



Town of Mashpee

Planning Board

16 Great Neck Road North
Mashpee, Massachusetts 02649

Meeting of the Mashpee Planning Board

Wednesday, January 25, 2023

Event Room

Mashpee Public Library

64 Steeple Street

Mashpee, MA 02649

6:00 PM

The Purpose of this Special Meeting is specifically to review draft materials relative to the updated Local Comprehensive Plan.

Call Meeting to Order

- Pledge of Allegiance

New Business

- Local Comprehensive Plan Updates with Weston and Sampson
The Planning Board will be meeting with it's Local Comprehensive Planning Consultants to review and provide comment on drafts of, including but not limited to an updated Vision Statement, Existing Conditions Chapters, proposed Actions, and Implementation Table. Additionally staff and consultants will briefly summarize the responses to the Public Opinion Survey that closed 01/06/2023 in preparation for a thorough and detailed analysis of collected data.

Additional Topics (not reasonably anticipated by Chair)

Adjournment

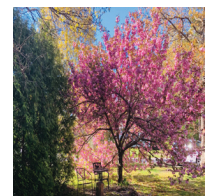
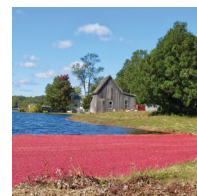
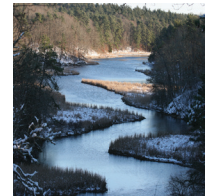
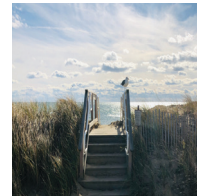
MASHPEE TOWN CLERK
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WHAT IS A VISION?

Our vision of the future is guided by the previous Local Comprehensive Plan with expanded focus on contemporary issues. Many of the challenges we have faced for years remain, but new approaches to these threats will capitalize on our shared community values, new technology, and resilient viewpoint. Our goals may be similar to other municipalities, but our resolve and resilience are uniquely Mashpee.

MASHPEE'S VISION

Mashpee is a vibrant, diverse community rooted in an ancient and proud past. Our vision for Mashpee's future requires recognition of past injustices and traumas inflicted upon the Mashpee Wampanoag, the original stewards of this land, while nurturing the shared values of all residents for a better and more united future. Our vision relies on a sustainable combination of natural resource protection and balanced economic growth to ensure Mashpee's small-town character and cultural heritage are maintained and reflected in all land-use decisions. We wish to be dynamic enough to retain Mashpee's cultural identity while boldly meeting the challenges of the future to ensure enhanced prosperity and opportunity for residents by restoring the health of Mashpee's waterways, while also providing the housing and shelter for residents in need and for the workforce who sustain Mashpee's economy. We envision a future where our children may realize their maximum potential and where our senior citizens can comfortably and safely enjoy the fruit of their life's labors. Our vision of Mashpee's future is one of healing: healing the waters that have been polluted, healing the housing stock that has been neglected, healing the climate and ecosystems that have been disturbed, and healing the relationship between Town Government and the Mashpee Wampanoag Tribe.



GUIDING PRINCIPLES

- Embrace cultural heritage, diversity, and inclusion of all residents
- Maintain public safety
- Provide an escape from the congestion, pollution, and stressors of urban environments
- Preserve its beautiful streets and natural areas
- Support local businessowners and the "blue economy"
- Offer the highest quality of public services
- Educate and encourage young people to become future leaders in our community and beyond
- Prepare for the threats of climate change

1.0 Housing

Goals

1. Ensure that current and future Mashpee residents have access to adequate and diverse types of housing options.
2. Ensure that sustainable practices are integrated into all housing development decisions to create a safer, healthier community.

Policies

1. Prioritize redevelopment of single-use, auto-centric commercial strip development into compact, walkable, and pedestrian-friendly mixed-use neighborhoods that provide a variety of housing types.
2. Maximize the Town's potential to provide Subsidized Housing Inventory (SHI) eligible deed restricted affordable units by using Town owned property.
3. Expand the diversity of housing types to provide all residents with appropriate shelter.
4. Diligently and efficiently monitor and enforce inclusionary zoning requirements and provide professional oversight for any locally run housing programs and nurture relationships with community housing partners.
5. Incentivize the production of Accessory Dwelling Units (ADUs).
6. Implement sustainable building practices for all new construction and redevelopment.
7. Minimize housing vulnerabilities to climate change and natural disasters.

Actions

1. Conduct a visual preference survey to determine the types and styles of housing that is supported by the community.
2. Procure a consultant to assist with community engagement and facilitation of design charrettes to support the development of a Form Based Code.
3. Develop, adopt, and implement a form-based code in the form of an overlay district.
4. Develop and adopt an Affordable Housing Bylaw that requires a minimum contribution of SHI eligible affordable units in exchange for density bonuses.
5. Change zoning to allow 'missing middle' housing typologies in appropriate residential areas with the possibility of establishing a new zoning district(s) to encourage the development or redevelopment of these building types in areas where its desirable and discouraging it where its unsustainable.
6. Regularly fund the Affordable Housing Trust to take advantage of opportunities as they arise.
7. Update and adopt the Housing Production Plan (HPP) with a focus on developing a roadmap and implementation plan for the development of the Town's identified sites for affordable/workforce housing.
8. Implement the Housing Production Plan update.
9. Prioritize options for year-round rental housing.
10. Develop incentives to encourage developers to build affordable senior housing.
11. Create a new position titled Affordable Housing Coordinator or Housing Planner within the Planning Department whose job description would be consistent with the objectives outlined in the Housing Production Plan.

Commented [SA1]: Do we want these in the housing section? May be better in the Land Use chapter?

Commented [SA2]: What do we mean by this? I would not know how to implement this as written.

12. Conduct bi-annual workshops led by the Town Planner and Building Commissioner alongside community partners such as HAC to inform property owners of the permitting process.
13. Assess ways for the private sector to contribute to the Town's inventory of Affordable Dwelling Units (ADUs).
14. Establish a revolving loan fund to provide small forgivable loans to property owners to construct an ADU to supplement programs offered by Housing Assistance and certain private lenders.
15. Restrict development in flood zones.
16. Identify suitable sites for infill development outside of flood zones.

2.0 Economic Development

Goals

1. Ensure a prosperous local economy that supports financial independence for all residents.
2. Bolster support for local businesses and the "blue economy."

Policies

1. Provide financial and policy-based support for local fishers and businesses.
2. Minimize homelessness and the proportion of Mashpee residents living below the poverty line.
3. Explore potential grant funding programs to support housing, natural systems, and community programs and services.

Actions

1. Incentivize locally owned, small business development and maintain its long-term growth.
2. Partner with higher education and regional institutions, including Woods Hole MBL, to enhance childcare and afterschool programs.
3. Evaluate use conflicts in fisheries and invest in appropriate infrastructure.
4. **Require living wages for all Mashpee residents.**

Commented [SA3]: I question how the town would implement this action.

3.0 Sustainability

Commented [SA4]: Beta is working on these. These are initial suggestions. To be updated.

Goals

1. Ensure Mashpee serves as an exemplary regional leader in municipal electrification.

Policies

1. Reduce the Town's reliance on fossil fuel for energy by investing in renewable technologies.
2. Maximize the opportunities and monies available to the Town following receipt of Municipal Vulnerability Preparedness Certification from the Commonwealth.
3. Assist with transition of gasoline-powered vehicles to electric vehicles.

Actions

1. Develop a pipeline of projects potentially eligible for MVP Action Grants from the Commonwealth that are consistent with the Town's climate vulnerability planning priorities.
2. Convert the municipal fleet to electric vehicles and install adequate charging stations for the fleet.
3. Identify and construct sites for public EV charging stations.
4. Develop solar canopy 'carports' in municipal parking lots and on install solar panels on any municipal structure where solar is viable and productive.

4.0 Natural Resources

Goals

1. Ensure that all residents have access to high quality water.
2. Protect terrestrial and aquatic habitats for long-term environmental and social benefits.
3. Protect the health, safety, and welfare of residents who use and enjoy Mashpee's waterways.

Commented [SA5]: I think we should change this around so we are protecting the resource for the benefit of the residents and visitors.

Policies

1. Return Mashpee's water quality to within normal parameters.
2. Identify areas for coastal and habitat restoration to enhance water quality.
3. Identify, preserve, and enhance ancient ways to water.
4. Limit construction in land under ocean to maintain and restore habitat vital to our fisheries.
5. Maintain and enhance cross-sector collaborations such as with educational institutions and research organizations to bolster water quality sampling programs and reporting.
6. Identify the most appropriate sites to establish Aquaculture Development Zones consistent with the Department of Natural Resources Harbor Management Plan.

Commented [SA6]: What is normal? Should this say "acceptable" and by who it is acceptable?

Commented [SA7]: This does not make sense as written.

Actions

1. Conduct a personnel needs assessment to understand gaps in consideration of current and planned water quality monitoring and testing programs.
2. Establish Water Quality Task force as a subcommittee of the Environmental Oversight Committee to conduct necessary engagement and community education around recommended bylaw changes to address water quality issues: fertilizer and pesticide use, wetlands buffers, floodplain management.
3. Implement recommended stormwater improvements within the Santuit Pond Watershed as recommended by the Fuss & O'Neill MVP Action Grant.
4. Construct the Wastewater Treatment Facility and wastewater collection system consistent with the Watershed Nitrogen Management plan as amended from time to time.
5. Continue acquisition of conservation lands in recharge areas.
6. Implement water quality improvement measures as recommended upon completion of the Mashpee Wakeby Diagnostic Study - To be completed in 2025.
7. Invest in necessary equipment and facilities to test cyanobacteria in-house that would specifically identify species in real time to assist in determinations of toxicity.
8. Remedy user conflicts within waterways consistent with the DNRHMP.
9. Continue to maintain navigational channels for not only navigation but for adequate stream and tidal flow.
10. Continue to investigate and inventory the legal status of all known public landings and access to coastal water and great ponds to develop an access plan.
11. Work to purchase parcels if feasible to enhance public access to water or create new sites for public landings.

5.0 Land Use and Growth Management

Goals

1. Maintain Mashpee's small-town community character and appearance.
2. Ensure development is consistent with current and future growth projections.
3. Promote mixed-use development to concentrate various activities in appropriate centralized locations.

Policies

1. Focus new growth in already disturbed areas of Town where adequate infrastructure is planned or in place and incentivize the protection/preservation of the remaining vacant properties where the only feasible growth does not meet the projected housing need.
2. Ensure Town services and facilities are adequate in consideration of current shortfalls and future growth projections.
3. Maintain the legitimacy and accuracy of the zoning bylaw and other local regulatory documents.
4. Identify opportunities for mixed-use development in existing commercial areas as appropriate.

Actions

1. Re-establish an ambitious program of acquisition of undeveloped lands for open space protection, including all currently undeveloped land within the Mashpee National Wildlife Refuge and all other lands shown as being for conservation or recreation interest in the Open Space and Recreation element of this plan via the establishment of an Open Space Committee to be appointed by the Select Board.
2. Prioritize redevelopment of single-use, auto-centric commercial strip development into compact, walkable, and pedestrian-friendly mixed-use neighborhoods that provide a variety of housing types as described in the Housing element of this plan.
3. Reassess the role of Transfer of Development Rights in the Town's land use and growth management priorities and consider overhaul of the Open Space Incentive Development Zoning Bylaw (OSID).
4. Continue buildout of Town cemetery as needed in consideration of capacity and the Cemetery Master Plan.
5. Construct a new Fire Department substation in North Mashpee.
6. Construct a new Community Center that may include those recreation services and facilities identified in the Open Space and Recreation element of this plan.
7. Consider the development of a dog/animal pound facility.
8. Develop a tree bylaw that would prohibit, or require permits for, clear cutting of lots as well as provide for performance standards and impact fees for the removal and replacement of certain native specimen trees.
9. Overhaul the Mashpee sign code with a form-based approach.
10. Develop a form-based code that would encourage structures that will be both aesthetically pleasing, consistent with the traditional character of the Town and be cohesive with the surrounding town-fabric by ensuring building scale and type that is consistent with the character of surrounding neighborhood.
11. Reassess current parking requirements and consider how to minimize parking impacts on aesthetic quality and the environment.
12. Re-codify and clarify the entire zoning bylaw.
13. Amend ADU bylaw to expand opportunity for property owners and affordable housing.
14. Consider form-based code revisions to existing zoning.
15. Proper siting of development.

Commented [SA8]: I am not sure what we are proposing here

6.o Heritage and Preservation

Goals

1. Ensure that unique archaeological resources are preserved.
2. Ensure that future development and redevelopment reflects the historic character of Mashpee and celebrates local culture.

Policies

1. Enhance the vitality of the Mashpee Historic District located at the Traditional Village Center of Mashpee.
2. Preserve and protect the Town's known archaeological and scenic resources and work to investigate and catalogue any potentially unknown archaeological resources.
3. Support Mashpee's unique cultural heritage through education programs.

Actions

1. Nominate any additional structures beyond the Avant House located within the Mashpee Historic District for inclusion on the National Register of Historic Places.
2. Adopt a form-based code in the form of an overlay district intended to reflect traditional settlement patterns and historic main streets.
3. Adopt and implement financial incentives for the rehabilitation of historic structures.
4. Collaborate with the Mashpee Wampanoag Tribe on the reconstruction of the Attaquin Hotel in its location across from Lake Avenue as a workforce/attainable housing project.
5. Determine a location for an appropriately designed "monument" of Wampanoag heritage significance.
6. Adopt a demolition delay bylaw*
7. Protect existing known burial sites and enhance with more dignified fencing and regular cleaning of grave markers.
8. Highlight tribal heritage throughout local school curriculum.
9. Create wayfinding and cultural heritage program to tell the story of Mashpee through trails.

Commented [SA9]: What is this for?

7.0 Open Space & Recreation

Goals

1. Ensure that residents and visitors have access to a variety of passive and active recreation opportunities.
2. Preserve the quantity and quality of conservation and open space lands as a means to protect natural resources, provide a high quality of life for residents, provide access for passive recreation, ensure adequate wildlife habitat, and preserve access for hunting and fishing rights.

Policies

1. Ensure that public access to open space and water bodies is preserved where it will not adversely affect sensitive natural resources.
2. Provide adequate recreational programs and facilities for existing residents and plan for additional programs and services for projected future growth.
3. Continue to pursue opportunities to preserve sensitive areas as conservation and passive open space lands.

Actions

1. Upload map of trails to the Town website.
2. Increase signage and wayfinding for trails to promote use by residents and visitors.

3. Consider adding facilities (i.e., bathrooms, water fountains, water etc.) to provide residents with access to passive recreation when visiting conservation lands.
4. Improve the protection of the Mashpee River Corridor by acquiring the properties surrounding Trout Pond owned by Mashpee Commons with the exception of any land area necessary to complete a rotary bypass road between Route 28 and Great Neck Road S as identified in the Transportation Element of the LCP.
5. Identify and work to acquire any parcels of conservation interest that were defined as priority acquisitions in both the 1998 LCP and 2007 Open Space Plan that remain unprotected particularly in recharge areas, identified rare species habitat (as per the August 1st, 2021, Estimated and Priority Habitat Map from MA Natural Heritage and Endangered Species Program) and/or the acquisition boundary of the Mashpee National Wildlife Refuge.
6. Identify site for construction of a new Community Center complete with public community spaces, active recreation, etc.
7. Construct public bathroom facilities at beach/pond parking areas.
8. Continue acquisition of cranberry bogs (active and/or abandoned) for wetlands restoration.
9. Assess trail networks for gaps and plan to connect those areas.
10. Plan a Town sponsored trail half marathon to bring community together and put Mashpee's open spaces on display.
11. Acquisition of 423 Main St (Map 27 Parcel 43) using CPA funds or other grant sources. This undeveloped parcel directly abuts Mill Pond, the Mashpee River, and the upper portion of the Mashpee River Herring Run. Acquisition of this parcel will allow for much needed maintenance of the land immediately abutting the Mashpee River herring run and improvements for recreational access to this area to highlight the herring run on the Mill Pond side of Rte. 130. The town owns the paved pull off area that abuts Mill Pond, which is also in need of improvements, including stormwater runoff.
12. Acquisition of parcels on Timber Landing and River roads (primarily unbuildable Sandalwood subdivision lots) to protect and enhance Mashpee River Woodlands (Map 82 Blocks 3, 13A, 13B, 94 & 95 and map 89, blocks 75 & 77. Funding through Town CPA funds or state grant funding.
13. Acquisition of 4 undeveloped parcels on Main Street: 493 (*map 27/parcel 164*), 495 (*map 27/parcel 164*), 497(*Map 27/parcel 162*) and 499 (*map 27/parcel 161*) for open space/conservation land.

8.o Municipal Buildings, Facilities and Services

Goals

1. Ensure all Mashpee residents have access to the highest quality of physical, mental, and emotional health care.
2. Provide safe, equitable school facilities that allow all Mashpee students to receive an excellent education and achieve their full potential.

Policies

1. Encourage sustainable solid waste management practices to prevent hazardous waste from infiltrating natural areas and municipal systems.
2. Protect Mashpee residents, visitors, and their property from crime.

3. Expand role of emergency management in minimizing loss and suffering from man-made and natural disasters.
4. Efficiently coordinate public safety services to ensure rapid response times and high-quality care.
5. Increase collaboration internally between Town departments and externally with Mashpee residents to limit the chance for a lack of communication or miscommunication.
6. Maintain and enhance cross-sector collaborations such as with educational institutions and research organizations to bolster water quality sampling programs and reporting.
7. Identify a site to be used for materials storage and develop the materials storage site
8. Enhance Suicide Prevention programming and educational awareness.
9. Enhance collaboration and communication with Mashpee Wampanoag Tribe.
10. Ensure critical facilities are located near populated centers while promoting equitable access to underserved communities.

Actions

1. Remedy user conflicts within waterways consistent with the DNRHMP.
2. Assess Town's staff capacity.
3. Conduct parking needs assessment and modify parking layout as recommended.
4. Construct a unisex locker room and shower facility for Town Employees.
5. Add EV charging stations as discussed in the Transportation and Circulation Element of this plan.
6. Construct solar canopies in the parking area as discussed in the Sustainability element of this plan.
7. Audio/Visual overhaul of Waquoit Meeting Room system with most advanced technology that will better facilitate remote and other alternate forms of participation.
8. Consider a new website host platform.
9. Implement recommended stormwater improvements within the Santuit Pond Watershed as recommended by the Fuss & O'Neill MVP Action Grant.
10. Construct the Wastewater Treatment Facility and wastewater collection system consistent with the Watershed Nitrogen Management plan.
11. Identify the most appropriate sites to establish Aquaculture Development Zones consistent with the Department of Natural Resources Harbor Management Plan.
12. Continue to investigate and inventory the legal status of all known public landings and access to coastal water and great ponds to develop an access plan.
13. Purchase parcels, where feasible, to enhance public access to water or create new sites for public landings.
14. Create Town information hub (i.e., "Get to Know Mashpee), staffed with volunteers.
15. Develop emergency communication system between Town and media.
16. Update Town website and social media presence to enhance user-friendliness and communication.
17. Designated moorings for commercial entities may alleviate this issue and remove a significant barrier to entry for the burgeoning aquaculture industry especially.
18. Increase enforcement and identify a more streamlined solution to protect diggers from speeding boats and recreational boats that stray from channels.
19. Hire a Town grant-writer.
20. Hire a Town communication director.
21. Increase public participation opportunities regarding government processes
22. Design and build community center for educational programs, gym, pools, and senior services.
23. Offer additional options for internet and cell services.

24. Inspect, maintain, and upgrade septic systems.
25. Consider redevelopment of DPW Building with a LEED Certified Net Zero building
26. Add at least 8,000 square feet of additional garage space with at least some portion of that additional capacity heated.
27. Build an additional 1,600 ft² bay into the maintenance garage
28. Install audio/visual capabilities into the Event Room and Zoom Meeting tech in the conference room of the library.
29. Install publicly accessible EV Charging stations in library parking lot.
30. Lease or purchase EV for use of Library Staff.
31. Redevelop Harbormaster Shack with a modern, climate resilient, facility.
32. Identify and construct site for Fire Department's north station
33. Consider expanding Kids Klub into a second location.
34. Offer Town employees free tuition for the Kids Klub.
35. Identify and construct site for community center.
36. Move recreation facility to community center
37. Open new childcare facility at 505 Main Street.
38. Construct wastewater treatment plant and all lift stations and phases as needed in accordance with the Watershed Nitrogen management plan.
39. Re-establish regular in-person drop-in nights with the Substance Abuse Task Force.
40. Offer NARCAN Training through Human Services Department.

9.0 Transportation and Circulation

Goals

1. Maintain and enhance a cost-effective, efficient, safe, and accessible multi-modal transportation system that is sensitive to and respectful of the Town's small-town character.
2. Support efforts to enhance and increase alternative modes of transportation such as ride shares, bicycling, and public transportation with an eye towards reductions in greenhouse gasses and air pollution.

Policies

1. Implement road design and maintenance standards and procedures that promote, protect, and encourage existing patterns of development and neighborhood character.
2. Maintain a formal program for road maintenance, new road construction, and accompanying drainage infrastructure that is economically responsible and implementable.
3. Promote cooperative state/local efforts in transportation planning, ensuring that the Town's qualities are maintained throughout any transportation planning and construction projects.
4. Encourage alternative modes of transportation and increase opportunities in Town for access to biking, walking, and carpooling.

Actions

1. Improve entrance at Deer Crossing and Route 28 by making entrance a right-turn in and right turn out only.
2. Direct Deer Crossing Commercial traffic seeking to make left turns out to Route 28 to the traffic light at Route 28 and Shellback Way adjacent to the Ace Hardware

Commented [SA10]: These are provided as a starting point. Beta is working on developing more or amended goals and policies.

3. Consider improving access to and from Deer Crossing from Shellback Way via mitigation monies held as a requirement of any approved retail grocery DRI at 647 Falmouth Road.
4. In addition to the proposed conversion of the Route 130 and Great Neck Road North intersection to a modern roundabout, consider alternative design options that would slow traffic, keep volume moving, but be less detrimental to pedestrian accommodations (seek input from BETA here). What could work instead of a roundabout and is it possible to make roundabouts in growth/activity centers more pedestrian friendly? IS a roundabout good for multimodal accommodation?
5. A connector street should be constructed between Route 28 and Great Neck Road South generally from the Mashpee Commons primary entrance from Route 28 to the Laurentide entrance on Great Neck Road South either in anticipation of additional development in this area or as a condition of such development.
6. Develop a town-wide bicycle and pedestrian master plan that would map out potential connections in the existing network and prioritize projects for future funding.
7. Develop and adopt formula that would provide the additional funding necessary to the Department of Public Works as private roads are petitioned for taking by the Town.
8. Conduct a needs assessment of DPW staff and equipment to determine adequacy of current level of service as it pertains to regular cleaning, leaf removal, snow plowing, and maintenance of bicycle facilities and sidewalks.
9. Work with the Cape Cod Regional Transit Authority and MassDOT to identify priority sites for bus-shelters along Routes 28 and 151 to allow for more safe drop offs and pick-ups.
10. Consider establishing regional transit hub in or around Mashpee Commons
11. Work with MassDOT to implement the Mashpee Rotary Retrofit and evaluate the long-term potential of transitioning existing rotary to a modern roundabout consistent with the recommendations of the Mashpee Rotary Study done by the Cape Cod Commission.
12. Consolidate and reduce the number of curb-cuts along Route 28 and 151 especially when considering redevelopment opportunities along these corridors.
13. Develop bypass roads around the Mashpee Rotary to accommodate local traffic both north-south (Route 151 to Old Barnstable Road) and east-west Route 28/Great Neck Road South to Route 28 east of the rotary through (Trout Pond neighborhood).
14. Prioritize roadway and intersection improvements to accommodate all roadway users, not just automobiles.
15. Convert remainder of Town Hall fleet to electric vehicles and install requisite charging stations to support those vehicles.
16. Change over additional municipal gas-powered vehicles to Electric Vehicles in outside departments if suitable electric alternative is on the market: DPW Director, Police Chief, Fire Chief and Fire Inspector, Recreation vehicles.
17. Install EV charging stations for public use at Town Hall, Mashpee Community Park, Public Library, Senior Center, Mashpee Beach, Attaquin Park.

10.0 Water and Coastal Resources

Goals

1. Maintain and restore the quality of Mashpee's groundwater to ensure an adequate supply of safe, high quality drinking water.
2. Protect Mashpee's groundwater supply, wetlands, and surface water from contamination.
3. Prevent harmful algal blooms in Mashpee waters to maximize recreational opportunities and preserve safe drinking water for all residents.

4. Maintain and expand wastewater treatment and disposal facilities.

Policies

1. Continue to support the shellfish propagation program to enhance local fisheries, restore vital habitat, and remove excessive nitrogen in both Waquoit and Popponesset Bay.
2. Protect the seashore from erosion.
3. Preserve fish and hunting rights of way on shore.
4. Promote shellfish seeding programs.

Actions

1. Continue to maintain navigational channels for not only navigation but for adequate stream and tidal flow.
2. Invest in necessary equipment and facilities to test cyanobacteria in-house that would specifically identify species in real time to assist in determinations of toxicity.
3. Conduct personnel needs assessment to understand gaps in consideration of current and planned water quality monitoring and testing programs.
4. Establish Water Quality Task force as subcommittee of the Environmental Oversight Committee to conduct necessary engagement and community education around recommended bylaw changes to address water quality issues: fertilizer and pesticide use, wetlands buffers, floodplain management.
5. Identify areas for coastal and habitat restoration to enhance water quality.
6. Establish at least one Aquaculture Development Zone (ADZ) in Town
7. Provide additional public access to the ocean.
8. Ban chemicals that increase nutrient load in waterways.
9. Establish boat washes to prevent invasive species from spawning in waterways.

2.0 ECONOMIC DEVELOPMENT

DISCLAIMER: This is a working draft and will continue to be updated as the Comprehensive Plan process evolves. Additional information will be added as stakeholder and public input is gathered. These blue boxes throughout the draft chapters represent areas of further consideration and study and will be updated with additional information as it is collected.

2.1 Vision

To be developed.

2.2 Introduction

This chapter assesses market and economic conditions in Mashpee, provides a local and regional context for economic development, and offers recommendations for aligning economic development efforts to meet new challenges, including:

- An aging population. Barnstable County residents are getting older, and there is a decline in the number of young adults.
- Housing ~~costs that~~costs outpace wages. Mashpee wages are relatively stable while housing prices continue to increase. The pandemic had some negative impact on housing affordability, as remote workers purchased homes on the Cape.
- A lack of infrastructure to support new investment. Nearly all development on Cape Cod continues to utilize on-site septic systems that release nitrogen to groundwater, which results in degraded embayment water quality. Significant investment in wastewater infrastructure is needed in the region to encourage economic growth.

~~2.2.3~~ 2.3 Existing Conditions

~~2.2.3.1~~ 2.3.1 Regional Context

The economic challenges faced by Mashpee reflect those of the greater Cape Cod region: how to grow a sustainable economic base while preserving the community's important natural resources. One of the major factors in creating a sustainable economic base is the availability of housing for local workers. As housing and land prices increase, the cost of living and doing business on the Cape becomes unattainable for all but those in the highest income brackets. The 2017 Regional Housing Market Analysis, prepared for the Cape Cod Commission, found that residents earning less than \$90,000 in Barnstable County will be housing cost-burdened (Cape Cod Commission, 2017). Since Mashpee's median household income is \$78,309 (ACS, 2015-2019), more than half of residents are considered cost-burdened (United States Census Bureau, 2020).

Cape Cod's economy is a small business economy. Eighty-eight percent of the region's businesses have fewer than twenty employees and many are seasonal and tourism-related (Richardson & Clinton, 2017). (Economic Development Resource Guide). Location quotients (LQ) are a useful tool to identify how concentrated an industry is within an area, compared to the rest of the country. Because so much of

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Barnstable County's economy is tied to tourism, it would follow that the LQ for tourism-related industries is high – meaning these types of industries are more concentrated within the county as compared to the rest of the nation. Within Barnstable County, the industries with the highest 2020 LQ based on annual average employment were Health Care and Services, Accommodations and Food Services, and Retail Trade. These industries serve as "core industries" in Barnstable County. Construction, ^uUtilities, ^aArts, entertainment, and recreation were identified as growing sectors (United States Bureau of Labor Statistics, 2020). ~~(BLS, 2015, 2020)~~

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In 2019, ~~the Cape Cod Commission conducted a county-wide~~ regional economic development analysis. ~~This -conducted at the county wide level was completed by the Cape Cod Commission through a~~ Comprehensive Economic Development Strategy (CEDS) ~~identified the following. The following~~ regional priorities ~~were identified in the 2019 CEDS:~~

- Infrastructure in activity centers
- Last-mile broadband strategy
- Expanded financing tools for infrastructure
- Expansion of the blue economy
- Business Development to support job growth
- Education and workforce development to support wage growth
- Housing diversity and affordability
- Zoning and regulatory reform for Smart Growth/Activity Centers
- Regionalization for greater government efficiency.

Many of these priorities are relevant for Mashpee. The 2020 CEDS update identified several trends that affect economic development in the region, all of which can be found in Mashpee:

- Aging population. Barnstable County residents are getting older, and there is a decline in the number of young adults.
- Stagnant wages. Barnstable County has experienced growth in the Gross Domestic Product, number of jobs, number of businesses, and in household income levels, since the Great Recession of 2008; however, average earnings remain stagnant when adjusted for inflation, consistent with the rest of Massachusetts and the nation. Seven percent of Barnstable County lives below the federal poverty level. (Education and Workforce Development for Wage Growth, Wellbeing).
- COVID19 impacts. In 2020, the pandemic caused unprecedented economic distress in the region. Barnstable County faced a higher unemployment rate at 21.6% in April 2020, compared with the state (15.1%) and the US (14.7%).
- Lack of worker housing. Housing affordability continues to be a crucial economic challenge for Barnstable County. The pandemic had some negative impact on housing affordability, as remote workers purchased homes on the Cape.
- A lack of infrastructure Investment. Nearly all development on Cape Cod continues to deploy onsite septic systems that release nitrogen to groundwater, which results in degraded embayment water quality. Wastewater infrastructure is needed in identified Activity Centers in the region to encourage economic growth.

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2-1.2.3.2 Mashpee Context

Like many Cape Cod towns, Mashpee's economy is influenced by seasonal residents and tourists in the summer season. The Cape's economy is less seasonal than during the 1990s, but it still depends heavily on the doubling of the population in the summer and spending by second homeowners and visitors. Table 2-1 shows the range of annual unemployment for both Mashpee and the state. In calendar years 2020 and 2021, the employment rates of both the town and state fluctuated more dramatically than usual.

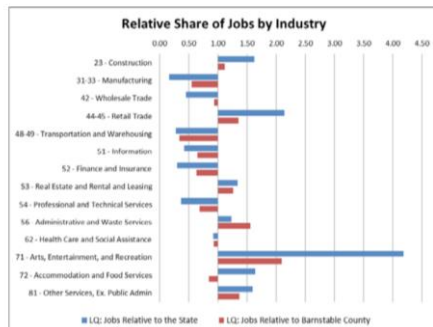
Year	Mashpee	Massachusetts
2017	3.4	3.8
2018	3.7	3.7
2019	3.6	3.5
2020	16.6	10.6
2021	5.5	4.0

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Source: 2016-2020 Labor Market Information, Massachusetts Department of Economic Research

Industries



Source: Bureau of Labor Statistics/MA Dept. of Employment & Training (ES202 Dataset)

Currently, 43% of jobs in Mashpee are in tourism-related industries. The Location Quotients (LQ) for Mashpee are consistent with the Cape-wide statistics—and, outside of healthcare, involve tourism-related industries. The LQ is a way of identifying which industries take up the greatest share of the local economy—the “core industries.” As would be anticipated, the core industries in Mashpee are tourism-related and include retail, accommodations, and food services. Health services also represent a “core industry” in Mashpee, while the arts, entertainment, and recreation industries are notable for their relatively high share

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of jobs.

Income and Wages

The 1998 Comprehensive Plan noted that Mashpee residents had lower income levels compared to residents in the rest of other Cape Cod residents. This trend appears to have changed. Mashpee's 2020 household income was \$78,530, compared to \$68,863 in Barnstable County (and comparable to Massachusetts overall at \$84,385) (ACS/ESRI, 2021). However, while median household incomes

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in Cape Cod are relatively high, the prohibitive cost of living on Cape Cod, and in Mashpee, need to be considered.

While employment growth has been steady, when controlled for inflation average weekly wages in Cape Cod have not increased significantly since 1990, a trend consistent with both Massachusetts and the overall US. In fact, median earnings on Cape Cod showed a slight decline, averaging \$8,000 to \$15,000 lower per year than wages in the US. The gap is even greater when compared to wages in Massachusetts overall (Richardson & Clinton, 2017). (Cape Cod Commission Economic Development Resource Guide, 2017). In May of 2020, the US Bureau of Labor Statistics (BLS) listed the average annual wage for Massachusetts as \$70,100, which the same measure for Barnstable County is \$57,270. Although Cape Cod has a more expensive housing market than the state of Massachusetts, local wage rates are lower. Data is not yet available for post-COVID wages.

The Housing Chapter 1, Housing, contains more detail on issues of affordability, but it is important to note that Massachusetts is one of the most expensive real estate markets in the nation, and the median home value on Cape Cod (\$431,483,000) is 4% higher than the rest of the state (United States Census Bureau, 2020) (ACS, 2016). The affordability gap for workers on the Cape, including Mashpee, continues to widen and represents a major challenge for sustainable economic development.

The Cape Cod economy is unique because of its significant natural resources, reliance on tourism, and a disproportional number of wealthy retirees. The percentage of self-employed residents in Barnstable County was 18%, which is double the percentage for Massachusetts and the United States. Compared to Massachusetts, Mashpee and Barnstable Country also had higher rates of non-wage income – 33% versus 22% statewide.

The average 2019 ACS data notes the median commute for a Mashpee resident at was 25.4 minutes. The current employers in Mashpee provide jobs for just under 5,000 people on average over the year, but the proportion of these jobs occupied by residents of other Cape towns is unknown. Almost 1,000 residents of Mashpee work outside Barnstable County and about 85 residents work outside the state.

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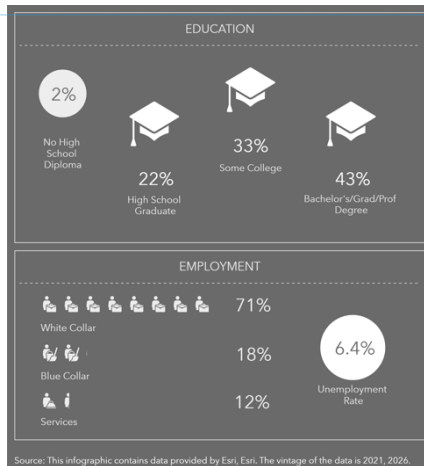
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Comprehensive Plan 2023~~2~~

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Unemployment

The 1998 Comprehensive Plan also identified Mashpee as having a relatively high unemployment rate, but that trend has reversed and the employment rates over the past ~~three~~ few years in Mashpee are generally consistent with those across Barnstable County. Unemployment in Mashpee, as would be expected, was significantly impacted by the COVID-19 pandemic. Mashpee's unemployment rate reached 20% in April 2020, mirroring the county-wide figures. These numbers exceeded both Massachusetts and U.S. figures, which is likely due to the Cape's considerable number of retail and restaurant uses, and to the annual seasonal dip in employment. Although the numbers are relatively low, they do not reflect the seasonal nature of unemployment in Mashpee, and on the Cape.



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~~2-1-32.3.3~~ Land Use and Zoning

Mashpee's tax base reflects the general land use configuration of the ~~T~~own. ~~Ninety-one percent~~ 14% of the total tax levy comes from residential property, compared to 86% countywide. Only 10% of the total land area is zoned for commercial (2.6%) or industrial (7.8%) uses. Approximately 28% of the total land area in Mashpee is protected open space.

- Vacant commercial – 214 acres
- Vacant industrial – 120 acres

In 2013, the Market Assessment for Cape Cod, Massachusetts prepared by the Chesapeake Group, Inc., projected the future demand for sales and commercial space in Mashpee. From 2013 to 2033, the Assessment projected an additional 60,000 square feet of commercial space. This is a small number considering the amount of developable land available, but Mashpee will not continue to see the rates of population growth that spur growth in the typical tourism-related industries and the pandemic's effect on the availability of remote work options will impact an already weak office market. The report recommended zone changes to accommodate a denser, more mixed-use type of development within the existing commercial areas. It is worth noting that 85.5% of the undeveloped commercial land is within the C-1 zoning district generally located around the Mashpee Rotary and is owned and controlled by Mashpee Commons, which provides an opportunity for these recommendations to be realized.

Major Commercial Areas

Mashpee's commercial and industrial uses and zones are in a few concentrated areas within the ~~T~~own. The most prominent is the C-1 Zoning District where Mashpee Commons is located. The other four were the subject of a 2016 RESET study that Mashpee worked on with the Cape Cod Commission:

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Commented [M55R4]: For the question on 28% of the total land area in Mashpee being protected open space, here's the data breakdown:

Land Area in Mashpee 16385

The total open space in Mashpee is 5356.33 acres, of which 4,621.72 acres (86.29%) is protected. 4,469.20 acres (83.44%) is considered protected "in perpetuity," and 152.52 acres (2.85%) is considered to have a "limited" level of protection.

4,621.72 acres of protected open space/16385 acres of land area = 28% of Mashpee's land area is protected open space.

Source: MassGIS 2016 Land Use, 2005 Land Use, 2021 Protected and Recreational Open Space

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Mashpee Commons - Mashpee Commons is currently permitted for an additional 400,000 SF of commercial space and 482 residential units.

Mashpee Industrial Park - The Mashpee Executive Park is located on Route 28 just south of the Mashpee Commons. The park has twenty-one ~~parcels, and~~ [parcels and](#) is zoned for industrial uses (I-1) on the Mashpee Zoning Map ~~(Reference)~~. The Commonwealth designated the Mashpee Executive Park as an Economic Opportunity Area for property tax abatement. The park is partially within the state-approved Wellhead Protection Area on the Regional Policy Plan Water Resources Classification Map 1. The 2016 analysis noted consistent vacancies and significant non-industrial uses in an area zoned for industrial uses, which suggests that demand for industrial space at this location is fairly weak. The data also suggests that office uses may be in much higher demand, especially for medical uses that make up 37% of the uses in the Executive Park.

John's Pond Area - This area includes ~~the commercial~~ [commercial](#)-zoned land along Route 151 between Old Brickyard Road and Algonquin Avenue and includes approximately 38 acres. This area includes commercial uses, with ~~some multi~~ [some multi](#)-tenant commercial structures. The land use pattern here is an auto-oriented suburban strip. In 2016, the vacancy rate was relatively low.

Route 130 Area - The Route 130 Area is shown in [Figure X](#). There is commercial zoning along Route 130 and the remainder of this area has Industrial zoning for a total area of about 198 acres.

Route 28 East Area - The Route 28 East Project Area is shown in [Figure 27](#) and includes the commercial and industrial zoned land surrounding Route 28 at the Mashpee/Barnstable Town Line and extending roughly between Old Mill Road and Cape Drive. The Project Area is approximately 57 acres, and the study identified this area as one of the more successful commercial areas within Mashpee based upon vacancy rates.

[Natural Resources](#)

During the 1980s, Mashpee's population was the fastest growing in New England, increasing by 113%. At the same time, it is located almost entirely within the watersheds of two shallow, nitrogen-sensitive embayments – Popponesset Bay and Waquoit Bay East. The estuarine systems of both bays have shown significant signs of degradation, which has been documented to be attributable to excessive inputs of nitrogen. Federal, state, and local efforts have identified this issue and created regulations that are intended to mitigate the current conditions and also prevent further degradation. ~~The Chapter 4, Natural Resources, and Chapter 8, Facilities and Services*Services*, chapter~~ both include more information about nitrogen loading and wastewater treatment, but this is an issue that affects the Town's capacity to encourage economic development, particularly any initiatives related to new development as these regulations increase the costs of new development.

~~2.1.4.2.3.4~~ [Economic Development Programs and Organizations](#)

Mashpee has local organizations that are dedicated to the [T](#)own's economic development.

Economic Development and Industrial Corporation (EDIC) - The mission of the Mashpee EDIC is to advocate sound growth policy, and to stimulate sustainable economic opportunities that will enhance the quality of life within the Mashpee community.

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The Mashpee Chamber of Commerce - The Mashpee Chamber of Commerce is a dynamic and growing non-profit organization, providing its members with ways to develop their businesses through networking events, education seminars, promotional avenues in digital and print media, and more. There are approximately 330 members of the Chamber who have access to these networking opportunities, referral systems, insurance benefits, educational sessions, and sponsorship opportunities at community events.

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2.3.5 ~~Issues/Threats~~

~~Mashpee faces an ongoing challenge of identifying funding options to support local programs. The Town lacks a grant writer, which makes securing funding for various projects more difficult. The Town has also seen a decline in its traditional "blue" economy based primarily around fishing due to shrinking public access to waterways and barriers to joining the sector, including commercial fishing and aquaculture.~~

~~II. Further information is needed in this section regarding economic development. We will gather this~~

~~2.3.1 Current Measures/Initiatives~~

~~III. 2.1.1 Further information is needed in this section regarding economic development. We will gather this information through engagement and stakeholder interviews.~~

2.3.6 Opportunities

~~Mashpee has numerous opportunities to expand its economy over the next few years. prioritize eco-tourism since prime greenspace is located within Eco Tourism Opportunity. Prime greenspace is located within walking distance of highly prized commercial and retail space near the Mashpee rotary. -This area has potential to be a base for eco-tourism. Tourism can also be expanded by connecting visitors to Mashpee's historical roots. The~~

~~Historic Tourism. The Mashpee Historical Commission has planned walks and events in the historic areas near Town Hall. These areas include the Mashpee Historic One Room Schoolhouse, the Mashpee Wampanoag Indian Museum, Attaquin Park, Mashpee Pond, and the Mashpee River and Herring Run. These efforts could be coordinated to showcase nearby commercial establishments, which could take some part part in hosting events.~~

2.3.7 Current Measures/Initiatives

Further information is needed in this section regarding economic development. We will gather information through engagement and stakeholder interviews.

2.4 Community Engagement

Further information is needed in this section regarding community engagement. We will gather this information through community engagement.

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2.5 Goals & Policies

~~Cape Cod Commission. (2017). *Economic Development Resource Guide*. Cape Cod Commission.~~ Goals

1. Ensure a prosperous local economy that supports financial independence for all residents.
2. Bolster support for local businesses and the "blue economy."

Policies

1. Provide financial and policy-based support for local fishers and businesses.
2. Minimize homelessness and the proportion of Mashpee residents living below the poverty line.
3. Explore potential grant funding programs to support housing, natural systems, and community programs and services.

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Cape Cod Commission. (2017). *Cape Cod Housing Market Analysis*. Cape Cod Commission.

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United States Census Bureau. (2020). *American Community Survey*. Retrieved from Financial Characteristics: <https://data.census.gov/table?q=mashpee,+ma+income&tid=ACST5Y2020.S2503>

United States Census Bureau. (2020). *Selected Housing Characteristics*. Retrieved from American Community Survey: <https://data.census.gov/table?q=barnstable+county+selected+housing&tid=ACSDP1Y2021.DP04>

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~~(2017). Cape Cod Housing Market Analysis. Cape Cod Commission.~~

~~United States Bureau of Labor Statistics. (2020). Occupational Employment and Wages in Barnstable Town—May 2020. Retrieved from Bureau of Labor Statistics: https://www.bls.gov/regions/new-england/news-release/2021/occupationalemploymentandwages_barnstable_20210820.htm~~

~~United States Census Bureau. (2020). American Community Survey. Retrieved from Financial Characteristics: <https://data.census.gov/table?q=mashpee,+ma+income&tid=ACST5Y2020.S2503>~~

~~United States Census Bureau. (2020). Selected Housing Characteristics. Retrieved from American Community Survey: <https://data.census.gov/table?q=barnstable+county+selected+housing&tid=ACSDP1Y2021.DP04>~~

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6.0 HERITAGE AND PRESERVATION

DISCLAIMER: This is a working draft and will continue to be updated as the Comprehensive Plan process evolves. Additional information will be added as stakeholder and public input is gathered. These blue boxes throughout the draft chapters represent areas of further consideration and study and will be updated with additional information as it is collected.

6.1 Vision

To be developed with the ~~Town~~ Town

6.2 Introduction

Mashpee's heritage plays a central role in planning for the future. Historic and cultural resources within a community are indicators of this heritage and can include structures, properties, places, landmarks, archeological sites, landscapes, and natural areas that the community has determined to be noteworthy and of primary importance for recognition and preservation. The physical remnants of its heritage provide valuable glimpses into history, offering information on how people lived and worked, their values, and the roles they played in the community. They also provide us with an understanding of how the built environment has changed over time. The Heritage and Preservation ~~Element~~ Chapter of the Comprehensive Plan focuses on the protection and preservation of important historic, cultural, and archaeological features of Mashpee. These historic and cultural resources are closely linked with a community's natural and built environment.

