center.

Housing Authority

The Holden Housing Authority is a state-funded entity separate from the Town government. It operates 56 subsidized apartments for local residents who meet income eligibility guidelines. The Checkerberry Village complex was built in the late 1970s and features 48 units for elderly or disabled residents. The *Commons at Holden* on Towle Drive, which consist of townhouses built in the 1990s, are home to eight families. The waiting lists for potential tenants are lengthy and reflect

the high demand for affordable housing in Town, with nearly 200 names on the list for Checkerberry Village and 100 waiting for The Commons at Holden. The Housing Authority also administers 59 federal Section 8 rental assistance vouchers and has seen a 50% increase in demand for vouchers in the past few years. In late 2018, the HHA entered a five-year contract with the Worcester Housing Authority for management assistance. The Housing Authority is governed by an elected board that includes one member appointed by the Governor.

Recreational Facilities

This discussion excludes conservation land and other unimproved or passive recreational sites that lack capital assets including buildings. Recreational considerations are discussed separately under the Open Space and Recreation chapter.

Recreation Department Office

Built in 1978 as Holden's police headquarters, the Recreation Department assumed ownership of this facility following relocation of the Police Department to the Public Safety Complex. The building was renovated in 2014 to include office space and a fitness studio for various recreational classes. While the facility is generally in good condition, there are ADA access limitations (the restroom and interior vertical access) and the plumbing system is in need of repairs. The facility is shared with the Town's Information Technology department. The Recreation Department has three full-time staff and one vehicle.

Trout Brook Reservation & Lodge

This 660-acre conservation property has a pavilion and a rentable lodge facility in addition to hiking trails. The lodge, considered to be in good condition, includes restrooms, a limited kitchen and a dining area. Some systems such as the water heater and furnace will need replacement in the next few years.

Eagle Lake Reservation

Eagle Lake was formed in 1798 following construction of a mill dam. A portion of the lake front is operated by the Town as a recreational area including a beach and basketball and volleyball facilities. A small bathhouse has supported

swimming opportunities, but it has not been opened in recent years due to lack of demand. Maintenance of the current dam is complicated by its ownership, which includes multiple private entities. In recent years, the dam has deteriorated and at least one owner has proposed to remove or decommission the dam. The Town has formed a committee to investigate solutions to the dam question in order to preserve the recreational use of the lake.

Dawson Recreation Area & Swimming Pool

The Dawson Recreation Area is Holden's primary active recreation site, offering two outdoor swimming pools, a bathhouse, multiple ballfields, basketball courts, picnic areas, a paddleball court, an arts and crafts room, and tennis courts. The facilities are generally in good to excellent condition. Planned projects include resurfacing of the tennis and basketball courts, updates to the playground (which dates to 2004, the original construction date of the complex), and the addition of a pickleball court. Upgrades to plumbing and pool heating may also be necessary in the next several years.

Bandstand & Ballfield (near Senior Center)

Maintained by the building and grounds section of Public Works, these facilities host sports and arts programming in the center of Town. The bandstand, built in 1992, is in good condition. Programming is overseen by the Bandstand Committee.

Other Facilities

Hendricks House

Built in 1890, the Historic Hendricks House was purchased for preservation by the Town in 1975. The landmark building is now managed by the Holden Historical Society as an office, event space, and model for preservation best practices. While the building is generally in good condition, it is not handicapped accessible, and some plumbing improvements are needed.

Damon House

The Damon House was built in 1850 and is Town-owned. It is rented by a law firm that subleases to other tenants, including the Wachusett Area Chamber of Commerce. The building is not ADA accessible.

Grove Cemetery

Grove Cemetery is Holden's active public cemetery. It is maintained by the buildings and grounds section of the Department of Public Works.

Infrastructure Water Supply System

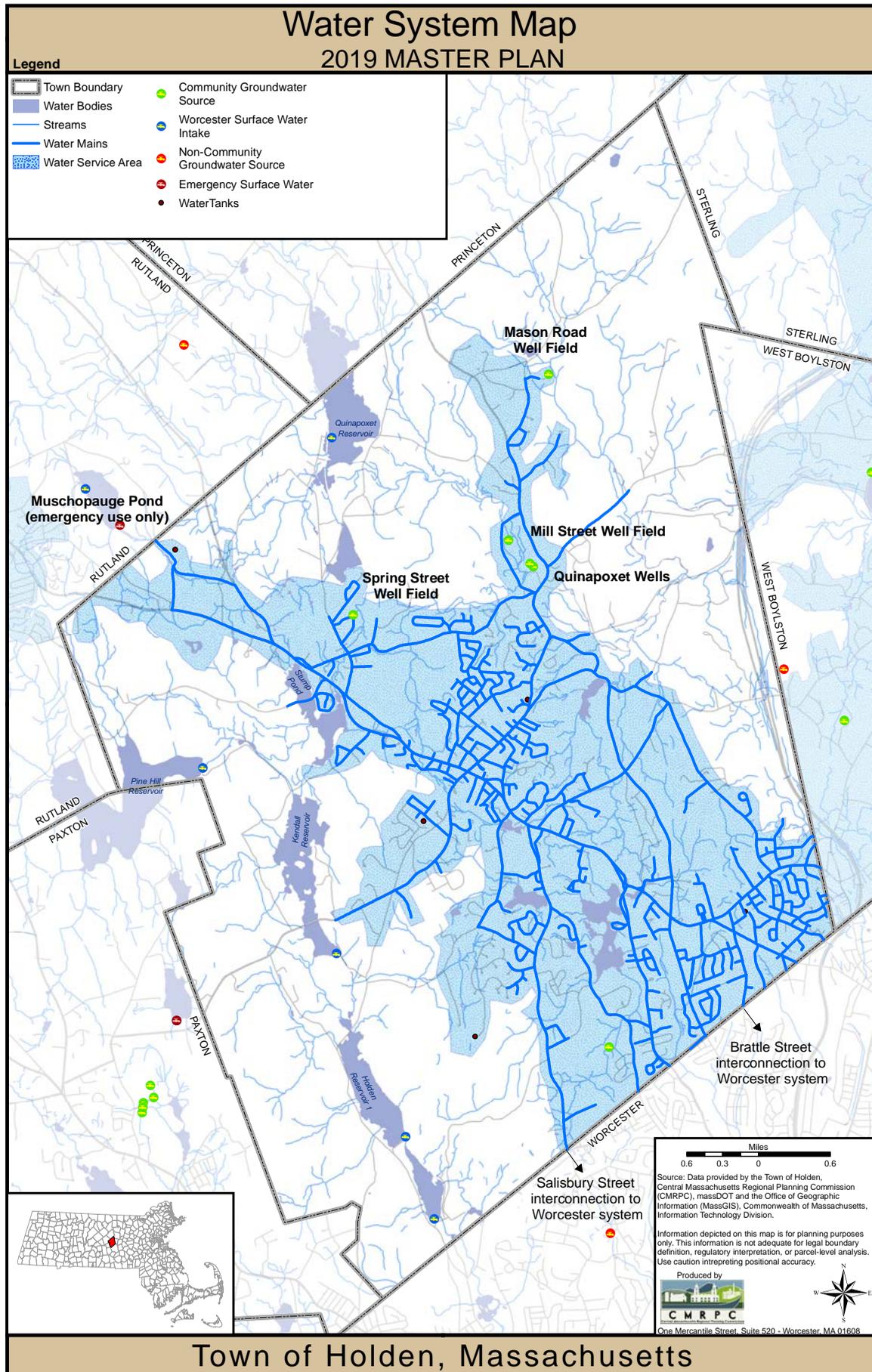
Holden's municipal water supply dates to around 1905, with a number of major extensions built through the early 2000s. The supply is sourced from four wellfields in Town and two interconnections to Worcester's water supply, much of which is originally sourced in Holden. Water from Holden's wells is treated for pH and with fluoride. More than 108 miles of water mains cover around half of the Town's area and serve a large majority of residents and businesses in Holden. In the past decade, average daily demand has ranged from 1.149 million gallons per day (MGD, in 2009) to 1.359 MGD (2013), with the most recent yearly data (2017) at 1.295 MGD. Peak demand has ranged from 2.196 MGD (2008) to 2.86 MGD (during the dry year of 2016), with a 2017 peak of 2.403 MGD. In 2017, approximately 71% of water used in Holden was

sourced from Holden wells. The total capacity of the water system over an extended period is roughly 4.1 MGD, of which 3 MGD would come from the Worcester interconnections. Peak rated capacity for short-term needs is around 4.5 MGD. Adequate capacity therefore exists to support moderate future growth in the customer base. The level of growth outlined in the Buildout Analysis (Appendix C) and Fiscal Impact Analysis (Appendix C), which suggest that much of Holden's remaining developable land is outside the existing water service area, should be manageable over the next two decades. While the water system in general is in good shape, there is interest in replacing all remaining asbestos cement mains and in reducing the "daisy chain" of boosting stations and mains that accompany some new subdivisions. The water system is funded by ratepayers through an enterprise fund. A GIS mapping effort of the water system was recently completed (see Map 10 – 2). In order to comply with the state Water Management Act, Holden issues a daytime water use restriction each summer.



C.L. Hendricks House (CMRPC Staff, 2019)

Map 10 - 2: Water System



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Wastewater System

The Town of Holden operates a network of roughly 80 miles of sanitary sewer mains and 29 pump stations serving an area from Jefferson through Holden Center to the Worcester line. Four additional pump stations are operated by private parties. Waste collected is sent via two state-owned interceptor lines through Worcester to the Upper Blackstone Wastewater Pollution Abatement District (UBWPAD) treatment plant in Millbury. The collection system dates to the 1930s and has been expanded a number of times. In the past decade, sewer flows from Holden have averaged around 401 million gallons yearly, ranging from 347.7 million gallons (2012) to 496 million gallons (2017). As of 2020, Holden's allocation of UBWPAD's treatment capacity will be raised to 1.69 MGD (or approx. 617 million gallons annually) per the District's Sewer Use Agreement. Some capacity for future user growth is therefore available. A recent study completed for the Town by engineers at Weston & Sampson estimated around 170,000 gallons in additional daily sewer use (or 62 million gallons annually) can be expected from long-term development of buildable lots within the existing sewer service area. The DPW is currently working with Weston and Sampson on a town-wide sewer analysis to determine where expansions to the sewer system can be accommodated as additional development continues. As with the water system, there is interest in replacing existing asbestos cement sewer mains and in reducing or at least maintaining the number of interconnected mains and pumps related to new subdivisions. The sewer system is funded by ratepayers through an enterprise fund. The wastewater system is shown in Map 10 – 3.

Stormwater Drainage

Stormwater management is an increasing concern for the DPW as the extent of development in Town expands and the intensity of storms is projected to increase due to climate change. Much of Holden, including many rural or lightly developed areas, is served by "country drainage" rather than by purpose-built drainage infrastructure such as storm drains and drain pipes. Access to private properties by easement or other means to retrofit drainage infrastructure where needed is

a considerable obstacle to future improvements. Another consideration is compliance with EPA's Municipal Separate Storm Sewer Systems (MS4) permit, which regulates stormwater management in the urbanized portion of Holden. Subdivisions are another complicating factor – homeowners' associations are often unable to maintain drainage assets installed during initial construction of new developments. There is no dedicated funding stream for drainage infrastructure, which is funded through the regular capital planning process or through available grants. Staffing constraints limit the DPW's ability to upgrade and maintain drainage assets, especially as the Town acquires more roadway miles through new subdivisions and commercial development.

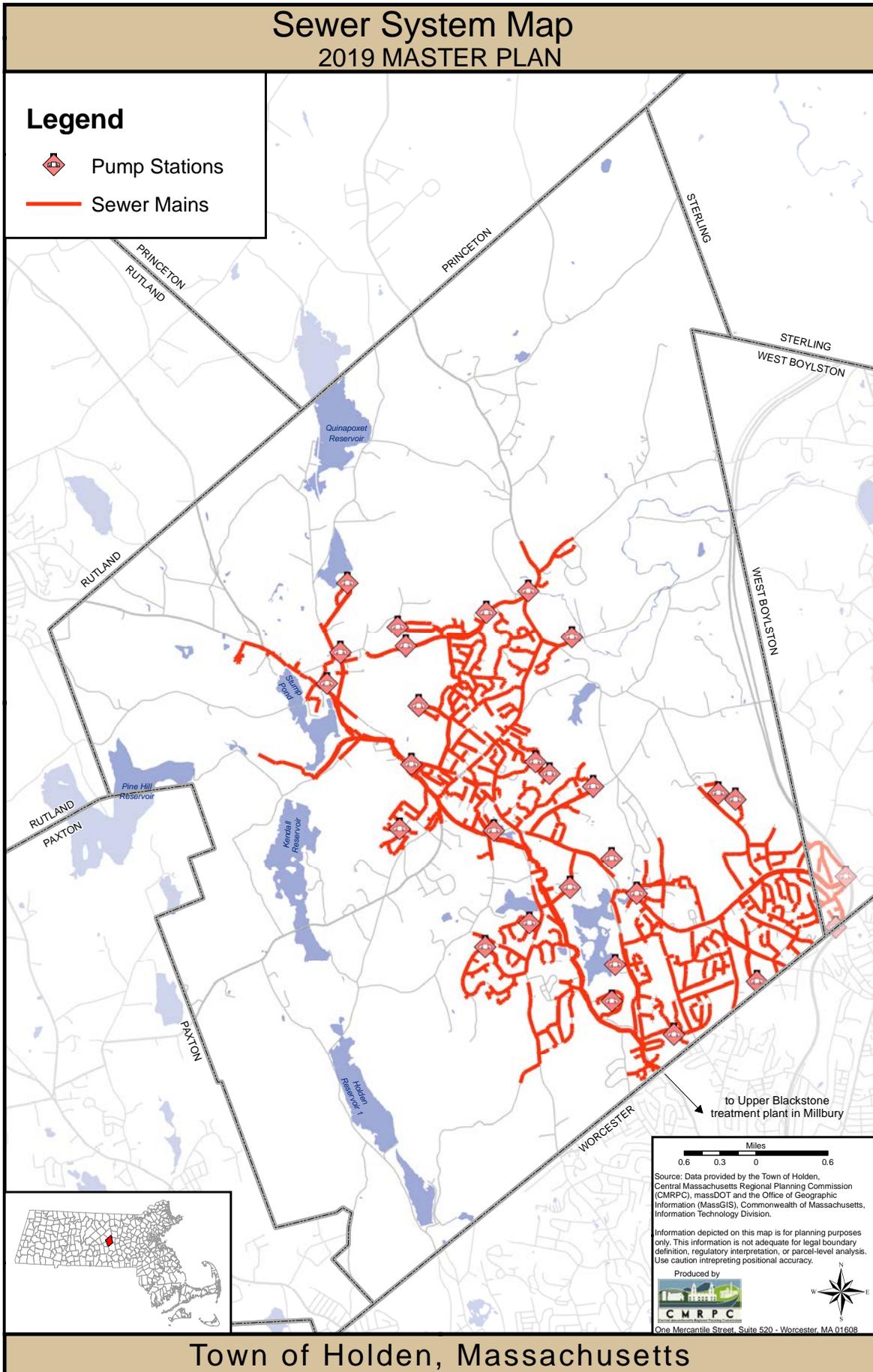
Municipal Light System

Holden's Town-operated electrical system includes 134 miles of overhead lines in six major feeder circuits that serve more than 7,600 residential and commercial customers. Electrical service is available throughout the developed portion of Town. HMLD employs 20 full-time equivalent employees. It operates a vehicle fleet of 17, three of which are in need of replacement in the next one to two years.

The Holden Municipal Light Department is one of 41 municipal electrical providers in Massachusetts. The Department does not generate its own power. Rather, it purchases electricity from outside providers for distribution within Holden. Operations are funded through a customer-funded enterprise fund rather than through the regular Town budget, and HMLD contributes Payments In Lieu of Taxes (PILOT) payments and reimbursements for municipal services to the Town (nearly \$430,000 total in 2017). Operations are overseen by an appointed Municipal Electric Power Advisory Board, while rate-setting authority falls under the Board of Selectmen, who serve as the Light Commission.

HMLD has used a number of contracting and cost adjustment techniques in recent years to keep electrical rates low. According to the Massachusetts Municipal Wholesale Electric Company, a public entity that assists municipal light providers, Holden's average cost for a 500-kilowatt-

Map 10 - 3: Sewer System



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hour residential user was \$67.27 in 2018 per month, near the lower end of the spectrum for municipal light plants and barely half of the average cost for customers of private utilities such as Eversource and National Grid. Commercial rates are similarly low.

Recent initiatives have included installation of 1,700 LED streetlights, the addition of wind power to HMLD’s portfolio of power sources, and continued improvements to resilience such as tree-trimming work and reinforcement of overhead circuits to better withstand storm damage. Planned improvements include upgrades to the aging Chaffin Electrical Substation and system control enhancements. In the longer term, substantial changes to the electrical system may be needed to account for widespread adoption of electric vehicles.

Other Utilities

In addition to its municipal utilities, Holden is served by private providers including Eversource (gas), Verizon (landline telephone), and Spectrum (formerly known as Charter; cable TV and internet). Holden’s ten-year licensing agreement with Spectrum

expires in 2020. Local cable access programming is available through Holden Community Television.

Other Services

The Town of Holden provides a number of important services that are not linked directly to its facilities. Over the next several years, Town staff anticipates changes to some of these services, including:

- Relocation of parts of the IT system to the “cloud” to improve efficiency and resilience to hazards.
- Reassessment of the residential trash and recycling collection program (the contract for Casella, the current vendor, is set to expire soon).

Facilities Inventory

An inventory of existing facilities, their condition, and replacement costs is included in Table 10 - 4.

Table 10 - 4 Holden Facilities Inventory (Source: Town of Holden)

Facility Category	Name	Address	Year Built / Major Reno.	Square footage (GSF)	Replacement Cost (\$)*	Handicapped Access	General Condition	Notes
General Government	Town Hall	1196 Main Street	pre 1900	11,000	\$1,071,631	Partial	Fair	Requires HVAC upgrades in short term
General Government	Starbard Building	1204 Main Street	1797	9,000	\$1,776,072	Partial	Poor	Requires structural upgrades in short term
General Government	Senior Center	1130 Main Street	2001	11,000	\$1,500,793	Good	Good	
General Government	Gale Free Library	23 Highland Street	1888/1989	26,000	\$3,706,081	Partial	Good	
Safety & Emergency Services	Public Safety Complex	1370 Main Street	2010	43,000	\$8,718,717	Good	Excellent	

Table 10 - 4 Continued

Facility Category	Name	Address	Year Built / Major Reno.	Square footage (GSF)	Replacement Cost (\$)*	Handicapped Access	General Condition	Notes
Safety & Emergency Services	Fire Station Annex (old station)	1384 Main Street	1957	11,000	\$1,063,846	Partial	Poor	
Public Schools	Wachusett Regional High School	1401 Main Street	1952/2009	375,000	\$28,091,700	Partial	Good	
Public Schools	Mountview Middle School	270 Shrewsbury Street	2016	147,000	\$35,785,000	Good	Excellent	Capital projects funded by Town of Holden
Public Schools	Dawson Elementary School	155 Salisbury Street	1956/2000	61,000	\$8,434,400	Partial	Good	Capital projects funded by Town of Holden
Public Schools	Davis Hill Elementary School	80 Jamieson Road	2000	78,000	\$14,270,400	Good	Good	Capital projects funded by Town of Holden
Public Schools	Mayo Elementary School	351 Bullard Street	1998	89,000	\$15,927,300	Good	Good	Capital projects funded by Town of Holden
Public Schools	Wachusett Regional School District Office/ Early Childhood Center	1745 Main Street	1900/1940/2000	43,000	\$2,475,100	Partial	Fair	
Public Works/ Safety & Emergency Services	Public Works Garage (hosts Chaffin Fire Substation)	87 Adams Road	1960	17,000	\$838,176	Partial	Poor	Requires structural upgrades in short term. Garage to be relocated ca. 2020
Public Works	Water/Sewer Division	Spring Street	1950	2,500	\$244,741	Partial	Fair	
Public Works	Future DPW Facility	18 Industrial Drive	appx. 2020	appx. 43,000	N/A	N/A	N/A	To be completed ca. 2020-21

Table 10 - 4 Continued

Facility Category	Name	Address	Year Built / Major Reno.	Square footage (GSF)	Replacement Cost (\$)*	Handicapped Access	General Condition	Notes
Public Works	Municipal Light Department	1 Holden Street	2001	15,000	\$2,053,693	Good	Good	
Housing Authority	Checkerberry Village (HHA office and 48 units)	9 Flagler Drive	1979	36,000	\$2,409,700	Partial	Good	
Housing Authority	Holden Hills Apartments (8 units)	Towle Drive	1990	15,000	\$1,079,200	N/A	Good	
Active Recreation	Recreation Department	1420 Main Street	1979/2014	6,000	\$1,040,400	Partial	Fair	Former police station
Active Recreation	Trout Brook Reservation (pavilions and lodge)	320 Manning Street	1970	2,000	\$136,685	Partial	Good	
Active Recreation	Eagle Lake Reservation (bathhouse)	66 Causeway Street	Unk.	Unk.	\$52,402	Partial	Fair	
Active Recreation	Dawson Recreation Area (lifeguard building, bathhouse and storage)	200 Salisbury Street	2003	8,000	\$857,271	Good	Good	
Active Recreation	Bandstand (near Senior Center)	1130 Main Street	1992	N/A	\$3,026	Partial	Good	
Other Facilities	Hendricks House and Barn	1157 Main Street	1890	3,000	\$363,411	Poor	Good	Occ. by Holden Historical Society
Other Facilities	Damon House	1174 Main Street	1850	5,000	\$480,706	Poor	Good	Occ. by various tenants
Other Facilities	Grove Cemetery (chapel, vault and garage)	Main Street	appx. 1925	Unk.	\$69,850	N/A	Good	
Other Facilities	Old Grist Mill Pond Dam	Lincoln Avenue	Unk.	N/A	Unk.	N/A	Poor	

ISSUES AND OPPORTUNITIES

As part of the Master Plan update process, Holden conducted outreach activities to help identify needs and priorities for the future of the Town's facilities and services. Key takeaways from these activities relevant to public facilities and services are as follows:

- Holden residents place a high priority on school quality, town services, and facilities. Holden's schools, Gale Free Library, and Eagle Lake Recreation Area are among residents' most cherished assets.
- The most frequently utilized facilities are parks and open space, other recreational facilities, and the Library. While residents are very satisfied with the Library facility and services, residents are less satisfied with the Town's recreational facilities and parks/open spaces (Eagle Lake and the Town pool most particularly).
- Respondents identified a desire for dog parks, additional indoor recreational facilities (including an indoor pool), a dedicated youth center, renewed recreational options at Eagle Lake, additional senior services, and full-day kindergarten.
- Residents lack familiarity with some Town departments and services. Familiarity with many governing boards and commissions is also low.
- Satisfaction with the Municipal Light Plant is high. Residents are also highly satisfied with Town water and sewer service. Some respondents expressed an interest in seeing the water and sewer networks extended. Support for doing so is not widespread. More options and frequency for household waste disposal (especially for yard waste and recycling) is desired, as are increased options for cable TV and internet.
- Residents would like wider utilization of green energy and cleanup of brownfields sites.

Administrative Offices: The central town administrative offices (Town Hall and the Starbard Building) require fairly substantial structural and other improvements and are not well configured for efficient, modern operations, lacking office and storage space.

Fire Protection for the Southern Portion of Town: The Chaffins Fire Substation that serves the southern part of Holden is obsolete and in deteriorating condition. The Public Works department, which currently shares the building, will be relocating to the new DPW building on Industrial Drive in the next few years.

Aging Building Systems: As facilities built in the late 1990s/early 2000s boom of public construction start to age, many building systems will begin to reach their designed lifespans; while replacement of these items is a challenge, it is also an opportunity to install more efficient state-of-the-art systems.

Access for the Disabled: As documented in the Gienapp Design building assessment report, a number of Town buildings and schools are in limited compliance with ADA and related state laws such as 521 Code of Massachusetts Regulations (CMR) Architectural Access Board Regulations; substantial alterations to existing facilities may also trigger the need for full accessibility.

Exposure to Natural Hazards: While Holden is in relatively good shape compared to many communities, a number of Town buildings, other facilities, and infrastructure elements are exposed to natural hazards now or are likely to become vulnerable as the climate changes and storm severity increases.

DPW Facilities: Relocation of DPW functions to the Industrial Drive site in the next 2 to 3 years creates opportunities for reuse of the current Highway Garage site on Adams Road and possibly the Water/Sewer Division office on Spring Street.

Park Link: The new DPW property at Industrial Drive (where new playing fields are also expected to be installed) offers an opportunity for connection by trail to the nearby Dawson Recreation Area to allow for a diverse array of recreational opportunities at a single complex, which may help alleviate crowding.

Full-Day Kindergarten: Classroom capacity is inadequate to implement full-day kindergarten at WRSD schools located in Holden, if desired (other District schools may potentially have capacity for Holden students, but transportation and funding issues may prove difficult to resolve).

Sewer System Capacity: While sewer treatment capacity appears adequate for near- and mid-term growth (assuming 2017 was a high-usage outlier), longer-term growth may be constrained without additional treatment capacity through the UBWPAD and/or through additional implementation of efficiency measures (infiltration/inflow improvements, homeowner education programs, etc.).

Water and Sewer Mains: Remaining asbestos concrete water and sewer mains are prone to rupture and require special handling during maintenance.

