



Meeting of the Mashpee Planning Board

Wednesday, June 1, 2022

Waquoit Meeting Room

Mashpee Town Hall

16 Great Neck Road North

Mashpee, MA 02649

6:00 PM

Broadcast Live on Local Channel 18

Streamed Live on the Town of Mashpee Website: <https://www.mashpeema.gov/channel-18>

Call Meeting to Order

- Pledge of Allegiance

Approval of Minutes

- Review of Meeting Minutes from May 18, 2022

New Business

- Consider adoption of Select Board Policy 81: Participation at Public Meetings
- Local Comprehensive Plan Updates with Weston and Sampson
 - Preliminary assessments of 1998 Action Plans
 - Existing Conditions
 - Survey Framework
- Consideration of Letter of Support for joint application to CPC by Conservation and Planning Departments for the acquisition of property addressed 751 Main Street for Open Space.
- Clean Water Initiative
- Affordable and Workforce Housing

Old Business

- Floodplain Bylaw amendments

Chairman's Report

Town Planner Report

- Update on Popponessett Overlay District

Board Member Committee Reports

- Cape Cod Commission, Community Preservation Committee, Design Review, Plan Review, Environmental Oversight Committee, Historic District Commission, Military Civilian Advisory Council.

Public Comment

MASHPEE TOWN CLERK

MAY 27 2022

RECEIVED BY: 



RECEIVED BY: JK

**Town of Mashpee
Select Board**

Policy No: 081

Public Participation at Public Meetings

I. INTRODUCTION

The Mashpee Select Board welcomes everyone to its meetings and meetings of all other public Town boards, committees and commissions. All regular and special meetings of boards, committees and commissions shall be open to the public and shall conform at all times to the Open Meeting Law of the Commonwealth of Massachusetts. (See Chapter 30A, Section 20 of Massachusetts General Laws) and Town General Bylaw Chapter 7 (Public Records and Open Meetings). The public shall be precluded from attending an executive session meeting of a public body for a valid reason pursuant to MGL Chapter 30A, Section 21. (Meeting of public body in executive session). All comments made by the public during meetings shall be in accordance with this Policy and all speakers are encouraged to be civil and respectful.

II. AUTHORITY OF CHAIR

No person shall address a meeting of a public body without permission of the Chair (presiding official), and all persons shall, at the request of the Chair, be silent. No person shall disrupt the proceedings of a meeting of a public body. If a person: 1) Speaks out of order, 2) Engages in other disorderly or disruptive conduct during a meeting, 3) Attempts to engage in dialogue regarding pending litigation or other subject matter otherwise subject to executive session privilege, or 4) Attempts to address a matter that is not within the public body's scope of authority or jurisdiction, the Chair shall have the right to rule said person out of order, and, after clear warning from the Chair, the right to order the person to cease and desist such conduct. If, notwithstanding such order, a person continues to disrupt the proceedings, the Chair may order the person to withdraw from the meeting, and if the person does not withdraw, the Chair may authorize a constable or other duly authorized officer to remove the person from the meeting. (See Massachusetts General Law Chapter 30A, Section 20, sub-section (g)). Notwithstanding the limitations outlined within this section, citizens may offer petitions, presentations, criticism of a policy or practice, or reference any matter of public interest without being considered "out of order", consistent with constitutional free speech principles and in due recognition of the principle that a public body cannot prevent all speech at a public meeting that may be upsetting and/or offensive to others.

III. PUBLIC HEARING COMMENTS

If a public hearing is posted within a public meeting, input from the public shall be permitted on the subject matter of the public hearing when the Chair invites public comment on such agenda item. Any person requesting to make a comment should identify themselves and state their address for the record of the proceedings.

IV. PUBLIC COMMENTS ON AGENDA ITEMS

If the Chair decides to allow public comment on a specific agenda item, other than comment from a person with a particular interest in the said agenda item, the comment time for each such person shall generally be limited to three (3) minutes or such duration deemed appropriate by the Chair. Any person requesting to make a comment should identify themselves and state their address for the record. Large groups addressing the same topic and offering similar sentiments are encouraged, but not required, to consolidate their remarks for meeting efficiency purposes.

V. PUBLIC COMMENT SEGMENTS OF MEETINGS

It is the policy of the Select Board to facilitate and encourage public engagement in Town matters of general public interest. To that end the Board will routinely provide a public comment opportunity at its meetings. Public comment shall be subject to the Chair's authority to maintain good order of the meeting and to ensure that comments can be made in an open and welcoming atmosphere.

Public comment periods provide an opportunity to address matters of public concern to the Board for future Board action or response. Public comment time is intended to be a time to address matters of broad public interest, to raise an individual concern and to address matters of policy and is not intended to be an opportunity attack or denigrate others. To that end, speakers are asked to be civil and respectful. Should a member of the public have issue with an individual Board member, town employee or other person it is recommended that such concern be expressed and presented to the Board in writing and the matter will, as appropriate and warranted, be investigated and addressed at a future meeting.

It is the policy of the Board that the Chair may set standards for the conduct of public comment segments of meetings as follows:

1. Set reasonable time limits on individual comments at the start of the public comment period.
2. Ask all speakers to sign up in advance of the commencement of the comment period.
3. Recognize speakers prior to anyone addressing the Board.
4. Direct all speakers to address the Board from the lectern or table facing the Board unless any speaker requires a special accommodation to speak from another location.
5. Rule any speaker out of order for violating the spirit and intent of this Policy or violating standards of decorum.
6. Suspend or adjourn the meeting should a speaker fail, after appropriate warning, to adhere to directions from the Chair.
7. Take any other action needed to maintain good order and allow the business before the Board to be conducted without unreasonable disruption or delay.

If the posted agenda for a public meeting includes a "public comment" item, input from the public shall be permitted when the Chair acknowledges said item on the agenda. Members of the public shall sign up or request to speak at the time designated by the Chair. Comments from the public shall generally be limited to three (3) minutes for each individual. Any person requesting to make a comment should identify themselves and state their address for the record. Public comments may address topics on the agenda or items within the scope of the public body's authority and responsibility. Large groups addressing the same topic are encouraged to consolidate their remarks.

VI. RESPONSE TO PUBLIC COMMENTS

Upon closing of a public hearing, further public comments on the subject matter of the hearing shall not be heard. If public comments are allowed by the Chair with respect to a posted agenda item, further discussion may occur. If an individual makes comments during the "public comment" segment of a meeting, the public body will generally not discuss or respond to such comments, except under extenuating circumstances and only if the Chair permits. General public comment segments of public meetings are not intended to initiate discussion, debate, or dialogue between and among the public body and an individual on any matter which is not duly posted on the meeting agenda, rather, they are intended to provide citizens with an opportunity to express a statement or opinion relating to the business of the public body.

VII. REASONABLE ACCOMMODATIONS

Any person who wishes to make a public comment before any board, committee or commission and requires accommodations on the basis of a speech-related disability or who requires language interpretation services may be allotted a total of five minutes to present their comments. Speakers should notify the board, committee or commission forty-eight (48) hours in advance by telephone if such arrangements need to be made.

*Adopted by the
Mashpee Board of Selectmen
September 23, 2019
Revised May 23, 2022*

To: Mashpee Planning Board

From: Evan Lehrer, Town Planner

Date: May 27, 2022

Re: 1998 Transportation Element of the LCP

Transportation Element – Present Status

Goals:

1. *To promote the safe and efficient movement of people and goods to, in and through Mashpee.*
2. *To ensure adequate mobility for all residents, particularly via alternatives to automobile travel such as bicycle and pedestrian facilities and public transit.*
3. *To minimize negative transportation system impacts on the Town's historic, scenic, and natural resources and overall quality of life.*
4. *To minimize both the need for new road construction and the fiscal impact to the Town of any new transportation facilities required to support new development or redevelopment.*
5. *To develop appropriate transportation facilities and services to support the Town's economy and economic development program.*
6. *To provide for proper maintenance of the Town's roadway and bridge infrastructure.*
7. *To minimize per-capita energy use related to transportation.*

From the time of adoption of the 1998 Local Comprehensive Plan to the present day much of what was defined in the short and mid-term action plans were accomplished either as defined in the plan itself, or consistent with the proposed action but altered in some way in consideration of new variables not present at the time of the plans adoption. These actions were implemented to facilitate the vision contained in the goals above. This memo will serve as an assessment of what was accomplished and what changes have occurred to those priority action items since the time of the plan's adoption and to offer some context as to why those changes occurred. For proposed actions that have not been accomplished this memo will also serve to provide some context as to why. Lastly, this assessment will conclude with a discussion of the long-range plan contained in the 1998 Transportation Element and contemplate some inconsistencies between the long-range buildout configurations of the Town's primary arterials: Route 151 and Route 28. It is my opinion that the long range buildout configurations as defined in this plan are in conflict with the goals defined in 1998 for transportation in Mashpee and certainly in conflict with existing conditions, current needs, and future trends.

5 Year Outlook

Intersection Improvements:

Improvements should be made at the intersections of Route 28 with Industrial Drive, Deer Crossing entrance, Shellback Way, Donna's Lane/Jobs Fishing Road, Steeple Street, Orchard Road and Noisy Hole/Sampson's Mill Road

The intersection at Shellback Way and Charles Street intersecting Route 28 was signalized in 2004 via mitigation monies provided as a requirement of the South Cape Village DRI decision.

No alterations have been made at the Deer Crossing entrance to Route 28 or Industrial Drive but the plan recommends that the entrance to Deer Crossing be right turn in and out only and to enhance access to Deer Crossing Commercial Area from Shellback Way.

Industrial Drive intersection has also not been followed through on according to the plan which calls for two lane approaches both east bound and west bound on Route 28 and to signalize if warranted. Improvements to Route 28, as a State Highway, are somewhat beyond the control of the Town and unless conditions require it, the state will not invest in these improvements. Since 1998, there have been no such plans contemplating these improvements according to the DPW Director. The Orchard Road intersection was signalized also using South Cape Village mitigation monies in 2005 and at the same Town, the Town realigned Asher's Path East to line up with Orchard Road.

Construct improvements to the Route 151 intersections with Market Street, Job's Fishing Road and Old Barnstable Road

The plan calls for through lanes be added east bound and westbound on Route 151 at the intersections of Market/N. Market Streets. There exists now a dedicated left turning lane into the North Market of Mashpee Commons at the signalized intersection with the remaining traffic able to turn continue east bound or westbound or turn into Mashpee Commons.

Mitigation monies from the Mashpee Commons DRI were utilized to signalize the intersection of Route 151 and Job's Fishing Road and the Town funded the realignment of Frank E. Hicks Drive. The recommendations of the plan were to continue Job's Fishing (Frank Hicks) all the way to Old Barnstable Road to bypass the Rotary for local traffic. This latter recommendation was never implemented but should be further considered to better accommodate local traffic.

Additionally, improvements to the intersections of Route 151 and Old Barnstable Road, Market Street, and Job's fishing Road are being further improved via Phases I and II of the Route 151 Improvement project currently underway.

Route 130 and Great Neck Road North

This intersection was signalized in 2001 but the conversion to a modern roundabout is in preliminary design phases consistent with the recommendations of the 1998 LCP.

Street and Driveway Improvements

A new “East Steeple Street” Connector should be constructed between Route 28 and Great Neck Road South.

The plan contemplated this new street in connection with Mashpee Commons’ expansion and was considered for private funding via those projects. Since 1998, these expansion plans have not been facilitated and further, the proposed street was additionally intended on providing more proper traffic flow before and after events at the ‘Boch Center of the Performing Arts.’ This entertainment facility was approved but never constructed. While Mashpee Commons expansion plans haven’t been realized, if they are to proceed, this connector should carry through to the new document

A new connector street should be constructed to Route 28 between Industrial Drive and Donna’s Lane. Additionally a connector should be constructed between Industrial Drive and Great Neck Road South.

The layout and construction of Commercial Street serves as connector between Industrial Drive and Donna’s Lane connecting the industrial park to South Cape Village. Further the approval of the Mercantile Way subdivision serves as a connector from Industrial Drive to Great Neck Road South.

4-6 foot shoulders should be constructed along Route 28 and Route 151

The addition of these shoulders is underway as part of Phase I and II of the ongoing Route 151 Improvement project however the addition of these shoulders along Route 28 has not been accomplished. Again, Route 28 is under state jurisdiction and there are no plans in place at this time to accomplish this action item.

Bicycle and Pedestrian Amenities

The Town has generally completed all of the new bike paths and bike path extensions defined in the 1998 Transportation element action plans.

- In 2001 the Town constructed a bike path from Frank Hicks to Old Barnstable Road. The plan calls for the bike path all the way to James Circle which is being completed as part of the Route 151 Improvement Project currently under construction.
- A bike path along Great Neck Road South from Donna’s Lane to the Mashpee Children’s Museum was constructed with mitigation monies from the South Cape Village DRI. The plan calls for this bike path to continue all the way to Red Brook Road but that portion has not been constructed.
- The plan asks for a bike path between Martin Road at the Falmouth Town line to the Mashpee Rotary. A bike path was not constructed however the State constructed a sidewalk from Donna’s Lane to the Mashpee/Falmouth Town Line.
- The Route 130 Bike Path was extended from Heritage Park to Pickerel Cove in 2010 using Cape Cod Commission DRI mitigation monies.
- The plan calls for a bike path along Job’s Fishing Road in coordination with Mashpee Commons projects. Portions of sidewalk are complete others incomplete and no dedicated bike path exists.

Town Services pertaining to transportation

The plan asks the Town to provide adequate equipment and staffing to allow regular cleaning, leaf removal, snow plowing, and maintenance of bicycle facilities and sidewalks.

While the DPW does accomplish this work the adequacy of equipment and staffing may need to be assessed in upcoming years.

The plan further asks for permanent information be provided at information booths and kiosks where residents can obtain travel-related information. This has not been prioritized since 1998.

Public Transit

The short-term goals in the 1998 LCP pertaining to public transportation were relatively limited. There was a desire for the 'Mashpee Trolley' to be further refined and advertised. The Mashpee Trolley is no longer in service.

Residents in 1998 wished to see an expansion of RIPTA's Sea Line. It is unclear at this time whether or not RIPTA has expanded this service.