Add updated Mashpee Historical Commission and [LIAISON] Mashpee Wampanoag Tribe information

Historic resources can be listed on federal, state, and local registers for a variety of reasons, including their architectural significance, their archaeological/historic significance, or because they reflect landscapes, development patterns, vocations, or lifestyles that are threatened. Many historic and cultural resources carry both federal and local protections.

Understanding the levels of protection for historic resources is critical to the assessment of existing conditions and future preservation efforts. These levels are described below:

- **The National Register of Historic Places** is the official list of the country's historic places and is administered by the National Park Service (National Park Service, 2023).* Historic and archeological resources are nominated and evaluated for admission onto the list, and individual properties and districts can be listed. The National Register denotes status upon these places and serves in the promotion of the resource and the municipality; however, protection from alteration and demolition is very limited. Historic places are protected from development that includes an element of federal funding, licensing, or permitting. The federal agency involved must document the effects of federal actions on historic properties and consult with stakeholders.

*<https://www.nps.gov/subjects/nationalregister/index.htm>

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- **Local Historic Districts (LHD)** provide the most oversight for historic resources. In 2007,⁴ Mashpee residents approved incorporating the creation of a Historic District into Article 21 which also amended Chapter 3 of the ~~Town~~Town's General Bylaws to create a Historic District Commission to oversee the Historic District. The purpose of the District is "to aid in the preservation and protection of the distinctive characteristics and architecture of buildings and places significant in the history of the ~~Town~~Town of Mashpee, the maintenance and improvement of their settings and the encouragement of new building designs compatible with the existing architecture."⁵ ([Mashpee Historic District Commission, 2008](#)).⁴ Mashpee, like many other municipalities, utilizes the power of its zoning bylaws to enforce standards for preservation and rehabilitation on historic properties within the designated district. See Section 6.3.3 for more information on Mashpee's Historic District.
- **Preservation Restriction (PR)** is a voluntary legal covenant that protects a significant historic, archaeological, or cultural resource from alteration or demolition. A PR is drawn up as a legal agreement and filed at the Registry of Deeds. This restriction runs with the land, regardless of the chain of ownership.

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Many historic and cultural resources carry both federal and local protections.

6.5.6.3 Existing Conditions

6.5.6.3.1 Historic Resources Inventory

The Massachusetts Cultural Resource Information System (MACRIS) catalogs sites and designations, which are located in Figure 6-1 ([Massachusetts Historical Commission, 2023](#)).³

National Register of Historic Places

Since 1998, Mashpee added five individual properties to the National Register. Table 6-1 provides a summary of those properties.

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Memo Comment: Add an appendix of all historic materials from the 1998 LCP Chapter entitled Heritage Preservation

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MHC Inventory Number	Property Name	Street	Year	Designations*
MAS.B	Old Indian Meeting House			NRIND
MAS.9	Avant House	414 Main St	c 1830	NRIND (1998) PR (2001) LHD (2007)
MAS.19	Indian Meetinghouse	410 Meetinghouse Rd	c 1684	NRIND (1998) PR (2008)
MAS.800	Old Indian Meeting House Burial Ground	410 Meetinghouse Rd	1783	NRIND
MAS.23	South Mashpee School	410 Meetinghouse Rd	1831	NRIND

* Designation definitions:

NRIND (National Register Individual Listing)

LHD (Local Historic District)

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² Mashpee Historic District Manual, Mashpee Historic District Commission, 2008.

³ <https://mhc-macris.net/#/>

Table 6-1~~3~~. Individually Listed Properties on the National Register in Mashpee

MHC Inventory Number	Property Name	Street	Year	Designations*
----------------------	---------------	--------	------	---------------

PR (Preservation Restriction)

Archaeological Resources

A communitywide archaeological reconnaissance survey was completed in Mashpee in ~~YEAR 2011?~~ one of only cities and ~~town~~Towns to do so with Community Preservation Act funding (Christopher C. Skelly, 2018). The State Register of Historic Places notes four archaeological sites in the Willowbend area protected by private restrictions in 1987 (Fox 2, 3, 4, and 5A) ([Massachusetts State Historic Preservation Office, 2020](#)).^{*} An additional site was identified by the state at Mashpee Neck called the Shellheap Site.

Historic Structures

Mashpee contains historic structures that are clustered in some areas of ~~town~~Town, such as the Historic District, and scattered throughout other parts of the ~~town~~Town.

Additional information is needed through interviews and research to fill out this section and table.

Table 6-2. Identified Historic Structures

Structure Name	Year Built	Address
Bell Johnson House	ca. 1841	278 Main Street
Sanford House		
Lysander Z. Amos House/Old Post Office	1875	28 Great Neck Road
First Pentecostal Church		
Jonas Homestead		
Gooch House		
Mabel Avant House	ca. 1830	414 Main Street
Mashpee Parsonage	1849	431 Main Street
Leonard Pocknet House		
Archives Building		
Samuel G. Davis School	1835	16 Great Neck Road
Mashpee Baptist Church		
Old Indian Meeting House		
Doctor's Office		
Horatio Amos House		
Jones/Pocknett Homestead	ca. 1850	262 Main Street
Attaquin/Oakley/Hendricks House	ca. 1860	389 Main Street
Okry Trading Post	1915	387 Main Street

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^{*}MA SHPO State Register 2020, p. 201-202.

Burial Grounds

The Mashpee Historical Commission has identified ten cemeteries and burial grounds in the town. They are listed in Table 6-3.

Name	Street	Designations*
Avant Burial Ground	60 & 64 Main Street	NRIND
Attaquin Burial Ground	401 Main Street	
Meetinghouse Cemetery		
Heirs of Phoebe Pocknett	Great Neck Road South (near Punkhorn Point)	
Pocknett Burying Ground	95 Meetinghouse Road	
Hicks Burial Ground	Falmouth/Sandwich Road	
Ancient Cemetery	Lakewood Drive	
Roxanna C. Mye Burying Ground	4 Highview Avenue	
Beckwith Property and Adjacent Lot 15	Northern Mashpee	
William Jones Burial Ground	The intersection of South Sandwich Road and Main Street	

Source: Town of Mashpee
 *Table Note: Designation definitions:
 NRIND (National Register Individual Listing)
 LHD (Local Historic District)
 PR (Preservation Restriction)

Additional information is needed through interviews and research to fill out this section and table.

6-5-36.3.2 Scenic Landscapes

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Mashpee's location and geology have combined to define its landscape. The ~~town~~Town is dominated by water features in the form of ocean, bays, streams, ponds, and wetlands. Although the ~~town~~Town is relatively low-lying, there are several scenic vistas. Dead Neck in South Cape Beach State Park provides spectacular views of Vineyard Sound, Waquoit Bay, and Sedge Lot Pond. Farther east in the Park, the dunes offer views of Nantucket Sound and the waterfowl that reside on Great Flat Pond.

Saconneset Point, a 40-foot-high bluff at the midpoint of Mashpee's coastline, offers spectacular views across the Sound to Martha's Vineyard. Unfortunately, this area has been developed for private house lots and is not accessible to the public. This is a predominate development pattern along the shoreline in Mashpee with the only public views of the ocean at a small fisherman's landing owned by the Division of Fisheries & Wildlife at the end of Wading Place Road. Other views of the coastal ponds are limited, as their shores are predominantly privately owned. The Seconsett Island Road causeway offers an excellent vista of Waquoit Bay to the south and the marshes of Hamblin Pond to the north. The Pond can also be viewed from the Monomoscoy Island Road causeway, which offers views of the extensive marsh system of the upper Great River, as well as the islands and wooded shore of an undeveloped area known as Bufflehead Bay. The property was acquired for public use and offers stunning views of the upper Great River marshes, Jehu Pond, and Abigail's Brook.

No ~~Town~~Town roads or publicly owned properties exist in the densely developed areas of New Seabury or Popponesset. As a result, views of Fells Pond, Fish Hook Pond, and most of Popponesset Bay are no longer readily available to the public. One vista of Dean's Pond and its white footbridge is available from Shore Drive. Popponesset Bay can be viewed from the Pirates Cove ~~Town~~Town landing at the end of Mashpee Neck Road or from a small undeveloped conservation area at the end of Punkhorn Point Road, opposite Gooseberry Island. Otherwise, one has to visit Cotuit's Crocker Neck Conservation Area for views of the Bay, as the Mashpee side is fully developed with privately owned land.

Many of Mashpee's most scenic areas, particularly along the ocean, bays, and pond shores have been impacted by private development. Those that remain for the public to enjoy are important to the ~~town~~Town's cultural heritage and should remain protected for the public.

~~6-5-46.3.3~~ Culturally Significant Landscapes

Additional information is needed through interviews and research to fill out this section. A meeting with the Mashpee Historical Commission and other relevant groups and individuals will provide additional information to populate this section.

The ~~Town~~Town of Mashpee has a rich cultural history that presents several varied types of culturally significant landscapes.

Route 130 (Main Street)

Route 130 is Mashpee's Main Street. The area of Route 130 around Great Neck Road North (as shown on ~~Map X~~ ~~Map X~~) comprises the historic ~~Town~~Town Center of Mashpee. A portion of this area was designated as a Historic District (the District) in 2007. The District begins on Route 130 just north of

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Ashumet Road and continues along Route 130 for approximately 1.4 miles, just west of Shields Road (see Figure 6-2).

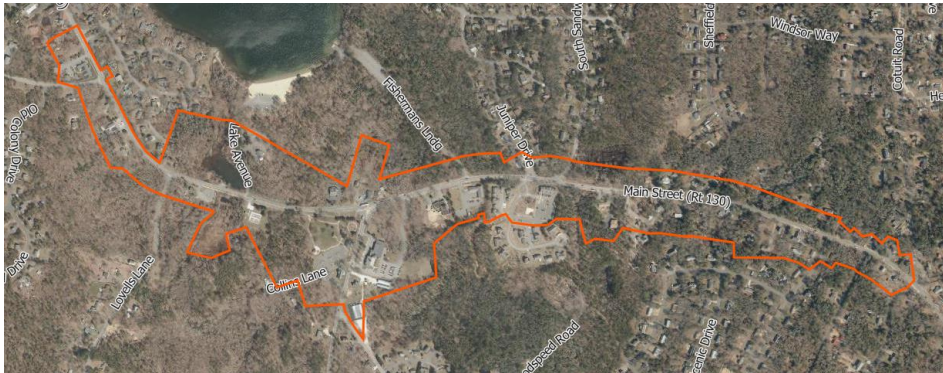


Figure 6-2. Mashpee Historic District

Source: [Town of Mashpee](#)

The District is the traditional center of the [Town of Mashpee](#), remarkable for its unique history in which the culture and heritage of the Native American Mashpee Wampanoag Tribe and European settlers forged a vibrant and deeply connected community for several hundred years. The District includes a mixture of modest 19th and 20th-century buildings, sites of important former buildings, the herring run, and other natural open space in a semi-rural landscape.

The District is intended to preserve the spirit and historic integrity of the traditional [Town of Mashpee](#) center, in the present and for the future by protecting the existing historic architectural resources and ensuring that new construction is compatible with the historic character of the District. The District is governed by the Mashpee Historic District Manual (2008) and a Historic District Commission. Section 110-1 of the Mashpee General Bylaws states:

The purpose of the District is to aid in the preservation and protection of the distinctive characteristics and architecture of buildings and places significant in the history of the [Town of Mashpee](#), the maintenance and improvement of their settings and the encouragement of new building designs compatible with the existing architecture.

The Mashpee Historic District Manual (the Manual) provides property owners within the District guidance in preserving both the essential features of their individual properties and the character of the Historic District in which they are located.

6-6.3.4 Mashpee Wampanoag Tribe

~~This section will be updated for content and accuracy after consultation with the Mashpee Wampanoag Tribe project liaison.~~

The Mashpee Wampanoag Tribe, also known as the People of the First Light, has inhabited present day Massachusetts and Eastern Rhode Island for more than 12,000 years ([Mashpee Wampanoag Tribe](#),

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2023).⁵ They are one of two federally recognized tribes of Wampanoag people in Massachusetts. The Tribe was recognized in 2007, and as of 2023⁴, consisted of 2,600 more than 2,900 enrolled members (Mashpee Wampanoag Tribe, 2023).⁶

6.3.5 Issues

Mashpee's history and cultural resources are not adequately promoted to the public. The importance of this land to the Mashpee-Wampanoag Tribe and the region's ties to tribal heritage have long been viewed by many residents as overlooked and misrepresented. Many feel the cultural heritage of the Mashpee-Wampanoag Tribe is being lost and should be promoted as an important aspect of the region's history.

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6.3.6 Opportunities

Many residents voiced their desire to include Mashpee-Wampanoag Tribal heritage and history studies into local school curriculums to ensure future generations are exposed to the region's cultural heritage and enhance future collaboration between the Tribal government and local government.

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6.3.7 Current Measures & Initiatives

Further information is needed in this section regarding current measures. We will gather this information through stakeholder interviews.

6.4 Community Engagement

Further information is needed in this section regarding current measures. We will gather this information through stakeholder interviews.

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6.5 Goals and Policies

Goals

1. Ensure that unique archaeological resources are preserved.
2. Ensure that future development and redevelopment reflects the historic character of Mashpee and celebrates local culture.

Policies

1. Enhance the vitality of the Mashpee Historic District located at the Traditional Village Center of Mashpee.
2. Preserve and protect the Town's known archaeological and scenic resources and work to investigate and catalogue any potentially unknown archaeological resources.
3. Support Mashpee's unique cultural heritage through education programs.

⁵<https://mashpeewampanoagtribe-nsn.gov/#:~:text=The%20Mashpee%20Wampanoag%20Tribe%2C%20also,federally%20recognized%20tribe%20in%202007>

⁶https://en.wikipedia.org/wiki/Mashpee_Wampanoag_Tribe

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1.0 HOUSING

DISCLAIMER: This is a working draft and will continue to be updated as the Comprehensive Plan process evolves. Additional information will be added as stakeholder and public input is gathered. These blue boxes throughout the draft chapters represent areas of further consideration and study and will be updated with additional information as it is collected.

Vision

1.1 ~~To be developed with the Town.~~ Vision

~~To be developed with the Town.~~

1.2 ~~Introduction~~ Introduction

Mashpee's population growth over the last half century catalyzed housing development, much of it single family. Mashpee's housing development over the last half-century catalyzed a significant population growth. The majority of this development has been as single-family detached homes. These trends were assessed in Mashpee's 2015 *Affordable Housing Production Plan* and the 2017 *Regional Housing Market Analysis* by Crane Associates and Economic Policy Resources. The *Housing Market Analysis* examines all housing on Cape Cod but contains projections specific to Mashpee up to 2025. This information, along with the more recent data from the 2020 Census and 2016-2020~~5-2019~~ American Community Survey (ACS), is used in this Chapter to provide an overview of existing conditions for Mashpee's housing.

The 2020 Census identified 6,923 occupied and 3,834 vacant housing units in Mashpee (United States Census Bureau, 2020). Vacant housing data can be skewed if seasonal homeowners are living elsewhere when the census is distributed. The Census Bureau is expected to publish detailed data on seasonal units. Meanwhile, the Massachusetts Department of Housing and Community Development (DHCD) continues to rely on 2010 Census data in which Mashpee has 6,473 occupied housing units in Mashpee, 343 of which are deed-restricted affordable housing units (Massachusetts Department of Housing and Community Development, 2020) (Department of Housing and Community Development Chapter 40B Subsidized Housing Inventory, December 2020). DHCD has calculated that affordable housing units this represented just 5.3% of the 2010 Census year-round housing units. By 2022, single-family detached units comprised 85% of total housing in Mashpee.

but when taking into account seasonal units, the percentage drops to 3.3% of the total units (2019 ACS). Mashpee's housing units are largely single family detached (75%) and owner occupied (92%). [SOURCE] Over a third are used only seasonally (ACS, 2019 5-year estimates). ~~VERIFY 2~~

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but when taking into account seasonal units, the percentage drops to 3.3% of the total units (2019 ACS).

1.4.1.3 Existing Conditions

1.4.1.3.1 Demographics and Housing

Historically, Mashpee's population growth rate has exceeded all other towns on the Cape as well as that for Barnstable County as a whole. Mashpee's population more than doubled in both the 1970s and 1980s. This growth slowed through the 1990s. In the 1990s, the population grew at a slower rate but was still more increasing two times faster than double the rate of than any other town on the Cape. (Town of Mashpee Affordable Housing and Planned Production Plan, 2015). (Town of Mashpee, 2015). The 2010 census indicated that the Town's year-round population for 2010 was 14,006, an increase of nearly 8.2% an increase of nearly 8.2% since 2000. Between 2010 and 2020, the population grew by 7.53% to 15,060, across 6,552 households living in 10,239 housing units (United States Census Bureau, 2020), a 7.53% population increase. The median home value is \$371,800. The presence of more housing units than households results from the prevalence of seasonal units. Of the 10,273 total housing units, 3,492 were estimated to be seasonal. The remaining units are comprised of year-round ownership units (53.6%), year-round rental units (8.3%), and 4.1% vacant/other. 84.5% of year-round occupied housing units are owner-occupied and 92% of total housing units are owner-occupied.

Mashpee's older year-round population represents a key demographic in the housing market. According to the ACS in 2020, 29.7% of the Town's population was 65 and older, up from 22.35% in 2010 and 18.65% in 2000 (United States Census Bureau, 2020). The ACS also indicates that Mashpee's median age is 52.27, up from 46.39 in 2010. This is significantly higher than the 1990s census. The median age of Barnstable County residents is higher than the median age for Massachusetts as a whole at 53.7 and 39.6, respectively. In Cape Cod overall, the median age of residents is higher than any other region in Massachusetts, which has an overall median age of (53.3 versus 39.5). Since the 1990s, Mashpee's median age has risen steadily. In 1990, just under 15% of residents were over 65 or older (Bureau of the Census, 1990). This number increased to nearly 30% by 2020. The reverse is evident for those under 18. Approximately 25% of residents were under the age of 18 in 1990 with only 14% by 2020. Age distribution is a factor in identifying Mashpee's future housing needs. Additional group living facilities and multifamily housing may replace single-family dwellings as the population ages and needs additional care.

Veterans and people with disabilities in particular may have different housing needs. Almost 9% of Mashpee's population are veterans compared to 5.3% in the state. Approximately 10% of Mashpee residents have a disability with the state average at 11.7% (United States Census Bureau, 2020).

Recent data suggest that some historically summer some traditionally summer homes are being converted into year-round homes (Melnik, Spitzer, & Breest, 2022) (Cape Cod New Homeowner Survey, 2021). This trend may have been influenced by opportunities the increased ability for residents to work remotely remote working because during the of the COVID-19 pandemic, but the longer-term trends indicate that seasonal homes on the Cape will continue to comprise a sizable portion of Cape housing and will outpace the growth of year-round units (Regional Housing Market Analysis and 10-Year Forecast of Housing Supply and Demand, 2017) (Crane Associates, Inc. & Economic & Policy Resources, 2017). The 2021 UMass Amherst Donahue Institute released the Cape Cod New Homeowners Survey in 2020-2021 to better understand the impact of remote work on the Cape Cod housing market. The survey documented an ongoing trend of an existing trend that is continuing older households looking for a

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retirement homes) and a new effort by workers to relocate to Cape Cod permanently. 35% Thirty-five percent of people surveyed indicated that the pandemic influenced their decision to purchase a home on Cape Cod. Overall, respondents were well-educated, with 34.34 percent having a bachelor's degree, and 52% percent a graduate or professional degree. and Many also reported high annual household incomes, including over half of respondents reporting incomes higher than \$150,000 annually. reported a high annual household income, with over half reporting incomes higher than \$150,000 annually.

MILLENNIAL POPULATION

15,060 people now reside in Mashpee, including 6,360 households living in 10,273 housing units (US Census, 2020). The average household size is 2.21 people, and the median home value is \$363,100. The presence of more housing units than households results from the prevalence of seasonal units. Of the 10,273 total housing units, 3,492 were estimated to be seasonal. The remaining units are comprised of year round ownership units (53.6%), year round rental units (8.3%), and 4.1% vacant/other. 86.6% of year round occupied housing units are owner occupied and 92% of total housing units are owner occupied.

1.4.2.3.2 Housing Stock and Condition

Mashpee was one of the last communities on the Cape to develop. Only 12.25% percent of the current housing stock town's homes were was constructed before 1940, and 81.5% percent of the housing stock was built after 1970. Mashpee developed rapidly, with much of the housing boom happening beginning in the 1980s. Consequently As a result, Mashpee there does are not have many older homes or in town, and residents do not experience the problems that are are typically seen with older housing stock, like lead paint. [BUILDING INSPECTOR ON TYPICAL CONDITION ISSUES].

A surge in housing construction occurred between 2000 and 2010, increasing by, with an 18.7% increase from 8,325 units to 9,882 units (6,473, or 66%, are year-round units). Table 1-1 provides a breakdown of the Town's housing units by year. The explosive increase in population during the 1980s doubled the number of housing units, with significant continuing growth in the 1990s. Seasonal housing, as a percentage of total Town housing stock, has declined Since 1980, seasonal housing as a percentage of the town's total housing stock has declined (see Table 1-2). This, although this trend was somewhat interrupted by the housing market crisis of 2008, which led to fewer low or moderate-priced year-round homes while high-end seasonal homes continued to be built. Now, however, housing in Mashpee is trending toward more year-round rather than seasonal vs. seasonal ownership occupancy. Mashpee developed rapidly, with much of the housing boom happening in the 1980s. Consequently, there are not many older homes in town, and residents do not experience the problems that are typically seen with older housing stock, like lead paint.

Table 1-1: Housing Units by Year Structure Built		
Year	Housing Units	Percent of Total Housing Stock
	10,273	100.0%
Built 2014 or later	360177	3.57%
Built 2010 to 2013	12941	1.34%
Built 2000 to 2009	1,516524	14.814.8%
Built 1990 to 1999	1,661792	16.217.4%

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Built 1980 to 1989	3,820	37.337%
Built 1970 to 1979	1,528	14.9%
Built 1960 to 1969	772	7.58%
Built 1950 to 1959	256	2.53%
Built 1940 to 1949	71	0.7%
Built 1939 or earlier	126	1.2%
TOTAL	10,239	100.0%
Median Year Structure Built	1986	

Source: US Census & Adjusted Estimate for 2010 and American Community Survey 2019 5-Year Estimates (ESRI)

Table 1-2. Mashpee Housing Stock

Year	Year-Round Units	Seasonal Units	Total Units
1980	1,756	1,989	3,582
1990	3,787	3,212	7,002
2000	5,578	2,747	8,325
2010	6,473	3,409	9,882
2020	6,781	3,492	10,273

Source: US Census & Adjusted Estimate for 2010 and American Community Survey 2019 5-Year estimates.

Further information is needed in this section regarding housing condition. We will gather this information through engagement and stakeholder interviews.

Table 1-1 Mashpee Housing Stock

Year	Year-Round Units	Seasonal Units	Total
1980	1,756	1,989	3,582
1990	3,787	3,212	7,002
2000	5,578	2,747	8,325
2010	6,473	3,409	9,882
2020	6,781	3,492	10,273

Source: US Census & Adjusted Estimate for 2010 and American Community Survey 2019 5-Year estimates.

4.4.1.3.3 Housing Types

The term "Missing Middle" housing" was coined in 2010 to describe the long-neglected middle of the housing spectrum, buildings ranging in size and density between a single-family detached home and a mid-rise apartment building. Common characteristics of Missing Middle housing is a scale comparable to a single-family house, but with multiple housing units. The varieties of Missing Middle housing includes duplexes, triplexes, and fourplexes, courtyard apartments, bungalow courts, townhouses, multiplexes,

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and live/work units. The term was also used to point out that these types of housing units are not allowed by right in most residential zoning, as ordinances still exclude most housing types, other than detached single-family.

"Missing Middle" housing is needed for Mashpee because Mashpee's the town's residential development is nearly all single-family. Over Nearly 75% of Mashpee's housing stock consists of single-family detached dwellings, a much larger share than Massachusetts as a whole or the nation at 52% and 63%, respectively (United States Census Bureau, 2020). (50%) or the nation (62%) (ACS 2019). Condominium developments like Windchime Point, Stratford Ponds, and the Southport Retirement Community are designed to appeal to older adults. Meanwhile, n, while newer resort-style developments like New Seabury and Willowbend provide seasonal homes and resort amenities for families with higher incomes. While these developments provide additional housing options, they are not affordable to most families in Mashpee.

Type of Housing Unit	Total	Housing Units 10,239	Percent of Total Housing Stock
1-unit, detached	7,502	7.3%	73.3%
1-unit, attached	1,204	1.2%	11.7%
2 units	162	0.7%	1.6%
3 or 4 units	439	3.9%	4.3%
5 to 9 units	390	4.7%	3.8%
10 to 19 units	106	1.0%	
20 or more units	198	1.9%	1.3%
20 to 49	75	0.7%	
50 or more	30	0.3%	
Mobile home	207	1.3%	2.0%
Boat, RV, van, etc.	0	0.0%	
Boat, RV, van, etc.	0	0.0%	
TOTAL	10,239	100.0%	

Source: US Census & Adjusted Estimate for 2010 and American Community Survey 2019 Selected Housing Characteristics 5-Year estimates (ESRI)

An example of Missing Middle housing is the Mashpee Commons, is a mixed-use style development, located at the rotary connecting Routes 28 and 151. The development has The development provides some of the "Missing Middle" housing for the town and there is additional expansion potential which to could provide more increase density and offer more housing options. The construction of the The Mashpee Commons' s development constructed its wastewater treatment infrastructure, which allows for increased housing and commercial density to minimize environmental impacts.

Non-age restricted condominium housing is found at Oak Hollow, Deer Crossing, Pheasant Run, and Quashnet Valley with buildings consisting of four to eight units. In Mashpee, densities of multi-family housing, including condominium complexes and resort complexes, range from X units per acre to X units per acre. Oak Hollow is 10 units per acre.

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Mobile Homes~~200 noted in 1998 LCP.~~~~Lakeside Trailer Park (300 Nathan Ellis Hwy.)~~

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Housing Affordability

In 2017, Crane Associates and EPR, Inc. conducted a Housing Market Analysis for Barnstable County. The analysis identified how individuals or families can become "housing cost-burdened," which occurs when the cost of a mortgage or rent payment exceeds 30% of a family's or individual's income. The report predicted that it would start to affect residents in higher income groups in the next 10 years as housing costs outpace wages.

In addition to the "housing cost burden," the "affordability gap" provides another metric to assess the gap between area median incomes and median housing prices. ~~Mashpee's median household income, \$77,019, is high in comparison to the state and nation overall but is relative to the town's high housing costs. In addition,~~ The 2017 Housing Market Analysis indicated that Mashpee residents' wage rates lagged behind other communities in Barnstable County. The housing affordability gap exists when the median household income is ~~not below enough to sustainably afford~~ the median house price.

~~Using 2015 median income data, the~~ This study estimated that an affordable house in Mashpee ~~2017 Housing Market Analysis indicated that an affordable house in Mashpee would~~ cost \$280,793. ~~However,~~ Meanwhile, the actual median house price in that year was \$327,000, which presents a gap of \$46,207. The study projected that by 2025, the median house price will be \$536,928 while, but an affordable house ~~based on the projected median household income should~~ will cost be \$291,718. The gap would increase to \$245,210, making the median house price unaffordable to all but those in the highest income brackets. (Cape Cod Commission, 2017).

The Economic Development chapter includes more detail on local wage rates and identifies a mismatch between local wages and local housing prices. The US Bureau of Labor Statistics listed the average annual wage for Massachusetts in May of 2020 as \$70,101 while the average annual wage for Barnstable County was only \$57,270, which the same measure for Barnstable County is \$57,270. Although Cape Cod has a more expensive housing market than the state of Massachusetts, local wage rates are lower. Wage rates, for workers within Mashpee, are not keeping pace with housing prices. Within Mashpee, affordable housing provides needed housing for local workers.

In addition to the affordability gap, there are other factors that affect the overall amount of available housing, which plays a role in an area's relative affordability. One factor is the continued seasonal use of homes in Mashpee. The 2017 Housing Market Analysis identified that Cape Cod lost 3,000 homes and gained 6,000 seasonal homes between 2013 and 2018 (Crane Associates, Inc. & Economic & Policy Resources, 2017) (Regional Housing Market Analysis and 10 Year Forecast of Housing Supply and Demand, 2017). The other factor is the relatively small household size in Mashpee and the Cape. As more retirees move to the Cape, this number will ~~get continue to decrease~~ smaller. US Census estimates have ~~place the persons per~~ average household size in Mashpee at 2.1524 (United States Census Bureau, 2020) (US Census QuickFacts, 2015-2019). It is important to note the 2020 ACS may have been an outlier

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for household size as the 2019 ACS and 2021 ACS had average household sizes of 2.21 and 2.26, respectively. However, regardless of their actual size, smaller households require more homes to house the same population as compared to larger household sizes, making it more difficult to offer affordable housing options.

The United States Department of Housing and Urban Development (HUD) conducted an annual Comprehensive Housing Affordability Strategy to identify housing problems, needs, and cost burdens for low-income households. The most recent analysis was based on data from the 2019 ACS. According to HUD, cost burden is defined as "monthly housing costs (including utilities) exceeding 30% of monthly income" while severe cost burden is "exceeding 50% of monthly income" (CHAS: Background, 2019). Cost burden and severe cost burden are then compared to the HUD Area Median Family Income, or HAMFI, to determine the cost burden by income level, as depicted in Tables 1-4, 1-5, and 1-6. Slightly over 36% of Mashpee households are considered cost burdened with 16.3% being severely cost burdened. Households making between 30% and 50% of Mashpee's HAMFI are the most cost burdened income group with 80.7% of owners and renters being at least cost burdened. Of the 860 cost burdened residents at this income level, over half are severely cost burdened. Meanwhile, only 20 households of 3,025 at the 100% HAMFI are severely cost burdened, indicating a wide disparity between cost burdened households at lower income levels compared to those at higher income levels. A further breakdown by owners versus renters illustrates a stark comparison between different income levels. The difference between cost burden for low-income renters versus high income renters is far greater than for owners. Over 80% of renters below 50% HAMFI are cost burdened while zero renters are cost burdened above 80% HAMFI.

Table 1-4. Income by Cost Burden (Owners and Renters)

Income Level	Cost Burden > 30%	Cost Burden > 50%	Total
Household Income <= 30% HAMFI	480	400	880
Household Income >30% to <=50% HAMFI	860	475	1,335
Household Income >50% to <=80% HAMFI	555	100	655
Household Income >80% to <=100% HAMFI	185	45	230
Household Income >100% HAMFI	220	20	240
TOTAL	2,300	1,040	3,340

Source: HUD User 2019 Comprehensive Housing Affordability Strategy

Table 1-5. Income by Cost Burden (Owners Only)

Income Level	Cost Burden > 30%	Cost Burden > 50%	Total
Household Income <= 30% HAMFI	320	275	595
Household Income >30% to <=50% HAMFI	620	300	920
Household Income >50% to <=80% HAMFI	480	100	580
Household Income >80% to <=100% HAMFI	185	45	230
Household Income >100% HAMFI	220	20	240
TOTAL	1,825	740	2,565

Source: HUD User 2019 Comprehensive Housing Affordability Strategy

Table 1-6. Income by Cost Burden (Renters Only)

Income Level	Cost Burden > 30%	Cost Burden > 50%	Total
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Comprehensive Plan 2023

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Household Income <= 30% HAMFI	160	125	230
Household Income >30% to <=50% HAMFI	240	175	265
Household Income >50% to <=80% HAMFI	75	0	95
Household Income >80% to <=100% HAMFI	0	0	70
Household Income >100% HAMFI	0	0	190
TOTAL	475	300	850

Source: HUD User 2019 Comprehensive Housing Affordability Strategy

Environmental Justice Populations

The Town of Mashpee has neighborhoods defined as minority and income Environmental Justice populations under the Executive Office of Energy and Environmental Affairs (EOEEA). Within Mashpee, Block Group 1, in Census Tract 150.02, qualifies under "Income" (see Figure 1, area shaded in green). Block Group 2, in Census Tract 150.02, qualifies under "Minority" (see Figure 1, the area shaded yellow). According to the Massachusetts EOEEA, a neighborhood is defined as an Environmental Justice population if one or more of the following four criteria are true:

- 1) the annual median household income is not more than 65 percent of the statewide annual median household income;
- 2) minorities comprise 40 percent or more of the population;
- 3) 25 percent or more of households lack English language proficiency; or
- 4) minorities comprise 25 percent or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150 percent of the statewide annual median household income (Environmental Justice Populations in Massachusetts).

4-5-1.3.4 Local Affordable Housing Programs

The Town of Mashpee has several programs and committees dedicated to addressing the issue of affordable housing. The following is a list of some of the Town and Tribe programs and resources.

- **Mashpee Housing Authority**- The Mashpee Housing Authority owns and manages Homeyer Village, Breezy Acres, and Great Cove Community, and manages Asher's Path, which is a privately funded affordable housing development.
- **Massachusetts Rental Vouchers Program (MRVP)** - Mashpee Housing Authority manages 71 MRVP vouchers, a state-funded program that offers rental support to low-income individuals or

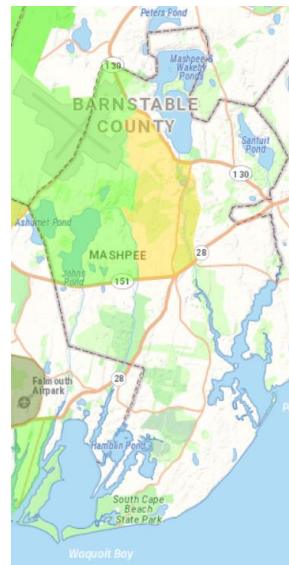


Figure 1: Environmental Justice Populations in Mashpee (Source MassMapper).

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Comprehensive Plan 2023

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households, which can be used for any housing unit that meets state codes and rent limitations. (2022 Annual Report, Mashpee Housing Authority).

- **Affordable Housing Trust** – Created in 2001, the Trust is a non-profit that works with the Mashpee Housing Authority to access grant funds and purchase real estate.
- **Affordable Housing Committee** – To meet the needs of present and future Mashpee residents for fair, decent, safe affordable housing in a manner that is consistent with the protection of Mashpee's environment. To ensure equal opportunity in housing. To assist current homeowners in maintaining current homeownership whether or not they started as affordable to not be forced into foreclosure.
- **Mashpee Wampanoag Housing Department** - to provide housing assistance and opportunities specific to the needs of the Native Americans living with The Wampanoag Community.
- **ADU BylawRegulatory** - Accessory dwelling units have been identified as a tool to provide more affordable housing, and Mashpee's zoning does have a provision for by-right accessory dwelling units.
- **Community Preservation Program** – Town has provided a portion of Community Preservation Funds toward affordable housing in Mashpee Housing Preservation with assistance with rent and mortgage.
- **Mashpee Village** – The Community Builders owns and manages 148 units of affordable rental housing centrally located in Mashpee at 1 Wampanoag Drive, off of Old Barnstable Road.

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Subsidized Housing

The following table lists the location of the deed-restricted affordable housing in Mashpee.

Table 1-7. Mashpee Affordable Units			
Site	Rental Units	Ownership Units	Total Units
Mashpee Housing Authority Units			
Homeyer Village	24	0	24
Breezy Acres	6	0	6
Great Cove Comm	10	0	10
Other Units			
Other Qualified Units	1	19	20
Asher's Path	56	0	56

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<u>Mashpee Village</u>	<u>145</u>	<u>0</u>	<u>145</u>
<u>CCC HOR Program</u>	<u>0</u>	<u>3</u>	<u>3</u>
<u>Habitat for Humanity</u>	<u>0</u>	<u>19</u>	<u>19</u>
<u>DDS Group Homes</u>	<u>20</u>	<u>0</u>	<u>20</u>
TOTAL	262	41	303

The following table lists the location of the deed-restricted affordable housing in Mashpee.

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Table 1-2 Mashpee Affordable Units			
Site	Rental Units	Ownership Units	Total
Mashpee Housing Authority Units			
Homeyer Village	24	0	24
Breezy Acres	6	0	6
Great Cove Comm	10	0	10
Other Units			
Other Qualified Units	1	19	20
Asher's Path	56	0	56
Mashpee Village	145	0	145
CCC HOR Program	0	3	3
Habitat for Humanity	0	19	19
DDS Group Homes	20	0	20
TOTAL	262	41	303

Source: Mashpee GIS, April 2017

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1.5-21.3.5 New Housing Construction

Affordable

Projects in the pipeline and under construction include the following which would provide additional affordable housing opportunities:

- Planning approval was recently given to a 40B development at 950 Falmouth Road. This will be a 39-unit affordable housing project on 13 acres of Town-owned land.
- There are units already permitted included the Mashpee Commons Ch 40B project which include 396 units of diverse housing, of which 96 units are affordable.
- Mashpee Commons has special permits allowing for up to 100 housing units in a mixed-use residential/commercial setting.

There are units already permitted including the Mashpee Commons 40B project which includes 96 affordable units (and another 16 rentals as originally permitted).

- The 52-unit Wampanoag Village project by the Wampanoag Tribe is proposed for 184 Meetinghouse Road.
- The Wampanoag Tribe is also working on a proposed Shelter and is planning on applying for ICDBG funding to the US Department of Housing and Urban Development.

Comprehensive Plan 2023

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- ~~Mashpee is in the due diligence phase for an affordable/workforce housing project at 108 Commercial Street. Funding approval was recently given for a feasibility study of 108 Commercial Street, a six-acre parcel designated in 2021 by Town Meeting for housing with affordable housing and workforce housing components.~~

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Despite these efforts, there is still a significant need for affordable housing. According to the Mashpee Housing Authority, the current wait for Asher's Path is six months to a year.

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Market Rate

New market-rate projects are focused on age-restricted housing:

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- Laurentide at Mashpee Commons – 70 units of assisted living focusing on memory care.
- Bridges at Mashpee – 54 units of assisted living focusing on memory care.
- Building permits ~~(verify with Evan)~~

Constraints to Development

Housing construction requires developable land, infrastructure, and capital. Much of Mashpee's land is conserved because of its ecological and/or cultural significance, which limits available space and increases cost. Like many towns on Cape Cod and coastal Massachusetts, development is also constrained by a lack of wastewater infrastructure to support new units. As noted, between 1980 and 2000, Mashpee experienced rapid growth in single-family housing. Possibly due to the rate of growth, housing construction has stressed natural systems and presented challenges to municipal services, such as water and wastewater. Several initiatives are underway, such as the Mashpee Clean Water Plan, to restore water quality in Mashpee.

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The Town's zoning bylaws also constrain development, by limiting higher density, mixed-use development, which could produce more affordable housing. In 2021, the Town Planner prepared a technical memo for the Mashpee Planning Board, which included a build-out analysis related to the potential for additional residential development within Mashpee. This build-out analysis estimated a potential 294 housing units for new single-family home construction under the cluster subdivision bylaw. This analysis pointed out the need for additional housing types and increased density, where appropriate as a measure to produce more affordable housing (Build-Out Analysis and Recommendations relative to the proposed Mashpee Commons Development Agreement, 2021).

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Threats/Issues

1.3.6

~~Further information is needed in this section regarding housing. We will gather this information through engagement and stakeholder interviews. Mashpee's rapid rise in population since the 1970s has resulted in challenges to its housing supply and related aspects of Town life. While year-round housing options have increased since the COVID pandemic, there is still widespread concern around regarding the overabundance of seasonal housing. Approximately 30% of current housing stock is only used part of the~~

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year and considered second homes. Access to affordable housing is also minimal and underfunded. Citizens are particularly concerned with the importance of balancing affordable housing needs with open space protection, which is also covered in Chapters 4 and 7, Natural Resources, and Open Space and Recreation, respectively. Polluted waters from past development booms and a fragile environment present additional challenges for identifying safe areas for affordable housing development. There is also a lack of senior housing available, even as the overall age of Mashpee's population increases. Additional developable land is not readily available, so alternative regulatory and engineering solutions may be necessary to promote affordable and senior housing within Mashpee. Affordable housing remains difficult to implement without full-time staff dedicated to its creation.

1.3.7 Opportunities

The Town is committed to finding solutions to both an aging population and lack of affordable housing. Between the nearly 300 housing units available for single-family home construction, potential reuse opportunities, and densification, there are still multiple pathways at the Town's disposal. A diverse array of housing styles provides current and future residents with options that reflect their needs. Changes to zoning bylaws, including the Friendly Ch 40B, which overcomes zoning barriers, would allow new types of development in areas that may have previously been restricted. Mashpee residents are generally in agreement that there is a critical need for housing; however, this cannot come at the expense of preserving the natural environment, which is essential for economic prosperity and overall well-being. A sustainable alternative to new building construction is redevelopment. A growing number of properties are eligible for redevelopment.

Many residents support expansion of mixed-use development. The so-called, "Amazon Effect," has made residential development more appealing than commercial development. Work-from-home business models have encouraged many seasonal homeowners to move to Mashpee full-time. Previous industrial, office, and commercial uses can now be turned into residential spaces. In tandem with Town-owned land, this creates an expanding, untapped market for low-income and senior housing.

Current Measures

1.3.8

Further information is needed in this section regarding current measures. We will gather this information through community engagement.

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1.4 Community Engagement

Residents were invited to attend five workshop meetings to discuss the state of housing in Mashpee. The Community Systems and Built Systems workshops were the two primarily focused on housing issues in the Town. Over 60 residents showed up to voice their opinions. Residents were asked to identify strengths, weaknesses, opportunities, and threats, which prompted a discussion of numerous topics, but affordable housing, sustainable infrastructure, and seasonal housing, in particular. These discussions were recorded on sticky notes, organized into spreadsheets, and analyzed to guide the creation of this chapter.

Goals & Policies

Goals

1. Ensure that current and future Mashpee residents have access to adequate and diverse types of housing options.
2. Ensure that sustainable practices are integrated into all housing development decisions to create a safer, healthier community.

Policies

1. Prioritize redevelopment of single-use, auto-centric commercial strip development into compact, walkable, and pedestrian-friendly mixed-use neighborhoods that provide a variety of housing types.
2. Maximize the Town's potential to provide Subsidized Housing Inventory (SHI) eligible deed restricted affordable units by using Town owned property.
3. Expand the diversity of housing types to provide all residents with appropriate shelter.
4. Diligently and efficiently monitor and enforce inclusionary zoning requirements and provide professional oversight for any locally run housing programs and nurture relationships with community housing partners.
5. Incentivize the production of Accessory Dwelling Units (ADUs).
6. Implement sustainable building practices for all new construction and redevelopment.
7. Minimize housing vulnerabilities to climate change and natural disasters.

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~~1.5.3~~ ~~Current Measures~~

~~1.6~~ ~~Community Engagement (Optional)~~

~~Goals & Policies~~

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5.0 LAND USE

DISCLAIMER: This is a working draft and will continue to be updated as the Comprehensive Plan process evolves. Additional information will be added as stakeholder and public input is gathered. These blue boxes throughout the draft chapters represent areas of further consideration and study and will be updated with additional information as it is collected.

5.1 Vision

To be developed with ~~Town~~Town.

5.2 Introduction

The Land Use element's purpose within Mashpee's Comprehensive Plan is to establish a plan for land use in Mashpee over the next 20 years. This involves updating current, as well as proposing new land use controls and regulations designed to implement this plan. As defined by the Guidebook to Massachusetts Land Use 2021 by the American Planning Association, a land use plan shall be designed to provide a basis for decision making for the long-term future of the community and internally consistent in its policies, forecasts, and standards (Mitchell & Ritchie, 2021). [Chapter 2, Housing, provides additional information on development and housing trends.](#)

The Land Use Chapter is the centerpiece of comprehensive planning, connecting all other elements of the plan and serving as a guide for thoughtful municipal decision-making on how to best manage land in Mashpee. This element discusses the existing conditions in ~~town~~Town, including land use and zoning development.

5.3 Existing Conditions

To establish a plan and propose new land use controls and regulations, an updated inventory of existing land use conditions is required. This section includes an overview of existing land use conditions and current zoning in Mashpee.

5.3.1 Existing Land Use

Mashpee is home to the federally recognized Mashpee Wampanoag Tribe whose people have been living in Mashpee and the surrounding region for more than 12,000 years. Approximately 150 acres of land in Mashpee represents the Tribe's initial reservation where ~~it the Tribe~~ can exercise ~~its~~ full tribal sovereignty (~~Mashpee Wampanoag Tribe, n.d.~~), including the right to hunt, fish, and gather (~~Mashpee Wampanoag Tribe, n.d.~~). ~~This area~~ holds critical importance to the survival of ~~the~~ traditions, lifeways, and culture ~~of~~ ~~for~~ the Wampanoag Tribe (Mashpee Wampanoag Tribe). The Mashpee Wampanoag Tribe regulates Tribal member hunting, fishing, and gathering rights through traditional and codified Tribal law (Mashpee Wampanoag Tribe).