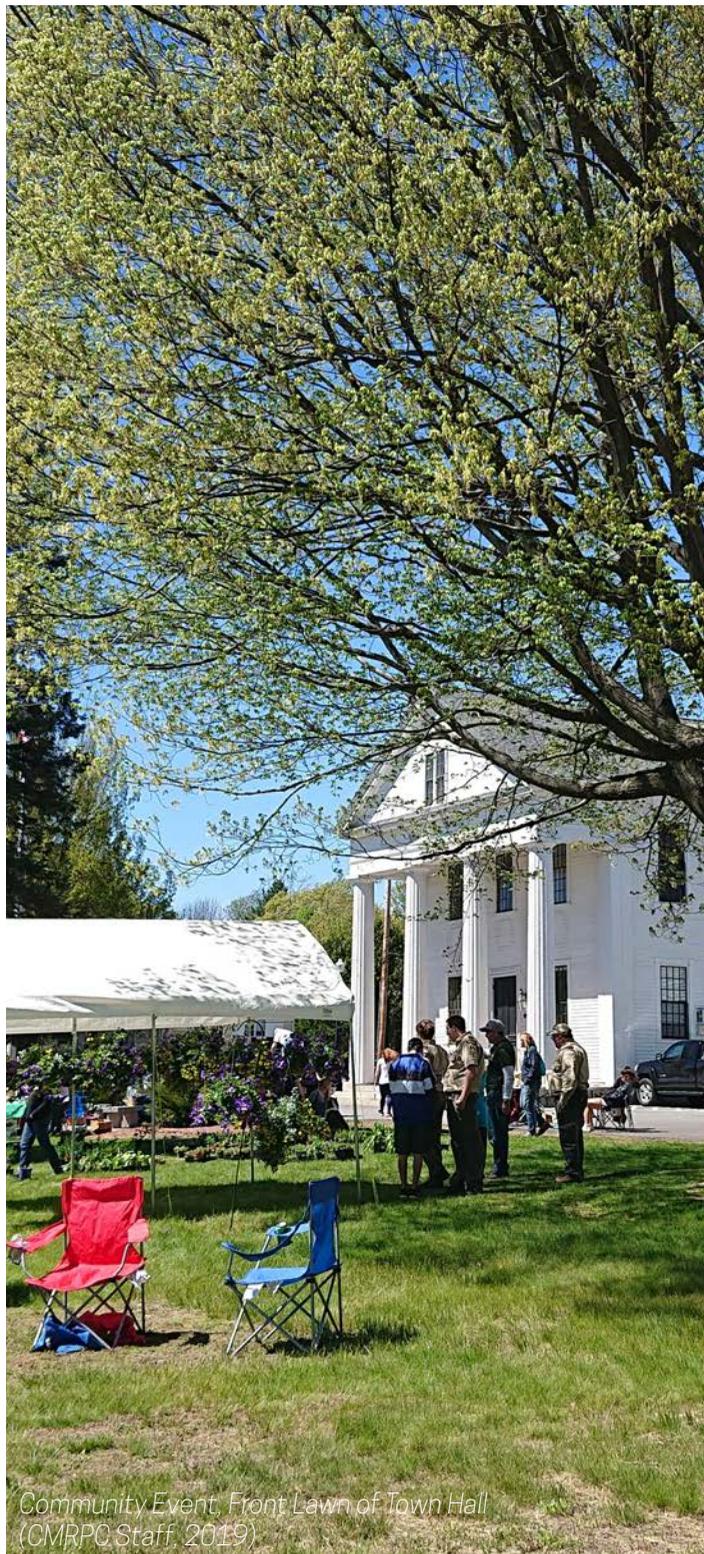
Stormwater Drainage: Infrastructure and funding challenges are not being fully met currently and can be expected to become more difficult as development continues, rainfall events intensify, and compliance with the new EPA MS4 permit is required.

Services for Seniors: As Holden's senior population peaks in the next decade-plus, services, and possibly facilities, may become inadequate to address the needs of local residents.

Cable TV/internet: Satisfaction with the current cable provider is relatively low, based on survey results; expiration of the current provider agreement in 2020

represents an opportunity to review this service and evaluate alternatives.

Staffing: Several departments have expressed concerns about maintaining adequate staffing levels for both current and future needs.



Community Event, Front Lawn of Town Hall
(CMRPC Staff, 2019)

GOALS, OBJECTIVES, AND ACTION ITEMS

The following section outlines the principal recommendations of this chapter. It is organized into a series of goals, each with attendant objectives and recommended action items to achieve them. The goals and objectives are based on input from community meetings, the community survey and close workshopping with the Steering Committee. The action items accompanying the objectives will also be reflected in the Implementation Chapter (Chapter 11).

Goal 10.1: Ensure public facilities meet the needs of Holden's population

Objective 10.1.1: Ensure that facilities are well-maintained and functioning optimally.

- **Action Item 10.1.1.1:** Implement the recommendations of the Town and School Building Assessment.
- **Action Item 10.1.1.2:** Ensure that existing facilities are maintained and operated appropriately and that life-limited components are replaced regularly; consider taking actions to extend the life of life-limited components and

CAPITAL ITEMS

Consider options for renovation/reconstruction to address space constraints and structural, code, and other concerns at the Town Hall and Starbard Building, as well as options for replacement with a new or adaptively reused facility.

Consider options to replace the deficient Chaffins Fire substation; explore options for constructing a new station elsewhere on the Adams Road site following relocation of the Highway Department to its new facility.

Continue efforts to migrate Town information technology systems to the cloud

Install backup power systems at additional key Town facilities.

Consider relocating or otherwise reinforcing sewer pump stations that are in or adjacent to flood zones, per the Natural Hazard Mitigation Plan (2017): Gail Drive, Industrial Drive, and Jefferson.

Continue and expand upon existing wastewater conservation measures (infiltration/inflow reduction, etc.).

Develop and implement a long-term plan to replace existing drainage structures with larger capacity structures (and/or with nature-based alternatives) in the expectation of greater peak flows.

Implement the recommendations of the Town and School Building Assessment.

seek more sustainable alternatives with longer life spans.

- **Action Item 10.1.1.3:** Using the Town and School Building Assessment as a first phase, complete a full facilities master plan that reviews building conditions and usage, assesses staffing and functional needs, and lays out a multi-decade program for building renovation and replacement.

Objective 10.1.2: Develop and implement a solution to improve the Town's central administrative facilities at the Town Hall and Starbard Building.

- **Action Item 10.1.2.1:** Consider options for renovation/reconstruction to address space constraints and structural, code, and other concerns at the existing facilities, as well as options for replacement with a new or adaptively reused facility.

Objective 10.1.3: Develop and implement a solution for providing long-term fire protection coverage to the southern portion of the Town.

- **Action Item 10.1.3.1:** Consider options to replace the deficient Chaffins Fire Substation; explore options for constructing a new station elsewhere on the Adams Road site following relocation of the Highway Department to its new facility.
- **Action Item 10.1.3.2:** Continue to review fire suppression capacity.

Objective 10.1.4: Complete and implement an ADA Self-Evaluation and Transition Plan that identifies physical and programmatic barriers to access for disabled persons.

- **Action Item 10.1.4.1:** Remove programmatic and policy barriers to ADA mobility and (as necessary) architectural barriers.
- **Action Item 10.1.4.2:** Consider establishing a local Commission on Disability to complete, monitor, and aid in the implementation of an ADA Self-Evaluation and Transition Plan.

Goal 10.2: Maintain long-term funding mechanisms to provide for future public facility needs.

Objective 10.2.1: Continue the existing capital planning process and make refinements as needed.

- **Action Item 10.2.1.1:** Regularly review expiring debt to understand the year-by-year capacity for borrowing in advance of future capital needs in order to minimize the need for overrides and debt exclusions.
- **Action Item 10.2.1.2:** Consider including preliminary information on major long-term capital projects in Capital Plans well in advance of formal capital requests in order to make the community more aware of upcoming needs.
- **Action Item 10.2.1.3:** Continue making the capital planning process transparent and participatory in order to make the community more aware of upcoming needs.

Goal 10.3: Improve the sustainability and resilience of Town operations.

Objective 10.3.1: Make Town operations more resilient to natural and other hazards.

- **Action Item 10.3.1.1:** Implement the recommendations of the Holden Natural Hazard Mitigation Plan (CMRPC, 2017); update the plan per FEMA requirement every 5 years.
- **Action Item 10.3.1.2:** Continue efforts to migrate Town information technology systems to the cloud.
- **Action Item 10.3.1.2:** Consider backup power systems at additional key Town facilities, including the Town Hall and Starbard Building.
- **Action Item 10.3.1.4:** Continue to periodically update the Continuity of Operations plan (COOP) for the local government.

- **Action Item 10.3.1.5:** Consider relocating or otherwise reinforcing sewer pump stations that are in or adjacent to flood zones, per the Natural Hazard Mitigation Plan. (CMRPC, 2017)

Objective 10.3.2: Make Town operations more sustainable.

- **Action Item 10.3.2.1:** Conduct an energy audit of Town facilities and operations to identify areas of inefficiency; make upgrades as needed.
- **Action Item 10.3.2.2:** Identify strategies to access state funding for energy efficiency projects.
- **Action Item 10.3.2.3:** Assess green infrastructure opportunities for stormwater management. Develop a list of specific priorities, assess feasibility and cost, rank priority projects in terms of climate resilience potential, and develop concept designs for key projects. Review Town regulations and update as necessary to support green infrastructure and low-impact development and encourage green infrastructure to be incorporated into all roadway projects.

Goal 10.4: Deliver infrastructure that meets existing and future Town needs.

Objective 10.4.1: Ensure an adequate water supply for existing and future needs.

- **Action Item 10.4.1.1:** Continue to monitor water system usage in comparison to system capacity.
- **Action Item 10.4.1.2:** Continue to expand upon existing water conservation measures.
- **Action Item 10.4.1.3:** If warranted by usage trends, develop a plan for adding capacity to the system through additional sources or through additional water sourced from outside partners.

Objective 10.4.2: Ensure adequate sewer capacity for existing and future needs.

- **Action Item 10.4.2.1:** Continue to monitor sewer system usage in comparison to system treatment capacity per the Upper Blackstone Wastewater Pollution Abatement District (UBWPAD) agreement.
- **Action Item 10.4.2.2:** Continue and expand upon existing wastewater conservation measures (infiltration/inflow reduction, etc.).
- **Action Item 10.4.2.3:** Negotiate a new Sewer Use Agreement with DCR, to replace the 2000 SUA between the Worcester and DCR, which expires in 2020. Ensure proper billing methodology and future growth in system.

Objective 10.4.3: Ensure adequate stormwater management capacity for existing and future needs.

- **Action Item 10.4.3.1:** Implement Holden's new EPA MS4 permit, including public outreach, mapping, review of existing local stormwater regulations, and support for low-impact development.
- **Action Item 10.4.3.2:** Consider initiating a stormwater utility fee to fund stormwater management infrastructure. Track expenses to manage 2016 MS4 permit and consider additional funding sources as may be necessary, including a stormwater utility.
- **Action Item 10.4.3.3:** Develop and implement a long-term plan to replace existing drainage structures with larger capacity structures (and/or with nature-based alternatives) in the expectation of greater peak flows.

Objective 10.4.4: Ensure adequate electrical distribution capacity for existing and future needs.

- **Action Item 10.4.4.1:** Conduct a feasibility study of cybersecurity and remote substation viewing capacity for the Municipal Light Department.

- **Action Item 10.4.4.2:** Conduct a system-wide study of the Municipal Light Department that includes a long-term capital assets plan.
- **Action Item 10.4.4.3:** Evaluate organizational efficiency of the Municipal Light Department and implement improvements.
- **Action Item 10.4.4.4:** Develop a technology road map that ensures the Municipal Light Department is kept up-to-date.

Objective 10.4.5: Consider regulatory tools to prevent the Town from exceeding its utility capacity or expanding services areas to an untenable degree.

- **Action Item 10.4.5.1:** Explore strategies to manage and regulate where water and sewer hookups may be granted, including delineating a sewer/water service district on the zoning map, with consideration for extensions outside the service boundary by special permit.

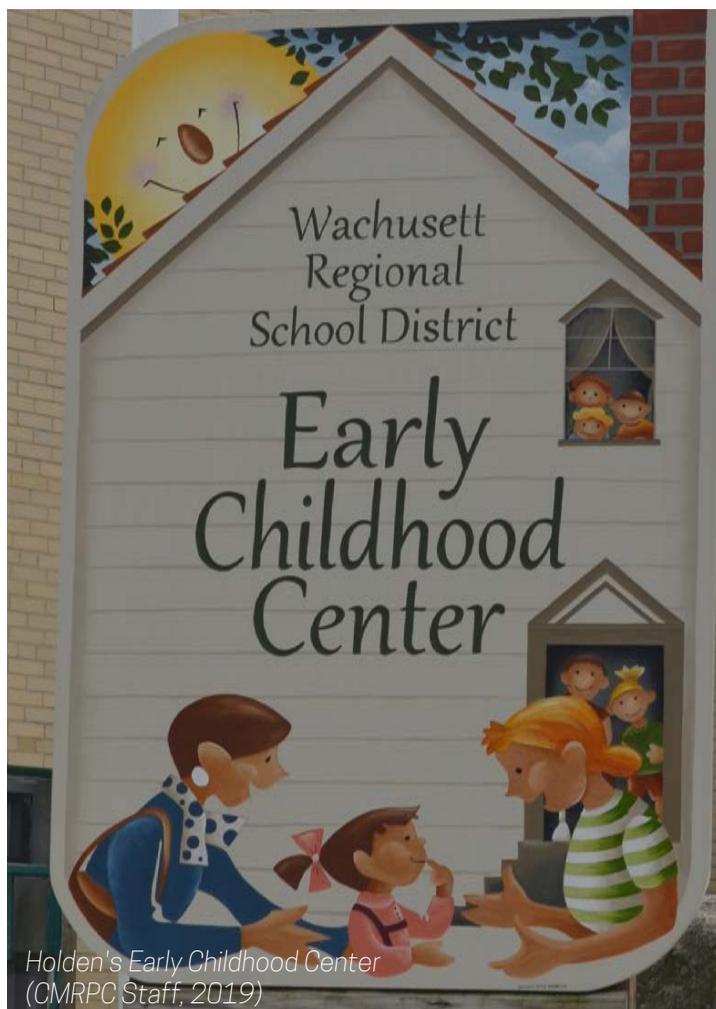
Goal 10.5: Uphold the high quality of Holden's educational system and facilities.

Objective 10.5.1: Maintain existing services and facilities.

- **Action Item 10.5.1.1:** Continue to coordinate with the Wachusett Regional School District and other member communities to adequately fund operations and facilities and create a plan to accommodate growth.
- **Action Item 10.5.1.2:** Implement the recommendations of the Town and School Building Assessment at the three Town-owned elementary schools.

Objective 10.5.2: Provide desirable new services and facilities.

- **Action Item 10.5.2.1:** Track demographic and development trends within Town to understand better locations and sizes of school facilities needed.
- **Action Item 10.5.2.2:** Coordinate with the Wachusett Regional School District and the Massachusetts School Building Authority regarding possible future expansion of facilities.



Holden's Early Childhood Center
(CMRPC Staff, 2019)

MUNICIPAL FACILITIES & SERVICES

Holden Community Survey Results

What does Holden think about Municipal Facilities and Services?

FACILITY % USERS SATISFIED

Gale Library	99
Davis Hill Elementary School	99
Mayo Elementary	94
Dawson Elementary	95
Mountview Middle School	91
Wachusett Regional High School	89
Recreational facilities	87
Parks and open spaces	87
Town Hall	91
Town website	90
Town events	92
Online bill pay	90
Senior center	95



Holden Tomorrow
planning our future together

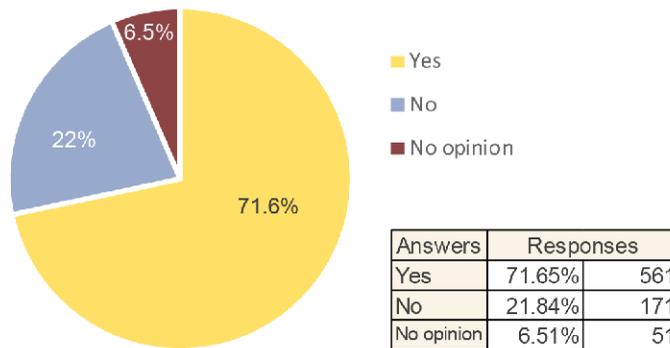
FOR MORE INFORMATION: www.holdenmasterplan.com Town of Holden Master Plan Committee

SCHOOLS

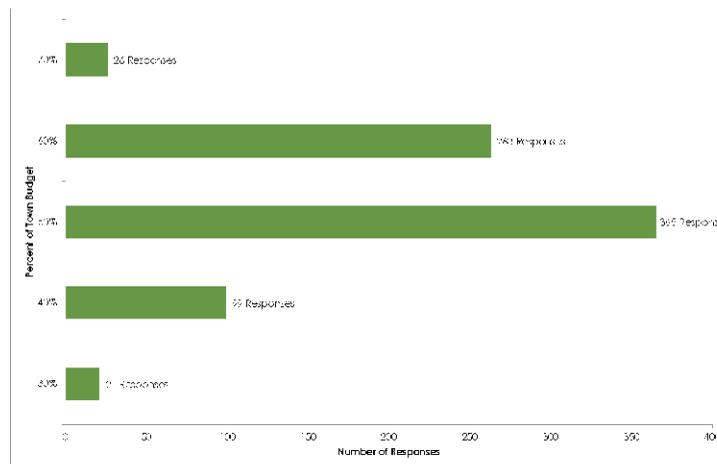
Holden Community Survey Results

What does Holden think about Schools?

DID THE QUALITY OF THE WACHUSETT REGIONAL SCHOOL DISTRICT FACTOR INTO YOUR DECISION TO LIVE IN HOLDEN?



WHAT PERCENTAGE OF THE TOWN BUDGET SHOULD BE ALLOCATED TO EDUCATION?



FOR MORE INFORMATION: www.holdenmasterplan.com Town of Holden Master Plan Committee

11.0 LAND USE

INTRODUCTION

The Land Use Element of a master plan is essentially a blueprint for development. This chapter synthesizes and builds upon the preceding elements to provide a roadmap for achieving a development vision. Through in-person meetings and the extensive community survey, it became clear that Holden's greatest task today is balancing inevitable change with preservation. These desires are not mutually conflicting, but require a new kind of planning approach than the Town has pursued in the past.

Land use and zoning play a crucial role in facilitating these changes by removing existing obstacles and providing new incentives. Land use patterns influence the issues and opportunities identified in other chapters including insufficient business, service, and restaurant options for both customers and owners (Economic Development), frustrating Main Street traffic (Transportation), high levels of single-family residential construction (Housing), and expansion of recreation and preservation opportunities including Eagle Lake (OSR and Natural Resources).

Accordingly, this chapter offers strategies for preservation and sustainable development, with emphasis on four specific goals:

- Concentrating development around existing infrastructure.
- Facilitating adaptive reuse of existing buildings to complement the rural character of the Town.
- Ensuring consistency between Holden's long-range plans and Town and state regulations.
- Taking a proactive and responsive approach to emerging issues in land use.

This chapter will summarize prior land use planning, analyze current land use patterns, review existing zoning, identify issues and opportunities and their relation to land use, and provide recommendations towards achieving the Master Plan land use goals.

PRIOR PLANNING AND ENGAGEMENT EFFORTS

The Town of Holden has pursued a consistent vision of development for several decades. This vision seeks increased goods, services, and employment opportunities, and an improved tax base, without compromising the existing character of the community. This vision has been expressed since at least 2004 with Holden’s Executive Order (EO) 418 Community Development Plan, and remains relevant today.¹

EO 418 Community Development Plan (2004)

The Community Development Plan recommended the redevelopment and expansion of existing commercial and industrial sites, or the rezoning of suitable land from residential to commercial or industrial use. That same year, CMRPC authored a regional 2020 Growth Strategy Study (CMRPC, 2004) that notes the tendency for towns to respond to growth pressures by adopting large-lot residential zoning as a mechanism for growth management. Recent land use data indicates that this method leads to rising levels of suburban sprawl, the deterioration of existing pedestrian-friendly development, similar deterioration of open space and town character, and the further construction of strip-style development. In response, CMRPC encourages compact development and the concentration of both residential and commercial uses in appropriate village centers—or “Smart Growth.” These strategies have evolved, and are reflected in the Town’s contemporary efforts to adopt mixed-use and village center zoning. Such approaches will enable new residential development concurrent to expansion of non-residential tax bases. (Land Use Inc., 2004)

Holden Master Plan (2008)

The 2008 Holden Master Plan is the most comprehensive land use planning document for Holden to date. (Community Preservation Associates, et.al., 2008) Given the continuity in vision for Holden’s land use, it is important to review the goals and implementation of the 2008 plan, as seen below:

- Establish design guidelines to help assure the quality of commercial and mixed-use development, infill, and adaptive reuse of historic buildings.
- Focus a diversity of future development along the Main Street corridor.
- Create and encourage mixed-use nodes at Jefferson, Holden Center, and Chaffinville.
- Encourage infill around the villages with a diversity of housing types with one to three bedrooms and home offices.
- Use cluster design principles to preserve some open space in areas outside the Main Street Corridor, recognizing that cluster provisions in the zoning bylaw need revision.

The status of these goals can be found in the Appendix E: Master Plan (2008) Benchmark Review. Many of these priorities are brought to life through zoning changes. Zoning amendments accomplished in recent years include:

2010: Replaced “Cluster Residential Development Bylaw” with an “Open Space Residential Development Bylaw”.

2012: Adopted a solar array bylaw.

2014: Temporary moratorium to allow time for the creation of a governing bylaw for the regulation of registered marijuana facilities.

2014: Amended Industrial Quarry (IQ) district to allow residential uses.

2015: Adopted registered marijuana facilities bylaw.

¹ Executive Order (EO) 418 was signed by Governor Cellucci in 2000. EO 418, then known as the Community Development Plan Program, committed resources to municipalities for the purpose of creating “community development plans.” A “community development plan” was defined as a comprehensive, strategic plan for the future development of a city or town.

2015: Amendments to the Sign Bylaw for definitions and guidance for enforcement and address new issues such as signage boards and gasoline pricing.

2017: Temporary moratorium prohibiting the creation of recreational marijuana facilities.

2017: Amended Open Space Residential Development (OSRD) Bylaw.

2018: An amendment to ban recreational marijuana establishments in all districts.

2018: Deleting temporary moratorium on recreational marijuana establishments.

2018: Setbacks for Sheds.

2018: Amendment to Accessory Apartment Bylaw – Recently at Town meeting expanded accessory dwelling units (ADUs) to be occupied by non-family members.

The Holden Town Common: Past, Present, and Future (2007)

Students from the University of Massachusetts Amherst developed a Cultural Landscape Plan for the Holden Town Common. The plan traced the evolution of the Town Common and provided recommendations to enhance residents' favorite aspects. The plan identified a historic zone, a civic zone, and a commercial zone in the Town Center, as well as four distinct gateways at the North, South, East, and West points of the common. Recommendations included: extending the old Town Common; establishing stronger pedestrian links between civic spaces; encouraging new commercial development consistent with the Town's historic building style; improving pedestrian circulation; decreasing impervious cover to increase green space; and establishing a design review board to develop design guidelines that respect the integrity of the existing building styles. The goals and recommendations of the cultural landscape plan are still relevant today and should be incorporated into any attempts to revitalize the Holden Town Center as a village center. (Greer, Leonard, & Weiland, 2007)

Central Thirteen Prioritization Plan (2012)

The Central Thirteen Prioritization Plan (2012) identified key regional opportunities for development and preservation. (CMRPC, 2012) Four development opportunities and 12 preservation opportunities are highlighted in the plan. Holden's ability to take advantage of these opportunities will be largely dictated by municipal zoning and land use policy. The Town should keep these parcels in mind when amending zoning or identifying project opportunities to pursue. A list of the Priority Development Areas (PDAs), Priority Preservation Areas (PPAs) and Significant Infrastructure Investments (SIs) is presented in Table 11-1. The locations of these are shown in Map 11-1.

