An aerial photograph showing a paved road with a yellow center line curving along the edge of a large body of water. The road is bordered by a dense forest of trees with green and yellow foliage. The water is a deep blue. In the distance, a small building and a bridge are visible. The sky is clear and blue.

Assawompset Pond Complex & Nemasket River Watershed Management & Climate Action Plan

**Regulatory Review & Recommendations
Overview**

Overview – topics & measures reviewed

Floodwater Management	Water Quality	Water Supply (TBD, potential topics)	Ecology & Unique Habitats	Recreation & Stewardship	Land Development
<ul style="list-style-type: none">• Restrict development in the floodplain: wetland and floodplain bylaws• Regional buy-out program	<ul style="list-style-type: none">• Wetland buffer protection and restoration (wetland bylaws, no mow standards)• Septic system design & maintenance• Lawn / agriculture best practices	<ul style="list-style-type: none">• <i>Groundwater recharge through LID</i>• <i>Secure alternative/backup water sources</i>• <i>Water conservation bylaws</i>• <i>Water resource protection overlay districts</i>	<ul style="list-style-type: none">• Open space planning• Open Space Design / Conservation Development• Invasive plant management and coordination	<ul style="list-style-type: none">• Community Preservation Act• People capacity for stewardship• Recreation & water access review	<ul style="list-style-type: none">• Stormwater bylaws & regulations• Impervious cover limits (zoning, subdivision rules & regs)• Incorporate resilience considerations into site plan review

Potential Floodwater Management Actions

Regulatory mechanisms

- How is new development regulated in the floodplain?
- Are communities protecting floodplain and wetland functions?
- Is the regulated floodplain reflective of future storm events?
- How to protect or relocate existing infrastructure within the floodplain?
- Are communities adequately prepared to respond to recurring extreme flood events?

Regulatory Review: Wetland Bylaws

	Lakeville	Middleborough	Freetown	Rochester
Wetland bylaw	no	Yes	Yes	Yes
Regulated area	N/A	25 ft buffer	100 ft wetland buffer 200 ft river/lake/pond buffer	100 ft wetland buffer 200 ft river/stream buffer
Floodplain elevation	N/A	100 yr floodplain considered in plans	Activities within 100 ft of 100 yr floodplain considered in plans	Not specified
Prohibited Activities (beyond WPA)	N/A	Not specified	No activity within 200 ft of lakes, rivers, ponds	No activity within 25 ft no disturb zone
Mitigation requirements	N/A	2:1 replication required	Full mitigation required Conditions for ensuring replication success	Not specified

Regulatory Review: Floodplain Bylaws

	Lakeville	Middleborough	Freetown	Rochester
Floodplain overlay district	Yes	Yes	Yes	Yes
Floodplain bylaw	Yes	Yes	Yes	Yes
Regulated area	100 yr base flood elevation	100 yr base flood elevation	100 yr base flood elevation	100 yr base flood elevation
Prohibited Activities	Alteration of base flood levels Obstructions to flood flow Permanent structures or storage	Alteration of base flood levels Obstructions to flood flow Permanent structures or storage	Alteration of base flood levels Obstructions to flood flow Permanent structures or storage Alteration of sand dunes New construction below mean high tide	Alteration of base flood levels Obstructions to flood flow Permanent structures or storage
Permitted Uses	Agriculture, forestry, nursery, outdoor recreation, conservation uses Some temporary non-residential structures	Agriculture, forestry, nursery, outdoor recreation, conservation uses Some temporary non-residential structures Essential municipal services Some residential uses (lawns, gardens, parking, storage)	Agriculture, forestry, nursery, outdoor recreation, conservation uses Some temporary non-residential structures	Agriculture, forestry, nursery, outdoor recreation, conservation uses Some non-residential structures

Regulatory Review: Hazard Mitigation Plans

HMP Status	
Freetown	No Plan
Lakeville	Plan in process
Middleboro	2015 Plan expired 9/30/2020
Rochester	2005 Plan expired 1/28/2010 (local adoption of SRPEDD's 2005 Multi-Jurisdictional HMP)

Flood vulnerability assessment	high frequency; extensive severity; affecting limited geographic areas
Floodplains identified	100 yr floodplain
Recorded flood occurrences	100 yr flood events: 3/17/10, 4/1/10
Flood locations	Specific in its identification of numerous locations
Mitigation activities implemented	<ul style="list-style-type: none"> - Assawompset Pond elevation study to optimize pond levels for water supply vs. flood threat - Local planning and bylaws - Drainage facilities maintenance - Development standards to limit encroachment
Recommended mitigation actions	<ul style="list-style-type: none"> - Local education and dam safety programs - Road flooding & culvert mapping & monitoring - Install gauges to monitor APC & Nemasket levels
NFIP data	Included: <ul style="list-style-type: none"> - 34 policies (as of 2010) - 20 claims since 1981 (15 paid out)
Repeat flood loss	- 1 property met FEMA's repetitive loss definition

Potential Water Quality Management Actions

Physical projects

- Reduce nitrogen & phosphorus
- Manage stormwater runoff and sedimentation
- Identify & mitigate potential hazard contamination
- Manage nuisance vegetation
- Enhance water quality & flow

Regulatory mechanisms

- **Wetland buffer protections**
- Boat washing stations and enforcement
- **Septic system design & maintenance standards**
- **Fertilizer use and agricultural best practices**
- Stormwater regulations favor on-site treatment and infiltration
- Stormwater management/maintenance MOUs
- Coordinate with land owners on water quality protection
- Water quality monitoring programs
- Invasive plant management programs and coordination

Possible Management
Actions:

Address Water Quality through Key Regulations

Wetland Buffer Protection	Adopt local wetland bylaws that protect vegetated buffers that catch & remove pollutants from runoff Establish no-mow buffers on municipal lands
Fertilizer Use	Homeowner education on MDAR fertilizer regulations Reduce / eliminate use on municipal lands & codify best practices
Agricultural Best Practices	Coordinate with landowners on implementing best practices & adopting Conservation Plans Conservation Commission enforcement of wetland protections on farmland
Septic System Design & Maintenance	Encourage the use of nitrogen reducing septic systems.

Wetland Buffer Protection

Vegetated buffers purify runoff & protect water quality

What can towns do?

- Local wetland bylaws can restrict activities in buffer zone
 - Ex: Rochester's bylaw prohibits any activity in the 25ft "no disturb zone"
- Restore altered wetland and riparian buffers
 - Ex. Riverside Park buffer restoration in New Bedford (pictured right)
- Clearly mark no-mow zones (as pictured right)
- SNEP Network Buffer Restoration Toolkit: snepnetwork.org/buffer



Fertilizer Use Regulation

State law	<p>MGL Ch. 262: <i>An Act Relative to the Regulation of Plant Nutrients</i></p> <p>MDAR (MA Dept of Agricultural Resources) regulates fertilizer use</p> <p>Applies to agriculture, lawns & turf</p> <p>Towns unable to further regulate local fertilizer use</p>
Regulations	<p>Homeowners and professionals required to follow UMass Amherst guidelines for nutrient management</p> <p>Phosphorus-containing fertilizers can't be used without a soil test indicating the need (except new lawns)</p> <p>Fertilizer application not allowed within 20 / 10 ft of waterways (depending on application method) or within 100 ft of waters used for drinking water supply</p>
Retailer Requirements	<p>Phosphorus-containing fertilizers must be displayed separately</p> <p>Signs must be posted informing customers about restrictions</p>

What can towns do?

- Coordinate with large landowners on management practices
- Coordinate with retailers on consumer information
- Adopt best practices that reduce or eliminate fertilizer use on municipal lands
- Educate landowners on best practices

**UMass
Extension**
CENTER FOR AGRICULTURE

**BEST MANAGEMENT PRACTICES FOR
SOIL & NUTRIENT MANAGEMENT IN
TURF SYSTEMS**

<https://ag.umass.edu/turf/publications-resources/nutrient-management-for-turf>

Agricultural Best Practices: Farm Conservation Plans

Free Services	Consultation & planning assistance from NRCS Recommend management practices to protect natural resources Choose practices and plan implementation schedule
Unlock \$\$	Keep plan up-to-date and gain access to NRCS programs & grant opportunities
Benefits	Improve soils & crop productivity Reduce soil erosion Protect water quality & wildlife habitat Preserve your land value for future generations

What can towns do?

- Coordinate with large landowners on management practices
- Encourage adoption of Conservation Plans
- Coordinate with NRCS on local issues and best practice recommendations
- Enforce best practices and wetland protections (Conservation Commission)

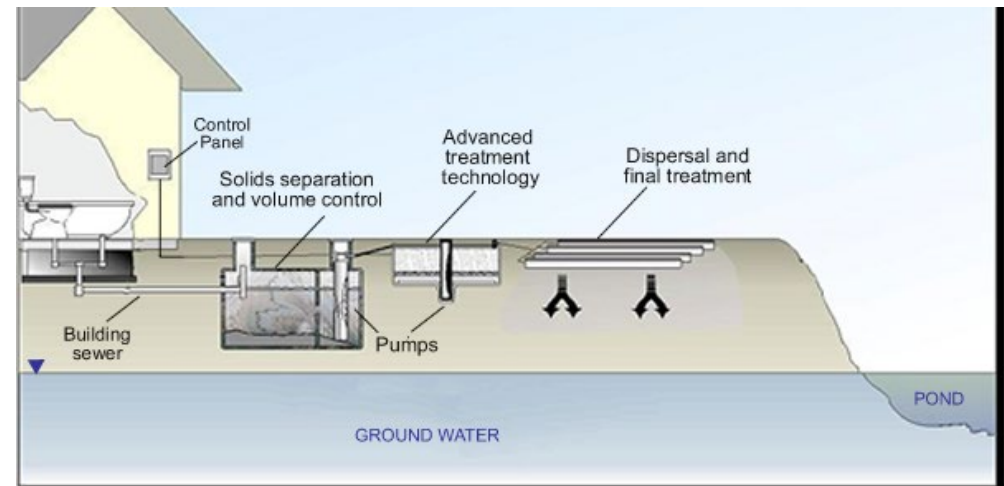


Enhanced Denitrification Septic Bylaws:

Define Applicable Areas	Marion = Townwide Wareham = within 500 ft of surface water (Water Quality Protection Zone) Tisbury = Lake Tashmoo and Lagoon Pond Watershed Nitrogen Management Districts
Define Triggering Events	New Construction Failed Systems Increase in design flow
New Tech	Enhanced Denitrification Technology = any tech approved by DEP for general, provisional, pilot program use for nitrogen reduction

What can towns do?

- Adopt a bylaw that goes above and beyond minimum Title V requirements to a Total Nitrogen effluent limit of 19 mg per liter or less
- Can be townwide or in a more defined area around the APC / Nemasket
- Some permit variances
- Some set sunset provisions



Potential Natural Resource Management Actions

Physical projects

- Improve aquatic habitat and passage
- Control the presence of invasive species
- Prepare forests for climate change
- Protect critical and endangered species and their habitats

Regulatory mechanisms

- Adopt the Community Preservation Act to fund open space protection
- **Open Space and Recreation Planning**
- **Open Space Residential Design**
- Allow more flexible subdivision design and zoning dimensions that preserve the existing landscape
- **Coordinate invasive plant management programs**

Possible Management
Actions:

Protect Ecology & Unique Habitats through Key Regulations

Open Space and Recreation Planning	<p>Adopt local OSRPs and keep current</p> <p>Prioritize high value natural areas for protection (i.e. Green Infrastructure Network)</p> <p>Coordinate with neighboring communities to protect connected habitat and/or wildlife corridors</p>
Open Space Residential Design	<p>Allow by-right and encourage developers to adopt low impact development in new subdivision development</p> <p>Align OSRD bylaw with OSRP land protection priorities</p> <p>Require contiguous land protection between parcels</p>
Invasive Plant Management Programs	<p>Coordinate with local and state regulatory entities to implement best practices</p> <p>Adopt a holistic approach to invasive plant removal that does not harm other wildlife</p>

Protect Green Infrastructure in Open Space & Rec Plans

Section 1	Plan Summary: Reference state/regional green infrastructure analysis as part of regional context to be considered in the plan
Section 3. A.	Regional Context: Include a more detailed explanation of the state/regional green infrastructure analysis and the regional green infrastructure map
Section 4	Environmental Inventory and Analysis: Include discussion of green infrastructure in pertinent sections
Section 8	Goals and Objectives: Prioritize land conservation to support the local priorities map
Section 9	Five Year Action Plan: Include local priorities map

Open Space Design

- Flexible subdivision regulations
- Smaller lot sizes
- Land set aside for conservation at no cost to town
- By-right is most effective
- Types of OSD:
 - Open Residential Design (OSRD)
 - Natural Resource Protection Zoning (NRPZ)
 - Conservation Subdivision

Conventional Subdivision



Conservation Subdivision



Protect Green Infrastructure in Open Space Design

Set clear criteria
for open space
protection

Require open space dedication to contribute to protection of the local green infrastructure network (link to local priorities map created for your Open Space & Recreation Plan)

Require
protection of the
GIN

When land being subdivided overlaps the green infrastructure network, require on-site protection

Allow TDR for
GIN protection
elsewhere

When land being subdivided does not overlap the green infrastructure network, utilize transfer of development rights (TDR) to protect the network elsewhere in the locality

Aquatic Invasive Plant Management Best Practices

Resources from MA Dept of Conservation & Recreation Lakes and Ponds Program

www.mass.gov/lakes-and-ponds-program

- Aquatic plant ID and management guides
- Weed Watcher volunteer training program
- Boat Ramp Monitor program

Early Detection is Key

Addressing an infestation before plants have had a chance to establish is the best way to ensure eradication

Monitor waterways regularly and be on the look out for invasives
Public education and awareness can help spot invasives early on

Prevent the Spread

Public education and awareness will prevent unintentional contamination and spread

Boat washing stations, especially at already contaminated spots, are essential to prevent boats from introducing invasives elsewhere

Take an Integrated Approach

Invasive control should be in the context of holistic ecosystem management, tailored to specific water body and species present, and address causes (nutrients, re-introduction)

Consider targeted treatments (i.e. physical removal) first & protect native species present