Mashpee has a rural resort character, consisting mainly of residential areas, active recreational facilities, forests, and wetlands (MassGIS, 2009). There are many sites, structures, rural landscapes, and significant archaeological sites that are threatened by suburban pressures from Falmouth and Barnstable (~~Massachusetts Historical Commission, 1984~~). ~~have remaining~~ (Massachusetts Historical Commission, 1984). Further information on the protection and preservation of important historic, cultural, and

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archaeological features of the ~~town~~Town is discussed in ~~the~~ Chapter 6, *Heritage and Preservation* Chapter. Land use changes that have occurred between 1951-2005 are summarized in Table 5-1.

Class of Land Use	1951	1971	1985	1999	2005	Change 1951-2005
Agriculture Land	503.07	337.99	238.02	190.80	112.48	-390.59
Forest	12588.24	11391.26	10135.37	8143.03	8667.46	-3920.78
Recreation & Public Space	181.81	495.99	639.35	886.45	868.76	686.95
Residential	480.05	1303.28	2351.66	3965.32	3198.95	2718.9
Commercial	15.64	59.81	128.20	208.10	153.24	137.6
Water	1455.16	1462.46	1462.46	1447.11	1526.69	71.53
Wetlands	470.70	503.12	566.26	574.46	874.56	403.86
Other	621.28	762.02	794.63	895.36	982.64	361.36

Source: MassGIS Land Use (1971-1999), MassGIS Land Use (2005)

Note:

a. MassGIS 2016 land cover/land use dataset does not conform to the classification schemes of previous land use data from MassGIS (1971-1999, 2005) and therefore not included for comparison purposes in Table 5-1.

b. The Historical Land Use dataset (1971-1999) uses a different methodology from the 2005 land use data and therefore not strictly comparable.

Table 5-2 below provides a breakdown of land cover based on Massachusetts Geographic Information System (MassGIS) 2005 Land Use data. This data set documents land area covered by forests, wetlands, impervious surfaces, agriculture, and other land and water classifications.

Land Use	Mass GIS Land Use Description (2005)	Mashpee Land Area (Acres)
Agriculture	Cranberry Bog: Both active and recently inactive cranberry bogs and the sandy areas adjacent to the bogs are used in the growing process. Impervious features associated with cranberry bogs such as parking lots and machinery are included.	108.32
	Pasture: Fields and associated facilities (barns and other outbuildings) are used for animal grazing and the growing of grasses for hay.	2.54
	Cropland: Generally, tilled land is used to grow row crops. Boundaries follow the shape of the fields and include associated buildings (e.g., barns). This category also includes turf farms that grow sod.	0.04
	Nursery: Greenhouses and associated buildings as well as any surrounding maintained lawn. Christmas tree (small conifer) farms are also classified as Nurseries.	1.58
	Total Agriculture	112.48
Recreation & Public Space	Urban Public/ Institutional: Lands comprising schools, churches, colleges, hospitals, museums, prisons, town Town halls or courthouses, police and fire stations,	117.19

Table 5-2. Existing Land Use 2005		
Land Use	Mass GIS Land Use Description (2005)	Mashpee Land Area (Acres)
	including parking lots, dormitories, and university housing. Also, may include public open green spaces like town Town commons.	
	Water-Based Recreation: Swimming pools, water parks, developed freshwater and saltwater sandy beach areas, and associated parking lots.	12.70
	Participation Recreation: Recreation Facilities are used by the public for active recreation. Includes ball fields, tennis courts, basketball courts, athletic tracks, ski areas, playgrounds, and bike paths plus associated parking lots. Primary and secondary school recreational facilities are in this category, but university stadiums and arenas are considered Spectator Recreation.	223.54
	Golf Course: Includes the greenways, sand traps, water bodies within the course, associated buildings, and parking lots.	383.76
	Saltwater Sandy Beach	131.56
	Total Recreation & Public Space	868.76
Residential	Very Low-Density Residential: Housing on > 1 acre lots and very remote, rural housing.	146.45
	Low-Density Residential: Housing on 1/2 - 1 acre lots.	723.33
	Medium Density Residential: Housing on 1/4 - 1/2 acre lots.	1,345.86
	High-Density Residential: Housing on smaller than 1/4 acre lots.	559.72
	Multi-Family Residential: Duplexes (usually with two front doors, two entrance pathways, and sometimes two driveways), apartment buildings, condominium complexes, including buildings, and maintained lawns.	423.59
	Total Residential	3,198.95
Commercial	Malls, shopping centers, and larger strip commercial areas, plus neighborhood stores and medical offices (not hospitals).	153.24
Industrial	Light and heavy industry, including buildings, equipment, and parking areas.	77.59
Undeveloped	Forest: Areas where tree canopy covers at least 50% of the land. Both coniferous and deciduous forests belong to this class.	8,667.46
	Open Land: Vacant land, idle agriculture, rock outcrops, and barren areas.	119.79
	Transitional: Open areas in the process of being developed from one land use to another (if the future land use is at all uncertain).	36.81
	Brushland/Successional: Predominantly (> 25%) shrub cover, and some immature trees not large or dense enough to be classified as forest.	21.47
	Mining:	26.96

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Table 5-2. Existing Land Use 2005

Land Use	Mass GIS Land Use Description (2005)	Mashpee Land Area (Acres)
	Includes sand and gravel pits, mines, and quarries. The boundaries extend to the edges of the site's activities, including on-site machinery, parking lots, roads, and buildings.	
	Waste Disposal: Landfills, dumps, and water and sewage treatment facilities such as pump houses, and associated parking lots.	14.26
	Total Undeveloped	8,886.74
Transportation and Utility	Transportation: Airports (including landing strips, hangars, parking areas, and related facilities), railroads and rail stations, and divided highways (related facilities would include rest areas, highway maintenance areas, storage areas, and on/off ramps).	611.49
	Marina: Include parking lots and associated facilities but not docks	6.86
	Powerline/Utility: Powerline and other maintained public utility corridors and associated facilities, including power plants and their parking areas.	62.18
	Total Transportation and Utility	680.53
Cemeteries	Includes the gravestones, monuments, parking lots, road networks, and associated buildings.	5.23
Wetlands	Forested Wetland: DEP Wetlands (1:12,000) WETCODEs 14, 15, 16, 24, 25 and 26.	218.50
	Non-Forested Wetland: DEP Wetlands (1:12,000) WETCODEs 4, 7, 8, 12, 23, 18, 20, and 21.	351.18
	Saltwater Wetland	304.88
	Total Wetlands	874.56
Water	DEP Wetlands	1,526.69
Total		16,384.78

Source: MassGIS Land Use (2005)

Mashpee encompasses approximately 16,384.78 acres of land. Of the total land, 65.6% is constrained by ecologically sensitive habitats and dense canopy including forest (52.9%), forested wetlands (1.3%), non-forested wetlands (2.1%), and water (9.3%).

Table 5-3. Existing Land Use 2016

MassGIS Land Use Code (2016)	Mass GIS Land Use Name (2016)	Mashpee Land Area (Acres)
7	Agriculture	40.60
3	Commercial	1,000.18
4	Industrial	121.72
10	Mixed use, primarily residential	56.17
2	Open Land	5,030.94
8	Recreation	176.69
12	Residential – multi-family	947.99
13	Residential - other	44.39

Table 5-3 Existing Land Use 2016

11	Residential – single-family	3,253.21
55	Right-of-way	974.74
9	Tax exempt	3,167.01
0	Unknown	54.86
88	Water	1,516.44
Total		16,384.94

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Source: MassGIS Land Cover/Land Use (2016)

Note:

a. MassGIS 2016 land cover/land use dataset does not conform to the classification schemes of previous land use data from MassGIS (1971-1999; 2005). The 2016 Mass GIS land use/land cover information for Mashpee is provided for informational purposes.

Land Use 2005 and 2016 maps are needed in this section. We will map this information through MassGIS Data: Land Use (2005) and 2016 Land Cover/Land Use.

5-3-4.5.3.2 Existing Zoning Districts

The allowable use of land is determined by the designation of a zoning district, which is established in the Zoning Bylaw. The Zoning Bylaw is responsible for establishing the zoning districts in ~~town~~Town and determining which uses are allowed in each district. The ~~town~~Town is divided into six underlying zoning districts (Town of Mashpee, 2015). Underlying zoning districts and their minimum lot size requirements are detailed in Table 5-4.

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Table 5-4. Minimum Lot Size for Zoning Districts

Zoning District	Minimum Lot Size (square feet)	Minimum Lot Frontage (square feet)
Residential Districts		
R-3	40,000	150
R-5	80,000	150
Commercial Districts		
C-1	40,000	200
C-2	40,000	200
C-3	40,000	200
Industrial Districts		
I1	40,000	200

Source: Zoning Bylaw of the ~~Town~~Town of Mashpee 2020

Figure 2 Zoning

Source: Town GIS

Setbacks

The purpose of the Mashpee Wetlands Protection Bylaw, Chapter 172 of the Mashpee General Bylaw, is to protect Wetlands, related water resources, and adjoining land areas in the Town of Mashpee from a variety of human and natural threats. Zoning bylaws have been adopted to promote wetland conservation efforts. Article VII of the Zoning Bylaw outlines land space requirements, including building setback requirements from bodies of water, wetlands, and cranberry bogs. Section 174-33 notes that structures must adhere to a setback of at least 50 feet from any water or wetland. Section 174-34 requires a 150-foot setback for any habitable structure from any active [within the previous five years] cranberry bog or meadow.

Overlay Districts

In addition to the underlying zoning districts described above, the Town of Mashpee applies seven overlay districts. An overlay district is a specific type of zoning district that floats on top of an underlying zoning district and brings an additional layer of standards to all areas within the defined overlay boundary, regardless of the underlying base zoning district. Overlay districts can serve multiple purposes, such as encouraging denser development or discouraging development in natural resource areas.

The Town of Mashpee Bylaw does not provide a purpose and criteria for most overlay districts in Mashpee. Below is an explanation of the purpose or criteria for overlay districts provided in the Zoning Bylaw:

Groundwater Protection District:

The purpose of Article XIII in the Zoning Bylaw is to protect public health from the contamination of existing and potential public and private water supplies and to protect the general welfare by preserving limited water supplies for present and future use.

Popponesset Overlay District:

The overlay allows for small lot sizes (6,000 square feet) and greater lot coverage.

Wireless Facility Overlay District:

The area within the two hundred ten (210') foot wide Commonwealth Electric Company transmission line easement running generally east-west between the Falmouth Town of Mashpee line and the Barnstable Town of Mashpee line, except that portion within the boundaries of the Otis A.N.G.B. Accident Prevention Zone; All other lands in the Town of Mashpee which are not located within the boundaries of the Mashpee National Wildlife Refuge, within one thousand (1000') feet of the mean high water line of a Great Pond or a tidal water body, within historic districts, within one thousand (1000') feet of a historic district or of structures or places listed in the Massachusetts State Register of Historic Places, within the Otis A.N.G.B. Accident Prevention Zone, within the R-3 or R-5 Zoning Districts or within three hundred (300') feet of the right of way of any designated scenic roadway.

Mashpee Center Overlay District:

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The Mashpee Center Overlay District shall include those parcels shown on the 1998 Mashpee Assessors' Maps as Map 27, Block 46, Map 28, Blocks 3 through 12, Map 35, Blocks 30 and 31, and Map 36, Blocks 1 through 20, 5A, 5B, 41 through 45, 47 and 49 through 52. The Mashpee Historic District is located within the Mashpee Center Overlay District.

Historic District:

Section 110-1 of the Mashpee General Bylaw states that the purpose of the Historic District is to aid in the preservation and protection of the distinctive characteristics and architecture of buildings and places significant in the history of the ~~town~~Town, the maintenance, and improvement of their settings and the encouragement of new building designs compatible with the existing architecture.

Otis A.N.G. B. Accident Prevention Zone:

The Otis A.N.G.B. Accident Prevention Zone is shown on a map entitled "Otis A.N.G. B. Accident Prevention Zone" dated January 1987 on file in the office of the ~~Town~~Town Clerk. It is considered part of the Zoning Bylaw. No new school, hospital, theater, or place of public assembly shall be erected or permitted within this zone. In addition, no portion of any structure located within the said zone may exceed thirty-five (35') feet in height, measured from the highest natural grade of the site at the foundation line.

Light Industrial Overlay District:

The Light Industrial Overlay District includes all parcels shown as within the I-1 and C-3 Zoning Districts on the Official Zoning Map.

~~Further information is needed in this section regarding the purpose of the Wireless Facility Overlay District and the Otis A.N.G. B. Accident Prevention Zone. We will gather this information through the Town.~~

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The Zoning Overlay map will be updated to include the Groundwater Protection District, Popponesset Overlay District, Wireless Facility District, Mashpee Center Overlay, Historic District, Otis A.N.G.B Accident Prevention Zone, and the Light Industrial Overlay District.

Figure 3 Zoning Overlays*Source: Town GIS*

The Zoning Overlay map will be updated to include the Groundwater Protection District, Popponesset Overlay District, Wireless Facility District, Mashpee Center Overlay, Historic District, Otis A.N.G.B Accident Prevention Zone, and the Light Industrial Overlay District.

Areas of Critical Environmental Concern (ACEC):

The purpose of Article XIV in the Zoning Bylaw is the protection of Areas of Critical Environmental Concern, areas of significance for flood control or the prevention of storm damage, waters containing shellfish and fisheries, and other public interests identified by the Wetlands Protection Act (MGL C. 131, §40 and 40A) and the ~~Town~~Town's Wetlands Protection Bylaw.

The Floodplain District:

Article XI in the Zoning Bylaw covers the Floodplain District, which includes all Special Flood Hazard Areas within the ~~Town~~Town Designated as Zone EA or VE on the Barnstable County Flood Insurance Rate Map (FIRM) issued by the Federal Emergency Management Agency (FEMA) for the administration of the National Flood Insurance Program.

Marijuana Exclusion Zone:

The purpose of the Marijuana Exclusion Zone is to show areas where marijuana establishments are not permitted to operate within the ~~town~~Town.

New Seabury Special Permit Zones:

Further information is needed in this section regarding the purpose of the New Seabury Special Permit Zone. We will gather this information through the Town.

A Map titled Exclusion and Special Permit Zones will be added to include the Marijuana Exclusion Zone and the New Seabury Special Permit Zones.

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A Map titled Exclusion and Special Permit Zones will be added to include the Marijuana Exclusion Zone and the New Seabury Special Permit Zones.

Cluster Development:

The purpose of Section 174-47 of the Zoning Bylaw is to encourage the preservation of open space, reduce the impact of new development on the Town's water quality and natural resources, to promote the more efficient use of land and municipal infrastructure, and to protect and promote the health, safety, and general welfare of the inhabitants of the Town.

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Accessory Apartment:

The Zoning Bylaw defines accessory apartments as apartments created within or detached from a single-family residential structure under the provisions of §174-45.4. One accessory apartment is permitted per lot under the Zoning Bylaw.

Subdivisions:

The Mashpee Planning Board adopted an updated version of the Rules and Regulations Governing the Subdivision of Land in 2017. This document details the Town's regulations for designing and constructing

subdivisions, in accordance with the Massachusetts Subdivision Control Law (Massachusetts General Laws Chapter 41, Sections 81K – 81GG). The Planning Board approves all “subdivisions,” as defined in Section III of the Rules and Regulations. Section 174-67.1, under Article XI of the Zoning Bylaw, regulates subdivisions as pertaining to floodplain zone provisions: all subdivision proposals shall be designed to ensure that public utilities and facilities are located and constructed to minimize or eliminate flood damage; and adequate drainage is provided to reduce exposure to flood hazards.

The Open Space Incentive Plan

Open Space Incentive Development

Section 174-46 details the zoning regulations related to open space protection in Mashpee. An open space incentive development may be granted through special permit by the Planning Board in any residential district, except as provided under Subsection H., to preserve open space and natural resource areas within the Town, promote an efficient pattern of land development, and promote the health, safety and general welfare of the inhabitants of the Town.

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Mashpee and Quashnet River Protective Districts:

The purpose of this Article XII in the Zoning Bylaw is the preservation of the Mashpee River and Quashnet River and the protection of wildlife resources. The Mashpee and Quashnet River Protective Districts Areas are shown on the Open Space Incentive Plan.

Primary and Secondary Conservation Areas:

The Primary and Secondary Conservation Areas are shown on the Open Space Incentive Plan.

Further information is needed in this section regarding Open Space Incentive Plan. We will gather this information through the Town.

Table 5-5 below summarizes the total land area by zoning categories.

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Zoning Category	Acres	Percentage of Total Land Area	Regulatory Authority	Provisions
Residential Districts			Town of Mashpee	Zoning Bylaw, §174-4
R3	6084.1	37.1%		
R5	497.8	3.0%		
Commercial Districts			Town of Mashpee	Zoning Bylaw, §174-4
C1	250.7	1.5%		
C2	99.9	0.6%		
C3	74.49	0.5%		
Industrial Districts			Town of Mashpee	Zoning Bylaw, §174-4
I1	1273.35	7.8%		

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Table 5-5 Land Area by Zoning Category

Zoning Category	Acres	Percentage of Total Land Area	Regulatory Authority	Provisions
Groundwater Protection District	5571.64	34.0%	Commonwealth of Massachusetts, Town Town of Mashpee	Massachusetts General Laws, Chapter 41A Zoning Bylaw, §174-79
Popponesset Overlay District	164.68	1.0%	Town Town of Mashpee	Zoning Bylaw, §174-4
Wireless Facility Overlay District	608.50	3.7%	Town Town of Mashpee	Zoning Bylaw, §174-4
Mashpee Center Overlay District	62.65	0.4%	Town Town of Mashpee	Zoning Bylaw, §174-4
Light Industrial Overlay District	1347.84	8.2%	Town Town of Mashpee	Zoning Bylaw, §174-4
Otis A.N.G. B. Accident Prevention Zone			Town Town of Mashpee	Zoning Bylaw, §174-4
Mashpee Flood Insurance Rate Map	3862.38	23.6%	Federal Emergency Management Agency (FEMA)	Zoning Bylaw, §174-4
Areas of Environmental Concern	881.37	5.4%	Secretary of Energy and Environmental Affairs (EEA)	Massachusetts General Laws, Chapter 131, §40 and 40A
Historic District	91.29	0.6%	Mashpee Historic District Commission	Mashpee General Bylaw, §110-1
Mashpee and Quashnet River Protective Districts			Commonwealth of Massachusetts Town Town of Mashpee, Open Space Incentive Plan (1998)	Massachusetts General Laws, Chapter 131, §40 Zoning Bylaw, §174-4
Primary and Secondary Conservation Areas			Town Town of Mashpee, Open Space Incentive Plan (1998)	Zoning Bylaw, §174-4
Marijuana Exclusion Zone	436.13	2.7%	Commonwealth of Massachusetts	Massachusetts General Laws, Chapter 94G §3(a)(2)(ii)
Seabury Special Permit Zones	1014.00	6.2%	Town Town of Mashpee	

Source: Mashpee GIS

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~~Land Area by Zoning Category needs to be updated in this section. We will add this information through~~

~~5.3.6 Development Trends~~

~~Further information is needed in this section regarding development trends. We will gather this information through stakeholder interviews.~~

~~5.3.3 Threats/Issues~~

~~Single-use commercial centers have limited Mashpee's growth potential in recent years. Mixed-zoning is not widespread throughout Mashpee, which reduces cohesion between different land uses within the Town. Additional zoning concerns, such as the current restrictive ADU bylaw, make it difficult for Mashpee to capitalize on underutilized land.~~

~~5.3.8~~

~~Further information is needed in this section regarding threats. We will gather this information through stakeholder interviews.~~

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~~5.3.4 Opportunities~~

~~Residents have a strong desire to convert existing single-use areas to mixed-use development to facilitate a stronger connection between residential and commercial areas while protecting open space and natural resources throughout the Town. Amending the zoning ordinance to encourage a wider array of land use options would promote economic development and modernize Mashpee's land use policies.~~

~~5.3.10 5.3.5 Current Measures & Initiatives~~

~~Further information is needed in this section regarding current measures. We will gather this information through stakeholder interviews.~~

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5.4 Community Engagement

Further information is needed in this section regarding community engagement. We will gather this information through stakeholder interviews and community engagement.

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5.5 Goals & Policies

Goals & Policies

Further information is needed in this section regarding goals and policies. We will gather this information through stakeholder interviews and community engagement.

Goals

1. Maintain Mashpee's small-town community character and appearance.
2. Ensure development is consistent with current and future growth projections.
3. Promote mixed-use development to concentrate various activities in appropriate centralized locations.

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Policies

1. Focus new growth in already disturbed areas of Town where adequate infrastructure is planned or in place and incentivize the protection/preservation of the remaining vacant properties where the only feasible growth does not meet the projected housing need.
2. Ensure Town services and facilities are adequate in consideration of current shortfalls and future growth projections.
3. Maintain the legitimacy and accuracy of the zoning bylaw and other local regulatory documents.
4. Identify opportunities for mixed-use development in existing commercial areas as appropriate.

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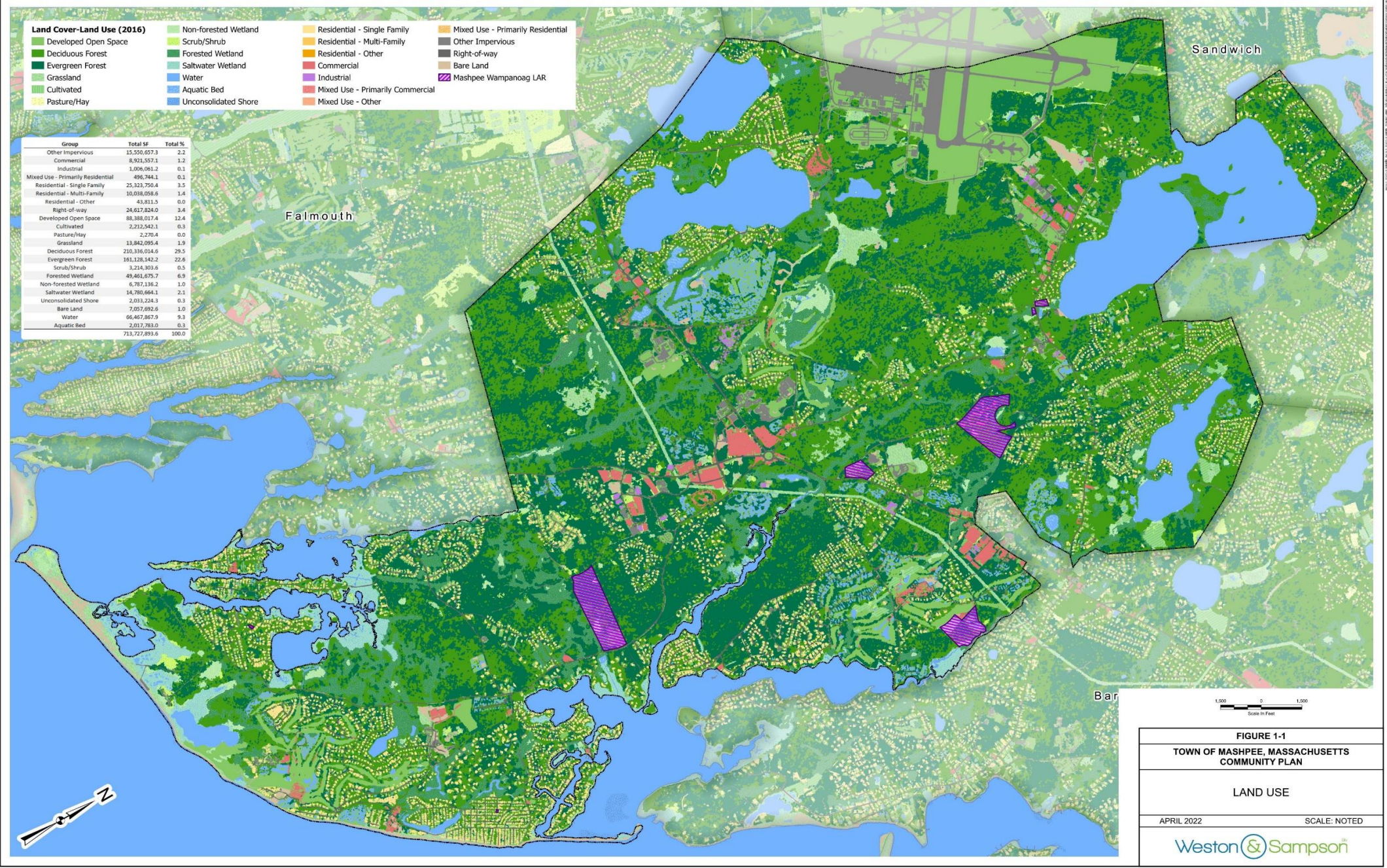
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~~Town~~Town of Mashpee. (2021, October 18). *Zoning Bylaws of the ~~Town~~Town of Mashpee*. Retrieved from https://www.mashpeeema.gov/sites/g/files/vyhlif3426/f/uploads/2021_zoning_bylaws.pdf

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Note:

a. MassGIS 2016 land cover/land use dataset does not conform to the classification schemes of previous land use data from MassGIS (1971-1999; 2005) and therefore not included for comparison purposes in Table 5-1.

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b. The Historical Land Use dataset (1971-1999) uses a different methodology from the 2005 land use data and therefore not strictly comparable.

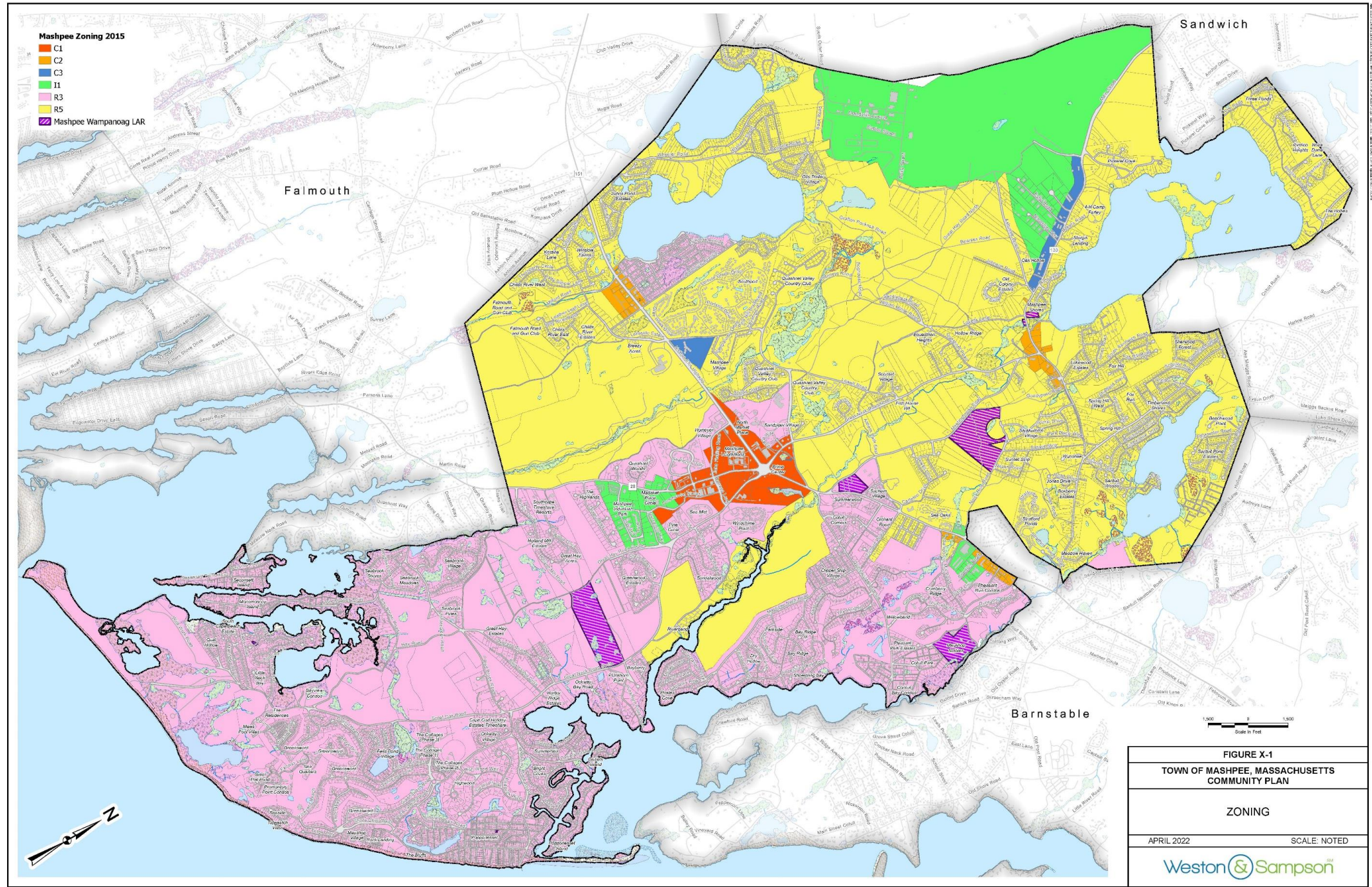


Figure 2 Zoning

MASHPEE, MA

Source: ~~Town~~ [Town GIS](#)

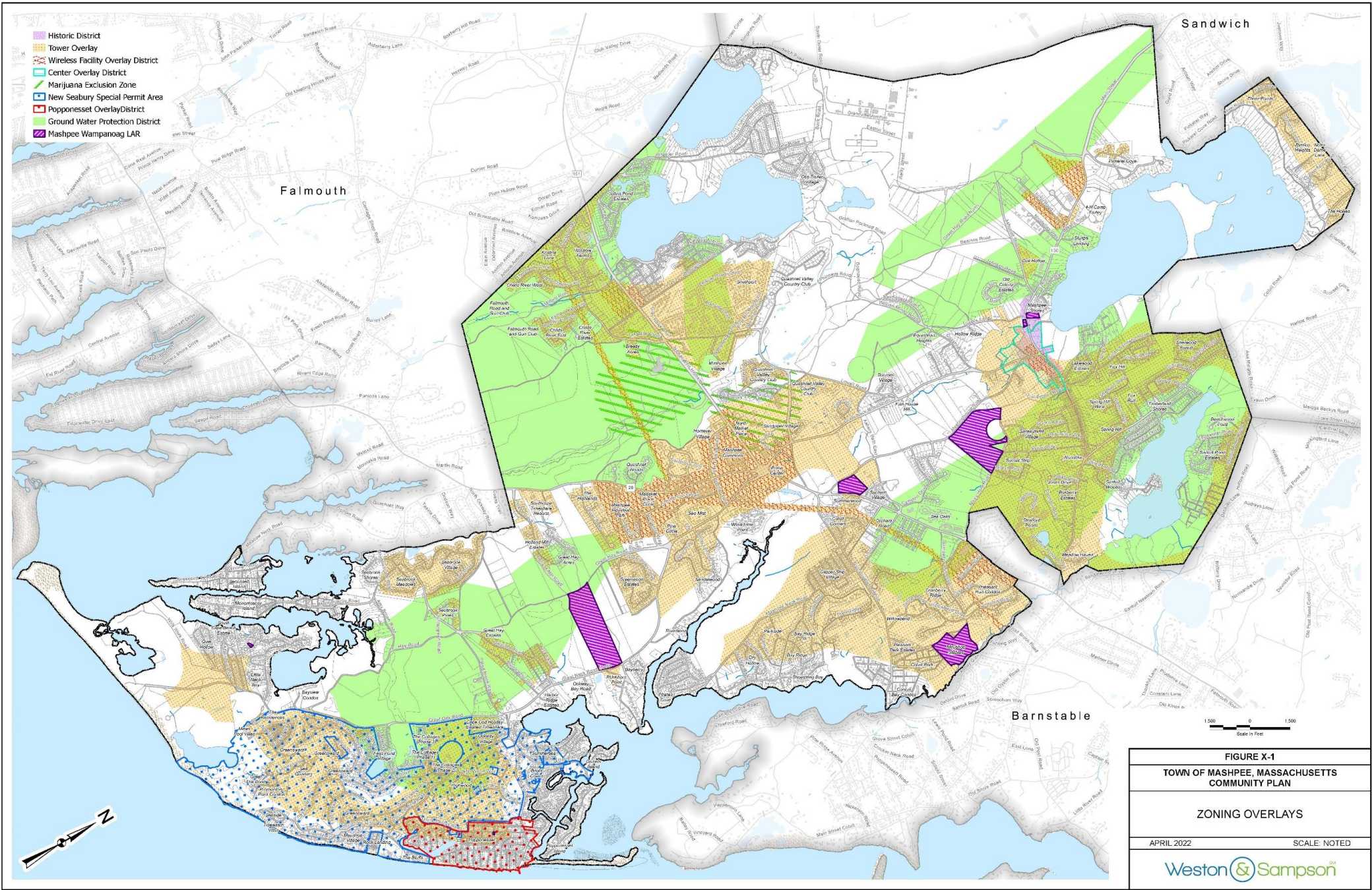


Figure 3 Zoning Overlays

Source: Town GIS

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4.0 NATURAL RESOURCES

DISCLAIMER: This is a working draft and will continue to be updated as the Comprehensive Plan process evolves. Additional information will be added as stakeholder and public input is gathered. These blue boxes throughout the draft chapters represent areas of further consideration and study and will be updated with additional information as it is collected.

4.1 Introduction

Mashpee is located along the southern coast of the Cape Cod peninsula. With over five miles of coastline along Nantucket Sound and Vineyard Sound, the ~~Town~~Town of Mashpee manages large coastal embayments and four of the largest freshwater ponds on the Cape. These are critical components of the landscape and provide habitat for a variety of flora and fauna. Chapter 10, Water and Coastal Resources, provides additional information on FEMA flood hazards, shorelines, and surface and groundwater quality. Mashpee is also rich in cultural and historical resources and ~~is~~ home to the federally recognized Mashpee Wampanoag Tribe, whose people have been living in Mashpee and the surrounding region for more than 12,000 years.

Mashpee's natural resources have played a defining role in the ~~T~~own's development, settlement pattern, and character. Mashpee enjoys a variety of important natural features and open space resources, including the Mashpee National Wildlife Refuge and upland forests that support regional water resources and habitat. These natural resources in Mashpee play a role in tourism, recreation, economic health, and the scenic value of the ~~T~~own. As described in the Cape Cod Regional Policy Plan:

Natural Areas are generally the region's least developed and most sensitive areas. The vision for these areas is to minimize adverse development impacts to sensitive resource areas, to preserve lands that define Cape Cod's natural landscape and contribute to its scenic character, and to improve the Cape's resilience to severe storms and the effects of climate change. (Cape Cod Commission, 2018)

For all of these reasons, natural resource management is a critical component of this Comprehensive Plan and plays an important role in planning for Mashpee's future. Because natural resources span so many topic areas, this common theme must be reflected in other elements of this plan. For example, ~~land use and water supply~~ are inextricably linked to natural resources, making them vital components of all focus areas of comprehensive planning.

4.2 Existing Conditions

To establish effective policies to protect the ~~town~~Town's natural resources, a thorough inventory of the ~~T~~own's natural resources is required. This section includes existing conditions of Mashpee's natural resources under the following categories:

- Landscape and Scenic Resources
 - ~~Shoreline~~
 - ~~Flood Zones~~
 - ~~Wetlands~~
- Surficial Geology

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- Soils and Vegetation
- Wetlands
- Wildlife Habitat
- Surface Water
- Groundwater

In addition, this chapter also identifies threats to natural resources for the Town of Mashpee to consider future actions to mitigate and protect these important assets.

4.2.1 Landscape and Scenic Resources

Mashpee has many scenic resources, including water views and conservation areas spanning such as the Mashpee River, the Popponesset Spit, and Nantucket Sound (Mashpee Environmental Coalition, n.d.). Other areas of interest include:

- Alper Conservation Area
- Attaquin Park
- Child's River Conservation Area
- Jehu Pond Park
- John's Pond Park Conservation Area
- Lopez Conservation Area
- Lowell Holly Reservation
- Mashpee River Woodlands
- Mashpee Wildlife Refuge
- Santuit Preserve
- South Cape Beach Area
- South Cape Beach State Park
- South Cape Town Beach
- South Mashpee Pine Barrens

- South Cape Beach Area
- Santuit Preserve

Mashpee also has numerous trails that provide opportunities for scenic viewing and is a significant resource of ecological assets (Mashpee Environmental Coalition, n.d.). The Waquoit Bay is designated as an Area of Critical Environmental Concern by the Massachusetts Secretary of Energy and Environmental Affairs (EEA) for having the quality, uniqueness, and significance of natural and cultural resources (MassGIS, 2009).

Further information is needed in this section regarding landscape and scenic resources. We will gather this information through stakeholder interviews.

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~~4.2.4 Shoreline~~

~~Mashpee has over five miles of coastline along Nantucket Sound and Vineyard Sound. The town's shoreline is formed by large coastal embayments: Waquoit Bay to the west and Popponesset Bay to the east. Waquoit Bay and Popponesset Bay include several small rivers, brooks, and small ponds in the area. The majority of Mashpee's shoreline has been claimed by development, including houses, Town beaches, and summer camps. Information regarding development by the Popponesset Corporation and the New Seabury Resort is detailed in the Land Use Chapter. The Mashpee River Reservation, which empties into Popponesset Bay, remains in good quality (The Trustees of Reservations). Further information on water quality is detailed under the Surface Water section of this chapter.~~

~~4.2.6 Flood Zones~~

~~Flood zones are those areas subject to temporary inundation during storm events or seasonal increases in rainfall or snowmelt. Flood zones are defined as areas with a 1% chance of flooding in any given year. These zones play an important role in naturally protecting a community from flood damage. Flood zones are commonly associated with water bodies and are designated and mapped by the Federal Emergency Management Agency (FEMA) by category. Flooding in Mashpee is the result of coastal storms, nor'easters, heavy rains, tropical storms, and hurricanes. Approximately 2,816.43 acres of land in Mashpee is classified by FEMA as a High Risk Coastal Area (VE), a Regulatory Floodway (AE), or a 0.2% annual chance flood areas (X) within the town (MassGIS, 2017).~~

~~Article XI in the Zoning Bylaw covers the Floodplain District, which includes all Special Flood Hazard Areas (SFHAs) within the town designated as Zone EA or VE on the Barnstable County Flood Insurance Rate Map (FIRM) issued by the Federal Emergency Management Agency (FEMA) for the administration of the National Flood Insurance Program (Town of Mashpee, 2021). These are locations where the NFIP's floodplain management regulations must be enforced because they are within the land area covered by the floodwaters of the base or 100-year flood (Federal Emergency Management Agency).~~

~~Flood Map is needed in this section. We will map this information through MassGIS Data: FEMA National Flood Hazard Layer.~~

~~Parcels and buildings vulnerable to flooding were identified in the 2017 Hazard Mitigation Plan Draft. The plan identified 19% of the parcels in the A zone and 4.6% of the parcels in the V zone (Cape Cod Commission, 2017). Infrastructure that is vulnerable to the impacts of flooding was also identified in the 2017 Hazard Mitigation Plan. These areas include several culverts, parts of Great Neck Road South and Great Oak Road, Route 28 east of the rotary, and the School Street Bridge (Cape Cod Commission, 2017). Additionally, the Municipal Vulnerability Preparedness (MVP) Planning process identified existing development in vulnerable floodplains, as well as coastal and stormwater flooding of low-lying roads and culverts, including Brook Road crossing Red Brook and Great Oak Road adjacent to Jehu Pond (Woods Hole Group, 2020).~~

~~4.2.14.2.2 Surficial Geology~~

~~The landscape of Barnstable County consists of glacial landforms from the last ice age. The ~~The~~ moving ice scraped bedrock from southern New England and ~~and~~ deposited it as glacial sediment in Cape Cod (General Geology of Barnstable County, Massachusetts). Kettle holes were formed from blocks of ice left behind by retreating glaciers (Town of Mashpee, 2008). As a result, steep slopes began to collapse around~~

their edges and formed a more gentle grade (Town of Mashpee, 2008). Sea level rise, ~~resulting due to from the ice~~ gradually melting ~~ice~~, resulted in freshwater reaching the ground into porous outwash sediments (Town of Mashpee, 2008). Mashpee consists of gravelly pebble to cobble-sized gravel typical of outwash plains (Town of Mashpee, 2008). In addition to sand and gravel, the New Seabury and Popponesset Beach areas consist of boulders and larger stones (Town of Mashpee, 2008).

~~4.2.12~~ 4.2.3 Soils and Vegetation

The ~~T~~own is surrounded by pines and oaks indigenous to the area. In addition to the pine trees and scrub oak, the Mashpee Pine Barrens, the Mashpee River Woodlands, and the Besse Bog consist of rare plant species. These areas are further detailed in ~~the Chapter 7~~, Open Space and Recreation, ~~chapter~~ of this Comprehensive Plan. The Mashpee Pine Barrens have pockets of Atlantic white cedar swamps that grow in sandy glacial deposits with standing water (Town of Mashpee, n.d.). The Mashpee River Woodlands include pine and oak forest, an understory of huckleberry, inkberry, and sheep laurel (Town of Mashpee, n.d.). ~~E~~The eastern white pines are the most common trees found in this conservation area (Town of Mashpee, n.d.). The Besse Bog is home to the rare pink lady's slipper, which is found on acidic soils, and made up of mixed forest and freshwater wetlands. (Town of Mashpee, n.d.).

~~4.2.14~~ 4.2.4 Wetlands

Wetlands generally occur in transitional areas between dry land and open water and they support vital natural functions. They are typically areas of poor drainage and standing water, either on a seasonal or year round basis. Approximately 2,624.59 acres of the town are wetlands, this includes barrier beach system, coastal and beach dunes, cranberry bogs, deep, shallow and salt marsh, shrub and wooded swamp, wooded swamp coniferous, deciduous, and mixed trees, tidal flat, and open water (MassGIS, 2017). Massachusetts Department of Environmental Protection (DEP) wetlands are summarized by the description in table 4-1 below.

Commented [LL4]: Add maps of wetlands

Table 4-1 DEP Wetlands in Mashpee	
Wetland Description	Acres
Barrier Beach System	29.0
Barrier Beach Coastal Beach	32.86
Barrier Beach Coastal Dune	19.77
Bog	7.23
Coastal Bank Bluff or Sea Cliff	10.49
Coastal Beach	29.14
Coastal Dune	11.66
Cranberry Bog	82.36
Deep Marsh	44.05
Open Water	1524.34
Salt Marsh	307.02
Shallow Marsh Meadow Or Fen	104.51
Shrub Swamp	199.38
Tidal Flat	0.22
Wooded Swamp Coniferous	40.03
Wooded Swamp Deciduous	116.19

Table 4-3 DEP Wetlands in Mashpee

Wooded Swamp Mixed Trees	66.34
Total	2624.59

Source: MassDEP Wetlands

Mashpee's Conservation Department and Commission are responsible for permitting and enforcement of the Massachusetts Wetlands Protection Act and the more protective Town of Mashpee Wetland Bylaw, Chapter 172 (Town of Mashpee). The purpose of the Mashpee Wetlands Protection Bylaw is to protect the wetlands, related water resources, and adjoining land areas in town by prior review and control of activities deemed by the Conservation Commission likely to have a significant or cumulative effect upon resource area values, including but not limited to the following: public or private water supply, groundwater, flood control, erosion and sedimentation control, storm damage prevention, including coastal storm flowage, water quality, water pollution control, fisheries, shellfish, wildlife habitat and biodiversity, rare species habitat, including rare plant species, recreation, agriculture, and aquaculture values. Article XIV in the Zoning Bylaw protects public interests identified by the Wetlands Protection Act (MGL C. 131, §40 and 40A) and the Town's Wetlands Protection Bylaw.

4-2-774.2.4 Wildlife Habitat

An array of open waters, wetlands, rivers, and forests in the town provide habitat for a variety of waterfowl and wildlife, while also simultaneously supporting tourism, clean water, and outdoor activities. This section provides an overview of various wildlife habitats found within Mashpee.

Vernal Pools

Vernal pools, also called vernal ponds or ephemeral pools, are unique, ecologically significant seasonal pools of water that provide habitat for distinctive plants and animals. They are a specific type of wetland usually devoid of fish and thus allow the safe development of natal amphibian and insect species unable to withstand competition or predation by fish. According to the Natural Heritage and Endangered Species office (NHESP), Mashpee currently has 39 certified vernal pools which are mostly located on private land that is not protected from development. Additionally, 38 "potential vernal pools" are also located in the town.

Wildlife Habitat Map is needed in this section. We will map this information through MassGIS Data: NHESP Potential Vernal Pools.

As noted on the Massachusetts Department of Environmental Protection (DEP) website, Massachusetts is unique in its efforts to protect vernal pools. In 1988, the MA Wetlands Protection Act was amended to include wildlife habitat as a reason to protect wetlands, and in recognition of the value of vernal pools to wildlife, they were defined and included in the regulation.