Open Space and Recreation Plan (2012)

Holden's 2012 Open Space and Recreation Plan (OSRP) recommends concentrating some future development in the Main Street Corridor where infrastructure and services exist, providing for mixed land uses where appropriate, and ensuring that land development is done in a responsible way that protects resources and has as few negative impacts as possible. The plan identified water and sewer as primary determinants of development in Holden. Increased densities "would be appropriate where water service is provided and also where adequate pressure is available." Unfortunately, different necessary existing infrastructures do not always overlap. The plan also notes numerous sand pit operations throughout Holden's history and the potential to redevelop these parcels at high densities without threatening the valuable adjacent ecosystems. (CMRPC, 2012)

Smart Growth Bylaw Review (2015 - 2018)

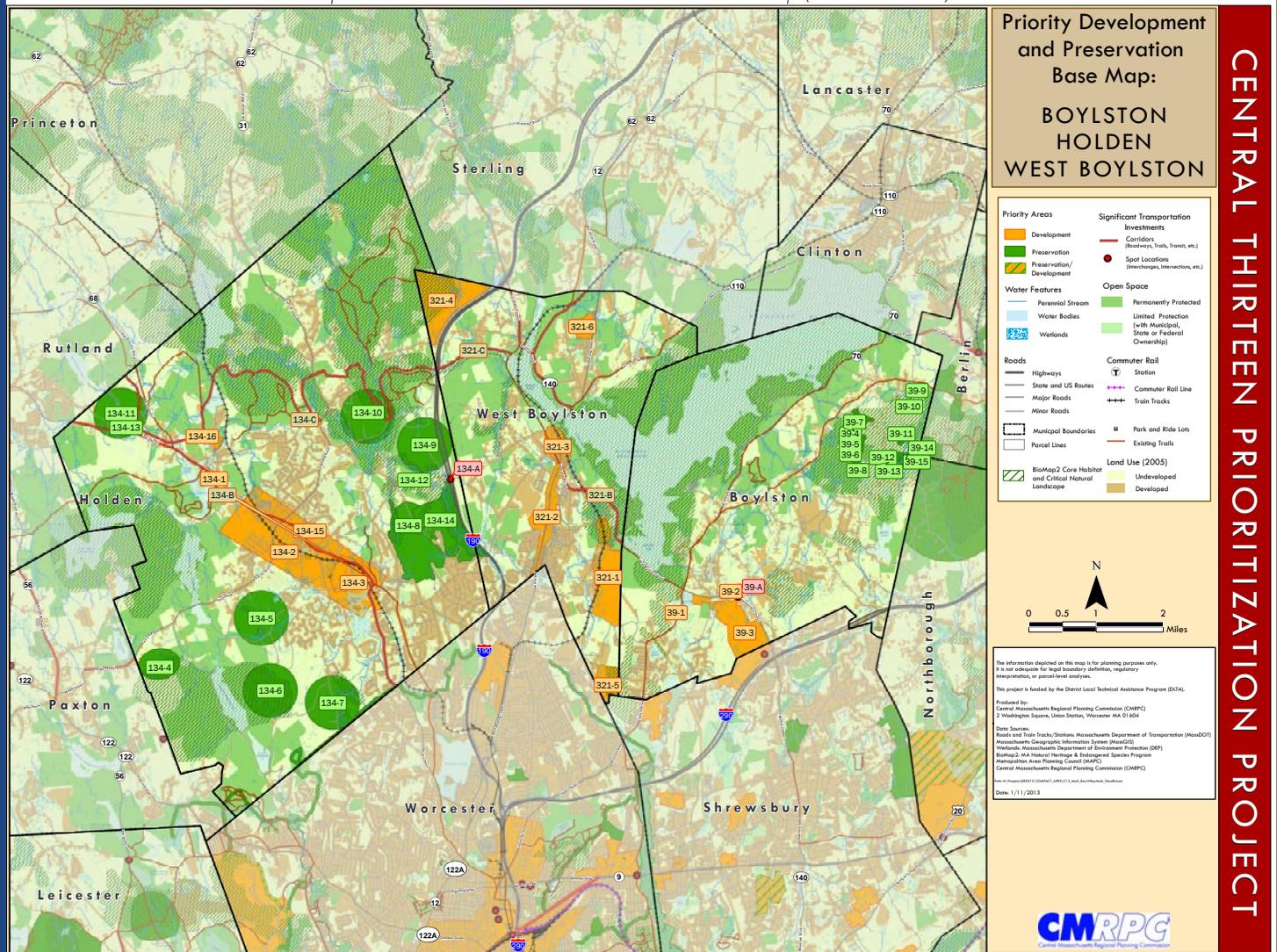
In 2015, CMRPC reviewed the Town's Open Space Residential Development (OSRD) Bylaw, as the Planning Board expressed concerns the bylaw did not operate as intended. The Bylaw Assessment focused on matters of permitted density, clear cutting during construction, and OSRD subdivision layouts. Similar concerns regarding excessive land use in residential development remain today, prompting the Town to amend the Village Center

Table 11-1 Central Thirteen Prioritization Plan Areas (Priority Development, Priority Preservation) and Significant Infrastructure Investments

Priority Development Areas (PDAs):
134-1: Village Center PDA
134-2: Main Street/Rte 122 light commercial corridor
134-3: Commercial Re-use PDA
134-15: Oriol Health Care campus
134-16: 176 Princeton Road
Priority Preservation Areas (PPAs):
134-4 GWLT trails area
134-5 Reservoir Street PPA
134-6 Holden Reservoir PPA
134-7 Fisher Road PPA
134-8 Bullard Street PPA
134-9 Harris Street PPA
134-10 Quinapoxet River/River Street PPA

134-11 Muschopauge Road PPA
134-12 Cheney Graham/Keskula Farm
134-13 Muschapague Road Farm - JD Enterprises
134-14 NHESP Estimated Habitats of Rare Wildlife
Significant Infrastructure Investments (SIs):
134-A I-190 Interchange (Transportation Investment Spot Location)
134-B Main Street corridor improvements (Transportation Investment Corridor)
134-C Water supply (Infrastructure Investment)
134-D Limited sewer capacity (Infrastructure Investment)
134-E Regional Transit Authority Service (Transportation Investment)
134-F Mass Central Rail Trail (Preservation/Transportation Investment)

Map 11 - 1 : Central Thirteen Prioritization Plan Map (CMRPC 2012)



CENTRAL THIRTEEN PRIORITIZATION PROJECT

T10 LAND USE

District (VCD) Bylaw. Recommended OSRD zoning changes suggested eliminating the minimum lot size requirement, at the time 10 acres, as larger parcels will lead to larger scale projects - an identified concern of the Holden Planning Board. Similarly, the Planning Board is currently reducing the minimum lot size requirement in the Village Center District. Other recommended alterations included an affordable housing density bonus to help the Town reach its Chapter 40B affordable housing units goal. The report also pointed to the example of Milford Smart Growth Bylaw which “may require developers to restore any common open space areas that may have been damaged or altered prior to the project and are not consistent with the conservation purposes of the bylaw”, as this has been expressed as a current concern of the Planning Board during the Village Center District (VCD) planning process.

In 2016 and 2017, the Planning Board began working on a comprehensive rewrite of the Town’s existing Subdivision Regulations, including compliance with Complete Streets standards. Additionally, as of 2018, the Town has worked to amend the existing Jefferson Village VCD Bylaw to improve usage.

As the Town moves forward with future planning and development efforts, they should be sure to refer to existing plans for guidance, as well as ensure that new initiatives do not conflict with local and state regulations.

EXISTING CONDITIONS

Holden is a residential community on the border of an urban core. The Town has a long history of agriculture and industrial manufacturing, reflected in the dense mill villages dotted across the rural landscape (Map 11-2). Today it is largely a commuter town where workers in urban centers like Worcester and Boston can enjoy a bucolic family-friendly lifestyle. Residents want to preserve this beautiful rural character while ensuring the Town provides an appropriate selection of goods, services, and jobs.

The following sections will discuss the historical patterns of land use that inform Holden’s current conditions and the ways in which Holden can provide for the desired forms of future development.

Land Use Distribution

Historically, Holden’s intensive land uses sprouted in clusters of mill-villages and village centers, while the periphery was dominated by agricultural uses. With the general reduction in small-scale industrial and agricultural production in the mid-1900s, Holden evolved into a bedroom-community. Much of the residential expansion has occurred in formerly open or agricultural lands.

Holden today has inherited useful corridors and villages from historic development patterns. The Main Street Corridor dominates local traffic flow and commerce. It runs directly through the Holden Center which is the historic core of the Town, found at the intersection of Main and Highland Streets. The Holden Center encompasses the Town Hall, Gale Free Library, Davis Hill School, Senior Center, Town Common, First Congregational Church, municipal offices at the Starbard Building, and popular new commercial ventures. Residences in the area are generally older and denser. Some have been converted to office or other commercial uses, lending a pleasant aesthetic to the area.

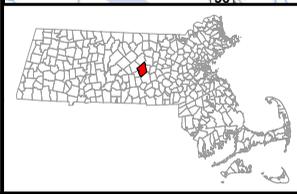
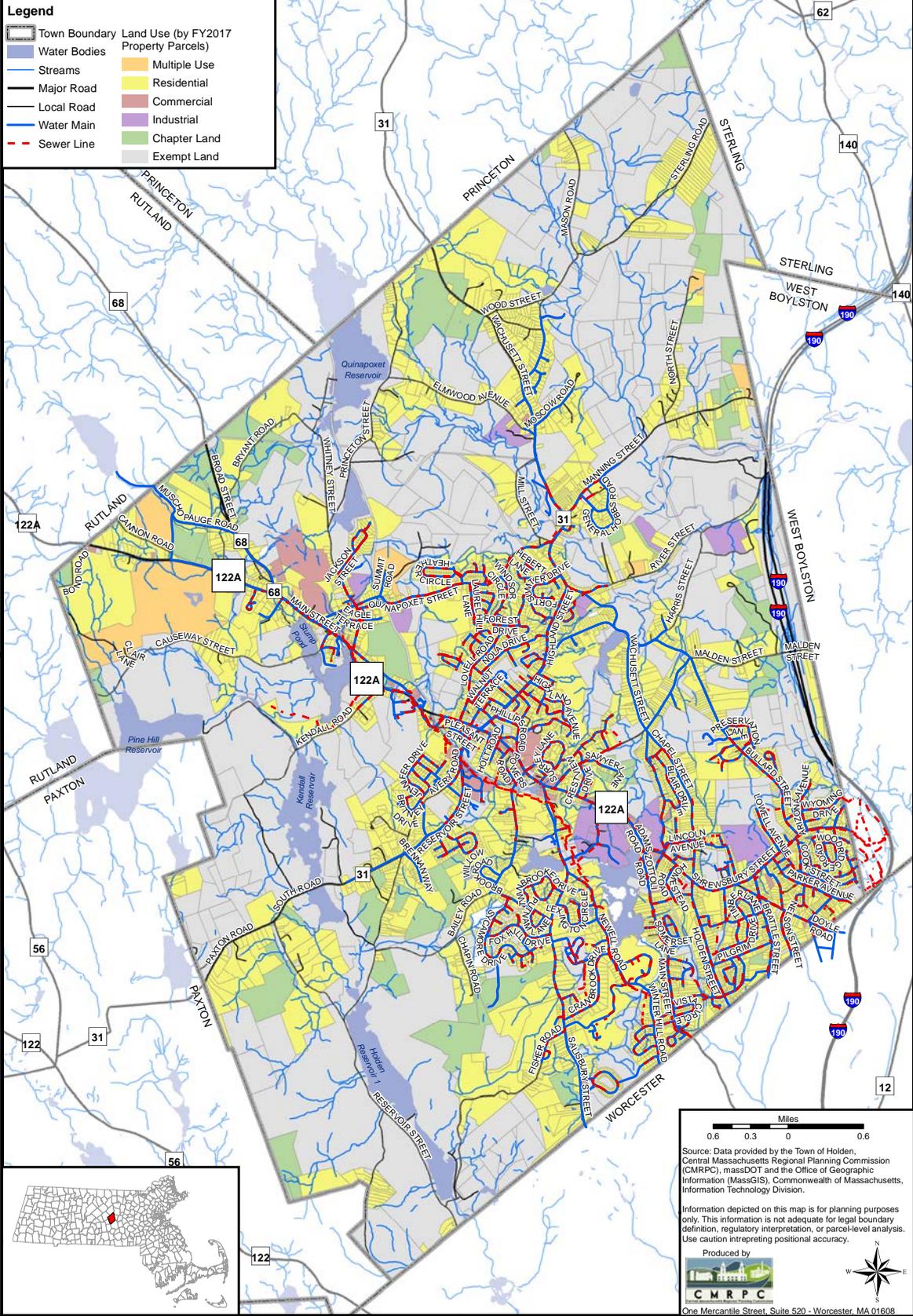
Jefferson Village can be found by continuing north along Main Street to the old Jefferson Mill site. This village features a small cluster of mixed residential and commercial uses at the intersection of Main Street, Princeton Street, and High Street. The Town has long recognized the potential to bring this village to life. Dawson and Chaffinville can be found following Main Street south from the Holden Center. Dawson encompasses the intersection of Main Street and Salisbury, including the Dawson Elementary School, Dawson Recreation Area, and Town Pool. Chaffinville is closest to the City of Worcester and surrounds Chaffin Pond. It is home to one of Holden’s industrial areas while also incorporating commercial and residential use. All of these villages are sites of denser mixed-use historic development that can be leveraged today.

DOR Land Use Map

2019 MASTER PLAN

Legend

	Town Boundary		Land Use (by FY2017 Property Parcels)
	Water Bodies		Multiple Use
	Streams		Residential
	Major Road		Commercial
	Local Road		Industrial
	Water Main		Chapter Land
	Sewer Line		Exempt Land



Miles
0.6 0.3 0 0.6

Source: Data provided by the Town of Holden, Central Massachusetts Regional Planning Commission (CMRPC), massDOT and the Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division.

Information depicted on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis. Use caution interpreting positional accuracy.

Produced by

 One Mercantile Street, Suite 520 - Worcester, MA 01608

Town of Holden, Massachusetts

Date: 1/10/2019 Document Path: H:\Projects\O_Holden_GIS\Subprojects\m134_master_plan\m134_MP_DOR_Landuse_Map_11x17.mxd

In addition to traffic and commercial corridors, Holden has been successful in preserving wildlife corridors between conservation parcels in the open space network. However, modern development has occurred predominately as low-density, large parcel residential growth that eats away at both historic and natural land use patterns. As development continues, the Town seeks appropriate methods to manage growth. Map 11-2: DOR Land Use shows the distribution of primary uses based on the Massachusetts Department of Revenue (DOR) Land Use Codes (Computer Assisted Mass Appraisal (CAMA)).

Land Use Patterns

Table 11 - 2 summarizes land use patterns in Holden based on Massachusetts DOR land use code categories. These are standardized codes for use in local property assessments and thus provide an excellent resource for trend analysis. As the table indicates, Holden’s developed land patterns are dominated by residential uses. These make up nearly 90% of the total parcel count in Holden and just under 40% of the total land area. Single-family housing accounts for nearly 70% of the parcel count and 30% of the total land area. More than 50% of the total land area falls into one or more tax-exempt category, even though it makes up less than 6% of total parcel count. This signifies that around 90% of the total acreage town-wide recorded in the assessor’s data is either 1) paying no taxes or 2) is utilized by net consumers of Town services. Neither of these usages are revenue positive for the municipality. Commercial and industrial uses which, in general, pay the same in taxes as other taxable uses, tend to consume fewer resources. These uses comprise only 3% of the total land area.

Hybrid data produced by MassGIS for Land Cover/Land Use in 2016 has the advantage of describing multiple land uses or covers within a single parcel – information that is especially useful for a Town like Holden where the average residential lot covers 2.5 acres, not all of which will be built out. The MassGIS data provides land area and percentages using the following 22 categories (Table 11-3):

Table 11-3: 2016 Land Cover/Land Use (Source: MassGIS, 2019)

2016 LAND COVER/LAND USE HYBRID TABLE		
Land Cover Type	GIS Acres	% Total
Deciduous Forest	9,959.01	42.84%
Evergreen Forest	5,529.57	23.79%
Developed Open Space	1,712.79	7.37%
Forested Wetland	1,646.68	7.08%
Water	729.56	3.14%
Residential - Single Family	594.22	2.56%
Right-of-way	537.01	2.31%
Pasture/Hay	524.44	2.26%
Grassland	482.54	2.08%
Non-forested Wetland	429.20	1.85%
Scrub/Shrub	283.01	1.22%
Bare Land	229.60	0.99%
Other Impervious	148.03	0.64%
Aquatic Bed	122.26	0.53%
Cultivated	99.19	0.43%
Residential - Multi-Family	78.21	0.34%
Commercial	74.24	0.32%
Industrial	52.26	0.22%
Unconsolidated Shore	10.65	0.05%
Mixed Use - Primarily Residential	0.77	0.00%
Residential - Other	0.69	0.00%
Mixed Use - Primarily Commercial	0.56	0.00%
Grand Total		100%

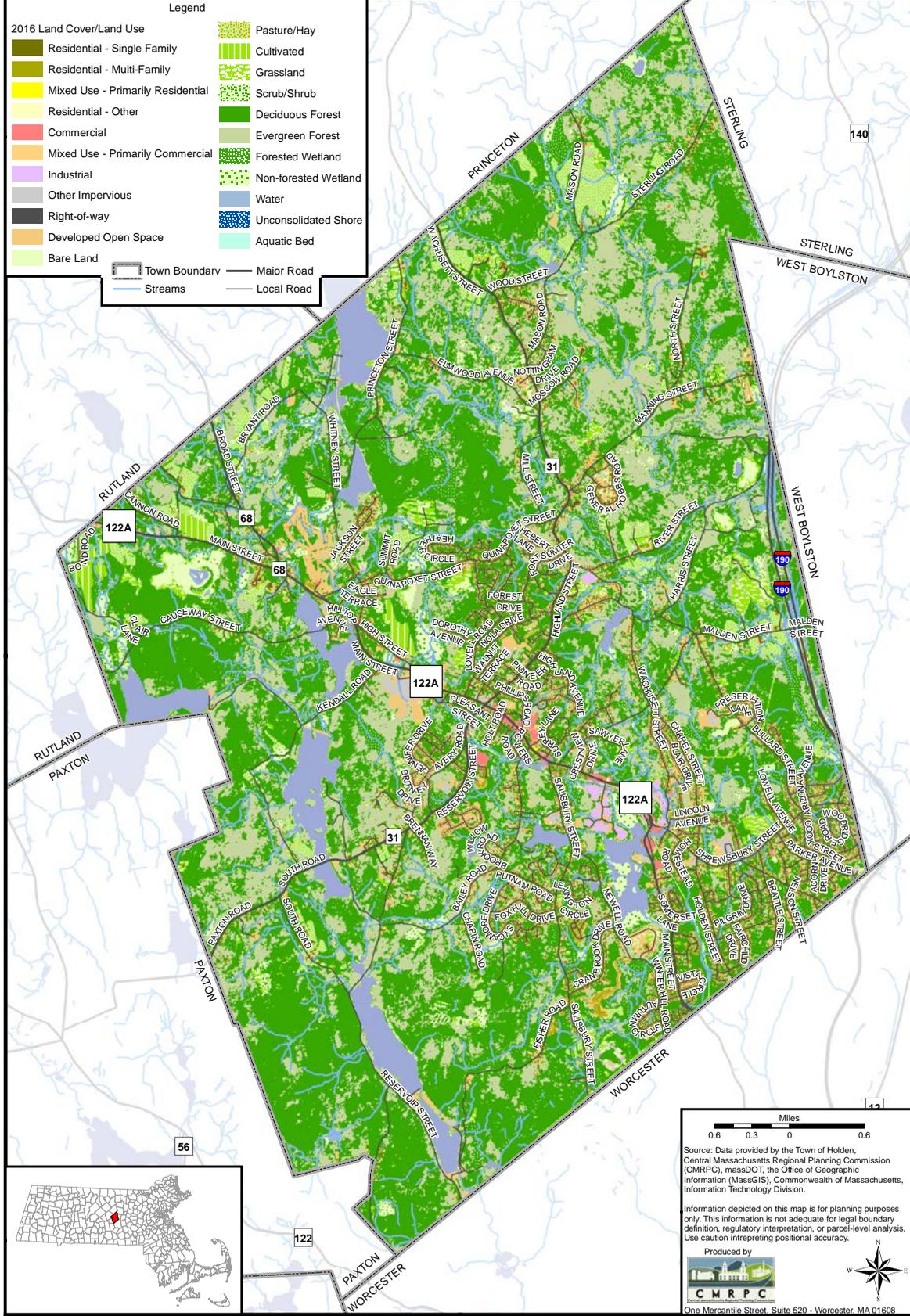
Holden is dominated by non-developed land uses, which significantly contribute to the community’s bucolic character. Over 21,758.51 acres or 94% of Holden’s land cover can be classified as non-developed (Deciduous Forest, Evergreen Forest, Developed Open Space, Forested Wetland, Water, Pasture/Hay, Grassland, Non-forested Wetland, Scrub/Shrub, Aquatic Bed, Cultivated, Unconsolidated Shore). The largest developed land use category is single-family residential at 594.22 acres (2.56% total land area).² Multifamily residential, commercial, industrial, and mixed-uses account for the least amount of land cover acres in Holden. Map 11- 3 shows the distribution of different land uses and coverage across Town. The following sections will discuss the history of these land use and land cover patterns, the

² Residential building footprint, distinct from parcel size.

Table 11-2: Land Use Patterns (Source: Holden Assessor, 2018)

DOR Land-Use Code	Parcel Count	Lot Size (acres)	% Total Parcels	% Total Land Area	% Total land Area per Use Category
No Code	37	0	0.44%	0.00%	--
Residential Uses	7,623	8,835	89.96%	39.56%	
Mixed Use - Primary Residential	19	494	0.22%	2.21%	5.59%
Residential - Single Family	5,915	6,228	69.81%	27.89%	70.50%
Residential - Condo	737	0	8.70%	0.00%	0.00%
Residential - Two Family	76	58	0.90%	0.26%	0.65%
Residential - Three Family	19	13	0.22%	0.06%	0.15%
Residential - Accessory Land, No Improvement	22	27	0.26%	0.12%	0.30%
Residential - Multiple Homes on one Parcel	19	60	0.22%	0.27%	0.68%
Residential - Multi-Family	816	1,954	9.63%	8.75%	22.12%
Commercial Uses	153	281	1.82%	1.25%	
Mixed Use - Primary Commercial	14	15	0.17%	0.07%	5.26%
Nursing Homes	1	5	0.01%	0.02%	1.89%
Other Storage, Warehouse and Distribution facilities	4	6	0.05%	0.02%	1.97%
Commercial Greenhouses	3	10	0.04%	0.05%	3.66%
Retail Trade	41	70	0.48%	0.31%	24.98%
Retail - Engine Propelled Vehicles, Sales/Service	22	19	0.26%	0.08%	6.59%
Office Building	37	34	0.44%	0.15%	11.93%
Public Service Properties	3	2	0.04%	0.01%	0.76%
Indoor Recreational Facilities	2	6	0.02%	0.03%	2.20%
Outdoor Recreational Properties	1	103	0.01%	0.46%	36.75%
Vacant Land	25	11	0.30%	0.05%	4.01%
Industrial Uses	28	354	0.33%	1.58%	
Manufacturing and Processing	17	138	0.20%	0.62%	39.10%
Mining and Quarrying	6	100	0.07%	0.45%	28.42%
Utility Properties - Communication	3	79	0.04%	0.35%	22.34%
Vacant Land - Accessory to Industrial Property.	2	36	0.02%	0.16%	10.14%
Agricultural Uses	78	1,381	0.93%	6.18%	
Chapter 61 - Forest Land	20	486	0.24%	2.17%	35.18%
Chapter 61A - Productive Land	42	746	0.50%	3.34%	54.05%
Non-Productive Land	2	1	0.02%	0.01%	0.09%
Chapter 61B - Recreational Land	14	148	0.17%	0.66%	10.68%
Exempt Land	554	11,481	6.53%	51.41%	
Commonwealth of Massachusetts –Reimbursable Land	192	4,338	2.27%	19.42%	37.78%
Commonwealth of Massachusetts – Non- Reimbursable	13	387	0.15%	1.73%	3.37%
Municipal or County Codes	167	1,536	1.97%	6.88%	13.38%
Charitable	66	1,047	0.78%	4.69%	9.12%
Religious Groups	24	51	0.28%	0.23%	0.45%
Authorities	11	11	0.13%	0.05%	0.10%
Land Held by other Towns, Cities or Districts	41	4,034	0.48%	18.06%	35.13%
Other	40	78	0.47%	0.35%	0.68%
Grand Total	8,473	22,331	-	-	

2016 Land Use/Land Cover Map 2019 MASTER PLAN



Town of Holden, Massachusetts

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issues and opportunities that result, and provide recommendations that will help Holden achieve the vision for its future as expressed by the community.

Residential

Holden grew significantly from the 1940s until the 1980s, when more stringent zoning controls caused growth to taper off. In an effort to maintain the pastoral character of the Town and meet a growing demand for residential services, the Town adopted large-lot residential zoning. While intended to control population growth, this zoning encouraged suburban sprawl over the gently rolling landscape, low-density housing with beautiful yards but fragmented landscapes, extra miles of road paving, the slow deterioration of town centers from increased automobile use, and the unintended loss of unprotected open spaces and Town character.

This trend is intensified by local regulations, which have long favored single-family housing. Single-family units tend to be the most expensive and utilize the most land resources. In Holden, the average residential lot size is currently 2.5 acres. While average house size shrank during the height of the housing bubble (2005-2007) due to land costs, it has since recovered, furthering the trend of fewer individuals utilizing more land. Such a trend is ultimately unsustainable and, as described in the Population and Housing chapter, even if the Town were to change nothing, the limits of land resources would eventually be reached. To a degree, the Town has seen this trend begin to plateau already.

Under current zoning regulations, buildout projections estimated a town-wide capacity of nearly 7,000 additional residential units. The Buildout Analysis (2018) (Appendix C) found an estimated 4,269 potentially developable acres in residential zones. A significant portion of this land faces some form of partial constraint (high slopes, Aquifer Protection areas, etc.) which would potentially reduce the total number of units.

Nonetheless, the Town can prioritize higher densities in order to mitigate the potential impacts of expected future growth. Multifamily housing growth has been inconsistent over the last 10 years, but residents and Town personnel recognize that multiple styles of clustered development can

aid in the preservation of open space. Holden can look to residential densities at the center of Town which conform to traditional land use patterns rather than the recent “large-lot low-density” approach. Denser development typically follows the sewer lines, which are one of Holden’s primary development constraints. Developments of a more rural character, in turn, radiate outward from the center of Town along roadways. Given the relative weight of residential land use in Holden, residential growth management will be the key to preserving the much-loved town character for future generations. Map 11-4 depicts the relationship between residential zoning and actual residential land use by parcel.

