Town of

Wenham, MA

Open Space and Recreation Plan

APPENDIX

April 2019

The Ciccolo Group, LLC

XIII. APPENDIX

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   b. Hamilton-Wenham Chronicle Op-Ed - *October 12, 2017*
   c. Hamilton-Wenham Chronicle article on second Public Forum – *May 31, 2018*

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Appendix A. Op-Eds

a. Salem News Op-Ed - *October 7, 2017*
b. Hamilton-Wenham Chronicle Op-Ed - *October 12, 2017*
c. Hamilton-Wenham Chronicle article on second Public Forum – *May 31, 2018*

OCT. 7, 2017

Help plan Wenham's future

To the editor:

Wenham residents are encouraged to come to the first interactive town forum on open space and recreation on Nov. 2.

Wenham's Open Space and Recreation Plan dates from 2001. The Wenham Open Space and Recreation Committee is beginning the much-needed update of the plan for approval by the state. We need your input.

An open space and recreation plan is a blueprint for progress; it establishes priorities and identifies actions over a seven-year period that will guide the town on matters involving open space. It is a critical tool for creating an inventory of a community's protected land and water areas and for identifying undeveloped parcels. Based on community values and input, all ages have a stake in this plan and everyone can participate in its development. The open space committee is working closely with the Economic Development Committee on this initiative.

One of our tasks is to look at land parcels that are classified under state law to allows properties used for recreation, agriculture or forestry to receive reduced tax assessments. This classification gives the town the right of first refusal if the property is put up for sale and the use changes, as was the situation with the Lakeview Golf Course property.

An approved plan will make Wenham eligible to apply for grants administered by the Executive Office of Energy and Environmental Affairs, Division of Conservation Services. These are valuable funding opportunities for land acquisition and preservation.

Community goals from the 2001 Plan and the 2013 partial update include:

- Maintain the rural, historic, small town character of the town;
- Protect water resources;
- Protect wildlife and plant habitat;
- Maintain and encourage the use of land for agriculture and forestry;
- Provide recreational facilities and opportunities for all citizens;
- Protect scenic vistas; and
- Develop and sustain the town's commitment to carrying out this plan

Residents are invited to participate in a conversation about open space and recreation needs, goals and priorities. Some topics we will explore:

1. Are the goals and vision statement of the attempted update in 2013 still aligned with community sentiment?

2. What areas of town should Wenham protect? Should they be protected for open space or used for recreation? Or both?

3. What kinds of public recreation does Wenham want? Does Wenham need more recreational facilities or different activities?

4. What are Wenham's most important natural resources? How can we preserve or promote them?

5. What are the town's priorities over the next seven years?

Help develop your plan for the future of Wenham and its residents. Come to the public forum to provide your input on Thursday, Nov. 2, at 7 p.m. at the Hamilton-Wenham Public Library, 14 Union St. You can also weigh in through the community survey, which will be compiled from your input and released in early November. Check the town website at www.wenhamma.gov for further information or contact Margaret Hoffman, planning coordinator, at 978-468-5520, ext. 8. The town of Wenham has contracted with The Ciccolo Group LLC to develop this new plan.

Most importantly, please help spread the word!

CHRIS GAJESKI, Chairman
Wenham Open Space and Recreation Committee

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OCT. 12, 2017

Innuendo dominates housing discussion

The elected officials, committee members and residents opposing affordable housing are winning the battle.

They have used illogical and false statements to convince everyone why affordable housing should not be built at the Longmeadow location. They have suggested the Longmeadow property should be used to build another school or an athletic field. Building another school at that location makes no sense considering the school district student enrollment has been on a steady decline over the past few years.

Their suggestion to construct a new athletic field on that property makes even less sense. The opposition, knowing their suggestions are absurd, is requesting more studies to be performed. Those opposed to affordable housing at the Longmeadow property will do whatever it take to insure that property is not developed as affordable housing.

They are willing to ignore Massachusetts Comprehensive Permit Act: Chapter 40B which requires our town to have 10 percent affordable housing. Presently our town has leas thas 4 percent affordable housing.

What can we the residents in favor of affordable do? Unfortunately very little or even nothing at all.

Those opposed to affordable housing in Hamilton are well organized. Their opposition to affordable housing has a lot of influence with our elected officials and committee members.

For over a year, Harborlight Community Partners have made extensive efforts to partner with the town to develop affordable housing. They have been stalled by our town continually performing studies and surveys. There have been continual debates regarding various locations without making any decisions or location commitment. It is time Harborlight accepts the fact that trying to partner with the Town of Hamilton may be a lost cause. If the town is ever to have affordable housing, Haborlight needs to take direct action.

They need to file with the state a Chapter 40B application. They need to purchase if they have not already purchased the Longmeadow property and plan to build affordable houses and apartments on that property. If Harborlight does nothing and continually tries to partner with the town, the affordable housing percentage will continue to remain at less than 4 percent.

If Harborlight is serious in developing affordable housing in the Town of Hamilton, I urge them to file the Chapter 40B application with the state. Approval of their application will allow Harborlight to develop affordable housing and apartments at the Longmeadow property and at other locations. The town needs affordable housing for the town to grow. If Harborlight takes no action and continually tries to partner with our town officials, those of use in favor of affordable housing have no hope and will continue to lose the battle to have affordable housing built in the town.

Norman Cramer, Forest Street, Hamilton

Help guide Wenham's open space and recreation

Wenham residents are encouraged to come to the first interactive Town Forum on Open Space and Recreation on Nov. 2.

Wenham's Open Space and Recreation Plan dates from 2001. The Wenham Open Space and Recreation Committee (OSRC) is beginning the much-needed update of the 2001 plan to create a plan for approval by the state. We need your input.

An Open Space and Recreation Plan is a blueprint for progress; it establishes priorities and identifies actions over a seven-year period that will guide the Town on matters involving open space. It is a critical tool for creating an inventory of a community's protected land and water areas and for identifying undeveloped parcels. Based on community values and input, all ages have a stake in this Plan and everyone can participate in its development. The OSRC is also working closely with the Economic Development Committee on this initiative.

One of our tasks is to look at land parcels that are classified under Massachusetts General Law Chapter 61, which allows properties used for recreation, agriculture, or forestry to receive reduced tax assessments. This classification gives the town the right of first refusal if the property is put up for sale and the use changes, as was the situation with the Lakeview Golf Course Property.

An approved plan will make Wenham eligible to apply for grants administered by the Executive Office of Energy and Environmental Affairs, Division of Conservation Services. These are valuable funding opportunities for land acquisition and preservation.

Community goals from the 2001 plan and 2013 partial update include: to maintain the rural, historic, small town character of the Town; to protect water resources; to protect wildlife and plant habitat; to maintain and encourage the use of land for agriculture and forestry; to provide recreational facilities and opportunities for all citizens; to protect scenic vistas; and to develop and sustain the Town's commitment to carrying out this plan.

Participate in a conversation about open space and recreation needs, goals, and priorities. Some topics we will explore: (1) Are the goals and vision statement of the attempted update in 2013 still aligned with community sentiment?; (2) What areas of town should Wenham protect? Should they be protected for open space or used for recreation? Or both?; (3) What kinds of public recreation does Wenham want? Does Wenham need more recreational facilities or different activities?; (4) What are Wenham's most important natural resources? How can we preserve or promote them?; and (5) What are the town's priorities over the next seven years?

Help develop your plan for the future of Wenham and its residents. Come to the Public Forum to provide your input on Thursday, Nov. 2, 2017 at 7 p.m. at the Hamilton-Wenham Public Library 14 Union St., Hamilton. You can also weigh in through the community survey, which will be compiled from your input and released in early November. Check the Town website www.wenhamma.gov for further information or contact Margaret Hoffman, Planning Coordinator at 978-468- 5520, ext. 8.

The Town of Wenham has contracted with The Ciccolo Group, LLC to develop this new Open Space and Recreation Plan.

Most importantly, please help spread the word!

Chris Gajeski, Chair, Wenham Open Space and Recreation Committee

Wenham mulls open space preservation goals

By Lucy Sprague Frederiksen / hamiltonwenham@wickedlocal.com

Posted May 28, 2018 at 12:29 PM

Wenham's Open Space and Recreation Committee hosted the last of two scheduled public forums to share with the community progress updating the Wenham Open Space and Recreation Master Plan and to accept resident input on May 22.