Wildlife Corridor and Habitat

BioMap2 is a framework offered by the MassWildlife's Natural Heritage & Endangered Species Program and Division of Fisheries and Wildlife for protection and stewardship of lands and waters that are most important for conserving biological diversity in Massachusetts. Mashpee contains a Critical Natural Landscape identified by BioMap2. Critical Natural Landscape identifies large natural landscape blocks that are minimally impacted by development, as well as buffers around some Core Habitats to enhance

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resilience (UMass Center for Agriculture, Food, and the Environment). BioMap2 is the preferred information source for conservation planning and action (UMass Center for Agriculture, Food, and the Environment). Mashpee has 9,642 acres of Critical Natural Landscape area (Massachusetts Division of Fisheries & Wildlife, 2012).

~~BioMap Critical Natural Landscape Map is needed in this section. We will map this information through MassGIS Data: MassGIS: BioMap2~~

The Mashpee National Wildlife Refuge has a unique partnership with federal, state, and private conservation groups to preserve waterfowl and wildlife (U.S. Fish & Wildlife Service). The Mashpee National Wildlife Refuge was established in 1995 to protect and preserve natural resources associated with the Waquoit Bay area (U.S. Fish & Wildlife Service). Waquoit Bay supports one of the most diverse estuarine fish communities in the state (Waquoit Bay National Estuarine Research Reserve).

The wetlands, rivers, marshes, and upland forests ~~throughout Mashpee in the town~~ provide habitat for regionally significant or rare birds, fish, reptiles, ~~amphibians~~, and flora. The upland forests provide benefits to wildlife species, including marbled and Jefferson salamanders (U.S. Fish & Wildlife Service). The Mashpee River is in great quality and notable for the rare sea-run brook trout (The Trustees of Reservations). The Quashnet River flows through mostly undeveloped land into Waquoit Bay (Division of Fisheries & Wildlife). The river has been the focus of several habitat improvement projects to improve trout habitat (Division of Fisheries & Wildlife). The ~~town~~ Town also supports bird species of high conservation priority, including the Eastern Towhee in the Mashpee National Wildlife Refuge (Avibase - The World Bird Database).

Species of Concern

The Natural Heritage & Endangered Species Program (NHESP) Office lists species that are scarce in Massachusetts and considered to be endangered, threatened, or of special concern. This list includes several animals and plant species in Mashpee, which cover 3,992.75 acres of land within the ~~town~~ Town (MassGIS, 2021). The Massachusetts Endangered Species Act (MESA) and its regulations protect rare species and their habitats (MassWildlife's Natural Heritage & Endangered Species Program). NHESP Priority Habitat areas determine whether or not a proposed project or activity must be reviewed by the NHESP for compliance with the (MESA) and its implementing regulations (MassGIS, 2021). Documented MESA-listed species observations are summarized in Table 4-12 below.

Table 4-12. MESA-listed Species Observations			
Common Name	Taxonomic Group	MESA Status	Most Recent Observation
American bittern	Bird	Endangered	2006
American brook lamprey	Fish	Threatened	2014

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Table 4-12. MESA-listed Species Observations

Barn owl	Bird	Special Concern	1991
Buck moth	Butterfly/Moth	Special Concern	2013
Coastal heathland cutworm	Butterfly/Moth	Special Concern	2019
Common tern	Bird	Special Concern	2008
Commons' rosette-grass	Vascular Plant	Special Concern	1968
Dune sympistis	Butterfly/Moth	Special Concern	2019
Dwarf bulrush	Vascular Plant	Threatened	1990
Eastern box turtle	Reptile	Special Concern	2019
Eastern meadowlark	Bird	Special Concern	2019
Eastern pondmussel	Mussel	Special Concern	2014
Eastern whip-poor-will	Bird	Special Concern	2013
Grasshopper sparrow	Bird	Threatened	2017
Inundated beaksedge	Vascular Plant	Threatened	1926
Least tern	Bird	Special Concern	2017
Little brown bat	Mammal	Endangered	2018
Mattamuskeet rosette-grass	Vascular Plant	Endangered	2007
Northern diamond-backed terrapin	Reptile	Threatened	1971
Northern harrier	Bird	Threatened	2003
Northern long-eared bat	Mammal	Endangered	2016
Northern parula	Bird	Threatened	2011
Pine barrens bluet	Dragonfly/Damselfly	Threatened	1996
Piping plover	Bird	Threatened	2019
Pondshore smartweed	Vascular Plant	Special Concern	2003
Redroot	Vascular Plant	Special Concern	2021
Roseate tern	Bird	Endangered	2005
Scarlet bluet	Dragonfly/Damselfly	Threatened	1999
Slender bladderwort	Vascular Plant	Special Concern	1931
Terete arrowhead	Vascular Plant	Special Concern	1997
Tidewater mucket	Mussel	Special Concern	2015
Upland sandpiper	Bird	Endangered	2019
Vesper sparrow	Bird	Threatened	2018
Water-willow borer moth	Butterfly/Moth	Threatened	2015
Wright's rosette-grass	Vascular Plant	Special Concern	1926

Source: MassWildlife's Natural Heritage & Endangered Species Program Rare Species Viewer

NHESP Estimated Habitat of Rare Wildlife Map is needed in this section. We will map this information through MassGIS Data: NHESP Estimated Habitats of Rare Wildlife.

Additionally, contaminants, dams, and turbines of hydropower plants affect eels during migration, which no longer have access to their historical habitat (U.S. Fish and Wildlife Service). High amounts of

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phytoplankton are adding to oxygen depletion and loss of fish, shellfish, and bottom-dwelling animals and organisms (Howes, Samimy, & Horvet, 2021). New England cottontails have faced an extreme decline in Massachusetts and are being tracked on Cape Cod (Town of Mashpee). Prescribed burns have been carried out on conservation land to remove mature trees and allow regrowth of low shrubs, which are preferred by cottontails to hide in (Town of Mashpee). The town also supports bird species of high conservation priority, including the endangered saltmarsh sparrow, and several near-threatened species in the Mashpee National Wildlife Refuge (Avibase - The World Bird Database).

4.2.79 Surface Water

Surface water is any body of water above ground, including oceans, streams, rivers, lakes, wetlands, reservoirs, and creeks (National Geographic Resource Library, 2021). Surface water plays a vitally important role as it is relied on for many human uses. It is an important source of drinking water and is used for the irrigation of farmland. A watershed is a land area that channels rainfall and snowmelt to these surface water bodies. The health and quality of a watershed are directly linked to the health and quality of its receiving surface water bodies. Mashpee is part of the Cape Cod watershed.

Mashpee is bordered by Waquoit Bay to the west and Popponesset Bay to the east and includes several small rivers, brooks, and small ponds in the area. Waquoit Bay contains open waters, salt, fresh marshes, barrier beaches, dunes, rivers, mixed pine and oak forests, and sandplain grasslands that are important to commercial and recreational shellfish and finfish fisheries (Waquoit Bay National Estuarine Research Reserve). The Town manages four of the largest freshwater ponds on the Cape, including Ashumet Pond, Johns Pond, Mashpee Wakeby Pond, and the Santuit Pond (Town of Mashpee).

The Mashpee River, which begins at Mashpee/Wakeby Pond and empties into Popponesset Bay, has excellent water quality (The Trustees of Reservations). The Waquoit Bay, Santuit Pond, Ashumet Pond, and Popponesset Creek require a total maximum daily load (TMDL) according to the U.S. Clean Water Act. A TMDL is a regulatory term describing a plan for restoring impaired waters that identifies the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards. All water quality impairments are summarized in Table 4.3 below.

Table 4.3 Receiving Waters and Impairments	
Water Body	Impairment
Mashpee River	Category 2: Unimpaired for some uses and not assessed for others.
Quashnet River	Category 2: Unimpaired for some uses and not assessed for others.
Santuit River	Category 2: Unimpaired for some uses and not assessed for others.
Childs River	Category 2: Unimpaired for some uses and not assessed for others.
Red Brook	Category 2: Unimpaired for some uses and not assessed for others.
Hamblin Pond	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Jehu Pond	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Great River	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Little River	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.

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(Some, like Santuit River have changed significantly)

Table 4-3 Receiving Waters and Impairments

Waquoit Bay	Category 5: Impaired for one or more uses and requiring a TMDL (impairment due to pollutant(s) such as nutrients, metals, pesticides, solids, and pathogens).
Wakeby Pond	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Mashpee Pond	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Santuit Pond	Category 5: Impaired for one or more uses and requiring a TMDL (impairment due to pollutant(s) such as nutrients, metals, pesticides, solids, and pathogens).
Ashumet Pond	Category 5: Impaired for one or more uses and requiring a TMDL (impairment due to pollutant(s) such as nutrients, metals, pesticides, solids, and pathogens).
Peters Pond	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Popponesset Creek	Category 5: Impaired for one or more uses and requiring a TMDL (impairment due to pollutant(s) such as nutrients, metals, pesticides, solids, and pathogens).
Shoestring Bay	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Mashpee River	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Popponesset Bay	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Johns Pond	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Santuit River	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.

Source: MassGIS 2016 Integrated List of Waters (305(b)/303(d))

Impaired Water Bodies are needed in this section. We will map this information through MassGIS Data: MassDEP 2016 Integrated List of Waters (305(b)/303(d)).

Mashpee Refuge projects include several efforts and restoration projects to improve water quality in Mashpee, including Upper Quashnet River Restoration, Waquoit Bay Watershed River Restoration Plan, Childs River Restoration Project, and the Abigail Brook Restoration Project (Friends of Mashpee National Wildlife Refuge).

4.2.155 Groundwater

Between 1980 and 2000, Mashpee experienced rapid growth of single family housing which contributed to many of the land use policies in place today and ongoing challenges for municipal planning. Housing construction stressed natural systems and presented challenges to municipal services, such as water and wastewater.

The Mashpee Clean Water Plan includes plans for wastewater facilities to restore water quality in Mashpee (Town of Mashpee, n.d.). A 2021 University of Massachusetts Dartmouth study concluded that the upper regions of Waquoit Bay and Popponesset Bay estuaries show the greatest level of nutrient-related water quality decline (Howes, Samimy, & Horvet, 2021). Degraded estuarine habitat is primarily restored through nitrogen management. The Town is utilizing shellfish seeding as a remedial action for

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estuaries approaching their nitrogen targets (Howes B. L., Mashpee Water Quality Monitoring Program Summary of Nutrient Related Health of Mashpee's Estuaries, 2021).

The MassDEP Public Water Supply lists public water, community surface, groundwater, and public non-community supply sources (MassGIS, 2021). Supply sources, locations of proposed wells, and sources with a defined DEP approved wellhead protection area (Zone II) are summarized in Table 4-4 below.

Table 4-4: Public Water Supply

PWS Identification Number	Site Name	Type of Public Water Supply	Zone II Number
4172014	Cape Cod Camp Corporation	Transient Non-Community	0
4172039	Holland Mills Well No. 5	Proposed Well	665
4172039	Proposed Site #P-1	Proposed Well	31
4172014	Cape Cod Camp Corporation	Transient Non-Community	0
4172039	Rock Landing Well 3	Community Groundwater Well	665
4172039	Turner Road Well 2	Community Groundwater Well	659
4172033	Well 2	Community Groundwater Well	0
4172035	Well 1	Community Groundwater Well	0
4172039	Belcher Well 7	Community Groundwater Well	632
4172035	Well 2	Community Groundwater Well	0
4172033	Well 1	Community Groundwater Well	0
4172043	Sea Mist Resort	Transient Non-Community	0
4172014	Cape Cod Camp Corporation	Transient Non-Community	0
4172048	Fit Company For Women	Transient Non-Community	0
4172039	Mashpee Village Well 6	Community Groundwater Well	633
4172001	Well #2 And Well #3 Manifolded	Community Groundwater Well	0
4172043	Sea Mist Resort	Transient Non-Community	0
4172039	Quaker Run Well 4	Community Groundwater Well	655
4172039	Site P-11/Tw #1-90	Proposed Well	565
4172039	Rock Landing Well 2	Community Groundwater Well	665
4172039	Turner Road Well 5	Community Groundwater Well	659

Source: MassGIS Public Water Supplies

Zone I is used to designate the protective radius required around a public water supply well or wellfield. Mashpee has 23 Wellhead Protection Areas designated in Zone I (MassGIS, 2021). DEP Zone II and public

water supply (PWS) data are closely linked. Wellhead Protection Areas are important for protecting recharge areas around public water supply groundwater resources (MassGIS, 2021). Mashpee has 12 Wellhead Protection Areas designated in Zone II (See Map—X.X) (MassGIS, 2021). In the absence of an approved Zone II, DEP has adopted the Interim Wellhead Protection Area (IWPA) as the primary, protected recharge area for PWS groundwater sources (MassGIS, 2021). Mashpee has 11 Interim Wellhead Protection Areas (See Map—X.X) (MassGIS, 2021).

Water Resource Risk and Protection Zones Map is needed in this section. We will map this information through MassGIS Data.

Further information is needed in this section regarding Groundwater. We will gather this information through stakeholder interviews and GIS analysis.

4-2-2774.2.5 Threats/Issues

A variety of land uses, and human activities pose a threat to the town's natural resources. This section presents the most notable threats to the natural resources in Mashpee.

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Unmanaged Stormwater Runoff

Stormwater is rainwater or melted snow that runs off streets, roofs, pavement, and other impervious surfaces as well as lawns, woodlands, and other more pervious areas as they become saturated. As the water flows over these surfaces, it can collect pollutants and sediment that can contaminate water bodies. Stormwater is addressed by federal, state, and local regulations. The United States Environmental Protection Agency (USEPA) has determined that municipal separate storm sewer systems (MS4s), a drainage system in an urbanized area, are a major pathway for the introduction of pollutants to waterways and are a leading cause of the impairment of ambient water quality, for both fresh and coastal waters (United States Environmental Protection Agency). Through the National Pollutant Discharge Elimination System (NPDES) under Section 319 of the Clean Water Act, the U.S. EPA regulates stormwater from MS4s. The Massachusetts Department of Environmental Protection (MassDEP) is delegated by USEPA to administer the program in Massachusetts. In 2016, EPA issued a final NPDES general permit for discharges of stormwater from small MS4s in Massachusetts (the MA MS4 Permit) (United States Environmental Protection Agency).

Mashpee is currently subject to MS4 jurisdiction in Massachusetts. Under this law, MassDEP requires subject communities to develop stormwater management program plans (SWMPPs) to address six minimum control measures. The six minimum control measures required in the SWMPP are addressed in Mashpee's Stormwater Management Program (Tighe & Bond, 2019):

- Public Education and Outreach
- Public Participation
- Illicit Discharge Detection and Elimination
- Management of Construction Site Runoff
- Management of Post Construction Site Runoff
- Good Housekeeping in Municipal Operations

Mashpee has established a Stormwater Management Task Force to develop and implement a Townwide Stormwater Management Plan (SWMP) to fully comply with the new National Pollution Discharge Elimination System (NPDES) permit and to continue to mitigate the impacts of stormwater runoff with the town (Town of Mashpee).

Uncontrolled Erosion and Sediment

Land development, when not properly managed, can have a detrimental effect on surrounding infrastructure and the function of the natural environment. When proper site preparation and maintenance do not occur during development, excessive quantities of soil can erode from the site. This situation can result in costly repairs and damage to the environment. The sediment can clog stormwater infrastructure, muddy streams, and leave deposits of silt in ponds and reservoirs and is considered a major water pollutant. Improperly managed construction projects can negatively impact aquatic habitat through erosion and sedimentation from construction sites (Town of Mashpee). The Erosion and Sedimentation Control section in the Town Bylaw ensures the prevention or reduction of soil erosion and sedimentation before, during, and after development or redevelopment of a site by requiring an Erosion and Sedimentation Control Plan to be submitted to the Town for approval before any construction takes place, except for some activities which are exempt from the requirement (Town of Mashpee, 2019). To help prevent soil erosion, Chapter 82 – Earth Removal under §82-3 Sand and Gravel Pits of the Town General Bylaw requires sand and gravel pit owners to replant trees or shrubs in areas larger than 5,000 square feet.

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Nitrogen Control

Nutrient related water quality decline is a serious threat to coastal waters and freshwater ponds in southeastern Massachusetts. The Massachusetts Estuaries Project (MEP) technical report indicated that the Waquoit Bay and the Popponesset Bay system are in impaired water quality as they exceed their critical threshold for nitrogen (Cape Cod Commission, 2017). The Comprehensive Watershed Nitrogen Management Plan is the culmination of multiple documents examining the needs and coordinating efforts of the Massachusetts Estuaries Project (MEP) (Town of Mashpee, 2019). The Mashpee Sewer Commission is exploring the expansion of Phase 2 of the Town's Comprehensive Watershed Nitrogen Management Plan to include lakes and ponds (Jung, 2021).

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Nitrogen is detrimental to the water quality of Mashpee's ponds, streams, and bay area. Excess nitrogen can also cause algae blooms, which lower oxygen levels and lead to long term damage to the ecosystem (Town of Mashpee, 2021). The Nitrogen Control section in the Town Bylaw aims to conserve valuable waterways and other resources that increase property values, protect the unique environment vital to the local economy, and reduce the financial burden on taxpayers and property owners by regulating the outdoor application of nitrogen and phosphorous on turf (Town of Mashpee, 2019). The regulation of fertilizer applications will reduce the overall amount of excess nitrogen and phosphorous entering resource areas as defined in the Mashpee Wetlands Protection Bylaw (Town of Mashpee, 2019). The Town also seeds shellfish as a remedial action for estuaries approaching their nitrogen targets (Howes B. L., 2021).

Hazardous and Landfill Areas

Landfills and hazardous waste can pollute water and air. Landfills also release methane gas, which is a potent greenhouse gas that contributes to climate change. Mashpee has a capped sanitary landfill

located at Ashers Path (Town of Mashpee). The operation and maintenance of the landfill are overseen by the Board of Health (Town of Mashpee).

Diesel fuel and other chemicals are stored at local businesses. These chemicals are considered dangerous and require proper storage and disposal to avoid contamination of groundwater supplies. MCP/Chapter 21E Tier Classification sites are approximate locations of oil and/or hazardous material disposal sites that have been (1) reported and (2) Tier Classified under M.G.L. Chapter 21E and the Massachusetts Contingency Plan (MCP) (MassGIS, 2021). All MCP/Chapter 21E Tier Classification sites in Mashpee are summarized in table 4-25 below.

Site Name	Address	Tier Classification
Otis Air National Guard Base at South Outer Road	South Outer Road	Tier 1D
Mashpee Shell Station	Mashpee Shell Station	Tier I
Augat Inc.	Falmouth Road	Tier II
Lakeside Estates	300 Nathan Ellis Highway	Tier 1D

Source: MassGIS MassDEP Tier Classified Oil and/or Hazardous Material Sites

Invasive Species

Invasive species can alter habitat and threaten or eradicate native plants and animals. A variety of invasive, non-native plant species occurs in Mashpee. These include koi fish, variable milfoil, oriental bittersweet, autumn olive, morrow honeysuckle, Japanese knotweed, and multiflora rose (Spencer, 2021) (Houghton, Invasive Fish Spotted In Johns Pond, 2016) (Houghton, Prescribed Burning in Mashpee, MA, To Improve New England Cottontail Habitat, 2018) (Town of Mashpee). Millfoil are present in both Satuit and Johns Pond. Treatment in the Johns Pond has been conducted and the Harbor Management Plan will additionally help address these issues. Monitoring for new invasives can help ensure early control measures to forestall major impacts on the environment.

Surface Water and Groundwater Resources and Protection Map is needed in this section. We will map this information through MassGIS Data.

4.2.6 Opportunities

Mashpee has many options for improving its erosion, hazardous waste, and invasive species problems. The Erosion and Sedimentation Control section in the Town Bylaw ensures the prevention or reduction of soil erosion and sedimentation before, during, and after development or redevelopment of a site by requiring an Erosion and Sedimentation Control Plan to be submitted to the Town for approval before any construction takes place, except for some activities which are exempt from the requirement (Town of Mashpee, 2019). To help prevent soil erosion, Chapter 82 – Earth Removal under §82-3 Sand and Gravel Pits of the Town General Bylaw requires sand and gravel pit owners to replant trees or shrubs in areas larger than 5,000 square feet. Additional restrictions on development and promotion of erosion-preventing measures will help to mitigate this problem. There has been a significant push by local residents to clean up hazardous sites around Mashpee. Many people are eager to return the natural landscape to a far less polluted version of its current state. There are simultaneously ongoing efforts to

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prevent invasive species from harming the environment and native species. Treatment in the Johns Pond has been conducted and the Harbor Management Plan will additionally help address the issues posed by non-native species. Monitoring for new invasives can help ensure early control measures to forestall major impacts on the environment.

4.2.7 Current Measures

Shellfish Aquaculture

Current programs and projects addressing nitrogen loading include:

- MVP Action Grant Nitrogen Loading on Santuit Pond
- Mashpee/Wakeby Pond Study
- Partnership with the Tribe for the SNEP Program
- Harbor Management Plan
- Ashumet Pond Clean Up
- Town Bylaws associated with clean water.

A variety of bylaw changes and updates have been adopted in recent years to ensure the prosperity of natural resources throughout the Town. The

- Hiring of boat ramp attendance to enforce rules about washing down boats to reduce invasive species
- Stormwater regulations need upgrades
- Harbor Management Plan implementation
- Irrigation Policy
- Nitrogen updated to nutrient control
- Wetland protection bylaw

Conservation Bylaw Review Committee has been reviewing changes to bylaws to ensure natural resources are better protected for future years.

Action item specific to implementing the bylaw updates identified in the report

Further information is needed in this section regarding current measures. We will gather this information through stakeholder interviews.

4.4.3 Community Engagement

Further information is needed in this section regarding community engagement. We will gather this information through community engagement.

4.4.4 Goals and Policies

Goals

1. Ensure that all residents have access to high quality water.
2. Protect terrestrial and aquatic habitats for long-term environmental and social benefits.
3. Protect the health, safety, and welfare of residents who use and enjoy Mashpee's waterways.

Policies

1. Return Mashpee's water quality to within normal parameters.
2. Identify areas for coastal and habitat restoration to enhance water quality.
3. Identify, preserve, and enhance ancient ways to water.
4. Limit construction in land under ocean to maintain and restore habitat vital to our fisheries.

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5. Maintain and enhance cross-sector collaborations such as with educational institutions and research organizations to bolster water quality sampling programs and reporting.
6. Identify the most appropriate sites to establish Aquaculture Development Zones consistent with the Department of Natural Resources Harbor Management Plan.

Further information is needed in this section regarding goals and policies. We will gather this information through stakeholder interviews and community engagement.

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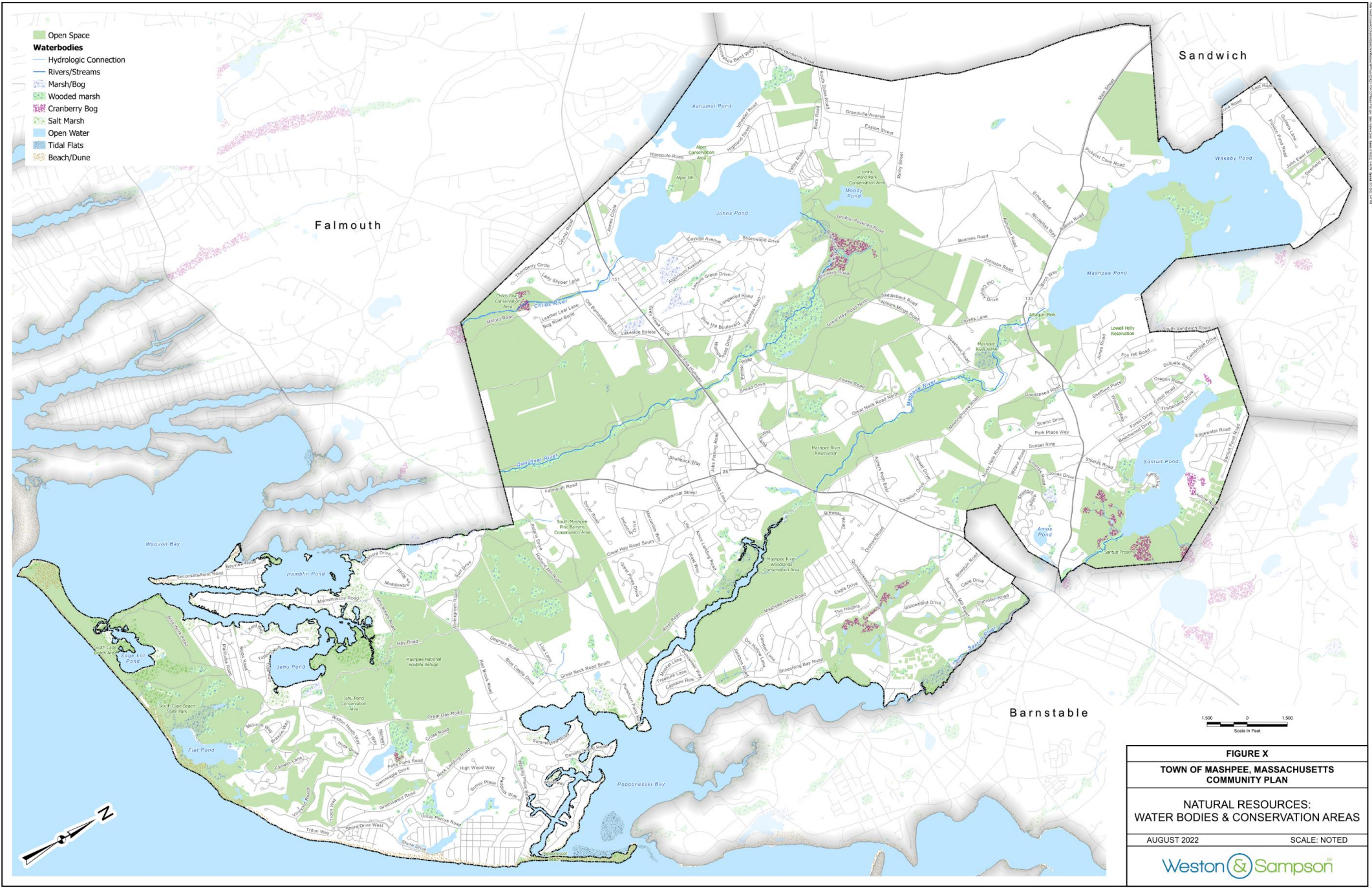
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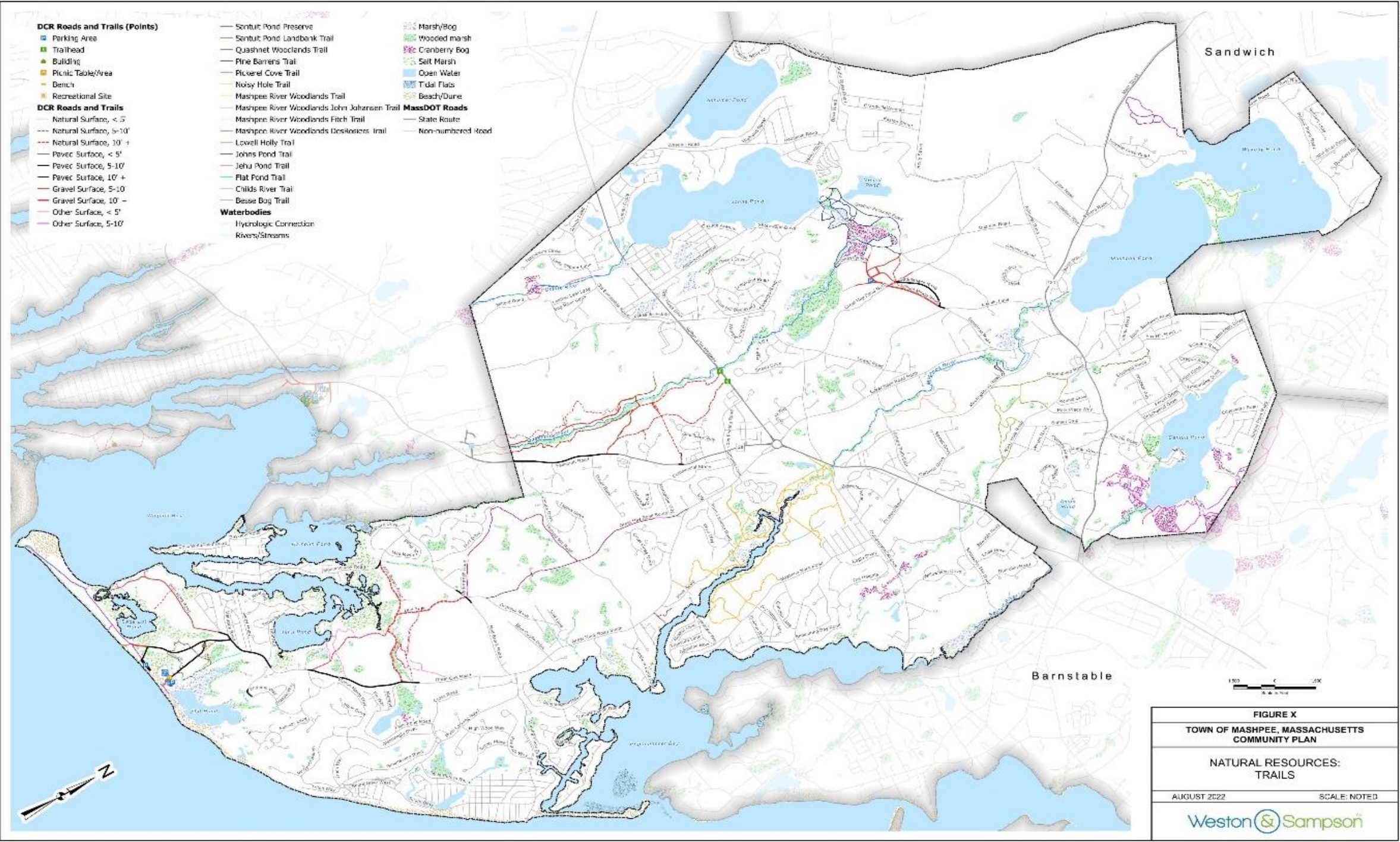
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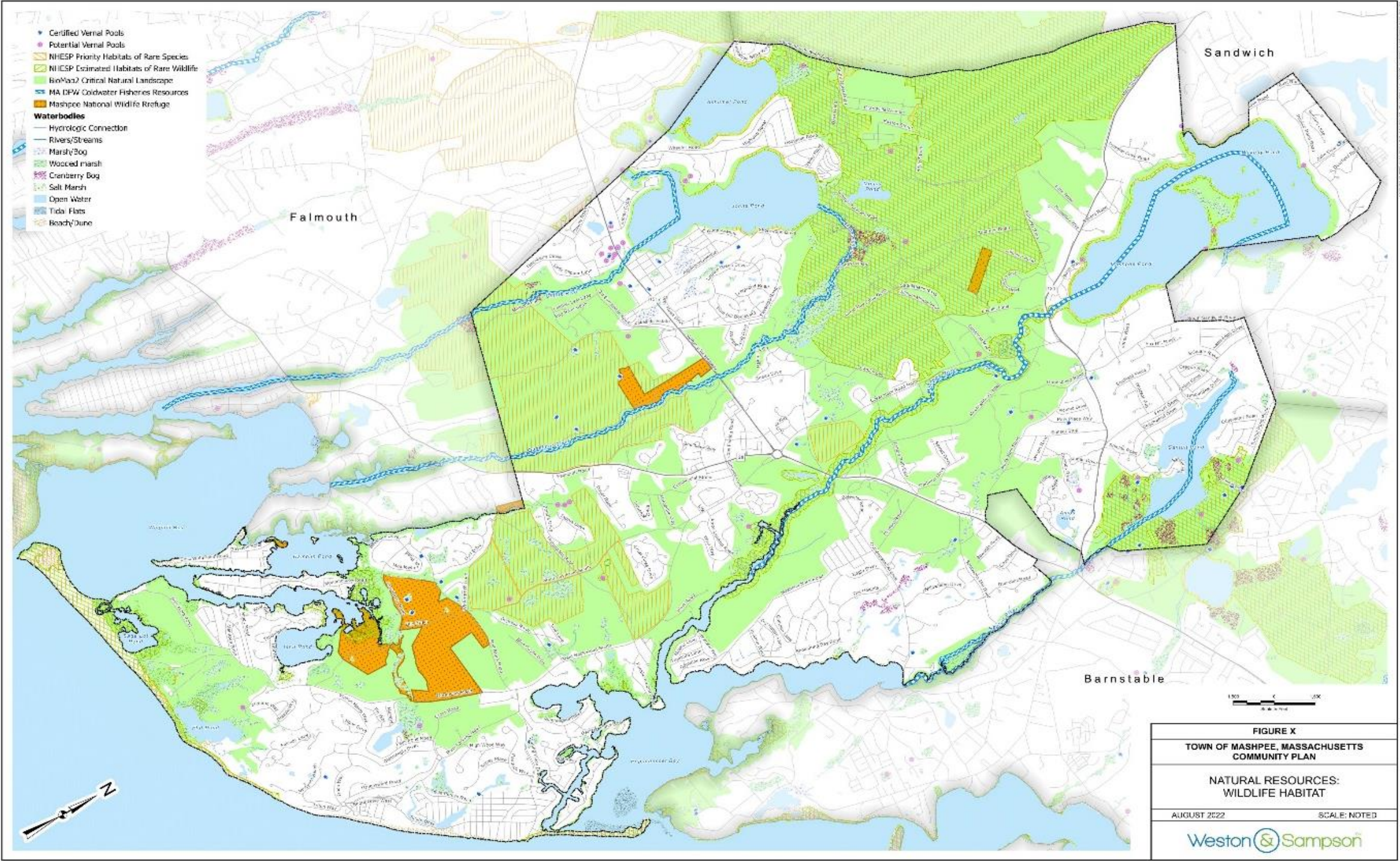


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7.0 OPEN SPACE AND RECREATION

DISCLAIMER: This is a working draft and will continue to be updated as the Comprehensive Plan process evolves. Additional information will be added as stakeholder and public input is gathered. These blue boxes throughout the draft chapters represent areas of further consideration and study and will be updated with additional information as it is collected.

7.1 Vision

To be developed with Town.

7.2 Introduction

Open space and recreation areas and facilities are vital to a community's health, economy, and quality of life. The Town's outdoor recreation spaces and amenities serve a variety of purposes: youth and adult sports, fitness and wellness programs, seasonal and community events, and others. These recreation resources are an asset to Mashpee residents of all ages, as well as residents in neighboring Towns and throughout the state. They create a sense of community and provide enjoyment of the outdoors for a wide variety of individuals. Recreational opportunities play an important role in people's daily lives and contribute to quality of life within a community. Open space areas serve an equally important purpose within a community. They provide habitat, protect environmentally sensitive areas, contribute to the character of the community, and offer passive recreation opportunities. Many areas of Town set aside for recreation and open space overlap and serve a dual purpose. Many properties considered as open spaces also provide opportunities for passive recreation such as hiking and bird watching. The purpose of the Open Space and Recreation Chapter is to define Town goals and actions to promote recreation and conservation of open space in Mashpee.

7.3 Existing Conditions

An important function of this Chapter is to inventory a community's existing open space and recreational resources. Section 7.3.1 provides an overview of the types of recreation facilities in Town and Section 7.3.4 describes the types of open space in Town along with their location and purpose.

7.3.1 Recreation Facilities Inventory

The Town of Mashpee offers a variety of outdoor recreation opportunities administered by the Mashpee Recreation Department. These amenities include sports, fitness, and wellness programs, childcare/preschool programs, and youth leisure programs (Town of Mashpee, n.d.). Table 7-1 below provides an overview of the different indoor and outdoor recreational facilities in Town.

Facility	Outdoor Amenities	Indoor Amenities	Address
Attaquin Park - Mashpee/Wakeby Lake	Attaquin Park Playground, Beach		Lake Avenue
Heritage Park	Softball/Baseball Fields, Playground, Soccer/Multi-Purpose Field, Basketball Court,		520 Main Street

Table 7-1. Recreational Facilities Inventory			
Facility	Outdoor Amenities	Indoor Amenities	Address
	Splash Pad, Tiger Long Playground		
John's Pond	Beach, Swing Sets, State Boat Ramp		Back Road
Mashpee Barnstable Fitness Center		Swimming Pool	168 Industrial Drive
Mashpee Senior Center			26 Frank Hicks Drive
Quashnet Elementary School and KC Coombs Elementary School	K.C. Coombs School Therapeutic Playground, Softball Field, Baseball Field, Soccer/Football Field	Gymnasium	150 Old Barnstable Rd and 152 Old Barnstable Road
Kids Klub Child Care Center	Kids Klub Pre-school Playground		Great Neck Road, North
Mashpee Middle-High School	Track, Basketball Courts, Baseball Fields, Softball Fields, Soccer/Field Hockey Field, Football Field, Tennis Court	Basketball Court, Training Rooms, Gymnasium	Route 151 and Old Barnstable Road
Maushop Equestrian Center	Horse Stables		31 Quashnet Road
Quashnet Valley Country Club	Golf Course, Tennis Courts		309 Old Barnstable Road
Mashpee Community Park/Veterans Garden	Outdoor Stage		Main Street Route 130
Ryder Conservation Area	Town Beach		Off South Sandwich Road
Sea Mist Resort	Outdoor Pool, Miniature Golf Course, Tennis Court	Swimming Pool	Great Neck Road South
Seconsett Island	Boat Ramps		Meadow Neck Road
Mashpee Pickleball Courts	Pickleball Courts		162 Ashumet Road
Willowbend Country Club	Golf Course, Swimming Pool, Tennis Court, Basketball Court		100 Willowbend Drive
The Country Club at New Seabury	Tennis, Golf Course, Swimming Pool		95 Shore Drive W,
Camp Farley	Horse Stables,		615 MA-130
Great River Boat Ramp	Boat Landing		Hooppole Road
Mashpee/Wakeby State Boat Ramp	State Boat Ramp		Main Street
Edward A. Baker Boat Ramp at Pirate's Cove	Boat Landing		End of Mashpee Neck Road
Ockway Bay	Boat Landing		Off Great Neck Road South
South Cape Resort and Club		Swimming Pool, Tennis Courts	

Table 7-1. Recreational Facilities Inventory			
Facility	Outdoor Amenities	Indoor Amenities	Address
South Cape State Beach	Beach		500 Great Oak Road
Popponesset Beach	Beach, Ball Field		
Santuit Pond Estates Common Open Space	Tennis Court, Basketball Court, Ball Field, Beach, Boat Landing		48 Cranberry Lane and Timberland Drive

Source: Town of Mashpee, MassGIS Protected and Recreational Open Space 2021

7.3.2 Recreation Department

The Recreation Department is located at 520 Main Street and has five staff members, including a Recreation Director, an Assistant Recreation Director, an Administrative Secretary, an Administrative Assistant Kids Klub Preschool, and an Administrative Clerk (Town of Mashpee, n.d.). The Department of Public Works (DPW) is responsible for maintaining recreational facilities including Heritage Park, Town beaches, and other Town-owned properties (Town of Mashpee, n.d.). The DPW also maintains equipment to assist with a variety of responsibilities.

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7.3.3 Recreation Programs

The Recreation Department strives to provide a variety of opportunities and activities for the public to participate in. Several programs are reoccurring, and some are changing based on seasons and public demand. The Recreation Department offers a variety of programs from youth sports programs to coding for kids (Town of Mashpee, n.d.) (Town of Mass Recreation Department, 2021). Current programs are listed below but are subject to change based on staffing, funding, and attendance.

Kids Klub Preschool and Childcare Center

Kids Klub Childcare Center

The Childcare Center provides a safe, fun, affordable, not-for-profit preschool and daycare program for the benefit of the community.

Special Events

Camp Sessions

Camp sessions for Voyager Camp, Adventure Camp, and Explorer Camp are available for grades 1-7. Voyager Camp is available for grades 1-3, Adventure Camp is available for grades 4 and 5 and Explorer Camp is available for grades 6 and 7.

Youth Fishing Derby

Youth Fishing Derby is held at John's Pond Town Beach and is available for children ages 5-14.

Youth Programs

Instructional Tee Ball

Instructional Tee Ball is available for youth ages 3-6 and teaches fundamentals like hitting, catching, throwing, and gameplay.

After School Soccer

After School Soccer is open to youth in grades K-2 to refine key soccer skills in areas such as dribbling, passing, receiving, shooting, and gameplay.

Tiny Tykes Soccer

Tiny Tykes Soccer is open to youth 3-6 years that teaches basic soccer skills while focusing on motor skill development, balance, coordination listening skills, and teamwork.

Youth Track and Field

Youth Track and Field is open for children in grades 1-6 and focuses on elements of running such as warm-up, cool-down, and stretching.

Tennis

Tennis lessons are open to grades K-12 and available for youngsters to build strokes into muscle memory, develop footwork that cross-trains for all sports, and finely tunes hand/eye coordination.

Coding for Kids

Code Wiz aligns its curriculum with the K-12 Computer Science Framework and represents a vision in which all students engage in concepts and practices of Computer Science. Students critically engage in computer science issues; approach problems in innovative ways; create computational artifacts with a practical, personal or social intent.

Everyday Science!

A hands-on after-school program that explores science as we interact with it every day.

Adult Programs**Pickleball**

Pickleball is available as open play, a predetermined time where pickleball players show up at the courts/gym to play. All classes are held at the Mashpee Pickleball Courts at 162 Ashumet Road.

Adult Tennis

Intense instruction of volley, forehand, backhand, and serving techniques at the Mashpee Middle-High School Tennis Courts. Participants learn how to play, score, and play in singles and double matches.

Golf

Pitch, Putt, and Swing Camp on Paul Harney Golf Course. Teaches full swing instruction, short game instruction, and full swing and short game review and play.

Adult Sailing

Designed for adults who have little or no knowledge about sailing. The four-week is taught at the John's Pond Town Beach.

Basketball

The Basketball program is open to adults aged 30 and older at the Quashnet Elementary School.

All Age Groups**Karate**

Isshinryu karate is an Okinawan-based karate system formally created in 1956 by its founder Tatsuo Shimabuku. Karate is taught at Heritage Park.

Qi Gong

A six-week zoom class teaches the benefits of the ancient and gentle movement practice which began in China over 3,000 years ago.

Futsal Soccer

Futsal is a modified form of soccer that is played with five players per team, and it is typically played indoors. Futsal is played with a smaller, harder, lower-bounce ball than soccer.

7.3.4 Private Recreation Programs

The Mashpee Youth Baseball/Softball and Soccer is run by parent volunteers and not affiliated with Mashpee Recreation Department.

Mashpee Youth Sports Leagues**Youth Baseball**

Baseball is open to sixth to twelfth grades and focuses on pitching, catching, and hitting.

Youth Soccer

The Mashpee Youth Soccer is run by parent volunteers and not affiliated with Mashpee Recreation Department.

7.3.5 Open Space Inventory

Mashpee's natural habitat, water, and abundant open spaces draw tourists to the Town for recreation. Mashpee has a variety of types of open space and conservation lands that provide activities such as hiking and biking. This section will focus on inventorying those resources to aid the community in policy decisions regarding opportunities for additional open space and conservation land acquisition.

The total land area in Mashpee is 16,384.94 acres. Of the Town's area, 5,356.33 acres (32.69%) is open space (MassGIS, 2021). Table 7-2 below provides an overview of all open spaces and their primary purposes. Table 7-3 provides an overview of the largest open space properties (180 acres and above) and their landowners. As detailed in Table 7-3, these come in the form of federally, state, and privately owned to those managed by the Town of Mashpee.

Open Space Primary Purpose	Open Space Description	Parcels	Open Space and Recreation Area (Acres)	% of Open Space and Recreation Area
Recreation	activities are facility-based	314	929.10	17.35%
Conservation	activities are non-facility based	63	3,568.91	66.63%
Recreation and Conservation	Recreation and Conservation	26	637.58	11.90%
Historic/Cultural	Historical/Cultural	3	2.64	0.05%

Table 7-2. Existing Open Space

Agriculture	Country Farm Estates Inc	1	Less than one acre	-
Water Supply Protection	Water Supply Protection	9	199.85	3.73%
Other	Cape Cod Land Bank Acquisition	6	18.28	0.34%
Total			5,356.33	100%

Source: MassGIS Protected and Recreational Open Space 2021

Table 7-3. Largest Open Space Properties and Landowners (180 acres and above)

Name	Landowner	Ownership	Primary Purpose	Area in Mashpee (Acres)
South Cape Beach State Park	DCR - Division of State Parks and Recreation	State	Conservation and Recreation	447.59
Quashnet Woods State Reservation & WMA	DCR - Division of State Parks and Recreation / Department of Fish and Game	State	Conservation	395.98
Mashpee River and Woodlands Conservation Area	Town of Mashpee	Town	Conservation	314.54
Mashpee National Wildlife Refuge	United States Department of the Interior	Federal	Conservation	276.93
John's Pond Park Conservation Area	Town of Mashpee	Town	Conservation	261.57
South Mashpee Pine Barrens Conservation Area	Town of Mashpee	Town	Conservation	259.68
Mashpee River Reservation	The Trustees of Reservation	Private	Conservation	253.30
Willowbend Country Club	Willowbend Development Corporation	Private	Recreation	211.25
Mashpee Pine Barrens WMA	Department of Fish and Game	State	Conservation	211.69
The Country Club at New Seabury	New Seabury Properties	Private	Recreation	209.66
Quashnet Valley Country Club	Lacava Anthony J TR	Private	Recreation	190.95
Santuit Pond WCE	Town of Mashpee	Town	Conservation	190.95

Table 7-3. Largest Open Space Properties and Landowners (180 acres and above)

Quashnet Woodlands	Town of Mashpee	Town	Conservation	181.29
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Source: MassGIS Protected and Recreational Open Space 2021

Several recreation activities can be experienced throughout the Town's open space areas including hiking, cross country skiing, golfing, fishing, canoeing/kayaking, bird watching, and walking trails (Town of Mashpee, n.d.). Table 7-4 provides an overview of public trails on Town of Mashpee properties, which are spread across the Mashpee River Woodlands and Mashpee Wildlife Refuge (ArcGIS).