Commercial/Industrial

Commercial land use comprises 1.25% of the Town’s total land use inventory and contributed approximately 3.3% to town revenues in 2018. Industrial land uses comprised around 2% of land use and 1.17% of Town revenue in 2018. Commercial and industrial uses are the focus of municipal growth strategies as discussed in the Economic Development chapter. The 2018 Buildout Analysis (Appendix C) estimated that Holden still has 75.9 acres, or 3,305,225 sq. ft. of buildable floor area in its Commercial and Industrial zones. The Town may not need to expand the Commercial and Industrial districts to promote economic development, but rather amend zoning regulations in the existing zones or explore increased mixed-use provisions in new areas.

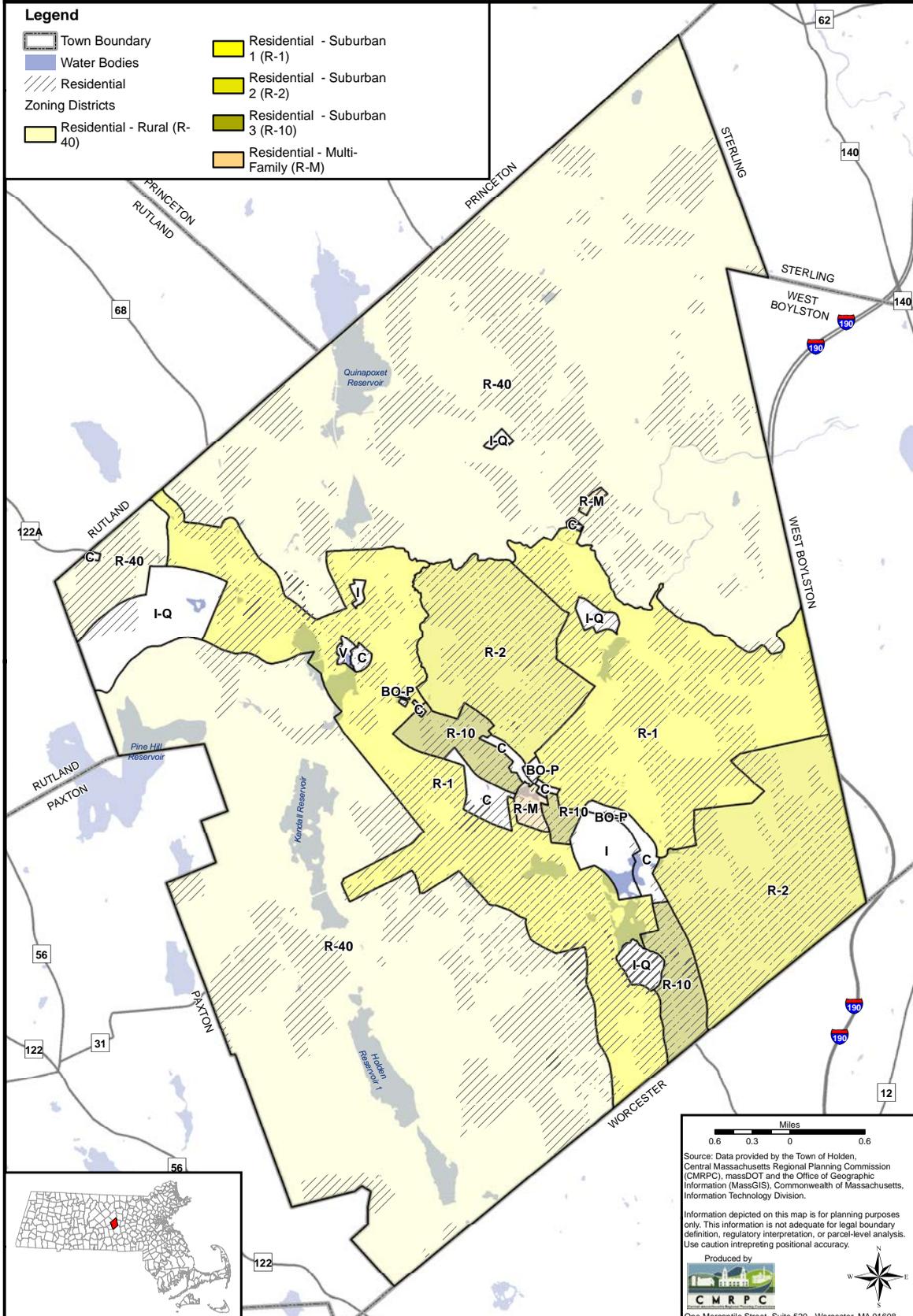
Industry is clustered in the Holden Industrial Park adjacent to Chaffins Pond with access off Main Street. Existing commercial development forms a corridor along Main Street from the intersection of Route 31/Route 122A southwards towards the Route 122A/Shrewsbury Street intersection. To encourage further amenities, a Main Street Design Review and Zoning Study Committee designated a multi-use zoning district along Main Street to promote a compatible mix of residential and commercial uses. The zoning bylaw was supplemented with landscaping and lighting bylaws to improve the aesthetics of this central corridor. To date, substantial Main Street improvements have

Residential Zoning vs. Land Use Map

2019 MASTER PLAN

Legend

-  Town Boundary
-  Water Bodies
-  Residential Zoning Districts
-  Residential - Rural (R-40)
-  Residential - Suburban 1 (R-1)
-  Residential - Suburban 2 (R-2)
-  Residential - Suburban 3 (R-10)
-  Residential - Multi-Family (R-M)



Miles
0.6 0.3 0 0.6

Source: Data provided by the Town of Holden, Central Massachusetts Regional Planning Commission (CMRPC), massDOT and the Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division.

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Town of Holden, Massachusetts

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been completed to facilitate commuter traffic, bury all utilities, widen the street and add sidewalks, plant street trees, and enhance the Historic District with period lighting and landscaping.

The Town will be well-served by exploring infill, redevelopment, and reuse opportunities along the Main Street Corridor. The Town should be aware of the water and sewer capacity limitations in this area. Mobility can also be improved by expanding additional clusters of commercial properties in other areas of Town so residents are not required to drive to Worcester or other locations to obtain necessary goods and services. Holden has been working to create such a Village Center cluster in Jefferson Village. Map 11 - 5 depicts the relationship between commercial/industrial zoning and actual commercial/industrial land use by parcel.

Non-Developed

There are several distinct types of land use and land cover which can, when successfully linked, create a resilient environmental network. Open space and recreation lands, non-built areas of large residential plots, surface water, and agricultural and forestry lands can interact to maintain the ecological integrity of Holden's natural resources, environmental services, and idyllic character. These lands account for over 94% of Holden's total land cover. The extent of non-developed land cover in town results from policies employed by the Town, State, and broader region. Holden already employs an Aquifer Protection District, regulations governing the public use of the waters of Eagle Lake, a Water Use Restriction Bylaw, Stormwater Management and Erosion Control Bylaw, Illicit Discharge Control Bylaw, Wetland Bylaw, Water Protection Bylaw, and Right-to-Farm Bylaw. These have a significant impact on the relative proportions of land uses.

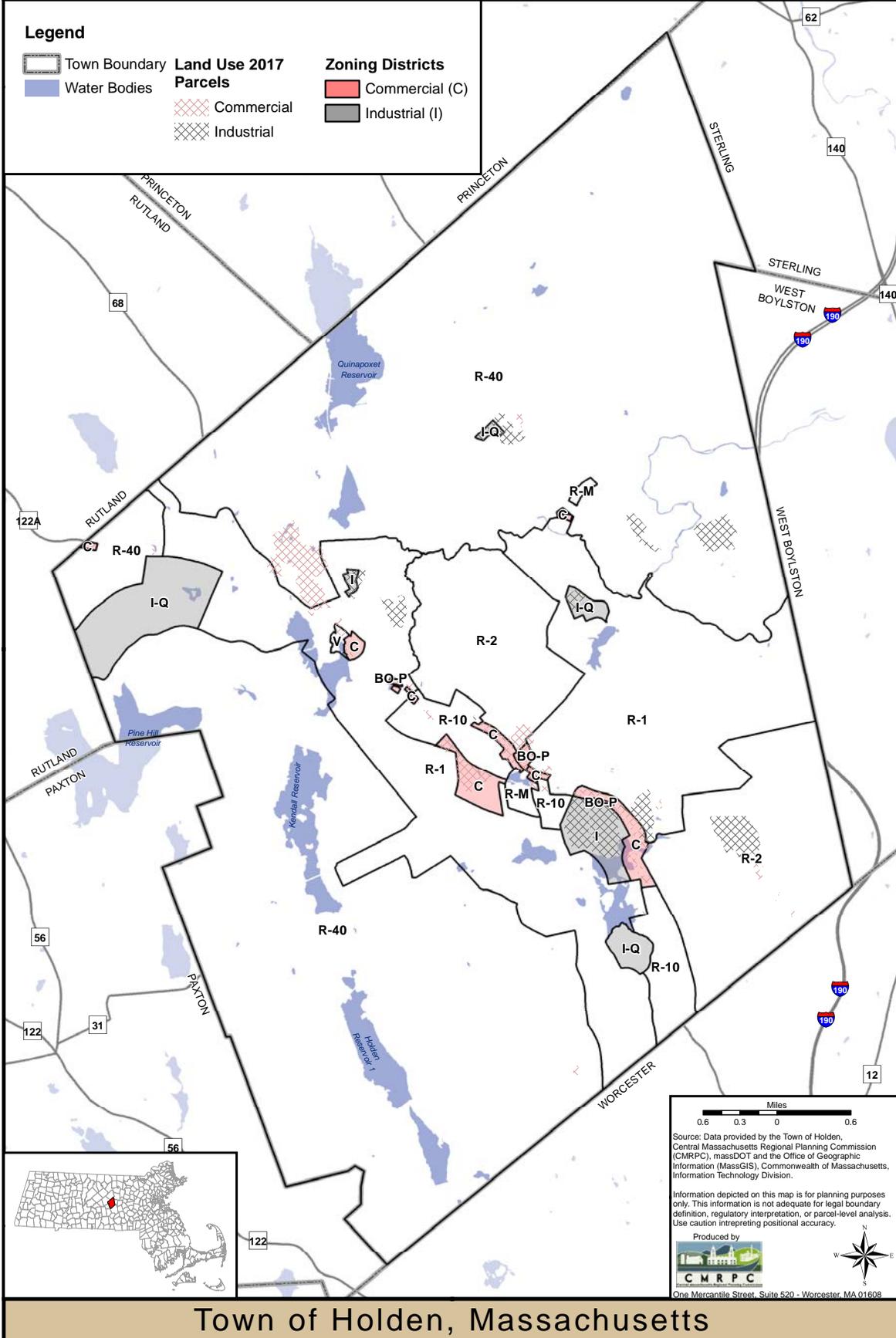
The 2016 MassGIS Land Use/Land Cover data (Map 11-3) identifies 99 acres of cultivated land and 524 acres of pasture/hay. Agricultural lands total 624 acres or 3% of the town's area. These uses are supported by Holden's Right-to-Farm Bylaw, Agricultural Preservation Restrictions (APR), and Chapter 61A regulations. Map 11-3 shows 21,759 acres of forest in Holden (94% of the

town's total area) that could be preserved under Massachusetts Chapter 61 and Holden's Wetland and Water Protection Bylaws. MassGIS identifies 1,646 acres of forested wetlands in Holden (7% of the total area), 429 acres of non-forested wetlands (2% of the total area), 122 acres of aquatic beds (0.5% total area), and 730 acres of water (3% of the total area), all of which are also preserved by the Wetland and Water Protection Bylaws. Holden has 10 areas identified by the State's BioMap2 Project as "core habitats" for conserving biodiversity for future generations, consisting of 3,361 acres in town, of which protected core habitat consists of 2,538 acres, or 75% of total core habitat. Such lands can be protected, in part, with conservation restrictions (CR). Currently, there are over 10,459 acres of permanently protected open space and recreation lands in town. Over 110 acres of open space have limited protection, and slightly more than 150 acres make up the open space that is not protected. These open space lands are predominately protected, owned, and managed by the Town (41%) and the State (40%). Chapter 61B tax exemptions can be used to support private recreation land preservation. These non-developed lands are crucial for providing ecosystem services that make everyday life possible, but increasingly also help buffer the effects of climate change. Map 11 - 6 depicts the relationship between lands zoned for development and non-developed land use by parcel.

Vacant Land

Vacant lands represent an opportunity for the Town to revive underutilized areas. They are distinct from open space or preservation lands as they fall within a given zoning district but remain unused. Map 11 -7 shows vacant land parcels in Holden. Some of this land may be appropriate for redevelopment, while other areas may be best suited for conservation. The Town should focus on developing and preserving quality parcels, especially those identified in the Central Thirteen Prioritization Plan; however, vacant lands may represent additional smaller-scale opportunities. If left unmaintained, vacant land can contribute to poor aesthetics. A clear picture of ownership rights will be helpful when planning future uses of these lands.

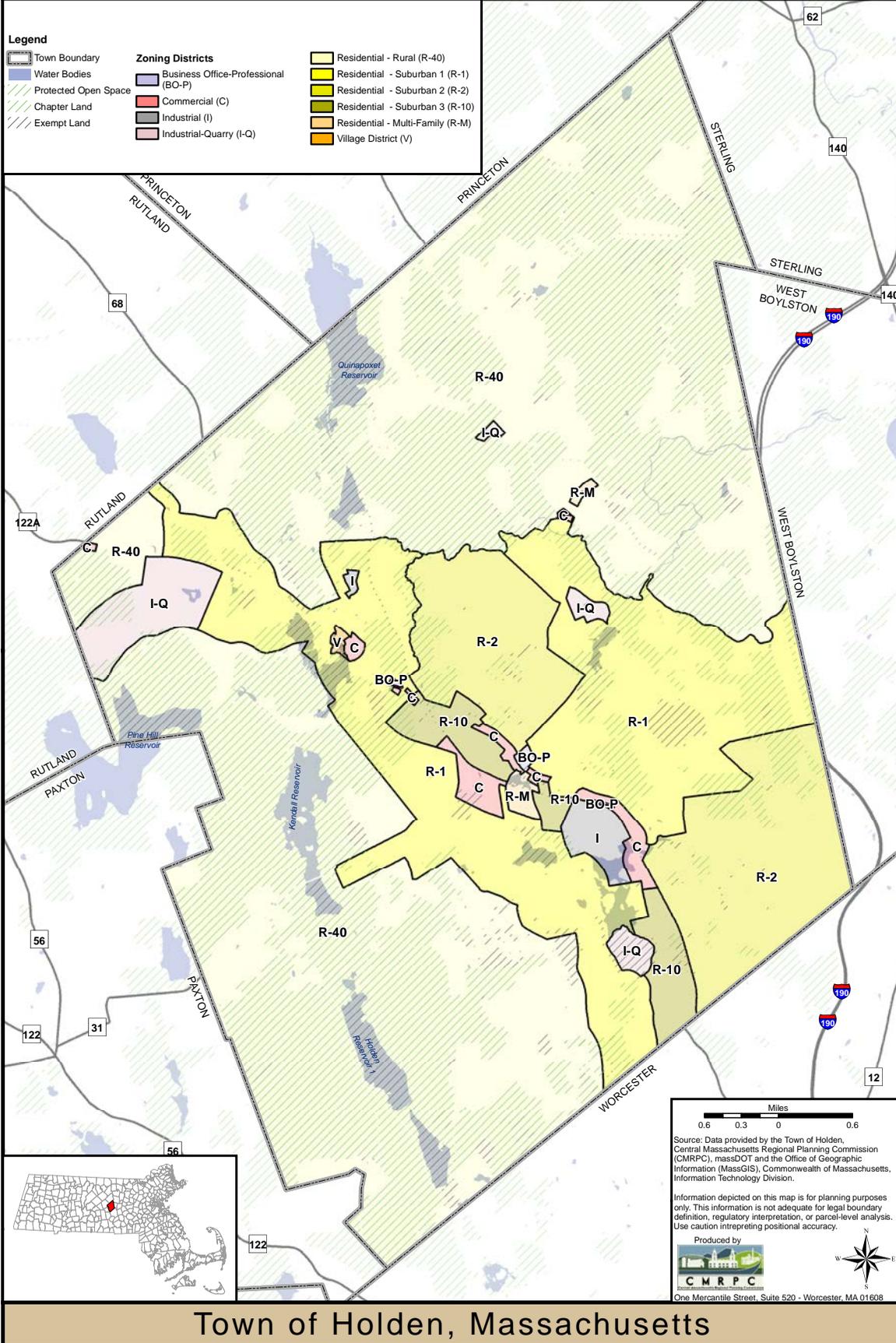
Commercial/Industrial Zoning vs. Land Use Map 2019 MASTER PLAN



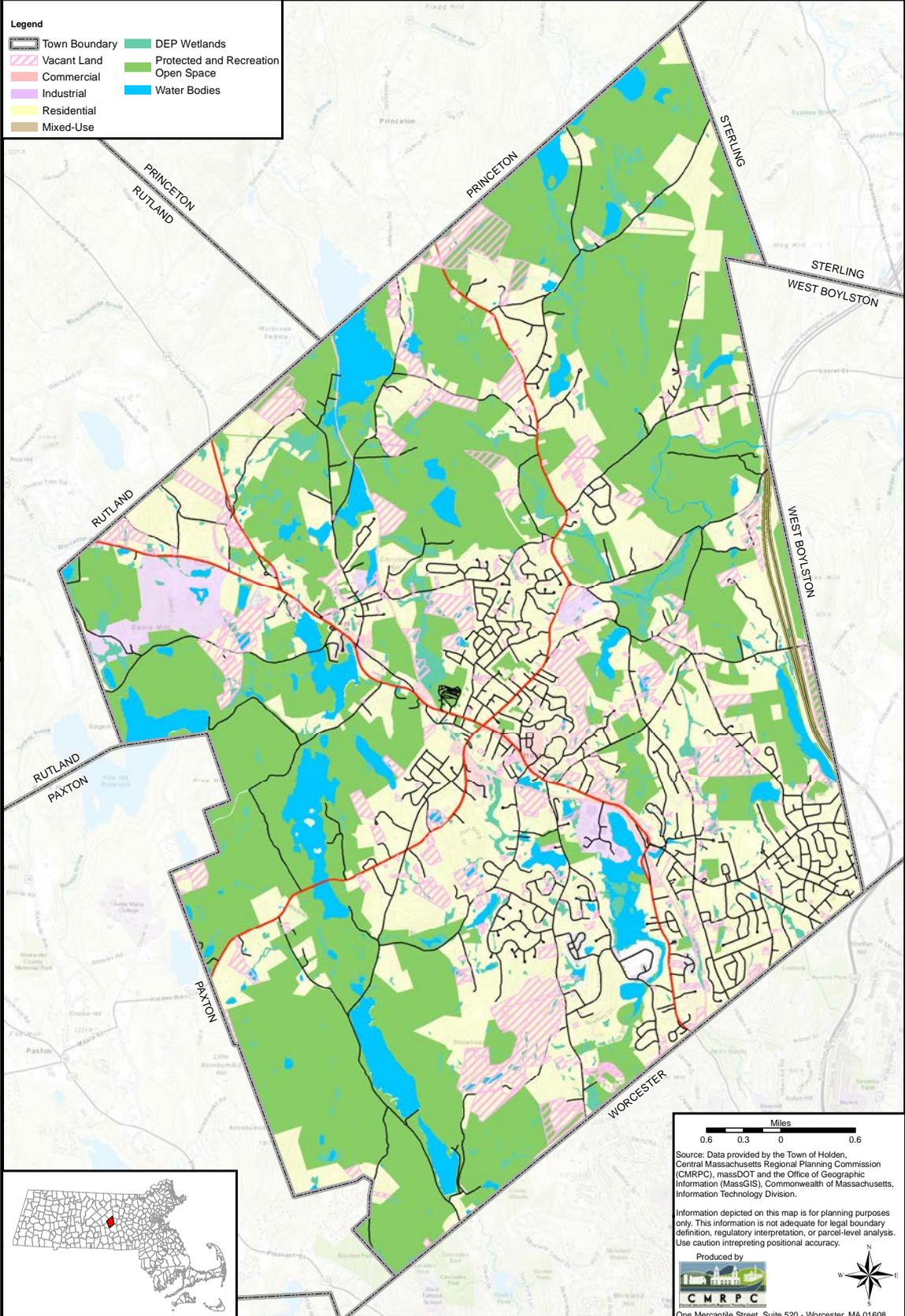
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Zoning vs. Non-Developed Land Use

2019 MASTER PLAN



Vacant Land Map 2019 MASTER PLAN



Town of Holden, Massachusetts

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Zoning

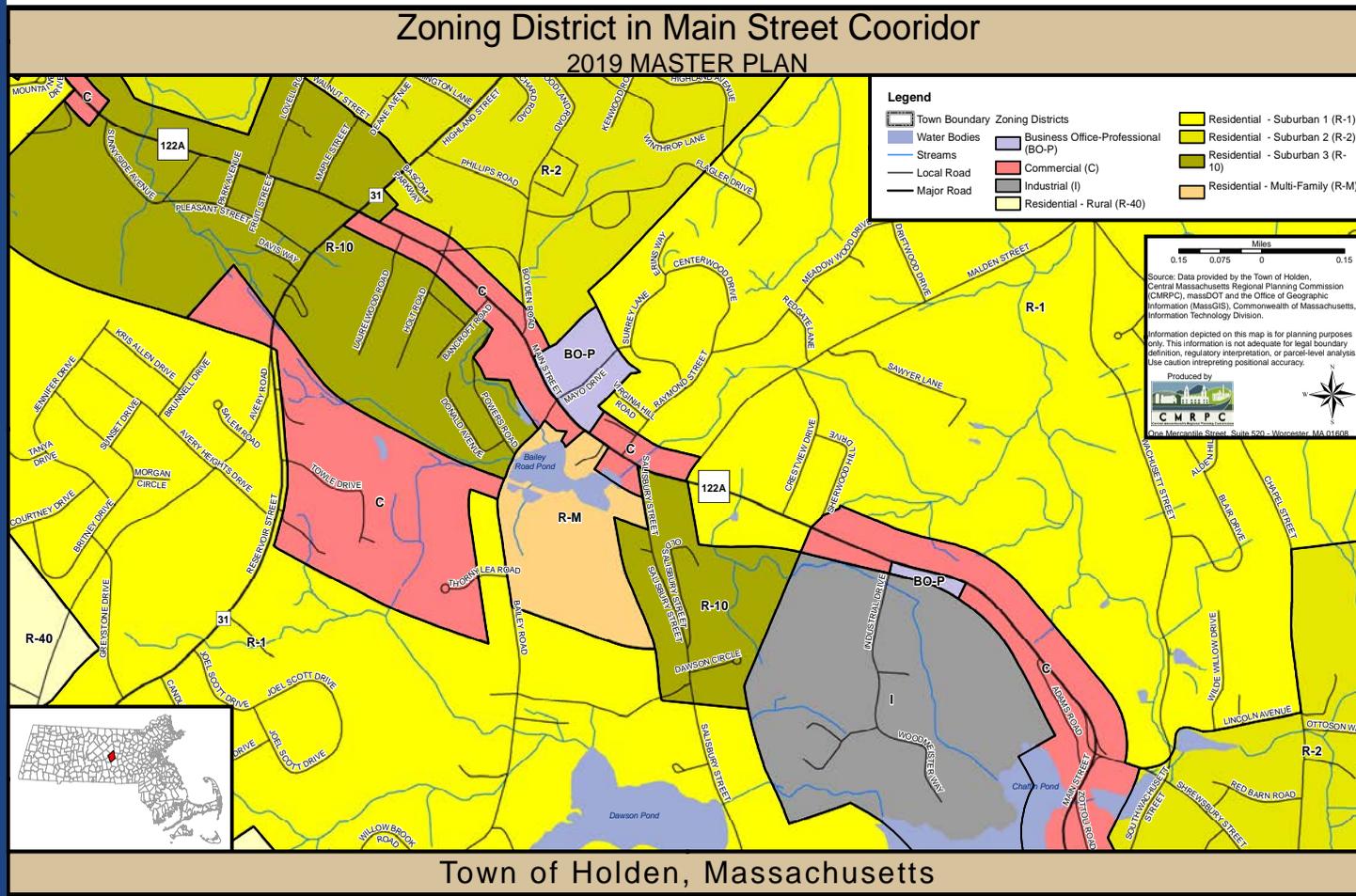
Holden is divided into 10 zoning districts, categorized broadly into Residential, Commercial/Industrial, and Overlay Districts. The majority of the Town is zoned Rural Residential, which creates large parcel neighborhoods. Industrial, Commercial, Business-Office Professional, Village Center, and Multifamily Residential define a minority of the land in Town largely clustered along the Main Street Corridor. The existing zoning regulations are discussed in depth below, along with potential and current opportunities for change. Map 11- 8 depicts the Zoning Districts in the Main Street Corridor. Map 11 - 9 demonstrates Holden’s Zoning Districts town-wide.