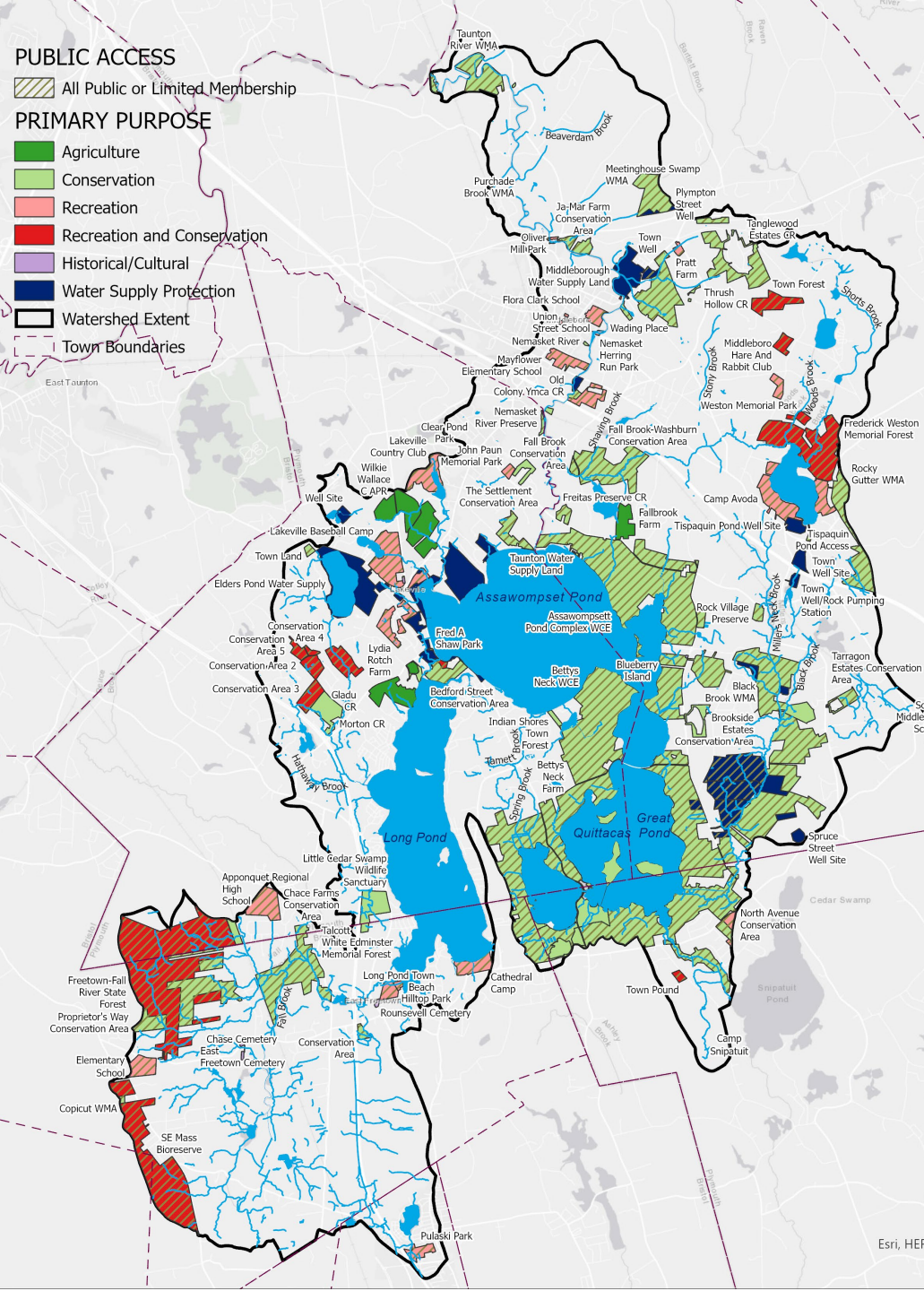
Build in adaptive management and post-treatment monitoring

Use Care with Herbicides

Chemicals should be used as a last resort to reduce collateral damage

Avoid applying in rare or sensitive species habitat & during critical times of year (i.e. spawning or migratory seasons)

Consult with Board of Health, Conservation Commission, MA Natural Heritage Program before application for guidelines and permitting



Existing recreational access & public information

	Lakeville	Middleborough	Freetown	Rochester
Recreational rules and/or guidelines	<ul style="list-style-type: none"> - No rules or regulations in bylaws or on town website - Motor Boat ban on Loon Pond - APC brochure linked on town website includes general uses allowed and guidelines for land-based recreation 	<ul style="list-style-type: none"> - No rules or regulations in bylaws or on town website 	<ul style="list-style-type: none"> - Recreational Facilities bylaw authorizes enforcement by town - No outdoor recreational use or guidelines posted on town website 	<ul style="list-style-type: none"> - No rules or regulations in bylaws - ConComm website has downloadable trail guide with recreational use guidelines
Public information accessible online	<ul style="list-style-type: none"> - APC page on town website with map & access guidelines - limited info on Park Commission website 	<ul style="list-style-type: none"> - Rec info on town website limited to event registration and facility reservation info - Discover Middleborough website has outdoor recreational info 	<ul style="list-style-type: none"> - No park dept website - Limited info posted on ConComm page 	<ul style="list-style-type: none"> - Parks Commission page limited to facility use request form - Separate ConComm & Town Forest Committee website has outdoor recreation details with downloadable public trail guide

Watershed Stewardship Capacity

Town Staff

- Pondside communities' Parks and Recreation Departments largely run by volunteer commissions (Middleborough has greatest capacity with 4 staff members)
- New Bedford and Taunton have staffed Parks Departments for land they own in watershed

Land Trusts

- Rochester Land Trust only known local land trust (currently no land held within watershed)

Local Environmental Groups

- Long Pond Association (Lakeville & Freetown)
- Middleborough-Lakeville Herring Fishery Commission
- Middleborough High School & Environmental Club
- Sustainable Middleborough (clean energy & climate change focus)

State and Regional Entities

- State: DCR, DEP Southeast Regional Office
- Environmental nonprofits: Mass Audubon, Wildlands Trust
- Watershed groups: Taunton River Stewardship Council, Taunton River Watershed Alliance, Buzzards Bay Coalition

Volunteer Stewardship Programs

- Middleborough Conservation Commission
- Long Pond Association

Recreation & Stewardship Management Actions

Public Information & Signage

- Universal informational signage explaining allowed uses, rules, and public access boundaries
 - Public education to increase awareness of responsible recreation and environmental stewardship

Invasive Plant Management

- Coordination between towns and local stewardship groups on volunteer invasive plant management efforts
- Prevent spread through public education and boat washing stations

Open Space Protection & Management

- Strategically expand the watershed's open space network
- Enhance land and water trails through regular maintenance
 - Cooperative regional stewardship

Recreational Programming

- Expand spiritual, cultural, and historic education and recreational programming opportunities
 - Local adoption of Community Preservation Act to fund open space & recreation

Enforcement of Recreational Use Rules

- Formalize funding stream for APC Rangers program and enforcement
- Advertise rules and regulations for public recreation on town websites and with clear signage at public sites

Land Development Management Goals

1

Proactively plan for future development by prioritizing areas for protection and development

2

Reduce the environmental impacts of development through low impact development and stormwater management practices

3

Build for the future and ensure all new and re-development is designed for future climate projections

4

Work with nature to preserve and leverage natural functions that provide community resilience

5

Encourage more flexible housing options and development practices to limit sprawl

Potential Management Actions

Improved Stormwater Management

- Limit conversion of natural areas to impervious cover that contributes to stormwater runoff
- Prioritize on-site treatment and infiltration in drainage designs
- Disconnect impervious areas from water bodies to improve water quality

Proactive Land Use Planning

- Prioritize areas for development vs. protection in Master Plans
- Prioritize valuable natural areas for protection in Open Space Plans
- Encourage development in priority development areas through expedited permitting

Low Impact Housing & Development Design

- Enable more multi-family housing options in zoning
 - Encourage cluster developments and Open Space Design (OSD) to minimize development's footprint
- Allow more flexible lot dimensions and designs in zoning and subdivision

Build for the Future

- Consider climate change and rainfall projections in construction design & planning
 - Build all new infrastructure to withstand larger storm events
 - Require climate resilience considerations in all site plans

Work with Nature

- Leverage natural functions that protect communities from flooding, extreme heat, and intense storms
- Enable flexible site plan design that conforms to, rather than alters, nature
 - Favor “green” stormwater infrastructure over “gray”

APC Communities Regulatory Review: Stormwater Management

Measures reviewed: MS4 permitting, local Stormwater Bylaws, Subdivision Rules & Regulations, Site Plan Review

	Freetown	Lakeville	Middleborough	Rochester
MS4 Regulated?	Y	Y	Y	N
Stormwater bylaw?	N - Illicit discharge detection only	N - Illicit discharge detection only	Y - standalone bylaw and thorough rules & regs	N- regulated in subdivision rules & regs
Enforcement/ Oversight	Building Commissioner	Building Commissioner	Board of Selectmen, Stormwater Committee	Planning Board
Stormwater Permit	N	N	Y, over 10,000 sq. ft.	N, but SW Management Plan required for SPR and reviewed by other depts
LID Stormwater management	not specified; bylaw targets illicit discharges	not specified; bylaw targets illicit discharges	required with clear guidelines, design standards	enabled and preferred in performance standards, but should be more clearly encouraged upfront

APC Communities Regulatory Review: Impervious Cover Controls

*Measures reviewed: Zoning
bylaws, Subdivision Rules &
Regulations*

	Freetown	Lakeville	Middleborough	Rochester
Lot dimensions (residential)	Min 70,000 sqft	Min 70,000 sqft	Min 20k-80k sqft	Min 43,560 sq ft
Impervious cover maximums	30% (residential) to 80% (business & industrial) maximums	25% (residential) to 50% (business & industrial) maximums	No maximum for residential; 60-65% for general use & business	20% max (residential) and 70% elsewhere
Parking	- Mins by use - Shared options for commercial	- Mins by use - Max in Smart Growth Overlay District - Shared parking by SP	- No requirements for residential development - Commercial min by use - Shared parking by SP	- Min driveway size for residential lots - Common driveways allowed for 2-4 lots by SP
Roads	24-40ft min widths	24-30ft min widths	24-26ft min widths (residential)	18-30ft min widths
Sidewalks	Required along all streets, both sides for primary and one side for secondary streets	Required along all streets, on one side only	Required along all streets serving 25+ homes, both sides in Res A/B and one side in Res-Rural	Required along all streets serving 3+ homes, on one side only
Permeable pavement	Concrete pavement standards No mention of permeable options			

APC Communities Regulatory Review: Site Plan Review

*Measures reviewed: Site Plan
Review bylaws/regulations,
Zoning bylaws*

	Freetown	Lakeville	Middleborough	Rochester
Site Plan Review	Standalone rules & regulations	Outlined in zoning; no separate rules and regs	Not addressed in zoning, except for Business District	Outlined in zoning; no separate rules and regs
Triggers	2500sqft gross floor area (single family exempt)	Business/industrial: 1500sq ft aggregate floor area Residential: 43,560 sqft	Business district and subdivision permits	675sqft total gross floor area (residential and agricultural uses exempt)
Reviewers	Planning Board, Board of Health, Building Inspector, Highway Surveyor, Police/Fire Chief, Conservation Commission	Planning Board, Police/Fire Chief, Board of Health, Conservation Commission, Highway Surveyor, Building Dept, Open Space Committee, Board of Selectmen	Business district: Zoning board of appeals reviews site plans for business district Subdivision: Planning Board	Planning Board, Conservation Commission, Board of Health, Building Commissioner, Highway surveyor, Police/Fire Chief
LID & resilience considerations	LID favored in design guidelines	SW management plan required; LID not specified	No design guidelines provided	Design guidelines require minimal environmental impacts; LID not specified

Floodwater Regulatory Review:
Wetland Bylaws

	Lakeville	Middleborough	Freetown	Rochester
Wetland bylaw?	no	no - ConComm Policy (2021), permit fee bylaw	yes (2019 gen Article 7; 2008 rules & regs)	yes
Jurisdiction, buffer		<ul style="list-style-type: none"> - Buffer zones noted but not defined in ConComm Policy - Water Resource Protection District Bylaw requires 25 ft buffer - undisturbed, natural vegetation/ soil 	100ft of wetlands, lands subject to flooding; 200ft perennial river/ stream/ lake; abutting resource area (incl flood control) *Art 7 purpose & jurisdiction good model <ul style="list-style-type: none"> - Commission shall take into account cumulative impacts to "resource areas" across community/ watershed from past/present/foreseeable future actions - can deny permit if conditions fail to protect resource areas - no activity will be permitted within 200ft rivers/lakes/ ponds unless proven with preponderance of evidence no practicable alternative and no significant adverse impact 	<ul style="list-style-type: none"> - Wetlands or lands subject to coastal storm flowage or flooding - Other wetlands >5000 sq ft (in addition to WPA) - 100ft buffer IDed as resource area in definitions (should be clearer in jurisdiction) - Permitting guide specifies 100' wetland buffer, 200' river/stream buffer - 25' no disturb zone (no activity permitted)
Existing conditions submittal requirements	ConComm submittal requirements published online <ul style="list-style-type: none"> - 50' & 100' buffer zones required on plans - water, septic lines - topography, hydrology, annual mean water 	<ul style="list-style-type: none"> - delineation of all waterbodies (incl intermittent), BVW, upland boundary - NHESP restrictions - Zone II, IWPA, Zone A, ACEC - protected open space, CRs, flood zones (not defined) - vernal pools (potential/ certified) - existing tree lines - existing structures (man-made and natural rock) - max groundwater & seasonal high groundwater elevations - soil characterization 	<ul style="list-style-type: none"> - may require wildlife study if ConComm deems appropriate - general submittal requirements not specified 	<ul style="list-style-type: none"> - BVW, banks, lands subject to flooding, wetland edges - discharges, culverts - 2ft contours - soil logs, max ground water