The Ciccolo Group is assisting with the update of the Master Plan, with Wenham resident Lynn Duncan as Project Leader. Around two dozen residents attended the May forum, including most of the committee members: Chris Gajeski, Asma Syed, Bill Wilson, Ann Weeks, Ernest Ashley, and Tom Starr, and Norman Tarr, liaison from Economic Development Committee. Liaison from the Joint Recreation Committee, Len Dolan, was unable to attend.

Since the Kickoff Meeting in September, Duncan and committee members conducted a community survey; the main content of the May forum was the results and their analysis. A total of 382 responses were received from residents, plus an additional 90 from non-residents, representing 7 percent of the total population, 26 percent of households, and 14 percent of registered voters.

Survey questions asked residents to select priorities from a list for Wenham's open space in the next seven years: for example, preserving natural habitat/passive recreation, future development of active recreation, farmland, preserving rural character of Wenham, protecting drinking water, preserving historical sites.

Respondents' highest priority was preserving Wenham's drinking water supply, followed by passive recreation, preservation of habitat, and maintaining the town's rural character, to list the priorities rating 50 percent or more from respondents.

The survey also identified a number of parcels currently under Chapter 61A for agricultural use and asked residents to choose the highest priorities for acquisition by the town in the future. Questions covered options to purchase of lots when the town's right of first refusal comes into play, using Community Preservation funds and/or bonding.

Most respondents preferred options with no tax increase on residential taxes. Additional survey questions addressed recreational opportunities, including enhancements to existing facilities at Pingree Park, West Wenham Playground, and Pleasant Pond. Respondents were most interested in expanding opportunities for bike paths, improving awareness of existing trails for both bikes and pedestrians, and maintaining existing recreational facilities.

The committee developed four goals from the survey: protect and preserve natural resources that contribute to passive recreation, the drinking water supply, high value habitat, agricultural and forestry use, and the rural and historical character; improve trail networks, cycling paths/lanes and sidewalks; provide and maintain facilities for active recreation; and sustain the town's commitment to carrying out the plan.

Each goal has associated objectives. Protect and preservation can include identifying parcels and strategies to protect them; protect parcels as opportunities arise; undertake actions to protect natural resources; educate the public; and work with other Town departments on resource protection initiatives. For trail concerns, build more trails and pedestrian and cycling paths; enhance existing trail networks; and increase public awareness of trails. For recreation needs, provide and maintain existing parks and playgrounds for

mixed use; redevelop and improved existing athletic field facilities. And to sustain the plan, the objectives include work on developing necessary administrative structures and policies to support the goals.

The second purpose for the May 22 forum was to introduce the proposed actions and a number of useful maps.

The 13-page draft Action Plan section of the final plan was distributed at the meeting, and is posted online, and the maps were available to review. The committee has developed over 70 actions they are considering in the coming seven years, according to Duncan. The room at the Library where the meeting was held was encircled by a number of colorful maps of Wenham, each with a different purpose; for example, one showed all the areas currently under agricultural and recreation restriction, for which Wenham will have a right of first refusal.

The committee has developed an evaluation system for chapter parcels based on the defining features in the maps, and additional characteristics such as zoning, legal, and financial concerns, time sensitivity, development pressure, and leverage opportunity. High priority projects in the next two years include using the evaluation system to assess Chapter 61 parcels and developing options to protect the parcels. Additional high priority projects are to identify funding sources and develop partnerships with land acquisition and protection organizations such as Greenbelt and Trustees of the Reservations.

Administratively, the committee plans to develop a policy to deal with right of first refusal properties so the town can act quickly, and a bonding program. Other plans include reviewing existing information on open space resources and trail maps to identify information gaps, disseminate information to residents, and coordinate with Essex County Trail Association (ECTA), Mass Audubon, City of Beverly and Gordon College on trails and trail use.

The committee plans to submit the final Master Plan to the state mid-August. Once the state approves the plan, access to opportunities for funding becomes available.

Leo Maestranzi commented that part of the push for Wenham to join the Community Preservation Act with the maximum surcharge of 3 percent was to preserve open space; however, since Wenham joined, no monies have been distributed for open space projects – because no projects have been submitted. The categories for Community Preservation funding include open space, recreation, historical preservation, and affordable housing. Wenham has developed an Affordable Housing Trust into which the Community Preservation sets aside required percentages for affordable housing, and the annual set asides for open space and recreation occur annually.

Appendix B. Wenham Open Space and Recreation Community Survey Results

7. Continued….

Audubon Endicott Wildlife Sanctuary	Often	Occasionally	Never
Long Hill	Often	Occasionally	Never
Equestrian Trails (ECTA or other)	Often	Occasionally	Never

OTHER _____

IV. RECREATIONAL OPPORTUNITIES

8. Do you think the following age groups have sufficient recreational opportunities?

Toddlers ages 1 - 3	Yes	No	Don't know
Children ages 4 - 12	Yes	No	Don't know
Teens ages 13 - 18	Yes	No	Don't know
Adults 19 - 60	Yes	No	Don't know
Adults 61+	Yes	No	Don't know
Children with disabilities	Yes	No	Don't know
Adults with disabilities	Yes	No	Don't know

9. How should we provide for a wide range of recreational opportunities for all residents? (Hi = High Priority, Med = Medium Priority, Low = Low Priority, N/O = No Opinion)

Enhance existing recreational trail networks.	Hi Med Low N/O
Publish information about existing trails (locations, trailheads, lengths, uses, restrictions, etc.)	Hi Med Low N/O
Build more pedestrian and cycling paths and increase connectivity to existing open space and recreational areas.	Hi Med Low N/O
Build more trails for walking and running.	Hi Med Low N/O
Create new playgrounds.	Hi Med Low N/O
Maintain and improve existing park and recreational areas.	Hi Med Low N/O
Create additional athletic fields.	Hi Med Low N/O
Provide field lighting at existing fields to extend their use, instead of creating new athletic fields.	Hi Med Low N/O
Redevelop existing fields using synthetic turf to extend their use, instead of creating new athletic fields.	Hi Med Low N/O
Create a dog park.	Hi Med Low N/O

OTHER _____

V. FUTURE OPPORTUNITIES

10. The Town has the right of first refusal on the properties identified on the attached map if they are being sold for a different use. Currently, they are used for agriculture, forestry, or recreation and taxed accordingly under a State program known as Chapter 61.

Which, if any, of these parcels would you recommend for acquisition if the Town had that option? Independent of the Town's ability to finance the acquisition cost for any specific parcel(s), please identify Map/Parcel from the attached map and suggest a proposed use.

_____

_____

11. What would increase your use of existing open space & recreational areas, both active (i.e. sports fields) and passive (i.e. walking/hiking trails)? (Check all that apply.)

___ Increased access and connectivity via trails to open space and recreational areas
___ Better parking
___ Handicapped access
___ Organized activities
___ Trail maps
___ Better maintenance
___ Better signage
___ Benches
___ Picnic areas
___ Park amenities, such as gardens, flowers beds and landscaping, to make them more inviting
___ Bicycle amenities; (i.e. bike racks, air pump stations, fix-it stations)
___ OTHER _____

Do you have any other thoughts about Open Space & Recreation in Wenham that you would like to share with us?

_____

_____

The Wenham Open Space & Recreation Committee wants your opinion!

The Town of Wenham is in the process of updating its 2001 Open Space and Recreation Plan. This survey is being conducted as part of this process to understand the needs and priorities of our residents. We need your input!

What is an Open Space & Recreation Plan?

An Open Space & Recreation Plan is a blueprint for progress; it establishes priorities and identifies actions over a seven-year period that will guide the Town on matters involving open space. It is a critical tool for creating an inventory of a community's protected land and water areas and for identifying undeveloped parcels.

Why is it important?

Based on community values and input, all ages have a stake in this Plan and everyone can participate in its development. An approved plan will guide the Town on matters involving recreation and open space and will make Wenham eligible to apply for certain State grants for recreational facilities and open space acquisition.

In order to make thoughtful decisions and provide guidance that affects Wenham's future, we need to hear from you, our residents, our taxpayers, our community. We are representing you, so it is important for you to let us know how you feel and what you want for the Town.

Your opinion is important. Please help us plan for the future of our community by completing this short, 11-question survey. All responses will be confidential and anonymous. Please complete this survey only once. If you have additional information you wish to share with us, please feel free to elaborate in writing in the space provided at the end of the survey.

The survey is also available ONLINE:

www.surveymonkey.com/r/WenhamOSRP

Please complete & return all surveys by

December 4, 2017.