Regulatory Updates and Misc. Actions

Proposed Action	Status
Adopt official map of existing and proposed streets	Official Map of existing streets updated annually.
Subdivision regulation amendments	
Encourage mixed-use, larger green space requirements in zoning	
Establish maximum parking requirements	Only have established minimums
Establish impact fee system	No municipal system adopted
Develop/utilize standard designs for transitions between bike facilities and road crossings	None unique to Mashpee. Standards are mandated at the state level
DPW regularly update pavement management plan	Updated every 5 years
Undertake origin-destination study	Town has not however some of this work has been completed via Mashpee Rotary study
Establish transportation coordination committee	Does not exist
Establish Transportation Management Association w/ Bourne, Falmouth Sandwich, Barnstable	There is not an association unique to the upper cape but there is a Joint Transportation Committee comprised of reps. From all 15 Cape Cod Towns.

10 Year Outlook

Again, much of the actions contained in the 5 year and 10 year action plans are intended to work toward the ultimate buildout configurations of Route 28 and Route 151 as a 4 lane highway (2 lanes east bound 2 lanes west bound). Widening these arterials to 4 lanes through the entirety of the Town is in conflict with the goals established by this chapter and others. Data shows that widening of roadways does nothing to facilitate the mitigation of traffic congestion and can have consequences contrary to their intent. We need to reconsider the ultimate buildout configurations of these highways in consideration of current priorities, needs, and future trends.

It was proposed to widen Route 28 to 4 lanes between the rotary and Meetinghouse Road by 2010 and to realign Quinaquisset opposite Meetinghouse Road. Neither proposed action is feasible or ever expected to be funded. The latter action is made infeasible due to the location of a river and culvert at that intersection.

10 Year Intersection Improvements

Intersections	Status
Route 28 & Quinaquisset	Realigned to prohibit left-turns out using mitigation monies from South Cape Village DRI
Reconfigure rotary to modern roundabout	Rotary retrofit being considered at state level with potential long-term shift to roundabout. This was an outcome of the Commission's Mashpee Rotary Study along with MassDOT
Increase shoulder width to between 4' and 6' along entirety of 151	Currently underway as part of Phase II of Rt. 151 Improvement project
Rt. 151 & Algonquin, Ninigret, and James Cir	Same as above
GNRN & Lowell Road reconstruction	Realigned and signalized in 2013
Left turn lane at GNRN & Old Barnstable Road and Ryan's Way	Not completed
Left turn lane @ Pickerel Cove, Echo, Ashumet, South Sandwich Road, Cotuit Road, Stratford Ponds	Not completed

10 Year Street and Driveway Improvements

Proposed Action	Status
Widen Rt. 151 between Job's Fishing and Old Barnstable to 3-lanes	Not feasible: wetlands, private property, safety, not best practice
Upgraded two lane cross section GNRN between rotary and Lowell.	Repaved, drainage improved, sidewalks installed in 2013
Reconstruct Mashpee River Crossing (Rt. 28)	Not done, state road with no plans in place

The Long Range Plan

While the long-range plan maintains some admirable goals that ought to be carried through to the updated plan such as:

- Additional intersection improvements made along Route 28 beyond those intersections defined in the 5 and 10 year action plans.
- Efforts should be made to consolidate and reduce the number of driveways entering onto Route 28 and Route 151.
- Left turn prohibitions onto Route 28 and Route 151, and where feasible the construction of traffic median barriers when they may be the only potential effective means of reducing left turn movements
- Development of bypass roads around the Mashpee Rotary such as an extension of Job's Fishing Road north to Old Barnstable/Lowell Roads and through the Mashpee Commons "trout Pond Neighborhood" to a right-turn only to Route 28 from Great Neck Road South.
- Eventually reconfigure Rotary as a modern "roundabout" and in addition certain intersections around town, such as the Route 130 Great Neck Road North intersection should also be considered for transition to modern roundabout.
- All roadways should be designed to accommodate shared use by bicycles, motor vehicles and pedestrians with a network of designated bicycle facilities (via recommendations defined in 1998 plan and new concepts to be assessed)

What needs to be reassessed and considered for change via the update to the Transportation element?

- 1. The ultimate buildout configuration of Route 28 as an undivided four-lane roadway.**
- 2. The ultimate buildout configuration of Route 151 as an undivided four-lane roadway**

Research shows that the widening of highways and roadways in urban and suburban contexts just invites more driving which produces more traffic and additional congestion which is contrary to the intent of the widening endeavor itself. In an attempt to reduce congestion, which may be realized in the short term, induced demand will result in similar congestion challenges while having the detrimental impact of making the widened roadway more unsafe for pedestrians and bicyclists, creating separation between neighborhoods and a generally less appealing streetscape devoid of any character. Additionally, expanding roadways and inviting more driving is inconsistent with goals for reducing greenhouse gas emissions and impacts from storm water runoff. Traffic congestion strategies should be focused on getting people to drive less via investments to support public transit in these areas, alternative transportation options such as bicycling and facilitating patterns of development that are less reliant on the automobile. Such a widening as described in the 1998 document would, in my opinion, be inconsistent with nearly all of the goals set forth in the chapter

The biggest challenge, as noted by the 1998 plan, will remain the buildout configurations of Routes 151 and 28 as well as the ultimate configuration of the Mashpee Rotary. Consideration ought to be given to these designs in consideration of existing conditions, current and future priorities and needs.

Open Space, Recreation, & Agriculture/Wetlands/Wildlife & Plant Habitat Element – Present Status

Note: this is an assessment of the 98' chapter and doesn't consider the 2007 Open Space Plan. That document will be reviewed and reported on separately.

Open Space, Rec & Agriculture Goals:

1. To preserve at least 50% of Mashpee's remaining open space in order to protect wildlife habitat and our other natural resources, provide a variety of outdoor recreation opportunities and maintain the rural and scenic character of the Town
2. To meet the needs of residents and visitors of varied ages and interests for passive and active recreation opportunities.
3. To preserve and enhance local agricultural activities
4. To ensure that prime agricultural soils are protected from development or degradation.

Wetlands Wildlife and Plant Habitat Goals:

1. To restore and preserve the quality and quantity of inland and coastal wetlands in Mashpee
2. To prevent loss or degradation of critical wildlife and plant habitat or migration routes
3. To maintain existing wildlife populations and species diversity.

Questions to consider as we assess accomplishments and shortfalls from the 1998 LCP:

Of Open Spaces that have yet to be preserved from 1998, is it still a priority to preserve at least 50% of the remaining in consideration of current needs?

While there is no doubt that people still value the smaller-town charm of Mashpee, Mashpee has undoubtedly lost its rural character and its fabric is now consistent with New England suburbia. How can we meet the needs of the future, and grow in a manner that recognizes Mashpee's rural history but is cognizant of the existing condition and modern identity?

Given the historical agricultural activities of the Town and the loss of cranberry bogs in recent years, how does the Town feel about agricultural activities in the Town today and what if any should be preserved and enhanced?

Open Space

Year 1

Proposed Action	Status
Acquire 16.85 acre Fitch Property	Acquired 1998
Acquire 15.07 acre northern MacDonald Property	Acquired 1999 / \$255,000
Acquire 6.2 Acres on Great Oak (116-1)	Acquired 1997 (Now 357 Great Oak)

Transfer Map 110 Parcels 67, 70, 71 to ConComm	Transferred
Mass DFW Greaney Property Acquisition	Purchased by Town of Mashpee 2000 (Pine Barrens)
Secure consultant for site selection and design of Children's Nature Trail	Con. Agent believes that property behind the Mashpee Children's Museum was identified for this but design or construction never occurred
Initial Jehu Pond Trail Development	Done on Town and US Fish and Wildlife Lands
Create or designate local Pathways Committee	Not currently active..unclear if ever in existence
Connect Lowell Holly to Ryder in Sandwich	Failed because Sandwich was concerned with beach access by non-residents through trail system. This is worth maintaining and reconsidering with Sandwich's cooperation
Expand Adult Ed and Other Leisure Services	Numerous programming through Rec Department
Construct handicap accessible multi-station playgrounds at Johns Pond, Heritage Memorial, Attaquin Park	Done
Review of Wetlands bylaws : vernal pools, etc	Always ongoing. ConComm has established bylaw review subcommittee for this purpose
Complete GIS mapping of wetlands	Utilize MassDEP layer
Identify all vernal pools for cert. by NHESP	Ongoing with AmeriCorps
Update zoning (cluster, OSID) directed at OS Preservation	

Year 2

Proposed Action	Status
Acquire 40 acre Barrows Property	Acquired 2002
Taking of 15.7 Acre Marsh on lower Santuit	TAX LIEN CASE #78550 / WILLOWBEND CONVEYED 1/3 INT TO TOWN FY06
Acquire (Town or State) Peck and Slaymaker properties on lower santuit	Acquired
Quashnet, Trout Pond, and South Mashpee Set aside for Mashpee Commons	No progress
Ext. of Cross Cape Trail from Red Brook through Bufflehead property to Great Oak and South Cape Beach Park	Status unclear at this time
Development of Noisy Hole Trail System	0.6 miles of trails complete
Construction of Childrens Nature Trail (Bufflehead)	Status unclear at this time

Mashpee River Woodlands and Johns Pond Park Management Plans Developed and submitted to state	Con Agent believes this was completed. Need more information as to status
Construct exercise court and little league field lighting at Heritage Park	No exercise court, but lights installed @ Heritage Park Little League
Develop temporary outdoor skating rink	Never done
Possible development and adoption of parks and rec impact fee bylaw	Never done
8=10' wide bike path from Jobs Fishing to James Circle	Phase I and II of ongoing Route 151 project
Create and distribute map and guide to Mashpee open spaces	Completed. New maps of MNWR (most of Mashpee's major con parcels) available
Develop w/ Assessors a standard policy for tax reductions for properties with CR	Assessor is not aware of that policy being adopted however he is new. Will check with recently retired assessor.
Adopt bylaw limiting land clearing and manipulations of natural topography prior to development review	Not done but should be carried over.
Adopt bylaw related to restoration of sand and gravel pits	Not done but should be considered by ConComm.

Year 3

Proposed Action	Status
Acquisition of Andrade Cedar Swamp	2.3 acres swamp not acquired
Acquire Prime View Trust Property (Map 115 Blocks 12-16)	Acquired 2001
Acquire "Great Hay Acres" Property (Pine Barrens)	Status unclear at this time
Acquisition of Wilbur Property by Falmouth Rod & Gun or Town	No progress - DRT RD ACC UP UNTL FAR END OF M79 LT 68, WHERE THERE IS A WTR DSTRCT- WTRSHD POSTED LOCKED GATE / CHAINED ACC FRM FLMTH
Acquisition of property corridor or trail easement from Falmouth Rod & Gun for completion of cross-cape trail	Status unclear at this time
Cross cape trail construction from Rt.28 to Lowell Holly via Mashpee River Reservation	Can connect to Lowell Holly via existing trail network but have to cross Route 28, Meetinghouse Road, and Route 130.
Rehab of Gamefield Walking Course @ Senior	Senior Center moved and this location is now Kids Klub Child Care Center
Development of Soccer/lacrosse fields at Landfill Cap	Solar

17.7 Acre Dawson property acquisition by Mass F&W or USFWS	Status unclear at this time
Acquisition of 71.3 acre Corey & Vose property west of Quashnet River	Status unclear at this time

Year 4

Proposed Action	Status
Acquisition of 30 acre Als Property	Acquired 2000
Acquisition of Collins Cedar Swamp	Status unclear at this time
Acquisition of 35.0 Comm Electric west of Quashnet River	Status unclear at this time
Develop temp. MNWR visitors center	Done @ WBNERR
Santuit Pond Conservation parking and trail system	Done
Childs River Conservation parking and trail	Done

Year 5

Proposed Action	Status
Acquire 135.1 acre Belcher Realty Trust property (44-46) and adjacent 31.5 acres (51-3) owners unknown	Status unclear at this time
Acquire 4.5 acre Louis Santos marsh off Amy Brown Road	Status unclear at this time
Acquire 7.1 acre Collins and 19 Acre Edgar Tobey properties (Noisy Hole)	Status unclear at this time
Sachem's Field Parking Area and trails	Never created
Alper Grant Conservation Area and parking	Done but without parking as the donation of land specified that the donation was for the preservation of wildlife habitat only.

Long Range Plan

The long-range plan maintains some admirable goals that are incomplete or are ongoing and ought to be carried through to the updated plan such as:

- Maximize publicly owned and protected lands within the Mashpee National Wildlife Refuge
- Develop a Refuge Visitor Center
- Preserve open spaces necessary for protection of public water supplies, surface water bodies, and wildlife habitat.
- Complete Mashpee segments of Cross-Cape trail and Cape Cod Pathways Walking Trail network
- Complete a town-wide system of bicycle facilities as specified in the Transportation element.
- Develop sufficient active recreation facilities to meet National Recreation and Park Association standards for future projected population growth.
- Preserve appropriate buffer areas around water bodies and wetlands consistent with Cape Cod Commission technical bulletins and guidance on the matter (Zoning)
- Storm water Management updates and interventions to mitigate issues caused by runoff and storm water drainage systems that adversely impact water quality (MS4 Permit and Stormwater Taskforce)

Goals accomplished or nearly accomplished in the Long Range Plan include:

- Complete protection of the Mashpee River Corridor (Trout Pond parcel still unprotected)
- Complete implantation of the John's Pond Park Master Plan.

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.

1.1 Vision

To be developed with the Town.

1.2 Introduction

Mashpee's population growth over the last half-century catalyzed housing development, much of it single-family. 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 2015-2019 American Community Survey, is used in this Chapter to provide an overview of existing conditions for Mashpee's housing.

For a brief snapshot, there are 10,273 housing units in Mashpee, 323 of which are deed-restricted affordable housing units (Department of Housing and Community Development Chapter 40B Subsidized Housing Inventory, December 2020). DHCD has calculated that this represents 5.3% of the 2010 Census year-round housing units, 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%). Over a third are used only seasonally (ACS, 2019 5-year estimates).

1.3 Existing Conditions

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. 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 COVID19 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% 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% a graduate or professional degree and reported a high annual household income, with over half reporting incomes higher than \$150,000 annually.

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.

1.3.2 Housing Stock and Condition

Mashpee was one of the last communities on the Cape to develop. Only 2.5 percent of the town's homes were constructed before 1940, and 81.5 percent of the housing stock was built after 1970. A surge in housing construction occurred between 2000-2010, with an 18.7% increase from 8,325 units to 9,882 units (6,473 or 66% are year-round units). Table 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 90s. Since 1980, seasonal housing as a percentage of the town's total housing stock has declined (see Table 1-2), although this trend was somewhat interrupted by the housing market crisis, 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 vs. seasonal ownership. 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

Total	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%	76
Built 1939 or earlier	222	2.2%	121
Median Year Structure Built	1986		1

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.