**Floodwater Regulatory Review:
Wetland Bylaws**

Proposed conditions submittal requirements	<ul style="list-style-type: none"> - % impervious cover - topography - hydrology / flow 	<ul style="list-style-type: none"> - 2' contours (with existing) - cellar/floor lowest elevations - alterations proposed in or having impact on wetlands (undefined) - wetland replication (see below) - proposed drainage w/ all catch basins, drains, culverts, etc. (on site, upstream, downstream), pre/post runoff rate/volume - new tree lines - limit of work w/ 25', 50', 100' wetland delineation - erosion control (temporary & permanent), permanent pollution control - cross-section drainage profiles w/ groundwater elevations (incl seasonal high water) - LID practices should be included as much as practicable - hydrographs, runoff characteristics before/after development 	not specified	<ul style="list-style-type: none"> - offset distances from proposed foundations, wells, septic tanks, septic systems, resource areas, property lines, easements, waterways, drainage structures - proposed grades, extent of work - all proposed structures within 100 ft resource area
Mitigation requirements		<ul style="list-style-type: none"> - 2:1 wetland replication if wetlands disturbed ("applicants should consider" - required?) - >3 species of plants similar to existing preferred 	<ul style="list-style-type: none"> - Full mitigation required, where wetland alteration is unavoidable - replication only with adequate security, professional design, monitoring to assure success 	not specified
Stormwater		<ul style="list-style-type: none"> - comply w/ MA SW handbook (latest revision) - site drainage must meet or reduce pre-development rate - SW management plan w/ runoff calcs (drainage - 25yr; re-/detention, crossings - 100yr storm) 	not specified in bylaw or regs, but ConComm website states any project that will result in more runoff to wetland/stream/river (even outside buffer) requires approval from ConComm	- Regulated activity includes draining
Flood elevation regulations		<ul style="list-style-type: none"> - 2, 10, 25, 100 yr flood elevations shown on plans - stream crossings must pass 100yr storm event - alterations to 100yr flood storage capacity calculations required - altered flood storage capacity must be compensated at every elevation in flood plain 	not addressed in bylaw or rules/regs, but ConComm website says any actions within 100ft of 100yr flood zone	- "Lands subject to flooding" not defined

**Floodwater Regulatory Review:
Wetland Bylaws**

Storm/precip calculations		<ul style="list-style-type: none"> - on-site drainage - 25yr storm - stream crossings - 100yr - retention/detention - 100yr - TP40 rainfall quantities; NOAA Atlas 14 for high infiltrating soils 	not specified	not specified
Inspections		<ul style="list-style-type: none"> - ConComm/agent authority to enter as deemed necessary - not when covering ground - project area staked out 10days before hearing 	no specified	<ul style="list-style-type: none"> - Access must be granted to ConComm - proposed structures must be marked with labeled stakes - All resource areas within 100ft of work must be marked
Enforcement / Fees	<ul style="list-style-type: none"> - NOIs for property abutting Long Pond, Assawompset, Elders Pond or tribs must also be sent to Taunton & New Bedford water dept. - advertisement & fees - \$25-1000 fees by type of filing, project size - higher fees for amendments 	<ul style="list-style-type: none"> - filing, advertising fees - additional fees for amended orders, additional site visits (discourage incomplete submittals, site visits) - smaller fees for residential vs. commercial projects 	<ul style="list-style-type: none"> - No conservation agent / staff - filing / application fees (\$10 to town on top of WPA fees) - consultant fees - public advertising fees (cannot be waived) - Concomm has authority to enter private property to enforce rules - Violators may be forced to restore property and/or pay fee (up to \$300/day) - Police dept, planning agent have authority to assist ConComm; select board / town counsel will take legal action at request of ConComm 	<ul style="list-style-type: none"> - filing, inspection fees (tiered structure based on project cost) - consultant fee
Permit expiration			<ul style="list-style-type: none"> - 3 years from issuance - for recurring maintenance, may issue 5yr permit (annual notification required) 	no specified

**Floodwater Regulatory Review:
Floodplain Zoning**

	Lakeville	Middleborough	Freetown	Rochester
Floodplain overlay district?	Yes: Floodplain Protection Overlay District (not displayed on zoning map)	Yes: Floodplain Overlay District (not displayed on zoning map)	Yes: Floodplain Overlay District (not displayed on zoning map)	Yes: Floodplain Overlay District (not displayed on zoning map)
Floodplain bylaw?	Flood Plain District Regulations (Zoning Bylaw Section 7.1) - 2021	Flood Plain District Regulations (Zoning Bylaw section 8.1) - 2015	Floodplain Overlay District zoning bylaw (Zoning Article 11.11) - 2019	Flood Plain District Zoning (Chapter 21.10) - 2020
Regulatory area / base flood elevation	all special flood hazard areas within town: Zone A, AE, AH, AO, A99, V, or VE - boundaries defined by 100 yr base flood elevation (Plymouth County FIS 7/6/2021)	- Special Flood hazard zones A, AO, AH, AI-30, AE, A99, VI-30, VE, V (100yr floodplain) - base flood elevation = 100yr storm	- special flood hazard areas Zones A, AE, VE - 100year base flood elevation	- special flood hazard areas Zones A, AE - 100year base flood elevation
uses regulated in district	- encroachments prohibited in floodway which would increase flood levels within community during base flood discharge - permit required for any development that might increase flooding	- encroachments prohibited in regulatory floodway which would result in increase in flood levels within community during base flood discharge	- alteration of sand dunes in zone VE prohibited - all new construction in Zone VE must be landward of mean high tide	
Permitted uses	- low flood damage potential, no obstructions to flood flows, allowed if permitted in underlying district and do not require structures, fill, storage: - agriculture, forestry, nursery, outdoor recreation, conservation, wildlife management areas - temporary non-residential structures for fishing/growing / harvesting/ storage/sale of crops - previously existing buildings	- low flood damage points, do not threaten other lands during flood, do not require storage of materials, structures, flood control works, filling/grading - agriculture, forestry, nursery, outdoor recreation, conservation, wildlife management areas - temporary non-residential structures for fishing/growing / harvesting/ storage/sale of crops - previously existing buildings - muni water works, pumping stations, essential services - residential uses - lawns, gardens, parking areas, structures for storage (not human habitation)	- low flood damage potential, no obstructions to flood flows, do not require storage of materials, structures, fill - agriculture, forestry, nursery, outdoor recreation, conservation, wildlife management areas - temporary non-residential structures for fishing/growing / harvesting/ storage/sale of crops	- low flood damage potential, no obstructions to flood flows, allowed if permitted in underlying district and do not require structures, fill, storage: - agriculture, forestry, nursery, outdoor recreation, conservation, wildlife management areas - appropriate non-residential structures for fishing/growing / harvesting/ storage/sale of crops - previously existing buildings

**Floodwater Regulatory Review:
Floodplain Zoning**

Variances	<ul style="list-style-type: none"> - town must notify property owner of impacts to annual flood insurance premiums - must meet requirements for variance set by state - good cause exceptional hardship, no threat to public safety / expense, minimum action to afford relief 		<ul style="list-style-type: none"> - must meet requirements for variance set by state 	<ul style="list-style-type: none"> - special permit from board of appeals required for any structure/building - review by COnComm, PB, BoH, Town Engineer, Building Inspector - no encroachment unless registered professional engineer certifies shall not result in any increases in flood levels during 100yr flood - Board may specify additional requirements/conditions to protect health, safety, welfare of public - variances in accordance with state requirements
Construction guidelines	<ul style="list-style-type: none"> - compliance with MA state building code for construction in floodplains - All subdivision proposals must be designed to minimize flood damage, locate utilities to minimize flood damage, adequate drainage to reduce exposure to flood hazards 	<ul style="list-style-type: none"> - all structural & non-structural activities/development shall comply with WPA, MA state building code for floodplains, Title V - drainage paths around structures to guide floodwaters away required within Zones AH, AO 	<ul style="list-style-type: none"> - all structural & non-structural activities/development shall comply with WPA, MA state building code for floodplains, Title V - All subdivision proposals must be designed to minimize flood damage, locate utilities to minimize flood damage, adequate drainage to reduce exposure to flood hazards 	<ul style="list-style-type: none"> - all structural & non-structural activities/development shall comply with WPA, MA state building code for floodplains, Title V
Site plan review	<ul style="list-style-type: none"> - Plans must be reviewed by ConComm, PB, BoH, Building Commissioner 	<ul style="list-style-type: none"> - base flood elevation required for subdiv/development proposals >50 lots / 5ac within unnumbered A zones - existing and proposed contours and elevations of structures required on plan proposal - Plans reviewed by ConComm, PB, BoH, Building Inspector 	<ul style="list-style-type: none"> - base flood elevation required for subdiv/development proposals >50 lots / 5ac within unnumbered A zones 	<ul style="list-style-type: none"> - base flood elevation required for subdiv/development proposals >50 lots / 5ac within unnumbered A zones
Floodplain Administrator	Building Commissioner			

**Floodwater Regulatory Review:
Hazard Mitigation Planning**

	Lakeville	Middleborough	Freetown	Rochester
Current HMP?	In development	Approved 2015; expired	No HMP	Approved 2005; expired
Expiration date	TBD	9/30/2020	n/a	1/28/2010
Flood vulnerability assessment		high frequency; extensive severity; affecting limited geographic areas		
Floodplains identified		100yr floodplain		
Dam safety		- 20 dams registered; 2 not - 8 are regulated: 4 significant hazard, 4 low hazard		
Recorded flood occurrences		- 100yr flood events: 3/17/10, 4/1/10		
Flood locations		- Assawompset Pond Complex - Nemasket River: Montello St homes near East Main St; East Main St wastewater pumping station; Oliver Mill Park; East Grove St well; Everett St WWTP - Taunton River: Woloski Park; Summer St bridge (since replaced); Titicut St Bridge (predicted that 500yr flood would impact many more homes) - Pratt Farm dams - Fuller St property - Shingle Mill Pond off Plympton St - Marion Rd Cranberry reservoir dam - road closure location chart p 41		
Flood management protocols / mitigation activities		- Assawompset Pond elevation study to optimize pond levels for adequate drinking supply while reducing flood threats - participation in NFIP since 1981 - Floodplain bylaw - Include HMP action items in next Capital Improvement Plan - Minimum upland area required on residential lots to prevent encroachment - Maintenance of drainage facilities to allow free water flow		
Local floodplain manager		Building Inspector		
NFIP data		- 34 policies (as of 2010) - 20 claims since 1981 (15 paid out)		

Floodwater Regulatory Review:
Hazard Mitigation Planning

Repeat flood loss documentation		<ul style="list-style-type: none">- 1 property met FEMA's repetitive loss definition (as of 2011)		
Proposed actions		<ul style="list-style-type: none">- Woloski Park repetitive flooding: acquire residential properties and/or elevate access road- Amend floodplain zoning- integrate HMP into MP, OSP- Hazard mitigation public education- Develop management/ operations plan for APC- Install gauges to monitor APC & Nemasket elevations- Local dam safety program- Evaluate, register Shingle Mill Pond & Pratt Farm Dams- Water Dept Emergency Response Plan- GIS implementation to assess and track mitigation efforts- ID & map road flooding risks; alt. routes; recommend actions for each- Culvert mapping & monitoring program		

Water Supply Regulatory Review:
Water Resource Protection Overlay Districts

	Freetown	Lakeville	Middleborough	Rochester
Water Resource Protection Overlay District?	N	Y - Water Resource Protection District Regulations (Zoning 7.2)	Y - Water Resource Protection District (Zoning 8.2)	Y - Groundwater Protection District (Zoning 21.30) - outside watershed
Area(s)	n/a	entire town	<ul style="list-style-type: none"> - WRPD Z1: 400' radius around public wells (=MGL Zone I) - WRPD Z2: aquifer area that contributes to public well (=MGL Zone II and IWPA) - WRPD Z3: area from which surface/ground waters drain into Z2 (=MGL Zone III) - WRPD Z4: entire town (outside Z1, 2, 3) 	- Zone I & II areas; doesn't overlap with watershed area
Development / use restrictions?	n/a	<ul style="list-style-type: none"> - no outdoor storage of salt, snow-melt chemicals, pesticides, herbicides, other hazardous chemicals - no disposal, use, stockpiling of demolition materials, wastes, hazardous chemicals 	<ul style="list-style-type: none"> - Z1: public water supply uses only (per CMR 22.00) - Z2& Z3 prohibited uses: landfills, soil removal within 4' of historical high groundwater, hazardous waste facilities, auto graveyards/ junkyards, chemically treated snow/ice disposal/ stockpiling - Z2 prohibited uses: sewage disposal systems > 110gal/d, petroleum stations, lots not on town sewer <60k sqft - Z3 prohibited uses: sewage disposal systems >440 gal/d, stockpiling of chemically treated snow/ice from outside Z3, lots not on town sewer <20k sqft - Z2 & Z3 SP uses: storage of sludge/sewage, deicing chemicals, manure, fertilizers, hazardous materials, automobile service shops, building/activity within 100' (Z2) or 25' (Z3) wetland - Z4 prohibited uses: hazard waste facilities, landfills; SP uses: sludge/septage landfilling/storage, municipal landfill, activity w/in 25' wetland, auto service shops/ junkyards, haz material storage, petroleum stations 	<ul style="list-style-type: none"> - prohibited uses: landfills, auto junkyards, haz waste sites, petroleum stations, haz mat storage, earth removal w/in 4' of high water, snow stockpiling/disposal from outside district - SP uses: toxic/haz mat handling, impervious cover >15% or 2500 sqft, pesticide/herbicide application (non-domestic/ agricultural), non-ag water control devices
Impervious cover limits?	n/a	none	<ul style="list-style-type: none"> - 25% max lot cover in Z2; 15-25% requires SP & groundwater recharge - 40% max lot cover in Z3; 25-40% requires SP 	- >15% lot or 2500sqft requires SP
Stormwater Management	n/a	none	<ul style="list-style-type: none"> - parking areas > 2fam must be impervious w/ oil/sediment traps, infiltration through above ground vegetated infiltration basins - groundwater recharge required in Z2 only - min natural vegetation area 35% (Z3) or 50% (Z2) lot - post-development runoff shal not exceed pre-dev up to and incl. 100yr storm 	- groundwater recharge required; vegetated infiltration basins for non-res uses
Enforcement	n/a	Planning Board	Board of Selectmen	Planning Board; violations given to Zoning Enforcement Officer

Water Supply Regulatory Review:
Water Resource Protection Overlay Districts

	- Site plan review design standards include minimizing adverse impacts to "water resource protection recharge areas" - Wetland bylaw includes public/private water supply as a resource area value	Special permit from PB (for continuing or expanding already existing prohibited uses?) requiring site plans show extent of impervious areas, water supply, drainage layout/design; provisions to prevent detrimental conditions to water supply; provisions to control ground/surface water pollution		
Other				
Water Use Restriction Bylaw?	N	N		