♦

By hand: Dianne Bucco, Town Clerk, Town Hall
By mail: Margaret Hoffman, Planning Coordinator, Town Hall, 138 Main Street, Wenham, MA 01984

I. TELL US ABOUT YOURSELF…

1. Are you a resident of Wenham?

___ Yes
___ No, I currently live in _____

2. What is your age?

___ 13 - 18 ___ 30 - 60
___ 19 - 29 ___ 61+

3. Are there children under 18 in your household?

___ Yes ___ No

II. OPEN SPACE & NATURAL RESOURCES

4. What should Wenham's open space priorities be for the next 7 years? (Hi = High Priority, Med= Medium Priority, Low = Low Priority, N/O = No Opinion)

Preserve open space for passive recreation and aesthetics; i.e. trails, scenic views.	Hi	Med	Low	N/O
Protect high value core wildlife and plant habitat, and maintain buffers and corridors.	Hi	Med	Low	N/O
Preserve open space for future development for active recreational uses, such as soccer, softball, and playgrounds.	Hi	Med	Low	N/O
Maintain the Town's rural character.	Hi	Med	Low	N/O
Preserve current farmland and encourage the use of land for agriculture and forestry.	Hi	Med	Low	N/O
Protect drinking water supply.	Hi	Med	Low	N/O
Preserve places of historical value.	Hi	Med	Low	N/O
None	Hi	Med	Low	N/O

OTHER _____

5. What Town actions would you support to achieve some or all of these open space goals? (Check all that apply.)

___ Purchase of land using CPA funds. (No tax increase.)

___ Creation of a bond in order to move quickly to purchase high priority open space parcels as identified in the Open Space and Recreation Plan, which will be completed in 2018. (Would likely represent a tax increase.)

___ Purchase of development rights from private property owners to limit development of open space parcels in the future.

___ Not in favor of Town action above and beyond the use of CPA funds.

___ OTHER _____

6. Are you aware of the following programs that currently exist to protect open space?

Property tax reduction for agriculture, forestry, or recreational uses. If property is put up for sale in the future, Town gets the right of first refusal. (State program)	Yes	No
Lease of Town-owned land for continued agricultural use (i.e. Reynolds Farm on Larch Row is currently being leased to the Food Project.)	Yes	No
Donation of conservation restrictions to limit development on certain parcels of land.	Yes	No
Mandatory dedication of open space by developers as is now required under the Flexible Development Bylaw.	Yes	No

III. RECREATIONAL FACILITIES

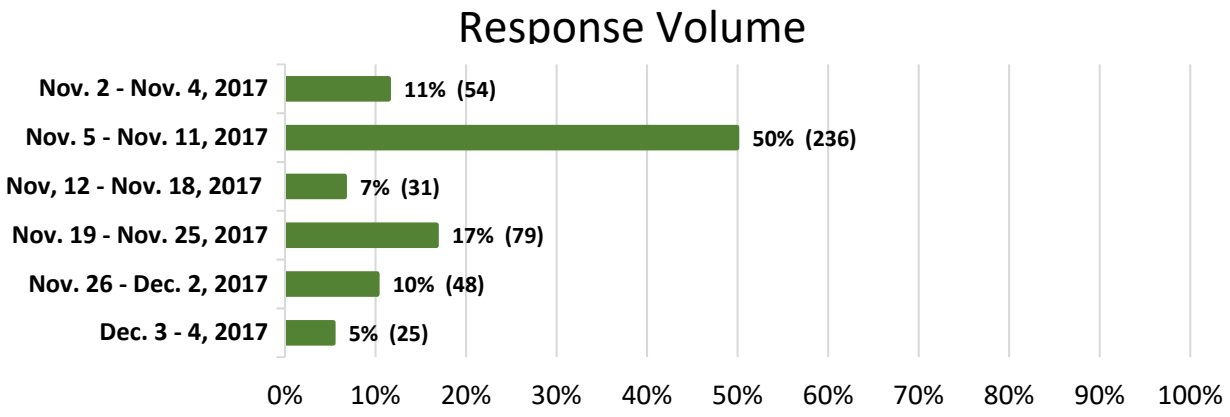
7. For each of the following resources, please indicate if you or any family members have utilized them for recreation in the past year.

PINGREE PARK			
Tennis courts	Often	Occasionally	Never
Ballfields	Often	Occasionally	Never
Playground	Often	Occasionally	Never
WEST WENHAM			
Field (Higginson Playground)	Often	Occasionally	Never
Tennis courts	Often	Occasionally	Never
Outdoor basketball court	Often	Occasionally	Never
OTHER MUNICIPAL RECREATIONAL FACILITIES			
High/Middle School fields	Often	Occasionally	Never
DPW field (adjacent to Iron Rail)	Often	Occasionally	Never
Iron Rail fields	Often	Occasionally	Never
Iron Rail building	Often	Occasionally	Never
Buker School fields	Often	Occasionally	Never
Buker School playground	Often	Occasionally	Never
Council on Aging building	Often	Occasionally	Never
Council on Aging bocce court	Often	Occasionally	Never
Pleasant Pond boat ramp	Often	Occasionally	Never
Pleasant Pond beach	Often	Occasionally	Never
PATTON PARK			
Tennis courts	Often	Occasionally	Never
Pickle ball courts	Often	Occasionally	Never
Ballfields	Often	Occasionally	Never
Playground	Often	Occasionally	Never
Swimming pool	Often	Occasionally	Never
Basketball court	Often	Occasionally	Never
Weaver Pond	Often	Occasionally	Never
RECREATION CENTER			
Gymnasium	Often	Occasionally	Never
Fairhaven Field	Often	Occasionally	Never
Playground	Often	Occasionally	Never
OTHER RECREATIONAL FACILITIES			
Wenham Country Club Golf Course	Often	Occasionally	Never
Gordon College campus	Often	Occasionally	Never
Gordon College Bennett Center	Often	Occasionally	Never
WVIS (Tea House) tennis courts	Often	Occasionally	Never
WVIS (Tea House) playground	Often	Occasionally	Never
Wenham Rail Trail	Often	Occasionally	Never
Wenham Canal	Often	Occasionally	Never
Chebacco Woods	Often	Occasionally	Never
Audubon Cedar Pond Sanctuary	Often	Occasionally	Never
J.C. Phillips Nature Reserve	Often	Occasionally	Never
Ipswich River Wildlife Sanctuary	Often	Occasionally	Never

SurveyMonkey

www.surveymonkey.com/r/WenhamOSRP

- **473 total responses**
  - **51% residents**
  - **19% non-residents** ***(results discarded)***
  - **30% unknown** ***(Q1 added in after survey went live)***
- **382 filtered responses** ***(total responses less non-residents)***
  - **7% of total population[1]**
  - **26% of households[2]**
  - **14% of registered voters[3]**
- **462 online takers, 11 paper copies** ***(paper data entered into SurveyMonkey for tabulation)***
  - **73% completion rate** ***(surveys filled out & submitted)***
  - **27% abandonment rate** ***(surveys started but not completed)***