Residential Zoning Districts

The Town has five exclusively residential zoning districts, locations noted in the Zoning Map (Map 11 - 9). These are as follows:

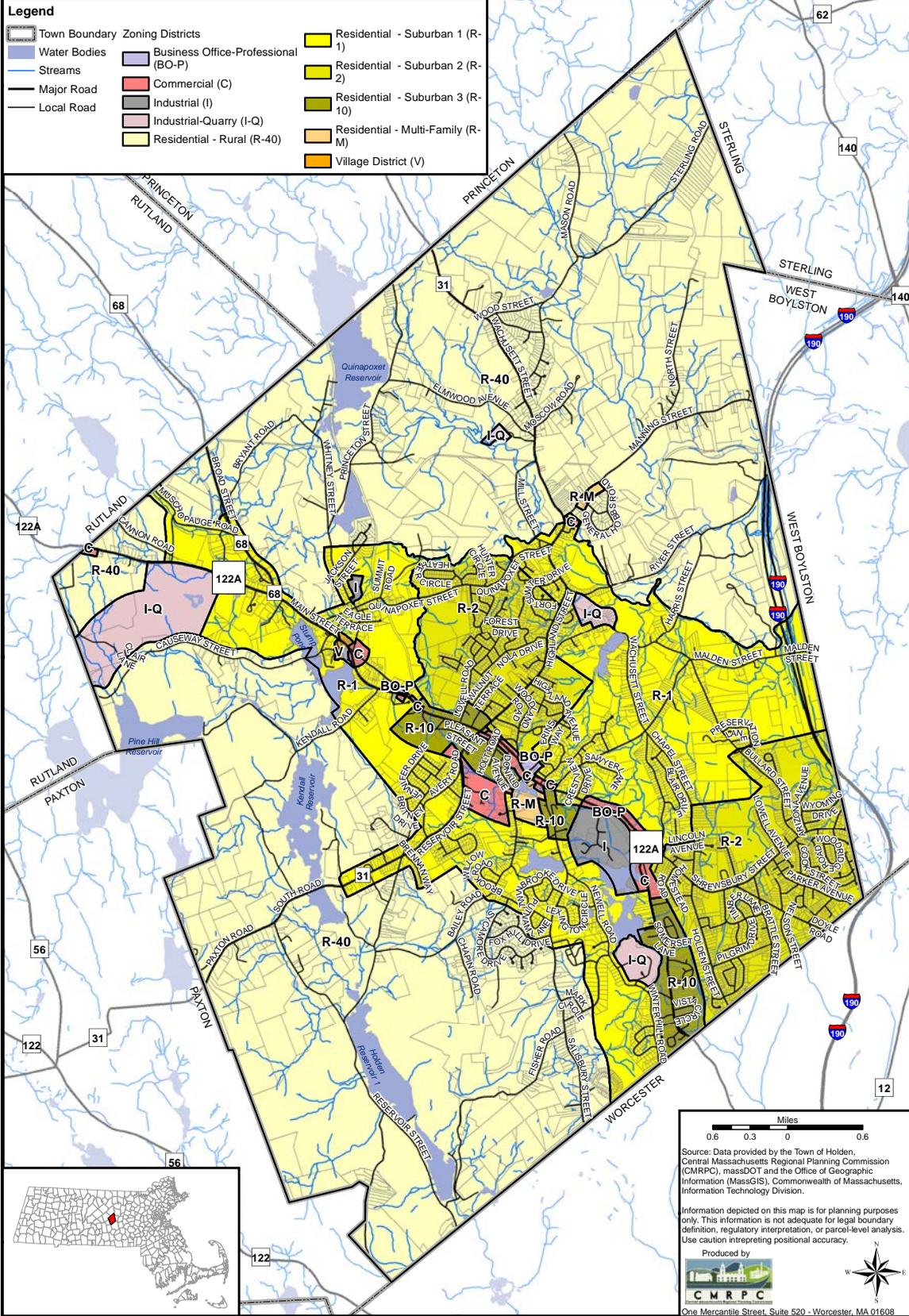
- Residential Suburban 1 (R1) –minimum of 40,000 sq. ft.
- Residential Suburban 2 (R2) - minimum of 30,000 sq. ft.
- Residential Rural (R40) –minimum of 40,000 sq. ft.
- Residential Suburban 3 (R10) –minimum of:
 - 10,000 sq. ft. for a one-family dwelling
 - 15,000 sq. ft. for a two-family dwelling
 - 20,000 sq. ft. for a three-family dwelling
 - 25,000 sq. ft. for a four-family dwelling
- 20,000 sq. ft. plus 5,000 sq. ft. for each unit more than three for all permitted structures of principal use
- Residential Multi Family (R-M) –a minimum of 10,000 sq. ft. plus an additional 5,000 sq. ft. for each unit more than two

Map 11 - 8: Zoning District in Main Street Corridor



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Zoning District Map 2019 MASTER PLAN



Legend

- | | | |
|---------------|-------------------------------------|----------------------------------|
| Town Boundary | Zoning Districts | Residential - Suburban 1 (R-1) |
| Water Bodies | Business Office-Professional (BO-P) | Residential - Suburban 2 (R-2) |
| Streams | Commercial (C) | Residential - Suburban 3 (R-10) |
| Major Road | Industrial (I) | Residential - Multi-Family (R-M) |
| Local Road | Industrial-Quarry (I-Q) | Village District (V) |
| | Residential - Rural (R-40) | |

T1.0 LAND USE



Miles
0.6 0.3 0 0.6

Source: Data provided by the Town of Holden, Central Massachusetts Regional Planning Commission (CMRPC), massDOT and the Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division.

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Town of Holden, Massachusetts

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Residential-only districts comprise the largest zoning districts in terms of land area. Table 11 - 4 summarizes each residential-only district by percentage of total zoned land (distinct from real land use).

Table 11 - 4: Residential-only Zoning Districts

Zone	Acres	% Town Acres
R-1	4,561	18.03%
R-2	2,389	9.44%
R-10	483	1.91%
R-40	14,853	58.72%

The largest residential district (R-40) is also the most restrictive of all the residential-only districts and has the largest capacity for residential expansion. Of the approximately 4,269 acres in residential districts identified as developable, approximately 71% are located in the R-40 district. Under current regulations, this zone is estimated to have a development capacity of around 4,103 additional units.

No changes have been made to the dimensional requirements of the Residential zoning districts since the 2008 Master Plan, nor have the districts themselves changed. Holden has not implemented inclusionary zoning requirements to date. Rather, several bylaws have adopted density incentives to encourage creation of new affordable housing. The Town has indicated a measure of success implementing some of these incentives, especially the Open Space Residential Development option. It should be noted however, that developers have raised issues with identifying income-qualified buyers for the deed-restricted units. While no data was available to support or refute those claims as of this writing, they warrant further study by the Town.

Open-space Residential Development (ORS D) Option:

Implemented in 2008, this bylaw revision allows developers to receive a density bonus in exchange for setting aside 50% of the total land area as publicly usable open space. The option allows the Town to off-set some the land-use impacts from single-family development.

Affordable Housing Bylaw: Allows for a density bonus to a given development provided at least 15% of the total number of units proposed are sold at prices affordable to buyers or renters earning no more than 80% of the Area Median Income (AMI). This provision is applicable to single-family or multi-family residential developments provided there is a permanent or semi-permanent deed-rider extending the cost restriction.

Issues with Smart Growth Policy Implementation:

It should be noted that some developers have pointed to difficulties identifying qualified buyers for some kinds of deed restricted properties. The Town should actively engage developers to help identify what these barriers are and work toward their mitigation.

Non-residential Zoning Districts

The Town of Holden has five commercial and industrial zoning districts (Maps 11- 8 and 11-9).

- Commercial District (C) - is a district that requires 10,000 sq. ft. for any permitted structures or principal use other than lodging
- Business Office-Professional District –(BO-P) minimum of 10,000 sq. ft.
- Mixed Use allowed by special permit
- Industrial District (I) minimum of 30,000 sq. ft.
- Industrial-Quarry District (I-Q) –minimum of 30,000 sq. ft.
- Village District: the greater of five acres or 10,000 sq. ft.

Table 11 - 5 summarizes the total land area covered by each of the commercial and industrial districts (distinct from real land use).

Table 11 - 5: Commercial and Industrial Districts

Zone	Acres	% Town Acres
BO-P	17.9	0.07%
C	226.37	0.89%
I	164.66	0.65%
I-Q	2,524.96	9.98%

The largest non-residential zoning district is the I-Q zone, which represents close to 10% of total land area. Build-out estimates show that there are almost 2.5 million sq. ft. of commercial or industrial development capacity in this district.

No dimensional requirements have been changed in the Commercial/Industrial/Village zoning districts since 2008. The Town of Holden has two distinct Industrially-zoned districts:

- **Industrial District (ID):** The Industrial District (ID) is located off of Main Street on Industrial Drive. The 153-acre industrial park is comprised of multiple sites and businesses. The Park's infrastructure includes water and sewer. There is a secondary 11-acre Industrial District located off of Princeton St.
- **Industrial-Quarry District (IQ):** The Industrial Quarry District (IQ) is located off Newell Road, Newbury Drive and Winter Hill Road.

Holden desires to retain its existing industry and potentially expand its light industry. Existing industrial zones are both accessed off Route 122A but lie towards the edges of town, so they do not interfere with uses in other zoning districts. Both districts have further buildout potential.

Mixed Use

Holden has experimented with various forms of mixed-use development to revive the advantages of historic land use patterns. Residents are by-and-large required to drive into Town or to other Towns to access goods, services, and jobs. The Town is interested in establishing new inclusive and resilient land use patterns that enable provision of diverse goods and services in or near places of residence. Mixed-use development is a combination of residential and commercial and/or business office professional uses. Mixed use approaches allow the Town to increase economic development opportunities while controlling growth that could threaten open space, as well as improve mobility between residential and commercial areas.

Mixed-Use Developments are allowed by special permit in the Commercial and Business Office Professional Zone and permit:

- 2, 3 and 4 family dwellings;
- Duplexes
- Townhouses

If the Town is interested in increasing the usage of Mixed-Use zoning, it may wish to establish by-right mixed uses/mixed-use base districts.

Village District

The Village District is an adaptation of the mixed-use approach designed to replicate traditional small-town development patterns where dense mixtures of land use provide a selection of goods, services, jobs, and opportunities in local pedestrian-friendly and attractive core areas. The intent of village zoning is to integrate different elements such that each complements the function of each other use, thus improving the quality of the village as a whole. Holden is amending its current Village Center Overlay District into a base Village Center District in order to simplify zoning and thus promote the desired development. The Village Center District allows many mixed-uses by right, but in a concentrated area, as opposed to the existing mixed-use overlay which allows development by special permit in the larger Commercial and Business Office Professional Zones. Holden currently has one Village Center District in Jefferson Village (Map 11- 10).

A village development shall include a minimum of three of the following permitted land uses, one of which shall be residential:

- Residential
- Restaurant
- Theater or Auditorium
- Recreational Facility
- Parking
- Business and Professional Office
- Retail Establishment
- Personal Service Business
- Hotel or Motel
- Community Facility

Map 11- 10: Proposed Jefferson Village Center District



Jefferson Village Center District
October 2018

0 0.05 0.1 0.2 Miles

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The Village Center Overlay District was implemented to encourage development in and around the Jefferson Mill which has yet to occur. Stakeholders identified the five-acre minimum dimensional requirement as an obstacle. As such, the Town of Holden is working with CMRPC to amend the Village district to reduce the minimum lot size, establish a base district, and review uses to make the original intent of the village concept more feasible.

Overlay Districts

The Town of Holden has two overlay districts - an Aquifer Protection District and the Flood Plain District. The Aquifer Protection District protects existing and future water and groundwater supply sources in Town. There are three zones each with its own set of permitted and prohibited uses designed to protect these valuable resources. The Flood Plain District requires development designed to minimize flooding within the 100-year flood risk zones.

Parking Requirements

Current parking regulations in the Town of Holden adhere to the standard minimum of two spaces per dwelling unit and one space per 200 sq. ft. of net retail space. However, common parking standards are car-oriented rather than pedestrian or multi-modal transit oriented. Significant portions of land are commonly underutilized by parking structures. Holden's standards dictate all paved parking structures use either bituminous or cement concrete, which is the easiest option to maintain in the New England climate, but restricts permeable pavement options or other alternatives. Parking lots are required to maintain vegetative screening between all developed parking structures and abutting residential properties. There are further regulations regarding plantings within the bounds of the parking lots. This helps improve the aesthetics of parking lots but can also be designed to address stormwater runoff and other ecological concerns. As the Town targets more dense, resilient, and mobility-inclusive development, it would be well-served to re-evaluate parking regulations.

Subdivision Regulations

The Town's subdivision control regulations greatly influence how land in Holden is developed, given the predominance of residential land uses. These subdivision regulations are intended to guide the approval process of a subdivision plan, and include general design standards, required improvements for an approved subdivision, and general administration. Subdivision bylaws have historically contributed to Holden's unintentional sprawl. However, these existing regulations are undergoing extensive review as the Town pursues the adoption of Stormwater Management Regulations.

Additional Bylaws

Holden has adopted additional bylaws effecting land use, some of which are discussed in prior chapters. A brief list is included here for reference:

- Signs and Billboards
- Cluster Residential Development Bylaw
- Accessory Apartment Zoning Bylaw
- Phased Growth Zoning Bylaw
- Wireless Communications Bylaw
- Retirement Community
- Board of Appeals - Zoning
- Regulation of Billboards
- Removal of Soil
- Street Opening
- Handicapped Parking
- Water Protection Bylaw
- Town By-Law Establishing So Called Fire Lanes On Public and Private Properties
- Underground Utilities Bylaw
- Wetland Bylaw

Development Constraints

Environmental conditions constrain development. Most types of development are limited on slopes over 15%, which equates to about 7% of the Holden's total area. In addition, glacial history has left much of the town's soil as poorly drained or rocky, making development in many areas a challenge. Specific constraints are discussed further in the Natural Resources Chapter and Buildout Analysis. (Appendix C)

Holden's role in the regional water system also constrains future development. Large swaths of land surrounding reservoirs are restricted from public access entirely, much less active development and use. Other zones control for type or density of development, water and sewer, and other partial development constraints. Capacity of water and sewer distribution systems restrict the type and density of development in some areas, including along the Main Street Corridor. The Department of Conservation and Recreation (DCR) and City of Worcester share responsibility for the management and protection of the regional water system, and continue to acquire land in order to enhance water quality. In addition to preservation buffers, future development must also account for local floodplains. Luckily most of the Town falls within Zone C – Areas of minimal flooding. The Natural Resources chapter discusses environmental constraints in depth and should be referred to for details on specific locations, regulations, and stakeholders as the town considers future development.

ISSUES AND OPPORTUNITIES

Extensive public outreach during the Master Planning update process highlighted the dynamic balance between the Town’s high quality of life and resultant growth. Both residents and the Town are actively discussing Holden’s future trajectory. Members of the public consistently envisioned forms of community-appropriate development that expanded amenities without sacrificing the Town’s character. Several themes emerged from outreach efforts:

- Appreciation of Main Street’s historic commercial character
- Desire for restaurants, small scale home businesses, and energy generation
- Lack of commercial space
- New growth that is overly focused on single family residential construction and does not provide required diversity (Figure 11-5)
- Traffic on Main Street that frustrates residents and dissuades visitors

Land Use Projections Population Changes and Projections

Holden’s evolving land use policy will be driven largely by the population changes projected over the lifespan of this plan. The Fiscal Impact Analysis (Appendix D) completed by CMRPC in 2018 estimates that the Town can expect to add roughly 4,000 new residents by 2030 (Table 11 - 5). These estimates are fairly conservative, as they assume a relatively stable rate of new housing unit production, persons-per-household figures, and average

Table 11 - 5: Projected Population Growth (CMRPC, 2018)

Year	Population	Difference per Decade	% Change per Decade
2010	17,346	-	-
2020	19,393	2,047	12%
2030	21,009	1,616	8%
2040	22,625	1,616	8%

occupancy rate. Any major real-world fluctuation in these factors could have a significant impact on the accuracy of these estimates.

Population increases will require expanded housing options (either single or multi-family), expanded municipal services, more business and service options, and greater school system capacity. The expected population increase can have dramatically different impacts on the nature of the town based on the type of housing and commercial development the Town’s zoning is designed to encourage. As a bedroom community, housing development will be the linchpin of the

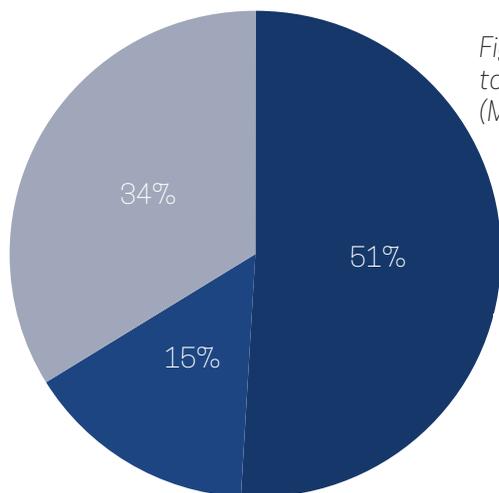


Figure 11 - 5: Should the Town Amend its Bylaws to Restrict Future Residential Growth (Master Plan Community Survey Results, 2018)

Answers	Responses	Percent
Yes	458	51%
No	137	15%
Possibly	304	34%
Total	899	100%

land use discussion. The Town should strive to proactively adopt zoning changes rather than be caught off guard. Holden is already working on localized housing and commercial zoning changes in the Jefferson Mill area, and may wish to consider other broader efforts.

Housing Unit Projections

The Fiscal Impact Analysis estimated the number of new residential units the community might expect to see over time. Table 11 - 6 shows the projected number of total housing units in 2017 and then each decade through to 2040. These estimates are a linear projection based on the 10-year average of 69 units added per year. This will have a significant

Table 11 - 6: Projected Housing Unit Growth

Year	Housing Units Town-Wide
2017 (Baseline)	8,094
2020	8,281
2030	8,971
2040	9,661

impact on town services and land use patterns. For further discussion, see the Fiscal Impact Analysis section (Appendix D) in this document.

Residential Road Miles Projections

The Buildout Analysis calculated the following road

Table 11 - 7: Projected New Road Miles per Residential Zoning District (CMRPC, 2018)

Zone	New Road Miles per Zone
Residential - R-1	11.96
Residential - R-2	7.08
Residential - R-10	1.81
Residential - Multi-Family (R-M)	0.73
Residential - Rural (R-40)	35.32

miles (Shown in Table 11 - 7) will be added when current zoning districts are completely built out (See Appendix C for methodology).

The buildout analysis estimates road development potential to be 56.9 miles Town-wide. The Transportation chapter analyzes the potential costs and benefits of adding additional road miles

to the Town’s overall road inventory. However, land use policy can reduce the ratio of new road miles for new development by promoting “Smart Growth” approaches including infill development, cluster development, redevelopment, adaptive reuse, and other higher-density tactics. The Master Plan has recommended the town identify other areas in addition to the Jefferson Village project where denser development can be implemented in order to preserve non-developed land.

Student and School Facility Projections

Population growth in Holden may have significant impacts on school facilities and the delivery of educational services. The excellent school system is often cited as a draw for new residents. Single family housing development also encourages families with children to move to the area, rather than couples or individuals who may be interested in smaller or multifamily options. Despite this, the Buildout Analysis indicates that families with school-aged children are not currently the fastest growing population. Nonetheless, growth in this cohort is still significant and it is very likely that the Town will need to explore expanding existing facilities in the near future. See Appendix C for projections of new students by school. It is recommended elsewhere in this plan that the Town undertake a more thorough investigation into enrollment trends and facility needs than what has been presented here.

Commercial and Industrial Development Potential

The buildout analysis projected the total commercial development potential in the Town of Holden generated by new development on available land under existing zoning. Given current zoning

Table 11 -8: Buildable Floor Area by Zone (CMRPC, 2018)

Zoning District	Buildable Floor Area (Sq. Ft.)
Commercial (C)	687,696
Business Office - Professional (BO-P)	52,994
Industrial (I)	104,452
Industrial - Quarrying (I-Q)	2,460,083
Total	3,305,225

conditions, Holden still has 75.9 acres, or 3,305,225 sq. ft. of buildable floor area in its commercial and industrial zones. Table 11 - 8 summarizes the total area and Buildable Floor Area by zone. There is significant buildable floor area, indicating that the zoning districts alone are not the only obstacle to desired development. The Business Office-Professional district is closer to built-out than the Commercial and Industrial districts, but still exhibits some potential. Note that these calculations do not account for potential redevelopment, which is a density approach the town indicates it may like to pursue. See the Buildout Analysis section for the methodology behind these estimates.

Emerging Issues in Land Use

Land use issues are evolving faster than ever. Towns are operating at the intersection of changing environmental and policy pressures. The Town of Holden cannot predict every emerging land use issue, but the Town can commit to acting in a proactive and responsive fashion in order to best serve the community. A variety of land use considerations have emerged as clear questions the Town must contend with moving into the future.

Climate Change: Towns today must cope with rapid changes in environmental trends in addition to social and demographic changes. Towns can no longer rely on the former climatic status quo, but must actively plan for changes in rainfall quantity, storm severity, water supplies, droughts, invasive species and other climate effects. These will affect the services residents require and the Town's ability to provide them. Holden must prepare itself to be responsive to emergency situations (Fire, EMT, Police), but can also offset climate change impacts by proactively planning for the Town to fit new environmental conditions. This includes promoting "Smart Growth," which increases density and mobility options in order to reduce carbon impact, as well as designing infrastructure and services for resilience. The more proactive planning Holden successfully completes, the less reactive recovery the Town will face. In 2018, the Town completed a very progressive

planning process (a Community Resilience Building Workshop) to identify likely hazards and what aspects of infrastructure, environment and demographics in Town would be impacted and how best to plan for resilience. The Community Resilience Building Workshop was supported by the Municipal Vulnerability Preparedness Program funding from the Commonwealth. The Town is now a designated MVP Community and can apply for dedicated funding to address the challenges identified in the plan (Fuss & O'Neill, 2018).

Growth Management: An major subject of this Master Plan has been the Town's desire to strike a balance between development and preservation. Residents desire improvements in local amenities, and the quality of life in Town continues to attract new residents, but this very growth in population can impact the character of Holden that attracted residents in the first place. Holden is projected to continue growing, but the community can shape that growth in appropriate directions through the active use of land planning tools. Holden must re-evaluate the former large-lot low-density zoning approach, which has largely failed to reduce growth rates, and instead encourage clusters of denser, well-designed development that is climatically resilient and enjoyable to live in.

Affordable Housing: The housing affordability crisis is deepening across the state. People are being pushed out of urban centers into growing suburban commuter zones. Recovering land prices, combined with the current large-lot zoning requirements, encourage developers to build larger more expensive houses in Holden to recoup their expenses. The majority of employed residents of Holden do work in Town; the second largest group is employed in Worcester. However, rising housing in prices in Worcester and Central Massachusetts are likely to affect this balance. Holden should aim to provide

housing options achievable for workers employed at all wage levels in Town, be it at minimum wage or higher.

Aging Population: Many Holden residents are seeking to age in place. Holden will need to continue planning for Health Aging to adequately serve its aging population. This includes appropriate housing size, accessibility, and affordability, inclusive mobility options, elderly and emergency response services, multi-generational community spaces, and more. Appropriate zoning can help facilitate Health Aging while simultaneously improving the quality of life for other generations of residents.

Green Energy: Many residents in Holden expressed a desire to be part of the recent expansion of green energy generation in Massachusetts. Solar farms and wind turbines are the most likely applications of green energy given the natural resources available in Holden. The Town will need to develop the necessary regulatory infrastructure to facilitate green energy in a manner appropriate to the vision of the Town. A proactive assessment of available or suitable land would help direct these new developments with appropriate zoning conditions.

Airbnb: Airbnb and other new platforms for small-scale shared use (such as Uber and Lyft) require a new approach by Towns because they inhabit a legally ambiguous area under most current regulations, especially zoning. These platforms can provide flexible amenities in Town to address existing concerns, such as the lack of lodging options or lack of transit options, but the Town would be well served by resolving zoning and other legal ambiguities.

Creative Economies: Holden residents have expressed interest in seeing popular new economies brought to Holden. This can range from Craft Breweries to Farm-to-Table restaurants to Makerspaces³ and

rideshare services. The Town should be aware of these emerging trends and have a consistent approach to incorporating these new uses into zoning regulations.

Jefferson Mill Village Center District

The Town of Holden has undergone an extended effort to implement the community's vision for the Jefferson Mill. Previous chapters, including Economic Development, have discussed this opportunity in depth. However, there are crucial land use and zoning conditions that impact the viability of this transformation. The Town is currently redesigning the Village Center Overlay District into a base district to simplify permitted uses and project development in the surrounding area. The Town reissued building permits for the site in 2017, but the project continued to stall due to uncertainty around Eagle Lake, the former mill pond of the Jefferson Mill. Development of the Jefferson Mill area is also limited by the layout and design of Route 122. Any traffic calming, changes in road layout, or pedestrian and bicycle amenities will need to be coordinated with MassDOT, as Route 122A falls under their jurisdiction. However, the Village Center District is being amended to facilitate these amenities as best possible within the town's jurisdiction.

Eagle Lake

The future of Eagle Lake has been discussed at length in the Master Plan's Natural Resources and Open Space and Recreation Chapters. The Eagle Lake Committee report (Holden Eagle Lake Committee, 2018), recommends preserving the recreational, natural, historical, and cultural importance of the area. Permanently drawing down the lake would significantly alter land use patterns and future opportunities in the Town. The presence of the lake provides certain opportunities, but, with good planning, so could the restoration of the original stream. There are limited ways in which land use tools are able to help resolve the question of Eagle Lake's future given that the primary difficulty is in the repair, maintenance, and ownership of the man-made dam. The following grants programs may prove to be avenues worth exploring to fund repair, restoration, or other options for the area.