Table 7-4. Public Trails on Town Property

Name	Parkland Designation	Length of Public Trail
Mashpee River Woodlands Main Parcel	Mashpee River Woodlands	3.5 Miles
Fitch Property	Mashpee River Woodlands	1.2 Miles
John Johansen	Mashpee River Woodlands	0.6 Miles
DesRosier	Mashpee River Woodlands	0.24 Miles
Pickerel Cove	Mashpee National Wildlife Refuge	1.8 Miles
Noisy Hole	Mashpee National Wildlife Refuge	2.5 Miles
Pine Barrens	Mashpee National Wildlife Refuge	3.4 Miles
Santuit Pond Landbank	Mashpee National Wildlife Refuge	0.6 Miles
Johns Pond	Mashpee National Wildlife Refuge	4 Miles
Jehu Pond	Mashpee National Wildlife Refuge	3.9 Miles
Childs River	Mashpee National Wildlife Refuge	1.2 Miles
Besse Bog	Mashpee National Wildlife Refuge	0.75 Miles

Source: Town of Mashpee

In addition to the trails mentioned above, the Mashpee Wildlife Refuge consists of the Flat Pond Trail, Lowell Holly Trail (2.2 miles), Santuit Pond Preserve (3 miles), and Quashnet Woodlands Trails (4.4 miles) (ArcGIS). The Town also has walking trails located at the Reserve Headquarters, the Quashnet River area, South Cape Beach State Park, Abigail's Brook, and Washburn Island on the Waquoit Bay National Estuarine Research Reserve (Waquoit Bay National Estuarine Research Reserve).

Levels of Protection

In Perpetuity: Legally protected in perpetuity and recorded as such in a deed or other official document. The land is considered protected in perpetuity if it is owned by the Town's conservation commission or, sometimes, by the water department; if a Town has a conservation restriction on the property in perpetuity; if it is owned by one of the state's conservation agencies (thereby covered by article 97); if it is owned by a non-profit land trust; or if the Town received federal or state assistance for the purchase or improvement of the property.

Private land is considered protected if it has a deed restriction in perpetuity if an Agriculture Preservation Restriction has been placed on it, or a Conservation Restriction has been placed on it.

Limited: Protected by legal mechanisms other than those above or protected through functional or traditional use.

Commented [AM2]: The Mashpee River Woodland parcels (Fitch, Johansen and DesRosier) are not part of the Mashpee National Wildlife Refuge

Commented [AM3]: There is also the Mashpee River Woodlands main parcel which is between Quinaquisset Ave and the end of Mashpee Neck Rd. 3.5 miles of trails

These lands might be protected by a requirement of a majority municipal vote for any change in status. This designation also includes lands that are likely to remain open space for other reasons (e.g., cemeteries and municipal golf courses).

Source: MassGIS

The total open space in Mashpee is 5,356.33 acres, of which 4,621.72 acres (86.29%) is protected. 4,469.20 acres (83.44%) is considered protected “in perpetuity,” and 152.52 acres (2.85%) is considered to have a “limited” level of protection (MassGIS, 2021). Several enterprises hold legal interests in land including the Town of Mashpee, the state’s conservation agencies (thereby covered by Article 97 of the Amendments to the Massachusetts Constitution), and nonprofit land trusts. Conservation and Recreation areas protected under Article 97 of the Massachusetts Constitution include 3,653.74 acres (68.21%) of the Town’s open space (MassGIS, 2021). Land that is protected under Article 97 requires a 2/3 vote of the Legislature with regards to the disposition of any protected open space (Executive Office of Energy and Environmental Affairs). Table 7-5 provides an overview of Mashpee’s largest open space lands (180 acres and above) protected in perpetuity.

Table 7-5. Large Protected Open Space Properties (180 acres and above)			
Protected Open Space	Fee Owner	Article 97	Area in Mashpee (Acres)
South Cape Beach State Park	DCR - Division of State Parks and Recreation	Yes	447.59
Quashnet Woods State Reservation & WMA	DCR - Division of State Parks and Recreation / Department of Fish and Game	Yes	395.98
Mashpee River and Woodlands Conservation Area	Town of Mashpee	Yes	314.54
Mashpee National Wildlife Refuge	United States Department of the Interior	No	276.93
John’s Pond Park Conservation Area	Town of Mashpee	Yes	261.57
South Mashpee Pine Barrens Conservation Area	Town of Mashpee	Yes	259.68
Mashpee River Reservation	The Trustees of Reservation	Some Properties	235.30
Mashpee Pine Barrens WMA	Department of Fish and Game	Yes	211.69
Santuit Pond WCE	Town of Mashpee	Yes	190.95
Quashnet Woodlands	Town of Mashpee	Yes	181.29

Source: MassGIS Protected and Recreational Open Space 2021

Land trusts that serve Mashpee include the Native Land Conservancy, Orenda Wildlife Land Trust, The Compact of Cape Cod Conservation Trusts, The Trustees of Reservations, and The 300 Committee Land Trust (MassGIS, 2021, MassLand, n.d.). Table 7-6 provides an overview of open space properties that are managed by land trusts in Mashpee.

Table 7-6. Open Space Properties Managed by Land Trusts				
Open Space	Fee Owner	Primary Purpose	Article 97	Area (Acres)
Ashumet Pond Sanctuary	Orenda Wildlife Land Trust	Conservation	No	35.20

Table 7-6. Open Space Properties Managed by Land Trusts				
Dawson Sanctuary	Orenda Wildlife Land Trust	Conservation and Recreation	No	3.53
East Way Conservation Area	Orenda Wildlife Land Trust	Conservation	No	0.70
Great Oak Road Conservation Area	Orenda Wildlife Land Trust	Conservation	No	25.52
Lowell Holly Reservation	The Trustees of Reservations	Conservation	No	63.17
Makepeace Reservation	Orenda Wildlife Land Trust	Conservation and Recreation	Yes	13.93
Makepeace Sanctuary	Orenda Wildlife Land Trust	Conservation	No	87.05
Mashpee River Reservation	The Trustees of Reservations	Conservation	Some Properties	235.30
Mercy Lowe Sanctuary	Orenda Wildlife Land Trust	Conservation	No	43.81
North Ockway Road Conservation Area	The 300 Committee Land Trust	Conservation	No	8.17
Quashnet River WCE	Orenda Wildlife Land Trust	Conservation and Recreation	Yes	14.23
Wood Road Conservation Area	Orenda Wildlife Land Trust	Conservation	No	0.74

Source: MassGIS Protected and Recreational Open Space 2021

Mashpee's Conservation Department is responsible for permitting and enforcing the Massachusetts Wetlands Protection Act (Town of Mashpee, n.d.; Town of Mashpee, 2021). Under the Conservation Commission Act, they are involved with open space acquisition and the management of conservation lands, including advocacy, maintenance, and improvement projects (Town of Mashpee, n.d.). Many of the open space properties identified in this chapter serve as natural resource and habitat protection areas. These areas are further detailed in the Natural Resources Chapter.

Commented [AM4]: And the Chapter 172 Mashpee Wetland Bylaw

7.3.6 Issues

Mashpee draws visitors and residents because of its scenic beauty and recreational accessibility. However, a lack of public facilities, including restrooms, water fountains, and water-bottle stations have limited use of open space and recreational areas. Expanding open space while enhancing development has been a concern in Mashpee for decades.

7.3.7 Opportunities

Increasing the amount of open space in Mashpee and encouraging development is an ongoing problem, but the Town can pursue opportunities to purchase land from residents and redevelop existing public property into open space. Other alternatives are planting trees through a one-for-one scheme in which if a tree is cut from one area, a new tree is then planted elsewhere in the community to ensure those

benefits are not lost. Street tree planting can be a climate change resilience measure with the added benefit of improving the streetscape of an area.

7.3.8 Current Measures & Initiatives

Further information is needed in this section regarding current measures. We will gather this information through stakeholder interviews.

7.4 Community Engagement

Further information is needed in this section regarding community engagement. We will gather this information through stakeholder interviews and community engagement.

7.5 Goals & Policies

Goals

1. Ensure that residents and visitors have access to a variety of passive and active recreation opportunities.
2. Preserve the quantity and quality of conservation and open space lands as a means to protect natural resources, provide a high quality of life for residents, provide access for passive recreation, ensure adequate wildlife habitat, and preserve access for hunting and fishing rights.

Policies

1. Ensure that public access to open space and water bodies is preserved where it will not adversely affect sensitive natural resources.
2. Provide adequate recreational programs and facilities for existing residents and plan for additional programs and services for projected future growth.
3. Continue to pursue opportunities to preserve sensitive areas as conservation and passive open space lands.

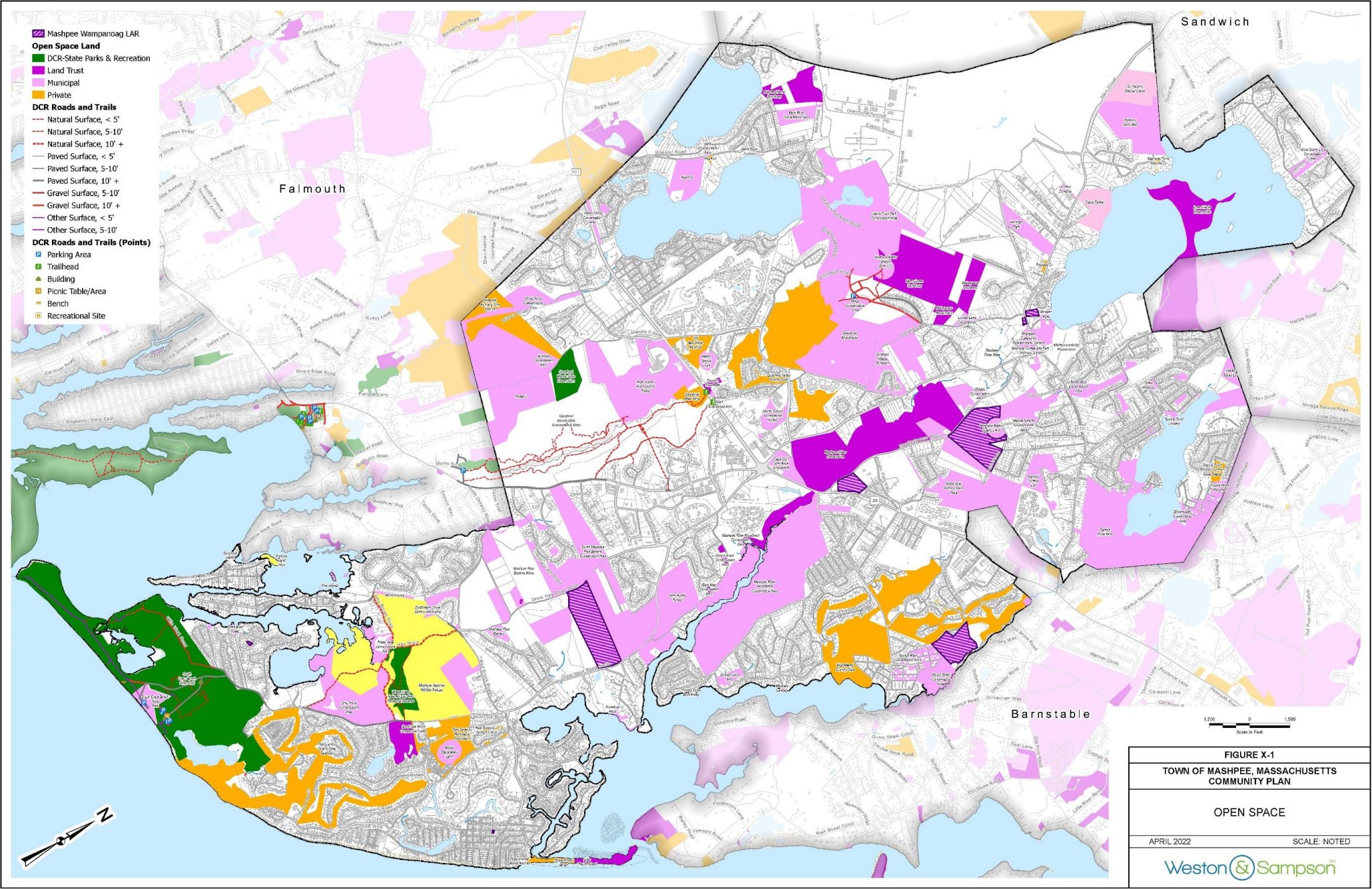
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Comprehensive Plan 2023

(DRAFT 01/12/23)



8.0 MUNICIPAL BUILDINGS, FACILITIES, AND SERVICES—EXISTING CONDITIONS

DISCLAIMER: This is a working draft and will continue to be updated as the Comprehensive Plan process evolves. Additional information will be added as stakeholder and public input is gathered. These blue boxes throughout the draft chapters represent areas of further consideration and study and will be updated with additional information as it is collected.

8.1 Vision

To be developed with the ~~Town~~Town

8.2 Introduction

The ~~quality of Planning for~~ public services and facilities directly impacts the ability of the residents to live in a safe and healthy environment. Sanitation, ~~and~~ public safety ~~services, and human services~~ as well as schools and the operation of the ~~Town~~Town government, are vital components of a thriving community. ~~Development Planning~~ must be linked to, and complementary with, established levels and quality of service. When it is not, growth can be disruptive and stress the community's ability to serve new ~~residents~~ and existing residents or businesses. The ~~Town~~Town's existing public services and facilities are presented on Map SF-1.

In general, major ~~Town~~Town functions in Mashpee are conducted from several main public buildings – ~~Town~~Town Hall, the Public Works Department, the Police Station, the Fire Station, ~~Water District Building, and several smaller public buildings, and several other smaller public buildings.~~ ~~Three school buildings, a~~ Senior Center, and Library also provide a variety of services to the ~~Town~~Town's population. Various municipal departments are integral in enhancing and protecting the quality of life that is so important to the residents of Mashpee. In particular, the Public Works Department is responsible for:

- ~~services~~Services and facilities related to wastewater
- ~~Town~~Town road maintenance, repair, and construction
- ~~stormwater~~Stormwater maintenance
- ~~Town~~Town building maintenance.

The Police Department, Fire Department, and Emergency Management provide a vital public safety role for the community protecting the overall health, safety, and welfare of residents. The School Department maintains three school buildings and an operating budget that, on average, represents a significant portion of the ~~Town~~Town's operating budget, providing a high level of educational ~~services and human services~~.

8.3 Context/Existing Conditions*Health and Human Services*

Health and human services refer to a variety of services and functions provided by the ~~Town~~Town that relate to the basic needs of the community. Health and human services range from those provided for mental and physical health, such as the Council on Aging, to infrastructural needs by the Department of Public Works. Public Safety also falls into this category as well as more social functions like the

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1. Should we change "Map SF-1" to "Figure X-1" or have Casia change the map name to reflect "Map SF-1"?
2. Should this be moved?

Commented [LL3]: Updated based on memo comments: ("MODIFY FIRST SENTENCE: Add Water District Building and the School Buildings...and several other smaller public buildings and areas")

Should probably be reworded?

Commented [LL4]: Memo comment: "After the brief description of the Public Works Dept, Police, Fire, Emergency Management, add a brief description of the following: Human Service Dept, Library and Senior Center."

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~~TownTown~~'s Public Library. This section identifies those services and provides an overview of their current capacity and operations.

~~TownTown~~ Hall

The Mashpee ~~TownTown~~ Hall is located at 16 Great Neck Road North and houses the following ~~TownTown~~ Departments:

- Accounting
- Assessing
- Board of Health
- Building
- Conservation
- GIS – NG911 – CRS Coordinator
- Human Resources
- Human Services
- Information Technology
- Natural Resources
- Planning
- ~~TownTown~~ Manager
- Treasurer/Tax Collector
- Watershed Nitrogen Management
- Zoning Board of Appeals

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~~The above section will be further updated through interviews with Town staff and boards and commissions.~~

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Department of Public Works

The Mashpee Department of Public Works (DPW) is responsible for public roads, bikeways, solid waste and recycling, cemeteries, public building maintenance, and recreational facilities. The DPW works with all ~~TownTown~~ departments, regionally with surrounding ~~townTown~~s, the Cape Cod Commission, and statewide with various state agencies, including Mass DOT. The DPW facility is located at 350 Meetinghouse Road and is the oldest of the municipal buildings dating back to 1985. The current facility does not have adequate space for the current DPW needs. Vehicles and equipment lack adequate indoor storage and thus are not protected from the weather. These conditions increase vehicle wear and necessitate more frequent replacement. The Department usually replaces work vehicles every seven years, depending on wear and tear. A garage at the facility is used to maintain all ~~TownTown~~ equipment. The DPW is responsible for all custodial functions and has a staff of four to maintain all 13 ~~TownTown~~ buildings. The Department currently lacks a bucket truck vehicle and a large dump truck, often contracting out for tree maintenance work and other work that requires these vehicles. The ~~TownTown~~ also contracts out for road paving functions, as they do not have that equipment in-house. As Mashpee has developed over the years, the need for new roads, recreational facilities, and services has increased. The DPW's resources have not kept pace, making it more challenging for the Department to maintain a high level of service to residents. Chapter 10, Water and Coastal Resources offers additional information on the water supply and wastewater management by the Department of Public Works.

Council on Aging (Senior Center)

The Council on Aging (COA) sponsors, coordinates, and conducts educational, social, and recreational services and programs at the Mashpee Senior Center. The COA also identifies and creates solutions for the empowerment and betterment of the ~~town~~Town's senior population. The Senior Center is located at 26 Frank E. Hicks Drive, adjacent to the Police and Fire Stations. The Mashpee Senior Center is a site for a variety of different support groups and functions to assist Mashpee seniors. These include, but are not limited to, the following:

- Legal services
- Grief counseling
- Mental health consultation
- Blood pressure clinics
- Foot care clinic
- Hope Dementia & Alzheimer's Services Caregiver Support Group
- Serving the Health Insurance Needs of Everyone (SHINE) counseling
- Parkinson's Support Group
- Hearing tests
- Candid Coffee Hour (with a nurse from the VNA of Cape Cod)
- Veteran's Services
- Sight Loss Services Peer Support Group

In addition to the services listed above, the COA coordinates a host of social activities including art and craft classes, dance classes, book clubs, exercise classes, and sports-related activities and groups. The COA also coordinates support services and appointments to assist seniors with tax preparation, legal appointments, library services, and medical appointments.

Two transportation options are available to Mashpee seniors through the COA. The Senior Center operates a van service that runs between Mashpee and other local ~~town~~Towns on a scheduled basis. The van is handicapped-accessible. The second option is transportation to local doctor's appointments which are arranged through COA volunteers. Additional opportunities for bus service exist through the Cape Cod Regional Transit Authority (CCRTA), which provides transportation to Boston hospitals.

Board of Health

The Mashpee Board of Health (BOA) licenses and inspects all food service, retail food, catering, mobile food, residential kitchen, and bakery facilities in Mashpee. They also license, inspect, and address complaints regarding all semi-public swimming pools (condominiums and hotels), tobacco retailers, tanning facilities, bodywork facilities, stables, kennels, housing, motels, camps, and trailer parks in the ~~town~~Town. The BOA also oversees the operation and maintenance of the capped sanitary landfill at Ashers Path and is responsible for septic system plan review, permitting, and approval, as well as the licensing of septic pumpers and installers. During the summer season (Memorial Day to Labor Day) the BOA oversees the sampling of all bathing beaches in ~~town~~Town.

The Board of Health is located at 16 Great Neck Road North, in the ~~Town~~Town Hall, and is staffed by a Health Agent, Assistant Health Agent, a Code Compliance Inspector, and an Administrative Secretary.

Library

Mashpee opened its first library in 1892 with an appropriation of \$15, appointed trustees, and a \$100 donation from the state. In 1928, the [Town of Mashpee](#) appropriated \$1,625 to construct a new building on the southeast corner of Snake Pond and Great Neck Roads to function exclusively as the [Town of Mashpee](#)'s library. In response to the growth of the community, a larger library building was constructed and opened on Nathan Ellis Highway in 1987. Despite the increase in size and scope of this building, it was quickly noted that the expansion of the [Town of Mashpee](#) would easily outpace the new library's ability to provide services to the residents.

The Mashpee Public Library opened the doors to its current 22,000 square foot facility at 64 Steeple Street in 2010, as the first certified Leadership in Energy and Environmental Design (LEED) library on Cape Cod, and one of the few public libraries in the state to achieve the status at the time. The [Town of Mashpee](#) of Mashpee was one of 35 [Towns](#) named in the inaugural class of "Green Communities" by the Massachusetts Department of Energy Resources. The Library achieved silver LEED status by earning credits in six categories: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, and Innovation ([U.S. Green Building Council, 2010](#)). ~~The full rating report for the library can be found here <https://www.usgbc.org/projects/mashpee-public-library?view=overview>.~~ The Library employs a solar energy system to help fuel the building's lighting, electrical components, and air conditions. Heat is generated by a high-efficiency, gas-fired boiler, and an energy recovery system is used to reclaim heat and cooling. Low emitting materials used in carpets, paints, and sealants were selected to reduce indoor air contaminants. Lighting systems include features that dim or switch off lighting when sufficient ambient light is present or when a space is unoccupied.

The Library offers traditional circulation and reference services, along with programs for children, teens, and adults, online databases, streaming content, internet access, and printer/copier equipment. ~~WiFi~~ [Wi-Fi](#) is accessible throughout the building, and patrons can check out a laptop for use in the building. All online services are available with a library card all the time from any computer. Meeting rooms with a computer projector, screen, sound system, and kitchen access are available for large and small groups.

The Library is a municipal library funded primarily by the [Town of Mashpee](#) and is governed by a seven-member elected Board of Library Trustees. The current staff includes a Director, an Assistant Director, three full-time librarians, one standard part-time Library Assistant, and seven non-standard part-time Library Assistants working less than 20 hours per week. Library employees are contracted with the [Town of Mashpee](#) and receive accounting, human resources, technology, DPW, administrative, and legal support through [Town of Mashpee](#) Departments.

The total appropriated budget for FY 2020 was \$692,665 of which \$501,560 is designated for salaries and wages, and \$191,105 is provided for operational expenses. The most significant item in the Library's operational expense budget is for the purchase of library materials (books, DVDs, music, magazines, etc.), which totaled \$111,760 in FY 2020. Table 8-1 provides additional information on library operations.

Table 8-1. Library Operations 2020

Operation	Number
Library Cardholders	17,247 (includes seasonal and year-round residents)
Circulation	209,055 (total transactions)
Holdings	103,551 (items)

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Comprehensive Plan 2023²

EXISTING CONDITIONS (DRAFT 013/128/23²)

Table 8-1. Library Operations 2020

Operation	Number
Public Computer Use	15,600 (users per year)
Meeting Room Use	219 (bookings)
Program Attendance	11,461 (total for children's, teens, and adult programs)
Total Hours Open	2228 (for the year)

Source: Mashpee Public Library Strategic Plan, Mashpee, MA 2021-2026

In April of 2019 a Strategic Planning Committee of residents, business owners, non-profit leaders, library staff, ~~town~~Town officials, and employees was formed to develop a comprehensive strategic plan to guide the organization for the following five years. The group hired a consultant to facilitate the strategic planning process and led two focus groups, met with a staff steering committee, and implemented a survey to the community. The Mashpee Public Library Board of Trustees adopted the Strategic Plan on November 12, 2019. The Strategic Plan outlines five goals of the organization and provides activities to achieve those goals. The Strategic Plan goals are:

- Building Community and Outreach
- Patron Experience
- Diversity and Inclusion
- Experiential Learning
- Community Service and Emergency Preparedness

Department of Human Services

The Mashpee Department of Human Services offers resources and solutions for community members who are in need of support. Numerous municipal, regional, and federal entities work with the Department of Human Services and Mashpee Human Services Committee to help Mashpee residents. Through a variety of clinical and other services, the Department assesses and advocates for food access, housing provisions, youth and senior services, substance abuse, and mental health awareness. The following are Town funded contracts for FY 2022:

- [AIDS Support Group of Cape Cod](#)
- [Big Brothers/Big Sisters of Cape Cod & The Islands](#)
- [Capeabilities](#)
- [Community Health Center](#)
- [Falmouth Service Center](#)
- [Independence House](#)
- [South Coastal Legal Services](#)
- [Salvation Army](#)
- [Sight Loss Services](#)
- [St. Vincent De Paul Society](#)
- [Visiting Nurses Association](#)

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Public Safety

The topic of public safety includes police, fire, and emergency management services. These organizations work cooperatively to ensure the overall health, safety, and welfare of Mashpee residents.

Police

The Mashpee Police Department is responsible for protecting the life and property of Mashpee residents, and preservation of peace within the community. The Police Department performs a variety of functions including, but not limited to, the prevention of crime, apprehension of criminals, protection of rights of persons and property, and the enforcement of [Massachusetts General Laws](#)~~the statutes of the Commonwealth of Massachusetts~~ and the bylaws of the ~~Town~~[Town](#) of Mashpee. The Police Department also assists other ~~Town~~[Town](#) Departments and officials in the performance of their duties when necessary.

The Mashpee Police Department is a full-service law enforcement organization, [fully-accredited through the Massachusetts Commission on Police Accreditation](#) that strives to create an environment that fosters the development of partnerships within the community. [The Mashpee Police Department strongly embraces the philosophy of community policing with all of our citizens. The Community Services Unit is highly committed and dedicated to identifying the core needs of our community. By providing outreach programs, specialized events and functions, we hope to build a strong collaborative supportive relationship, which will build public trust and mutual respect between our citizens and our police department, increasing the quality of life for those that live, work and visit the beautiful Town of Mashpee.](#)



The Police Station is located at 19 Frank E. Hicks Drive, adjacent to the Mashpee Fire Department. The station was built in ~~1990~~[YEAR](#). Currently, there are 38 full-time officers [1 full-time animal control officer, one full-time administrative assistant, 7 full-time public safety dispatchers, 1 part-time records clerk, one part time firearms licensing clerk, one part-time domestic violence coordinator, and five part-time reserve police officers. The Department responded to over 40,500 service calls in 2021, resulting in 489 arrests or criminal applications.](#)

~~and one full-time administrative staff person.~~ The station is understaffed and should have approximately 45-48 officers and three administrative staff. The Police Station needs upgrades, with concerns about air quality (a study of air quality conditions is in progress). Furthermore, the design of the Station requires officers to walk through the cell block area to get to the other side, which is problematic. The Station has two garages, but one is utilized for storage and maintenance. The Station has one sally port for officers to bring detainees in, which creates potential conflicts when multiple detainees are being brought in at the same time. The facility space is at capacity and additional space is desired to continue to operate at current staffing levels. Station upgrades will be necessary if staff increases in proportion to the

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Comprehensive Plan 2023~~2~~

EXISTING CONDITIONS (DRAFT 013/128/23~~2~~)

community's growth. The Station has separate facilities for men and women, which have reached capacity, but drains backing up in those facilities have been an ongoing issue that needs to be addressed.

The Department maintains a fleet of 11 patrol vehicles which operate 24/7 365 days a year. These vehicles are replaced every three years. There are 8 administrative vehicles and detective vehicles that are replaced every 6 years as well as the animal control vehicle which is replaced every six years. This has been a comprehensive vehicle replacement plan which has been in effect since January of 2005 and has worked well. The department also has two ATV patrol vehicles for beaches and difficult terrain as well as two bicycle patrol units.

~~13 patrol vehicles. These vehicles are replaced every three years on a rotating basis when they reach approximately 100,000 miles. The Department also maintains OTHER VEHICLES AND EQUIPMENT HERE. The Police Station is centrally located so that response times are adequate to all locations in town. Ideally, upgrades and expansion to the existing facility would provide for better service to the public and better conditions for the officers to perform their duties.~~

The Police Department has two divisions. The operations division consists of patrol, dispatch, animal control, school resource officers, special response team, K-9 unit, bike unit, ATV units, and the honor guard. The support services division consists of the detective bureau, prosecution, community services unit, internal affairs, and training and facility inspections. The Policing Division contains Animal Control, Detective Division, Patrol Division, Prosecution, School Resource Officer, and the Training Division. The Special Units Division contains K-9 Unit, ATV Unit, Bike Unit, Community Service Unit, Special Response Team (SRT), and the Honor Guard.

Additional information will be added to this section as interviews with Town staff are conducted.

Animal Control

Animal Control falls under the jurisdiction is part of the Mashpee Police Department and is responsible for an issue about stray, loose, nuisance dogs, dog bites, loose livestock, rabid animals, and other animal complaints. The department also conducts animal and barn inspections in compliance with Massachusetts General Laws. The department is responsible for enforcing the TownTown Bylaws relating to dogs and the Massachusetts General Laws in the care of strays and homeless animals. The Animal Control Unit is staffed by HOW MANY STAFF one animal control officer and one vehicle. and has HOW MANY VEHICLES/EQUIPMENT. Animal Control is contacted by calling the Mashpee Police Department and a dispatcher will contact the Animal Control Unit, which is available Monday through Friday from 7:00 a.m. through 3:00 p.m. which is available during normal business hours Monday through Friday.

Fire and Rescue

The Mashpee Fire and Rescue Department's mission is to minimize loss and suffering within the community by education, training, and the mitigation of emergency incidents within the limit of available resources. As of December 31, 2021, the current authorized force of the Department was 36 operational members (four captains, four lieutenants, 24 firefighters, one fire prevention inspector, one lieutenant EMS officer, one fire chief, and one deputy fire chief), one administrative assistant, and one billing clerk for a total of 38 members.

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EXISTING CONDITIONS (DRAFT 013/128/23~~22~~)

The Mashpee Fire and Rescue Department is located at 20 Frank E. Hicks Drive, adjacent to the Mashpee Police Station. The building was constructed in 2000. The Department maintains a total of nine vehicles, including a rescue pumper, brush breaker, ladder tower, forestry truck, tanker, rescue boat, and 3 ambulances. The Department were called to 44 total fires, 2,942 emergency medical responses, and 79 hazardous material responses. YEAR: LIST OF EQUIPMENT AND VEHICLES AND REPLACEMENT SCHEDULE.

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The Fire Inspector and Emergency Medical Services (EMS) Officer are continually working to develop new ways to deliver public education courses, site visits, and other public safety events to enhance the quality of life in Mashpee. Some of the beneficial offerings have been smoke and carbon monoxide detector surveys of homes and businesses, childcare seat installations, vital of life medical reviews, fire extinguisher training, home safety inspections and lectures, and the management of end-of-life decisions. Both the Fire Inspector and the EMS Supervisor work closely with the Council on Aging and Board of Health to monitor activities within the TownTown that they and others in the Department can assist with.

The Department participates in wildfire planning in the Mashpee National Wildlife Refuge. The Department performs prescription fires for habitat restoration and fire fuels reduction practices on both state and federal lands. There are plans to continue these programs in 2022 to accomplish beneficial burns by the Massachusetts Division and Federal Department of Fisheries and Wildlife. This program is accomplished in partnership with the U.S. Fish and Wildlife Service, Massachusetts Department of Conservation and Recreation, Massachusetts Fish and Wildlife, Orenda Wildlife Trust, and the TownTown of Mashpee.

Department of Natural Resources

The Department of Natural Resources (DNR) promotes public health and safety by protecting and restoring Mashpee waterways, enforcing shellfish and water way laws, and maintaining water quality (Town of Mashpee, n.d.). The DNR was created in 2016 and includes the following positions: Director of Natural Resources, Harbormaster, Assistant Harbormasters, Shellfish Constable, Shellfish and Water Quality Monitoring Technician, and Waterways Assistants (Town of Mashpee, 2021). Chapter 4, Natural Resources, and Chapter 10, Water and Coastal Resources, provide additional information on the Department of Natural Resources.

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Harbormaster

The Harbormaster's Office reports to the Town of Mashpee Police Department. Section 170 of the Mashpee General Bylaws states that the Harbormaster is responsible for enforcing the rules and regulations relating to Mashpee waterways. All moorings require a permit from the Harbormaster (Town of Mashpee, 2021). The Mashpee Harbormaster Division maintains a fleet of seven vessels and five vehicles for patrol and related duties across all Mashpee waterways. The assistant harbormaster responded to one boating accident, 26 service calls, 15 marine incidents, and gave out over 50 citations over 1,600 hours of patrol during the 2021 boating season.

Shellfish Warden

The Shellfish Warden, like the Harbormaster, reports directly to the Police Department. In accordance with Chapter 130, Section 98 of the Massachusetts General Laws, the Shellfish Warden is appointed by

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the Town to promote and manage shellfisheries (Commonwealth of Massachusetts). Fines and other penalties are enforced by the Shellfish Warden for failure to abide by regulations, including acquiring permits and catch restrictions. The Mashpee Shellfish Regulations have been effective since June 15, 2010 and remain in effect indefinitely (Town of Mashpee, 2021). The Mashpee Shellfish Division has three vessels and one vehicle used for Joint HM-Shellfish Patrol, propagation work, staff transport. The Shellfish Division also has access to 72 floating cages and 350 bottom cages; upwellers, powered by 4 Hayward Super Pumps; and, an oyster tumbler. The Town currently has approximately 1,400 recreational boating permit holders, which is the primary use of Mashpee waterways.

The Town's waitlist for moorings has increased substantially in recent years, resulting in diminished commercial interest and available permits. Additional boats have also damaged the healthy bottoms of these waterbodies, which are critical for shellfish digging. The clam flats of Waquoit Bay have experienced particularly notable decline in productivity as the influx of recreational vessels have led to seasonal closures and narrow waterways, posing a threat to the health and safety of commercial fishers. Aquaculture farms are located throughout the Town, but expansion has become limited due to boating traffic patterns.

Additional information will be added to this section as interviews with Town staff are conducted.

Emergency Management

To provide reliable and effective emergency communications to residents, the ~~Town~~Town of Mashpee implemented the Blackboard Connect Notification System as a ~~town~~Town-wide emergency notification platform to provide timely and important emergency notification information to residents. Blackboard Connect is a high-speed notification system designed to make calls to specific people or areas in the event of an emergency or for sharing important information. The Mashpee Emergency Management Team and other ~~Town~~Town departments use this system to notify residents by telephone of important information. The system can make thousands of calls in a minute to convey vital information. These messages may include information about the flood, fire, water emergencies, road closures, missing persons, evacuation orders, weather events, and other related emergency issues or situations.

Residents and businesses must verify their contact information in the database and can do so by using the Blackboard Connect icon on the ~~Town~~Town's website (<https://www.mashpeema.gov/police/pages/emergency-alert-sign>). Accurate telephone numbers in the database help to ensure that emergency information will be distributed on time. Residents can add additional telephone numbers including a cell phone, and can also receive notification by email, text, or pager. The address documented must be in Mashpee, but the associated phone number can be from anywhere to receive alerts.

Additional information will be added to this section as interviews with Town staff are conducted.

School Facilities

The ~~Town~~Town, along with the Mashpee School Department, is committed to providing and maintaining high-quality education to the children and families of Mashpee. The ~~Town~~Town allocated approximately

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Comprehensive Plan 2023-28

EXISTING CONDITIONS (DRAFT 01/12/2023)

~~X%~~ ~~X%~~ of the total operating budget to education in FY ~~21-22~~. The general administration of the Mashpee School Department is directed by a five-member committee who are elected to a four-year term.

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The Mashpee School District is composed of three school locations (Kenneth C. Coombs School, Quashnet Elementary School, and Mashpee Middle-High School). The school facilities operated by the Mashpee School Department are presented in Table 8-2 below.

School	Year Built	Location	Grades	Enrollment (2021-22)	Class Size	Site Size
Kenneth C. Coombs School		152 Old Barnstable Road	Grades PreK-2			
Quashnet Elementary School		150 Barnstable Road	Grades 3-6	460	20:1	
Mashpee Middle-High School		500 Old Barnstable Road	Grades 7-12	440	10.7:1	

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Source: Mashpee School Department Website <https://www.mpspk12.org/about-us> and Massachusetts Department of Elementary and Secondary Education: School District and Profiles <https://profiles.doe.mass.edu/profiles/student.aspx>

Table 8-3 provides enrollment numbers for all grade levels from the 2014-15 school year through the 2021-22 school year.

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School Year	Grades													
	PK	K	1	2	3	4	5	6	7	8	9	10	11	12
2014-15	92	106	122	123	109	136	131	149	127	141	119	109	99	104
2015-16	81	120	100	125	135	104	135	131	149	127	114	105	106	97
2016-17	30	73	116	95	121	134	102	137	129	148	113	105	95	102
2017-18	74	122	101	119	116	132	135	102	140	130	129	112	111	99
2018-19	94	97	114	103	119	116	128	140	111	140	115	120	108	111
2019-20	91	96	95	111	100	120	117	123	147	109	119	116	113	106
2020-21	54	93	92	91	105	97	119	119	115	141	95	122	106	119
2021-22	80	90	98	96	90	109	105	119	118	112	127	95	113	105

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Source: Adapted from Massachusetts Department of Elementary and Secondary Education: School and District Profiles <https://profiles.doe.mass.edu/profiles/student.aspx>

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Over an eight-year period (2014-2022), school enrollment in Mashpee declined by approximately 19.8%. Table 8-3 provides total enrollment counts for 2013-2022 on a grade-by-grade basis, while Table 8-4 provides total school enrollment and the percent change from enrollment the prior year. Except for the 2017-2018 school year, each year experienced an enrollment decline from the prior year.

School Year	K-12 Total Enrollment	Difference	% Change
2014-15	1,667	NA	NA
2015-16	1,629	-38	-2.3%
2016-17	1,500	-129	-8.6%

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School Year	K-12 Total Enrollment	Difference	% Change
2017-18	1,622	122	7.5%
2018-19	1,616	-6	-0.3%
2019-20	1,563	-53	-3.3%
2020-21	1,468	-95	-6.4%
2021-22	1,457	-11	-0.8%
Change		-210	-19.8%

Source: Adapted from Massachusetts Department of Elementary and Secondary Education: School and District Profiles
<https://profiles.doe.mass.edu/profiles/student.aspx>

~~Additional information will be added to this section as interviews with school staff are conducted.~~

Solid and Hazardous Waste Management

The ~~Town~~Town of Mashpee does not provide curbside trash pickup. Residents must either purchase a permit to drop off trash at the transfer station or contact a licensed trash hauler for privately operated curbside pickup. The Mashpee Transfer Station is located at 380 Asher's Path and is open to residents five days a week, including weekends (currently closed on Tuesdays and Thursdays). Stickers for the transfer station are purchased at ~~Town~~Town Hall and recycling-only permits can be purchased.

Recycling is collected at the transfer station and users must separate the recyclables into categories. Massachusetts State Law bans the disposal of recyclable materials without household trash. Mashpee residents can purchase recycling bins at the DPW facility.

In addition, the transfer station also accepts antifreeze, appliances, automotive batteries, rechargeable batteries, books, electronics, mattresses and box springs, mercury products, mixed rigid plastic, oil filters and used oil, propane tanks, scrap metal, textiles, tires, yard waste, and brush. Barnstable County residents can dispose of household hazardous waste during scheduled events several times a year.

8.3.1 Issues

Mashpee's outdated Town technology would benefit from an update to ensure that residents are kept informed on important matters. Residents voiced their concern around the lack of communication between Town departments and the need for expanded integration between the Town and Mashpee Wampanoag Tribal leaders. The lack of a community center has been seen as a detriment to the Town. The community center could be a place for promoting traditions of the region and connecting people from within Mashpee and out to the cultural heritage of the area. Public safety issues are most pertinent on the water. Increased boating traffic, especially speed boats and recreational vessels that stray out of their channel, presents a safety risk to diggers.

8.3.2 Opportunities

Designated moorings for commercial entities may alleviate the issue of safety risks to diggers and remove a significant barrier to entry, especially for the burgeoning aquaculture industry. While Mashpee does not currently have the same amount of viable space for aquaculture as other Towns, a

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well thought out smaller scale version of this has the potential to impact the Town and drive our local "Blue Economy".

8.3.3

Current Measures & Initiatives

Further information is needed in this section regarding current measures. We will gather this information through stakeholder interviews.

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8.4 Community Engagement

Further information is needed in this section regarding community engagement. We will gather this information through community engagement.

Additional information will be added to this section as interviews with Town staff are conducted.

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8.3.5 Water and Wastewater Resources and Facilities

The Mashpee Water District provides clean and safe drinking water to 10,149 accounts, as of December 31, 2021. The Mashpee Water District was formed in 1987 and from 1987 to 1999 established an agreement to authorize the District to receive water from the Town of Falmouth to supply water to areas of Mashpee that were contaminated by Otis Air Force Base. In 1999 the District established a new source of water with the Quaker Run Road well installation. In 1991, the District purchased the Highwood Water Company, increasing their customer base from 500 to 3,000, also bringing along three water supply wells. The District continued to expand through 2005, adding two water tanks (Back Road in 1993 and Meeting House Road in 2003), two new wells (Turner Road Well in 1999, Mashpee Village Well in 2002, and Belcher Road Well in 2005). Table 8-5 provides illustrates

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Table 8-5. Mashpee Water District Consumer Counts	
Year	Number of Consumers
1987-1991	0 to 3,000
1994	4,000
1996	5,000
1999	6,000
2001	7,000
2004	8,000

Source: Mashpee Water District
<http://www.mashpeewaterdistrict.com/about/index.html>

Additional information will be added to this section as interviews with Town staff are

8.5 Goals & Policies

Goals

1. Ensure all Mashpee residents have access to the highest quality of physical, mental, and emotional health care.
2. Provide safe, equitable school facilities that allow all Mashpee students to receive an excellent education and achieve their full potential.

Policies

1. Encourage sustainable solid waste management practices to prevent hazardous waste from infiltrating natural areas and municipal systems.
2. Protect Mashpee residents, visitors, and their property from crime.
3. Expand role of emergency management in minimizing loss and suffering from man-made and natural disasters.
4. Efficiently coordinate public safety services to ensure rapid response times and high-quality care.
5. Increase collaboration internally between Town departments and externally with Mashpee residents to limit the chance for a lack of communication or miscommunication.

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6. Maintain and enhance cross-sector collaborations such as with educational institutions and research organizations to bolster water quality sampling programs and reporting.
7. Identify a site to be used for materials storage and develop the materials storage site
8. Enhance Suicide Prevention programing and educational awareness.
9. Enhance collaboration and communication with Mashpee Wampanoag Tribe.
10. Ensure critical facilities are located near populated centers while promoting equitable access to underserved communities.