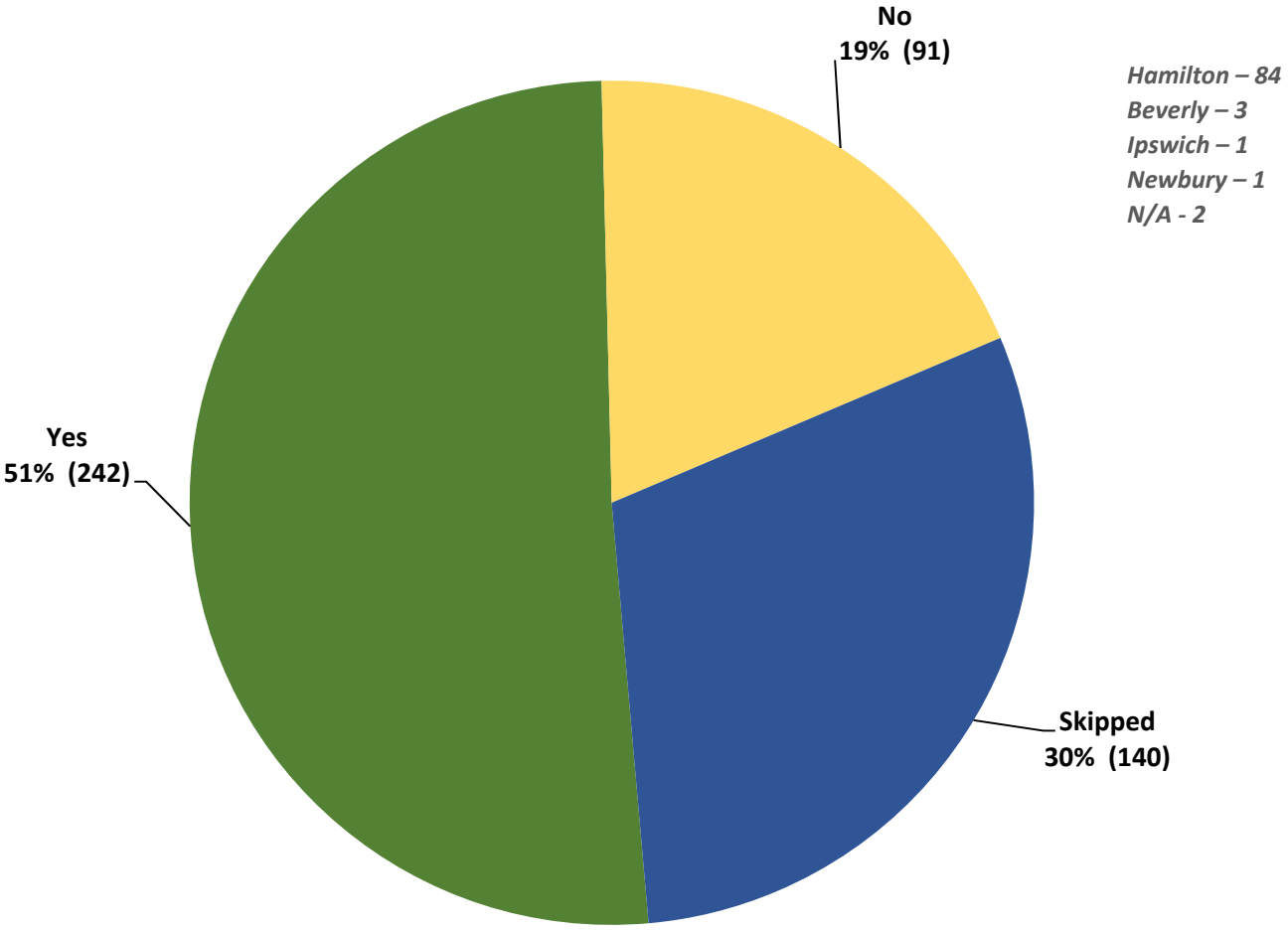
[1] https://factfinder.census.gov: 2016 population estimate – 5,135

[2] https://factfinder.census.gov: 2016 households estimate – 1,449

[3] http://www.wenhamma.gov: registered voters – 2,806

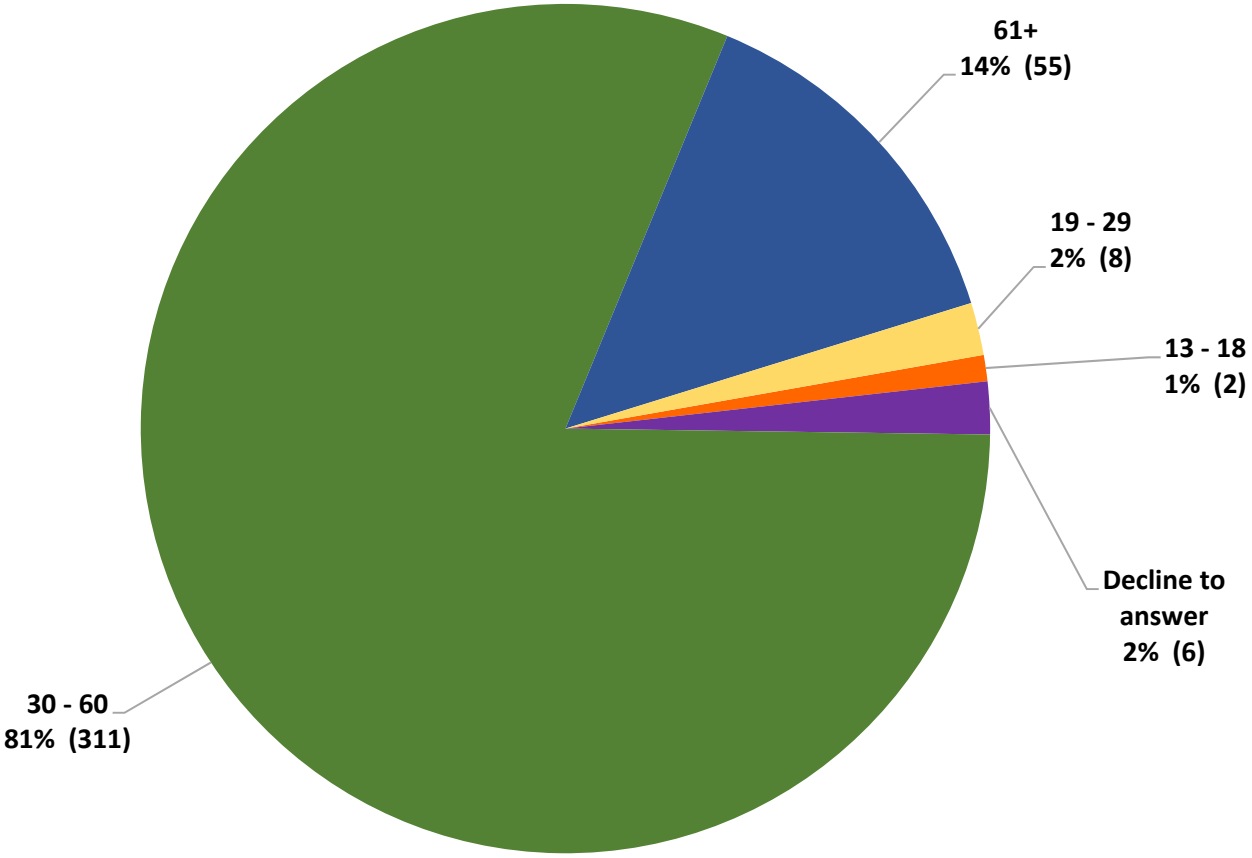
Q1 Are you a resident of Wenham?

Respondents: 473



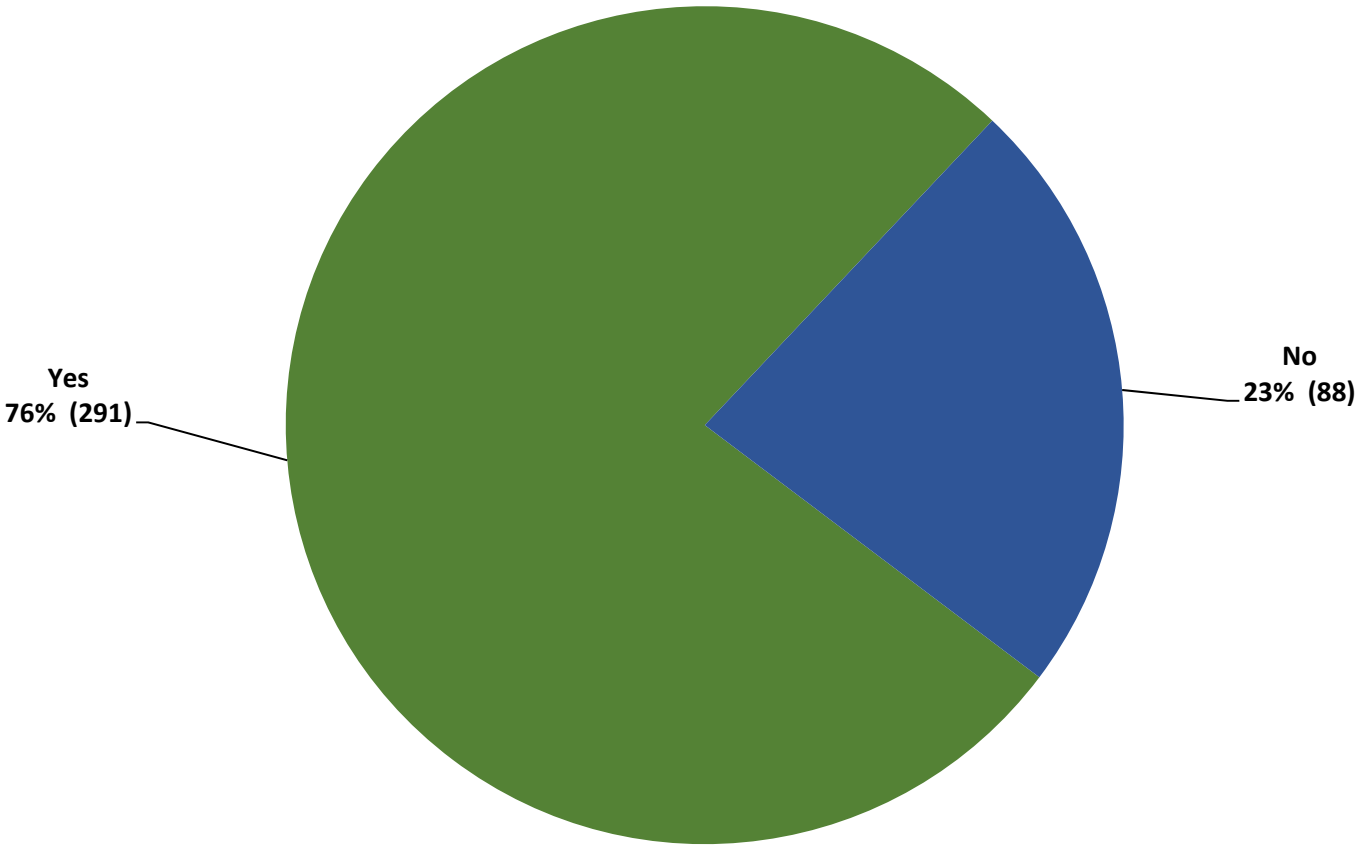
Q2 What is your age?