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 include duplexes, triplexes, and fourplexes, courtyard apartments, bungalow courts, townhouses, multiplexes, 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 the town’s residential development is nearly all single-family. Over 75% of Mashpee’s housing stock consists of single-family detached dwellings, a much larger share than Massachusetts as a whole (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, 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.

Table 1-2: Housing Units By Units In Structure

Total	10,273	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)

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

1.4 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 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.

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 2.21 (US Census QuickFacts, 2015-2019). Smaller household sizes require more homes to house the same population as compared to larger household sizes.

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).

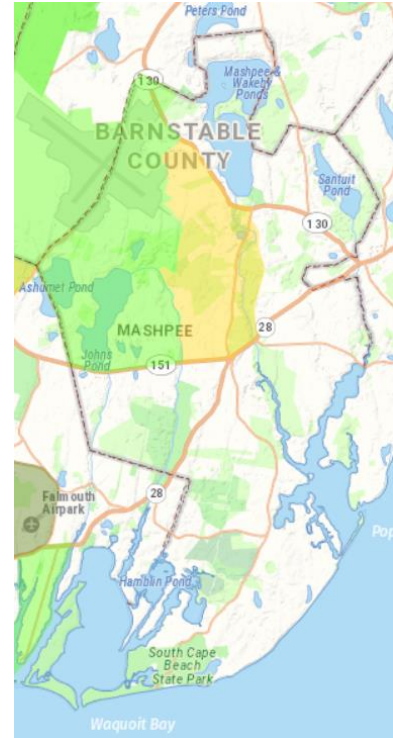


Figure 1: Environmental Justice Populations in Mashpee (Source MassMapper).

1.4.1 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).

- **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.

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

1.4.2 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

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.

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).

1.4.3 Threats

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

1.4.4 Current Measures

1.5 Community Engagement (Optional)

1.6 Goals & Policies

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.

Vision

To be developed.

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 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.

Existing Conditions

2.1.1 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. Since Mashpee's median household income is \$77,019 (ACS, 2015-2019), more than half of residents are considered cost-burdened.

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. (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 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, Utilities, Arts, entertainment, and recreation were identified as growing sectors (BLS, 2015, 2020).

In 2019, a regional economic development analysis conducted at the county-wide level was completed by the Cape Cod Commission through a Comprehensive Economic Development Strategy (CEDS). 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.

2.1.2 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

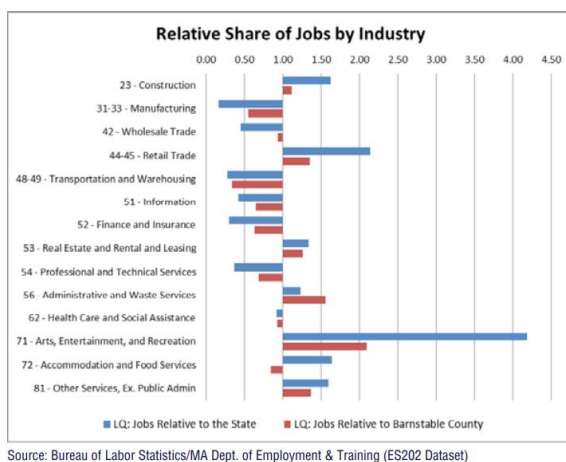
2-1 shows the range of annual unemployment for both Mashpee and the state. In calendar years 2020 and 2021, the employment rates of both the town and state fluctuated more dramatically than usual.

Table 2-1 Range of Annual Unemployment Rates for Massachusetts vs. Mashpee

Year	Mashpee	Massachusetts
2017	3.4	1.2
2018	3.7	1.7
2019	3.6	1.5
2020	16.4	13.3
2021	5.5	4.0

Source: Labor Market Information

Industries



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 Arts, Entertainment, and Recreation industry is notable for its relatively high share of jobs.

Income and Wages

The 1998 Comprehensive Plan noted that Mashpee residents had lower income levels compared to residents in the rest of Cape Cod. This trend appears to have changed. Mashpee's 2021 household income was \$85,815, compared to \$82,092 in Barnstable County (and comparable to Massachusetts overall at \$85,273) (ACS/ESRI, 2021). However, while median household incomes 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 (Cape Cod Commission Economic Development Resource Guide, 2017). In May of 2020, The US Bureau of Labor Statistics listed the average annual wage for Massachusetts 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. Data is not yet available for post-COVID wages.

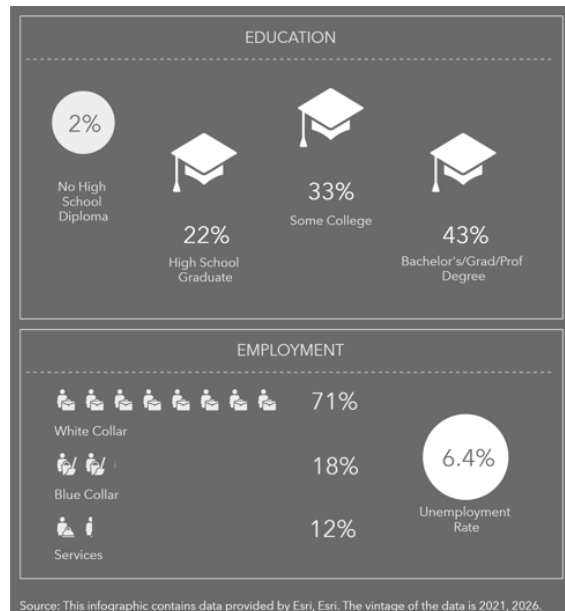
The Housing Chapter contains more detail on issues of affordability, but it is important to note that Massachusetts is one of the most expensive real estate markets in the nation, and the median home value on Cape Cod (\$383,200) is 4% higher than the rest of the state (ACS, 2016). The affordability 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.

2019 ACS data notes the median commute for a Mashpee resident at 25.2 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.

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 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.



2.1.3 Land Use and Zoning

Mashpee's tax base reflects the general land use configuration of the town. 91% 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 town. 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:

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 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-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-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 Natural Resources and *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 *Economic Development Programs and Organizations*

Mashpee has local organizations that are dedicated to the town'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.

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.

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

i. Threats

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

i. Current Measures/Initiatives

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

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 that are in place to protect the natural environment and to reduce waste in Mashpee.

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 <u>LIST OF ACTIONS</u> 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 <u>CONSERVATION COMMISSION</u> 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. <u>NEED MORE INFORMATION ON THIS</u>
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-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>

	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

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**

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.

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, VE102: 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.).

3.3.5 Threats

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

3.3.6 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

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

REFERENCES

- Cape Cod Commission. (2017). *Implementation Report: Watershed Report*. Mashpee: Cape Cod Commission.
- Cape Cod Commission. (2017). *Mashpee Hazard Mitigation Plan Draft*. Town of Mashpee.
- Cape Cod Green Infrastructure Guide. (2015, February 27). *Bioretention*. Retrieved from [capecodgreenguide.wordpress.com: https://capecodgreenguide.wordpress.com/2015/02/27/bio-retention/](https://capecodgreenguide.wordpress.com/2015/02/27/bio-retention/)
- Cape Cod Light Compact. (n.d.). *Energy Efficiency for Municipalities*. Retrieved from [www.capelightcompact.org: https://www.capelightcompact.org/municipal/](https://www.capelightcompact.org/municipal/)
- City of Boston. (n.d.). *Community Choice Electricity*. Retrieved from <https://www.cityofbostoncce.com/>
- Commonwealth of Massachusetts. (n.d.). *Bill S.1937*. Retrieved from [malegislature.gov: https://malegislature.gov/Bills/191/S1937](https://malegislature.gov/Bills/191/S1937)
- Commonwealth of Massachusetts. (n.d.). *Chapter 40A: ZONING*. Retrieved from [malegislature.gov: https://malegislature.gov/Laws/GeneralLaws/PartI/TitleVII/Chapter40A](https://malegislature.gov/Laws/GeneralLaws/PartI/TitleVII/Chapter40A)
- CRMC Bioenergy LLC. (2015, February 13). *Final Construction Project Report for the CRMC Bioenergy Facility*. Retrieved from [studylib.net: https://studylib.net/doc/18462596/final-construction-project-report-for-the-crmc-bioenergy-...](https://studylib.net/doc/18462596/final-construction-project-report-for-the-crmc-bioenergy-...)
- Department of Energy Resources, Massachusetts Executive Office of Environmental Affairs. (2012, March). *Model As-of-Right Zoning Ordinance or Bylaw*. Retrieved from [www.mass.gov: https://www.mass.gov/doc/wind-model-bylaw-mar-2012pdf/download](https://www.mass.gov/doc/wind-model-bylaw-mar-2012pdf/download)
- Energy Efficiency Measures for Municipalities. (n.d.). *MassEnergyInsight*. Retrieved from [www.mass.gov: https://www.mass.gov/service-details/massenergyinsight](https://www.mass.gov/service-details/massenergyinsight)
- Energy Efficiency Measures for Municipalities. (n.d.). *Municipal Best Practices*. Retrieved from [www.mass.gov: https://www.mass.gov/service-details/municipal-best-practices](https://www.mass.gov/service-details/municipal-best-practices)
- Green Communities Division. (n.d.). *Efficient Vehicles*. Retrieved from [www.mass.gov: https://www.mass.gov/service-details/efficient-vehicles](https://www.mass.gov/service-details/efficient-vehicles)
- Massachusetts Department of Energy Resources. (n.d.). *Stretch Code Adoption, by Community*. Retrieved from [www.mass.gov: https://www.mass.gov/doc/stretch-code-adoption-by-community-map/download](https://www.mass.gov/doc/stretch-code-adoption-by-community-map/download)
- Massachusetts Department of Environmental Protection, EEA Office of Grants and Technical Assistance. (n.d.). *MassDEP Waste & Recycling Grants & Assistance*. Retrieved from [www.mass.gov: https://www.mass.gov/service-details/massdep-waste-recycling-grants-assistance](https://www.mass.gov/service-details/massdep-waste-recycling-grants-assistance)

- Massachusetts Office of Coastal Zone Management. (n.d.). *Massachusetts Ocean Management Plan*. Retrieved from [www.mass.gov](https://www.mass.gov/service-details/massachusetts-ocean-management-plan): <https://www.mass.gov/service-details/massachusetts-ocean-management-plan>
- Massachusetts Water Resources Authority. (n.d.). *Recycling Wastewater Sludge into Fertilizer*. Retrieved from www.mwra.com: <https://www.mwra.com/o3sewer/html/sewssc.htm>
- MassGIS. (2022, February). *MassGIS Data: Property Tax Parcels*. Retrieved from [www.mass.gov](https://www.mass.gov/info-details/massgis-data-property-tax-parcels): <https://www.mass.gov/info-details/massgis-data-property-tax-parcels>
- Program Summaries*. (n.d.). Retrieved from [www.mass.gov](https://www.mass.gov/service-details/program-summaries): <https://www.mass.gov/service-details/program-summaries>
- Times, C. C., & Young, C. A. (2021, October 14). *Municipal light plants facing clean energy requirements partner with offshore wind developer*. Retrieved from www.capecodtimes.com: <https://www.capecodtimes.com/story/news/2021/10/14/municipal-light-plants-partner-offshore-wind-developer/8439263002/>
- Town of Mashpee. (2019). *General Bylaws Town of Mashpee*. Retrieved from www.mashpeeema.gov: https://www.mashpeeema.gov/sites/g/files/vyhlf3426f/uploads/2019_town_code_.pdf
- Town of Mashpee. (2020, 19 October). *General Bylaws Town of Mashpee*. Retrieved from www.mashpeeema.gov: https://www.mashpeeema.gov/sites/g/files/vyhlf3426f/uploads/2020_town_code_3.pdf
- Town of Mashpee. (2021, October 18). *Report of the Finance Committee*. Retrieved from www.mashpeeema.gov: https://www.mashpeeema.gov/sites/g/files/vyhlf3426f/news/finance_committee_report_october_18_2021_website.pdf
- Town of Mashpee. (2021, October 18). *Zoning Bylaws of the Town of Mashpee*. Retrieved from www.mashpeeema.gov: https://www.mashpeeema.gov/sites/g/files/vyhlf3426f/uploads/2021_zoning_bylaws.pdf
- Town of Mashpee. (n.d.). *Mashpee Energy Review*. Retrieved from www.mashpeeema.gov: <https://www.mashpeeema.gov/mashpee-energy-review>
- Town of Mashpee. (n.d.). *Mashpee Energy Review*. Retrieved from www.mashpeeema.gov: <https://www.mashpeeema.gov/mashpee-energy-review>
- Town of Mashpee. (n.d.). *October 18 2021 Annual Town Meeting Finance Committee Report and Warrant*. Retrieved from www.mashpeeema.gov: <https://www.mashpeeema.gov/home/news/october-18-2021-annual-town-meeting-finance-committee-report-and-warrant>
- Town of Mashpee. (n.d.). *Stormwater Management Program*. Retrieved from www.mashpeeema.gov: <https://www.mashpeeema.gov/public-works/stormwater-management-program>
- Tufts Water: Systems, Science & Society Program. (n.d.). *Working Cape Cod Map*. Retrieved from www.google.com:

<https://www.google.com/maps/d/viewer?mid=1swu6WGoLrgCAAgUFwuTKuEzwUAQ&ll=41.96975935958491%2C-70.55859804999999&z=10>

U.S. Census Bureau QuickFacts. (n.d.). *QuickFacts*. Retrieved from www.census.gov:

<https://www.census.gov/quickfacts/fact/table/mashpeetownbarnstablecountymassachusetts/HS0310219>

United States Environmental Protection Agency. (n.d.). *Benefits of Green Infrastructure*. Retrieved from www.epa.gov: <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: <https://www.mass.gov/doc/mashpee-report/download>

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 of Mashpee manages large coastal embayments and four of the largest freshwater ponds on the Cape. 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 town'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 town. 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. As an 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's natural resources, a thorough inventory of the town'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
- Soils and Vegetation
- Wetlands
- Wildlife Habitat

- Surface Water
- Groundwater

In addition, this chapter 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 which include water views and conservation areas such as the Mashpee River, the Popponesset Spit, and Nantucket Sound (Mashpee Environmental Coalition, n.d.). Other areas of interest include:

- Jehu Pond Park
- Lopez Conservation Area
- Lowell Holly Reservation
- Mashpee River Woodlands
- 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.