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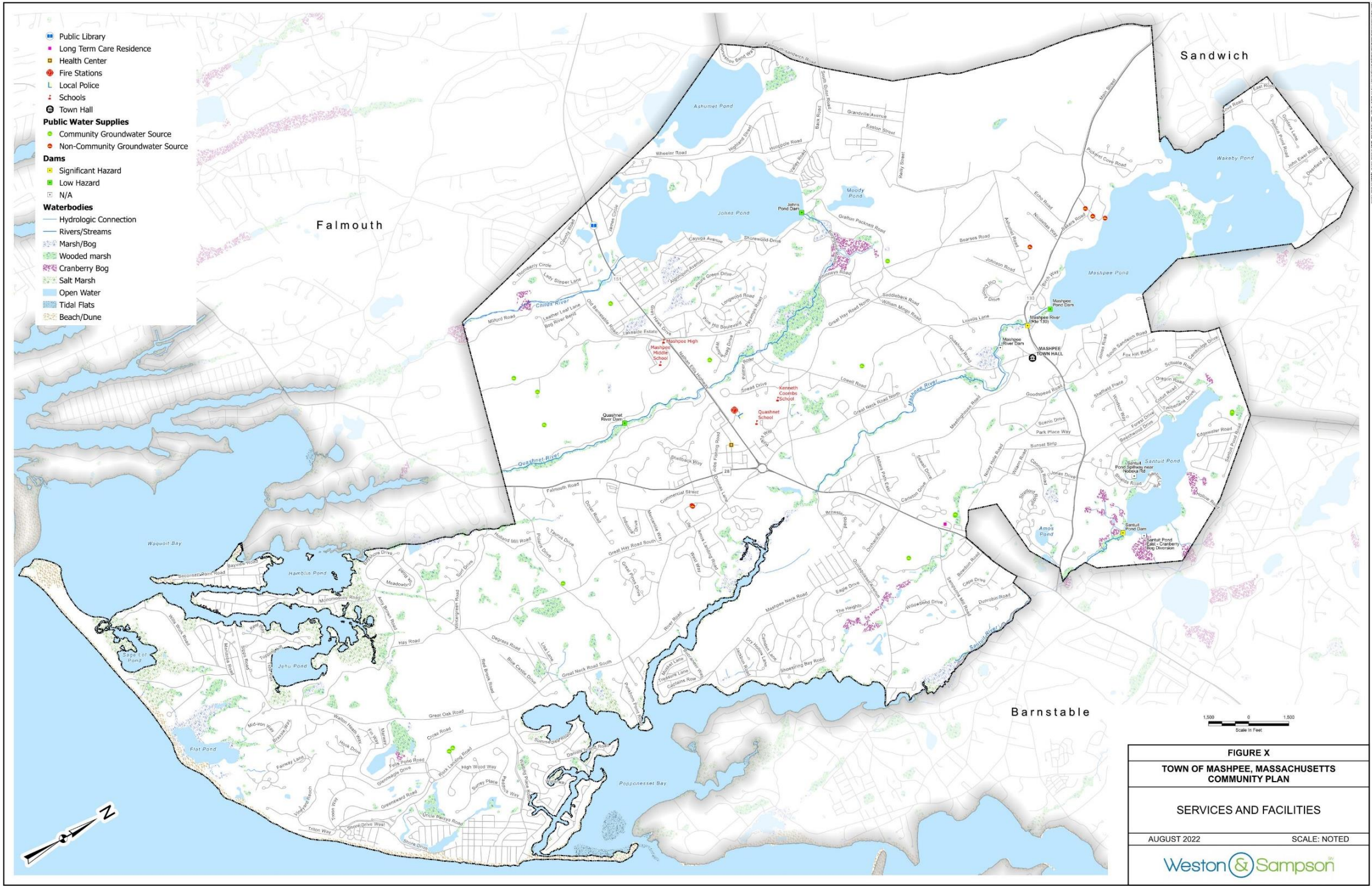
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3.0 SUSTAINABILITY

DISCLAIMER: This is a working draft and will continue to be updated as the Comprehensive Plan process evolves. Additional information will be added as stakeholder and public input is gathered. These blue boxes throughout the draft chapters represent areas of further consideration and study and will be updated with additional information as it is collected.

3.1 Vision

To be developed with Town.

3.2 Introduction

This chapter focuses on sustainable development patterns, energy efficiency, climate preparedness, and green infrastructure. As a coastal community with a large seasonal population, Mashpee's natural resources, housing, and economic development are closely intertwined. Rapidly changing conditions resulting from climate change will affect every aspect of residents' lives. Fortunately, the Town of Mashpee has initiated planning efforts that will improve its resiliency to these impacts. In 2010, Mashpee was designated as a "Green Community" by the Commonwealth under the Green Communities Act. This program provides a designation and grant funding to incentivize cities and towns to reduce municipal energy consumption by 20 percent over five years.

Additionally, the Town completed a Municipal Vulnerability Preparedness Plan (MVP) which provides an assessment of Mashpee's vulnerabilities and strengths and outlines actions to improve resiliency and a Hazard Mitigation Plan Draft to reduce damages resulting from natural disasters. The Hazard Mitigation Plan identifies infrastructure, parcels, and buildings that are vulnerable to the impacts of flooding. Information on flood zones is further detailed in the Natural Resources Chapter of this Comprehensive Plan. The Town also completed a Comprehensive Watershed Nitrogen Management Plan, which sets forth actions to mitigate the impacts of nitrogen on the watershed to ensure a sustainable environment for organisms.

Mashpee's infrastructure is largely developed; however, there is much that the Town can do to promote sustainability. Local sustainability efforts can leverage the following federal, state, and regional plans and programs:

- Commonwealth goal for 50% reduction in GHG emissions by 2050
- Cape Cod Commission Climate Action Plan.

3.3 Existing Conditions

3.3.1 Sustainable Development Patterns

Development is shaped not just by market opportunities, but also by state and local regulation. Understanding what development patterns result from the Town's regulations (Zoning Bylaws and Subdivision Regulations) is key to addressing problems before they are built. Table 3-1 identifies existing regulations [and conservation efforts](#) that are in place to protect the natural environment and to reduce waste in Mashpee.

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Commented [ES3]: Somewhere in here, define sustainability, resilience, and climate mitigation vs hazard mitigation, and adaptation so the reader is clear on what we are talking about with the various terms.

I would also caution about the introduction saying that this chapter will cover sustainable development patterns and green infrastructure – those topics should be covered in the land use and public services, respectively. Just want to be sure that we're not duplicating efforts or content. I recommend that the author check in with the authors of those chapters to see how this chapter can reference the sustainability elements from the other chapters without spending too much time on theme here to avoid being redundant.

Commented [ES4]: Local resilience efforts can leverage MVP, FEMA BRIC, and NFWF funds, among others.

Table 3-1 Development Regulations that Support Sustainability and Resiliency	
Regulation	Purpose and Effect
Protection Districts Zoning Bylaw	Restrict development or require a review process before LIST OF ACTIONS are allowed. These areas include floodplain zones as defined by FEMA, Mashpee River, Quashnet River Protection Districts, Groundwater Protection District, and Areas of Critical Environmental Concern (ACEC). ACEC areas include areas of flood control or the prevention of storm damage, waters containing shellfish and fisheries, and other public interests identified by the Wetlands Protection Act and Bylaw.
Wetlands Protection	Wetlands provide several benefits. They filter pollutants from rainwater so that they do not wash into water bodies, prevent flooding during storms by holding rainwater, provide food and habitat for fish and wildlife, control erosion, and support the economic, academic, and recreational activities of people. Mashpee's General Bylaws are intended to protect wetlands, related water resources, and adjoining land areas by requiring prior review by the Conservation Commission. The Town's Wetland Protection Bylaw regulations utilize the Home Rule authority to protect additional resource areas, for additional values, with additional standards and procedures that are stricter than the Wetlands Protection Act, G.L. Chapter 131, Section 40 and Regulations in 310 CMR 10.00.
Conservation Lands	The CONSERVATION COMMISSION Committee has the power to protect environmental values on conservation lands by imposing rules and regulations. They can govern the use of land and waters under its control for the protection, promotion and development of water supply, groundwater, flood control, erosion and sedimentation control, for the prevention of water pollution, for the protection and preservation of fisheries, shellfish, recreational values, wildlife and wildlife habitat, and for the providing of open spaces in land and water areas and for all other purposes as provided for in the Massachusetts State Laws, MGL C. 40, §8c.
Low Impact Development (LID)	Low Impact Design and Best Management Practices are terms that describe design techniques that imitate natural processes and mitigate impacts from development. As of new language adopted in October of 2020, they also require that the development plans will not adversely affect air quality, will not have a significant adverse impact on wildlife habitat, estuarine systems, traffic flow, traffic safety, waterways, fisheries, public lands, or neighboring properties and will not destroy or disrupt species that are listed as endangered or threatened by the Massachusetts Natural Heritage Program or any known historic or archeological sites. Although this regulation is a great step towards sustainability, it does not clearly define how these determinations are made. NEED MORE INFORMATION ON THIS
Erosion and Sediment Control	The purpose of this ordinance is to build off the earth removal ordinance and ensure the prevention or reduction of soil erosion and sedimentation before, during, and after the development or redevelopment of a site. This ordinance requires an Erosion and Sedimentation Control Plan to be submitted to the Town for approval before any construction takes place. Although, single-

Commented [ES5]: Do we know about how well these regulations are enforced in Mashpee? Who is responsible for enforcement? How often are variances granted?

Commented [ES6]: Adopted by who – the town? As part of a new ordinance? Or an update to the zoning bylaw?

Commented [ES7]: Good point! I would also check/mention if it clearly defines who is responsible for making those determinations.

	family homes are exempt from an approved Erosion and Sedimentation Control Plan. Of the 10,035 residential properties, 7,056 are single-family, which accounts for about 70% of the residential properties and 20% of the town's land area (Commonwealth of Massachusetts, 2021b). The Town should consider revoking the exemption privilege for single-family homes since they cover much of the town land. This would help further reduce soil erosion and disturbance by expanding the jurisdiction of the ordinance.
Nitrogen Control Bylaw	This Bylaw is meant to conserve valuable waterways and other resources that increase property values, protect the unique environment vital to the local economy, and reduce the financial burden on taxpayers and property owners by regulating the outdoor application of nitrogen and phosphorous on turf. Nitrogen and phosphorus are found in fertilizers that aid in lawn growth, but they are detrimental to the water quality of Mashpee's ponds, streams, and bay areas. The regulation of fertilizer applications will reduce the overall amount of excess nitrogen and phosphorus entering the town's natural resource areas.
Earth Removal	This ordinance is typical in municipalities, and they are granted such a right to impose these regulations under Chapter 40A of the Massachusetts General Laws (Commonwealth of Massachusetts, 2021a). It states that "no topsoil, subsoil, gravel, sand or other earth may be removed from the Town of Mashpee without first having obtained a permit from the Selectmen (Zoning Board of Appeals, 2019, pg. 62)". This section may also require that if the area of ground being removed exceeds 500 square feet, then the board may require the entity to replant the entire area annually with rye, vetch, wheat, legumes, or other soil-improving plants or plants with a permanent cover crop or reforest the area. This section also requires sand and gravel pits to replant trees or shrubs in areas larger than 5,000 square feet that have become unsuited for further use to prevent soil erosion. These regulations protect the natural integrity of the soils and land within the Town limits. If a permit is issued and earth removal is allowed, remediation to support regrowth in the area is required. This supports a sustainable cycle, but it should be defined that the plants shall be of native origin so that invasive species are not introduced into the area.
Solar Energy Overlay District	At the Annual Town meeting in October 2021, the Town of Mashpee (WHO) proposed edits to the Zoning Bylaw that would allow for a solar energy overlay district. These changes will be reviewed by the Attorney General in the upcoming months to be approved or not.
Single-Use Plastic Prohibition	<p>The Town is prohibiting the use and distribution of single-use plastic carryout bags by any person, owner, or operator of any establishment within the Town of Mashpee. This ordinance was approved in 2017 and it stated that the existing stock of single-use bags shall be phased out within twelve months of the adoption of the ordinance and that any remaining bags after twelve months should be disposed of properly.</p> <p>The purchase by the Town of Mashpee of water or any other beverage in single-use plastic bottles, of any size, is prohibited and the sale of water or any</p>

Commented [ES8]: Is this for all properties, or just commercial? And how is it enforced?

Commented [ES9]: How about also drought tolerant, and climate-adaptive species?

Commented [ES10]: Do these changes specify where large-scale solar should be built? And how were these areas selected? Will this new overlay district (or existing bbylaw) protect natural resources, like forests and wetlands, from solar developers, and protect water resources from construction impacts? Or is the primary sustainability benefit the encouragement of enewable energy? Need to acknowledge both sides of the issue.

	beverage in single-use plastic containers is prohibited on Town property. This ordinance went into effect in October of 2020.
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Source: Town of Mashpee Zoning Bylaw, Town of Mashpee General Bylaw

Commented [ES11]: Since then, do we know how it has impacted litter or costs of recycling locally?

Incentives for Sustainable Development

More resilient development patterns can be incentivized as well as regulated to offset additional costs to property owners and to reward specific approaches.

Table 3-2 Incentives for Sustainable Development	
Roof-mounted solar	Mashpee does not offer incentives for the addition of solar energy systems TO BE CONFIRMED
Ground-mounted solar	There is no zoning ordinance encouraging the installation or use of solar energy systems, but there is a table that defines which districts solar energy systems can be installed in. The only district currently allowed with a plan review is industrial.

Source: **SOURCE NEEDED**

Commented [ES12]: Is this section talking about sustainable development, or resilience development, or both?

Commented [ES13]: Ground mounted solar takes up a lot of land, and can also have negative environmental impacts. The best thing a town can do is to identify areas that might be suitable for GMS, for instance areas of environmental contamination, or that don't have environmental, agricultural, or economic value for some other reason.

Commented [ES14]: As I mentioned earlier, I would think that GI should be discussed under Public Services, and referenced here. But if this chapter remains the primary location for this discussion, make sure it is at least mentioned in the Public Services chapter, referencing this chapter.

3.3.2 Nature-Based Improvements

The Cape Cod Green Infrastructure Guide provides an overview of bioretention and green infrastructure sites in the Cape Cod area (Cape Cod Green Infrastructure Guide, 2015) (Tufts Water: Systems, Science & Society Program, n.d.). Green infrastructure is a nature-based improvement and site design technique that controls stormwater on the ground by replicating natural hydrology patterns. These techniques can accomplish many regulatory needs of urban stormwater treatment through bioretention and infiltration, a process of temporary storage of stormwater in a ponding area. It can provide several benefits for stormwater treatment, flood control, erosion control, and nitrogen removal in Mashpee. Stormwater is rainwater or melted snow that runs off streets, roofs, pavement, and other impervious surfaces as well as lawns, woodlands, and other more pervious areas as they become saturated. As the water flows over these surfaces, it can collect pollutants and sediment that can contaminate water bodies. All water quality impairments and information on how stormwater is addressed by federal, state, and local regulations are detailed in the Natural Resources Chapter of this Comprehensive Plan. Nutrient-related water quality decline is a serious threat to coastal waters and freshwater ponds as excess nitrogen can lead to eutrophication and degrade water habitats. When proper site preparation and maintenance do not occur during development, excessive quantities of soil can also erode from the site. This can result in costly repairs and damage to the environment. Information on Mashpee's nitrogen control and erosion and sediment control are detailed in the Natural Resources Chapter of this Comprehensive Plan.

Commented [ES15]: Maybe blow this out as a text box? Or keep this in text, and put the GI definition into a text box. Also, make sure these definitions coincide with the definitions in the Natural Resources chapter.

The Environmental Protection Agency (EPA) has identified several economic and health benefits of green infrastructure/low impact development (United States Environmental Protection Agency, n.d.). These include:

- Reduction in community infrastructure costs
- Increase in construction and maintenance jobs
- Increase in private and public cost savings such as lower capital costs for developers
- Increase in the efficiency of water supply systems through infiltration-based practices
- Reduction in air temperatures.

- Reduction in power plant emissions associated with air conditioning
- Reduction in particulate pollution through absorbing and filtering particulate matter
- Resiliency to the impacts of climate change
- Improved habitat in small streams and washes
- Protection of the local watershed and conservation of native ecosystems
- Increase in property values, benefiting both developers and homeowners.

The MVP report outlines actions and nature-based improvements to improve resiliency (Woods Hole Group, 2020). These include:

- Initiate plans to permit, fund, and construct coastal green infrastructure that provides beach nourishment, dune restoration, and other living shoreline projects to build coastal resilience to climate change.
- Implement the Mashpee Comprehensive Watershed Nitrogen Management Plan and further develop infrastructure to support shellfish aquaculture and enhanced monitoring of pollutants and invasive aquatic species.
- Update stormwater systems and infrastructure to anticipate future conditions and protect natural resources from erosion and nutrient impacts.
- Conduct a detailed vulnerability assessment for municipal facilities and infrastructure in Mashpee.
- The Town should prioritize road adaptations and culvert resizing for access roadways to build resilience to coastal storms and sea-level rise.
- Updating and coordinating emergency preparedness planning including considerations for communication networks, enabling energy resilience, enhancing local shelter capacity, coordinating town services, and developing climate-related outreach.

3.3.3 *Energy Use Reduction*

Reducing energy use through behavior modification, efficient facilities and equipment, and focused design can lower costs and reduce greenhouse gases. As a Green Community, Mashpee must lower municipal energy usage by 20% before the YEAR. The Town is currently employing several strategies and tools to reach this goal:

MassEnergyInsight

MassEnergyInsight is a free web-based tool provided that allows towns to monitor energy usage and carbon footprint by providing energy information for buildings, vehicles, streetlights, traffic lights, and drinking water & wastewater treatment.

Stretch Codes

Stretch Codes are building performance standards for energy efficiency that are intended to result in more cost-effective construction and higher energy efficiency. Mashpee's Board of Selectmen adopted stretch codes in 2010 (Massachusetts Department of Energy Resources, n.d.).

LED Streetlights

LED streetlights can help decrease energy consumption and municipal costs. Mashpee converted to LED streetlights to meet the energy efficiency criteria needed to be designated a Green Community (Cape Cod Light Compact, n.d.).

Hybrid or Electric Municipal Fleets

Mashpee instated a fuel-efficient fleet policy in 2009 to comply with the Green Community designation standards but their efforts and progress beyond that are unknown. There is a statewide contract, VEHao2: Advanced Vehicle Technology, that assists with procuring energy efficient vehicles for municipalities (Green Communities Division, n.d.) DOER is providing this procurement service in partnership with the Metropolitan Area Planning Council (MAPC).

3.3.4 Renewable Energy Sources

Several different types of renewable energy sources can replace or supplement traditional forms of energy production. Within the Town of Mashpee, solar and wind energy are sources of renewable energy production.

COMMON RENEWABLE ENERGY SOURCES

Solar - Solar energy is collected from sunlight and converted to electricity through solar panels. Solar energy systems can be installed on the roofs of existing and new structures or on the ground. When properly sited, solar energy systems can generate enough electricity to meet the needs of a building or home and produce excess energy to be sold back to the electric grid.

Wind - Wind power is generated with the use of wind energy conversion systems, most commonly in the form of wind turbines. Conversion systems convert the kinetic energy of the wind into electricity for consumption.

Geothermal – Geothermal energy utilizes the heat contained in rocks and fluids beneath the earth's crust by digging wells to access steam and hot water, then used to drive turbines connected to electricity generators.

Hydroelectric – Hydropower is generated by converting the force of moving water into electricity by spinning a generator's turbine blades.

Biomass – Biomass is organic material that comes from plants and animals, including crops, waste wood, and trees. When biomass is burned, the chemical energy is released as heat and can generate electricity with a steam turbine.

Solar

Solar installations on municipal facilities including the DPW building, high school, landfill, library, and senior center supplement the energy needed for operation (Town of Mashpee, n.d.).

Wind

In 2010, the Town installed wind turbines at Heritage Park followed by the solar energy installations listed previously. These projects are projected to generate 90% of the Town's municipal electric energy demand (Town of Mashpee, n.d.).

Commented [ES16]: Installed in 2010, so why is this still a projection? Do we know what percentage they generate today? Is that going to stay stable over time, increase, or decrease? What is the town's goal for renewable energy – to power a certain percentage?

3.3.6.3.5 Threats

Further information is needed in this section regarding threats. We will gather this information through stakeholder interviews.

3.3.7.3.6 Current Measures

Further information is needed in this section regarding current measures. We will gather this information through stakeholder interviews.

3.4 Community Engagement

Further information is needed in this section regarding community engagement. We will gather this information through stakeholder interviews and community engagement.

3.5 Goals & Policies**Goals**

1. Ensure Mashpee serves as an exemplary regional leader in municipal electrification.

Policies

1. Reduce the Town's reliance on fossil fuel for energy by investing in renewable technologies.
2. Maximize the opportunities and monies available to the Town following receipt of Municipal Vulnerability Preparedness Certification from the Commonwealth.
3. Assist with transition of gasoline-powered vehicles to electric vehicles.

FURTHER INFORMATION IS NEEDED IN THIS SECTION REGARDING GOALS AND POLICIES. WE WILL GATHER THIS INFORMATION THROUGH STAKEHOLDER INTERVIEWS AND COMMUNITY ENGAGEMENT.

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~~HTTPS://WWW.EPA.GOV/GREEN-INFRASTRUCTURE/BENEFITS-GREEN-INFRASTRUCTURE~~
~~WOODS HOLE GROUP. (2020, MARCH).-COMMUNITY RESILIENCE BUILDING WORKSHOP SUMMARY OF FINDINGS-RETRIEVED-FROM WWW.MASS.GOV:~~
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9.0 TRANSPORTATION AND CIRCULATION

DISCLAIMER: This is a working draft and will continue to be updated as the Comprehensive Plan process evolves. Additional information will be added as stakeholder and public input is gathered. These blue boxes throughout the draft chapters represent areas of further consideration and study and will be updated with additional information as it is collected.

9.1 Vision

To be developed with the Town

9.2 Introduction

The Transportation Chapter describes the existing transportation system in Mashpee and how it connects with the regional transportation network. This Chapter also identifies transportation-related issues, opportunities, and challenges raised by Town officials and residents that the Comprehensive Plan will address. This Chapter begins with an introduction and background, followed by an inventory of the existing transportation conditions. The following elements are summarized in this Chapter:

- Travel Characteristics
- Public Transportation
- Roadways
- Traffic Volumes
- Roadway Safety
- Pedestrian and Bicycle Accommodations
- Marinas and Boat Ramps
- Parking
- Maintenance of Infrastructure
- Recent and Planned Projects
- Issues and Opportunities

The local transportation system should provide safe and efficient mobility for people traveling using all transportation modes and should offer connections to regional facilities. Residents, businesses, students, visitors, and emergency services rely on an available and quality transportation system. The maintenance and enhancement of the transportation system impact town resources, community character, and quality of life of new and existing residents, and can attract and respond to new development.

9.3 Context/Existing Conditions

9.3.1 Demographics

Table 9-1 summarizes total population estimates based on data from the U.S. Census Bureau for the years 2000, 2010, and 2020 at the local, county, and state levels.

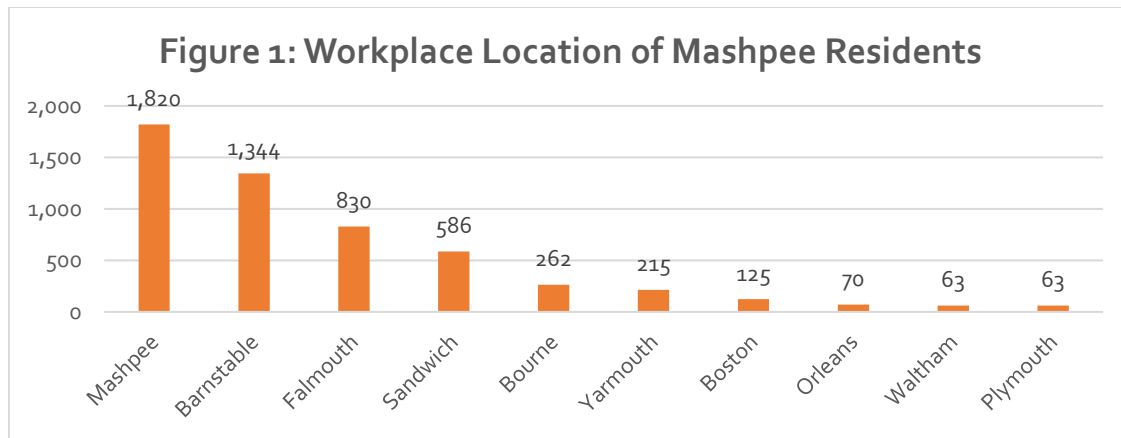
Table 9-1. Demographic Data							
	Total estimated population						
	2000	2010	2020	Net change 2000-2020		Net change 2010-2020	
				Total	Yearly	Total	Yearly
Mashpee, Massachusetts	12,946	14,006	15,060	16.3%	.8%	7.5%	.8%
Barnstable County, Massachusetts	222,230	215,888	228,996	-2.9%	0.2%	6.1%	0.6%
Massachusetts Statewide	6,349,097	6,547,629	7,029,917	10.7%	0.5%	7.4%	0.7%

Source: U.S. Census Decennial Counts 2020, 2010, 2000

Mashpee's population reached an estimated 15,060 persons in 2020, an increase of almost 7.5 percent since 2010 (14,006 estimated population). Over the past ten years, the population increase experienced by Mashpee was in line with the population increase statewide (7.4 percent), but higher than the population increase in Barnstable County (around 6.1 percent). Between 2000 and 2020, Mashpee experienced a population increase of around 16 percent, while Barnstable County saw a decrease in population of around three percent.

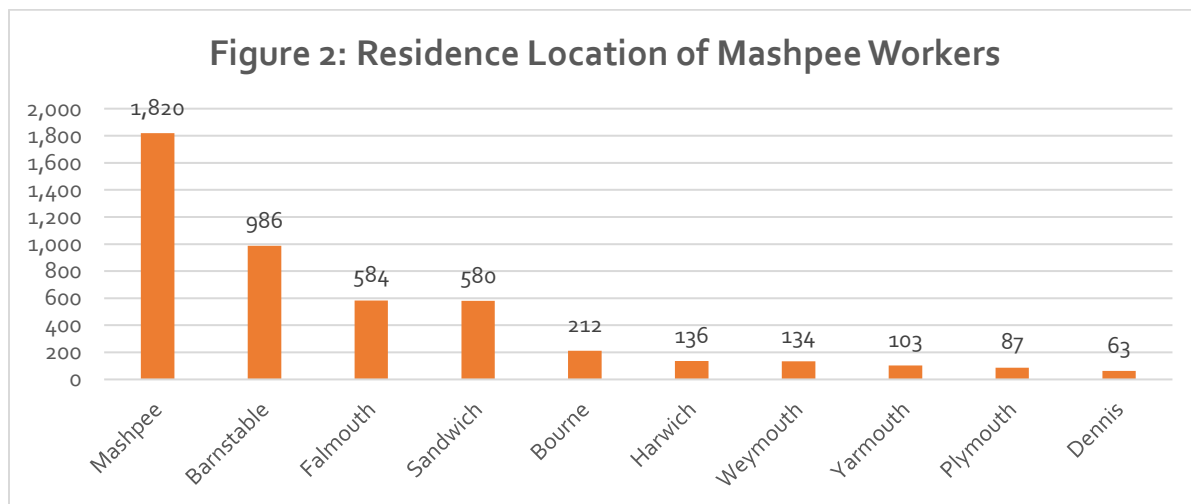
9.3.2 Journey-to-Work Data

Figure 1 shows the most popular work destinations for Mashpee residents based on the most recent data from the U.S. Census American Community Survey 2011-2015 Five-Year Estimate. As shown in the figure, 1,820 Mashpee residents (approximately 34 percent of workers) work in Mashpee. A total of 1,344 residents (25 percent of workers) are employed in the Town of Barnstable. Mashpee residents also work within nearby communities such as Falmouth (830) and Sandwich (586).



Source: *Commuting Flows, 2011-2015 American Community Survey Five-Year Estimate*

Figure 2 shows the major residence locations for people working in Mashpee based on the most recent data from the U.S. Census American Community Survey 2011-2015 Five-Year Estimate. Approximately 1,820 people who work in Mashpee also live in Mashpee (29 percent). A total of 986 Barnstable residents (16 percent) work in Mashpee. People who work in Mashpee also come from nearby towns including Falmouth, Sandwich, and Bourne. In total, more Mashpee residents are commuting out of Mashpee, than non-residents commuting into Mashpee.

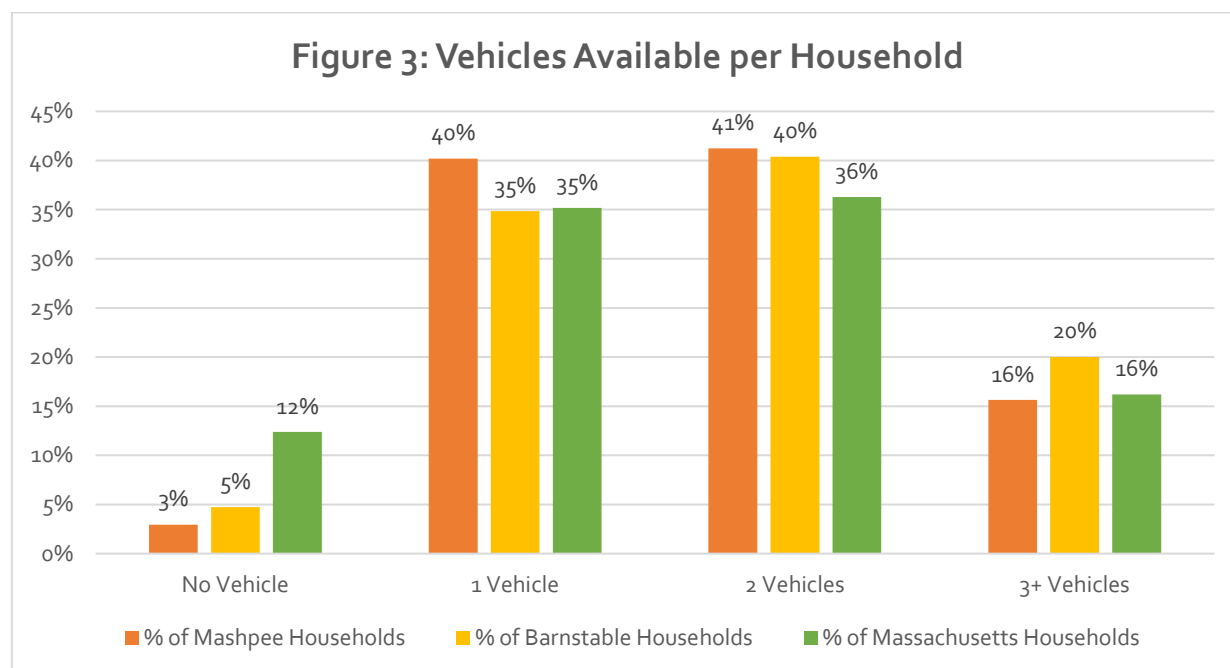


Source: *Commuting Flows, 2011-2015 American Community Survey Five-Year Estimate*

9.3.3 Vehicles Available

Figure 3 shows the number of vehicles available per household for both Mashpee and the State of Massachusetts based on the U.S. Census American Community Survey 2015-2019 Five-Year Estimate. As shown, 40 percent of households in Mashpee have access to one vehicle. The percentage of households in Mashpee with access to two or more vehicles is 57 percent, which is slightly greater than the percentage of households in the State with two or more vehicles (52 percent), and slightly lower than

the percentage of households in Barnstable County with two or more vehicles available (60 percent). Approximately three percent of Mashpee households do not have access to a vehicle. This is less than the state average of over twelve percent. However, within Mashpee, the percent of households with access to no vehicle or one vehicle greatly. In the census tract in the northeast of town framed by Route 151 to the south and Meetinghouse Road to the east, an estimated 57 percent of households have no vehicle or one vehicle, with an estimated 8 percent of households with no vehicle. The other three census tracts in town have between 33 percent and 43 percent of households with one vehicle or no vehicle.

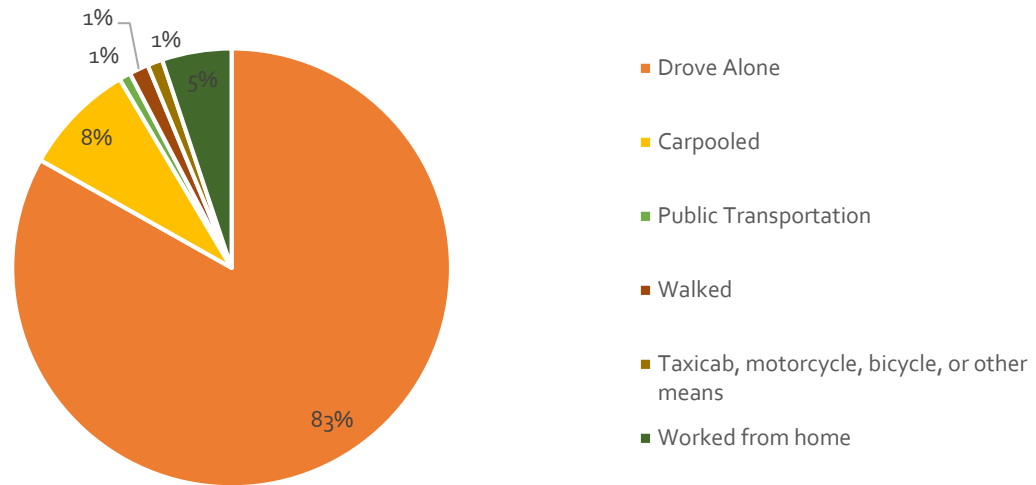


Source: 2015-2019 American Community Survey Five-Year Estimate

9.3.4 Mode Share and Commute Time

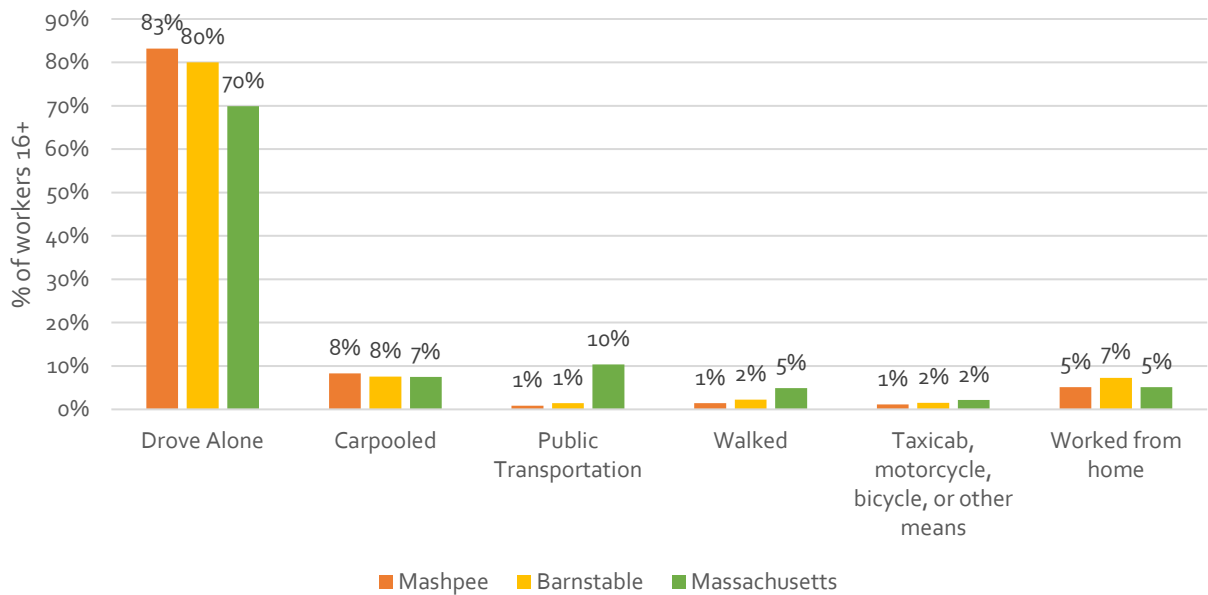
Figures 4 and 5 show the modes of transportation to work for Mashpee residents in 2019, the most recent year for which data is available. As shown, 83 percent of residents drove alone, eight percent carpooled, and five percent worked from home. Just one percent walked, and one percent took a taxi, motorcycle, bicycle, or other means, and one percent used public transportation. The percentage (83 percent) of Mashpee residents commuting to work by driving alone was slightly higher than the Barnstable County average of 80 percent and significantly higher than the Massachusetts average (70 percent). In both Barnstable County and Mashpee, significantly fewer people take transit or walk to work than in Massachusetts as a whole. Again, the percentage of people commuting by driving alone does vary across Mashpee. In the northwest census tract, an estimated 69 percent of workers drive alone while in the northeast census tract, framed by Meetinghouse Road to the west and Route 28 to the south, an estimated 89 percent of workers drive alone. Important to note that during the pandemic, the work from home share has likely increased as it has across the country.

Figure 4: Mode of Transportation to Work in Mashpee



Source: Source: 2015-2019 American Community Survey Five-Year Estimate

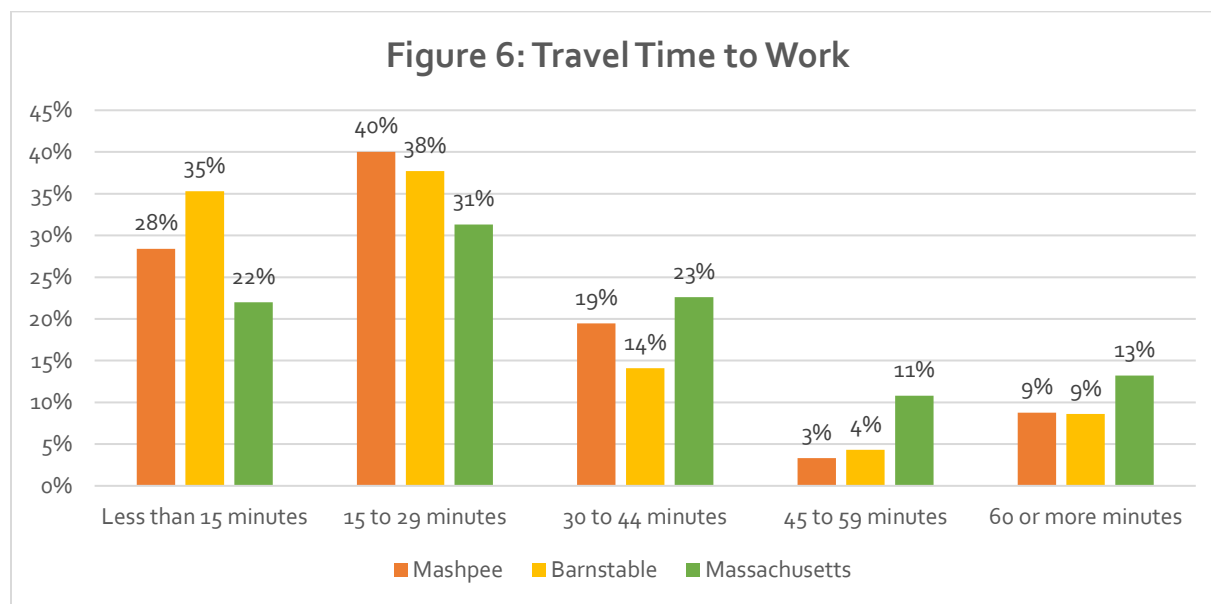
Figure 5: Mode of Transportation to Work



Source: 2015-2019 American Community Survey Five-Year Estimate

Figure 6 shows the reported travel times to work for Mashpee residents in 2019. Approximately 68 percent of Mashpee residents had an average commute of fewer than 30 minutes, 22 percent had a commute of 30-60 minutes, and nine percent had a commute of an hour or more. The mean travel time to work for Mashpee residents was 25 minutes, which was slightly longer than the Barnstable County

average of 24 minutes but shorter than the Massachusetts average of 30 minutes. Again, the travel time to work varied significantly by census tract in Mashpee. The southern tract along the ocean, framed to the north by Holland Mill Road has a mean travel time to work of an estimated 34 minutes, while the northern census tracts have estimated mean travel times to work of 22 and 23 minutes.



Source: 2015-2019 American Community Survey Five-Year Estimate

The future of commuting patterns in Mashpee and the region is still uncertain. Both commuting patterns before March 2020 and the recent increase in remote working behavior may offer indicators of the future commute patterns for Mashpee residents.

Public Transportation

The Cape Cod Regional Transit Authority (CCRTA) serves Mashpee with two bus routes; the Sealine, and the Bourne Run. The main bus stop in Mashpee is located by the entrance to the Mashpee Commons Stop & Shop. **Figure 7** shows the locations of Mashpee's two fixed-route bus lines. The CCRTA also operates a demand response/paratransit service called Dial-A-Ride Transportation (DART) and a Boston hospital service. Funding for the CCRTA is partially from local contributions. The Town of Mashpee's FY 23 assessment is \$115,135. As of January 2022, CCRTA ridership has grown back to 90 percent of its pre-Covid ridership, where earlier in the pandemic, ridership was down to 30 percent¹, growing to 50 percent in the summer of 2021. The only Town-provided public transportation is school buses.

Sealine

¹ Fitzpatrick, Brendan. 2022. "CCRTA Promoting Improvements, Growing Ridership." CapeCod.com, January 20.

The Sealine bus route runs from Downtown Hyannis to Woods Hole with stops in Centerville and Osterville Centers, Mashpee Commons, Falmouth Center, and the Falmouth Bus Terminal. The Sealine connects at the Hyannis Transportation Center to the Plymouth & Brockton bus service to Boston and Providence, to the Peter Pan bus to Boston, Providence, and New York, and CCRTA routes (the Barnstable Villager, Hyannis Loop, and the H2O). Riders can either board at a scheduled bus stop or flag the bus anywhere along the route. In Mashpee, the Sealine makes scheduled stops at Mashpee Commons Stop & Shop, South Cape Village Marshalls, and the Community Health Center of Cape Cod. At Mashpee Commons Stop & Shop, the Sealine connects to the Bourne Run.

Service along the Sealine runs Monday to Saturday. On weekdays in the Woods Hole direction, service begins at 5:54 AM at Mashpee Commons Stop & Shop and ends at 7:06 PM. On Saturdays, service begins at 8:06 AM and runs until 7:06 PM. In the Hyannis direction, service on weekdays begins at 7:05 AM and runs until 8:50 PM. On Saturdays, service begins at 10:18 APM and runs until 8:50 PM. Service runs roughly every hour on weekdays and weekends.

For adults and youth, a one-way ride on the Sealine costs \$2, a day pass costs \$6 and the monthly pass costs \$60. The CCRTA has a half-price discount on all fare products for seniors sixty and older, and people with disabilities. Transfers on CCRTA require a new fare. The buses have bike racks and are accessible to riders with limited mobility or in a wheelchair. There is a bus shelter located at the Community Health Center of Cape Cod Sealine stop.

The Bourne Run

The Bourne Run bus route runs from Buzzards Bay Train Station/ Mass Maritime to Mashpee Commons Stop & Shop via Bourne. Riders can either board at scheduled stops or flag the bus down anywhere along the route. During the summer, the Buzzards Bay Train Station offers weekend trips to Boston's South Station. In Mashpee, the Bourne Run makes scheduled stops at Mashpee Commons Stop & Shop, Mashpee Village, and Algonquin Avenue. At Mashpee Commons Stop & Shop, the Bourne Run connects to the Sealine.

The Bourne Run provides service Monday to Friday from 6:40 AM to 7:40 PM. The first trip from the Stop & Shop at Mashpee Commons is at 8:30 AM and the last is at 6:30 PM. Buses run roughly every hour.

The pricing and bus amenities for the Bourne Run are the same as for the Sealine.

Dial-A-Ride Transportation

The CCRTA's Dial-A-Ride Transportation (DART) service is a door-to-door ride-by-appointment service available to any Cape Cod residents and visitors for any purpose. All DART vehicles are fully accessible. According to CCRTA customer service, the service is typically recommended for people going to and from the supermarket or medical appointments. The CCRTA encourages riders to take fixed route service unless they need an accessible vehicle or are underserved by fixed-route service. DART times vary and before making an appointment, the CCRTA recommends riders call to determine the best appointment time. DART costs \$3 per ride for adults and youth, and \$1.50 for seniors and people with disabilities. DART passes (20 rides for the cost of 15) can be purchased for \$45 for general riders and \$22.50 for seniors and

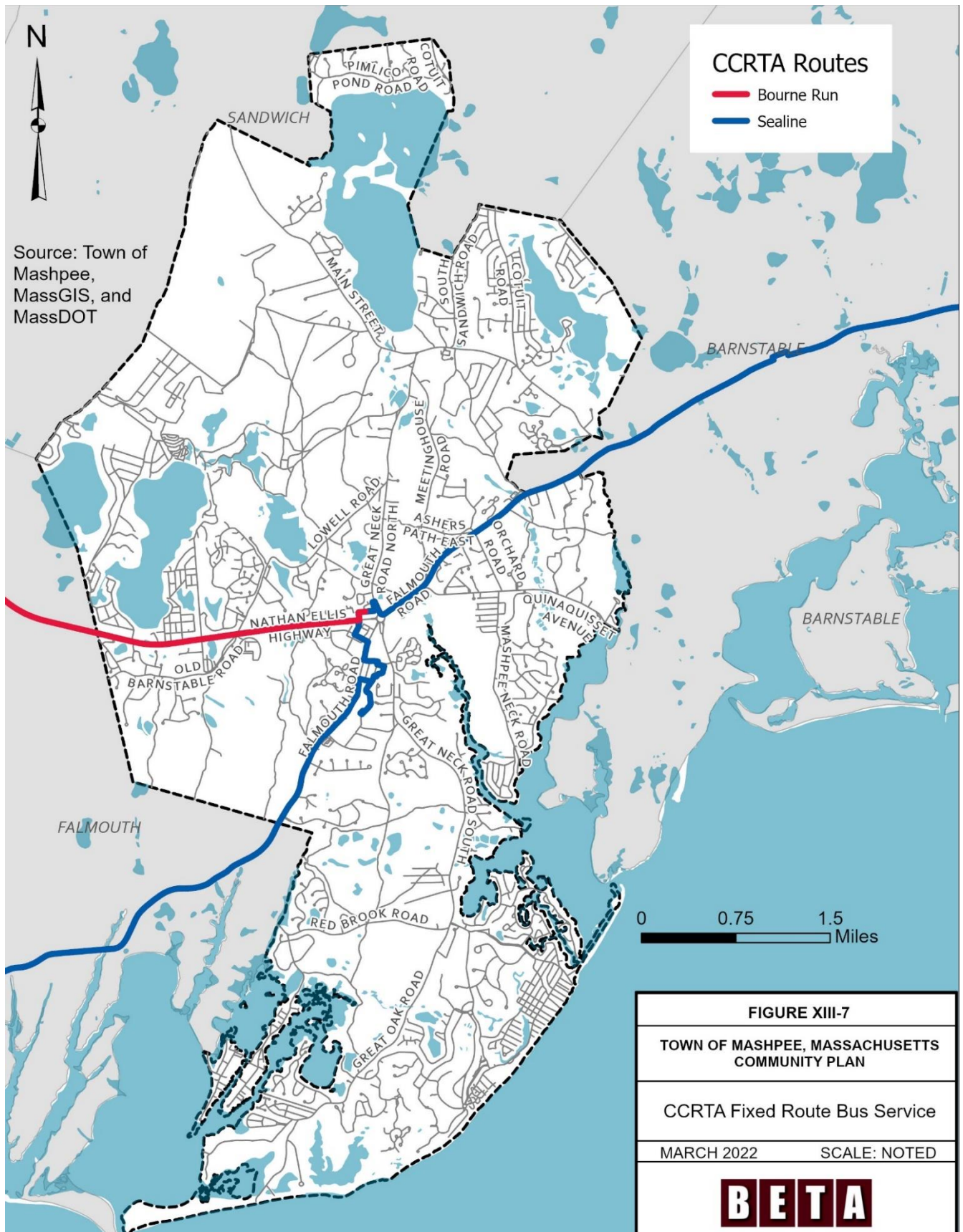
riders with disabilities. The CCRTA requires riders to make reservations at least one weekday in advance, and up to one month in advance.