Respondents: 382

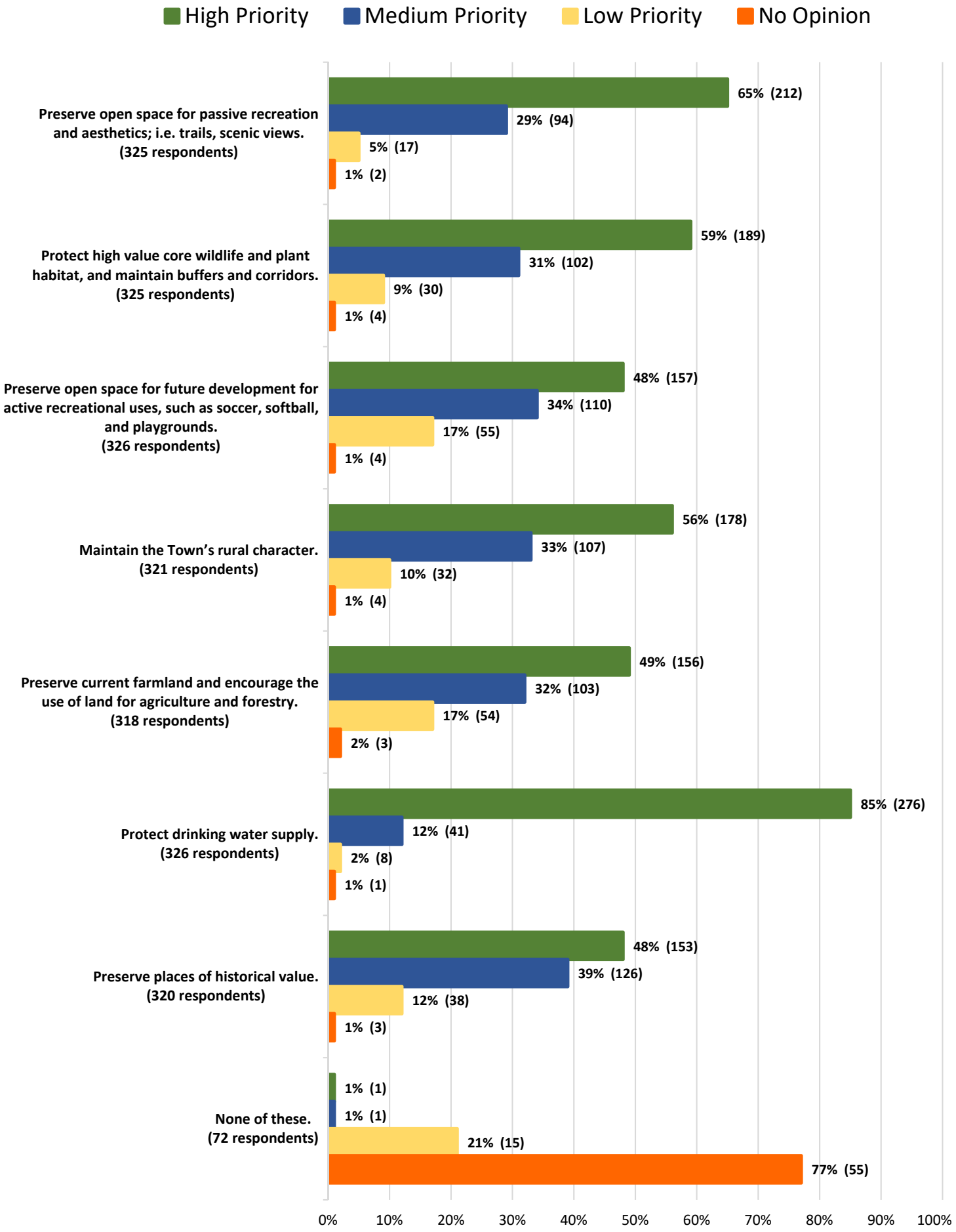


Q3 Are there children under 18 years old in your home?

Respondents: 379



Q4 What should Wenham's open space priorities be for the next 7 years?



Q4. What should Wenham's open space priorities be for the next 7 years?