Water Quality Regulatory Review:
Wetland Buffer Protections

	Lakeville	Middleborough	Freetown	Rochester
Wetland bylaw?	no	yes	yes (2019 gen Article 7; 2008 rules & regs)	yes
Wetland buffer protections	n/a	25 ft buffer - undisturbed, natural vegetation/ soil (water resource protection district only?)	100ft of wetlands, lands subject to flooding; 200ft perennial river/ stream/ lake; abutting resource area (incl flood control) *Art 7 purpose & jurisdiction good model - Commission shall take into account cumulative impacts to "resource areas" across community/ watershed from past/present/foreseeable future actions - can deny permit if conditions fail to protect resource areas - no activity will be permitted within 200ft rivers/lakes/ ponds unless proven with preponderance of evidence no practicable alternative and no significant adverse impact	- Wetlands or lands subject to coastal storm flowage or flooding - Other wetlands >5000 sq ft (in addition to WPA) - 100ft buffer IDed as resource area in definitions (should be clearer in jurisdiction) - Permitting guide specifies 100' wetland buffer, 200' river/stream buffer - 25' no disturb zone (no activity permitted)

Water Quality Regulatory Review:
Septic Bylaws

	Lakeville	Middleborough	Freetown	Rochester
Total N Requirement	Baseline Title V (including 440 gpd of design flow per acre limit in IWPA and Zone II Areas)	Baseline Title V (including 440 gpd of design flow per acre limit in IWPA and Zone II Areas)	Baseline Title V (including 440 gpd of design flow per acre limit in IWPA and Zone II Areas)	Baseline Title V (including 440 gpd of design flow per acre limit in IWPA and Zone II Areas)
Exceptional Circumstances	Advanced I/A system might be required if septic within 100 feet of three or more abutting wells; Cesspools considered failed at time of property transfer	Systems with cesspools, privies, or overflow cesspool components automatically fail Title V inspection and must be fully replaced		Cesspools considered failed at time of property transfer
Other Features	Checklist form for Innovative / Alternative Systems			50-ft wetland setback
How much of town on private septic?				
Inspection triggering events	change in use (including alterations, change from seasonal to year round use)			
Building/installation regs			Couldn't find BoH regs; building dept steps to obtaining a building permit require ConComm, Boh/Building dept to sign off on septic systems	

EXAMPLE BYLAWS	Marion	Tisbury	Wareham
Definition	Alternative System: A DEP-approved septic system designed to provide or enhance the removal of nitrogen in on-site sewage disposal; Enhanced De-Nitrification Technology - any tech intended to meet 19 mg/liter standard approved by DEP for general use, provisional use, or pilot program use for nitrogen reduction	Enhanced De-Nitrification Technology - any tech intended to meet 19 mg/liter standard approved by DEP for general use, provisional use, or pilot program use for nitrogen reduction	Alternative System: A DEP-approved septic system designed to provide or enhance the removal of nitrogen in on-site sewage disposal
Area Applicability	Townwide	Lake Tashmoo and Lagoon Pond Watershed Nitrogen Management Districts (map included within regulation as appendix) and note in Approved Sewer District	Water Quality Protection Zone = Area within 500 ft of surface water. No septic systems are allowed within 150ft of surface water; from 150-500 ft only alternative systems are allowed
Total Nitrogen Requirement	TN effluent limit of 19 milligrams per liter or less	TN effluent limit of 19 milligrams per liter or less	TN effluent limit of 19 milligrams per liter or less
Triggering Event(s)	New Construction (unless able to connect to sewer), finding that a system is nonconforming or failed at the time of sale	New Construction, failed system (provided subsidy approved as required), expanding capacity of existing system, on basis of inspection at time of sale	New construction, increase in actual or design flow to an existing system in the Zone, failed systems in Zone
Variance Potential	Yes from BOH	none noted	Yes from BOH
Operation / Maintenance	Agreement required as part of permit, must take immediate action and notify BOH within 7 days if TN not in compliance	In accordance with all local and state regulations	Agreement required as part of permit, must take immediate action and notify BOH within 7 days if TN not in compliance

Water Quality Regulatory Review: Septic Bylaws

[illegible]

Monitoring	Semi-annual then once a year after two years; all results provided to BOH.	In accordance with all local and state regulations	Semi-annual then once a year after two years; all results provided to BOH along with annual \$50 reporting fee.
Deed Notice	Must file the presence of alternative system approved by BOH with Registry of Deeds before issuance of CO	-	Must file the presence of alternative system approved by BOH with Registry of Deeds before issuance of CO
Findings and Purpose	Present, related to effects of N on coastal waters	Extensive Findings and Purpose Sections; Frames as partnership with property owners and septic engineers for in-field testing of innovative de-nitrification technologies;	-
Subsidy	-	Subsidy available for some or all of the costs of engineering, installing, monitoring, and/or testing Enhanced System available to eligible owners of property with failed systems	-
Effective Date / End Date	If sewer becomes available, must connect. Maximum time allowed for connection established by formula that accounts for the age of the existing denitrification system	BOH will declare reg ceases to apply when BOH determines that sufficient N is being removed to meeting water quality standards for N	-

Ecology Regulatory Review:
Open Space and Recreation Planning

	Lakeville	Middleborough	Freetown	Rochester
Open Space and Recreation Plan?	Expired; update in process?	Expired; plan in process	Expired; plan in process (pulling this info from MVP)	Yes
Date	2012	2008?	unknown	2019 (draft - not reviewed yet)
Expiration	2019	2022?		2026
Natural Areas identified	Assawompset Ponds Complex Bettys Neck, Vigers Conservation Area, Night Soil Repository Area	Town of Middleborough Soil Associations Town of Middleborough Surface Watersheds (from Mass GIS)		Rochester Pond Systems,
GIN, BioMap, TNC Resilient Lands, wildlife corridors mapped in plan	Contextual maps w SRPEDD road, zoning, and water layers Land Use Maps from MassGIS LU layers Water and Sewer Maps (SRPEDD) Surficial Geology Map General Soil Map Open Space and Recreation Plan - Special Landscapes and Unique Features Map Night Sky Survey Open Space and Recreation Plan Water Resources Map BioMap and Living Waters Cores NHESP Priority and Estimated Habitats TNC - Habitat Protection Priorities in the Taunton River Watershed (Town of Lakeville) Natural Heritage Endangered Species Program - Vernal Pools and Natural Communities	SRPEDD drafting current OSRP update and will include GIN, BioMap.... Maps in plan (From pervious OSRP: Division of Fish and Wildlife, Bradshaw Property (57 acres, owned by town), Bally property (13 acres) owned by DFW), Vernon Street (DEM 13 acre Slein Property), Rocky Gutter, Forbers Swamp (meeting house swamp), Beaver Dam Swamp, White Oak Island, Rocky Gutter and Forbes Swamp, Devil's Kitchen), Core habitat areas,		Regional Context Map (SRPEDD) Environmental Justice Populations (MassGIS and SRPEDD) Zoning Map (Rochester) Surficial Geology (MassGIS) Unique and Scenic Reources Major Watersheds and Sub Watersheds Protected Lands Unprotected Open Lands (BBNEP) Chapter 61 Land (SRPEDD)
Climate change / resilience referenced in plan? Conservation priorities reflect resilience?	Mentioned open spaces in terms of 'ecosystems services' Mention of low impact development and conservation of critical areas			

Ecology Regulatory Review:
Open Space and Recreation Planning

<p>Regional open space linkages addressed?</p>	<p>Describes how 'coalitions like the one that gave us Betty's Neck will be much harder to put together' (Social regional OS linkage)</p> <p>Mentions the APC in terms of its importance to water in the region and which towns withdraw water from the region.</p> <p>The 2007/2008 Regional Open Space Plan for Berkley, Fall River, and Lakeville was mentioned as a mechanism to support open space protection in Lakeville</p> <p>"An extensive, connected network of suitable habitat is required, for example, to allow re-establishment of populations after crashes due to the combination of natural environmental factors and the vagaries of demography. Connectedness has long been recognized as a basic tenet of conservation planning. However, it is critical that connecting pieces not be as wide as possible, but swaths amply wide to provide quality habitat in their own right. Ongoing efforts between Lakeville and its neighboring towns should be pursued more vigorously to promote the preservation of large open tracts of land overlapping town borders."</p> <p>Goal 4 (Develop and maintain a priority</p>			
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Ecology Regulatory Review:
Open Space and Recreation Planning

<p>Open Space Protection Goals?</p>	<p>1A: Find and take steps to eliminate sources of pollution and degradation, especially around the Ponds and water resources, through regulation and education</p> <p>1D: Enhance protection of water resources by ensuring their correct designation i.e. perennial streams and Great Ponds</p> <p>2A: Maintain areas of intact habitat (large, connected high quality habitat)</p> <p>2C: Create and implement forest plan for town forest areas, including Betty's Neck, Vigers Conservation Area, and the night soil repository area.</p>	<p>Protect Ground Water Resources including current and Future Public Water Supply well Sites and Zone I, II, and IIIs. Evaluate, prioritize and preserve or protect parcels necessary for protection of existing Public Water Surface Water Supplies and their watersheds.</p> <p>Identify and prioritize parcels critical to the protection of Middleborough's and the region's water resources protection / acquisition including riparian zones and adjacent watersheds'</p> <p>Manage and improve the Nemasket River ecosystem to encourage recreational use of and on the river while at the same time, improve the anadromous fish run by various conservation and restoration means.</p>		<p>Protect surface and ground water quality and quantity, and natural resources, in the Mattapoissett River and Sippican River watersheds.</p> <p>Increase herring and other aquatic populations in the Mattapoissett and Sippican Rivers</p> <p>Preserve identified areas/resources that are of unique natural, cultural, historic, and scenic value to the Town.</p> <p>Acquire lands critical to water supply protection and recharge in the Mattapoissett and Sippican River watersheds when they are for sale or are released from Ch. 61 programs</p>
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Ecology Regulatory Review:
OSRD Bylaws

	Lakeville	Middleborough	Freetown	Rochester
Open Space Residential Design / Conservation Subdivision allowed?	No	Open Space and Resource Preservation Development (sect 7.5 in zoning bylaw)	No - looked at Planned Mixed Use Development bylaw (General bylaws 11.29 & PMUD rules and regs - review completed in 2020)	Flexible Development SP option (required for all major residential developments = subdivisions of 10 or more lots, optional for others) allows higher density and more flexible design standards, permanent protection of open space (no required min?), point incentive system for bonus lots (zoning ch 22.40)
Zoning districts		Residential, general use districts	PMUD Overlay District only - relatively small area within general use and industrial zoning districts	
By right / special permit?		special permit only	special permit	
Guidelines / requirements			- min 5ac/ max 44ac lot intended for mixed use - maximums on residential units - requirements for smaller (< 3 bed) dwellings, 55+ housing (density bonus for 55+ restricted units) - TDR allowed within OD - LID required	
Open Space Protection Required		Common open spaces are sent to the Town 'for park or open space use', a nonprofit corporation (for conservation), or corporation or trust (owned by owners of lots within developments) - if the land isn't given to the town, 'perpetual restriction MGL Ch 184 Sec 31 - 3' is implemented 'providing permanent restrictions made running to or enforceable by the town'	- min 30% contiguous open space required - permanent conservation restriction required w/ easement to town for maintenance	
Contiguous land protection required?		No less than 40% of land 'shall be devoted to common open space', 'common open space shall be planned as large, contiguous units wherever possible,' (no strict requirement for continuity)	- yes, within lot, no mention of connecting with other lots, except linking ped/bike paths - village green may be separate - roads can separate contiguous space	
How is open space selected?		At least 5 acres, number of OSRD buildings cannot be greater than number allowed by conventional design	- central village green min .5ac, may be included w/in min open space requirement, even if not contiguous - no more than 25% of open space shall be wetland resource area - no specific process for selecting open space, but applicants encouraged to consult with ConComm	
Existing OSRDs?		yes - Harvestwood Estates? Willowtree Ln/Plain St	Assonet Commons - 125 South Main St? (proposed 2020 - in Google maps looks under construction, clear cut lot)	

Land Development Regulatory Review:
Overview

Document reviewed	Lakeville	Middleborough	Freetown	Rochester
Stormwater bylaw?	<p>general bylaws: "Non-stormwater discharges to the municipal storm drainage system of the town of Lakeville" applies to any discharges to muni system (adopted 2006)</p> <p>- Building Commissioner/ Dept is Authorized enforcement agency</p>	<p>Standalone bylaw (03/2020) SW Rules & Regs (08/2020)</p> <p>- BoS oversees, Stormwater Committee (incl town manager, DPW Dir, Asst Hghwy Super, Building Comm, Cons Agent, Health Officer, Town Planner) may administer/ implement/ enforce rules & regs</p> <p>- Permit required for any alteration, disturbance, development, redevelopment (res, comm, ind...) disturbing 10,000sq ft (exemptions: single family landscaping maintenance, fencing that doesn't alter terrain/drainage, utilities that don't alter terrain/drainage/ sediment discharge, ag maintenance as per WPA, road resurfacing, emergency repairs, activity subject to ConComm OOC in compliance w/ SW regs)</p> <p>- 2 tiers: admin SW review permit (10,000sqft - 1 ac) & General SW Management permit (>1ac) - general permit requires public hearing</p> <p>- concurrent permitting with ConComm / PB (no sep SW permit app)</p> <p>- preconstruction review w/ selectboard; will recommend use of LID/GI</p> <p>- mitigation for redevelopment sites w/in same HUC10 watershed</p>	<p>Article 27 in general bylaws, "Non-Stormwater Discharges to the Municipal Storm Drainage System of the Town of Freetown" (adopted 2007), applies to all water entering town storm drainage system</p> <p>- Building Commissioner/ Dept is Authorized enforcement agency</p>	<p>No standalone bylaw/ rules & regs</p> <p>- Subdiv rules & regs contain standards and specs for SW management systems (Design and Construction standards - sect 5 & app A)</p>
Zoning bylaw	May-21	amended 10/5/15	Article 11 of general bylaws (10/28/2020)	amended 2020
Subdivision Rules & Regs	Jan-16	Jun-20	Apr-03	1/1/2015 Major Residential Development (10 or more house lots) & Minor Subdivision Development (<10 lots)
Site Plan Review	<p>2021 Zoning bylaw sect. 6.7 (amended 2019)</p> <p>no rules and regs</p>	<p>no general bylaw/ rules & regs</p> <p>Business district has SPR</p>	<p>Zoning bylaw 11.23</p> <p>SPR Rules & Regs (Aug 2016)</p> <p>SPR application</p>	<p>- no separate bylaw or rules & regs</p> <p>- Zoning sect. 22.10 outlines site plan review & approval - required for Industrial, general & commercial districts, mixed use development including res in limited comm</p> <p>- residential, ag, normal maintenance are exempt</p>
What triggers SPR?	<p>- any new business/ industrial structure construction, addition resulting in 1500sq ft aggregate floor area or lot coverage disturbance, increase in occupancy load by 10%, change in use to bus/ ind</p> <p>- residential building permits (new, modification, or addition) that disturb more than 43,560sqft (1ac) of ground</p>	<p>all permits in business district, subdivisions (didn't find other requirements)</p>	<p>- 2500sqft gross floor area or generating 25 vehicle trips/day; construction/ expansion muni, institutional, commercial, industrial, multi-family (3 or more) building or parking lot for above</p> <p>- totals include all approved building permits, special permits, site plans within 5 previous calendar years</p> <p>- minor SPR: new construction 2500-10,000 sqft GFA; expansion 2500-8000 sqft GFA; accessory building addition 2500-5000 sqft GFA; change of use requiring up to 5 additional parking spaces, increased impervious surfaces (other than building footprint) up to 2000sqft; construction/expansion parking lot up to 5 new parking spaces (PB may waive requirements for minor SPR)</p>	<p>- non-residential building/construction permit 675sqft total gross floor area or \$25k or required changes to parking area</p>