4.2.2 *Shoreline*

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, remains in good quality (The Trustees of Reservations). Further information on water quality is detailed under the Surface Water section of this chapter.

4.2.3 *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).

4.2.4 *Surficial Geology*

The landscape of Barnstable County consists of glacial landforms from the last ice age. The moving ice scraped bedrock from southern New England 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 from the ice gradually melting, 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 plain (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).

4.2.5 *Soils and Vegetation*

The town 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 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.). 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.).

4.2.6 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.

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
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.

4.2.7 Wildlife Habitat

The open waters, wetlands, rivers, and forests in the town provide habitat for a variety of waterfowl and wildlife, while also 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 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 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 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 (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 4-2 below.

Common Name	Taxonomic Group	MESA Status	Most Recent Observation
American bittern	Bird	Endangered	2006
American brook lamprey	Fish	Threatened	2014
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

Table 4-2 MESA-listed Species Observations

Wright's rosette-grass	Vascular Plant	Special Concern	1926
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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 phytoplankton are adding to oxygen depletion and loss of fish, shellfish, and bottom-dwelling animals and organisms (University of Massachusetts Dartmouth, 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).

4.2.8 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.

Table 4-3 Receiving Waters and Impairments	
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.
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).

4.2.9 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 (University of Massachusetts Dartmouth, 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 (Town of Mashpee, 2018).

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.

4.2.10 Threats

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.

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.

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).

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 (Town of Mashpee, 2018).

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 4-5 below.

Table 4-5 MCP/Chapter 21E Tier Classification		
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). 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.

4.2.11 Current Measures

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

4.3 Community Engagement

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

4.4 Goals and Policies

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

REFERENCES

- Avibase - The World Bird Database. (n.d.). *Avibase - Bird Checklists of the World*. Retrieved from avibase.bsc-eoc.org: <https://avibase.bsc-eoc.org/checklist.jsp?region=USmabao2>
- Cape Cod Commission. (2017). *Implementation Report: Watershed Report*. Mashpee: Cape Cod Commission.
- Cape Cod Commission. (2014, April 23). *DEP Public Water Supplies*. Retrieved from gis-cccommission.opendata.arcgis.com: <https://gis-cccommission.opendata.arcgis.com/datasets/dep-public-water-supplies/explore?location=41.604431%2C-70.536597%2C13.15>

- Cape Cod Commission. (2017). *Mashpee Hazard Mitigation Plan Draft*. Town of Mashpee.
- Cape Cod Commission. (2018, December). *Cape Cod Regional Policy Plan*. Retrieved from [www.capecodcommission.org: https://www.capecodcommission.org/resource-library/file?url=/dept/commission/team/Website_Resources/RPP/2018_Cape_Cod_Regional_Policy_Plan_for_web.pdf](https://www.capecodcommission.org/resource-library/file?url=/dept/commission/team/Website_Resources/RPP/2018_Cape_Cod_Regional_Policy_Plan_for_web.pdf)
- Division of Fisheries & Wildlife. (n.d.). *Quashnet Catch and Release Area: Mashpee*. Retrieved from [www.mass.gov: https://www.mass.gov/doc/quashnet-river-catch-and-release-area/download](https://www.mass.gov/doc/quashnet-river-catch-and-release-area/download)
- Drysdale, S. (2022, February 2). *Mashpee Sewer Commission Considers Plans for Wastewater Treatment Plant*. Retrieved from [www.capenews.net: https://www.capenews.net/https://www.capenews.net/mashpee/news/mashpee-sewer-commission-considers-plans-for-wastewater-treatment-plant/article_509ac50a-c348-5486-8fdc-7224cba8c3c3.html](https://www.capenews.net/https://www.capenews.net/mashpee/news/mashpee-sewer-commission-considers-plans-for-wastewater-treatment-plant/article_509ac50a-c348-5486-8fdc-7224cba8c3c3.html)
- Federal Emergency Management Agency. (n.d.). *Special Flood Hazard Area (SFHA)*. Retrieved from [www.fema.gov: https://www.fema.gov/glossary/special-flood-hazard-area-sfha](https://www.fema.gov/glossary/special-flood-hazard-area-sfha)
- Friends of Mashpee National Wildlife Refuge. (n.d.). *Mashpee Refuge Projects*. Retrieved from [www.friendsofmashpeenationalwildliferefuge.org: https://www.friendsofmashpeenationalwildliferefuge.org/home/the-refuge/refuge-projects/](https://www.friendsofmashpeenationalwildliferefuge.org/https://www.friendsofmashpeenationalwildliferefuge.org/home/the-refuge/refuge-projects/)
- General Geology of Barnstable County, Massachusetts*. (n.d.). Retrieved from [nesoil.com: http://nesoil.com/barnstable/barngeology.htm](http://nesoil.com/barnstable/barngeology.htm)
- Houghton, S. (2016, April 21). *Invasive Fish Spotted In Johns Pond*. Retrieved from [www.capenews.net: https://www.capenews.net/https://www.capenews.net/mashpee/news/invasive-fish-spotted-in-johns-pond/article_8d6b3a3c-75a2-5ee9-9ea9-09a9a23771a1.html](https://www.capenews.net/https://www.capenews.net/mashpee/news/invasive-fish-spotted-in-johns-pond/article_8d6b3a3c-75a2-5ee9-9ea9-09a9a23771a1.html)
- Houghton, S. (2018, January 6). *Prescribed Burning in Mashpee, MA, To Improve New England Cottontail Habitat*. Retrieved from [newenglandcottontail.org: https://newenglandcottontail.org/news/prescribed-burning-mashpee-ma-improve-new-england-cottontail-habitat](https://newenglandcottontail.org/news/prescribed-burning-mashpee-ma-improve-new-england-cottontail-habitat)
- Jung, A. (2021, October 8th). The worst water quality on Cape Cod': Mashpee adds ponds, lakes to clean-water push. *Cape Cod Times*. Retrieved from [www.capecodtimes.com: https://www.capecodtimes.com/story/news/2021/10/08/mashpee-add-ponds-and-lakes-escalated-clean-water-push-estuaries-nitrogen-cyanobacteria-pollution/6018387001/](https://www.capecodtimes.com/story/news/2021/10/08/mashpee-add-ponds-and-lakes-escalated-clean-water-push-estuaries-nitrogen-cyanobacteria-pollution/6018387001/)
- Mashpee Environmental Coalition. (n.d.). *About Mashpee*. Retrieved from [www.mashpeemec.us: https://www.mashpeemec.us/about-mashpee/](https://www.mashpeemec.us/https://www.mashpeemec.us/about-mashpee/)
- Mashpee Environmental Coalition. (n.d.). *Vistas*. Retrieved from [www.mashpeemec.us: https://www.mashpeemec.us/vistas/](https://www.mashpeemec.us/https://www.mashpeemec.us/vistas/)
- Massachusetts Division of Fisheries & Wildlife. (2012). *BioMap2*. Retrieved from [maps.massgis.state.ma.us: http://maps.massgis.state.ma.us/dfg/biomap/pdf/town_core/Mashpee.pdf](http://maps.massgis.state.ma.us/dfg/biomap/pdf/town_core/Mashpee.pdf)

- MassDEP. (2014). *MassDEP Online Map Viewer*. Retrieved from <http://maps.massgis.state.ma.us/>:
<http://maps.massgis.state.ma.us/images/dep/omv/il2014viewer.htm>
- MassGIS. (2009, April). *MassGIS Data: Areas of Critical Environmental Concern*. Retrieved from www.mass.gov: <https://www.mass.gov/info-details/massgis-data-areas-of-critical-environmental-concern>
- MassGIS. (2017, July). *MassGIS Data: FEMA National Flood Hazard Layer*. Retrieved from www.mass.gov: <https://www.mass.gov/info-details/massgis-data-fema-national-flood-hazard-layer>
- MassGIS. (2017, December). *MassGIS Data: MassDEP Wetlands (2005)*. Retrieved from www.mass.gov: <https://www.mass.gov/info-details/massgis-data-massdep-wetlands-2005>
- MassGIS. (2021, December). *MassGIS Data: MassDEP Tier Classified Oil and/or Hazardous Material Sites (MGL c. 21E)*. Retrieved from www.mass.gov: <https://www.mass.gov/info-details/massgis-data-massdep-tier-classified-oil-andor-hazardous-material-sites-mgl-c-21e>
- MassGIS. (2021, December). *MassGIS Data: MassDEP Tier Classified Oil and/or Hazardous Material Sites (MGL c. 21E)*. Retrieved from www.mass.gov: <https://www.mass.gov/info-details/massgis-data-massdep-tier-classified-oil-andor-hazardous-material-sites-mgl-c-21e>
- MassGIS. (2021, December). *MassGIS Data: MassDEP Wellhead Protection Areas (Zone II, Zone I, IWPA)*. Retrieved from www.mass.gov: <https://www.mass.gov/info-details/massgis-data-massdep-wellhead-protection-areas-zone-ii-zone-i-iwpa>
- MassGIS. (2021, August). *MassGIS Data: NHESP Estimated Habitats of Rare Wildlife*. Retrieved from www.mass.gov: <https://www.mass.gov/info-details/massgis-data-nhesp-estimated-habitats-of-rare-wildlife>
- MassGIS. (2021, August). *MassGIS Data: NHESP Priority Habitats of Rare Species*. Retrieved from www.mass.gov: <https://www.mass.gov/info-details/massgis-data-nhesp-priority-habitats-of-rare-species>
- MassGIS. (2021, December). *MassGIS Data: Public Water Supplies*. Retrieved from www.mass.gov: <https://www.mass.gov/info-details/massgis-data-public-water-supplies>
- MassWildlife's Natural Heritage & Endangered Species Program. (n.d.). *BioMap2: Conserving Biodiversity in a Changing World*. Retrieved from www.mass.gov: www.mass.gov/service-details/biomap2-conserving-biodiversity-in-a-changing-world
- MassWildlife's Natural Heritage & Endangered Species Program. (n.d.). *MA Endangered Species Act (MESA) Overview*. Retrieved from www.mass.gov: <https://www.mass.gov/service-details/ma-endangered-species-act-mesa-overview>
- MassWildlife's Natural Heritage & Endangered Species Program. (n.d.). *Rare species viewer*. Retrieved from www.mass.gov: <https://www.mass.gov/info-details/rare-species-viewer>

- National Geographic Resource Library. (2021, August 25). *Surface Water*. Retrieved from [www.nationalgeographic.org: https://www.nationalgeographic.org/encyclopedia/surface-water/](https://www.nationalgeographic.org/encyclopedia/surface-water/)
- Spencer, R. (2021, June 18). *Invasive Milfoil Discovered In Johns Pond In Mashpee*. Retrieved from [www.capenews.net: https://www.capenews.net/mashpee/news/invasive-milfoil-discovered-in-johns-pond-in-mashpee/article_80b3d13e-ocdd-560e-887a-f68c41ae05cd.html](https://www.capenews.net/mashpee/news/invasive-milfoil-discovered-in-johns-pond-in-mashpee/article_80b3d13e-ocdd-560e-887a-f68c41ae05cd.html)
- The Trustees of Reservations. (n.d.). *Little affected by development, this tidal stream remains one of Cape Cod's most pristine environments*. Retrieved from [thetrustees.org: https://thetrustees.org/place/mashpee-river-reservation/](https://thetrustees.org/place/mashpee-river-reservation/)
- Tighe&Bond. (2019, June). *Mashpee's Stormwater Management Program*. Retrieved from [www.mashpeema.gov: https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/2019_mashpee_ma.pdf](https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/2019_mashpee_ma.pdf)
- Town of Mashpee. (2008, October). *Open Space Conservation and Recreation Plan*. Retrieved from [www.mashpeema.gov: https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/ch4a_1_2_3_-_geology.pdf](https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/ch4a_1_2_3_-_geology.pdf)
- Town of Mashpee. (2018). *Mashpee Water Quality Monitoring Program Summary of Nutrient Related Health of Mashpee's Estuaries*. Retrieved from [www.mashpeema.gov: https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/mashpee_wq_summer_2018_presentation_7-22-19_final_to_town.pdf](https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/mashpee_wq_summer_2018_presentation_7-22-19_final_to_town.pdf)
- Town of Mashpee. (2019, January 24). *Comprehensive Watershed Nitrogen Management Plan*. Retrieved from [www.mashpeema.gov: https://www.mashpeema.gov/clean-water/news/comprehensive-watershed-nitrogen-management-plan](https://www.mashpeema.gov/clean-water/news/comprehensive-watershed-nitrogen-management-plan)
- Town of Mashpee. (2019). *General Bylaws Town of Mashpee*. Retrieved from [www.mashpeema.gov: https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/2019_town_code_.pdf](https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/2019_town_code_.pdf)
- Town of Mashpee. (2021, April 22). *What's at Stake? - Mashpee's Waters and Economy*. Retrieved from [www.mashpeema.gov: https://www.mashpeema.gov/home/news/whats-stake-mashpees-waters-and-economy](https://www.mashpeema.gov/home/news/whats-stake-mashpees-waters-and-economy)
- Town of Mashpee. (2021, October 18). *Zoning Bylaws of the Town of Mashpee*. Retrieved from [www.mashpeema.gov: https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/2021_zoning_bylaws.pdf](https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/2021_zoning_bylaws.pdf)
- Town of Mashpee. (n.d.). *Besse Bog*. Retrieved from [www.mashpeema.gov: https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/trail_guide_besse_bog.pdf](https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/trail_guide_besse_bog.pdf)
- Town of Mashpee. (n.d.). *Board of Health*. Retrieved from [www.mashpeema.gov: https://www.mashpeema.gov/board-health](https://www.mashpeema.gov/board-health)
- Town of Mashpee. (n.d.). *Chapter 172 - Wetlands*. Retrieved from [www.mashpeema.gov: https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/chapter_172_wetlands_bylaws.2017.pdf](https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/chapter_172_wetlands_bylaws.2017.pdf)