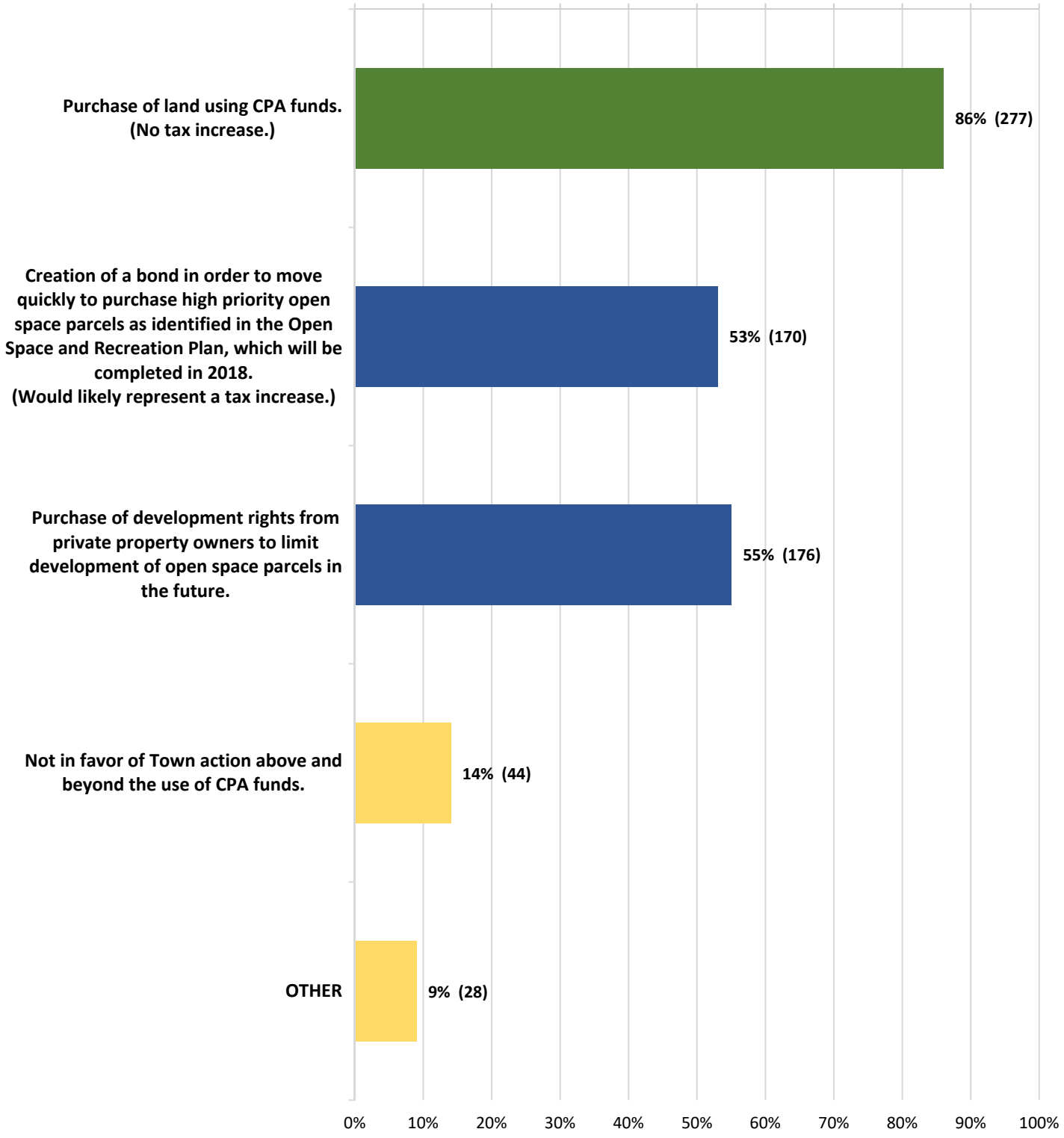
Other *(please specify)*

1	Bring more art to our open spaces (art lighting, sculptures, garden art, etc.) - that will add to character of Wenham
2	Clean up and beautify the back area of The Boulders as was originally planned. It currently looks like a mess.
3	Community garden, yard waste drop off
4	Evaluate open space for affordable housing opportunities in order to achieve 10% housing stock as affordable
5	First priority that is the basis for all others listed above is to stop or limit the subdivision of land and construction of additional buildings.
6	I consider playing fields the most important need and can easily blend in with the current character of the town
7	I don't know enough about what we have now to comment - do we need athletic fields? What historical places to we need to preserve? In my opinion, we have enough playgrounds (and I have 3 young kids). See comment below about balancing open space plans w/opportunities for tax revenue.
8	I have 2 kids that have played at every field in wenham and Hamilton. I also rode my horse. To protect and have recreational space is so important for the future of the town and real estate values to new families looking to move in.
9	I think there is room to develop a larger business base and still have a rural character and open space they are not mutually exclusive goals. We need some economic development - can't stay static.
10	I think we should use some open space to attract businesses that would increase our tax base
11	I was disappointed that the town didn't purchase Lakeview Golf Course.
12	Important to have areas where pets are not allowed. Too many dog owners do not pick up after their dogs and if they do there are people who just leave the plastic bag on the side of the road or field.
13	Keep low income housing OUT.
14	Land for school improvement (ie abutting) and not missing opportunities like the Town's opportunity to preserve Lakeview, which was an irreversable mistake, with a strong amount of community feedback that was disregarded by individual selectmen.
15	Limit development, maintain town's character
16	Make trails and open spaces more accessible withpoupt requiring people to drive there. This means better sidewalks and trail heads.
17	No comment
18	No comment I live here for open space and equestrian activities
19	preserve spaces that link to other spaces that are already preserved so the town's open spaces are part of a system.
20	preserve the walking trails such as the one by the water plant.
21	Preserving the 128 corridor on town lines. Dedicating the 17 plus acres off Grapevine for open space, not necessarily trails but just open space to be saved.

22	Satisfy our lack of Low Income housing for families.
23	Small shops ie. similar to Ham. Plaza
24	Stop housing developers! Open space has been diminishing in the 15+ years I've lived here. There seems to be no plan: individuals are allowed to sell their property and where once one home stood, now there are many. The traffic is horrendous as a result.
25	Water supply wells are adequately protected. All these choices are dependent on our stopping or limiting further building in town.
26	we do not want to see land overdeveloped with houses and businesses ... our charming farm town could turn into other nearby towns that have let that happen. We want open land, farms and views. Another priority is field space for our youth sports. We have a shortage. The fair haven field is subpar for our varsity field hockey team and youth sports to play on. Field access is s challenge. Using open land for fields seems needed and will not ruin the beauty and quaintness of our town.

Q5 What Town actions would you support to achieve some or all of the open space goals identified above? *(Choose all that apply.)*