Land Development Regulatory Review:
Overview

Who reviews?	PB (SPRA); applicant must submit copies to police & fire chief, BoH, ConComm, Highway Surveyor, Building Dept, Open Space Committee, Board of Selectment (applicant must complete SPR receipt form for proof of submittal to other depts)	Zoning board of appeals reviews site plans for business district	PB (SPRA); BoH, Building Inspector, Highway Surveyor, Chief of Police, Fire Chief, ConComm, others at discretion of PB (by PB)	<ul style="list-style-type: none"> - PB must approve site plan before Building Commissioner grants permit; Building Comm shall enforce conditions imposed by PB - PB oversees SPR, but must share application and site plan w/ Con Comm, BoH, Building Comm, Highway surveyor, fire chief, police chief for review/comment; pre-submission conference w/ town planner, cons agent, hgwy surveyor, regional sanitarian, building commissioner
LID/resilience considerations in SPR, subdiv?	<ul style="list-style-type: none"> - SW management plan required detailing BMPs employed to meet current MassDEP performance standards (SPR) - Subdiv rules & regs require preservation of existing trees where feasible, otherwise planting of street trees every 40' and trees on lots to provide at least 1 area of shade on each lot - Subdiv rules & regs - outside RoW no trees >24" can be removed without PB approval 	<ul style="list-style-type: none"> - Subdivision rules & regs design guidelines prohibit clear cutting of lots, existing trees/veg should be protected wherever feasible - subdiv design guidelines direct roadway design to fit existing topography as much as possible to minimize cut/fill - Subdiv design guidelines: every effort shall be made to preserve all natural features, must be presented on plans w/ provisions to protect them - Subdiv design guidelines grant authority to PB to require designated open space in subdiv, conservation land and CRs shown on plan (1ac/ 20 dwellings or 3x floor area/ 10% land area for non-residential subdivs) - SW Bylaw - purpose of permitting / performance standards includes "reduce and eliminate impairments of the Nemasket, Taunton, and Weweantic Rivers and to preserve the health of the Town's water resources..." & establish provisions for long-term responsibility for maint, adequate funding mechanism for review/ inspection/ maintenance... - SW bylaw requires preconstruction review w/ selectboard; will recommend use of LID/GI - SW bylaw includes "Burden of Proof" clause stating the permit applicant shall provide preponderance of credible evidence work will not have unacceptable adverse effect on SW quality, flood elevations, adjacent/down gradient property, health/safety/ environment 	<ul style="list-style-type: none"> - maintain natural drainage patterns - must not result in significant increases in rate/volume of SW runoff (or take adequate provisions to maintain existing level) (SPR) - Highway Surveyor determines locations/species of trees to retain/plant (SPR) - non-structural LID drainage encouraged where practical in design standards; increases in surface runoff should be recharged on site (SPR) 	<ul style="list-style-type: none"> - zoning limited use in limited commercial district, requires 20% of site area reserved for landscaped courtyards/decks/ pedestrian pathways/ gardens/ play areas/ rec/ green space - SPR includes consideration of SW runoff impacts to abutters, preservation of natural/historic features & rural atmosphere, pruning & selective cutting (vs clear-cutting - "avoid all but the absolutely necessary clearing of trees and other vegetation") - SPR requires minimization of cut/fill, wetland veg displaced, SW flow increase, soil erosion, air/water pollution, groundwater contamination from on-site wastewater disposal/ hazardour substances containment, changes in max groundwater elevations - PB may not make SPR decision without review of ConComm w/ particular reference to WPA and Rochester Wetlands bylaw - Flexible Development SP option (required for all major residential developments = subdivisions of 10 more lots, optional for others) allows more flexible design standards accommodating some LID, shared sewage systems, protected open space (zoning ch. 22.40) - Subdivision rules & regs require EIS for 10 or more lots (Major Res Dev) - Subdiv R&R prohibit filling/construction within 100yr floodplain for streets (w/o ConComm OOC); no point on travel way may be below 100yr base flood elevation - Subdiv R&R require adequate SW easement/ROW
Preapplication?	not addressed		Yes - PB will discuss preliminary plans with applicant at any PB meeting	pre-submission conference required prior to SPR application w/ town planner, cons agent, hgwy surveyor, regional sanitarian, building commissioner
Plan Contents	<ul style="list-style-type: none"> - landscaping, incl trees to be removed and retained - drainage calcs w/ verified soil types - wetlands (approved by ConComm) - SW management plan detailing BMPs used to meet MassDEP performance standards 		<ul style="list-style-type: none"> - abutting properties min 50' outside property line - major land features (waterways, wetlands, natural drainage courses, large trees, wooded areas - 100yr floodplain per FIRM - All drainage & sewer system plans/profiles, incl method of carrying water to nearest watercourse (whether or not w/in project boundaries) - Environmental Impact Assessment may be required 	

Land Development Regulatory Review:
Overview

Encourage/require LID across all bylaws & regs		- Subdiv regs: increases in SW runoff resulting from development shall be minimized through use of LID, incl reducing impervious surfaces and limiting disturbance of natural vegetated areas; lot drainage design should incorporate LID as per latest MA SW Handbook		- LID is preferred in stormwater management design guidelines/ performance standards in Appendix A of Subdivision rules & regs, but otherwise barely mentioned - could be made more obvious
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Land Development Regulatory Review:
Mass Audubon LID Bylaw Review Tool Analysis

Factors	Conventional	Better	Best	Community's Zoning	Community's Subdivision Rules & Regulations	Community's Site Plan Review	Community's Stormwater/LID Bylaw/Regulations
GOAL 1: PROTECT NATURAL RESOURCES AND OPEN SPACE							
Soils managed for revegetation	Not addressed	Limitations on removal from site, and/or requirements for stabilization and revegetation	Prohibit removal of topsoil from site. Require prep of soils compacted during construction	(Not applicable)	Not assessed	Rochester: SPR (zoning bylaw) requires minimization of erosion	
Limit clearing, lawn size, require retention or planting of native vegetation/naturalized areas	Not addressed or general qualitative statement not tied to other design standards	Encourage minimization of clearing/ grubbing	Require minimization of clearing/grubbing with specific standards	Not assessed	Not assessed	Freetown: design standards retain open space, minimize disturbance; low impact landscaping and stormwater practices strongly encouraged; minimize tree/veg removal Lakeville: protect environmental features on site and adjacent; minimize erosion Middleborough: Rochester: (zoning bylaw) requires minimization of cut/fill, avoiding clear-cutting	
Require native vegetation and trees	Require or recommend invasives	Not addressed, or mixture of required plantings of native and nonnative	Require at least 75% native plantings	Not assessed	Not assessed	Freetown: preference to maintain existing health trees/ groundcover, indigenous species, enhance wildlife habitat Lakeville: Middleborough: Rochester: Industrial/ commercial district (zoning) requires vegetated buffers w/ 4 season evergreens for screening	
GOAL 2: PROMOTE EFFICIENT, COMPACT DEVELOPMENT PATTERNS AND INFILL							
Lot size	Required minimum lot sizes	OSRD/NRPZ preferred. Special permit with incentives to utilize	Flexible with OSRD/NRPZ by right, preferred option	Freetown: 70,000 sqft min (52k non-resource area), PMUD OD 5ac min (PMUD dimensional requirements removed in Oct 2019 - same as underlying?) Lakeville: 70k sqft (52,500 contiguous non-wetland); 3ac for Industrial-B; Smart Growth OD: 5000sqft for single fam, 7000sqft for 2/3 family, 40ksqft for multi-fam & business Middleborough: min 20k/60k in residential B/A districts, 80k in res-rural district, 43,560 commercial district (no mins for general use, business, industrial) Rochester: min 43,560sqft ind/gen commercial, 30k sqft limited comm, 87,120 sq ft ag-res	(Not applicable)	(Not applicable)	(Not applicable)
Housing density	Multi-family housing not allowed, or only in/adjacent to commercial and industrial uses	Multi-family and cluster developments allowed by special permit.	Multi-family housing allowed by right in most residential areas; cluster developments encouraged with density bonuses for LID features and no maximum lot coverage	Not assessed	(Not applicable)	(Not applicable)	(Not applicable)

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Setbacks	Required minimum front, side, and rear setbacks	Minimize, allow flexibility	Clear standards that minimize and in some instances eliminate setbacks	Freetown: single/duplex residential: 50' front, 20' side/rear; village residential: 10' all; multi-family: 100' all; PMUD: 6' front, 10' side, 20' rear (PMUD dimensional requirements removed in Oct 2019 - same as underlying?) Lakeville: Residential 40' front, 20' side/rear; business/ industrial 40' all; industrial-B 60' front, 40' side/rear; Smart Growth OD: res 20', bus no front/side setback, 20' rear Middleborough: residential: 25-50' front, 10' side/ rear; industrial 150' all; business 10' rear; GU 35' front, 25' side/rear, commercial 40' front, 25' side/ rear Rochester: min ind 40' front/ side/ rear or 10' from RR ROW; gen & limited comm 30' front, 40' side/ rear (mixed use in limited commercial must match average of adjacent structures); ag-res 40' all; additional accessory structure setbacks for ag-res	(Not applicable)	(Not applicable)	(Not applicable)
Frontage	Required minimum frontage for each lot/unit	Minimize especially on curved streets and cul-de-sacs	No minimums in some instances, tied into other standards like OSRD design and shared driveways.	Freetown: 175ft min Lakeville: 175ft; 200ft for industrial-B; Smart Growth OD: 50' 1-3 fam, 100' multi-fam & business Middleborough: 125' / 175' / 200' for res B / A/ rural, 75' in GU, 150' commercial Rochester: min 150' ind/gen comm, 100' limited comm, 225' ag-res (multi-fam in ag-res SP min 150' up to 30 dwellings)	(Not applicable)	(Not applicable)	(Not applicable)
Common driveways	Often not allowed, or strict limitations	Allow for 2-3 residential units	Allow for up to 4 residential units, preferably constructed with permeable pavers or pavement	Freetown: not addressed Lakeville: not addressed Middleborough: not addressed Rochester: allowed for 2-4 single-fam res lots by SP including all involved land owners; may not count towards required frontage	All: Not addressed	Freetown: not addressed Lakeville: Middleborough: Rochester:	(Not applicable)
GOAL 3: SMART DESIGNS THAT REDUCE OVERALL IMPERVIOUSNESS							
Impervious cover limits and infiltration rates	Not usually addressed in zoning and subdivision regs for rural/suburban residential	Require no net increase in site run-off from pre- to post-development	Impervious cover limits tailored to the community and district type (i.e. <10% total impervious cover in rural districts, but higher in urban and redevelopment districts); post-development infiltration should be equal to or greater than pre-development. Following best practice may also help communities comply with MS4 permit requirements.	Freetown: max lot coverage by structures (incl imperviousness): 30% residential, 65% village residential, 70% village business, 50% general use, 80% business, industrial Lakeville: max lot coverage (by structures, parking, pavement) 25% res, 50% bus/ ind/ ind-B; density bonuses in business/ industrial districts - up to 20% increase with approval from PB for compliance w/ large scale development SPR (Sect 7.6.1); Smart Growth OD - 30% single fam, 40% 2-3fam, 50% multi fam, 75% business Middleborough: 60% impervious cover limit/40% open space in GU; 65% impervious/ 35% open space in commercial (no residential requirements) Rochester: 70% max cover ind/gen comm/ limited comm, 20% ag-res	Freetown: runoff managed to pre-development level Lakeville: must maintain volume/ rate of runoff at natural / existing level (up to 25yr event) Middleborough: increases in SW runoff shall be minimized through use of LID, incl reducing impervious surfaces and limiting disturbance of natural vegetated areas Rochester: Design guidelines require subdivision not result in significant increase in rate/volume runoff; provisions must be taken to maintain natural/existing runoff; all runoff from 100yr storm must be mitigated/treated b4 flowing beyond site	Freetown: maintain natural drainage patterns - must not result in significant increases in rate/volume of SW runoff; increases in runoff should be recharged on site Lakeville: minimize SW runoff, maximize infiltration, minimize pollutants (meet MassDEP performance standards) Middleborough: Rochester:	(Not applicable)
Street location	Numeric and geometric standards based primarily on vehicular travel and safety, with basic pedestrian requirements e.g. sidewalks	Flexibility in applying standards, to reduce area of impact, grading, avoid key natural features	OSRD design preferred by-right. Require locating streets to minimize grading and road length, avoid important natural features	(Not applicable)	Not assessed	(Not applicable)	(Not applicable)