- Town of Mashpee. (n.d.). *Conservation*. Retrieved from www.mashpeeema.gov:
<https://www.mashpeeema.gov/conservation>
- Town of Mashpee. (n.d.). *Eco-Smart Information*. Retrieved from www.mashpeeema.gov:
<https://www.mashpeeema.gov/conservation-resources/pages/eco-smart-information>
- Town of Mashpee. (n.d.). *Local Fresh and Salt Water Information*. Retrieved from
www.mashpeeema.gov: <https://www.mashpeeema.gov/harbormaster/pages/local-fresh-and-salt-water-information>
- Town of Mashpee. (n.d.). *Mashpee Invasive Species Guide*. Retrieved from www.mashpeeema.gov:
https://www.mashpeeema.gov/sites/g/files/vyhlf3426f/uploads/mashpee_invasive_species_guide.pdf
- Town of Mashpee. (n.d.). *Mashpee River Woodlands: Fitch Property*. Retrieved from
www.mashpeeema.gov:
https://www.mashpeeema.gov/sites/g/files/vyhlf3426f/uploads/trail_guide_mrw-fitch.pdf
- Town of Mashpee. (n.d.). *Pine Barrens*. Retrieved from www.mashpeeema.gov:
https://www.mashpeeema.gov/sites/g/files/vyhlf3426f/uploads/trail_guide_pine_barrens.pdf
- Town of Mashpee. (n.d.). *Sewer Commission*. Retrieved from www.mashpeeema.gov:
<https://www.mashpeeema.gov/sewer-commission>
- Town of Mashpee. (n.d.). *Stormwater Management Program*. Retrieved from www.mashpeeema.gov:
<https://www.mashpeeema.gov/public-works/stormwater-management-program>
- Town of Mashpee. (n.d.). *Water Matters to Mashpee*. Retrieved from www.mashpeeema.gov:
https://www.mashpeeema.gov/sites/g/files/vyhlf3426f/uploads/mashpee_water-matterseditedlinks.pdf
- U.S. Fish & Wildlife Service. (n.d.). *Wildlife & Habitat*. Retrieved from www.fws.gov:
https://www.fws.gov/refuge/Mashpee/wildlife_and_habitat/index.html
- U.S. Fish and Wildlife Service. (n.d.). *Wildlife & Habitat*. Retrieved from www.fws.gov:
https://www.fws.gov/refuge/Mashpee/wildlife_and_habitat/index.html
- UMass Center for Agriculture, Food, and the Environment. (n.d.). *BioMap2*. Retrieved from
ag.umass.edu: <https://ag.umass.edu/resources/land-conservation-tools/biomap2>
- United States Environmental Protection Agency. (n.d.). *Massachusetts Small MS4 General Permit*.
Retrieved from www.epa.gov: <https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit>
- United States Environmental Protection Agency. (n.d.). *Stormwater Discharges from Municipal Sources*.
Retrieved from www.epa.gov: <https://www.epa.gov/npdes/stormwater-discharges-municipal-sources>
- University of Massachusetts Dartmouth. (2021, June 31). *Water Quality Monitoring Program for the*.
Retrieved from www.mashpeeema.gov:

https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/news/mashpee_2019_2020_water_quality_tech_memo_draft_final_7-20-21.pdf

Waquoit Bay National Estuarine Research Reserve. (n.d.). *National Estuarine Research Reserve*. Retrieved from waquoitbayreserve.org: <http://waquoitbayreserve.org/>

Woods Hole Group. (2020, March). *Community Resilience Building Workshop Summary of Findings*. Retrieved from [www.mass.gov](https://www.mass.gov/doc/mashpee-report/download): <https://www.mass.gov/doc/mashpee-report/download>

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.

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).

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, 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 the Tribe can exercise its full tribal sovereignty (Mashpee Wampanoag Tribe, n.d.), including the right to hunt, fish, and gather hold critical importance to the survival of the traditions, lifeways, and culture of 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 archaeological features of the town is discussed in the Heritage and Preservation Chapter. Land use changes that have occurred between 1951-2005 are summarized in Table 5-1.

Table 5-1 Land Use Over Time

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.

Table 5-2 Existing Land Use 2005

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

Table 5-2 Existing Land Use 2005

Land Use	Mass GIS Land Use Description (2005)	Mashpee Land Area (Acres)
	Total Agriculture	112.48
Recreation & Public Space	Urban Public/ Institutional: Lands comprising schools, churches, colleges, hospitals, museums, prisons, town halls or courthouses, police and fire stations, including parking lots, dormitories, and university housing. Also, may include public open green spaces like town commons.	117.19
	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

Table 5-2 Existing Land Use 2005

Land Use	Mass GIS Land Use Description (2005)	Mashpee Land Area (Acres)
	Brushland/Successional: Predominantly (> 25%) shrub cover, and some immature trees not large or dense enough to be classified as forest.	21.47
	Mining: 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.	26.96
	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

Table 5-3 Existing Land Use 2016

2	Open Land	5,030.94
8	Recreation	176.69
12	Residential – multi-family	947.99
13	Residential - other	44.39
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

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.

5.3.2 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 and determining which uses are allowed in each district. The 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.

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 of Mashpee 2020

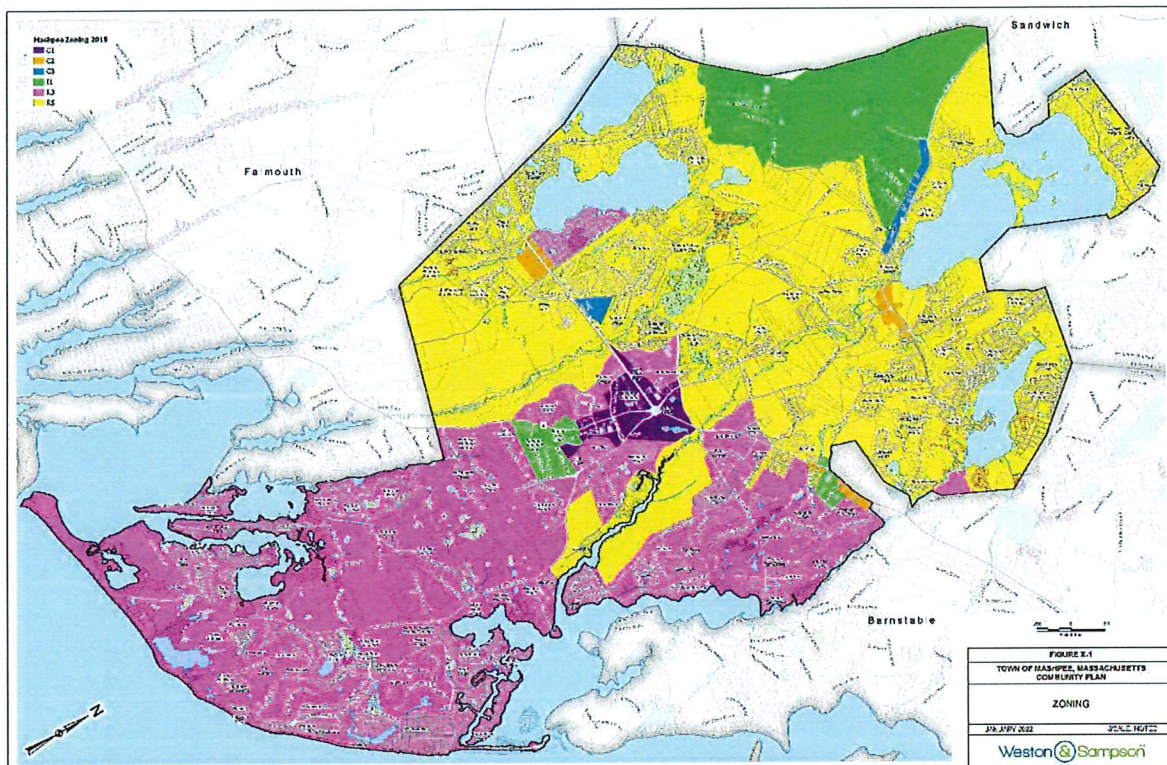


Figure 2 Zoning

Source: Town GIS

Overlay Districts

In addition to the underlying zoning districts described above, the Town 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 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 line and the Barnstable Town line,

except that portion within the boundaries of the Otis A.N.G.B. Accident Prevention Zone; All other lands in the Town 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:

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, 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 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.

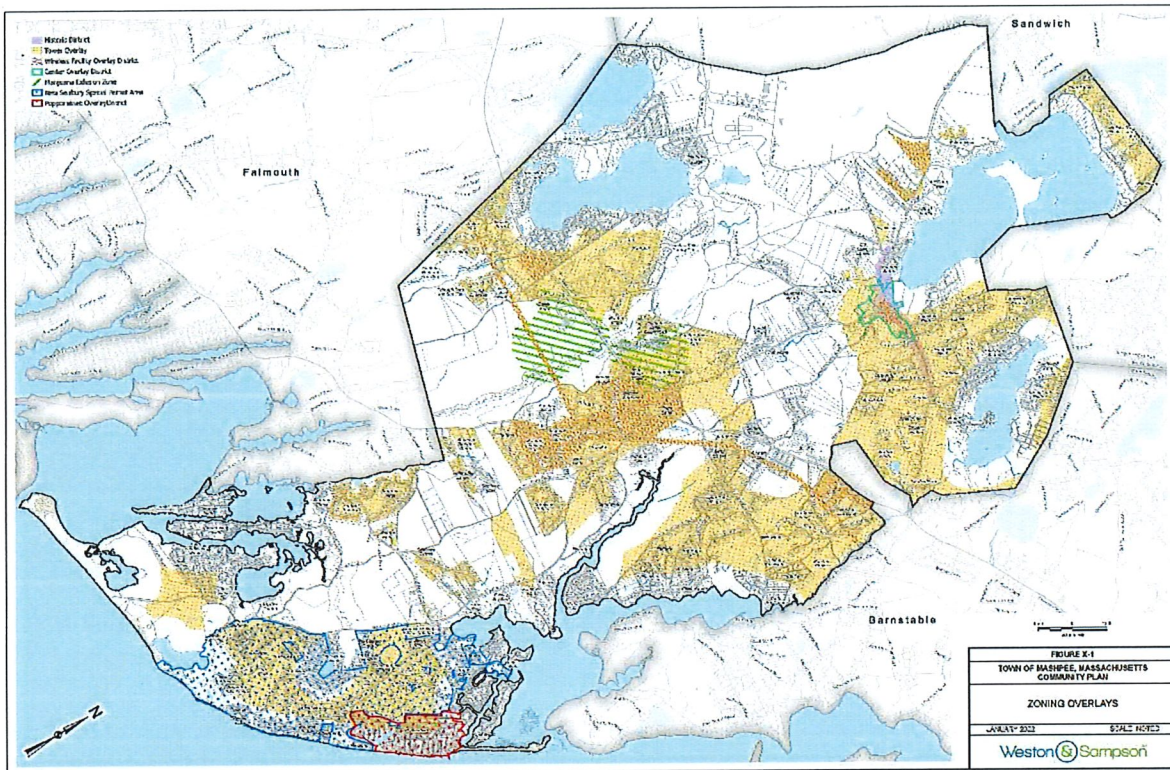


Figure 3 Zoning Overlays

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'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 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.

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.

The Open Space Incentive Plan

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.

Table 5-5 Land Area by Zoning Category				
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%		
Groundwater Protection District	5571.64	34.0%	Commonwealth of Massachusetts, Town of Mashpee	Massachusetts General Laws, Chapter 41A Zoning Bylaw, §174-79
Popponesset Overlay District	164.68	1.0%	Town of Mashpee	Zoning Bylaw, §174-4
Wireless Facility Overlay District	608.50	3.7%	Town of Mashpee	Zoning Bylaw, §174-4
Mashpee Center Overlay District	62.65	0.4%	Town of Mashpee	Zoning Bylaw, §174-4

Table 5-5 Land Area by Zoning Category				
Zoning Category	Acres	Percentage of Total Land Area	Regulatory Authority	Provisions
Light Industrial Overlay District	1347.84	8.2%	Town of Mashpee	Zoning Bylaw, §174-4
Otis A.N.G. B. Accident Prevention Zone			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 of Mashpee, Open Space Incentive Plan (1998)	Massachusetts General Laws, Chapter 131, §40 Zoning Bylaw, §174-4
Primary and Secondary Conservation Areas			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 of Mashpee	

Source: Mashpee GIS

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

5.3.3 Development Trends

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

5.3.4 Threats

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

5.3.5 *Current Measures*

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

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.

Goals & Policies

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

REFERENCES

Mashpee Environmental Coalition. (n.d.). *Vistas*. Retrieved from www.mashpeemec.us:

<https://www.mashpeemec.us/vistas/>

Mashpee Historic District Commission. (2008, June 18). *Mashpee Historic District Manual*. Retrieved

from www.mashpeema.gov:

https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/mashpee_historic_district_manual_approved_6-18-08.pdf

Mashpee Wampanoag Tribe. (n.d.). *Mashpee Wampanoag Tribe*. Retrieved from

mashpeewampanoagtribe-nsn.gov: <https://mashpeewampanoagtribe-nsn.gov/>

Mashpee Wampanoag Tribe. (n.d.). *Mashpee Wampanoag Tribe Aboriginal Rights*. Retrieved from

[Mashpee Wampanoag Tribe](http://mashpeewampanoagtribe-nsn.gov): <https://mashpeewampanoagtribe-nsn.gov/aboriginal-rights>

Massachusetts Historical Commission. (1984). *MHC Reconnaissance Survey Town Report*. Retrieved

from www.sec.state.ma.us:

<https://www.sec.state.ma.us/mhc/mhcpdf/townreports/Cape/mas.pdf>

MassGIS. (2009, June). *MassGIS Data: Land Use (2005)*. Retrieved from www.mass.gov:

<https://www.mass.gov/info-details/massgis-data-land-use-2005>

Mitchell, R. P., & Ritchie, R. W. (2021). *The Guidebook to Massachusetts Land Use 2021*. Retrieved from

www.apa-ma.org: <https://www.apa-ma.org/password-protected-chapter-one/>

Peninsula Council, Inc. (n.d.). *History*. Retrieved from peninsulacouncil.com:

<https://peninsulacouncil.com/the-peninsula-council/history/>

The Popponesset Beach Association. (n.d.). *History of the Popponesset Beach Area*. Retrieved from

www.popponessetbeachassociation.com:

<https://www.popponessetbeachassociation.com/history-of-popponesset.html>

Town of Mashpee. (2015). *Mashpee Town Map*. Retrieved from mashpeegis.maps.arcgis.com:

<https://mashpeegis.maps.arcgis.com/apps/webappviewer/index.html?id=4ff3b3d53b824f4385d72a434d2181fa>

Town of Mashpee. (2020, 19 October). *General Bylaws Town of Mashpee*. Retrieved from

www.mashpeema.gov:

https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/2020_town_code_3.pdf

Town of Mashpee. (2021, October 18). *Zoning Bylaws of the Town of Mashpee*. Retrieved from

www.mashpeema.gov:

https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/2021_zoning_bylaws.pdf

U.S. Fish & Wildlife Service. (n.d.). *Wildlife & Habitat*. Retrieved from www.fws.gov:

https://www.fws.gov/refuge/Mashpee/wildlife_and_habitat/index.html

United States v. Winans, 198 U.S. 371, 180 (U.S. Supreme Court April 3-4, 1905). Retrieved from

<https://supreme.justia.com/cases/federal/us/198/371/>

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

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 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. 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.¹ 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.
- **Local Historic Districts (LHD)** provide the most oversight for historic resources. In 2007 Mashpee residents approved incorporating the creation of a Historic District into Article 21 which also amended Chapter 3 of the 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 of Mashpee, the maintenance and improvement of their settings and the

¹ <https://www.nps.gov/subjects/nationalregister/index.htm>

encouragement of new building designs compatible with the existing architecture.”² 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.