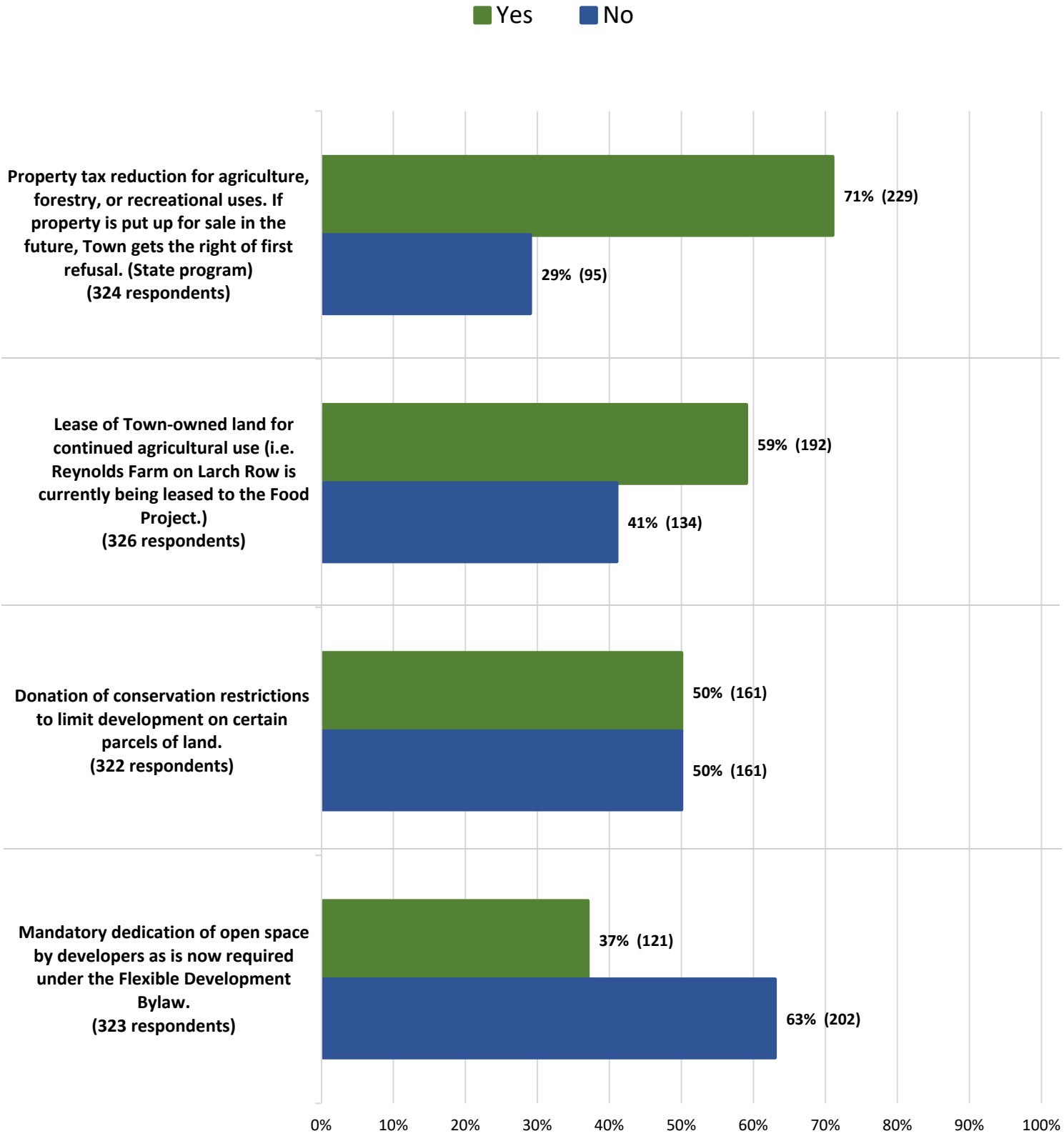
Respondents: 322



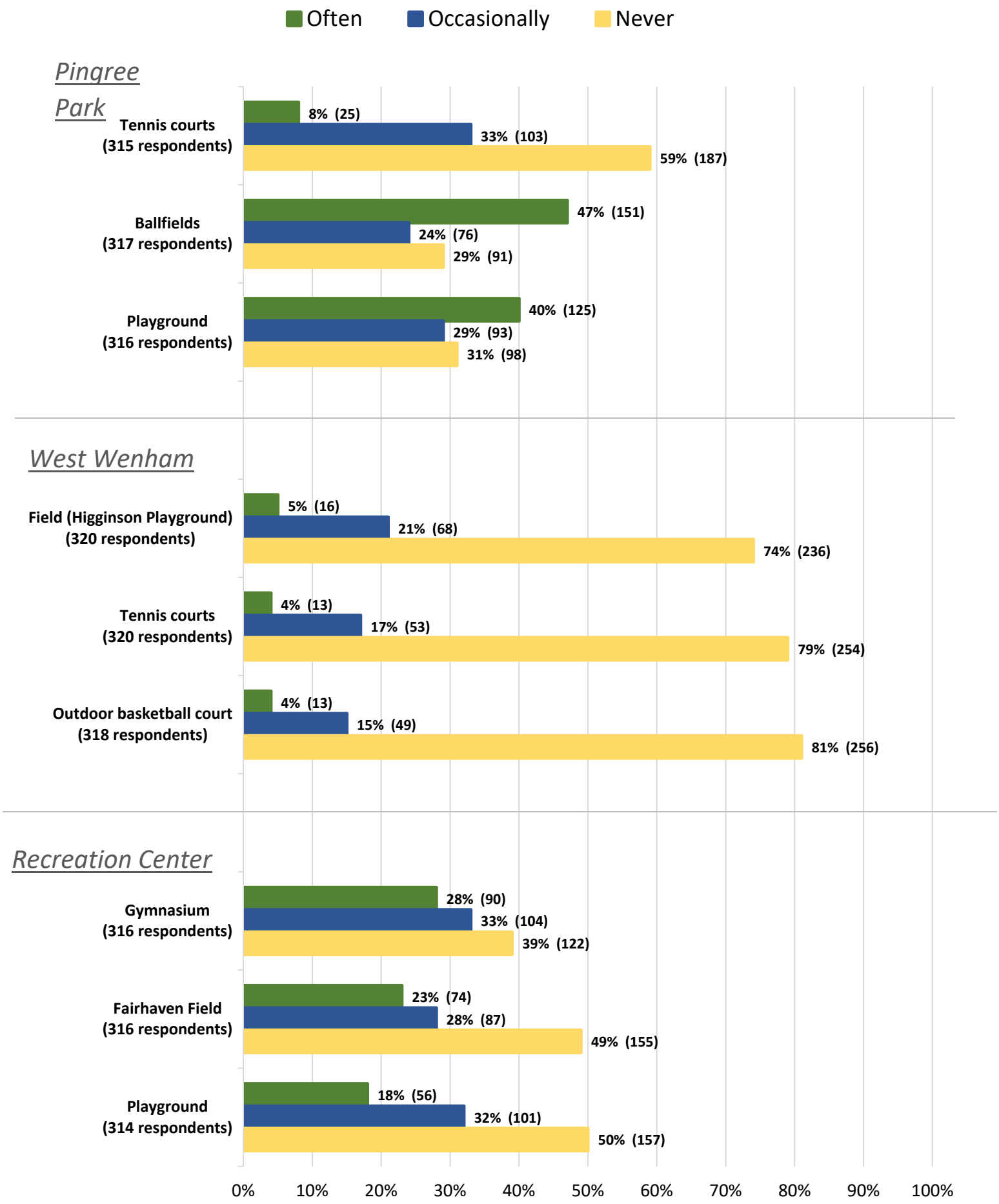
Q5. What Town actions would you support to achieve some or all of the open space goals identified above? *(Choose all that apply.)*	
Other *(please specify)*	
1	Can't afford to buy up all the needed parcels, so should concentrate on buying up development rights.
2	CPA, Bonds, Taxes are inadequate to buy neede open space. Better to buy the development rights and leave the parcels in current usage.
3	Engage large landowners. See if they have a long term plan for their property. Can the town play a role in the planning?
4	Find some space for business opportunity in the downtown area. Don't need business outside of the downtown area
5	Gifts
6	Gordon College making Payments in Lieu of Taxes as all Boston universities are requested to do to support the ample services and resources they have from Wenham; requirement that they provide ample affordable housing to offset our requirements and which should align with their Christian mission, both of which could help drive our open space needs also other Town revenue needs (like our schools, which also support their resident families)
7	How are purchase of land and purchase of development rights different?
8	I think that the CPA funds could be used to pay back the bond but that the bond is needed because the CPA funds require a lengthy process and town meeting before they can be used and "first right of refusals" are not for that long a time period.
9	I think we need to make a longer term plan that includes tasteful development of some land for tax revenue (like Hamilton's Institute for Savings) as well as open space planning (preferably without tax increase)to keep our town beautiful.
10	I was disappointed that the town didn't buy Lakeview Golf course.
11	I would like to see what is defined as "high priority, " but I am generally in favor of preserving some space.
12	Implement a transfer tax on all real estate sales. Funds would sit in a land bank to be used to purchase property (see: nantucket)
13	incentives to increase voluntary donation / set aside / liens
14	Look for other ways to generate Town revenue to purchase parcels -- this is a pretty limited and unimaginative list
15	No new taxes. We already pay WAY too much...
16	No to all of the above.
17	Not sure.
18	Only interested in non-athletic space so would not be in favor of bonds if they were to be used to purchase more sports fields for the school.
19	Open to funding if there is long-term payback, such as to attract businesses that would pay taxes

20	partner with other organizations
21	Stop raising taxes!!! You are killing us.
22	Support recreational turf project at HWRHS
23	T
24	turf fields
25	We need to use CPA funds rather than sit on them.
26	work with local groups like essex county greenbelt or nature conservancy to acquire land or rights to land
27	Work with the Essex Greenbelt to use a combination of Wenham funds and Grants to preserve open space.
28	you should define CPA funds for survey takers... I had to look it up, and i still don't know what it means for wenham, Like how much money is there? Where does it come from? Is it from our taxes? etc etc.

Q6 Are you aware of the following programs that currently exist to protect open space?



Q7 How often do you/family members use the following facilities?



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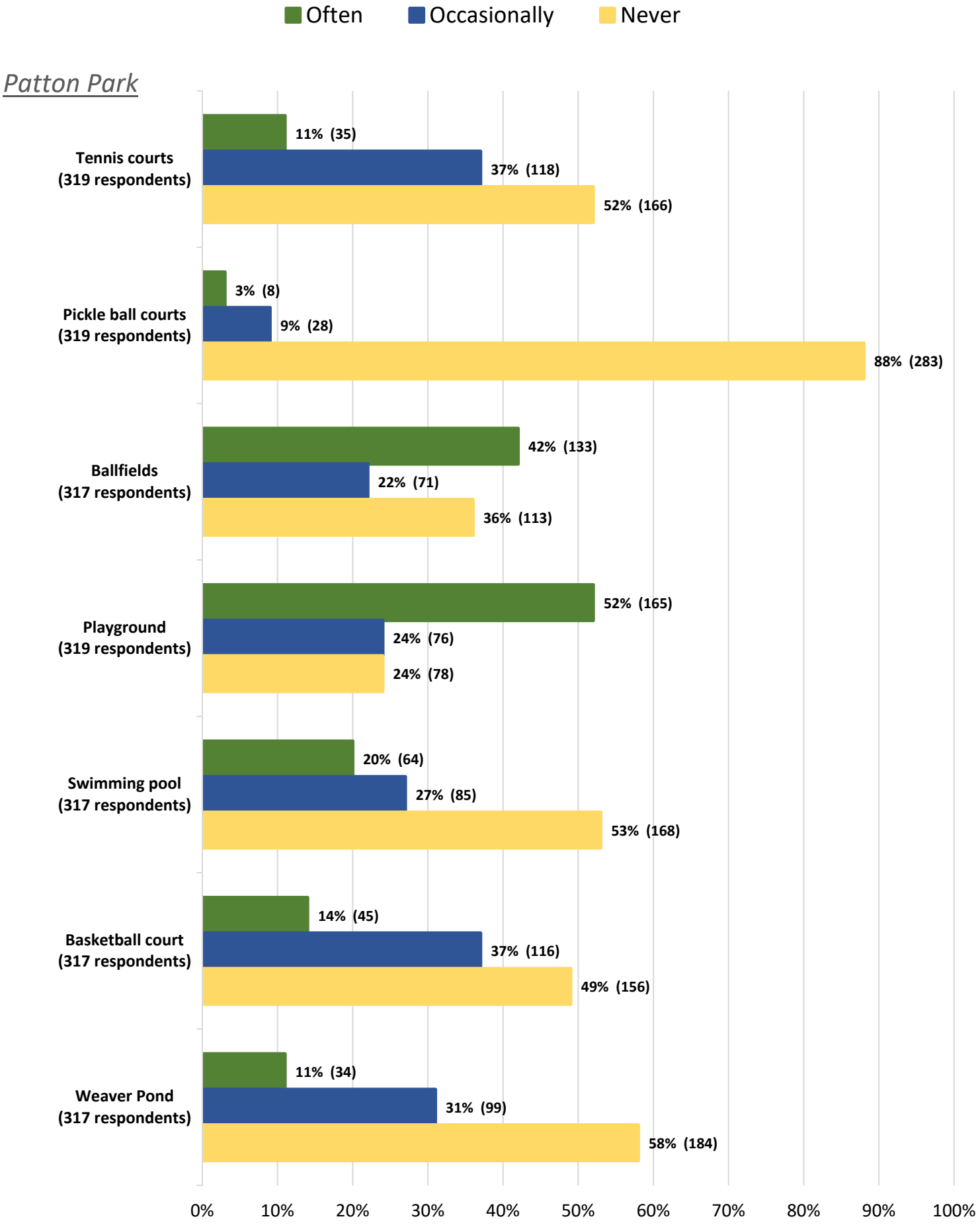