³ A makerspace is a collaborative work space inside a school, library or separate public/private facility for making, learning, exploring and sharing that uses high tech to no tech tools.

Dam and Seawall Repair or Removal Program

Grants and Funds: Two requests for proposals are typically offered each year for state funds. One is a grant program to support the completion of designs and permit applications to repair or remove dams, seawalls and other coastal infrastructure, and levees. Municipalities and nonprofit organizations are eligible to apply. The second is a grant and/or loan program to support the construction phase of repair or removal of dams, seawalls and other coastal infrastructure, and levees. Municipalities and nonprofit organizations are eligible to apply. Certain private owners of dams may apply for loan financing. The next round of applications is expected to open in late spring of 2019. Please check this page <https://www.mass.gov/service-details/dam-and-seawall-repair-or-removal-program-grants-and-funds> or www.commbuys.com for updates. This program is the most appropriate of the listed grants for Eagle Lake, however, it is a highly competitive grant.

Municipal Vulnerability Preparedness Grant Program:

Holden has recently qualified as an MVP Community, making it eligible for funds for planning and prevention around climate change issues. MVP Action Grants provide direct funding and technical support to municipalities which seek to implement key priorities and projects identified through the MVP Planning Grants. Eagle Lake was featured in the MVP Plan by Fuss & O'Neill (2018). It is possible that the Eagle Lake Dam may be eligible for MVP funding if the town can highlight how various climate change scenarios (excessive rainfall, flooding, etc.) threaten the integrity of the dam and therefore downstream or flood zone land uses. It is also possible that Eagle Lake helps maintain the resilience of the surrounding environment, including wetlands, and therefore should be maintained as a part of the town's climate resilience strategy. This grant could potentially be used to either restore the stream or rehabilitate the dam.

FEMA High Hazard Dam Rehabilitation Program:

FEMA is expected to announce a new grant program aimed at rehabilitating high hazard dams like Eagle Lake Dam. The program will be administered through MEMA and the first year will be limited to plans and studies, with construction allowed in future funding years. The amount of funding is limited nationwide, so the grant process will likely be highly competitive.

Coldwater Fish Resources:

Funds are available through MassWildlife for the protection and revitalization of Coldwater Fish Resource (CFR) waterbodies such as Eagle Lake. It may be possible to use funds to reconstruct the dam in order to maintain the lake as a functional habitat. This may be dependent on the active presence of the protected species.

5 Star Wetland and Urban Waters Resoration Grants:

The National Fish and Wildlife Foundation offers the Five Star Wetland and Urban Waters Restoration Program which brings together students, conservation corps, other youth groups, citizen groups, corporations, landowners and government agencies to provide environmental education and training through projects that restore wetlands and streams. The program provides challenge grants, technical support and opportunities for information exchange to enable community-based restoration projects. Funding levels are modest, from \$10,000 to \$40,000, with \$20,000 as the average amount awarded per project. However, when combined with the contributions of partners, projects that make a meaningful contribution to communities become possible. This opportunity may be relevant for the scale of work around Eagle Lake.

The New England Forests and Rivers Fund:

The New England Forests and Rivers Fund is dedicated to restoring and sustaining healthy forests and rivers that provide habitat for diverse native bird

and freshwater fish populations in New England. The program annually awards competitive grants ranging from \$50,000 to \$200,000 each. It funds projects to restore early successional and mature forest habitat, modify and replace barriers to fish movement, restore riparian and instream habitat, and engage hundreds of volunteers in forest habitat restoration and stream connectivity projects in Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island and Vermont. This program is provided by the National Fish and Wildlife Foundation.

Division of Ecological Restoration: The State of Massachusetts Division of Ecological Restoration has several programs applicable to Eagle Lake. The DER coordinates with communities through their River Restoration program to provide services for streamflow, dam removal, and wetlands restoration. Stakeholders can apply to the DER to become a Priority Project. Eligible applicants include private property owners, municipalities, non-governmental organizations, and academic institutions. Typically, DER selects projects based on ecological and community benefits and local leadership. Selected projects are eligible for:

- Technical services such as data collection, engineering, design work, and permitting
- Project management and fundraising help from DER staff
- Small grants

If a project has high ecological benefits but critical feasibility issues, DER may select the project as a Provisional Project. DER will review progress toward resolving feasibility issues one year after the project was selected. Projects that have resolved identified issues may receive full Priority Project status.

MassWildlife Habitat Management Grant Program: The MassWildlife Habitat Management Grant Program provides assistance to private and municipal owners

of protected lands to enhance wildlife habitat, while promoting public access for outdoor recreation. MHMGP objectives are to:

- Improve habitat(s) for game species (those species that can be legally hunted, fished, and trapped in MA)
- Manage habitat(s) for Species of Greatest Conservation Need as identified in the Massachusetts State Wildlife Action Plan (SWAP) – special emphasis on State-Endangered and State-Threatened Species
- Promote public recreational opportunities for hunting, fishing, trapping, and other wildlife associated recreation on conserved lands

Applicants are eligible to receive between \$10,000 and \$50,000 per grant towards their approved habitat management project. The Town should explore whether Eagle Lake or the original water body is habitat to any Species of Greatest Conservation Need.

Supplemental Dam Funding: The following grants can all be used to fund dam-related construction (Appendix H):

- New England Emergency Streambank and Shoreline Protection
- New England Flood Reduction Projects
- New England Aquatic Ecosystem Restoration Projects
- New England Environmental Restoration
- Watershed Restoration and Enhancement Agreement Authority
- Emergency Watershed Protection Program
- Watershed and Flood Prevention Operations (WFPO) Program
- North American Wetlands Conservation Fund
- Investments for Public Works and Economic Development Facilities
- Massachusetts Environmental Trust

- River and Harbor Grant Program
- State Revolving Loan Fund: Clean Water Fund
- Wetlands and River Restoration and Revitalization Priority Projects
- Community-Based Restoration Program River Grants
- The Toyota Together Green Innovation Grants Program

Town Center

The Town Common sits at the heart of Holden Center, the Town’s most developed village center. As the Town seeks to cluster future development, it can leverage the existing Town Center to create more public and green spaces, improve mobility, provide access to services, create gateways, facilitate commercial development, construct diverse and inclusive housing, and revive the historic aesthetic of the community. The Town can reduce commuter traffic issues along Main Street by providing more local commercial opportunities and greater mobility options. Development efforts for the Main Street Corridor and Holden Center will overlap and enhance each other. The Town should review prior planning efforts for these areas and begin to implement the recommended strategies.



Jefferson Mill (CMRPC Staff, 2019)

GOALS, OBJECTIVES, AND ACTION ITEMS

The Master Plan recommends the following action items based on the goals and objectives crafted with careful consideration of the public outreach results, analysis of current conditions, and progress achieved since 2008. The action items accompanying the objectives will also be reflected in the Implementation Chapter (Chapter 11).

Goal 11.1: Concentrate development around existing infrastructure.

Objective 11.1.1: Consider innovative zoning that encourages mixed-use development of Priority Development Areas (PDAs).

- **Action Item 11.1.1.1:** Identify land and buildings suitable for mixed-use redevelopment and employ land use tools to encourage their adaptive reuse.
- **Action Item 11.1.1.2:** Consider funding opportunities for properties of regional or local significance the Town wishes to see developed as mixed-use.
- **Action Item 11.1.1.3:** Conduct or update feasibility studies for the five Priority Development Areas (Oriol Health Care Campus, 176 Princeton Road, Commercial Re-use PDA, Village Center PDA, and the Main Street/Rt. 122 light commercial corridor.)
- **Action Item 11.1.1.4:** Complete the Village Center Bylaw.

Objective 11.1.2: Provide for a cohesive permitting process for development that considers existing infrastructure, as well as local and regional plans.

- **Action Item 11.1.2.1:** Revisit and update Priority Development Areas and Priority Preservation Areas identified in the Central Thirteen Prioritization Plan.

- **Action Item 11.1.2.2:** Consider utilizing 43D Expedited Permitting to encourage development of Priority Development Areas.
- **Action Item 11.1.2.3:** Conduct regular development review team meetings that include staff from relevant departments.
- **Action Item 11.1.2.4:** Consider revising site plan review regulations to streamline the permitting process for projects that are small-scale and of limited complexity.
- **Action Item 11.1.2.5:** Consider revising site plan review regulations in their entirety to enhance clarity and specificity.

Goal 11.2: Facilitate adaptive reuse of existing buildings to complement the rural character of the Town.

Objective 11.2.1: Explore zoning tools that encourage adaptive reuse including Mill Overlay Bylaws, Mixed-Use Bylaws, and Adaptive Reuse Overlay Districts.

- **Action item 11.2.1.1:** Form a Zoning Bylaw Review Committee to evaluate potential amendments.
- **Action Item 11.2.1.2:** Pursue technical assistance grants that support smart growth zoning, including EEA Planning Assistance and Massachusetts Downtown Initiative.

Objective 11.2.2: Develop design preferences or guidelines that are consistent and complement the existing and desired character of the Town.

- **Action Item 11.2.2.1:** Form a Design Review Committee and adopt Design Guidelines and/or Site Plan Regulations.

Objective 11.2.3: Identify vacant or underutilized buildings suitable for adaptive reuse.

- **Action Item 11.2.3.1:** Partner with property owners to explore reuse options for buildings the Town does not own but wishes to see improve via adaptive reuse.

- **Action Item 11.2.3.2:** Examine Jefferson Mill as a building/area eligible for adaptive reuse.
- **Action Item 11.2.3.3:** Form a Municipal Building Reuse Committee to review municipal properties and buildings that could benefit from adaptive reuse, including Adams road.

Goal 11.3: Ensure consistency between Holden's long-range plans and Town and state regulations.

Objective 11.3.1: Review and update all municipal planning documents.

- **Action Item 11.3.1.1:** Review timelines (including expiration dates where applicable), relevance, and oversight of municipal plans.
- **Action Item 11.3.1.2:** Review plans for conformance and present-day applicability and consistency with Town and state regulations.
- **Action item 11.3.1.3:** Actively review and implement strategies indicated in the various plans as resources and opportunities arise. Consider areas of commonality and conflict.

Objective 11.3.2: Amend applicable policies, regulations and bylaws to reflect active municipal plans and to incorporate Town and state regulations.

- **Action Item 11.3.2.1:** Form a municipal committee to review plans, policies, regulations, and bylaws for compliance with Town and state regulations.
- **Action Item 11.3.2.2:** Conduct a comprehensive zoning bylaw diagnostic to remove conflict with existing plans and to support goals and objectives of this and other plans.
- **Action Item 11.3.2.3:** Review general bylaws, regulations and policies for consistency and compliance.
- **Action Item 11.3.2.4:** Continue efforts to manage and regulate where water and sewer

hookups may be granted, including delineating a sewer/water service district on the zoning map, with consideration for extensions outside the service boundary by special permit.

Goal 11.4: Take a proactive and responsive approach to emerging issues in land use.

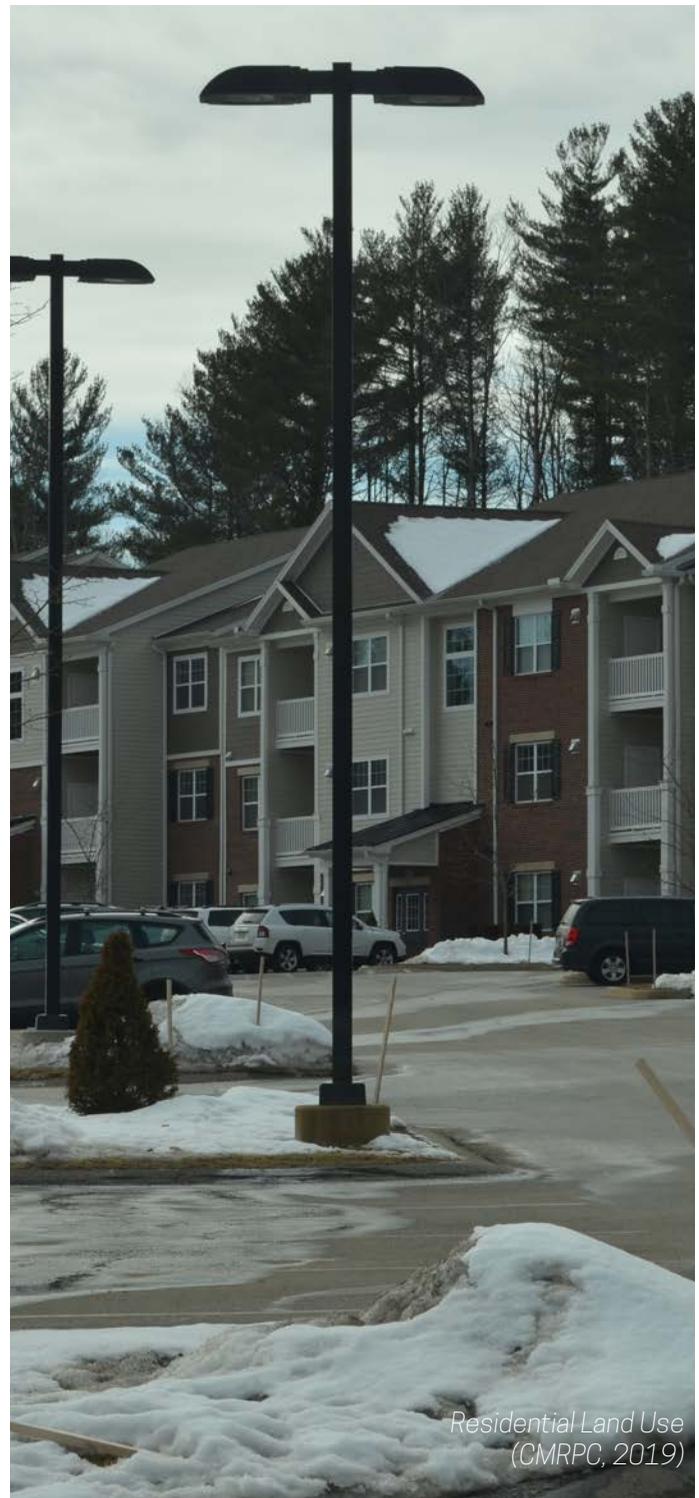
Objective 11.4.1: Review opportunities and challenges associated with emerging land use issues.

- **Action Item 11.4.1.1:** Form a Zoning Bylaw Review Committee to assess emerging issues in land use with regard to infrastructure demands, traffic, and tax implications.
- **Action Item 11.4.1.2:** Consider adding new definitions to Zoning Bylaw to expand (or clarify) desirable commercial, industrial, and agricultural uses.
- **Action Item 11.4.1.3:** Increase awareness of emergent industries, uses, and associated resources.
- **Action Item 11.4.1.4:** Evaluate phased growth and housing production to ensure that future development is manageable.
- **Action Item 11.4.1.5:** Allow for a mix of new land uses in the Jefferson Mill area that are appropriate to both the needs of the community and the scale of surrounding neighborhoods.

Objective 11.4.2: Encourage sustainable development and sustainable buildings.

- **Action Item 11.4.2.1:** Build a greater awareness of sustainable development and design principles such as Low-Impact Development and how they may be encouraged.
- **Action Item 11.4.2.2:** Seek opportunities to promote comprehensive and integrated planning that supports community resilience.

- **Action item 11.4.2.3:** Consider forming a Sustainability Committee to ensure the Town's ability to utilize available resources; respond and adapt to changes in climate, land use, or economy; and withstand and recover from adverse situations.





LAND USE

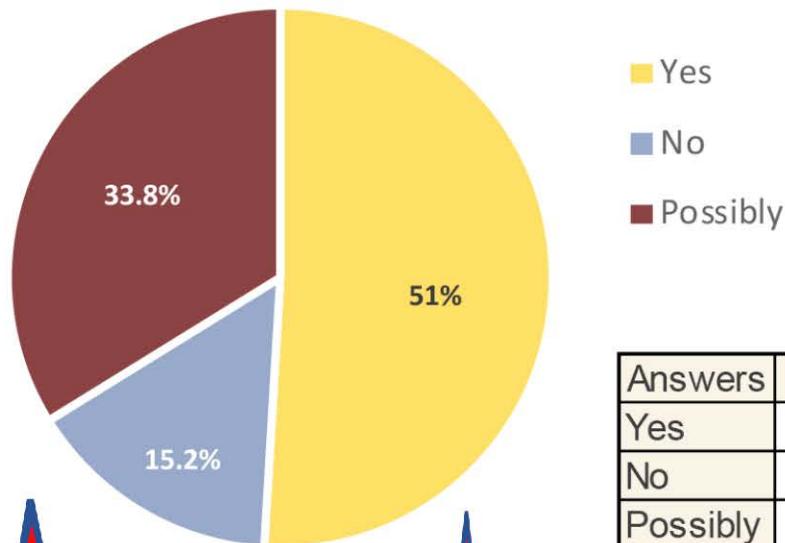
Holden Community Survey Results

What does Holden think about Land Use?

TOP 3 PREFERRED TYPES OF DEVELOPEMENT

1. Restaurants
2. Small Scale Home Business
3. Energy Generation

DO YOU THINK THE TOWN SHOULD CHANGE ITS BYLAWS TO RESTRICT FUTURE RESIDENTIAL GROWTH?



■ Yes
■ No
■ Possibly

Answers	Responses
Yes	50.95% 458
No	15.24% 137
Possibly	33.82% 304



Holden Tomorrow
planning our future together

FOR MORE INFORMATION: www.holdenmasterplan.com Town of Holden Master Plan Committee

12.0

IMPLEMENTATION

IMPLEMENTATION COMMITTEE

The input and participation encapsulated in this Master Plan is essential to ensure this plan will not “sit on a shelf”. Because the Master Plan serves as a blueprint and contains a “menu” of various options, creating an *implementation plan* and strategy is critical.

Fundamental to putting a Master Plan into action is a Master Plan Implementation Committee (MPIC). This working group should consist of a diverse set of members. As such, there are a wide range of options for the composition of the Implementation Committee. The following example can be tailored provided the availability of key staff people and/or interested residents to carry forward the entire plan.

- Board of Selectmen Member
- Advisory Board Member
- Planning Board Member
- Finance Committee Member
- Town Official(s) such as Town Manager, Asst. Town Manager, Town Planner
- Conservation, Recreation, Historical Perspectives

The Committee should be a manageable size in order to secure quorum. It should meet regularly and be connected to decision making bodies such as the Board of Selectmen and/or Finance Committee. The Committee should consider establishing a series of initial goals over the first one to two years. Subsequently, they will benefit from further evaluating priority actions and designating responsible parties and funding sources. One approach could be to identify, in consultation with other Town officials and boards, at least one goal/action item in the plan to be pursued by each of the relevant existing Boards and Committees in Town. This type of program would allow for multiple actions to be explored simultaneously by existing bodies, especially where staff time is limited.

After a period of time, the Board of Selectmen should gauge the effectiveness of the Master Plan and identify or fund resources for next steps. Other important aspects that should be considered by an Implementation Committee include:

- **Representation** - The Board of Selectmen, Advisory Board, Planning Board and other boards and committees will need to work together with Town staff and residents to use this Master Plan as a guidance and policy document.
- **Accountability** – A mechanism for reporting on progress should be established. The goal may be to track action, identify funding sources, or identify barriers to implementation. If actions can be coordinated and grouped, the effectiveness and ability for the Plan to be useful is increased. Benchmark regularly. Provide a report on progress to the Board of Selectmen and/or at Annual Town Meeting or Town Report
- **Education** – It will be important for Town Meeting members to be aware of the Master Plan to understand that many future actions and funding requests may be generated out of its goals and actions.
- **Adaptability** - It is important to note that planning is a dynamic process and priorities can shift over time. The Town’s capacity to implement the Plan may be altered due to changes in Town financial status, economy, or by other factors. Therefore, the implementation matrix is not intended to be “set in stone”. The Plan offers background and guidance but requires interpretation, investigation, and subsequent action.

IMPLEMENTATION MATRIX

The Implementation Matrix summarizes the specific action items for each “goal” and “objective” found at the end of each chapter. The action items list a priority, a timeframe to completion, a responsible party, and resources such as funding sources, technical assistance, and stakeholders. Capital Items are derived from the relevant Action Items and share the same reference number. They have a unique category in the table for ease of reference. Table 9-1 defines abbreviations used in the implementation matrix. The matrix is organized under the following categories:

Capital Items
Municipal Processes and Procedures
Zoning and Regulations
Initiatives
Studies, Plans, and Reviews/Evaluations
Education and Outreach
Policy and Strategy
Funding and Resources

Priority is abbreviated by Low (L), Medium (M), and High (H).
Action Item Reference Numbers should be read as
(Chapter # . Goal # . Objective # . Action Item #).

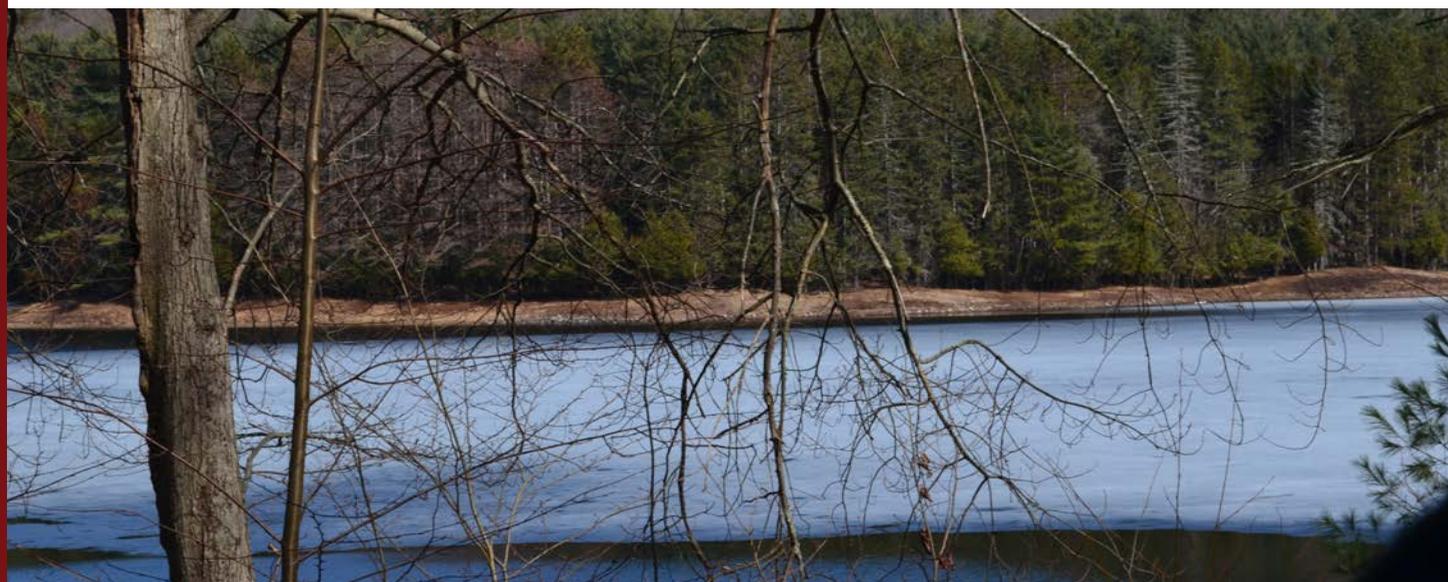


Table 12-1 Responsible Parties

Abbrev.	Agency or Resource
AB	Advisory Board
ADA	Americans with Disabilities Act
Ag Com	Holden Agricultural Commission
AHPC	Holden Affordable Housing Partnership Committee
BC/ZEO	Holden Building Commissioner/Zoning Enforcement Officer
BOH	Holden Board of Health
BOS	Holden Board of Selectmen
CMMPO	Central Massachusetts Metropolitan Planning Organization
CMRPC	Central Massachusetts Regional Planning Commission
CMRSWC	Central Massachusetts Regional Stormwater Coalition
COA	Holden Council on Aging
Con Com	Holden Conservation Commission/Department
CPA	Community Preservation Act
CPTC	Citizen Planner Training Collaborative
CRHSAC	Central Region Homeland Security Advisory Council
CUC	Holden Cultural Council
DCR	Massachusetts Department of Conservation and Recreation
DCS	Massachusetts Division of Conservation Services
DEP	Massachusetts Department of Environmental Protection
DER	Massachusetts Division of Ecological Restoration
DHCD	Massachusetts Department of Housing and Community Development
DLTA	District Local Technical Assistance
DOER	Massachusetts Department of Energy Resources
DOT	MassDOT/Massachusetts Department of Transportation
DPW	Holden Department of Public Works
EDC	Holden Economic Development Committee
EDE	Economic Development Entity (such as Chamber of Commerce)
ELC	Eagle Lake Committee
EOEEA	Massachusetts Executive Office of Energy and Environmental Affairs
EOHED	Massachusetts Executive Office of Housing and Economic Development
EPA	Environmental Protection Agency
FD	Holden Fire Department
FEMA	Federal Emergency Management Agency
Fin Com	Holden Finance Committee
GWLT	Greater Worcester Land Trust
HA	Holden Housing Authority
HC	Holden Historical Commission
HDC	Holden Historic District Commission
HMGP	Hazard Mitigation Grant Program