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Road width	Major and minor categories, 24-30'	Wide, medium, narrow categories. 22-24' max, plus 2' shoulders	Wide, medium, narrow, and alley categories. 20-24' widest for 2 travel lanes, 18-20' low traffic residential neighborhood, plus 2' shoulders. Allow alleys and other low traffic or secondary emergency access and all shoulders to use alternative, permeable materials.	(Not applicable)	Freetown: min widths: 40' + 10' shoulder primary, 30' + 10' shoulder major/secondary, 24' + 9' shoulder minor Lakeville: min 24' wide for minor and dead end streets, 26' wide for secondary, 30' for major/primary Middleborough: 24-26' min widths for residential district, based on # homes; 24' min width in rural district Rochester: 30' min for commercial/ind streets, 18-24' min for res based on # lots	(Not applicable)	(Not applicable)
Road ROW width	50-75', fully cleared and graded	40-50', some flexibility in extent of clearing	20-50' depending on road type	(Not applicable)	Freetown: min widths: 60' primary, 50' major/secondary, 42' minor Lakeville: min 50', 60' for major (PB may require more for larger volume streets) Middleborough: min 50' all streets, PB may require greater depending on volume Rochester: min 50' for res, 60' for ind/comm; greater widths as deemed necessary by PB	Freetown: as per subdiv rules & regs Lakeville: Middleborough: Rochester:	
Access Options	No common drives allowed, dead end allowed with limit on length and # of units	Allow dead end with limit on length and # of units. Allow common drives up to 2-3 units	Allow one way loop streets. Allow common drives up to 4 units, and alleys and rear-loading garages where suitable.	(Not applicable)	Freetown: dead ends allowed on minor steets only, max length 750' with turnaround Lakeville: not addressed Middleborough: Rochester: 1-3 min access locations from public way based on # lots; dead-end max length 500'	(Not applicable)	(Not applicable)
Dead Ends/Cul-de-sacs	120 ft or more minimum turnaround	Minimize end radii – 35 ft	Allow hammerhead turnaround	(Not applicable)	Freetown: minimum 50' turnaround radius Lakeville: max 750' long; min 120' turnaround road diameter/ 140' property line diameter Middleborough: max 12 lots; min turnaround diameter 105' for roadway and 130' property lines, no islands in center of turnaround Rochester: dead-ends must have cul-de-sac at closed end with min 130' travel way diameter / paved min 24' wide plus berm; alternative turnaround configurations subject to review/ approval by PB	(Not applicable)	(Not applicable)
Cul-de-sacs	Full pavement standard	Encourage center landscaping with bioretention	Require center landscaping with bioretention	(Not applicable)	Freetown: PB may require landscaped island in non-residential (§ IV. B. 2.) not required, no mention of bioretention; not addressed in residential Lakeville: not addressed Middleborough: no islands allowed at end of dead-ends - so not allowed? Rochester: center landscape plantings required	(Not applicable)	(Not applicable)
Curbing	Curbing required full length both sides of road	Allow curb breaks or curb flush with pavement to enable water to flow to vegetated LID features	Open drainage with roadside swales and no curbs preferred	(Not applicable)	Freetown: full length, both sides on primary/major streets; at intersections only on secondary/minor streets Lakeville: concrete berms/ curbs 6" along each side of roadway where sidewalks; 18" flat berm where no sidewalks or where PB waives curbs Middleborough: 3" monolithic cape cod berms required along both sides of all roadways Rochester: bituminous cape cod berms/ granite curbs required along all roads serving 3 or more lots	Freetown: not addressed Lakeville: (separate curb cut bylaw in general bylaws - no opening for any purpose allowed without permit from Board of Selectmen) Middleborough: Rochester:	Not addressed
Roadside Swales	Allowed as an option	Preferred over closed drainage	Preferred, with criteria for proper design. Adoption of technical specifications and design templates for green infrastructure recommended	(Not applicable)	Freetown: not mentioned, but vegetation strips are required along roadsides; vegetation strips must slope towards street Lakeville: Middleborough: Rochester: 3' grass planting strips required on either side of street, between curb and sidewalk/property line, sloping towards street, swales not mentioned; streets & drainage must conform to MA DPW Standard Specifications for Hghwys and Bridges	Freetown: non-structural LID, incl open drainage, grass swales, shallow detention basins encouraged in design standards Lakeville: Middleborough: Rochester:	Not addressed
Utilities	Off sets required contributing to wide road ROWs	Not specified, flexible	Allow under road, sidewalks or immediately adjacent to roads to enable placement of roadside swales.	(Not applicable)	Not assessed	Not assessed	(Not applicable)

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Sidewalks	Concrete or bituminous	Some flexibility in material and design	Prefer permeable pavement or permeable pavers	(Not applicable)	Freetown: min 5' class I Bituminous concrete Lakeville: 5' wide bituminous concrete Middleborough: 5' wide bituminous concrete Rochester: required along all roads serving 3 or more lots, full length, min 5' wide	Freetown: as per subdiv rules & regs Lakeville/ Middleborough/ Rochester: not addressed	(Not applicable)
Sidewalk location	Required both sides of road	Allow on only 1 side of road especially in low density neighborhoods	Prefer siting with land contours and for best pedestrian utility (e.g. connect with common areas and shared open spaces) – not necessarily immediately parallel to road.	(Not applicable)	Freetown: both sides along primary/major streets and one side along secondary/minor, along entire outside of cul-de-sac Lakeville: all along all streets, on one side Middleborough: only required on Collector Streets (25+ homes), both sides of street in res A&B and only one side in res-rural; minor streets only require on one side and only if street intersects a roadway with existing sidewalk; sidewalks should directly abut curb (no planting area separating from street) and may meander to accommodate topography, trees, etc Rochester: required on 1 side only on roads serving 3 or more lots, at least 3' from road	Freetown: should be provided along streets, separated by vegetated buffer Lakeville/ Middleborough/ Rochester: not addressed	(Not applicable)
Sidewalk drainage	Drains to road closed drainage system	Not addressed	Disconnect drainage from road system – e.g. adjacent green strips or within vegetated areas that can absorb sheet flow	(Not applicable)	Freetown: sloped towards road; vegetated strips required between road and sidewalk but no specification for drainage Lakeville: not addressed Middleborough: not addressed Rochester: not addressed, must slope towards road, vegetated strip required between rd and sidewalk	Freetown: not addressed Lakeville/ Middleborough/ Rochester: not addressed	(Not applicable)
GOAL 4: ADOPT GREEN INFRASTRUCTURE STORMWATER MANAGEMENT PROVISIONS							
Rooftop runoff	Prohibit directing clean roof runoff into closed municipal drainage systems.	Allow clean roof runoff to be directed to landscaped or naturally vegetated areas capable of absorbing without erosion, or infiltration	Require directing clean roof runoff to landscaped or naturally vegetated areas capable of absorbing, or infiltration	(Not applicable)	Freetown: not addressed Lakeville: allowed to drain to street drainage system (with explicit approval from PB) Middleborough: no drainage from roof drains or other on lot sources shall be connected to street drainage system Rochester: not addressed		All: not addressed
Overall stormwater design; piping and surficial retention vs. LID	Conventional stormwater system design standards	Encourage LID features and BMPs; design standards often not specified	LID design standard encouraging infiltration, allowing surficial ponding of retained runoff for up to 72 hours; systems designed for larger volume storms, accounting for future precipitation predictions; credit for green roofs towards stormwater requirements. Following best practice may also help communities comply with MS4 permit requirements.	(Not applicable)	Freetown: not addressed Lakeville: storm drains and retention basins designed for 25yr storm; all SW carried in ditches or storm drain lines to detention-retention basins capable of recharging 10yr storm or to permanent streams (must pass through sedimentation treatment prior to discharge) Middleborough: peak discharge after development for 10yr storm must not be greater than prior, SW management must be able to safely convey 100yr storm; storm drains, detention/ retention basins designed for 10yr storm; all SW conveyed in ditches/ storm drain lines to de-/retention facilities for recharge in compliance w/ MA DEP SWV regs, 80% sediment removal; no discharge overland across lot lines, properly treated SW shall be conveyed to nearest wetland resource area, permanent stream or muni drainage system Rochester: SW management systems design guidelines specified to maintain volume/rate of runoff; storm drains designed to manage 25yr storm flow, bridges/culverts/ open channels/ drainage systems/facilities designed to 100yr storm; system may make use of flexible means to manage SW, must function without frequent maintenance, where feasible should be directed to nearest open stream channel; LID BMPs specified in Appendix A performance standards	Freetown: recharge on site encouraged; surface water should not affect adjoining property/street/ storm drainage system; must prevent pollution of surface/ groundwater; non structural LID surface water drainage encouraged Lakeville/ Middleborough/ Rochester: not addressed	Freetown/Lakeville: building commissioner shall adopt BMP requirements for any activity/ facility which may contribute to storm drainage system; no specific practices listed; shall maintain watercourses on property free of debris/pollutants/ flow impediments Middleborough: LID required "to the maximum extent practicable"; on-site treatment & infiltration/ groundwater recharge (as per MA SWV Handbook BMPs), design standards (rules & regs) require LID BMPs, includes appendix with recommended practices; MS4 permit requirements (first inch runoff retained on site & treatment standards for new development; first 0.8in runoff retained on site for redev) Rochester: Subdiv rules & regs appendix A SW performance standards specify preferred LID BMPs

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Site Plan/Design Requirements	LID not addressed	Encourage use of LID features in site design - such as reduced imperviousness, maintaining natural hydrology, preserving open space, rainwater reuse.	Include bioretention and other vegetated LID features in site landscaping/open space requirements. Following best practice may also help communities comply with MS4 permit requirements. See section 2.3.5 of the MS4 permit for more information.	(Not applicable)	Freetown: Lakeville: developer may control SW runoff through any method suitable to site, subject to PB approval, LID not specified or favored; pollutant removal required for drainage from large parking areas and high volume streets Middleborough: SW runoff shall be minimized through use of LID, incl reducing impervious surfaces and limiting disturbance of natural vegetated areas; lot drainage design should incorporate LID as per MA SW handbook Rochester: Stormwater Management Report required with definitive plan; Design guidelines require maintain volume/rate of runoff, maintain integrity of natural drainage patterns, reduce pollution using BMPs, protect health & enviro during construction, provide treatment/management prior to discharge of SW; Performance standards provided in Appendix A for flood control and NPS pollution reduction - apply to all applications reviewed by PB, pre-/post-watershed plan showing all surface waters, wetlands, flood prone areas, watershed boundaries, soil types, flow paths, water supplies on or adjacent to site required; LID BMPs preferred in performance standards, but not specified clearly enough upfront	Freetown: LID techniques, following Mass DEP SW Handbook BMPs, encouraged for surface water drainage in SPR design standards Lakeville/ Middleborough/ Rochester: not addressed	Freetown/Lakeville: not specified Middleborough: LID required with appendix of recommended practices Rochester: Design guidelines and performance standards included in Subdiv rules & regs & appendix A performance standards
Allow easy siting of LID features (bioretention, swales, etc.)	Often not addressed, may require waivers from subdivision standards	Encouraged along road ROW	Allowed on lots, common open space, or road ROW, easement recorded. For commercial development, allow an increase in floor area ratio or other developmental incentives for green roofs	Rochester: Flexible development SP for all Major Residential Developments (=subdiv SP?) allows more flexible design - encourages non-sprawling, efficient development that conforms to topography & natural features, natural/ cultural resource protection etc. (zoning ch 22.40)		Freetown: siting of features not specifically addressed Lakeville/ Middleborough/ Rochester: not addressed	(Not applicable)
Permeable paving	Often not addressed, may require waivers from subdivision standards	Allowed on private residential lots for parking, patios, etc.	Allowed for residential drives, parking stalls, spillover parking spaces, emergency access ways (with proper engineering support for emergency vehicles) Two track design allowed for driveways and secondary emergency access ways (where required).	(Not applicable)	Freetown: bituminous concrete required for all roads and sidewalks Lakeville: bituminous concrete pavement required for all roadways Middleborough: asphalt pavement as per current MassDOT standards Rochester: Bituminous Concrete required; streets & drainage must conform to MA DPW Standard Specifications for Hghwys and Bridges	Freetown: bituminous concrete (parking lots), mostly as per subdiv/ zoning Lakeville/ Middleborough/ Rochester: not addressed	All: not addressed
Stormwater management O&M plan	Typically only addressed if municipality has a stormwater or LID bylaw, or for areas subject to wetlands permitting	Required	Required, contents specified in alignment with current MassDEP Stormwater Handbook. Following best practice may also help communities comply with MS4 permit requirements.	(Not applicable)	Rochester: Stormwater Management Report required with submittal of definitive plan	Freetown: Drainage structures should be maintained on a regular basis, but no specifics Lakeville: SW management plan required detailing BMPs employed to meet current MassDEP performance standards Middleborough: Rochester:	Freetown: not addressed Lakeville: not addressed Middleborough: bylaw requires long-term O&M plan submitted with as-built plan upon completion of work Rochester: Stormwater Management Plans required for subdivisions (requirements specified in Subdiv rules & regs app B)