Boston Hospital Service

The CCRTA offers round trip service Monday through Thursday to Boston Area Hospitals. The service picks up in Wellfleet, Eastham, Orleans, Barnstable, Wellfleet, Harwich, and at the Sagamore commuter lot. The service can also pick up in Mashpee based on availability. CCRTA runs the service with shared, accessible vehicles to eight Boston hospital locations, including Massachusetts General Hospital, Tufts Medical Center, Boston Medical Center, Boston Children's Hospital, Beth Israel, New England Baptist Hospital, Faulkner Hospital, and Carney Hospital. The service costs \$30 round trip. CCRTA recommends riders make medical appointments at 11 AM when using the service. The service requires a reservation.

School Buses

The Town provides buses for children to get to school. The Town owns the school buses and contracts out the bus service to a private operator. All students in Mashpee, regardless of how far they live from school, are eligible to take the school bus.



Roadways

9.3.5 Roadway Classification

Roadway classifications can be broken down into a hierarchy that ranges from interstates, providing high levels of vehicle mobility and low levels of vehicle access, to local roadways, providing low levels of vehicle mobility and high levels of access. **Table 2** shows the total length of each classification of roadway in Mashpee and **Figure 8** illustrates the roadway classification system in Mashpee.

Table 9-2: Classification of Roadways in Mashpee		
Roadway Class	Miles	% of Miles
Interstate	0	0%
Arterial	23.8	10%
Collector	9.6	4%
Local	201.1	86%
Total	234.5	100%

Source: MassDOT Road Inventory 2018

Interstates

Mashpee does not have an interstate highway located in town or nearby.

Arterials

Arterial roadways provide the second-highest level of vehicle mobility and are not primarily intended to provide access to abutting properties. Mashpee contains approximately 24 miles of arterials making up 10 percent of its transportation network. Main Street (Route 130), Nathan Ellis Highway (Route 151), and Falmouth Road (Route 28) are principal arterials, while Great Neck Road, Quinaquisset Avenue, Cotuit Road, Red Brook Road, and Great Oak Road are minor arterials. The primary purpose of major arterials is to move heavy traffic efficiently and safely, while minor arterials typically move traffic between major arterials and provide moderate access to abutting properties.

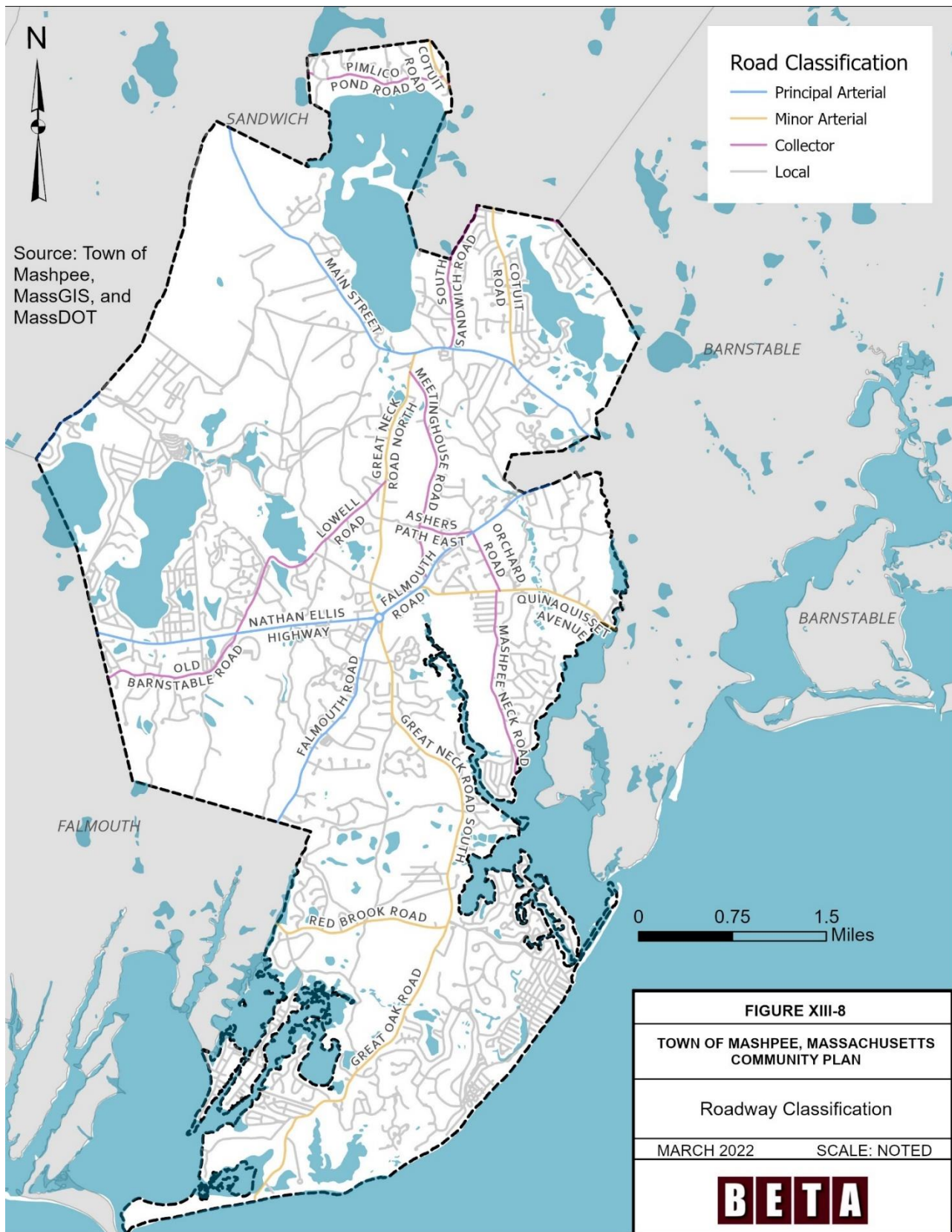
- **Route 130** (also known as Main Street) is a north-south major arterial running from close to 6A in Sandwich to Route 28 in Barnstable with a connection to Route 6. The route generally provides one lane in each direction and runs through the north side of Mashpee.
- **Route 151** (also known as Nathan Ellis Highway) is a route running east-west from the Mashpee Rotary to Route 28 in Falmouth. The route generally provides one lane in each direction.
- **Route 28** (also known as Falmouth Road) runs from Eastham to New Hampshire via Boston. On Cape Cod, Route 28 runs along the western and northern sides of the peninsula providing access to Harwich, Chatham, Falmouth, Yarmouth, Barnstable, Dennis, and Bourne.

Collector Roads

Collector roads move traffic from local streets to arterials. They provide moderate amounts of vehicle mobility and moderate vehicle access to adjacent properties. Mashpee contains approximately 10 miles of collector roadways, making up four percent of its roadway network, which is typical of Cape Cod towns. In Mashpee, major collector roadways include South Sandwich Road, Meetinghouse Road, Lowell Road, Old Barnstable Road, Mashpee Neck Road, Orchard Road, Pimlico Pond Road, and Asher's Path East.

Local Roadways

Local roadways provide the highest level of vehicle access to adjacent properties with the lowest level of vehicle mobility. Approximately 86 percent of all roadways in Mashpee fall under this classification.



9.3.6 Roadway Jurisdiction and Tribal Roadways

Table 4 shows the roadway miles in Mashpee under Town, State, private, and Federal jurisdiction. Around half of Mashpee's roadways are under Town jurisdiction. Falmouth Road, including the Mashpee rotary, is the only state-owned (MassDOT) road in town. The US Air Force roadways are within the Otis Air Base. The high percentage of roads under private jurisdiction is due to the many subdivision complexes in Mashpee. **Figure 11** shows roadways by jurisdiction in Mashpee.

Table 9-3: Jurisdiction of Mashpee Roadways		
Jurisdiction	Miles	% of Miles
Private	111.5	48%
Town	116.1	49%
State	4.1	2%
US Air Force	2.8	1%
Total	234.5	100%

Source: MassDOT Road Inventory 2018

Several state and town-owned roads in Mashpee are also listed under the Indian Reservation Roadways program. Indian Reservation Roads (IRR) are public roads that are located within or provide access to an Indian reservation, Indian trust land, or restricted Indian land. In Mashpee, IRR roads include parts of Route 151, Route 28, Red Brook Road, Route 130, Great Neck Road, Quinaquisset Avenue, Sampson's Mill Road, Meetinghouse Road, Cotuit Road, and Old Barnstable Road².

9.3.7 Traffic Volumes

Table 3 shows average daily traffic volumes (AADT) on Mashpee roadways collected between 2014-2021.

Table 9-4: Average Daily Traffic Volumes at Highest Volume Locations								
Location	2014	2015	2016	2017	2018	2019	2020	2021
Great Neck Road south of Route 130		16,079			15,207			
Great Neck Road south of Donna's Lane	9,270	11,186						9,011

² Mashpee Wampanoag Tribe. 2013. "Indian Reservation Roads Inventory Update and Long Range Transportation Plan Update."

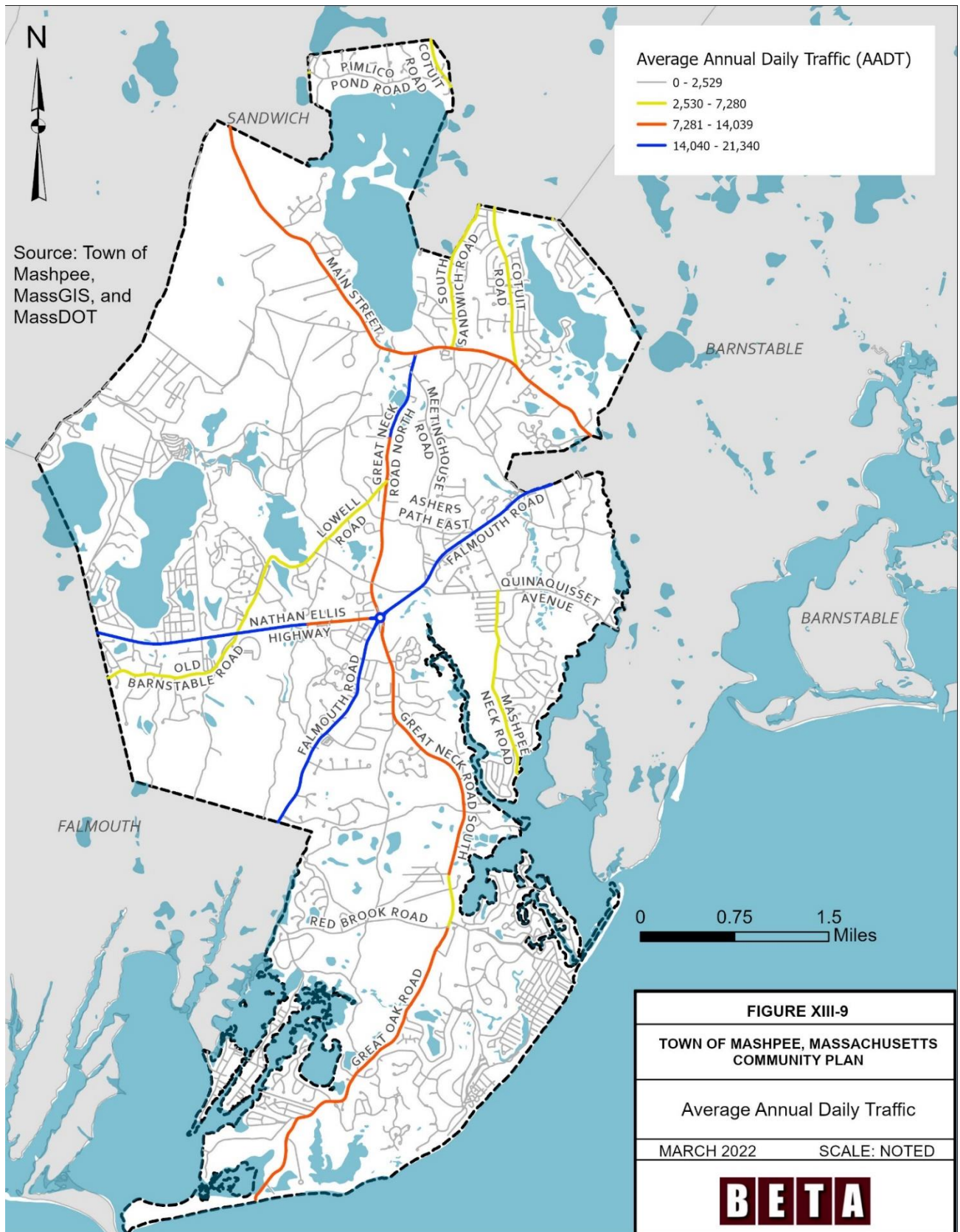
Table 9-4: Average Daily Traffic Volumes at Highest Volume Locations

Location	2014	2015	2016	2017	2018	2019	2020	2021
Great Neck Road north of Mashpee Rotary			10,448			11,435		
Nathan Ellis Highway (Route 151) west of Market Street					13,697			
Old Barnstable Road north of Nathan Ellis Highway (Route 151)			7,770			8,615		
Nathan Ellis Highway (Route 151) west of Mashpee Rotary	13,719	13,602		12,813		13,625		
Nathan Ellis Highway (Route 151) west of Old Barnstable Road	21,516							11,825
Nathan Ellis Highway (Route 151) east of Old Barnstable Road			17,364	16,690	17,679	18,618		10,571
Falmouth Road (Route 28) east of Donna's Lane	17,727							
Falmouth Road (Route 28) at Orchard Rd & Asher's Path			19,361					
Falmouth Road (Route 28) east of Industrial Way					14,273			
Falmouth Road (Route 28) west of Mashpee Rotary				15,205				
Cotuit Road at Sand/Mash TL (N end)	6,893			7,303	7,103			
Main Street west of South Sandwich Road	10,958					10,978		

Source: MassDOT Transportation Data Management System

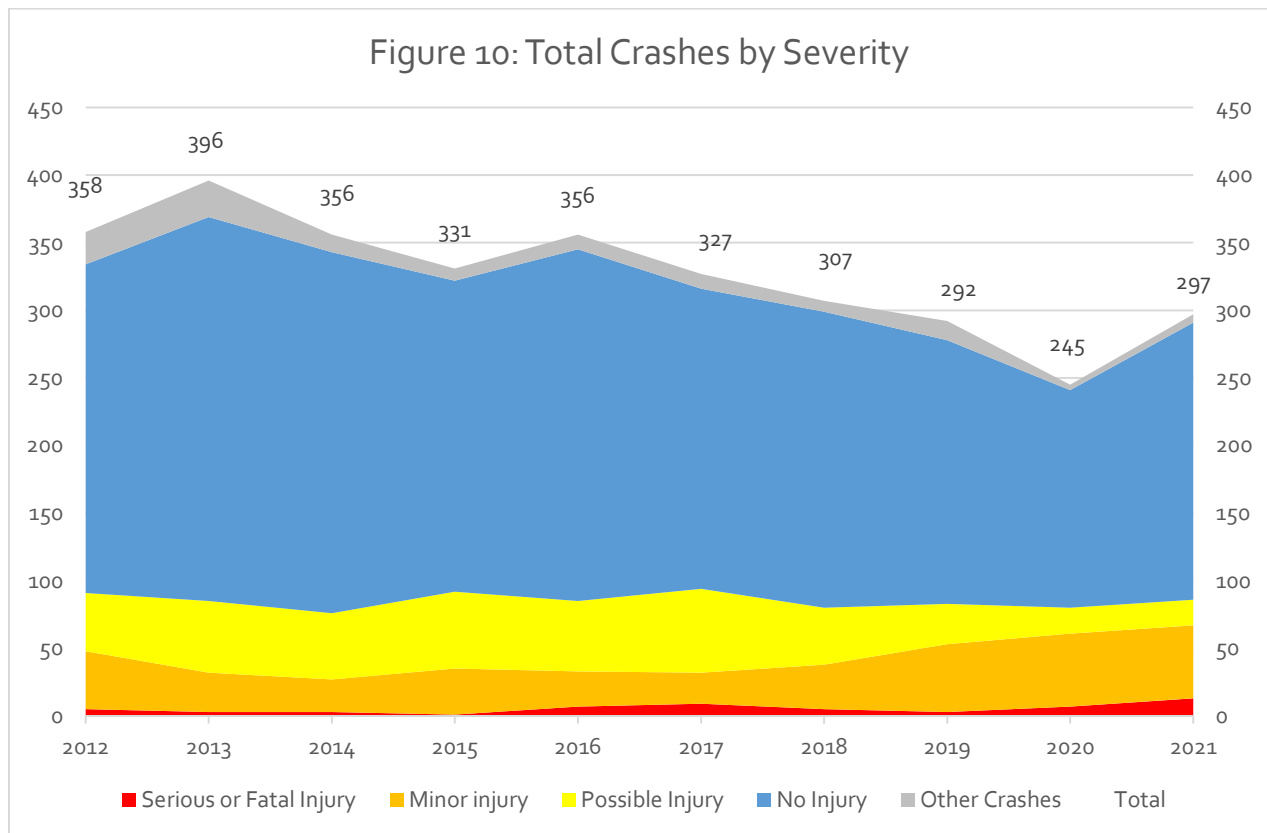
The data show that traffic volumes are heaviest on Route 151 (Nathan Ellis Highway) and Route 28 (Falmouth Road). Traffic volumes on Route 151 east of Old Barnstable Road grew seven percent from an average daily traffic volume (AADT) of 17,364 in 2016 to 18,618 in 2019. Volumes decreased significantly in 2021, down to 10,571, reflecting a decrease in travel during the Covid-19 pandemic.

According to Town staff, traffic in Mashpee varies greatly by time of day and season. For example, Route 151 and Old Barnstable Road are both busy around school pick-up and drop-off times, particularly during the pandemic when fewer students chose to take the bus. Mashpee also has more traffic in the summer months than the winter months, as visitors come to enjoy Mashpee's beaches and natural resources. In the summer, week-long rentals change over on Saturday generating delays and long queues in town. **Figure 9** shows average daily traffic volumes.



9.3.8 Roadway Safety

Crash data available from Massachusetts Department of Transportation (MassDOT) indicate that 3,265 crashes, or an average of approximately 327 crashes per year, have occurred in Mashpee from the years 2012 to 2021. As shown in **Figure 10**, the total number of crashes each year has fluctuated since 2012, with a low of 245 in 2020 and a high of 396 in 2013. From 2013 to 2021, the total number of crashes has trended downward, with a record low in 2020 (as a result of fewer vehicle trips being made during the Covid-19 pandemic). The total number of crashes in 2021 (297) was comparable to the number in 2019 (292). However, while total crashes have decreased over time, the total number of crashes resulting in injury has remained steady. In 2021, 12 crashes resulted in serious injury, compared to an average of five crashes in the past ten years.



Source: MassDOT Interactive Mapping Portal for Analysis and Crash Testing

9.3.8.1 Crash Type

Of the 3,265 crashes from 2012 to 2021, 34 crashes involved pedestrians, and 15 crashes involving bicyclists. During that same time frame, 2,286 crashes resulted in no injuries, 426 resulted in possible injury, 370 resulted in minor injury, 50 resulted in serious injury, and six crashes resulted in fatal injury. Of the 50 crashes resulting in a serious injury or death, 15 involved an older driver, 9 involved a younger driver, 8 involved a pedestrian, 3 involved a bicyclist, and 3 involved a motorcyclist.

Out of the six fatal crashes, three crashes involved a person walking. One occurred at the Quinaquisset Avenue and Orchard Road intersection involving a person under 15 years old, one occurred at the

intersection of Falmouth Road and Bowdoin Road and involved a person between age 55 and 64, and one occurred at the intersection of Falmouth Road and Orchard Road and involved a 91-year-old woman crossing the street from a CCRTA bus. All three fatal crashes occurred at night and two were on unlit roadways. MassDOT identified Route 151 and Market Street as a high pedestrian crash cluster with six total crashes, five resulting in injury or death, between 2010 and 2019. Generally, crashes involving people walking occur near the center and east of town.

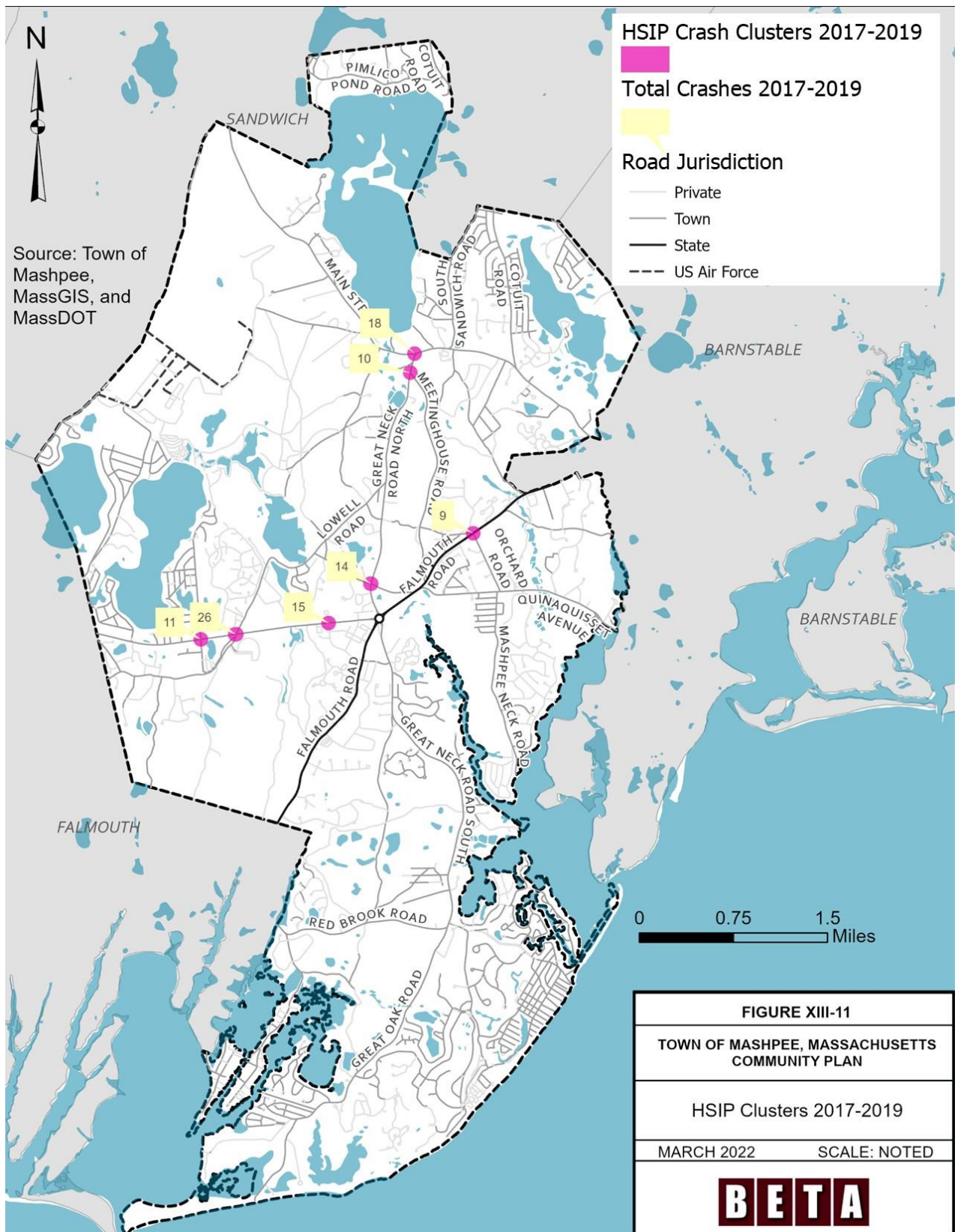
9.3.8.2 Highway Safety Improvement Program

MassDOT maintains a database of top crash locations in the state. This database includes locations identified under the Highway Safety Improvement Program (HSIP) in addition to a list of the top 200 crash locations in the state.

For the years of 2017-2019, **Table 5** shows the intersections in Mashpee identified as HSIP clusters. **Figure 11** shows these high crash locations.

Table 9-5: HSIP Locations 2017-2019	
Intersection	Total Crashes 2017-2019
Nathan Ellis Highway (Route 151) and Old Barnstable Road	26
Great Neck Road North and Main Street (Route 130)	18
Nathan Ellis Highway (Route 151) and Job's Fishing Road	15
Old Barnstable Road and Great Neck Road North	14
Algonquin Avenue and Nathan Ellis Highway (Route 151)	11
Great Neck Road North and Meetinghouse Road	10
Falmouth Road (Route 28) and Asher's Path East	9

Source: MassDOT Interactive Mapping for HSIP Clusters 2017-2019



9.3.8.3 Other Safety Concerns

The Mashpee Police Department and Department of Public Works identified high vehicle speeds as a safety challenge on Route 28 between Orchard Road and Old Barnstable Road, Route 151 by Old Brickyard Road, Orchard Road, and South Sandwich Road, based on observation. Currently, the Town does not have any speed feedback signs or a speed trailer.

Town staff also identified several wide intersections that have visibility issues for turning vehicles. These include the intersections of South Sandwich Road and Route 130, Meetinghouse Road and Great Neck Road North, Old Barnstable Road and Great Neck Road North, Great Neck Road South and Great Oak Road, Meetinghouse Road and Route 28, Quinaquisset and Route 28, Sampson's Mill Road and Route 28, and Monomoscoy Road and Red Brook Road.

Pedestrian and Bicycle Accommodations

Mashpee has around 12 miles of dedicated paths for people walking or biking, in the form of either a sidewalk or a shared-use path. These sidewalks and shared-use paths are on around 10 percent of town-owned roads and on around 30 percent of Mashpee's arterial and collector roadways. The paths extend primarily along the arterial and collector roadways close to the center of town, and throughout most of the Mashpee Commons commercial complex.

In addition to the shared-use paths and sidewalks on Mashpee's roadways, the town has some shared-use pedestrian connections that help fill the gaps along roads. For example, there is a shared-use path connecting Mashpee Police Department, Kenneth C. Coombs Elementary School, the Stop & Shop Complex, and the 99 Restaurant in the center of town. This connection allows people walking or biking to bypass the northwest side of the rotary.

A major gap in the path network is located at the Mashpee Rotary, where paths coming from Great Neck Road North and Great Neck Road South, Route 151 (Nathan Ellis Highway) and Route 28 (Falmouth Road) abruptly end at the rotary. In general, the collector and arterial roadways on the east side of the Mashpee rotary do not have dedicated paths, while the western side of town does. Many private roadways do not have sidewalks because, while the subdivision regulations in Mashpee require developers to put a sidewalk on at least one side of the roadway, this requirement is frequently waived because roads in subdivisions frequently dead end. **Figure 12** shows the sidewalks and shared-use paths along roadways in Mashpee.

In Mashpee, people on bikes are permitted to ride on the town's sidewalks and paths, but there are a few on-street bike lanes in the form of a painted four- to five-foot-wide shoulder on Great Neck Road South, Red Brook Road, and Great Oak Road. Mashpee offers bike parking at locations around town, including in Mashpee Center, John's Pond, and at the recreational fields off of Main Street. The Town of Mashpee received funding from the Cape Cod Commission for bike racks.

The town has several off-road trails for both biking and walking within the following recreational areas:

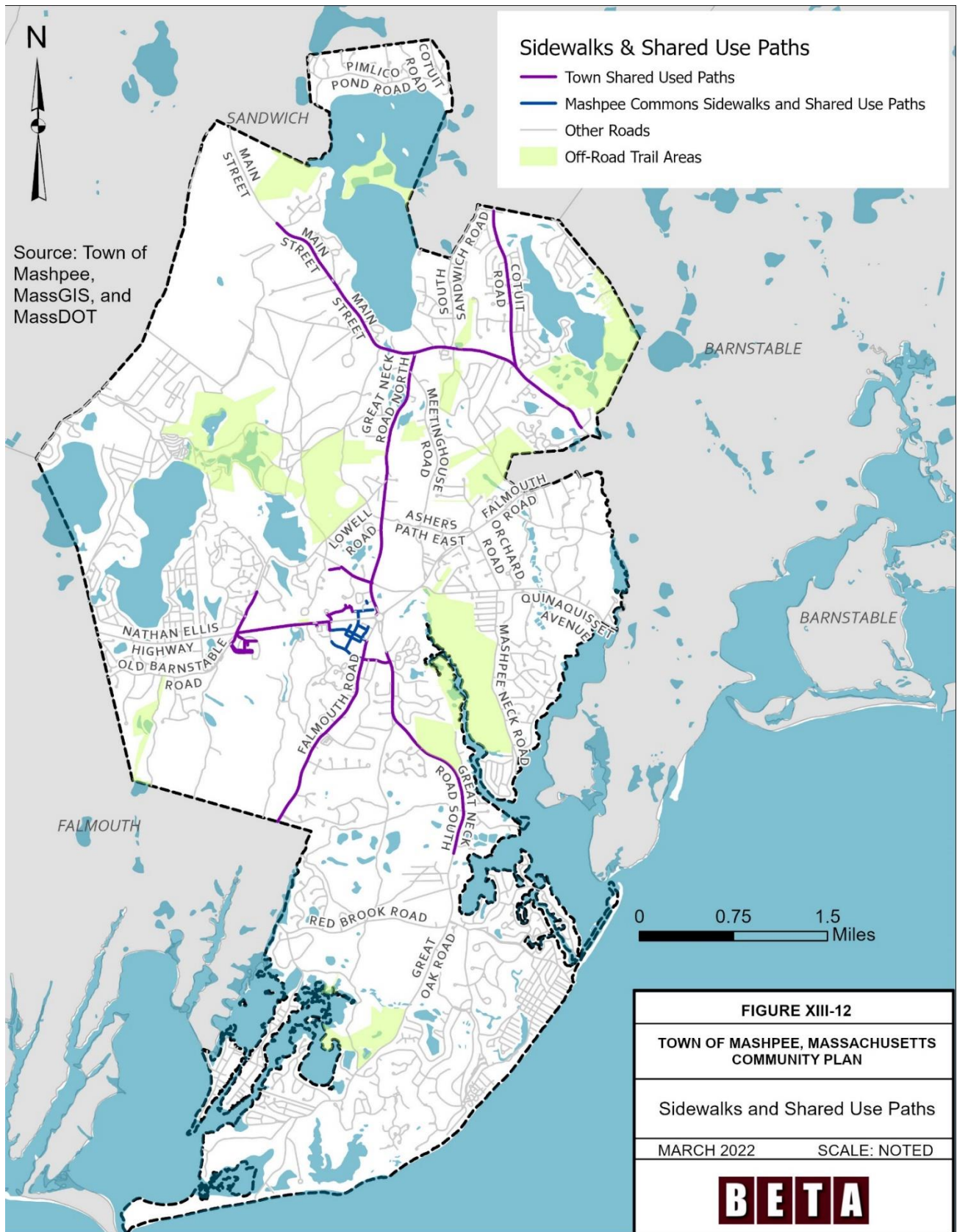
- Besse's Bog
- Child's River
- Jehu Pond
- John's Pond
- Noisy Hole

- Santuit Pond
- Pickerel Cove
- Mashpee River Woodlands
- Pine Barrens
- Quashnet River Woodlands
- Lowell Holly Reservation
- Mashpee's beaches, extending more than five miles along the waterfront

Several recent and proposed projects in Mashpee are focused on expanding and improving the network of trails, paths, and sidewalks. Some of the proposed projects in Mashpee are the result of the Town's Complete Streets Prioritization Plan. The Massachusetts Complete Streets Funding program provides technical assistance and construction funding to eligible municipalities who pass a Complete Streets Policy and develop a Prioritization Plan. The program funds projects making the public right of way accessible to people of all ages, abilities, and modes of travel, including walking, biking, driving, and using public transportation. The Town of Mashpee passed a Complete Streets Policy in 2018 and developed a Prioritization Plan in 2020. Mashpee's Complete Streets program has 22 projects in the prioritization plan, with the highest-ranked improvements on Route 151, South Sandwich Road, Orchard Road, and Old Barnstable Road.³ The projects proposed include new sidewalks, speed feedback signs, rapid rectangular flashing beacons, multiuse paths, traffic calming, intersection improvements, and bike lanes.

Further information on recent and planned improvements for walking and biking is in the Recent and Planned Projects section of this chapter.

³ Massachusetts Department of Transportation, " Mashpee: Complete Streets Funding Program Project Prioritization Plan," September 25, 2020.



Parking

The Town of Mashpee owns three beach parking lots at South Cape Beach, Attaquin Park, and John's Pond. To use these parking lots in the summer season, Mashpee residents and residential property owners must purchase a beach sticker for \$30 and Mashpee visitors must purchase a weekly pass for \$50.

- South Cape Beach Town parking lot has around 120 spaces, including 6 accessible spaces
- Attaquin Park Town parking lot has around 70 spaces, including 3 accessible spaces
- John's Pond Town parking lot has around 75 spaces, including 4 accessible spaces

Other Town surface parking is available at the Mashpee Senior Center, Fire Department and Police Department complex, Mashpee Recreation Department, Mashpee Town Hall, Mashpee Department of Public Works, Mashpee Public Library, Mashpee Community Park, Quashnet Elementary School, and Mashpee Middle-High School. The Town also provides parking lots at some of the Town's conservation areas for people accessing trails, and at some of Mashpee's boat ramps. During the summer, parking at Town-owned boat ramps is restricted to Mashpee vehicles with a permit.

The State owns a parking lot at South Cape Beach with discounted prices for Massachusetts residents.

Mashpee Commons, Mashpee's commercial hub, has a mix of on-street parking and an abundance of surface parking lot spaces. Most residential and commercial developments in town offer surface parking lots and most single-family homes have driveways.

Mashpee Commons has a publicly available electric vehicle charging station, where people with Tesla vehicles can pay to recharge. The Town also has electric vehicle charging stations at the Town Hall dedicated to Town-owned electric vehicles.

Airports

The Otis Air National Guard Base is located northwest of Mashpee. The Coast Guard uses this airbase, but no commercial or private flights are allowed. The closest airport with commercial flights is in Barnstable.

Marinas and Boat Ramps

Mashpee has three private marinas.

- **Little River Boat Yard** is a private marina located on Seconsett Island with access to Waquoit Bay and Vineyard Sound. They offer both slips and rack boat storage, along with other maintenance and fueling.
- **New Seabury Marina** is a private marina located with the New Seabury housing community. The marina offers fuel, docking, and boating supplies. The slips are available seasonally or on a transient basis.
- **Mashpee Neck Marina** is a private marina with 154 slips located on Popponesset Bay.

In addition to the marinas in Mashpee, the State owns two boat ramps, Mashpee/Wakeby State Boat Ramp and John's Pond State Boat Ramp, and the Town of Mashpee owns Great River Boat Ramp, Edward A. Baker Boat ramp at Pirate's Cove, Santuit Pond Boat Ramp, and Ockway Bay Boat Ramp.

Planned and Recent Projects

9.3.9 Planned Projects

The following transportation-related projects are currently planned or under construction in Mashpee:

- **Mashpee, Route 151 Corridor Improvements (Phase 1) (2021-2022):** This Transportation Improvement Program (TIP) funded project will include intersection improvements, new drainage, pavement markings, signage, and traffic signal upgrades at the intersections of Job's Fishing Road, Old Barnstable Road, and Market Street. The project will improve pedestrian and bicycle accommodation both along the corridor and at key intersections. The Cape Cod Commission expects the improvement in active transportation options will lower greenhouse gas emissions on the Cape by approximately 8,000 kilograms per year. The \$5 million project is mostly funded using federal grants. This project received the highest prioritization score in the 2022-2026 TIP out of the 31 considered projects. Work has already begun on the project and is expected to be completed in 2025.⁴
- **Mashpee, Route 151 Corridor Improvements (Phase 2) (2026):** This TIP project will include installation of new turn lanes, a small portion of raised median, new drainage, pavement markings, a shared-use path, and a sidewalk from the Falmouth Town Line to just west of Old Barnstable Road. This \$8 million project is mostly funded using federal grants. This project received the fifth-highest prioritization score in the 2022-2026 TIP out of the 31 considered projects. The project is expected to be completed in 2026-2027.
- **Great Neck Road and Route 130 Roundabout:** The Town recently approved this project in early 2021 and the project is in the conceptual design stage. The goal of the project is to make the intersection safer. The final design and construction are not yet funded.
- **Old Barnstable Road Improvements:** The Mashpee Wampanoag Tribe received a \$300,000 grant to redesign Old Barnstable Road from Route 151 to the Falmouth Town Line. The goal of the project is to add sidewalk and drainage improvements, in response to a death of a young adult walking on this road.
- **Mashpee Rotary Retrofit:** The State plans to retrofit the rotary, as recommended by the Mashpee Rotary Study (see below) and add pedestrian and bicycle accommodation. This project is not yet funded for construction. As of early 2022, MassDOT has hired an engineer to begin design on the rotary retrofit.
- **Prioritized Complete Streets Projects:** The priorities from the Complete Street Prioritization Plan include improvements to bicycle and pedestrian accommodation across town including on Route 151, South Sandwich Road, Orchard Road, and Old Barnstable Road. The projects are not yet funded.
- **Speed Feedback Signs on South Sandwich Road and Orchard Road:** The Town applied for Shared Streets & Spaces funding from MassDOT in Spring 2022 to add speed feedback signs along South Sandwich Road and Orchard Road, to reduce speeds and improve safety. The Cape Cod Commission conducted a speed survey for both roads to apply for this funding.

⁴ Cape Cod Commission. 2021. "Cape Cod Transportation Improvement Program Federal Fiscal Year 2022-2026."

9.3.10 Recently Completed Projects

The following transportation-related projects were recently completed in Mashpee:

- **Mashpee Rotary Study:** Completed in August of 2019, this study was funded by MassDOT and the Federal Highway Administration Unified Planning Working Program and conducted by the Cape Cod Commission in Partnership with the Town of Mashpee. The study offered short-, mid- and long-term recommendations. The highest priority recommendations were a shared-use path around the rotary, rotary retrofit improvements, Route 28 directional signage on Donna's Lane for retail traffic, and multi-modal accommodations, including a shared-use path, on Route 28 between Mashpee Rotary and Quinaquisset Avenue. Some of the short-term signage improvements have been completed. The next steps include securing funding for the remaining short-term improvements through town, beginning the design process, and identifying state funds for the construction of the long-term improvements.
- **Road Safety Audits:**
 - Mashpee Rotary (2019)
 - Nathan Ellis Highway (Route 151) at Job's Fishing Road, Algonquin Ave and Ninigret Ave (2018)
 - Nathan Ellis Highway (Route 151) at Old Barnstable Road Intersection (2014)
 - Great Neck Road North/Old Barnstable Road (2009)
 - Route 130 Lane Departure Road Safety Audit (2007)
- **Route 28 Eastern Mashpee Corridor Study:** Completed in January 2018 and funded by the Unified Planning Work Program, this report examined existing conditions, recommended short-term, mid-term, and long-term improvements, and alternatives development for the section of Route 28 from Route 130 to Orchard Road. This section of roadway was prioritized due to safety and congestion issues. This study recommended improvements included a speed study, traffic signal improvements, new turn lanes, visibility improvements, sidewalks, and improved crosswalks.
- **Intersection Realignment at Cotuit Road:** The Town recently completed an intersection realignment at Cotuit Road and Route 130 to improve sightlines.

Maintenance of Infrastructure

9.3.11 Pavement Management Program

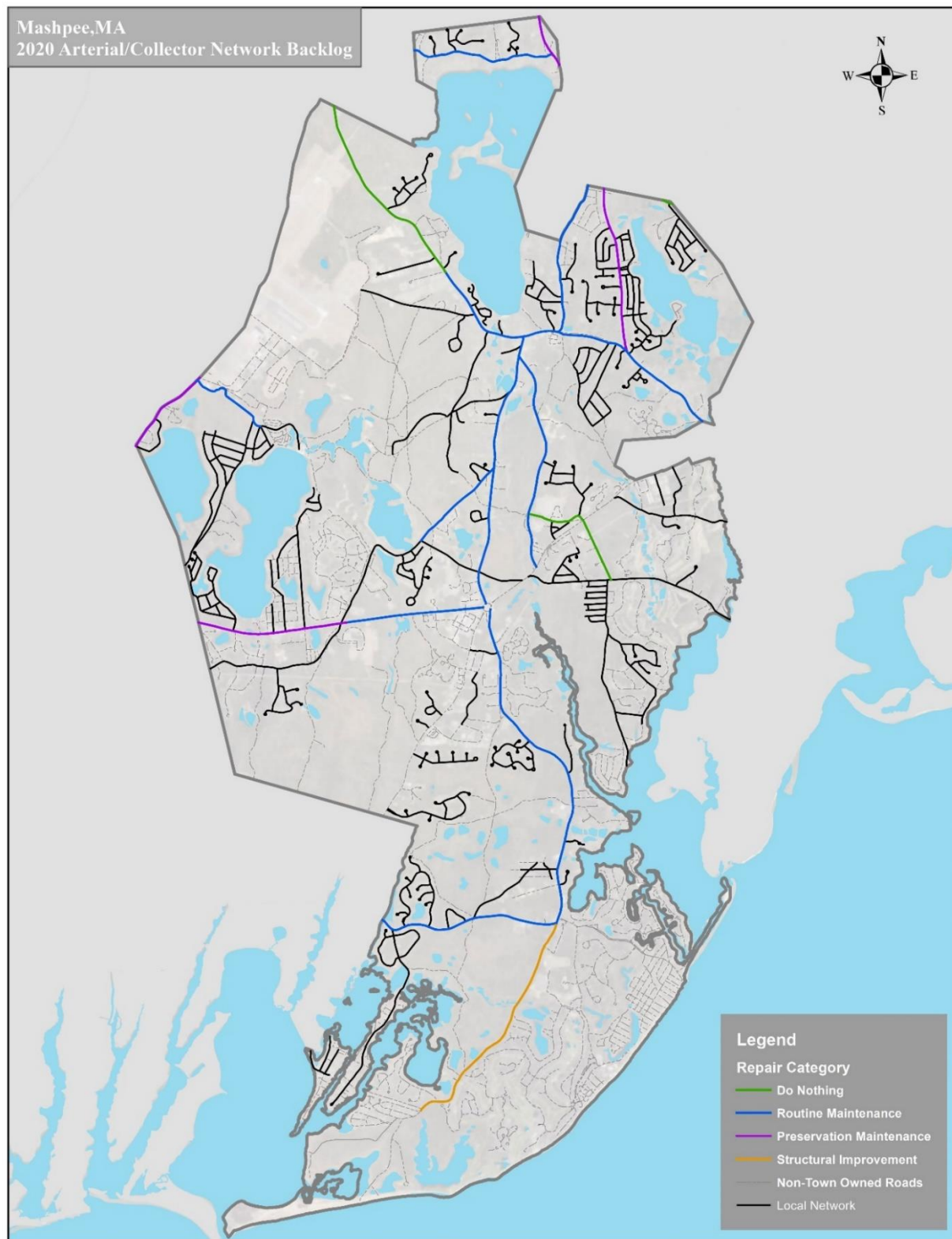
The Town of Mashpee implements a pavement management program to monitor the conditions of roadways and prioritize their repair. The GIS-based program collects and evaluates data about the condition of roadways in order to determine a Pavement Condition Index (PCI) and schedule of maintenance. The PCI is a pavement scoring system based on 100 points, with 100 being the best score. The Pavement Condition Index for the Town of Mashpee is 78.8 for arterial roads and 86.9 for residential roads⁵. **Figures 13 & 14** shows the condition of roadways in Mashpee.