HMLD	Holden Municipal Light Department
HWD	Holden Highway Department
IT	Holden Information Technology Department
LIB	Gale Free Library
LIG	Local Interest Group
MassCEC	Massachusetts Clean Energy Center
MDAR	Massachusetts Department of Agricultural Resources
MDI	Massachusetts Downtown Initiative
MEMA	Massachusetts Emergency Management Agency
MHC	Massachusetts Historical Commission
MHP	Massachusetts Housing Partnership
MMWEC	Massachusetts Municipal Wholesale Electric Company
MOBD	Massachusetts Office of Business Development
MOD	Massachusetts Office of Disability
MSMSC	Massachusetts Statewide Municipal Stormwater Coalition
MS4	Municipal Separate Storm Sewer System
MVP	Municipal Vulnerability Preparedness Program
NGO	Non-Governmental Organization
PB	Holden Planning Board
PD	Holden Police Department
Pres Mass	Preservation Massachusetts
PDM	Pre-Disaster Mitigation
Rec Com	Holden Recreation Committee
Rec Dept	Holden Recreation Department
SC	Holden Senior Center
TA	Technical Assistance
TM	Town Manager
TP	Town Planner and Office of Planning and Development
UBWPAD	Upper Blackstone Water Pollution Abatement District
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
VHB	Vanesse Hangen Brustlin Inc. (Consulting Firm)
WBDC	Worcester Business Development Corporation
WOLCS	White Oak Land Conservation Society
WPI	Worcester Polytechnic Institute
WCC	Wachusett Chamber of Commerce
WRSD	Wachusett Regional School District
WRTA	Worcester Regional Transit Authority
WSD	Holden Water and Sewer Division
ZBA	Zoning Board of Appeals
ZSC	Zoning Study Committee

TABLE 13-2 IMPLEMENTATION MATRIX

	Priority	Time to Completion	Responsible Parties	Resources
Capital Items				
Install and improve ADA compliant parking spaces at trailheads and other recreation areas, and ADA-friendly trails to accommodate accessibility for all. (5.2.2.1)	M	36-60 months	Rec Dept, DPW, Con Com, Wachusett Greenways	MOD, Mass Audubon, DCR, ADA Project Grants
Develop and implement wayfinding program for recreational trails. (5.2.2.1)	L	0-24 months	Rec Dept, DPW	Mass Audubon, DCR
Implement a comprehensive plan to control the spread of exotic aquatic weeds, likely including resuming bi-annual winter drawdown or potentially dredging. (5.3.1.1)	M	0-24 months	Con Com, DPW	DER, DCR
Continue tree replanting efforts following significant tree removal to eradicate Asian Long-horned Beetle (5.3.1.1)	H	60+ months	Con Com, DPW	DER, DCR, residents
Implement future maintenance funding plan for historically significant properties within the two historic districts. (6.1.1.1)	M	36-60 months	BOS, TM, HC	Pres Mass, MHC
Install landing impact material at playgrounds. (7.4.1.2)	M	36-60 months	Rec Dept, DPW	Town Budget
Renovate the soccer/baseball field at Mayo Elementary School. (7.4.1.2)	M	36-60 months	Rec Dept, WRSD, DPW	Town Budget
Implement wayfinding and pedestrian-level improvements (i.e., flowerboxes) in the Town Center area. (8.3.2.1)	M	36-60 months	DPW, TP	MDI
Continue to implement Road Maintenance Program as outlined in Pavement Management System. (9.1.1.2)	H	60+ months	DPW	CMRPC, DOT
Improve ADA Ramps and Sidewalk Repair, Replacement and Expansion as outlined in Pavement Management System and Complete Streets Policy. (9.1.2.2)	M	60+ months	DPW	Complete Streets, CMRPC, DOT, MOD ADA Project Grants
Implement transportation (sidewalk and ramp) aspects of future ADA/ Section 504 Transition Plan. (9.1.2.3)	M	60+ months	DPW	CMRPC, DOT, MOD, Community Compact
Implement future Bridge Capital Plan and Replacement. (9.1.3.2)	H	60+ months	DPW	CMRPC, DOT
Ensure that sidewalks and bike lanes areas are clear of obstructions so that all users may safely use them; may require relocation of utility structures. (9.3.2.1)	M	60+ months	DPW	CMRPC, DOT
Add marked bike facilities to roadways with excess shoulder capacity. (9.3.2.3)	M	0-24 months	DPW	Complete Streets, CMRPC, DOT

Implement the recommendations in the CMMPO Regional Bicycle Plan in coordination with all planned roadway improvements. (9.3.2.4)	L	60+ months	DPW	CMMPO, CMRPC, DOT
Consider options for renovation/reconstruction to address space constraints and structural, code, and other concerns at the Town Hall and Starbard Building, as well as options for replacement with a new or adaptively reused facility. (10.1.2.1)	M	36-60 months	TM, relevant departments	HMGP, PDM Grant Programs
Consider options to replace the deficient Chaffin's Fire substation; explore options for constructing a new station elsewhere on the Adams Road site following relocation of the Highway Department to its new facility. (10.1.3.1)	H	36-60 months	FD, TM	MVP or similar state funding program for climate change planning and action
Continue efforts to migrate Town information technology systems to the cloud. (10.3.1.2)	M	0-24 months	IT	Relevant Town Boards and Comm
Install backup power systems at additional key Town facilities. (10.3.1.2)	M	0-24 months	TM, relevant departments	FEMA HMGP, PDM Grant Programs
Consider relocating or otherwise reinforcing sewer pump stations that are in or adjacent to flood zones, per the Natural Hazard Mitigation Plan (2017): Gail Drive, Industrial Drive, and Jefferson. (10.3.1.5)	M	60+ months	DPW	MVP or similar state funding program for climate resilience planning and action; FEMA HMGP, PDM Grant Programs
Continue and expand upon existing wastewater conservation measures (infiltration/inflow reduction, etc.) (10.4.2.2)	M	60+ months	DPW	DCR
Develop and implement a long-term plan to replace existing drainage structures with larger capacity structures (and/or with nature-based alternatives) in the expectation of greater peak flows. (10.4.3.3)	H	60+ months	DPW	DER
Implement the recommendations of the Town and School Building Assessment. (10.5.1.2)	H	60+ months	TM, WRSD, relevant departments	Relevant Town Boards and Comm
Municipal Processes and Procedures				
Revive the Holden Affordable Housing Partnership Committee (AHPC) or a Municipal Affordable Housing Trust (MAHT) to better coordinate planning for housing, efforts to manage growth, and pursuit of funding opportunities from state and federal sources. (4.1.3.1, 4.1.4.1)	M	long term	BOS, TM	TP, representative from BOS, PB, HA, COA, and other concerned residents, TA from CMRPC, MHP, DHCD
Convene regular meetings of the Economic Development Commission and establish a new vision to guide the Committee's efforts (8.1.1.1)	H	long term	BOS, TM	TP, EDC, CMRPC, WCC, Mass Office of Business Development (MOBD)

Continue to preserve historically valuable homes by supporting and/or expanding local historic preservation districts. (4.2.1.1)	M	long term	HC	Pres Massachusetts, Mass Historic Comm, HC
Consider a Transfer-of-Development Rights (TDR) bylaw/policy to encourage preservation of open space. (4.3.1.2)	M	12 -24 months	TP, PB, Con Agent, Con Com	Mass Affordable Housing Partnership, CMRPC
Review subdivision regulations to ensure design standards are in line with latest Low Impact Development (LID) standards. (4.3.1.4)	H	long term	TP, DPW	CMRSWC, PB, Stormwater utility for funding, CMRPC for TA
Create an Open Space and Natural Resource Committee to coordinate protection and preservation initiatives. (5.1.1.3)	M	6 -24 months	BOS, TM	TP, PB, Rec Com, Ag Com, Hist Com, Con Com, DPW, Rec leagues, and other interested residents, CMRPC for assistance with OSRP update.
Update and adopt stormwater regulations to reflect new Department of Environmental Protection (DEP) guidelines. (5.1.1.4)	H	long term	TP, DPW	CMRSWC, PB, Con Com, Stormwater utility for funding, CMRPC for TA
Establish a Town committee with youth representation to review cultural opportunities such as arts education, public art, special events and programs, or regular talks on local history. (6.3.1.1)	M	6 -24 months	BOS, TM	Holden Cultural Council, Council on Aging (COA), Hist Com, WRSD, concerned residents and students, Mass Cultural Council for TA
Consider hiring a dedicated economic development staffer to undertake proactive and responsive economic development activities (8.1.1.2)	M	long term	BOS, TM	TP, EDC, CMRPC Shared Service Opportunity, Community Compact, Town Budget
Consider establishing Zoning Combined Permitting and Round Table Review to streamline application and review processes for developers (8.1.2.1, 11.1.2.3)	M	long term	TM and TP	TP, Con Com, FD, DPW, ZBA, PB
Establish a single municipal point of contact to shepherd developers and prospective business owners through the permitting process (8.1.2.2)	H	long term	TM, TP, EDC	EDC, TP, Con Com, FD, DPW, ZBA, PB
Form a Design Review Committee and adopt Design Guidelines and/or Site Plan Regulations that promote walkable places, preserve and enhance cultural and historic assets (8.3.2.2, 11.2.2.1)	M	6 -24 months	PB, HC	Concerned residents for input, CMRPC for Technical Assistance (TA)

Consider establishing a local Commission on Disability to complete, monitor, and aid in the implementation of an ADA Self-Evaluation and Transition Plan. (10.1.4.2)	H	long term	BOS, TM	MOD, concerned residents, representatives of affected populations
Form a Zoning Bylaw Review Committee to evaluate potential zoning amendments and assess emerging issues in land use with regard to infrastructure demands, traffic, and tax implications (11.2.1.1, 11.4.1.1)	M	6-12 months	BOS, TM	Zoning Board of Appeal (ZBA), PB (PB), concerned residents
Form a Municipal Building Reuse Committee to review municipal properties and buildings that could benefit from adaptive reuse, including Adams road (11.2.3.3)	M	6-12 months	BOS, TM	Fin Com, Holden residents, EDC
Form a municipal committee to review plans, policies, regulations, and bylaws for compliance with Town and state regulations (11.3.2.1)	M	6-12 months	BOS, TM	Holden residents
Consider forming a Sustainability Committee to ensure the Town's ability to respond and adapt to changes in climate, land use, or economy, and withstand and recover from adverse situations (11.4.2.3)	M	long term	BOS, TM	MVP or similar state funding program for climate change planning and action. MEMA, Town Emergency Management personnel, CERT team, concerned residents
Zoning and Regulations				
Amend Continuing Care Retirement Community Bylaw to require the inclusion of progressive living options and ensure strong integration with surrounding neighborhoods/amenities. (4.4.2.2)	M	6-36 months	PB, TP, COA	AHPC, DHCD, MHP, CMRPC
Research and develop a prioritized list of appropriate potential zoning reform options to encourage smaller lot residential development in appropriate places, including cottage developments and townhouses (4.5.1.1)	M	6-36 months	TP, PB	AHPC, DHCD, MHP, CMRPC for TA
Complete the Village Center Bylaw (4.6.1.1, 11.1.1.4)	H	3-12 months	TP, PB	CMRPC for TA
Consider adding a Traditional Neighborhood Development (TDR) option to the Town zoning bylaw in designated areas. (4.6.1.2)	M	6-36 months	PB, TP	EEA Planning Grant, CMRPC for TA
Review the zoning bylaws and update regulations to better protect priority preservation areas and farmland. (5.1.1.1)	H	3-12 months	Con Com, Ag Com, TP, PB	Central Mass Grown, MDAR, Ag Com, Farm Bureau
Pursue adoption of conservation-related bylaws and policies, particularly zoning incentives for preserving open space and natural resources. Examples include incentives for creative and environmentally appropriate project proposals, or requiring low impact development in sensitive natural resource areas. (5.1.1.2)	M	6-36 months	Con Com, TP, PB	CMRPC, EEA Planning Grants, Smart Growth Alliance

Prepare zoning bylaw amendments and design guidelines to ensure zoning districts protect historic structures in terms of uses, scale, placement, and design. (6.1.2.1)	M	6-36 months	HC, TP, BC/ ZEO, PB	CPA, Pres Mass, MHC, EEA Planning Grant
Explore adoption of a Demolition Delay Ordinance or Bylaw to protect architecturally and historically significant buildings from demolition. (6.2.1.1)	M	6-36 months	PB, TP	CPA, Pres Mass, MHC
Explore adoption of a Scenic Roads Bylaw that will help the Town maintain and enhance its small-town character. (6.2.3.1)	H	3-12 months	PB, TP, DPW	CPA, Pres Mass, MHC
Explore bylaws to preserve cultural landscapes such as the Red Barn, Alden Laboratories, and historic farms (e.g., Scenic Vista Protection Bylaw, Scenic Overlay District Zoning, Corridor Protection Overlay District Zoning, Shade Tree Act Bylaw). (6.3.2.1)	M	6-36 months	HC, TP, PB	CPA, Pres Mass, MHC
Explore strategies for establishing a tax abatement district in the Main Street corridor (8.3.1.4)	M	6-36 months	BOS, TM	EDC, Industrial Park Association, WCC, WBDC
Expand opportunities for mixed-use development by rezoning select areas along Main Street from Commercial or Residential to Village (8.3.1.5)	H	3-12 months	PB, TP, EDC	EEA Planning Grant, CMRPC for TA
Allow for a mix of new land uses in the Jefferson Mill area that are appropriate to both the needs of the community and the scale of surrounding neighborhoods (11.4.1.5)	H	3-12 months	PB, TP	Relevant Town Boards and Committees, Smart Growth Toolkit, CMRPC for TA
Assess the need for a pop-up retail ordinance that streamlines issuance of temporary use permits for uses such as food trucks, seasonal retail, pilot businesses, and other uses (8.5.1.2)	M	6-36 months	PB, TP, BOH, Town Clerk, EDC	CMRPC for TA
Continue to explore expanded uses in the Industrial District (8.5.1.4)	M	6-36 months	TP, PB, EDC	Industrial Park Association, WCC, Mass Development
Amend the zoning bylaw to eliminate undesirable commercial uses such as "big box" retail (8.6.1.1)	H	3-12 months	PB, TP	CMRPC for TA
Continue efforts to manage and regulate where water and sewer hookups may be granted, including delineating a sewer/water service district on the zoning map, with consideration for extensions outside the service boundary by special permit (11.3.2.4)	H	3-12 months	DPW, WSD, TP, PB	Relevant Town Boards and Comm
Consider revising site plan review regulations to streamline the permitting process for projects that are small-scale and of limited complexity (11.1.2.4)	M	6-36 months	TP, PB, ZBA	Relevant Town Boards and Comm
Consider revising site plan review regulations in their entirety to enhance clarity and specificity (11.1.2.5)	M	6-36 months	TP, PB, ZBA	AHPC, DHCD, MHP, CMRPC for TA
Conduct a comprehensive zoning bylaw diagnostic to remove conflict with existing plans and to support goals and objectives of this and other plans (11.3.2.2, 4.3.1.3)	M	6-36 months	TP, PB, ZBA	CMRPC for TA

Consider adding new definitions to Zoning Bylaw to expand (or clarify) desirable commercial, industrial, and agricultural uses (11.4.1.2)	M	6-36 months	TP, PB	Relevant Town Boards and Comm
Initiatives				
Utilize the community outreach and needs analysis process in the Housing Production Plan (action-item 4.1.2.1) to identify housing production goals that meet both state thresholds and local standards. (4.4.1.1)	H	3-12 months	AHPC	Community Compact Commitment, Community Preservation Alliance
Continue to proactively develop the Towns' Complete Streets Prioritization Plan and pursue funding opportunities with the state. (4.6.1.3)	M	6-36 months	DPW, TP	CMMPO, CMRPC, DOT
Work with Massachusetts Department of Fish and Game's Natural Heritage and Endangered Species Program (NHESP) to identify and certify vernal pools that have not been certified. (5.1.2.2)	H	3-12 months	Con Com	Residents and locals NGO's
Establish a best practices education program for site contractors, landscapers, facilities managers, and others to learn about techniques to reduce stormwater runoff and pollution, deal with invasive species, reduce the use of toxic pesticides and herbicides, and maintain lands in a way that enhances protection of native species. (5.1.3.1)	M	6-36 months	Con Com, Con Agent, DPW	EPA, DCR, DER, Mass Audubon, CMRPC
Identify water resource access opportunities; pursue property rights as appropriate. (5.2.1.1)	H	3-12 months	PRC	Chapter 61
Identify the accessibility status of existing water resources. Undertake maintenance and improvements as necessary to meet the access needs of all populations. (5.2.1.2)	M	6-36 months	PRC, Con Com	MOD
Assess the accessibility status of existing hiking and biking trails. Undertake maintenance and improvements as necessary to meet the access needs of all populations. (5.2.2.1)	H	3-12 months	PRC, TP, Town Manager	MOD
Expand green spaces in the Town Common area. (6.1.1.5)	M	6-36 months	PRC, DPW	AARP Grants
Undertake strategic purchases of open space to increase local and regional landscape connectivity and enhance the ecological integrity of Holden's landscapes. (7.1.1.1)	H	3-12 months	Con Com, Fin Com, BOS	DCR for funding, Chapter 61 Funding, CPA
Identify priority recreation areas in need of upgrade, repair, maintenance, or further evaluation and fund necessary improvements. (7.1.1.2)	M	6-36 months	Rec Dept, Fin Com	AARP Grants, MassTrails Grants, PARC Grants
Continue to use the first right of refusal process to identify and evaluate lands that are withdrawn from Chapter 61, 61A, and 61B; implement permanent restrictions as appropriate. (7.1.1.3)	H	3-12 months	Ag Com, Con Com, PRC, Fin Com	MDAR, local land trusts
Identify key privately-owned open space parcels (including those with limited public access); pursue acquisition or access rights. (7.3.1.3)	H	3-12 months	TP, Con Com, BOS	Chapter 61

Identify key privately-owned parcels suitable for recreation; pursue acquisition or access rights. (7.3.2.1)	M	6-36 months	TP, PRC, Rec. Dept., BOS	CPA
Increase opportunities and areas for passive recreation such as community gardens and walking and biking trails. (7.4.1.1)	M	6-36 months	PRC, Con Com, Rec Dept, TP, residents, DPW	Complete Streets, EEA Planning Assistance Grants, DOT, Safe Routes to Schools
Increase opportunities and areas for active recreation such as ballfields, additional hiking and biking trails, playgrounds, and summer recreational programs. (7.4.1.2)	H	3-12 months	PRC, Rec Dept, TP	AARP Grants, MassTrails Grants, PARC Grants
Market Holden as a desirable place to do business; consider creating an economic development website, Town brochure or video, and stronger social media presence (8.2.1.2)	H	3-12 months	EDC	MOBD, Mass Development
Review the Town's leakage analysis in concert with the Community Vision Survey to identify suitable retail targets; market accordingly (8.2.1.3)	M	6-36 months	EDC	Relevant Town Boards and Comm, WCC, MOBD
Identify off-site parking solutions for vacant commercial buildings on Main Street that lack adequate parking (8.3.1.2)	H	3-12 months	TP, EDC	MOBD, Mass Development
Pursue branded wayfinding and pedestrian-level aesthetic improvements in Town Center and the Jefferson Mill area (8.3.2.1, 8.4.2.2)	H	3-12 months	TP, PB, EDC	MDI
Prepare a design for Town Center that better connects existing open and green spaces to the pedestrian infrastructure (8.3.2.3)	M	6-36 months	TP, PB, PRC, DPW	MDI
In the Jefferson Mill area, provide incentives to develop larger parcels at higher densities and in a coordinated, planned approach (8.4.1.5)	M	6-36 months	PB, TP	MOBD, Mass Development
Prepare a design for the Jefferson Mill area that leverages Eagle Lake by connecting existing open and green spaces to pedestrian infrastructure (8.4.2.1)	H	3-12 months	TP, PB, PRC	MDI
Widely market vacant and available properties; consider traditional platforms as well as social media and emerging online tools (8.5.1.3)	M	6-36 months	EDC	MOBD, CMRPC
Establish an inventory of available commercial and industrial space; routinely update and make publicly available (8.5.1.6)	H	3-12 months	EDC	Relevant Town Boards and Comm
Seek funding for additional testing and remediation at the former Electronic Controls Corp. site (8.5.1.7)	M	6-36 months	TP	EPA
Encourage development of small office space with business resources (e.g., co-working spaces) to draw existing home occupations into commercial space (8.6.1.5)	H	3-12 months	EDC	MOBD, Mass Development
Assess opportunities to support and encourage the use of social media and online tools by farms (8.6.2.1)	M	6-36 months	Ag Com, EDC	Central Mass Grown, MDAR, Farm Bureau

Encourage new and collaborative revenue models for agricultural businesses, including festivals, workshops, active recreation and sports, and farm-to-table dining (8.6.2.2)	H	3-12 months	Ag Com, EDC	Central Mass Grown, MDAR, Farm Bureau
Work with the WRTA to explore opportunities for workplace transportation (8.7.1.2)	H	3-12 months	TP	CMMPO, WRTA, DOT
Continue the existing road survey program using the Pavement Management System (PMS) tool to help determine road maintenance and funding needs (9.1.1.1)	H	3-12 months	DPW	Complete Streets, EEA Planning Assistance Grants, Mass DOT, CMRPC, EEA Grants
Continue a sidewalk and Americans with Disabilities Act (ADA) ramp survey program using the Pavement Management System (PMS) tool to help determine sidewalk/ramp maintenance funding needs (9.1.2.1)	H	3-12 months	DPW	CMRPC, EEA Grants, ADA Planning Grants
Ensure that roadway signage, poles, and other structures do not impede safe multi-modal access (9.2.1.2, 9.3.2.1)	H	3-12 months	DPW	CMRPC for TA
Consolidate driveways when possible to reduce access points and provide better visual cues including clear markings for exit and entrance only (9.2.1.5)	M	6-36 months	PB, DPW	Relevant Town Boards and Comm, CMRPC, MassDOT
Identify areas for sidewalk reconstruction and/or expansion (9.3.2.1)	M	6-36 months	DPW, TP, PB	DOT, CMRPC, Complete Streets
Utilize the MassDOT Complete Streets Funding Program process to pursue infrastructure funding and continue to close the gaps in the pedestrian network (9.3.2.2)	H	3-12 months	DPW, BOS, TM, TP, PB	Complete Streets Funding, CMRPC for TA
Examine arterial and collector streets with excess shoulder capacity to determine how they can be converted into Complete Streets with bicycle facilities (9.3.2.3)	M	6-36 months	DPW	Complete Streets Funding, CMRPC for TA
Ensure that Regional Multi-Use Trails and Pathways are advanced to meet the needs of subregional and regional travel via alternative modes (9.3.2.4)	M	6-36 months	DPW, BOS with the TM, TP, PB	PRC, , CMRPC
Account for electric vehicle charging stations in municipal and private parking lot designs (9.3.4.1)	M	6-36 months	PB, TP, DPW	Complete Streets, CMRPC, Mass DOT
Consider building space for ride share pick-up and drop-off in commercial thoroughfares (9.3.4.2)	H	3-12 months	PB, TP	Complete Streets, CMRPC, Mass DOT
Anticipate the impact of autonomous vehicles; consider revising parking standards to include a maximum, rather than minimum, number of parking spaces (9.3.4.3)	M	6-36 months	PB, TP	Complete Streets, CMRPC, Mass DOT
Implement the recommendations of the Town and School Building Assessment (10.1.1.1, 10.5.1.2)	H	3-12 months	BOS, TM, WRSD, DPW	Relevant Town Boards and Comm
Ensure that existing municipal facilities are maintained and operated appropriately and that life-limited components are replaced regularly; consider taking actions to extend the life of life-limited components and seek more sustainable alternatives with longer life spans (10.1.1.2)	H	ongoing	DPW	DOER Grants, MassCEC grants

Consider options for renovation/reconstruction to address space constraints and structural, code, and other concerns at the Town's central administrative facilities, as well as options for replacement with a new or adaptively reused facility (10.1.2.1)	H	3-12 months	TP, TM, DPW	Local resources
Consider options to replace the deficient Chaffin's Fire substation; explore options for constructing a new station elsewhere on the Adams Road site following relocation of the DPW to its new facility (10.1.3.1)	M	6-36 months	TP, TM, DPW, FD	Local resources, state earmark
Remove programmatic and policy barriers to ADA mobility and (as necessary) architectural barriers (10.1.4.1)	H	long term	ADA Coord., DPW, COA	MOD, concerned residents, representatives of affected populations
Implement the recommendations of the Holden Natural Hazard Mitigation Plan (2017); update the plan per FEMA requirement every 5 years (10.3.1.1)	H	3-12 months	TP, TM, DPW, FD	MVP or similar state funding program for climate resilience planning and action. MEMA, Town Emergency Mgmt personnel, CERT team, concerned residents; FEMA PDM or HMGP grants
Continue efforts to migrate Town information technology systems to the cloud (10.3.1.2)	H	3-12 months	IT, TM	Relevant Town Boards and Comm; E&R grants
Consider backup power systems at additional key Town facilities, including the Town Hall and Starbard Building (10.3.1.3)	M	6-36 months	TM, DPW	FEMA PDM and HMGP grants; MVP Action grants
Consider relocating or otherwise reinforcing sewer pump stations that are in or adjacent to flood zones, per the Natural Hazard Mitigation Plan (2017) (10.3.1.5)	M	6-36 months	DPW, TM	MVP or similar state funding program for climate resilience planning and action, FEMA PDM or HMGP
Conduct an energy audit of Town facilities and operations to identify areas of inefficiency; make upgrades as needed (10.3.2.1)	H	3-12 months	DPW	CMRPC, DOER
Continue to monitor water system usage in comparison to system capacity (10.4.1.1)	M	6-36 months	DPW, TP, PB	Local resources
Continue to expand upon existing water conservation measures (10.4.1.2)	M	6-36 months	WSD, DPW	DCR, DEP