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

6.3 Existing Conditions

6.3.1 Historic Resources Inventory

The Massachusetts Cultural Resource Information System (MACRIS) catalogs sites and designations, which are located in Figure 6-1.³

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

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)

PR (Preservation Restriction)

Archaeological Resources

A communitywide archaeological reconnaissance survey was completed in Mashpee in [YEAR – 2011?], one of only cities and towns to do so with Community Preservation Act funding (Christopher C. Skelly,

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

³ <https://mhc-macris.net/#/>

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).⁴ 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, such as the Historic District, and scattered throughout other parts of the 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

Burial Grounds

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

Table 6-3. Burial Grounds		
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	

⁴ MA SHPO State Register 2020, p. 201-202.

Table 6-3. Burial Grounds

Name	Street	Designations*
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.

6.3.2 Scenic Landscapes

Mashpee's location and geology have combined to define its landscape. The town is dominated by water features in the form of ocean, bays, streams, ponds, and wetlands. Although the 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.

Saconnesset 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 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 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's cultural heritage and should remain protected for the public.

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

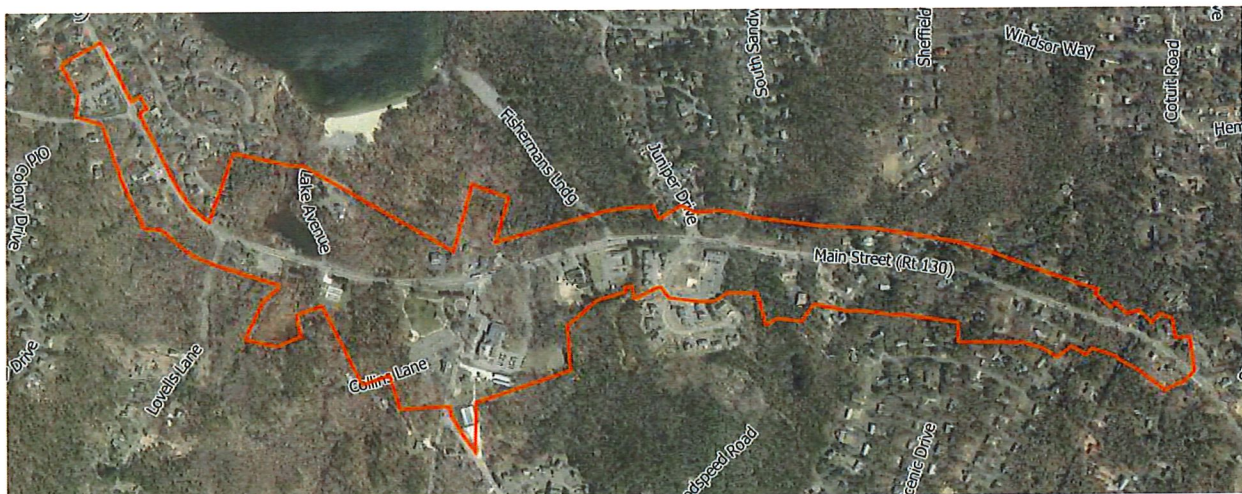


Figure 6-2. Mashpee Historic District

Source: Town of Mashpee

The District is the traditional center of the town, 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 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.

6.4 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.⁵ They are one of two federally recognized tribes of Wampanoag people in Massachusetts. The Tribe was recognized in 2007, and as of 2019, consisted of more than 2,900 enrolled members.⁶

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

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

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 Element 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 Element 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.

This table will be updated further after discussions with the Recreation Department and Recreation Commission.

Table 7-1 Recreational Facilities Inventory

Facility	Outdoor Amenities	Indoor Amenities	Address
Attaquin Park - Mashpee/Wakeby Lake	Attaquin Park Playground, Beach		Lake Avenue

Table 7-1 Recreational Facilities Inventory

Facility	Outdoor Amenities	Indoor Amenities	Address
Heritage Park	Softball/Baseball Fields, Playground, Soccer/Multi-Purpose Field, Basketball Court, Splash Pad, Tiger Long Playground		520 Main Street
John's Pond	Beach, Volleyball Court, 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	
South Cape State Beach	Beach		500 Great Oak Road

Table 7-1 Recreational Facilities Inventory

Facility	Outdoor Amenities	Indoor Amenities	Address
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 [LIST OF EQUIPMENT](#)

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

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. Kids Klub is open year-round, and serves children ages 15 months up to age 5 years. The center employs 7 fulltime educators and 1 part-time staff member. Kids Klub is licensed by the Commonwealth of Massachusetts Department of Early Education and Care. The program accepts children and families who receive government-based financial assistance.

Extended Day Programs

Before and After School Care

Mashpee Recreation offers Before and After School Care programs for children enrolled in Mashpee Public Schools, grades K-6. The Extended Day Program operates Monday – Friday from 7:30 am -5:30 PM throughout the school year, including school vacation weeks. The program is licensed by the Commonwealth of Massachusetts Department of Early Education and Care and employs 12-15 part-time educators

Summer Camp

Camp Sessions

Mashpee Recreation offers an extensive Summer Day Camp program for 8 weeks each summer. The camp program is based at either of the two local elementary schools, alternating years. Registration for summer camp is open to both residents and non-residents for children ages 4 – 14 years old. Campers are

grouped by age, and activities are designed to incorporate field trips, swimming, sports, arts and crafts, and games that are age-appropriate, maintaining a 1:10 staff to camper ratio. Summer Camp is permitted through the Mashpee Board of Health and accepts children and families who receive government-based financial assistance. Financial assistance is also available by application to the Mashpee Recreation Department. Mashpee Recreation Summer Camp employs approximately 24 part-time, seasonal employees including Camp Supervisors, Head Camp Counselors, Camp Counselors, an Aquatics Coordinator, and Camp Lifeguards.

Special Events

Sweetheart Dance

Held annually in February, the dance is open to children ages 6 – 12 years old and their adult escort.

Annual Egg Hunt

Held at the Mashpee Community Park, the egg-hunt typically attracts 250 children ages 2 – 10 years old. The children gather 4,000 candy-filled plastic eggs.

Memorial Day Ceremony

The Memorial Day Ceremony is held annually at the Mashpee Community Park and Veteran's Garden.

Youth Fishing Derby

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

Superswim

Now in its 33rd year, this event is the only open-water swim of its kind on Cape Cod. Participants can choose to swim a ½ mile, 1 mile or 3 mile distance. This event is open to swimmers ages 8 to adult.

Community Picnic and Fireworks Display

This annual event is held at the Mashpee Middle – High School and draws over 6,000 attendees. The family – friendly, free, event offers food trucks, entertainment, games and activities for every age followed by the fireworks display.

Mashpee Summer Concert Series

The Mashpee Summer Concert Series is held on Tuesday nights at the Mashpee Community Park for eight weeks each summer. These concerts are free to the public and performers are local to Cape Cod.

Rhiannon McCuish 5K Woodland Run

Held annually in memory of Rhiannon McCuish, a Mashpee native that lost her life tragically at age 21. This race averages 100 participants, ages 8 years old to adult, and is the primary fund raiser for Mashpee Recreation Camp and Program scholarships and financial aid.

Oktoberfest

The Oktoberfest features over 100 local and regional crafters along with entertainment, food trucks, games and activities for the whole family, traditional German music and a Bier Garten. This free event draws approximately 2,000 people and is held at the Mashpee Commons Green across from the Mashpee Public Library.

Veteran's Day Ceremony

The Veteran's Day Ceremony is held at the Mashpee Community Park and Veteran's Garden each year on November 11th.

Annual Fill the Van Food and Household Good Drive

The Mashpee Recreation Department organizes and promotes an annual food and household items drive each year with a goal of filling one of the Recreation Department vans. All donations are distributed to local food pantries serving the Mashpee community.

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.

Youth Pickleball Lessons

Open to participants in grades 4 – 6, students learn the basic skills, rules and strategies of Pickleball.

Babysitter's Course

For boys and girls ages 11 and up, this 4-H certified course provides the new or veteran sitter with an up-to-date lecture series on this subject matter. We will refresh veteran sitters and provide the skill training for new sitters. Topics include responsibilities, fire prevention, home safety, first aid, entertainment, nutrition and much more.

Archery

For youth grades 6 – 12, participants learn to load an arrow onto a bow, release an arrow when shooting, learn to adjust your aim, extract an arrow from a target and keeping score.

Clamming

This is a fun filled class teaching students the different types of Shellfish, how they grow and the techniques used for clamming.

Stand Up Paddleboard and Kayaking

For boys and girls ages 8-14. RideAway Kayak offers a very active and beginner-friendly experience for their students. RideAway introduces necessary skills and information to those who have never worked with Kayaks or Stand-Up Paddleboards, but also develops more advanced techniques and skills with those that have some experience with either activity. Outside of the key fundamentals and body mechanics for each sport, we incorporate different competitions, group activities, and information about Cape Cod's wild life and preservation information. RideAway Kayak's goal is to create an active, welcoming and informational environment for students to experience the beauty of nature and the joy of an active lifestyle.

Rockin' Rockets and Aerodynamics

From the earliest flying machines to the first rocket flights, this hands on program for children will allow them to build many different flying devices, see how Newton's Law of Motion helps to explain how things move and how rockets fly, and show them how amazing our Milky Way is.

Youth Sailing

Youth sailing lessons are offered at two levels, beginner and advanced beginner for youth ages 9 - 13 years of age. Our beginner class is designed for sailors with very little or no experience. The focus of the class will be on parts of the boat, boating safety, and basic boat handling. Our advanced beginner class is designed for confident beginner sailors who have participated in a sailing program previously.

Swimming Lessons

Ages 2 years to 14 years. Students learn to enter the water, learn and practice the fundamentals, and improve their swimming efficiency by stroke development classes.

Jr. Firefighters

Children ages 3 years – 5 years, accompanied by an adult, get to tour the fire station, see how a firefighter dresses, where they eat and sleep, see how the fire truck and ambulance work, and squirt a real fire hose.

Jr. Police Academy

For students in grades 3 – 6, this program consists of discussions of daily police duties, safety, checking out a police car, taking a tour of the station and a K-9 demonstration or obstacle course.

Adult Programs

Pickleball

Pickleball is available as open play, a predetermined time where pickleball players show up at the courts/gym to play. All spring, summer, and fall classes are held at the Mashpee Pickleball Courts at 162 Ashumet Road. Winter classes are held indoors at one of the elementary schools.

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 course 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.

Yoga on the Beach

With fresh salty air, the beauty of nature, and the melody of the ocean, classes are taught at a mixed level in which participants are encouraged to stretch, breathe, and relax.

Spartan Strong Fitness Class

A group fitness workout inspired by Spartan Race, this class is open to all fitness levels. Participants will increase strength, endurance and mobility with an innovative combination of resistance training, body weight moves, dynamic stretching and cardio-focused drills.

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.

Boating Safety Class

Family participation is strongly encouraged. All graduates in the 12-15 year-old age group will be issued a safety certificate allowing them to operate a motorboat without adult supervision, as required by state law. The same is true for 16 and 17 year old youth who wish to operate a personal watercraft.

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.

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

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.

Table 7-2 Existing Open Space

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%
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

A Recreation and Open Space map is needed in this section. We will map this information through MassGIS Data: Protected and Recreational OpenSpace.

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
Quashnet Woodlands	Town of Mashpee	Town	Conservation	181.29

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, all of which are located on the Mashpee Wildlife Refuge (ArcGIS).

Table 7-4 Public Trails on Town Property	
Name	Length of Public Trail
Mashpee River Woodlands: Fitch Property	1.2 Miles
Mashpee River Woodlands: John Johansen	0.6 Miles
Mashpee River Woodlands: DesRosier	0.24 Miles
Pickrel Cove	1.8 Miles
Noisy Hole	2.5 Miles
Pine Barrens	3.4 Miles
Santuit Pond Landbank	0.6 Miles
Johns Pond	4 Miles
Jehu Pond	3.9 Miles
Childs River	1.2 Miles
Besse Bog	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.

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 Native

Land Conservancy, Orenda Wildlife Land Trust, The Compact of Cape Cod Conservation Trusts, The Trustees of Reservations, and The 300 Committee Land Trust (MassLand, n.d.), (MassGIS, 2021). 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
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

Table 7-6 Open Space Properties Managed by Land Trusts

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.). 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.