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Construction Erosion and Sedimentation Plan, and stormwater control	Basic general requirements	Required, contents specified - The site design process should include soil erosion and sedimentation control measures	Goes beyond minimum NPDES requirements. Requires minimization of site disturbance, reduction of construction waste, control measures not removed until proof of soil stabilization or reestablishment of vegetation. Written procedures for site inspection and enforcement included. Following best practice may also help communities comply with MS4 permit requirements. See section 2.3.5 of the MS4 permit for more information.	(Not applicable)	Rochester: erosion control plan w/ mitigation measures and contruction details required with definitive plan to prevent damage to environment/ watercourses from construction		Freetown/Lakeville: as per NPDES permit Middleborough: required with specified components: bylaw requires SW runoff/ sediment/ erosion control for any permit; BMPs minimizing disturbance, stabilization, slope protection, storm drain protection, perimeter controls, site entrance/exit stabilization & inspection required; all wastes must be controlled on-site (no discharge to MS4) Rochester: not addressed
Stormwater discharge detection & elimination	Not addressed	Discharges and connects noted and or limits set on quantity and quality.	Illicit discharges and connections are prohibited and enforced. Following best practice may also help communities comply with MS4 permit requirements. Find more information in section 2.3.4.a of the MS4 permit.	(Not applicable)	(Not applicable)	(Not applicable)	Freetown/Lakeville: no illicit discharges allowed into muni system; exempt discharges: water line flushing, landscape irrigation/lawn watering,uncontaminated pumped ground water, crawl space pumps, air conditioning condensation, springs, non-commercial vehicle washing, natural flows, dechlorinated swimming pools, fire fighting activities, any other water source not containing pollutants Middleborough: no illicit discharge into municipal system, no obstruction of municipal system; exemptions: fire-fighting, DPW ice/snow control, water line flusing, potable water, springs, natural flow, groundwater, exterior drains, crawl space pumps, air conditioning condensation, landscape irrigation/lawn watering, residential car washing, dechlorinated swimming pools, street sweeping Rochester: not addressed
Post-construction stormwater management and drainage patterns	Not addressed	Allow LID	Resemble pre-existing conditions of volume, velocity, quality and location, as nearly as possible, requiring LID to the max extent feasible. Retain vol of runoff > 1in. per sq.ft. of impervious surface and/or remove 90% TSS post-construction & 50% TP generated on the site for new development, or >0.8in. per sq.ft and/or remove 80% TSS and 50% of TP load for redevelopment. Following best practice may also help communities comply with MS4 permit requirements.	(Not applicable)	Freetown: Lakeville: SW shall not discharge over land across lot lines, must be conveyed to nearest permanent stream or municipal drainage system/ detention- retention basin, with required easements as needed; 80% sediment removal required prior to discharge, pollutant removal from large parking areas and high volume streets Middleborough: Rochester: Design standards require maintenance of existing runoff, drainage system designed to 100yr storm details and calculations required with definitive plans		Freetown/ Lakeville/ Rochester: Not addressed Middleborough: bylaw requires site planning/ design standards that include LID, treatment & infiltration (state SW handbook BMP guidance), retain runoff volume 1 in x post-construction impervious area and/or remove 90% TSS / 60% TP for all new/ redeveloped sites (threshold in rules/regs); no new SW discharges
As-built surveys	Not addressed	Recommended	Required, with written instructions for process; electronic submittal allowed	(Not applicable)	Not assessed		Freetown/ Lakeville/ Rochester: Not addressed Middleborough: required, certifying all controls, must include long-term O&M plan; requirements specified in Appendix B, Rules & regs
Intra-departmental communication and coordination	Not addressed	Informally or loosely occuring	Required for plan review and/or permit approvals	(Not applicable)	Not assessed	Rochester: PB oversees SPR, but must share application and site plan w/ Con Comm, BoH, Building Comm, Highway surveyor, fire chief, police chief for review/comment; pre-submission conference w/ town planner, cons agent, hgwy surveyor, regional sanitarian, building commissioner	Freetown/Lakeville: not addressed Middleborough: projects being reviewed by other boards must also comply with SVV bylaw and apply for administrative SVV permit; SVV committee reviews permits (incl town manager, DPW Dir, Asst Hghwy Super, Building Comm, Cons Agent, Health Officer, Town Planner) Rochester:

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Enforcement	No	Yes	Yes with fines. Same entity should oversee permit approvals and enforcement.	(Not applicable)	Not assessed		Freetown/Lakeville: Building dept/ commissioner; may suspend access; \$100-300 fee based on # offense Middleborough: Board of Selectmen/ SW Committee; may suspend MS4 access, require remediation; \$300 fee / offense; inspections required before/during/after construction and as-built plans required, annual inspection reports of BMPs Rochester: no enforcement mechanism
GOAL 5: ENCOURAGE EFFICIENT PARKING							
Parking	Specific minimums set based on projected maximum use times	Encourage minimum # needed to serve routine use (e.g. 2/residential unit with any additional/visitors parking behind in driveway or on street).	Establish Maximum Parking spaces allowed. Do not require more than 2/residence. Allow tenants separate, optional lease agreements for parking.	Freetown: min 2 spots/ dwelling single & multi family; PMUD OD 1.25/ single, 1.5/ double, shared parking allowed, PMUD allows parking within rear ground floor for mixed use buildings Lakeville: min 2 spots/ dwelling unit; mixed use - sum of required spots for all uses, shared parking by SP; Smart Growth OD required parking is also max Middleborough: not addressed Rochester: industrial/business buildings in ag-res district must provide off-street parking; dwelling shall have a driveway min 40'x8'; special residential development (elderly) multi-fam housing requires min 2 spots / unit plus additional parking for facilities and gues (max .5 space/unit for accessory parking)	(Not applicable)	Freetown: as per zoning (according to zoning bylaw, during SPR PB may approve fewer parking spots if determine proposed arrangement adequate based on cirumstances, like differing hours of operation) Lakeville/ Middleborough/ Rochester: not addressed	(Not applicable)
Commercial Parking	Specific minimums set based on projected maximum use times adding all on-site uses together.	Some flexibility to reduce minimums based on street or other available nearby parking or transit.	Allowed shared parking for uses with different peak demand times. Provide model agreements/deed restrictions. Reduce parking requirements near transit. Limit parking stall size (9ftx18ft max), with up to 30% smaller for compact cars	Freetown: no min/max (must provide adequate off-street parking for employees & visitors; flexible shared use options; required parking spot size 18' x 10' Lakeville: minimums depending on use and max projected usage; mixed use - sum of required spots for all uses, shared parking by SP; min space size 9' x 20'; Smart Growth OD required parking is also max and mins can be reduced, shared parking encouraged Middleborough: mins by use, size; common parking areas by SP for two or more uses, total space must accommodate sum of spaces required for each individual use, or reduced up to 1/2 sum if demonstrated to meet needs and land must be set aside as open space to accommodate remainder of parking needs; min parking space size 10' x 20', min aisle width 24' Rochester: off-street parking required in ag-res district	(Not applicable)	All: not addressed	(Not applicable)
LID in Parking Areas	Often not addressed, may require waivers e.g. for planting islands to drain down rather than built up surrounded by curbs	Allow LID/bioretenation within parking areas.	Require landscaping within parking areas, as LID/bioretenation, at a minimum of 10% of the interior area landscaped and a minimum of 25 square feet for island planting areas.	Middleborough : landscaped islands/ medians required on at least 10% of commercial parking areas, must include shrub groundcover and shade trees, can be counted in pervious cover; however, curbing required along all edges to protect landscaped islands/ medians	All: not addressed	All: not addressed	All: not addressed

Recreation and Stewardship Regulatory Review:
Community Preservation Act Adoption

	Lakeville	Middleborough	Freetown	Rochester
CPA adopted?	No - on town ballot Spring 2022	Yes (2010)	No (failed vote 2012)	No (failed vote 2006)
Surcharge	1% (proposed)	1%	n/a	n/a
Exemptions	(proposed) - First \$100k value for residential properties & businesses - low & moderate income households	- first \$100k of residential properties - low income households		
Total revenue	n/a	- \$3,369,302 (as of 1/2022) (- \$446,879 in 2021)	n/a	n/a
Previously funded projects (completed)	n/a	http://middleborocpa.org/projects/ - Oliver House (2013) - update historic/archaeological Inventory - Vital records preservation (phase 1 & 2, 2013) - enviro controls, filing, digitizing town records - Nemasket Apartment Windows (Park Street, 2013) - Cemetery signage (historic; 2012) - no open space/recreation projects completed	n/a	n/a

Recreation and Stewardship Regulatory Review:
Community Preservation Act Adoption

		<ul style="list-style-type: none"> - Nemasket Hill Chapel - historic building repair (approved 2021) - Green School - historic building Preservation (2014) - Nemasket Apartment Windows (Sproat Street; 2014) - Soule Homestead historic restoration (2014) - Shoe Shop Place housing (2014) - Historical Association museum infrastructure (2013) - Pipe organ restoration (historic; 2013) 		
Approved projects (not complete)	n/a	<ul style="list-style-type: none"> - no open space projects approved 	n/a	n/a
		<ul style="list-style-type: none"> - Oliver house/estate acquisition (445 Plymouth St) - 54 acres of Nemasket riverfront, open space acquisition & preservation, recreation, historic home preservation (recommended for town meeting vote 2014-grant funding fell through; revised and resubmitted application) - Robbins museum collections preservation - Lion's Head - preservation of 103.09 ac along Nemasket River (inactive as of 2013 - "applicants are not currently pursuing this project") - Weston Forest Disc Golf Course (step 1 application to CPC 2015) - Town recreation complex feasibility study (step 1 app 2015) 		
Pending projects	n/a		n/a	n/a

Recreation and Stewardship Regulatory Review:
Stewardship Capacity

	Lakeville	Middleborough	Freetown	Rochester	New Bedford	Taunton
Open Space and Rec plan?	Expired; plan in process	Expired; plan in process	Expired; plan in process	Yes (2019)		
Town dept & staffing	<ul style="list-style-type: none"> - Park Commission (1 staff, 5 volunteer board members) - manage certain properties - Conservation Commission (2 staff & 6 members) - Open Space Committee (1 staff, 6 members) - Middleborough-Lakeville Herring Fishery Commission (Nemasket herring run) 	<ul style="list-style-type: none"> - Tourism Committee (11 volunteer members) - host 5 annual town events - Parks Dept (4 staff - part time?, 5 commission members) - annual canoe/kayak race, fishing programs - Conservation Commission (3 staff, 7 members, volunteer stewardship group meeting quarterly) - Community Preservation Committee (11 members) - Middleborough-Lakeville Herring Fishery Commission (Nemasket herring run) 	<ul style="list-style-type: none"> - Board of Park Commissioners? (Recreational Facilities bylaw 2004) - Parks and Recreation Committee established 7/13/2020? - Conservation Commission has some rec info in site (no cons agent; 4 volunteer commissioners & 1 part-time clerk) - Tree Warden (1 position - P/FT? paid/ volunteer?) - maintain trees in town ROW only) - Open Space and Recreation Advisory Committee (8 members) 	<ul style="list-style-type: none"> - Conservation Commission (2 staff, 8 members) - informational website with public land info & trail maps - Town Forest Committee (part of ConComm) - Park Commission (2 members) - Tree warden (1 position - paid?) - responsible for trees on all town properties 	<ul style="list-style-type: none"> - Robust Dept of Parks, Recreation and Beaches & Park Board of Commissioners (develop rules governing park facilities) - Owns land surrounding ponds - publicly accessible - Town website has lots of rec info, but doesn't include properties outside NB - Town staff do not manage lands in watershed, outside city limits - Volunteer Green Team stewards watershed lands occasionally on off-season 	<ul style="list-style-type: none"> - Parks, Cemeteries & Public Grounds Dept (2 staff - incl 1 rec program supervisor + 6 member commission) - Land owned around ponds is not publicly accessible - Town staff do not manage lands in watershed, outside city limits
Land trust	Wildlands Trust & Buzzards Bay Coalition (manage CRs in watershed?) TNC holds CRs in Middleborough, elsewhere?			- Rochester Land Trust (no properties within watershed)		
Local environmental groups	<ul style="list-style-type: none"> - Long Pond Association (pond resident stew, invasive plant management) 	<ul style="list-style-type: none"> - Middleborough High School (community service; environmental club volunteers) - Sustainable Middleborough (clean energy & climate focus) - Citizens Environmental Health Impact Committee (dormant currently; contaminants focus) 	<ul style="list-style-type: none"> - Long Pond Association (pond resident stew, invasive plant management) 		<ul style="list-style-type: none"> - Green Team - mobilize volunteers to steward parks in city, have some events on watershed lands during off-season 	
State/regional groups/ entities	<ul style="list-style-type: none"> - MA DEP, Southeast regional office (oversees WQ monitoring program) - Mass Audubon (partnerships with libraries, schools; no public properties within watershed) - Wildlands Trust (no public properties within watershed, some in Rochester) - Taunton River Stewardship Council (Taunton River Stewardship Plan; historic tours) - Taunton River Watershed Alliance (volunteer WQ monitoring on Nemasket - Middleborough) - Buzzards Bay Coalition (APC recreation webpage w/ info on visiting/access) - Assawompset Ponds Committee - Trail running and equestrian groups? (Chance mentioned, but unsure of who runs them) 					
Enforcement entities	<ul style="list-style-type: none"> - APC Rangers - how many/hours? (funded by New Bedford and Taunton water depts) - Environmental police - how many for this region? 					

**Recreation and Stewardship Regulatory Review:
Public Info and Rules**

	Lakeville	Middleborough	Freetown	Rochester
bylaw	<ul style="list-style-type: none"> - Motor Boat ban on Loon Pond - no general rec/parks rules/regs 	<ul style="list-style-type: none"> - no bylaw or general rec/parks rules/regs 	<p>Article 14: Recreational Facilities (General bylaws)</p> <ul style="list-style-type: none"> - hours of operation: 9am-6pm - violations: fines up to \$50/offense, eviction/suspension from facility - enforcement: Board of Park Commissioners, Town Admin, Police 	<p>nothing posted online (only zoning bylaw is posted on town website)</p>
rules / guidelines	<p>No general recreation/ park rules/ regs APC (Edlers Assawompset, Pocksha, Great Quittacas, Little Quittacas) Rules & Regs (APC brochure on APC page on town website)</p> <ul style="list-style-type: none"> - Uses limited to land-based activities (walking, running, hiking, sightseeing, artistic work, cross country skiing/snowshoeing, horseback riding, hunting, shoreline fishing, non-motorized mountain biking, picnicking, dog walking (leashed) on designated trails/areas - Special permits for competitive/ special events, dog training, night use, scientific research - prohibited: alcohol, boating (except grandfathered properties), camping, canoe/kayaking, commercial dog walking/training, digging/collecting artifacts, ice skating/ ice fishing, motorized vehicles, paint ball, rollerblading/ skateboarding, swimming - notice about drinking water supply, basic stewardship messaging 	<ul style="list-style-type: none"> - very general policies posted on Parks & Rec dept page reharding behavior/ participation in rec programs - no rules for outdoor rec uses posted online 	<ul style="list-style-type: none"> - nothing posted online - only rules are hours of operation, enforcement, violations in recreational facilities bylaw 	<p>nothing posted on town website, but ConComm & Town Forest Committee website has downloadable Rochester trail guide document with recreation guidelines (2016)</p> <ul style="list-style-type: none"> - no motorized vehicles on any trails - respect wildlife, plants; fire / water protection; carry in / carry out; stay on marked paths; leash/ pick up after dogs - respect neighboring land owners privacy - no specifics about water rec/APC
town website	<ul style="list-style-type: none"> - APC page on town website (map & regs) - limited info on Park Commission website - Clear Pond Park, Dickran Diran Square, sport activities/ leagues 	<ul style="list-style-type: none"> - info about reserving facilities - event page w/ registration (only event on there is from 2018 - unclear how much this page is used) 	<ul style="list-style-type: none"> - no park dept website - some info posted on ConComm page 	<ul style="list-style-type: none"> - no details on Parks Commission website except facility use request form - Separate ConComm & Town Forest Committee website with details about public lands & Explore Rochester Public Trail Guide (downloadable pdf)
property / trail maps	<ul style="list-style-type: none"> - Public access map & parking for APC posted on APC page on town website 	<ul style="list-style-type: none"> - limited info about 2 conservation properties on ConComm page - Pratt Farm website w/ trail maps posted on ConComm page - discovermiddleborough.com has additional info about outdoor recreation sites (town and private properties, incl APC page noting Long Pond is only pond accessible for public rec & Nemasket River page - but no access info) 	<p>Southeastern MA Bioreserve trail map and link to DCR trail maps site on ConComm page</p>	<p>Town map with public rec access in 2016 Explore Rochester Trail Guide doc posted on ConComm website</p>