Continue to monitor sewer system usage in comparison to system treatment capacity per the Upper Blackstone Wastewater Pollution Abatement District (UBWPAD) agreement (10.4.2.1)	M	6-36 months	DPW	UBWPAD, DEP
Continue and expand upon existing wastewater conservation measures (infiltration/inflow reduction, etc.) (10.4.2.2)	H	3-12 months	Con Com, DPW	DCR, DEP
Implement Holden's new EPA MS4 permit, including public outreach, mapping, review of existing local stormwater regulations, and support for low-impact development (10.4.3.1)	H	3-12 months	TP, DPW, PB, Con Com	MVP or similar state funding program for climate resilience planning and action, residents
Evaluate organizational efficiency of the Municipal Light Department and implement improvements (10.4.4.3)	H	3-12 months	BOS	Relevant Town Boards and Comm
Coordinate with the Wachusett Regional School District and the Massachusetts School Building Authority regarding possible future expansion of facilities (10.5.2.2)	M	6-36 months	BOS, TM, WRSD	Mass School Building Authority
Identify land and buildings suitable for mixed-use redevelopment and employ land use tools to encourage their adaptive reuse (11.1.1.1)	M	6-36 months	PB, EDC	CMRPC for TA
Consider funding opportunities for properties of regional or local significance the Town wishes to see developed as mixed-use (11.1.1.2)	H	3-12 months	TP	MOBD, Mass Development
Examine Jefferson Mill as a building/area eligible for adaptive reuse (11.2.3.2)	M	6-36 months	TP, EDC, PB	MOBD, Mass Development
Develop comprehensive invasive species management from inventory stage through management planning and implementation in order to address existing invasive populations that threaten natural features such as open space or forests as well as to anticipate new invasive species which are likely to move into the area as a result of climate change. (5.1.3.1)	M	6-36 months	Ag Com, Con Com	DCR, DCS, DEP, DER, EOEAA, GWLT, LIG, USDA, WOLCS
Develop branded wayfinding and signage to promote the Town's historic and cultural assets. (6.3.4.5)	H	3-12 months	TP, PB, HC	MDI
Negotiate a new Sewer Use Agreement with DCR, to replace the 2000 SUA between the Worcester and DCR, which expires in 2020. Ensure proper billing methodology and future growth in system. (10.4.2.3)	H	3-12 months	TM, DPW	DCR
Studies, Plans, and Reviews/Evaluations				
Complete a Housing Production Plan. (4.1.2.1)	M	6-36 months	PB, TP	CMRPC for TA
Conduct more robust school population projections and scenario planning to help the school district better plan for future capital expenditures. (4.1.2.2)	H	3-12 months	WRSD, TP, BOS, TM	CMRPC
Regularly update Town's pavement management plan and implement recommendations. (4.6.1.4)	H	3-12 months	DPW, TP	DOT, CMMPO
Update the 2006 Town Forest Stewardship Plan. (5.1.1.5)	M	6-36	Ag Com	Chapter 61 Funds

Develop and implement a plan outlining routine maintenance activities and funding sources for Town-owned historic properties. (6.1.1.1)	H	3-12 months	HC, DPW	Relevant Town Boards and Comm
Finalize updates to the Town's Open Space and Recreation Plan. (7.2.1.1)	H	3-12 months	PB, TP	Con Com, Rec Dept
Continue to revisit and work towards implementing the goals of the current Open Space and Recreation Plan. (7.4.1.3)	H	3-12 months	PB, TP	Con Com, Rec Dept, Land Trusts
Evaluate phased growth and housing production to ensure that future development is manageable. (7.4.1.4)	H	0-12 months	BOS, TM, TP, PB	Smart Growth Alliance, CMRPC for TA
Work with the Industrial Park property and business owners to create an action plan for addressing future vacancies in the Park and other areas (8.5.1.5)	H	3-12 months	EDC, TM, TP	Industrial Park tenants, local business community
Review Holden's policies, programs, services, and facilities and develop an ADA/Section 504 Self-Evaluation and Transition Plan. (9.1.2.3)	H	3-12 months	ADA Coord.	MOD, Community Compact
Continue to develop and then implement a bridge inventory and capital plan. (9.1.3.1)	H	3-12 months	DPW	MassDOT, CMRPC
Coordinate with MassDOT, owner of Main Street (Route 122A), to conduct an updated assessment of the area including a Road Safety Audit, traffic study or other survey work (9.2.1.1)	H	3-12 months	DPW, TP	DOT
Review the priority locations and recommendations identified for Holden in the 2018 Central Massachusetts Metropolitan Planning Organization (CMMPO) Regional Bicycle Plan (9.3.1.1)	H	3-12 months	DPW, PB, TP	Relevant Town Boards and Comm, CMRPC
Review the walk-to-school zones for sidewalk gap installation or upgrades. (9.3.1.2)	H	3-12 months	DPW, PB, TP	Relevant Town Boards and Comm, CMRPC
Review the on-road and multi-use recommendations for potential bicycle facilities in Holden and ensure that the recommended segments are prioritized in future construction activity (9.3.1.3)	H	3-12 months	DPW, BOS, TM, PB, TP	Relevant Town Boards and Comm, CMRPC
Ensure that local planning processes reflect and are consistent with the recommendations of the Regional Bicycle Plan (9.3.1.4)	H	3-12 months	PB, TP, DPW	Relevant Town Boards and Comm, CMRPC
Using the Town and School Building Assessment as a first phase, complete a full facilities master plan that reviews building conditions and usage, assesses staffing and functionality needs, and lays out a multi-decade program for building renovation and replacement (10.1.1.3)	L	36-72 months	BOS, TM, WRSD with the School Committee, DPW	Mass School Building Authority
Continue to review fire suppression capacity. (10.1.3.2)	M	6-36 months	FD	DPW, FEMA Hazard Mitigation Grants, MVP Action Grant
Continue to periodically update the Continuity of Operations plan (COOP) for the local government (10.3.1.4)	H	12-36 months	BOS, TM	Relevant Town Boards and Comm, FD, PD

Develop and implement a long-term plan to replace existing drainage structures with larger capacity structures (and/or with nature-based alternatives) in the expectation of greater peak flows (10.4.3.3)	H	3-12 months	DPW, Con Com	DCR grants, FEMA HMGP and PDM Grant Programs, MVP Action grant
Conduct a feasibility study of cybersecurity and remote substation viewing capacity for the Municipal Light Department (10.4.4.1)	H	3-12 months	TM, BOS, HMLD	Enterprise Fund, MMWEC
Conduct a system-wide study of the Municipal Light Department that includes a long-term capital assets plan (10.4.4.2)	M	6-36 months	HMLD	Enterprise Fund, MMWEC
Develop a technology road map that ensures the Municipal Light Department is kept up-to-date (10.4.4.4)	H	3-12 months	HMLD	DOER
Track demographic and development trends within Town to understand better locations and sizes of school facilities needed (10.5.2.1)	H	ongoing	WRSD, TP, BOS with the TM	CMRPC, Mass School Building Authority
Revisit and update Priority Development Areas and Priority Preservation Areas identified in the Central Thirteen Prioritization Plan (11.1.2.1, 11.1.1.3, 4.2.1.1)	H	3-12 months	EDC, TP, PB	WCC, MOBD, Relevant Town Boards and Comm
Assess green infrastructure opportunities for stormwater management. Develop a list of specific priorities, assess feasibility and cost, rank priority projects in terms of climate resilience potential, and develop concept designs for key projects. Review Town regulations and update as necessary to support green infrastructure and low-impact development and encourage green infrastructure to be incorporated into all roadway projects. (10.3.2.3)	H	3-24 months	WSD, DPW, TP, PB	Con Com, MVP Action Grants, EOEEA, HMGP
Assess mosquito, tick, and other pest control options. (5.1.3.4)	H	3-12 months	BOH, DPW	HMGP, MVP Action Grants,
Determine status of forest management planning, particularly on lands owned by the Town and Commonwealth, in order to reduce wildfire threats and encourage management of invasive species. (5.1.1.6)	H	3-24 months	Con Com	TP, FD, EOEEA, MVP Action Grants
Education and Outreach				
Encourage community leaders to attend meetings on housing trends hosted by CMRPC and other organizations (e.g. Mass Affordable Housing Partnership and CPTC (CPTC)). (4.1.1.1)	M	6-36 months	TM, TP	CMRPC, MHP, CPTC
Work with CMRPC and local Chamber of Commerce to organize regular meetings with real estate professionals (e.g. Brokers' Breakfast) to identify pressing needs, trends, opportunities and threats to the local housing market. (4.1.1.2)	H	3-12 months	TP, EDC	CMRPC, WCC
Promote and support the activities of the HHP/MAHT by providing technical assistance, coordinating their work with other committees and facilitating smooth communications between Town functions. (4.1.3.2)	H	3-12 months	TM, TP	AHPC, DHCD, MHP, CMRPC

Develop handouts and other informational materials for distribution at Town Hall, online or at other housing related meetings. (4.2.2.1)	H	3-12 months	Relevant Town departments	AHPC, DHCD, MHP, CMRPC
Leverage connections made through regular meetings with real estate professionals (e.g. action item 4.1.1.2) to provide up-to-date information on relevant housing regulations and available resources. (4.2.2.2)	M	6-36 months	TP, EDC,	AHPC, DHCD, MHP, CMRPC
Work with CMRPC and other state/regional agencies to widely disseminate information about available incentives for utilizing energy efficient materials and appliances in new/revamped housing units. (4.2.2.3)	M	6-36 months	Relevant Town departments	AHPC, DHCD, MHP, CMRPC
Work with local and regional developers to ensure the Town's Smart Growth and inclusionary/incentive bylaws continue to be an attractive option for new housing development (4.3.1.1)	H	3-12 months	TP, PB	CMRPC
Continue to work with local land trusts and non-profits to identify and acquire important unprotected natural resource areas for permanent protection. (5.1.1.7)	H	3-12 months	Con Com, Ag Com, TP, PB	Central Mass Grown, MDAR, Ag Com, Farm Bureau
Encourage community involvement in trail maintenance activities to keep trails well-maintained and increase longevity. (5.2.2.2)	M	6-36 months	Con Com, Con. Agent	Relevant Town Boards and Comm, concerned residents
Continue and expand current watershed education programs with Dawson and Mayo Schools, and expand to include Davis Hill. (5.3.1.1)	H	3-12 months	Con Com	WRSD, Mass Audubon
Partner with local conservation organizations including the WOLCS, GWLT, and Mass Audubon to host community events such as bird counting, trail maintenance, and volunteer days. (5.3.2.1)	M	6-36 months	Con Com, Con. Agent, Ag Com	WOLCS, GWLT
Create an internship program in coordination with the Con Com and Conservation Agent to involve students in local conservation issues and activities. (5.3.2.2)	H	3-12 months	Con Com	Local colleges and universities, local land trusts
Collaborate with local land trusts and non-profit organizations to host workshops, produce signage, and create and distribute informational brochures along with other educational materials. (5.3.3.1)	M	6-36 months	Con Com, Con. Agent, Ag Com	Mass Audubon, WOLCS, GWLT
Educate Town leaders on the significance of historic preservation and ways to address preservation issues. (6.1.2.2)	H	3-12 months	HC, TP, PB	Pres Mass, MHC
Develop formal communication channels with and between local preservation groups to ensure awareness of current issues and activities in Holden, including routine distribution of meeting agendas and minutes, scheduling of occasional group meetings to share resources and ideas, and development of joint activities. (6.1.3.1)	M	6-36 months	TP, Relevant Town Departments	Pres Mass, MHC
Work with regional, state, and national preservation groups such as Pres Mass and the National Trust for Historic Preservation to seek out technical and financial assistance on preservation issues. (6.1.3.2)	H	3-12 months	HC, TP, PB	Pres Mass, National Trust for Historic Preservation

Pursue partnerships with local college and university programs that could provide preservation assistance to the Town. (6.1.3.3)	M	6-36 months	HC, TP, PB	Clark University, WPI, and other local colleges and universities
Initiate a public process to establish Local Historic Districts at Jefferson, Quinapoxet, and Chaffinville to supplement the Town's two existing historic districts. (6.2.2.1)	M	6-36 months	HC, TP, PB	Pres Mass, MHC, residents
Build awareness of Local Historic District (LHD) benefits. (6.2.2.2)	H	3-12 months	HC, TP, PB	Pres Mass, MHC
Encourage property owners in the two historic districts to consult with the Holden Historic District Commission prior to making façade changes. (6.2.2.3)	H	3-12 months	BC/ZEO, TP	HDC, Pres Mass, MHC
Partner with the school department to involve Holden Public Schools in education programs on historic preservation. (6.3.3.1)	M	6-36 months	HC, WRSD	Pres Mass, MHC
Consider developing heritage education initiatives, such as guided community tours, history days, and historic house tours to attract visitors and build appreciation for local history and culture. (6.3.3.2)	H	3-12 months	HC	Pres Mass, MHC
Continue to promote local history and culture at special Town events. (6.3.3.3)	M	6-36 months	HC	Pres Mass, MHC
Provide a link on the Town of Holden website to the Town's existing historic resource inventory. (6.3.4.1)	H	3-12 months	HC	Pres Mass, MHC
Make information on Holden's cultural and historic character, districts, cemeteries, and other heritage assets widely available to residents and visitors in formats that are attractive and easy to understand. (6.3.4.2)	M	6-36 months	HC	Pres Mass, MHC
Identify and prioritize additional historic sites to be included in the National Registry of Historic Places. (6.3.4.3)	H	3-12 months	HC	Pres Mass, MHC
Develop a comprehensive database of historic resources that includes local historic districts, National Register properties, and other inventoried properties, and integrate the database with Holden's Geographic Information System (GIS) to be made accessible for other public uses. (6.3.4.4)	M	6-36 months	HC	Pres Mass, MHC
Promote preservation of important landscape resources. (7.3.1.1)	H	long term	Con Com, Ag Com, PB	DCR, MDAR
Develop an education campaign or program to build awareness of available natural resources and benefits. (7.6.1.1)	H	3-12 months	Con Com	Mass Audubon, WOLCS, GWLT
Collaborate with land trusts and other environmentally-focused organizations to promote conservation benefits. (7.6.1.2)	M	6-36 months	Con Com	Mass Audubon, WOLCS, GWLT
Develop an outreach campaign to promote and increase awareness of the benefits provided by protected open space. (7.7.1.1)	H	3-12 months	Con Com	Mass Audubon, WOLCS, GWLT

Continue to develop partnerships between conservation groups, land trusts, and the Town of Holden. (7.7.1.2)	M	6-36 months	Con Com	Mass Audubon, WOLCS, GWLT, relevant town departments
Continue working with the Wachusett Chamber of Commerce, commercial real estate brokers, and state agencies to identify prospective business interests (8.2.1.4)	H	3-12 months	EDC, TM, TP	WCC, WBDC, CMRPC, EOHEd, MOBD
Convene frequent meetings with the local business community to discuss challenges and desired resources; encourage the establishment of a small business or merchants association (8.6.1.2)	M	6-36 months	EDC, Town Development Staff, TM	WCC, CMRPC, WBDC
Help businesses promote their goods and services by providing access to municipal platforms (8.6.1.3)	H	3-12 months	BOS, TM,	EDC, Cable Access TV, local media
Support collaborative capitalism. Encourage local businesses and community partners to organize and take part in "buy local" initiatives (8.6.1.4)	M	6-36 months	EDC	WCC
For agricultural businesses, encourage joint marketing and peer engagement through organizations such as Central Mass Grown (8.6.2.3)	H	3-12 months	Ag Com	Central Mass Grown, MDAR, Ag Com, Farm Bureau
Assist farms with identifying tenants for underutilized land (8.6.2.4)	M	6-36 months	Ag Com	New England Land Link
Engage with the local business community to identify unmet labor and workplace transportation needs (8.7.1.1)	M	6-36 months	EDC	Industrial Park Assoc., WCC, DOT
Expand public education campaigns that promote the rules of the road so that all transportation system users are aware of their responsibilities (9.2.1.3, 9.2.2.2)	M	12 -36 months	WRSD, School Committee, DPW	Safe Routes To School/ MassDOT, Walk Bike Worcester, concerned residents, PD, Rec Dept.
Work to incorporate Safe Routes to School materials and practices into local education systems (9.2.1.4, 9.2.2.4)	H	0 - 24 months	WRSD, School Committee, DPW	CMRPC, Safe Routes to Schools/MassDOT, Rec Dept, DPW
Collaborate with CMRPC, WRTA to study current transit uses, and identify opportunities for a future transit planning study (9.3.3.1)	H	3-12 months	TP, PB	CMRPC, WRTA
Work with CMRPC, WRTA to improve existing WRTA paratransit services provided in partnership with the COA (9.3.3.2)	M	6-36 months	COA	CMRPC, WRTA, MassCOA
Explore best practices to assist carpooling commuters; identify key travel patterns as well as needs (9.3.3.3)	M	6-36 months	EDC, TP	CMRPC, WRTA, DOT,
Explore partnerships with organizations to provide carpool lots (9.3.3.4)	M	12 -36 months	EDC, TP	CMRPC, WRTA
Partner with property owners to explore reuse options for buildings the Town does not own but wishes to see improve via adaptive reuse (11.2.3.1)	H	3-12 months	EDC, TM, TP	WCC, CMRPC, WBDC

Increase awareness of emergent industries, uses, and associated resources (11.4.1.3)	M	long term	EDC, TP	MOBD
Build a greater awareness of sustainable development and design principles such as Low-Impact Development and how they may be encouraged (11.4.2.1)	M	6-36 months	Con Com, Con. Agent, TP, PB, DPW	CMRPC, Mass Audubon, Low Impact Development (LID) Working Group, MA Smart Growth / Smart Energy Toolkit, EPA
Develop public education and outreach on appropriate operation and maintenance (O/M) of stormwater BMPs on private properties. Identify legal authority to enforce established O/M requirements (7.5.1.5)	M	6-36 months	WSD	MSMSC, CMRSWC
Provide education and outreach on fertilizer effects to inform landowners about the negative water quality impacts of nutrient pollution and the relation to algal blooms. (5.1.3.2)	M	6-36 months	Con Com	LIG, WSD
Develop an education and outreach program to inform the public about health risks associated with mosquitos, ticks, and other pests. Determine future risks to human health due to increases in type and quantity of pests and disease vectors resulting from climate change. (5.1.3.5)	M	6-36 months	BOH	HMGP, MVP Action Grants, LIG
Policy and Strategy				
Continue to encourage the use of Agricultural Preservation Restriction (APR), Chapter 61A, and deed restrictions to retain farmland and ensure its viability. (7.2.1.4)	M	long term	Ag Com, Fin Com	MDAR, local land trusts
Explore Community Preservation Act (CPA) as a means of purchasing deed restrictions, documenting resources, repairing assets, and acquiring property (7.2.1.5, 6.2.1.2)	M	6-36 months	Ag Com, TP, BOS, TM	Community Preservation Alliance
Protect large forested areas to avoid fragmentation and maintain biodiversity. (7.3.1.2)	H	long term	Con Com, Ag Com, PB	DCR, DER, MDAR
Preserve Holden's surface and groundwater for wildlife, recreation, and other uses through strategies that protect riparian buffers. (7.5.1.1)	H	long term	Con Com, Ag Com, PB	DCR, DER, MDAR Mass Fish and Wildlife, Local Land Trusts, EOEAA MVP, Stormwater Coalition
Minimize the introduction and spread of non-native species. (7.5.1.2)	H	long term	Con Com, Ag Com, PB	DCR, DER, MDAR, EOEAA MVP
Incorporate nature-based solutions into future planning and development. (7.5.1.4)	H	long term	TP, Con Com, Ag Com, PB	DCR, MDAR Mass Fish and Wildlife, Local Land Trusts, EOEAA MVP
Consider using and promoting the availability of Tax Increment Financing and other development incentives (8.2.1.1)	M	6-36 months	BOS, TM	EOHED, Mass Development

Explore the Urban Center Housing Tax Increment Financing (UCH-TIF) Program as a means to encourage housing in the Jefferson Mill Area (8.4.1.1)	M	6-36 months	BOS, TM, TP, Assessor	EOHED, Mass Development
Build upon historic development patterns to create attractive walkable village centers (8.4.1.2)	M	6-36 months	TP and PB	Complete Streets, EEA Planning Assistance Grants, DOT, Safe Routes to Schools
Encourage adaptive reuse of abandoned, vacant, or underutilized buildings or structures where appropriate (8.4.1.3)	M	6-36 months	TP and PB	USDA, WBDC
Explore vacancy registry and tax policy models (8.5.1.1)	M	6-36 months	BOS, TM, TP, Assessor	Collins Center
Regularly review expiring debt to understand the year-by-year capacity for borrowing in advance of future capital needs in order to minimize the need for overrides and debt exclusions (10.2.1.1)	M	6-36 months	BOS, TM	Fin Com
Consider including preliminary information on major long-term capital projects in Capital Plans well in advance of formal capital requests in order to make the community more aware of upcoming needs (10.2.1.2)	M	6-36 months	BOS, TM	Fin Com
Continue making the capital planning process transparent and participatory in order to make the community more aware of upcoming needs (10.2.1.3)	M	6-36 months	BOS, TM	Fin Com with help from all depts and town boards
Continue to coordinate with the Wachusett Regional School District and other member communities to adequately fund operations and facilities and create a plan to accommodate growth (10.5.1.1)	M	6-36 months	BOS, TM	WRSD, other WRSD member communities
Consider utilizing 43D Expedited Permitting to encourage development of Priority Development Areas (11.1.2.2)	M	6-36 months	PB, TP	EOHED, Mass Development
Review timelines (including expiration dates where applicable), relevance, and oversight of municipal plans (11.3.1.1)	M	on-going	PB, TP	Relevant Town Boards and Comm
Review plans for conformance and present-day applicability and consistency with Town and state regulations (11.3.1.2)	M	6-24 months	PB, TP	DHCD Peer to peer Grant, Mass Affordable Housing Partnership, CMRPC for TA
Actively review and implement strategies indicated in the various plans as resources and opportunities arise. Consider areas of commonality and conflict (11.3.1.3)	M	on-going	PB, TP	Relevant Town Boards and Comm
Seek opportunities to promote comprehensive and integrated planning that supports community resilience (11.4.2.2)	H	long term	PB, TP	MVP Action Grants, Mass Audubon, CMRPC for TA

Coordinate with Town departments to incorporate green infrastructure into planned road improvements (9.3.4.4)	H	long term	TP, DPW	Complete Streets, MVP Action Grants
Funding and Resources				
Utilize the funding mechanisms available to the Holden Affordable Housing Partnership/MAHT to achieve housing production goals. (4.4.1.2)	M	long term	Holden Housing Partnership	DHCD, MHP
Leverage available state/local funding sources to improve infrastructure and mitigate water-use and traffic issues from denser developments, and/or plan effectively for housing. (4.5.2.1)	H	(long term)	AHPC, TP, PB	DHCD, Mass Affordable Housing Partnership, Housing Choice
Seek public and private funding to enhance maintenance and preservation of historic resources. (6.1.1.2)	M	6-24 months	HC	Pres Mass, MHC
Implement annual Town budget item to address maintenance of Town buildings within the Holden Center Historic District. (6.1.1.3)	H	0-36 months	TM, BOS, DPW	Holden Historic Com, MHC, Pres Mass, ADA Coordinator, concerned residents
Budget annual maintenance funding for the center of Holden to keep it historically appropriate and economically viable. (6.1.1.4)	H	0-36 months	TM, BOS, DPW	Holden Historic Com, MHC, Pres Mass, ADA Coordinator
Seek funding through the Parkland Acquisitions and Renovations for Communities (PARC) program to develop a new outdoor recreation facility or park. (7.2.1.2)	M	6-24 months	Rec Dept, Con. Agent	DCR, CMRPC for TA
Seek funding through the Local Acquisitions for Natural Diversity (LAND) program to develop additional passive recreational opportunities. (7.2.1.3)	M	6-24 months	Rec Dept, Con. Agent	DCR, CMRPC for TA
Continue to apply for the 604(b) Water Quality Management Grant to preserve and enhance existing water quality. (7.5.1.6)	H	ongoing	TP, Con Com	CMRSWC, DEP, MSMSC
Identify funding mechanisms for a façade improvement program (8.3.1.1)	M	6-24 months	TP, EDC	MDI, Main Streets Program
Explore Community Preservation Act (CPA) as a means of funding improvements in historic Main Street buildings, housing planning, and agricultural preservation (8.3.1.3, 4.1.4.2, 6.2.1.2, 7.2.1.5)	M	6-24 months	BOS; TM, HC, Affordable Housing Partnership, PRC, Ag Com, Con Com	Community Preservation Alliance
Identify strategies to access state funding for energy efficiency projects (10.3.2.2)	M	6-24 months	BOS, TM, HMLD, DPW	DOER, CMRPC for TA
Pursue technical assistance grants that support smart growth zoning, including EEA Planning Assistance and MDI (11.2.1.2)	M	6-24 months	TP, PB	CMRPC for TA, EEA for Planning Assistance
Consider initiating a stormwater utility fee to fund stormwater management infrastructure. Track expenses to manage 2016 MS4 permit and consider additional funding sources as may be necessary, including a stormwater utility (10.4.3.2)	M	6-24 months	TP, DPW	CMRSWC, DEP

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