REFERENCES

ArcGIS. (n.d.). *Mashpee Refuge Trails Map*. Retrieved from www.arcgis.com:

<https://www.arcgis.com/apps/mapviewer/index.html?webmap=340d54744f774210833bcf24a26bacb3>

Executive Office of Energy and Environmental Affairs. (n.d.). *How is Land Protected?*. Retrieved from

www.mass.gov: <https://www.mass.gov/service-details/how-is-land-protected>

MassGIS. (2021, December). *MassGIS Data: Protected and Recreational OpenSpace*. Retrieved from

[www.mass.gov: https://www.mass.gov/info-details/massgis-data-protected-and-recreational-openspace](https://www.mass.gov/info-details/massgis-data-protected-and-recreational-openspace)

MassLand. (n.d.). *List of Land Trusts*. Retrieved from [massland.org: https://massland.org/land-trusts/list](https://massland.org/land-trusts/list)

Town of Mashpee. (n.d.). *Besse Bog*. Retrieved from www.mashpeeema.gov:

https://www.mashpeeema.gov/sites/g/files/vyhlif3426/f/uploads/trail_guide_besse_bog.pdf

Town of Mashpee. (n.d.). *Child's River*. Retrieved from www.mashpeeema.gov:

https://www.mashpeeema.gov/sites/g/files/vyhlif3426/f/uploads/trail_guide_childs_river.pdf

Town of Mashpee. (n.d.). *Conservation*. Retrieved from www.mashpeeema.gov:

<https://www.mashpeeema.gov/conservation>

Town of Mashpee. (n.d.). *Jehu Pond*. Retrieved from www.mashpeeema.gov:

https://www.mashpeeema.gov/sites/g/files/vyhlif3426/f/uploads/trail_guide_jehu_pond_o.pdf

Town of Mashpee. (n.d.). *Johns Pond*. Retrieved from www.mashpeeema.gov:

https://www.mashpeeema.gov/sites/g/files/vyhlif3426/f/uploads/trail_guide_-_johns_pond.pdf

Town of Mashpee. (n.d.). *Mashpee Recreation Staff*. Retrieved from www.mashpeeema.gov:

<https://www.mashpeeema.gov/recreation/slideshows/mashpee-recreation-staff>

Town of Mashpee. (n.d.). *Mashpee River Reservation*. Retrieved from www.mashpeeema.gov:

https://www.mashpeeema.gov/sites/g/files/vyhlif3426/f/uploads/mashpee-river-trail-map_ttor.pdf

Town of Mashpee. (n.d.). *Mashpee River Woodlands: DesRosier*. Retrieved from www.mashpeeema.gov:

https://www.mashpeeema.gov/sites/g/files/vyhlif3426/f/uploads/trail_guide_mrw_desrosier.pdf

Town of Mashpee. (n.d.). *Mashpee River Woodlands: Fitch Property*. Retrieved from

www.mashpeeema.gov:

https://www.mashpeeema.gov/sites/g/files/vyhlf3426/f/uploads/trail_guide_mrw-fitch.pdf

Town of Mashpee. (n.d.). *Mashpee River Woodlands: John Johansen*. Retrieved from

www.mashpeeema.gov:

https://www.mashpeeema.gov/sites/g/files/vyhlf3426/f/uploads/trail_guide_mrw-john_johanson.pdf

Town of Mashpee. (n.d.). *Noisy Hole*. Retrieved from www.mashpeeema.gov:

https://www.mashpeeema.gov/sites/g/files/vyhlf3426/f/uploads/trail_guide_-_noisy_hole.pdf

Town of Mashpee. (n.d.). *Pine Barrens*. Retrieved from www.mashpeeema.gov:

https://www.mashpeeema.gov/sites/g/files/vyhlf3426/f/uploads/trail_guide_pine_barrens.pdf

Town of Mashpee. (n.d.). *Programs*. Retrieved from www.mashpeerec.com:

<https://www.mashpeerec.com/info/activities/default.aspx?type=activities>

Town of Mashpee. (n.d.). *Programs*. Retrieved from [/www.mashpeerec.com](http://www.mashpeerec.com):

<https://www.mashpeerec.com/info/activities/default.aspx?type=activities>

Town of Mashpee. (n.d.). *Public Works*. Retrieved from www.mashpeeema.gov:

<https://www.mashpeeema.gov/public-works>

Town of Mashpee. (n.d.). *Santuit Pond Land Bank*. Retrieved from www.mashpeeema.gov:

https://www.mashpeeema.gov/sites/g/files/vyhlf3426/f/uploads/trail_guide_santuit_pond_land_bank.pdf

Town of Mashpee. (n.d.). *Santuit Pond Preserve*. Retrieved from www.mashpeema.gov:

<https://www.mashpeema.gov/sites/g/files/vyhlif3426/f/uploads/santuitpondpreserve07192018.pdf>

Town of Mashpee. (n.d.). *Trail Guides*. Retrieved from www.mashpeema.gov:

<https://www.mashpeema.gov/conservation/trail-maps/pages/trail-guides>

Town of Mass Recreation Department. (2021). *Spring 2021*. Retrieved from www.mashpeerec.com:

https://www.mashpeerec.com/forms/6164_spring_2021.pdf

Waquoit Bay National Estuarine Research Reserve. (n.d.). *Trails*. Retrieved from

waquoitbayreserve.org: <https://waquoitbayreserve.org/visit-the-reserve/trails/>

WHAT'S YOUR OPINION?

Survey of Public Opinion on Mashpee's Growth & Development

It has been 11 years since the Town's Comprehensive Plan was created, adopted by Town Meeting and certified by the Cape Cod Commission. The 1998 Plan relied heavily on the opinions of residents regarding Mashpee's future direction. Again, we would like to give you the opportunity to tell us what you believe are the Town's major issues, how they should be addressed and what the priorities should be for future growth and development of Mashpee.

IF YOU WOULD PREFER, YOU MAY TAKE THIS SURVEY ONLINE AT THE TOWN'S WEB SITE: www.ci.mashpee.ma.us

PART ONE – Respondent Information

As a respondent to this survey, we would like to know a few things about you that will be used to interpret the results. Especially important is the location of your residence.

1. Are you a Town of Mashpee ☐ year-round resident ☐ seasonal resident or ☐ non-resident property owner?
2. If a seasonal resident or non-resident property owner, do you plan to make Mashpee your full-time residence in the next 10 years? ☐ yes ☐ no ☐ unsure ☐ I am a year-round resident
3. What type is your Mashpee residence, if any? ☐ single family home ☐ apartment ☐ condo ☐ mobile home ☐ other.
4. Where is your residence or property located in Mashpee (please write in the name of the subdivision, condominium project, mobile home park, street or neighborhood etc.) _____
5. How long have you lived in the Town of Mashpee?
☐ less than 5 years ☐ 5-10 years ☐ 11-25 years ☐ over 25 years ☐ I am a non-resident property owner
6. Does your household include children under the age of 19? ☐ yes ☐ no
7. What group best describes your current age? ☐ Under 19 ☐ 19-29 ☐ 30-39 ☐ 40-49 ☐ 50-65 ☐ Over 65
8. What is your gender? ☐ female ☐ male
9. What is your current employment status? (check one)
☐ Employed ☐ Self-employed ☐ Unemployed ☐ Homemaker ☐ Retired ☐ Retired-working part time
10. If employed, where is your primary place of employment? (check one)
☐ Mashpee ☐ Barnstable ☐ Falmouth ☐ Sandwich ☐ Elsewhere on Cape Cod ☐ Off Cape
11. How often do you attend Town Meetings? (check one) ☐ Most always ☐ Occasionally ☐ Never.
12. How often do you vote at Town elections? (check one) ☐ Most always ☐ Occasionally ☐ Never

PART TWO – What's Your Opinion?

Growth and Development

Mashpee is still growing, but not at the pace of the 80s and 90s. Today's year-round population is about 15,000 with a peak summer population of 31,500. Current Planning Department "buildout" projections suggest an ultimate year-round population of close to 23,000 with a seasonal population of 36,000 based on remaining land, current zoning and approved projects.

13. In your opinion, is Mashpee's population ☐ growing too fast ☐ growing at an acceptable rate ☐ growing too slowly ☐ unsure about growth rate
14. Would you enjoy living in Mashpee if its population increased to the "buildout" level? ☐ yes ☐ no ☐ unsure
15. Are you satisfied with the appearance of new developments built in Mashpee during the last 20 years?
☐ very much ☐ somewhat ☐ not satisfied
16. Do you favor a mix of commercial, retail and residential development in the rotary area and other commercial areas which may include 2 or 3 story buildings? ☐ yes ☐ no ☐ unsure

25. Would you support a Town by-law restricting the use of phosphorus in fertilizers? ☐ yes ☐ no ☐ unsure
26. Would you support the development of publicly-owned wastewater collection and treatment facilities to reduce the level of nitrogen, phosphorus and other pollutants in our bays and ponds? ☐ yes ☐ no ☐ unsure
27. If it would save on operating and administrative costs for such a publicly-owned system, do you believe the Mashpee Water District should develop and manage Mashpee's system? ☐ yes ☐ no ☐ unsure
28. Assuming as much federal or state aid as possible is obtained, should the remaining capital costs of proposed publicly-owned wastewater facilities be paid for by (check one):
☐ "betterment" charges on sewered properties ☐ general property tax base ☐ combination of both ☐ unsure

Conservation & Recreation

29. What priority should be given to protecting the following natural resource areas?

RESOURCE	High	Medium	Low	Unsure
Freshwater ponds				
Rivers				
Vernal pools				
Salt marshes				
Coastal bays				
Shellfish beds				
Beaches				
Freshwater wetlands				
Forests				
Groundwater for water supply				
Other (please specify below)				

30. Almost 40% of the Town's land area has been protected as open space or recreation land, while over 52% has been developed or approved for development. There still remains about 1150 acres of available open land. What percentage of Mashpee's remaining undeveloped lands should be protected as open space?
☐ 0% ☐ 1-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐ Unsure

31. As the Town grows, what priority should be given to the following recreation facilities?

FACILITIES	High	Medium	Low	Unsure
Neighborhood playgrounds				
Baseball fields				
Softball fields				
Soccer fields				
Indoor basketball courts				
Outdoor basketball courts				
Tennis courts				
Indoor swimming pool				
Outdoor swimming pool				
Walking / hiking trails				
Bicycle trails				
Nature study / conservation areas				
Ocean beaches and parks				
Pond beaches and parks				
Indoor ice skating rink				
Town boat landings				
Town marina				
Town golf course				
Public access to bays and ocean				
Picnic areas				
Town campground				
Other (please specify below)				

Municipal Facilities and Services

38. What level of municipal tax revenues should be spent on the following Town services?

SERVICES	More	Same	Less	Unsure
Recreation programs				
Library				
Web site / information services				
Fire protection				
Ambulance service				
Police protection				
Road improvements / maintenance				
Health services				
Administrative services				
Elder services				
Planning / zoning services				
Conservation				
Schools				
Sewage treatment				
Trash disposal				
Recycling				
Human / social services				
Public transit				
Public housing				
Harbormaster				
Shellfish Constable and Herring Warden				
Improved access to ocean and ponds				
Renewable energy / efficiency improvements				
Other (please specify below)				

39. The appeal of Cape Cod for retirees, either to 2nd homes or recently developed condo projects will increasingly lead to new and different service needs. In terms of priority, what services / facilities should be developed or improved to accommodate Mashpee's growing senior population?

SERVICES / FACILITIES	High	Medium	Low	Unsure
Nursing homes				
Age-appropriate housing				
Sidewalks / walking trails				
Arts & cultural programs				
Medical transportation				
Community parks (not active recreation fields)				
Community gardens				
Bike pathways				
Nutrition service facilities				
Assisted living facilities				
Accessible transit services				
Other (please specify below) _____ _____ _____				
_____ _____ _____				
_____ _____ _____				



Town of Mashpee

Planning Board

*16 Great Neck Road North
Mashpee, Massachusetts 02649*

Ms. Mary Waygan, Chair
Mashpee Planning Board
16 Great Neck Road N
Mashpee, MA 02649

June 2, 2022

Mr. Andrew Gottlieb, Chair
Community Preservation Committee
16 Great Neck Road N
Mashpee, MA 02649

Re: Letter in Support of Planning and Conservation Department's application for funding

Dear Mr. Gottlieb,

I am writing to express on behalf of the Mashpee Planning Board, who voted on 06/01/2022 to submit this letter, its support of the joint application made by the Planning Department and Conservation Department to acquire the property addressed as 751 Main Street for Open Space.

As stated in the application, this funding request meets the requirements of the Community Preservation Act and is consistent with community needs. The property in question, if acquired, would maximize publicly owned and protected lands within the Mashpee National Wildlife Refuge. This proposal would permanently protect Wildlife Habitat on a parcel subject to development that is also contiguous with protected open space. It would expand opportunities for passive recreation if the trail system in Pickerel Cove conservation area could be extended and provide further connection with existing trails. Further, it would remove the potential for additional nutrient pollution via onsite septic systems if the property were to be developed consistent with what is allowed by zoning.

The Mashpee Planning Board supports this effort and asks for the CPC's support by first authorizing a third-party appraisal to begin negotiations, and, if a price can be agreed upon, to submit an article for Town Meeting consideration to acquire the parcel. The Planning and Conservation Departments are actively seeking partnerships to assist with purchasing power.

Sincerely,

Mary E. Waygan, Chair

1. Goals:

The primary goal of this proposal is to have the Town acquire an 8.00 acre parcel addressed as 751 Main Street for Conservation purposes to expand the pickerel cove conservation area and protect a parcel within the acquisition boundary of the Mashpee National Wildlife Refuge (MNWR).

2. Community Need:

Mashpee's Long Range Plan as stated in the 1998 Local Comprehensive Plan includes a goal to "maximize publicly owned and protected lands within the Mashpee National Wildlife Refuge." The subject parcel is within the acquisition boundary of the MNWR and is contiguous with the more than 78 acre pickerel cove conservation area and also abuts the open space required by the Pickerel Cove neighborhood cluster subdivision. Additionally, this land is not currently protected and is subject to development and could sustain approximately 4 single family building lots under current zoning.

As surface and ground water qualities continue to decline additional single family dwellings without access to sewer will install polluting septic systems that are the primary culprit in the degradation of water quality in Mashpee. Protecting this parcel would contribute towards the protection of drinking water quantity and quality. The 2007 Open Space Plan identifies this parcel as privately held lands of conservation interest and is shown as a secondary priority parcel on the Open Space Plan.

This proposal would permanently protect Wildlife Habitat on a parcel subject to development that is also contiguous with protected open space. It would expand opportunities for passive recreation if the trail system in Pickerel Cove conservation area could be extended and provide further connection with existing trails.

3. Community Support:

- Planning Board
- Conservation Commission
- Native Land Conservancy
- Orenda Wildlife Land Trust
- Mashpee Wakeby Pond Alliance
- Pickerel Cove Neighborhood Association
- Friends of MNWR

4. Project Timeline

The first step in this proposed acquisition would be to conduct an independent appraisal, ideally, that adheres to the "uniform appraisal standards for federal land acquisitions" or "yellow book." It has been indicated by Town staff that partnerships would likely need to be relied upon to fund an acquisition of this nature in times when land costs, particularly for developable parcels, continue to grow. Once market value has been determined the Town could assess its ability to partner with entities such as the Orenda Wildlife Land Trust and Massachusetts Fish & Wildlife who have indicated a general interest in participating in this acquisition. With acquisition price and agreements in place, Town Meeting would be asked to appropriate funds for the acquisition at the October 2022 Town Meeting.