9.3.12 Bridges

According to the most recently available data in MassDOT's database, five bridges are located in Mashpee. Of the five bridges, MassDOT found one bridge was structurally deficient (Route 28 Falmouth Road over the Mashpee River). **Figure 15** shows the condition of bridges in Mashpee.

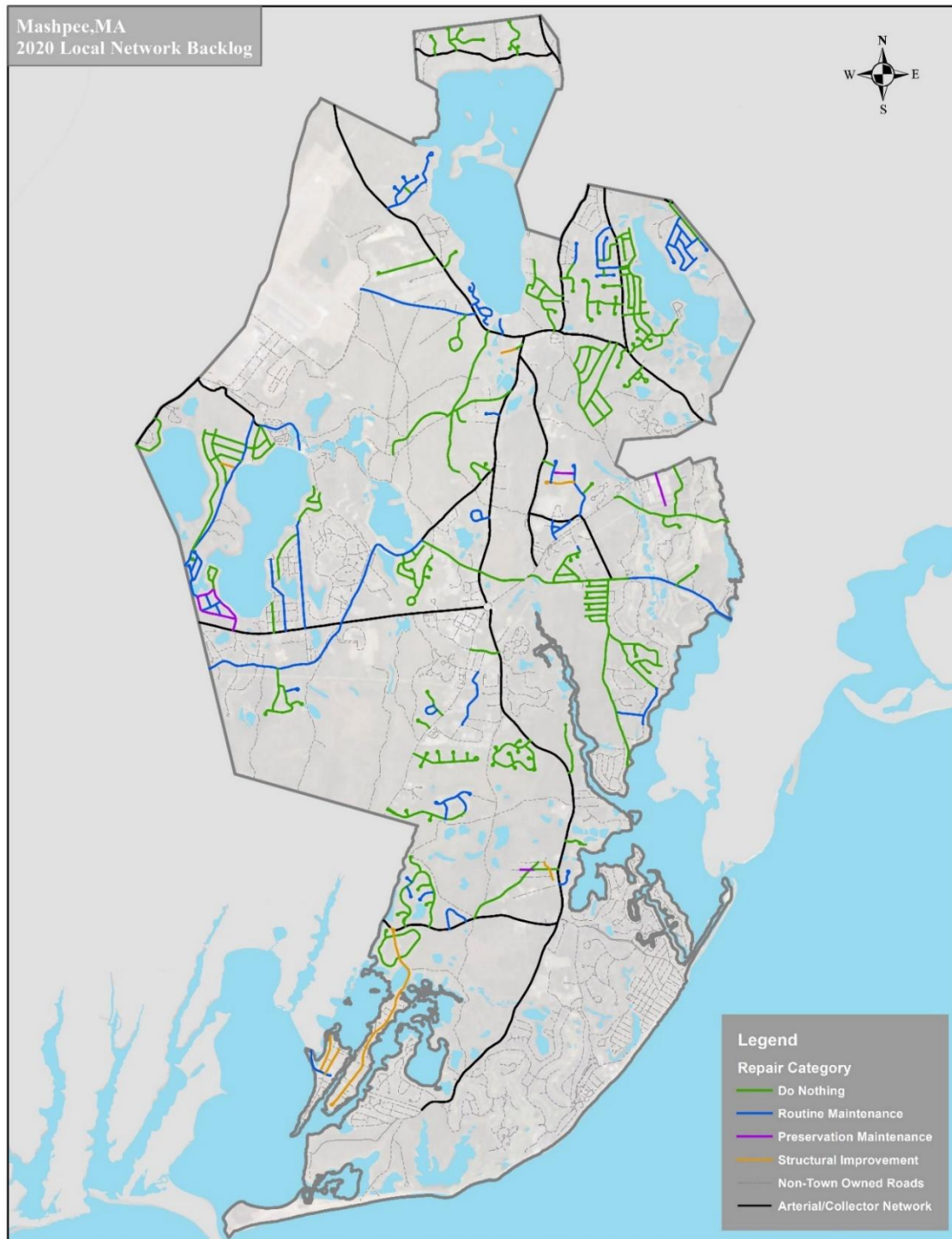
⁵ Stantec. 2020. "FY2020 Street Conditions Report."

Figure 13: Pavement Management Summary 2020 for Arterial/Collector Network

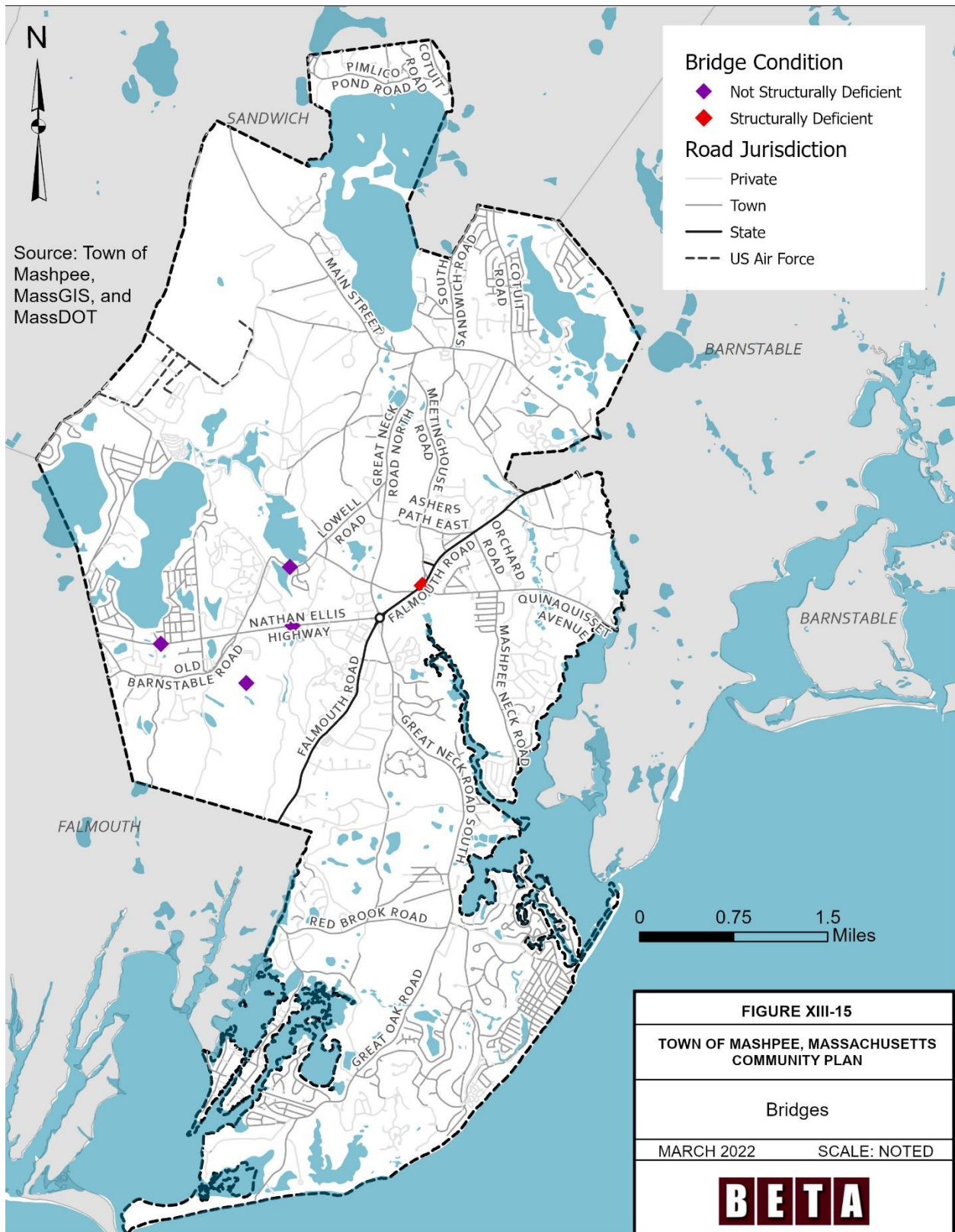


Source: Stantec. 2020. "FY2020 Street Conditions Report."

Figure 14: Pavement Management Summary 2020 for Local Network by Stantec.



Source: Stantec. 2020. "FY2020 Street Conditions Report."



Issues

The following transportation-related issues were identified:

- Residents and Town staff have identified speeding as being an issue in town, particularly along Route 28 and Route 151.
- Only 30 percent of arterial and collector roadways in Mashpee have sidewalks or shared-use paths.
- Route 28 east of the Mashpee Rotary lacks a sidewalk or shared-use path and crossings for people accessing the Sealine CCRTA route.
- Three people were killed while walking in Mashpee in the past 10 years, all three deaths occurring at night, and two on unlit roadways.
- The Town is required to work with private developers, the Mashpee Wampanoag Tribe, and the State to develop and improve the roadway network. Only around half of the roads in Mashpee are under the jurisdiction of the Town, and some roads under Town jurisdiction are Indian Reservation Roads.
- Adding high visibility crossings and bus amenities is a challenge along the CCRTA routes. Generally, the CCRTA buses running in town do not have designated bus stops, as the buses can be flagged.
- While crashes have been declining overall over the past 10 years, crashes resulting in injury have remained steady, and serious injury crashes have increased in the past three years.
- One bridge in Mashpee (Falmouth Road over the Mashpee River) was found structurally deficient by MassDOT.
- The Mashpee Rotary lacks pedestrian or bike accommodation and has a high number of minor vehicle crashes.
- When new roads get built in Mashpee, DPW does not receive an increase in maintenance funds.
- Traffic in Mashpee is highly variable by time of day and season, including school drop-off times and summer rental changeovers.
- The majority of Mashpee households commute by driving alone, demonstrating a general car dependency; however, the dependence on driving alone varies geographically in town. In the northwest section of town, a lower percentage of residents drive alone to commute, and a higher percentage do not have a vehicle compared with other parts of town.
- High crash locations in Mashpee include Great Neck Road North and Old Barnstable Road, Great Neck Road North and Meetinghouse Road, Great Neck Road North and Route 130, the Mashpee Rotary, Route 151 and Old Barnstable Road, Route 151 and Job's Fishing Road, Route 151 and Algonquin Avenue, and Route 28 and Asher's Path East.
- Truck volumes on Lowell Road were identified as an issue.

9.3.13 O

The following transportation-related opportunities were identified:

- The Town has adopted a Complete Streets Policy and created Project Prioritization Plan, so is eligible to apply for up to \$400,000 of infrastructure funding from the MassDOT.

- The Mashpee Rotary Study offered recommendations and support for improving bicycle and pedestrian connectivity and safety for all road users through the Mashpee Rotary.
- Several intersections in Mashpee would benefit from tighter curb radii and intersection realignment to improve visibility, lower vehicle speeds for turning vehicles and reduce pedestrian crossing distances. These include South Sandwich Road at Route 130, Meetinghouse Road at Great Neck Road, Old Barnstable Road at Great Neck Road North, Meetinghouse Road at Route 28, Quinaquisset at Route 28, and Sampson's Mill Road at Route 28.
- Mashpee has "hidden" pedestrian connections that could be enhanced by wayfinding signage and improved connectivity to other pedestrian infrastructure.
- The Town has expressed interest in a speed trailer to better enforce speeding on critical roadways in town.
- Mashpee does not currently participate in MassDOT's Safe Routes to Schools program. The program can provide education and encourage programs and funding to improve walking and biking facilities around elementary and middle schools.
- The Town has expressed interest in a bicycle and pedestrian plan to prioritize improvements in town for people walking and biking.
- MassDOT has identified seven Highway Safety Improvement Program crash clusters in Mashpee eligible for a road safety audit. Road safety audits have already been conducted at four of these crash clusters. The intersections of Great Neck Road North and Meetinghouse Road, Route 28 and Asher's Path East, and Great Neck Road and Route 130 are eligible for Road Safety Audits.
- The Town could benefit from increasing pedestrian scale lighting and high visibility crossings at areas where people walk across the street, for example, at higher ridership bus stops.
- The Town could benefit from adding a bus shelter at Mashpee Commons CCRTA stop.
- A sidewalk plow is needed to maintain accessibility in winter.
- The Town of Mashpee does not currently have any speed feedback signs, but there is an opportunity to apply for these using MassDOT Shared Streets and Spaces grant funding.
- The Town approved a roundabout redesign at Route 130 and Great Neck Road North and is looking for funding opportunities.
- The Town of Mashpee has several public transportation options serving the community including two fixed-route buses, paratransit, Boston Hospital service, and school buses for all children. There is just one bus shelter in town located at the Community Health Center serving the Sealine route. There is an opportunity to add bus amenities at other locations in town.
- There are existing studies on the Route 28 Corridor by both the Cape Cod Commission and MassDOT that could be referenced to improve this corridor.
- The Cape Cod Commission is examining where to put electric vehicle (EV) charging stations across Cape Cod, including in the Town of Mashpee.
- The Cape Cod Commission is beginning an inventory of side path crossings in Mashpee and other Cape towns starting in the summer of 2022.

10.0 COASTAL & WATER RESOURCES

DISCLAIMER: This is a working draft and will continue to be updated as the Comprehensive Plan process evolves. Additional information will be added as stakeholder and public input is gathered. These blue boxes throughout the draft chapters represent areas of further consideration and study and will be updated with additional information as it is collected.

10.1 Vision

~~1.0~~ To be developed with the Town.

10.2 Introduction

Water and coastal resources are important components of Mashpee's landscape and socioeconomic stability. An extensive coastline along its southern and eastern edges as well as inland lakes and rivers provide the Town with a variety of recreational and commercial activities. Meanwhile, aquifers provide residents with potable water. Chapter 8, Municipal Buildings, Facilities, and Services, offers more information on the Department of Natural Resources and its role in waterway enforcement.

~~but when taking into account seasonal units, the percentage drops to 3.3% of the total units (2019 ACS).~~

10.3 Existing Conditions

10.3.1 Demographics, Shoreline and Housing

Mashpee has over five miles of coastline along Nantucket Sound and Vineyard Sound. The Town's shoreline is farmed by large coastal embayments: Waquoit Bay to the west and Popponesset Bay to the east. Waquoit Bay and Popponesset Bay include several small rivers, brooks, and small ponds in the area. The majority of Mashpee's shoreline has been claimed by development, including houses, Town beaches, and summer camps. Information regarding development by the Popponesset Corporation and the New Seabury Resort is detailed in the Land Use Chapter. The Mashpee River Reservation, which empties into Popponesset Bay (The Trustees of Reservations). The Mashpee Water Quality Monitoring Program is comprised of a local partnership between the Mashpee Wampanoag Tribe, Town of Mashpee, and University of Massachusetts – Dartmouth, headed by Dr. Brian Howes. Its purpose is to assess, monitor, and enhance water quality throughout the Waquoit Bay and Popponesset Bay Estuaries. The consortium presented its findings to the Town in July 2021: no high-water quality areas remain within either estuary with an increasing presence of phytoplankton blooms due to nitrogen enrichment (Howes B. L., 2021). Further information on water quality is detailed under the Surface Water section of this chapter. Historically, Mashpee's population growth rate has exceeded all other towns on the Cape as well as that for Barnstable County as a whole. Mashpee's population more than doubled in both the 1970s and 1980s.

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In the 1990s, the population grew at a slower rate but was still more than double the rate of any other town on the Cape. (Town of Mashpee Affordable Housing and Planned Production Plan, 2015) The 2010 census indicated that the town's year round population for 2010 was 14,006, an increase of nearly 8.2% since 2000. Between 2010 and 2020, the population grew to 15,060, a 7.53% population increase.

Mashpee's older year round population represents a key demographic in the housing market. In 2020, 29% of the town's population was 65 and older, up from 23.5% in 2010 and 18.65% in 2000. Mashpee's median age is 52.7, up from 45.9 in 2010. In Cape Cod overall, the median age of residents is higher than any other region in Massachusetts, which has an overall median age of (53.3 versus 39.5).

Recent data suggest that some traditionally summer homes are being converted into year round homes (Cape Cod New Homeowner Survey, 2021). This trend may be influenced by the increased ability for remote working because of the COVID-19 pandemic, but the longer term trends indicate that seasonal homes on the Cape will continue to comprise a sizable portion of Cape Housing and will outpace the growth of year round units (Regional Housing Market Analysis and 10 Year Forecast of Housing Supply and Demand, 2017). In 2021 UMass Amherst Donahue Institute released the Cape Cod New Homeowners Survey in 2020-2021 to better understand the impact of remote work on the Cape Cod housing market. The survey documented an existing trend that is continuing (older households looking for a retirement home) and a new effort by workers to relocate to Cape Cod permanently. 35% percent of people surveyed indicated that the pandemic influenced their decision to purchase a home on Cape Cod. Overall, respondents were well educated, with 34 percent having a bachelor's degree, and 52% percent a graduate or professional degree and reported a high annual household income, with over half reporting incomes higher than \$150,000 annually.

MILLENNIAL POPULATION

15,060 people now reside in Mashpee, including 6,360 households living in 10,273 housing units (US Census, 2020). The average household size is 2.21 people, and the median home value is \$363,100. The presence of more housing units than households results from the prevalence of seasonal units. Q of the 10,273 total housing units, 3,492 were estimated to be seasonal. The remaining units are comprised of year round ownership units (53.6%), year round rental units (8.3%), and 4.1% vacant/other. 86.6% of year round occupied housing units are owner occupied and 92% of total housing units are owner occupied.

10.2.210.3.2 Housing Stock and Condition Flood Zones

Flood zones are those areas subject to temporary inundation during storm events or seasonal increases in rainfall or snowmelt. Flood zones are defined as areas with a 1% chance of flooding in any given year. These zones play an important role in naturally protecting a community from flood damage. Flood zones are commonly associated with water bodies and are designated and mapped by the Federal Emergency Management Agency (FEMA) by category. Flooding in Mashpee is the result of coastal storms, nor'easters, heavy rains, tropical storms, and hurricanes. Approximately 2,816.43 acres of land in Mashpee is classified by FEMA as a High-Risk Coastal Area (VE), a Regulatory Floodway (AE), or 0.2% annual chance flood areas (X) within the town (MassGIS, 2017).

Article XI in the Zoning Bylaw covers the Floodplain District, which includes all Special Flood Hazard Areas (SFHAs) within the town designated as Zone EA or VE on the Barnstable County Flood Insurance

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Comprehensive Plan 2023

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Rate Map (FIRM) issued by the Federal Emergency Management Agency (FEMA) for the administration of the National Flood Insurance Program (Town of Mashpee, 2021). These are locations where the NFIP's floodplain management regulations must be enforced because they are within the land area covered by the floodwaters of the base or 100-year flood (Federal Emergency Management Agency).

Parcels and buildings vulnerable to flooding were identified in the 2017 Hazard Mitigation Plan Draft. The plan identified 19% of the parcels in the A zone and 4.6% of the parcels in the V zone (Cape Cod Commission, 2017). Infrastructure that is vulnerable to the impacts of flooding was also identified in the 2017 Hazard Mitigation Plan. These areas include several culverts, parts of Great Neck Road South and Great Oak Road, Route 28 east of the rotary, and the School Street Bridge (Cape Cod Commission, 2017). Additionally, the Municipal Vulnerability Preparedness (MVP) Planning process identified existing development in vulnerable floodplains, as well as coastal and stormwater flooding of low-lying roads and culverts, including Brook Road crossing Red Brook and Great Oak Road adjacent to Jehu Pond (Woods Hole Group, 2020).

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Table 1-1: Housing Units by Year Structure Built

		10,273	100.0%
Built 2014 or later	177	1.7%	
Built 2010 to 2013	141	1.4%	
Built 2000 to 2009	1,524	14.8%	
Built 1990 to 1999	1,792	17.4%	
Built 1980 to 1989	3,800	37.0%	
Built 1970 to 1979	1,280	12.5%	
Built 1960 to 1969	911	8.9%	
Built 1950 to 1959	327	3.2%	
Built 1940 to 1949	99	1.0%	
Built 1939 or earlier	222	2.2%	
Median Year Structure Built	1986		

Source: US Census & Adjusted Estimate for 2010 and American Community Survey 2019 5-Year estimates (ESRI).

Further information is needed in this section regarding housing condition. We will gather this information through engagement and stakeholder interviews.

Table 1-1 Mashpee Housing Stock

Year	Year-Round Units	Seasonal Units	Total
1980	1756	1,989	3,582
1990	3787	3,212	7,002
2000	5578	2,747	8,325
2010	6473	3,409	9,882
2020	6781	3,492	10,273

Source: US Census & Adjusted Estimate for 2010 and American Community Survey 2019 5-Year estimates.

10.2.105

10.2.106 10.3.3 Surface Water/Housing Types

Surface water is any body of water above ground, including oceans, streams, rivers, lakes, wetlands, reservoirs, and creeks. (National Geographic Resource Library, 2021). Surface water plays a vitally

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important role as it is relied on for many human uses. It is an important source of drinking water and is used for the irrigation of farmland. A watershed is a land area that channels rainfall and snowmelt to these surface water bodies. The health and quality of a watershed are directly linked to the health and quality of its receiving surface water bodies. Mashpee is part of the Cape Cod watershed.

Mashpee is bordered by Waquoit Bay to the west and Popponesset Bay to the east and includes several small rivers, brooks, and small ponds in the area. Waquoit Bay contains open waters, salt, fresh marshes, barrier beaches, dunes, rivers, mixed pine and oak forests, and sandplain grasslands that are important to commercial and recreational shellfish and finfish fisheries (Waquoit Bay National Estuarine Research Reserve). The Town manages four of the largest freshwater ponds on the Cape, including Ashumet Pond, Johns Pond, Mashpee-Wakeby Pond, and the Santuit Pond (Town of Mashpee).

The Mashpee River, which begins at Mashpee/Wakeby Pond and empties into Popponesset Bay, contains poor water quality and some of the highest chlorophyll pigments in Popponesset Bay (Howes, Samimy, & Horvet, 2021). The Waquoit Bay, Santuit Pond, Ashumet Pond, and Popponesset Creek require a total maximum daily load (TMDL) according to the U.S. Clean Water Act. A TMDL is a regulatory term describing a plan for restoring impaired waters that identifies the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards. All water quality impairments are summarized in Table 13-1 below.

Table 1-2: Housing Units By Units-In-Structure		
Total	10,773	100.0%
1, detached	7,738	75.3%
1, attached	1,204	11.7%
2	74	0.7%
3 or 4	396	3.9%
5 to 9	482	4.7%
10 to 19	138	1.3%
20 to 49	75	0.7%
50 or more	30	0.3%
Mobile home	136	1.3%
Boat, RV, van, etc.	0	0.0%

Source: US Census & Adjusted Estimate for 2010 and American Community Survey 2019 5 Year estimates (ESRI).

Mobile Homes

200 noted in 1998 LCP.

Lakeside Trailer Park (300 Nathan Ellis Hwy.)

Housing Affordability

In 2017 Crane Associates and EPR, Inc. conducted a Housing Market Analysis for Barnstable County. The analysis identified how individuals or families can become "housing cost burdened", which occurs when the cost of a mortgage or rent payment exceeds 30% of a family's or individual's income. The report

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In addition to the "housing cost burden", the "affordability gap" provides another metric to assess the gap between area median incomes and median housing prices. Mashpee's median household income, \$77,019, is high in comparison to the state and nation overall but is relative to the town's high housing costs. In addition, the 2017 Housing Market Analysis indicated that Mashpee residents' wage rates lagged behind other communities in Barnstable County. The housing affordability gap exists when the median household income is not enough to sustainably afford the median house price.

Using 2015 median income data, the 2017 Housing Market Analysis indicated that an affordable house in Mashpee would cost \$280,793. However, the actual median house price in that year was \$327,000, which presents a gap of \$46,207. The Study projected that by 2025, the median house price will be \$536,928, but an affordable house based on the projected median household income should be \$291,718. The gap would increase to \$245,210, making the median house price unaffordable to all but those in the highest income brackets.

The Economic Development chapter includes more detail on local wage rates and identifies a mismatch between local wages and local housing prices. The US Bureau of Labor Statistics listed the average annual wage for Massachusetts in May of 2020 as \$70,101, which the same measure for Barnstable County is \$57,270. Although Cape Cod has a more expensive housing market than the state of Massachusetts, local wage rates are lower. Wage rates, for workers within Mashpee, are not keeping pace with housing prices. Within Mashpee, affordable housing provides needed housing for local workers.

Table 13-1. Receiving Waters and Impairments

Water Body	Description	Impairment
Red Brook	From dam (NATID: MA01037) at Red Brook Road, Falmouth/Mashpee to mouth at inlet Hamblin Pond, Falmouth/Mashpee.	Category 2: Unimpaired for some uses and not assessed for other
Hamblin Pond	From inlet of Red Brook, Falmouth/Mashpee to outlet of Little River, Mashpee and inlet/outlet of Waquoit Bay west of Meadow Neck Road, Falmouth/Mashpee.	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Jehu Pond	Mashpee.	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Great River	From inlet of Abigails Brook, Mashpee to mouth at inlet Waquoit Bay (excluding Jehu Pond), Mashpee.	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Little River	Headwaters outlet Hamblin Pond, Mashpee to mouth at confluence with Great River, Mashpee.	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Waquoit Bay	From mouths of Seapit River, Quashnet River (also known as Moonakis River), Falmouth and Great River, Mashpee to inlet of Vineyard Sound, Falmouth/Mashpee.	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Wakeby Pond	Mashpee/Sandwich.	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Mashpee Pond	Mashpee/Sandwich.	Category 5: Impaired for one or more uses and requiring a restorative "action" plan, such as TMDL or Alternative Restoration Plan

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Comprehensive Plan 2023²

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Table 13-1. Receiving Waters and Impairments

		(impairment due to pollutant(s) such as nutrients, metals, pesticides, solids, and pathogens).
Santuit Pond	Mashpee.	Category 5: Impaired for one or more uses and requiring a restorative "action" plan, such as TMDL or Alternative Restoration Plan (impairment due to pollutant(s) such as nutrients, metals, pesticides, solids, and pathogens).
Ashumet Pond	Mashpee/Falmouth.	Category 5: Impaired for one or more uses and requiring a restorative "action" plan, such as TMDL or Alternative Restoration Plan (impairment due to pollutant(s) such as nutrients, metals, pesticides, solids, and pathogens).
Peters Pond	Sandwich/Mashpee.	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Popponneset Creek	All waters west of Popponneset Island (from Popponneset Island Road bridge at the north to a line extended from the southeastern most point of the island southerly to Popponneset Beach), Mashpee.	Category 5: Impaired for one or more uses and requiring a restorative "action" plan, such as TMDL or Alternative Restoration Plan (impairment due to pollutant(s) such as nutrients, metals, pesticides, solids, and pathogens).
Shoestring Bay	Quinaquiset Avenue, Mashpee/Barnstable to Popponneset Bay (line from Ryefield Point, Barnstable to Punkhorn Point, Mashpee, including Gooseberry Island), Barnstable/Mashpee.	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Mashpee River	Quinaquiset Avenue, Mashpee to mouth at inlet Shoestring Bay (formerly to mouth at Popponneset Bay), Mashpee.	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Popponneset Bay	The waters seaward of an imaginary line connecting Ryefield Point, Barnstable and Punkhorn Point, Mashpee to inlet of Nantucket Sound (including Ockway Bay, Mashpee and Pinquickset Cove, Barnstable) (excludes Popponneset Creek, Mashpee).	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Johns Pond	Mashpee.	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Santuit River	From confluence with fresh water portion south of Old Mill Road, Mashpee to mouth at inlet Shoestring Bay, Mashpee/Barnstable.	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.
Sagelot Pond	west of Great Oak Road, Mashpee (segment includes tidal channels to Waquoit Bay).	Category 4A: Impaired for one or more designated uses but does not require the development of a TMDL: TMDL has been completed.

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~~10.1.1 needed housing for local workers:~~

In addition to the affordability gap, there are other factors that affect the overall amount of available housing, which plays a role in an area's relative affordability. One factor is the continued seasonal use of homes in Mashpee. The 2017 Housing Market Analysis identified that Cape Cod lost 3,000 homes and gained 6,000 seasonal homes between 2013 and 2018 (Regional Housing Market Analysis and 10 Year Forecast of Housing Supply and Demand, 2017). The other factor is the relatively small household size in Mashpee and the Cape. As more retirees move to the Cape, this number will get smaller. US Census estimates have the persons per household in Mashpee at 2.23

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(US Census QuickFacts, 2015–2019). Smaller household sizes require more homes to house the same

10.3.4 Groundwater

Between 1980 and 2000, Mashpee experienced rapid growth of single-family housing which contributed to many of the land use policies in place today and ongoing challenges for municipal planning. Housing construction stressed natural systems and presented challenges to municipal services, such as water and wastewater.

The Mashpee Clean Water Plan includes plans for wastewater facilities to restore water quality in Mashpee (Town of Mashpee, n.d.). The upper regions of Waquoit Bay and Popponesset Bay estuaries show the greatest level of nutrient-related water quality decline (Howes, Samimy, & Horvet, 2021). Degraded estuarine habitat is primarily restored through nitrogen management. The Town is utilizing shellfish seeding as a remedial action for estuaries approaching their nitrogen targets (Howes, Samimy, & Horvet, 2021).

The MassDEP Public Water Supply lists public water, community surface, groundwater, and public non-community supply sources (MassGIS, 2021). Supply sources, locations of proposed wells, and sources with a defined DEP-approved wellhead protection area (Zone II) are summarized in Table 13-2 below.

PWS Identification Number	Site Name	Type of Public Water Supply	Zone II Number
4172014	Cape Cod Camp Corporation	Transient Non-Community	0
4172039	Holland Mills Well No. 5	Proposed Well	665
4172039	Proposed Site #P-1	Proposed Well	31
4172014	Cape Cod Camp Corporation	Transient Non-Community	0
4172039	Rock Landing Well 3	Community Groundwater Well	665
4172039	Turner Road Well 2	Community Groundwater Well	659
4172033	Well 2	Community Groundwater Well	0
4172035	Well 1	Community Groundwater Well	0
4172039	Belcher Well 7	Community Groundwater Well	632
4172035	Well 2	Community Groundwater Well	0
4172033	Well 1	Community Groundwater Well	0
4172043	Sea Mist Resort	Transient Non-Community	0
4172014	Cape Cod Camp Corporation	Transient Non-Community	0
4172048	Fit Company For Women	Transient Non-Community	0
4172039	Mashpee Village Well 6	Community Groundwater Well	633
4172001	Well #2 And Well #3 Manifolded	Community Groundwater Well	0

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Table 13-2. Public Water Supply			
PWS Identification Number	Site Name	Type of Public Water Supply	Zone II Number
4172043	Sea Mist Resort	Transient Non-Community	0
4172039	Quaker Run Well 4	Community Groundwater Well	655
4172039	Site P-11/Tw #1-90	Proposed Well	565
4172039	Rock Landing Well 2	Community Groundwater Well	665
4172039	Turner Road Well 5	Community Groundwater Well	659

Source: MassGIS Public Water Supplies

Zone I is used to designate the protective radius required around a public water supply well or wellfield. Mashpee has 23 Wellhead Protection Areas designated in Zone I (MassGIS, 2021). DEP Zone II and public water supply (PWS) data are closely linked. Wellhead Protection Areas are important for protecting recharge areas around public water supply groundwater resources (MassGIS, 2021). Mashpee has 12 Wellhead Protection Areas designated in Zone II (See Map – X.X) (MassGIS, 2021). In the absence of an approved Zone II, DEP has adopted the Interim Wellhead Protection Area (IWPA) as the primary protected recharge area for PWS groundwater sources (MassGIS, 2021). Mashpee has 11 Interim Wellhead Protection Areas (See Map – X.X) (MassGIS, 2021).

Water Resource Risk and Protection Zones Map is needed in this section. We will map this information through MassGIS Data.

Further information is needed in this section regarding Groundwater. We will gather this information through stakeholder interviews and GIS analysis.

10.3.5 Water and Wastewater Resources and Facilities

The Mashpee Water District provides clean and safe drinking water to 10,149 accounts, as of December 31, 2021. The Mashpee Water District was formed in 1987 and from 1987 to 1990 established an agreement to authorize the District to receive water from the Town of Falmouth to supply water to areas of Mashpee that were contaminated by Otis Air Force Base. In 1990 the District established a new source of water with the Quaker Run Road well installation. In 1991, the District purchased the Highwood Water Company, increasing their customer base from 500 to 3,000, also bringing along three water supply wells. The District continued to expand through 2005, adding two water tanks (Back Road in 1993 and Meeting House Road in 2003), two new wells (Turner Road Well in 1999, Mashpee Village Well in 2002, and Belcher Road Well in 2005). Table 8-5 provides illustrates the growth of the Mashpee Water District's consumers from 1987 to 2004. An addition of 1,000 new consumers is projected and in the planning stages.

Table 8-5. Mashpee Water District Consumer Counts	
Year	Number of Consumers
1987-1991	0 to 3,000
1994	4,000
1996	5,000

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Table 8-5. Mashpee Water District Consumer Counts	
Year	Number of Consumers
1999	6,000
2001	7,000
2004	8,000

Source: Mashpee Water District

<http://www.mashpeewaterdistrict.com/about/index.html>

Environmental Justice Populations

The Town of Mashpee has neighborhoods defined as minority and income Environmental Justice populations under the Executive Office of Energy and Environmental Affairs (EOEEA). Within Mashpee, Block Group 1, in Census Tract 150.02, qualifies under "Income" (see Figure 1, area shaded in green). Block Group 2, in Census Tract 150.02, qualifies under "Minority" (see Figure 1, the area shaded yellow). According to the Massachusetts EOEEA, a neighborhood is defined as an Environmental Justice population if one or more of the following four criteria are true:

- 1) the annual median household income is not more than 65 percent of the statewide annual median household income;
- 2) minorities comprise 40 percent or more of the population;
- 3) 25 percent or more of households lack English language proficiency; or
- 4) minorities comprise 25 percent or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150 percent of the statewide annual median household income (Environmental Justice Populations in Massachusetts).

10.3.1 Local Affordable Housing Programs

The Town of Mashpee has several programs and committees dedicated to addressing the issue of affordable housing. Following is a list of some of the Town and Tribe programs and resources:

- **Mashpee Housing Authority**—The Mashpee Housing Authority owns and manages Homeyer Village, Breezy Acres, and Great Cove Community, and manages Asher's Path, which is a privately funded affordable housing development.
- **Massachusetts Rental Vouchers Program (MRVP)**—Mashpee Housing Authority manages 71 MRVP vouchers, a state-funded program that offers rental support to low-income individuals or households, which can be used for any housing unit that meets state codes and rent limitations. (2022 Annual Report, Mashpee Housing Authority).

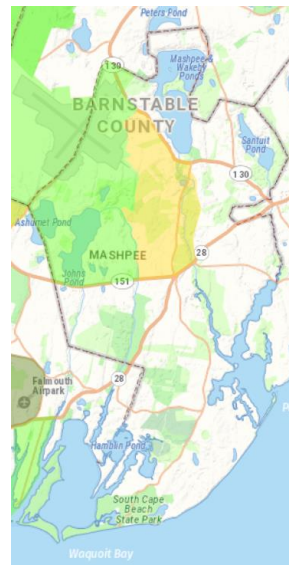


Figure 1: Environmental Justice Populations in Mashpee (Source MassMapper).

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- Affordable Housing Trust**—Created in 2001, the Trust is a non-profit that works with the Mashpee Housing Authority to access grant funds and purchase real estate.
- Affordable Housing Committee**—To meet the needs of present and future Mashpee residents for fair, decent, safe affordable housing in a manner that is consistent with the protection of Mashpee's environment. To ensure equal opportunity in housing. To assist current homeowners in maintaining current homeownership whether or not they started as affordable to not be forced into foreclosure.
- Mashpee Wampanoag Housing Department**—to provide housing assistance and opportunities specific to the needs of the Native Americans living with The Wampanoag Community.

Regulatory—Accessory dwelling units have been identified as a tool to provide more affordable housing, and Mashpee's zoning does have a provision for by right accessory dwelling units.

Subsidized Housing—The following table lists the location of the deed restricted affordable housing in Mashpee.

The following table lists the location of the deed restricted affordable housing in Mashpee.

Table 1-2 Mashpee Affordable Units			
Site	Rental Units	Ownership Units	Total
Mashpee Housing Authority Units			
Homeyer Village	24	0	24
Breezy Acres	6	0	6
Great Cove Comm	10	0	10
Other Units			
Other Qualified Units	1	19	20
Asher's Path	56	0	56
Mashpee Village	145	0	145
CCC/HOR Program	0	3	3
Habitat for Humanity	0	19	19
DDS Group Homes	20	0	20
TOTAL	262	41	303

Source: Mashpee GIS, April 2017

10.3.2 New Housing Construction

Affordable

Projects in the pipeline and under construction include the following which would provide additional affordable housing opportunities:

- Planning approval was recently given to a 40B development at 950 Falmouth Road. This will be a 39-unit affordable housing project on 13 acres of Town-owned land.

There are units already permitted including the Mashpee Commons 40B project which includes 96 affordable units (and another 16 rentals as originally permitted).

- The 52-unit Wampanoag Village project by the Wampanoag Tribe is proposed for 184 Meetinghouse Road.

- The Wampanoag Tribe is also working on a proposed Shelter and is planning on applying for ICDBG funding to the US Department of Housing and Urban Development.

- Mashpee is in the due diligence phase for an affordable/workforce housing project at 108 Commercial Street.

Despite these efforts, there is still a significant need for affordable housing. According to the Mashpee Housing Authority, the current wait for Asher's Path is six months to a year.

Market Rate

New market rate projects are focused on age-restricted housing:

- Laurentide at Mashpee Commons—70 units of assisted living focusing on memory care.
- Bridges at Mashpee—54 units of assisted living focusing on memory care.
- Building permits (verify with Evan)

Constraints to Development

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~~Housing construction requires developable land, infrastructure, and capital. Much of Mashpee's land~~

~~The Town's zoning bylaws also constrain development, by limiting higher density, mixed-use development, which could produce more affordable housing. In 2021 the Town Planner prepared a technical memo for the Mashpee Planning Board, which included a build-out analysis related to the potential for additional residential development within Mashpee. This build-out analysis estimated a potential 294 housing units for new single-family home construction under the cluster subdivision bylaw. This analysis pointed out the need for additional housing types and increased density, where appropriate as a measure to produce more affordable housing (Build-Out Analysis and Recommendations relative to the proposed Mashpee Commons Development Agreement, 2021).~~

~~Threats/Issues~~

~~10.3.6~~

~~A variety of human activities pose a threat to the town's natural resources. This section presents the most notable threats to the water resources in Mashpee.~~

Unmanaged Stormwater Runoff

Stormwater is rainwater or melted snow that runs off streets, roofs, pavement, and other impervious surfaces as well as lawns, woodlands, and other more pervious areas as they become saturated. As the water flows over these surfaces, it can collect pollutants and sediment that can contaminate water bodies. Stormwater is addressed by federal, state, and local regulations. The United States Environmental Protection Agency (USEPA) has determined that municipal separate storm sewer systems (MS4s), a drainage system in an urbanized area, are a major pathway for the introduction of pollutants to waterways and are a leading cause of the impairment of ambient water quality, for both fresh and coastal waters (United States Environmental Protection Agency). Through the National Pollutant Discharge Elimination System (NPDES) under Section 319 of the Clean Water Act, the U.S. EPA regulates stormwater from MS4s. The Massachusetts Department of Environmental Protection (MassDEP) is delegated by USEPA to administer the program in Massachusetts. In 2016, EPA issued a final NPDES general permit for discharges of stormwater from small MS4s in Massachusetts (the MA MS4 Permit) (United States Environmental Protection Agency).

Mashpee is currently subject to MS4 jurisdiction in Massachusetts. Under this law, MassDEP requires subject communities to develop stormwater management program plans (SWMPs) to address six minimum control measures. The six minimum control measures required in the SWMP are addressed in Mashpee's Stormwater Management Program (Tighe&Bond, 2019):

- Public Education and Outreach
- Public Participation
- Illicit Discharge Detection and Elimination
- Management of Construction Site Runoff
- Management of Post Construction Site Runoff
- Good Housekeeping in Municipal Operations

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Mashpee has established a Stormwater Management Task Force to develop and implement a Townwide Stormwater Management Plan (SWMP) to fully comply with the new National Pollution Discharge Elimination System (NPDES) permit and to continue to mitigate the impacts of stormwater runoff with the town (Town of Mashpee).

Nutrient Control

Nutrient-related water quality decline is a serious threat to coastal waters and freshwater ponds in southeastern Massachusetts. The Massachusetts Estuaries Project (MEP) technical report indicated that the Waquoit Bay and the Popponesset Bay system are in impaired water quality as they exceed their critical threshold for nitrogen (Cape Cod Commission, 2017). The Comprehensive Watershed Nitrogen Management Plan is the culmination of multiple documents examining the needs and coordinating efforts of the Massachusetts Estuaries Project (MEP) (Town of Mashpee, 2019). The Mashpee Sewer Commission is exploring the expansion of Phase 2 of the Town's Comprehensive Watershed Nitrogen Management Plan to include lakes and ponds (Jung, 2021).

Nitrogen is detrimental to the water quality of Mashpee's ponds, streams, and bay area. Excess nitrogen can also cause algae blooms, which lower oxygen levels and lead to long-term damage to the ecosystem (Town of Mashpee, 2021). The Nitrogen Control section in the Town Bylaw aims to conserve valuable waterways and other resources that increase property values, protect the unique environment vital to the local economy, and reduce the financial burden on taxpayers and property owners by regulating the outdoor application of nitrogen and phosphorous on turf (Town of Mashpee, 2019). The regulation of fertilizer applications will reduce the overall amount of excess nitrogen and phosphorous entering resource areas as defined in the Mashpee Wetlands Protection Bylaw (Town of Mashpee, 2019). The Town also seeds shellfish as a remedial action for estuaries approaching their nitrogen targets (Howes B. L., 2021).

Phosphorus introduction into Mashpee's freshwater systems can lead to algal growth and subsequent eutrophication. Eutrophication can result in anoxia, or lack of oxygen, from water bodies, threatening biodiversity. Phosphorus enrichment was found to be causing eutrophication in three of Mashpee's four largest ponds (Ashumet, Santuit, Mashpee Wakeby). Harmful algae blooms (HABs) can result in adverse health effects in humans and animals. Mashpee Wakeby Pond and Santuit Pond have been closed to the public for extended periods of time due to the presence of HABs. Long-term closures are expected to increase with climate change and nutrient pollution (Mashpee Department of Natural Resources and Fuss & O'Neill, 2022).

Groundwater Contamination

Joint Base Cape Cod, which includes Otis Air National Guard Base and Camp Edwards, has been an Environmental Protection Agency (EPA) Superfund site since the late 1980s. Per- and polyfluoroalkyl substances (PFAS) were detected in nearby groundwater, threatening the Sagamore Lens aquifer (EPA). The EPA continues to conduct groundwater plume extraction and treatment will be provided until PFAS

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levels reach EPA standards, with an expected completion date of 2060 for some measures (Massachusetts National Guard, 2019).

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10.3.7 Opportunities

Mashpee has many tools at its disposal to improve water quality, stormwater management, and protect native aquatic species. The Harbor Management Plan and Mashpee Clean Water Plan offer guidance for implementing actions that address Mashpee's groundwater contamination and invasive species management. Irrigation policies and the wetland protection bylaw are examples of what future policy-based actions should mimic.

Further information is needed in this section regarding housing. We will gather this information

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10.3.8

Hiring of boat ramp attendance to enforce rules about washing down boats to reduce invasive species

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- Shellfish aquaculture is a core component of Mashpee's modern "blue" economy. Mashpee and regional partners have introduced Stormwater regulations need upgrades
- Harbor Management Plan implementation
- Irrigation Policy
- Nitrogen updated to nutrient control
- Wetland protection bylaw
- Mashpee Clean Water Plan

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Shellfish Aquaculture

Current programs and projects that primarily address addressing nitrogen loading, including:

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— the MVP Action Grant Nitrogen Loading on Santuit Pond,

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— Mashpee/Wakeby Pond Study,

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— Partnership with the Tribe for the SNEP Program

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— Harbor Management Plan

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— Ashumet Pond Clean Up, and updated Town bylaws associated with clean water.

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— Town Bylaws associated with clean water.

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10.4 Goals & Policies

Goals & Policies

Goals

1. Maintain and restore the quality of Mashpee's groundwater to ensure an adequate supply of safe, high quality drinking water.
2. Protect Mashpee's groundwater supply, wetlands, and surface water from contamination.
3. Prevent harmful algal blooms in Mashpee waters to maximize recreational opportunities and preserve safe drinking water for all residents.
4. Maintain and expand wastewater treatment and disposal facilities.

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Policies

1. [Continue to support the shellfish propagation program to enhance local fisheries, restore vital habitat, and remove excessive nitrogen in both Waquoit and Popponesset Bay.](#)
2. [Protect the seashore from erosion.](#)
3. [Preserve fish and hunting rights of way on shore.](#)
4. [Promote shellfish seeding programs.](#)

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~~10.3.3~~ Current Measures

~~10.4~~ Community Engagement (Optional)

Goals & Policies

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