APC-Nemasket Plan: Regulatory Review

Recommended Management Actions

Floodwater Management

1. Adopt shared wetland regulations that uniformly protect floodwater storage areas and their buffers across the watershed from development. *[Lakeville and Middleborough should adopt a wetland bylaw; all four communities should incorporate the following into their bylaws for consistency across the watershed]*
 - a. Include “flood control” and “climate change” in the purpose of the bylaw. The definition of “alter” should include decreasing the capacity of wetlands to absorb floodwaters, including stormwater, and respond to the impacts of climate change (Boston Ordinance Protecting Local Wetlands and Promoting Climate Change Adaptation example from MAPC Climate Resilient Land Use Strategies Toolkit).
 - b. Expand the Conservation Commission’s jurisdiction in permitting projects by specifying a 100-ft or larger buffer surrounding all wetland resource areas, and include this buffer area within the community’s defined resource area. *[Rochester includes 100ft buffer in resource area in definitions (could make clearer in jurisdiction); Freetown allows no activity within 200ft of rivers, lakes, ponds]*
 - c. Clearly define “Land Subject to Flooding” in the jurisdictional wetland resource area as including the 500-yr FEMA flood zone (Millis example in MAPC Toolkit) and require this area be included in all plans/designs submitted for review – as more intense storms become more frequent in the future, site plans should consider larger storm events the new norm to plan for. *[Middleborough only requires up to 100-yr; Freetown and Rochester don’t specify in their bylaws]*
 - d. Require a 2:1 ratio for compensatory floodwater storage, with adequate provisions to ensure success of wetland replication projects, if a project may reduce storage in Bordering and Isolated Land Subject to Flooding. *[Middleborough recommends 2:1 wetland replication if wetlands disturbed; Freetown requires full mitigation where wetland alteration is unavoidable and requires specific measures to ensure success]*
 - e. Establish a minimum 25’ no disturb zone buffering all identified resource areas. *[Rochester has a 25’ no disturb zone; Middleborough requires a 25’ undisturbed buffer within the Water Resource Protection District bylaw]*
2. Update local floodplain zoning bylaws to adopt uniform regulations that prevent any development within or alteration of floodplains. *[All four communities have floodplain overlay districts that encompass the 100-yr FEMA floodplain and recent zoning regulations for these areas, based on the state’s model]*
 - a. Include a broad and all-inclusive purpose for the floodplain overlay district that protects various public interests from flood threats and accounts for future flood threats due to climate change (Millis Special Flood Hazard District purpose example from MAPC Toolkit).

- b. Expand the floodplain overlay district to encompass the 500yr floodplain *[alternative to adopt separate APC floodplain district – Manchester adopted a Flood Control District based on a drainage study of a brook, ex in MAPC Toolkit; many communities include xft buffer adjacent to streams/waterbodies within district – see MAPC Toolkit examples]*
 - c. Prohibit any type of development, or expansion of existing structures, within the floodplain overlay district, or by special permit only as long as no alteration to flood storage capacity and after review by Conservation Commission, Planning Board, Board of Health, Department of Public Works, and/or Building Department. Do not allow alterations to 500yr flood zone, regardless of use (not even for lawns, gardens, parking, or temporary storage). *[Communities may not change building code, but can restrict development. Middleborough allows lawns, gardens, parking areas, structures for storage in floodplain]*
- 3. Adopt a current Hazard Mitigation Plan that prepares the community for future climate impacts, incorporating the latest information and predictions. *[None of the towns have up to date HMPs; Lakeville is in the process of developing a HMP]*
 - a. Identify 500yr floodplain area and record 100 & 500 yr flood occurrences, locations, and properties impacted.
 - b. Document all flood losses and repeat losses, regardless of their location with respect to the floodplain. Record any mitigation activities taken to protect repetitive loss properties.
 - c. Identify locations and probabilities of potential future flood losses. Consider potential impacts of development on future flood hazards and steps that can be taken to reduce such hazards, including candidate properties for buy-out programs. (Monmouth County, NJ HMP example)

Water Quality

- 1. Adopt local wetland buffer protections to help manage and treat stormwater runoff.
 - a. Adopt local wetlands bylaws with uniform buffer restrictions above and beyond the state requirements (i.e. Rochester's bylaw establishes a 25ft "no disturb zone").
 - b. Establish no-mow buffers on municipal lands surrounding water bodies and wetlands, and clearly mark these zones with signs.
- 2. Reduce nutrient inputs across the watershed from fertilizer use.
 - a. Adopt best practices that reduce or eliminate fertilizer use on municipal lands (follow [UMass Extension Center for Agriculture's Nutrient Best Management Practices](#)).
 - b. Educate landowners about MA Department of Agricultural Resources (MDAR) fertilizer use regulations (i.e. restrictions on phosphorus-containing fertilizers, and minimum application distances from waterways) and best practices. Coordinate with retailers to provide consumer information.
 - c. Coordinate with large landowners (including agricultural land and golf courses owners) to implement best practices.
 - d. Encourage local adoption of Farm Conservation Plan with the US Department of Agriculture's Natural Resources Conservation Service (NRCS).
 - e. Coordinate with NRCS on local issues and challenges to influence best practice recommendations.

- f. Enforce best practices and wetland protections (including agricultural activities) during project reviews by local Conservation Commissions.
3. Reduce nutrient releases from septic systems.
 - a. Adopt uniform local septic bylaws that go beyond minimum Title V regulations to protect the watershed from groundwater pollution (see example bylaws in Marion, Wareham and Tisbury). Limit Total Nitrogen effluent to 19mg per liter or less.
 - b. Require or encourage the use of nitrogen reducing septic systems in all new construction or redevelopment triggers (i.e. increase in expected use or flow).
 - c. Require septic system inspections with all property sales or changes in use.

Water Supply

1. Adopt uniform Water Resource Protection Overlay Districts and Regulations that protect groundwater recharge areas to the ponds, as well as local water supply wells elsewhere in the watershed.
 - a. Adopt tiered maximum impervious surface area lot coverage, similar to Middleborough's existing regulations.
 - b. Require groundwater recharge onsite using best practices to treat and infiltrate stormwater.
 - c. Require special permit for any development or land disturbance, regardless of use, within overlay district (*or within x ft of water supply??*)

Ecology & Unique Habitats

1. Adopt an updated Open Space & Recreation Plan (OSRP) that prioritizes natural area protection and conservation for improving community well-being and climate resilience. *[Rochester is the only community with a recently updated OSRP (completed 2019); Freetown, Lakeville, and Middleborough are currently in the process of updating their OSRPs and should incorporate the following recommendations into their updated plans.]*
 - a. Identify the regional Green Infrastructure Network (2017 Green Infrastructure Analysis for the Taunton River Watershed, Massachusetts, developed by Manomet, Inc.) in each community's OSRP Plan Summary (section 1) and Regional Context (section 3A). Include the local Green Infrastructure Network in the community's Environmental Inventory and Analysis (Section 4) and discuss the undeveloped and unprotected portions of this network in the Inventory of Lands of Conservation and Recreation Interest (section 5).
 - b. Prioritize land conservation in each community's OSRP Goals and Objectives (section 8) that protects important wildlife habitat and promotes local and regional resilience, particularly lands within the regional Green Infrastructure Network.
 - c. Link local priorities for land conservation with regional Green Infrastructure and Open Space Networks, prioritizing regional linkages that contribute to the protection of these larger networks and help to establish wildlife and climate migration corridors, and enhance regional resilience.
2. Adopt a local Open Space Development (OSD) or Conservation Subdivision bylaw that enables conservation-oriented subdivision development by-right. *[None of the four pondside communities allow OSD by-right; Middleborough and Rochester (? Need to review and confirm)]*

have special permit development options and Freetown has a mixed use overlay district that allows some features of an OSD bylaw by special permit.]

- a. Designate lands eligible for development within the regional Green Infrastructure Network for OSD by right and require a minimum of 50% or more of the land of a subdivision be protected.
 - b. Within subdivisions where priority natural areas are located, particularly the Green Infrastructure Network or other priorities identified in the community's most recent OSRP, require those areas be protected as open space.
 - c. Require open space designated for an OSD be contiguous not only within the subdivision but with adjacent natural areas as well, particularly providing linkages with the regional Green Infrastructure Network.
3. Increase regional coordination between local conservation commissions, stewardship groups and state agencies to implement a holistic and integrated approach to addressing invasive aquatic plant growth throughout the watershed.
- a. Invasive plant treatment efforts led by local stewardship and volunteer groups should work with local and state regulatory entities to implement best practices, resorting to the chemical treatments only as a last resort.
 - b. Implement a watershed-wide public education campaign to avoid unintentional spread of invasive species and help detect new infestations as early as possible.
 - c. Install boat washing stations at boat ramps, particularly on Long Pond, and encourage people to wash their boats to avoid the spread of invasive plants to other water bodies, through informational signage and enforcement.
 - d. Establish a group of trained volunteer stewards to help monitor the presence and spread of invasive plants, and to organize removal events on an as-needed basis.

Recreation & Stewardship

1. Adopt the Community Preservation Act in all watershed communities to assist with funding open space acquisition and recreational improvements. *[Middleborough and Lakeville are the only communities that have adopted CPA to date.]*
 - a. Utilize local Community Preservation Fund to protect high priority natural areas within the watershed. *[Middleborough's projects completed have been mostly historic projects, and no open space projects have been approved yet]*
 - b. Improve access to and responsible use of outdoor and water-based recreational sites through informational signage.
 - c. Utilize historic preservation funds to improve access and education at watershed historic sites.
2. Increase public access to information about where and how to recreate across the watershed.
 - a. Publish maps detailing public access locations and allowed uses within and surrounding the ponds and Nemasket River, clearly accessible on all town websites.
 - b. Post universal informational signage about recreating in the watershed, with allowed uses and trail maps for all public access locations.
 - c. Post event permitting requirements and guidelines visibly on each town website.
3. Increase local communities' capacities for natural area stewardship.

- a. Formalize and increase the annual funding stream for the APC Rangers program to increase their presence around the ponds during peak months, for both public education and enforcement.
- b. Increase municipal funding for local Park Commissions/Departments to improve maintenance of open space.
- c. Organize and mobilize local volunteers to help manage open space and outdoor recreational facilities, similar to Middleborough Conservation Commission's volunteer stewardship group.
- d. Coordinate with local environmental groups (i.e. Long Pond Association) and leverage existing volunteer groups to help implement priority stewardship actions.

Land Development

1. Adopt uniform stormwater permitting mechanisms to enforce better stormwater management and site planning in all new and re development across the watershed. *[Middleborough's Stormwater Bylaw is a good model for the other communities to follow. They are the only community with a stormwater bylaw or permitting mechanism.]*
 - a. Establish local Stormwater Committees that include representatives from each department (including Conservation Commission, Board of Health, Planning Department, Building Department, among others) and review all projects that will result in a cumulative land disturbance area of 10,000 square feet or more.
 - b. Require low impact development stormwater management best practices that limit impervious cover and maximize on-site treatment and infiltration, to the maximum extent practicable, in all projects that undergo stormwater review. Make this requirement clear in all local bylaws and provide LID design guidelines.
 - c. Require the use of the most recent rainfall rates from NOAA Atlas 14 for all stormwater management system calculations in site plans.
2. Establish impervious cover controls and limits in all new development to reduce stormwater runoff impacts (focus on single family residential homes in particular, since that is the most common development type expected in future).
 - a. Reduce minimum lot sizes and allow more flexible dimensional requirements in local zoning bylaws to encourage infill and prevent sprawling development. Adopt a uniform tiered structure across the watershed with one acre minimum lot size for standard single family residential lots, and allowing for denser development in village and mixed use areas, particularly where public water infrastructure already exists. *[Middleborough has tiered minimum lot sizes for different residential districts, which Rochester has a standard 43,560 square foot minimum, and Freetown and Lakeville have a standard 70,000 square foot minimum lot size for all residential lots.]*
 - b. Establish maximum impervious cover limits that are uniform across the watershed and are tiered to accommodate denser development in village and mixed-use districts, or other priority development areas. *[Freetown, Lakeville, and Rochester have standard maximums for residential development, but a uniform, tiered approach could benefit the watershed.]*
 - c. Allow shared parking options by-right for residential and commercial developments and institute uniform parking maximums in local zoning bylaws and subdivision rules and

regulations. Also require, to the maximum extent practicable, onsite treatment and infiltration of stormwater through low impact development practices (i.e. permeable pavement and bioswales) for all new parking lots.

- d. Allow permeable pavement options by-right for all parking lots, driveways, and low volume roads in local zoning bylaws and subdivision rules and regulations.
3. Adopt uniform site plan review regulations that incorporate resilience considerations into all new and re development projects.
 - a. Expand site plan review authority so that all types of development resulting in a 1500 square foot or more increase in floor area, or 5,000 square feet or more of land disturbance, undergo some sort of site plan review (can define a major and minor site plan review for different types (i.e. residential vs. commercial) and sizes of development). *[All four communities have reasonable thresholds for industrial and commercial developments, but should increase oversight of residential and agricultural developments to encourage best practices in all types of developments.]*
 - b. Require sign-off from all local boards and committees (including Conservation Commission, even if outside jurisdiction) on all project reviews.
 - c. Require low impact development practices that minimize site disturbance and conform to the existing natural features, to the maximum extent practicable, in design guidelines.
 - d. Require the inclusion of both the 100- and 500-yr floodplains in site plans and that developers incorporate future rainfall and floodplain considerations into designs.
 - e. Require all infrastructure and stormwater management systems be designed to withstand larger rain events and utilize the most recent rainfall rates from NOAA Atlas 14.