5. Success Factor

Success of this project is contingent on costs and capacity building with partners. If a reasonable acquisition price can be agreed upon then the parcel can be added to the existing Mashpee Wildlife Refuge system. The property lies within the acquisition boundary of the Refuge, thus successful acquisition of this parcel will further the goals of the Mashpee National Wildlife Refuge partnership. Success will be measured by management and maintenance of this parcel as deeded conservation land.

6. Experience / Credentials

The Mashpee Conservation Department, Conservation Commission, Town Planner and the Mashpee National Wildlife Refuge Partnership work in conjunction to acquire lands for open space protection. Combined experiences amongst these entities include facilitation of land acquisition for open space, forestry management, wildlife habitat preservation and enhancement, wildfire risk assessment and abatement and natural resource management. Indeed, the experience and credentials of the petitioners of this CPA funding application is substantial.

7. Budget

Budget will be determined by an appraisal and potential partnerships to add capacity to purchasing power.

8. Other funding:

Other potential funding sources include partnership funding from land trusts such as Orenda Wildlife Trust, The Native Land Conservancy. The parcel, if acquired, will need to have a conservation restriction placed on it, this cost could potentially be covered by one of the Refuge partners, including the Mashpee Conservation Department. Any grant funding relative to acquisition of open space will be researched and applied for.



**TOWN OF FALMOUTH
MASSACHUSETTS**

BOARD OF APPEALS

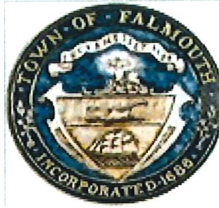
Notice of Decision

Notice is hereby given that the Board of Appeals of the Town of Falmouth has made a decision on a petition by Sandra Miranda, 105 Redlands Road, East Falmouth, Ma.

(Map 09 Lot 289) under 240-162 and 240-203 of the Zoning By-Law to allow a home occupation for indoor swimming lessons / aqua classes; the Board voted to withdraw with prejudice.

Appeals, if any, shall be made pursuant to the Massachusetts General Laws, Chapter 40A, Section 17, and shall be filed within twenty (20) days after **May 19, 2022** which is the date the Decision was filed in the office of the Town Clerk.

Please contact Noreen Stockman at 508-495-7460
or Noreen.stockman@falmouthma.gov if you have any questions or comments
full text of decision available at <http://www.falmouthmass.us>



**TOWN OF FALMOUTH
MASSACHUSETTS**

BOARD OF APPEALS

Notice of Decision

Notice is hereby given that the Board of Appeals of the Town of Falmouth has made a decision on a petition by Village at Brick Kiln, LLC, 511 Brick Kiln Road, West Falmouth, Ma. (Map 26 Lot 000A) **under** chapter 40B, as amended to deny the modification(s) of comprehensive permit #050-20.

Appeals, if any, shall be made pursuant to the Massachusetts General Laws, Chapter 40A, Section 17, and shall be filed within twenty (20) days after **May 19, 2022** which is the date the Decision was filed in the office of the Town Clerk.

Please contact Noreen Stockman at 508-495-7460
or Noreen.stockman@falmouthma.gov if you have any questions or comments
full text of decision available at <http://www.falmouthmass.us>

Town of Sandwich
THE OLDEST TOWN ON CAPE COD



Planning Board

16 Jan Sebastian Drive
Sandwich, MA 02563
Phone: 508-833-8001
Fax: 508-833-8006
E-mail: planning@sandwichmass.org

TOWN CLERK
TOWN OF SANDWICH

MAY 18 2022

1 H 46 M 17 M
RECEIVED & RECORDED

Special Permit Amendment
Large Scale Ground Mounted Solar Photovoltaic Special Permit
Certificate of Approval


Property Address: 180 Cotuit Road, Sandwich, MA 02563
Name of Applicant: ASD Cotuit MA Solar
Property Owner: Andrew E. Degraw Jr. & Ann Degraw Swaim, Trustees

On May 17, 2022 the Planning Board voted to grant an amendment to a special permit to ASD Cotuit MA Solar for property located at 180 Cotuit Road, as shown on Assessor's Map 13, Parcel 44 Sandwich, MA to allow a large scale ground-mounted solar photovoltaic installation.

The Planning Board certifies that the decision attached hereto is a true and correct copy of its decision to grant a special permit and that copies of said decision have been filed with the Planning Board and the Town Clerk.

The Planning Board also calls to the attention of the owner or applicant that General Law, Chapter 40A, Section 11 provides that no special permit, or any extension; modification or renewal thereof, shall take effect until a copy of the decision bearing the certification of the Town Clerk that twenty days have elapsed after the decision has been filed in the office of the Town Clerk and no appeal has been filed or that, if such appeal has been filed, that it has been dismissed or denied, is recorded in the registry of deeds for the county and district in which the land is located and indexed in the grantor index under the name of the owner of record or is recorded and noted on the owner's certificate of title. The owner or applicant shall pay the fee for such recording or registering. A copy of that registered decision shall be returned to the Planning & Development office as proof of filing.

Any person aggrieved by this decision may appeal to the Superior Court or Land Court as in Section 17 of Chapter 40A, M.G.L. by filing a NOTICE OF ACTION AND COMPLAINT with the Town Clerk within twenty (20) days of the date of filing of this decision.



Planning Board Member

May 18, 2022

Date

- a. The Planning Board does not find that there are conditions peculiar to this case but not generally true for similar permitted uses on other sites in the same district
 - b. The Planning Board finds that nuisance, hazard or congestion will not be created
 - c. The Planning Board finds that there will not be substantial harm to the neighborhood
 - d. The Planning Board finds that there is no derogation from the intent of the bylaw such that the districts' objectives will not be satisfied
7. The application for special permit substantially conforms to Section 4180 of the Zoning By-Laws.
 8. All components of Section 4186 have been included with the application to the satisfaction of the Planning Board; however, this does not preclude the Building Commissioner from requiring more detailed documentation before issuing a building permit.
 9. The application meets requirements for of Section 9, MGL c. 40A.
 10. The applicant is proposing an 8 foot fence on the property. Under Section 3560 a fence cannot exceed 6 feet unless a special permit is granted by the Zoning Board of Appeals. The applicant has stated that they will apply for a special permit.

Motion: I, Robert King, move to adopt these findings as the findings of the Planning Board for 180 Cotuit Road, Sandwich MA.

Second: Jeffrey Picard

Vote: Matthew Cubetus	Yes
Jeffrey Picard	Yes
Robert King	Yes
James Kalweit	Yes
Jennifer Reisig	Yes
David Darling	Yes
Mark Callahan	Yes

CONDITIONS

At the public hearing, the Planning Board considered potential conditions of approval for this special permit. The Planning Board voted that the following conditions of approval shall be imposed upon any approval of a special permit and that these conditions are reasonable and that the applicant and its successor-in-interest shall be bound by these conditions:

1. Pursuant to the requirements of Sandwich Protective Zoning By-law Section 1330, the grant of special permit shall expire upon:
 - Transfer of ownership, prior to initiation of substantial construction on or occupancy of the site unless such transfer is authorized in this permit, or
 - If no substantial construction or occupancy takes place within (12) twelve months of special permit approval, excluding such time required to pursue

- Exhibit D Invasive Species Management Plan prepared by LEC dated July 25, 2019,
 - Exhibit H Preliminary Operations and Maintenance Plan
 - Exhibit I Battery System Information and Emergency Response Plan
 - Exhibit J System Components (Manufacturing Specifications Sheets)
 - Site Plan Single Driveway Layout Alternative dated August 24, 2020
 - Graphic Site Plan Supplemental Screen Plantings dated October 5, 2020.
- However, the screening shall wrap around the easterly side of the property.

17. Prior to the issuance of a building permit, town Engineering and Building Departments will work in conjunction with the applicant to finalize the decommissioning bond and present the final bond to the Planning Board. The bond shall be revised every 5 years by the Planning Board.

Motion: I, Robert King, move to impose the above conditions of approval upon any approval of the special permit.

Second: Jeffrey Picard

Vote: Matthew Cubetus	Yes
Jeffrey Picard	Yes
Robert King	Yes
James Kalweit	Yes
Jennifer Reisig	Yes
David Darling	Yes
Mark Callahan	Yes

After reviewing the application, the plan and other materials submitted and after giving due consideration to testimony given at the public hearing, the Board hereby approves the special permit application to install a Solar Photovoltaic Ground mounted system greater than 250 kW under Sandwich Protective Zoning By-law Section 4180 for property located at 180 Cotuit Road, Sandwich, MA.

Motion: I, Robert King, move to approve the special permit in consideration of the findings and in reliance upon the conditions of the Planning Board as stated herein.

Second: Jennifer Reisig

Vote: Matthew Cubetus	Yes
Jeffrey Picard	Yes
Robert King	Yes
James Kalweit	Yes
Jennifer Reisig	Yes
David Darling	Yes
Mark Callahan	Yes



TOWN OF FALMOUTH

ZONING BOARD OF APPEALS

59 TOWN HALL SQUARE, FALMOUTH, MA 02540
508-495-7460 – FAX 508-495-7463

BOARD OF APPEALS NOTICE OF PUBLIC HEARING

Being all persons deemed affected by the Board of Appeals under Section 11 of Chapter 40A of the Massachusetts General Laws you are hereby notified that:

Application #039-22 Bruce and Hedy Buch, 21 Old Nourse Street, Westborough, Ma.: Applied to the Zoning Board of Appeals for a special permit pursuant to section(s) 240-10.2A and 240-11.3A (4) (formerly 240-3 C. and 240-69 E.) of the Code of Falmouth to construct a dormer and balcony to the second floor of the nonconforming dwelling; increasing lot coverage by structures. The subject property is 172 Grand Avenue, Falmouth, Ma.

Map 46B Section 29 Parcel 024 Lot(s) 138A

A public hearing will be given on this application, in the Select Board's Meeting Room, Town Hall, on

Thursday, June 9, 2022 at 6:30PM

You are invited to be present.

By Order of the Board of Appeals,
Chairman, Terrence Hurrie

Plans are available for review prior to the hearing at the Board of Appeals office, Town Hall during the hours of 8:00 AM to 4:00 PM. *Plans are available to review at <https://www.falmouthma.gov/1113/Applications-under-review-by-the-ZBA>



TOWN OF FALMOUTH

ZONING BOARD OF APPEALS

59 TOWN HALL SQUARE, FALMOUTH, MA 02540
508-495-7460 – FAX 508-495-7463

BOARD OF APPEALS NOTICE OF PUBLIC HEARING

Being all persons deemed affected by the Board of Appeals under Section 11 of Chapter 40A of the Massachusetts General Laws you are hereby notified that:

Application #041-22 David Allan McKiernan, 170 Picnic Street, Boxborough, Ma.: Applied to the Zoning Board of Appeals for a special permit pursuant to section(s) 240-10.2A (formerly 240-3 C.) of the Code of Falmouth to remove the existing non-conforming detached garage and replace with a shed on subject property known as 96 Queen Street, Falmouth, Ma.

Map 47B Section 04 Parcel 025 Lot(s) 000

A public hearing will be given on this application, in the Select Board's Meeting Room, Town Hall, on **Thursday, June 9, 2022 at 6:30PM**
You are invited to be present.

By Order of the Board of Appeals,
Chairman, Terrence Hurrie

Plans are available for review prior to the hearing at the Board of Appeals office, Town Hall during the hours of 8:00 AM to 4:00 PM. *Plans are available to review at <https://www.falmouthma.gov/1113/Applications-under-review-by-the-ZBA>



TOWN OF FALMOUTH

ZONING BOARD OF APPEALS

59 TOWN HALL SQUARE, FALMOUTH, MA 02540
508-495-7460 – FAX 508-495-7463

BOARD OF APPEALS NOTICE OF PUBLIC HEARING

Being all persons deemed affected by the Board of Appeals under Section 11 of Chapter 40A of the Massachusetts General Laws you are hereby notified that:

Application #035-22 Michael J. Roof, 50 Wedgewood Drive, Norwood, Ma.: Applied to the Zoning Board of Appeals for a special permit pursuant to section(s) 240-10.2A (formerly 240-3 C.) of the Code of Falmouth to construct an addition and convert existing deck area on the second floor to a 3-season room. The subject property is 100 Bridge Street, East Falmouth, Ma.

Map 45 Section 07 Parcel 000 Lot(s) 019

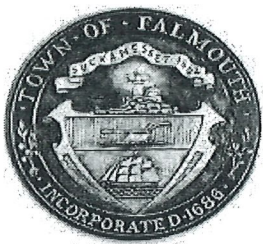
A public hearing will be given on this application, in the Select Board's Meeting Room, Town Hall, on

Thursday, June 9, 2022 at 6:30PM

You are invited to be present.

By Order of the Board of Appeals,
Chairman, Terrence Hurrie

Plans are available for review prior to the hearing at the Board of Appeals office, Town Hall during the hours of 8:00 AM to 4:00 PM. *Plans are available to review at <https://www.falmouthma.gov/1113/Applications-under-review-by-the-ZBA>



TOWN OF FALMOUTH

ZONING BOARD OF APPEALS

59 TOWN HALL SQUARE, FALMOUTH, MA 02540
508-495-7460 – FAX 508-495-7463

BOARD OF APPEALS NOTICE OF PUBLIC HEARING

Being all persons deemed affected by the Board of Appeals under Section 11 of Chapter 40A of the Massachusetts General Laws you are hereby notified that:

Application #034-22 William E. and Lisa H. Campbell, Trustees, 8 Pocasset Street, Teaticket, Ma.:

Applied to the Zoning Board of Appeals for a special permit pursuant to section(s) 240-10.2A (formerly 240-3 C.) of the Code of Falmouth to construct an addition to the nonconforming single family dwelling on subject property known as 8 Pocasset Street, Teaticket, Ma.

Map 46A Section 10 Parcel 000 Lot(s) 148

A public hearing will be given on this application, in the Select Board's Meeting Room, Town Hall, on

Thursday, June 9, 2022 at 6:30PM

You are invited to be present.

By Order of the Board of Appeals,
Chairman, Terrence Hurrie

Plans are available for review prior to the hearing at the Board of Appeals office, Town Hall during the hours of 8:00 AM to 4:00 PM. *Plans are available to review at <https://www.falmouthma.gov/1113/Applications-under-review-by-the-ZBA>