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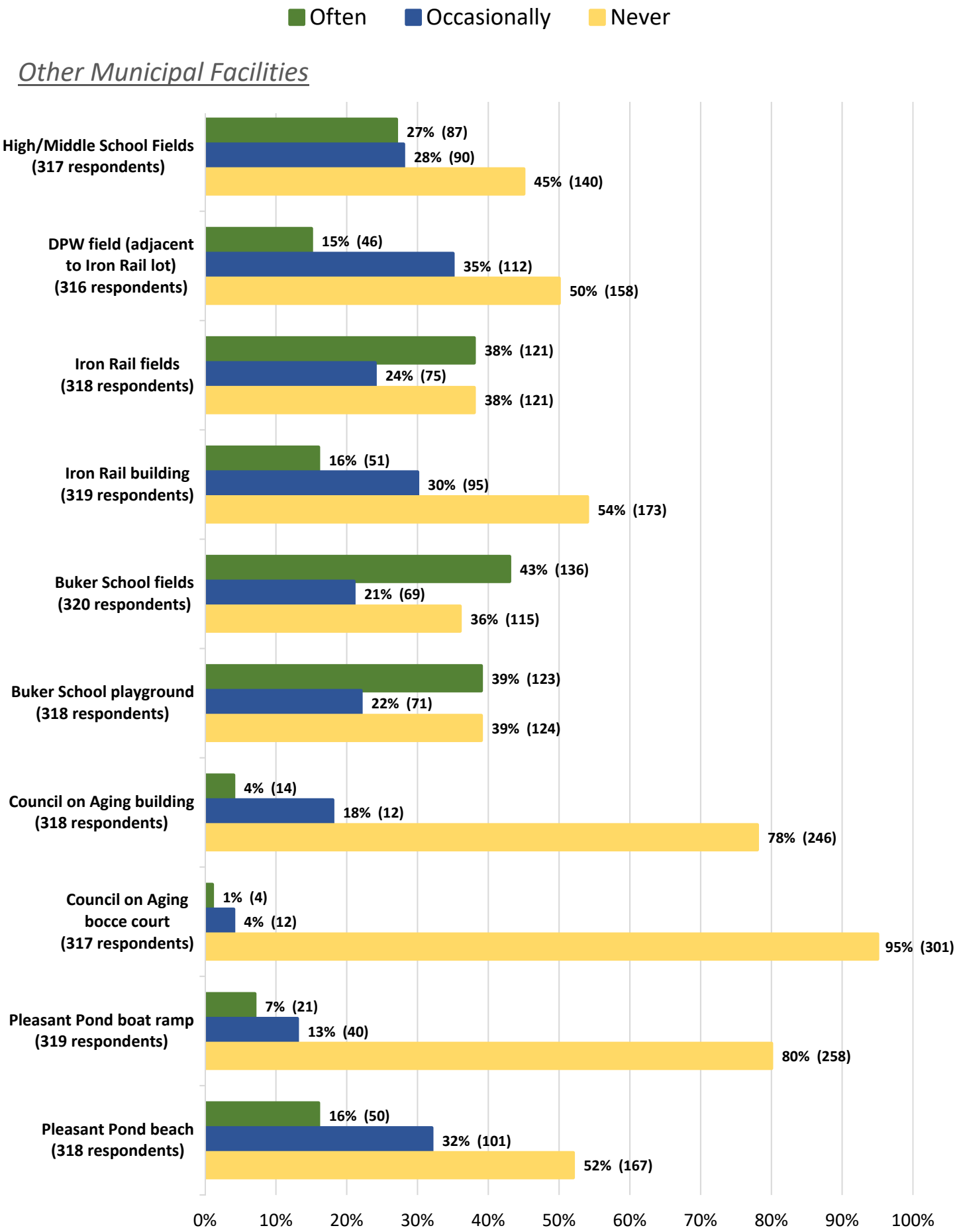

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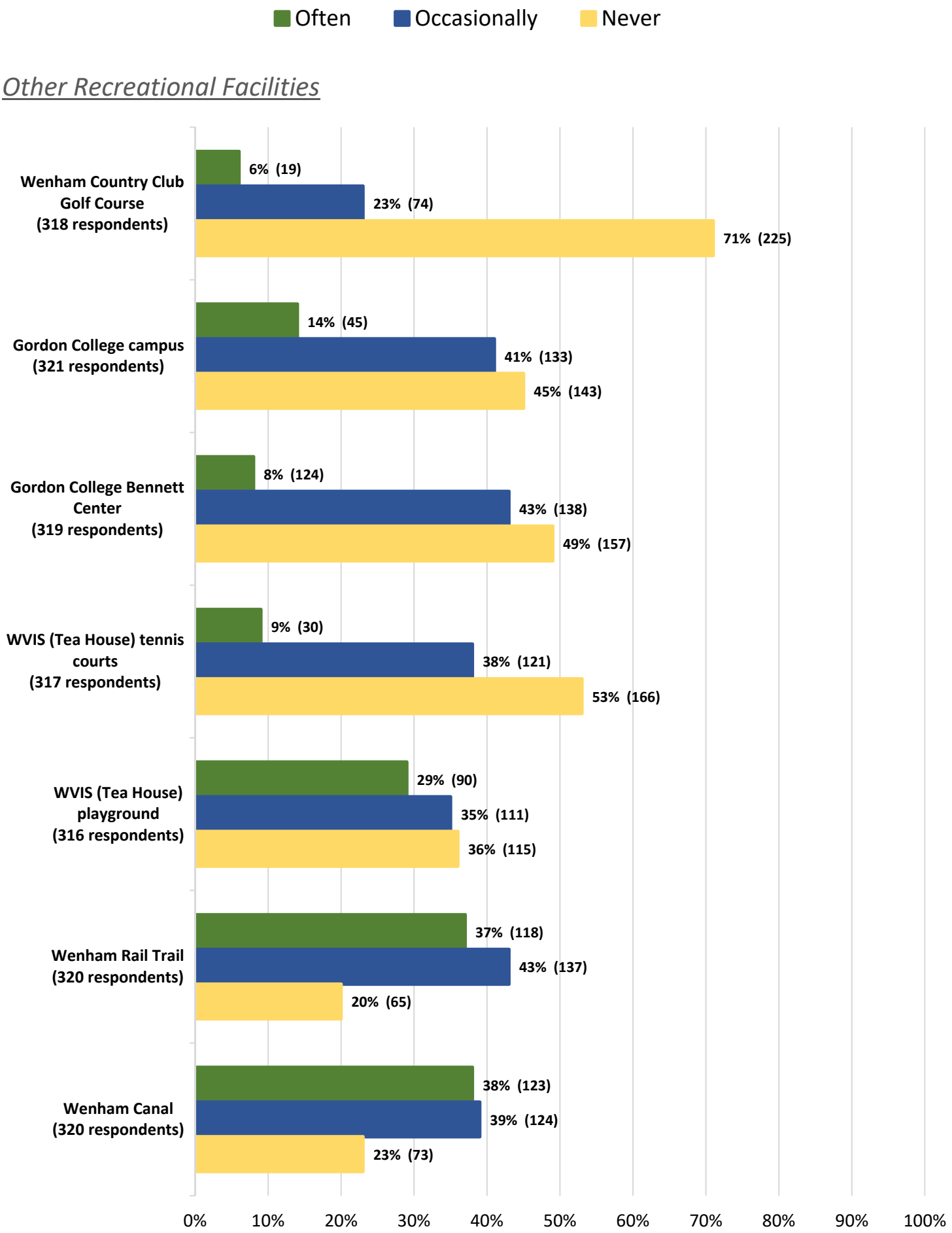

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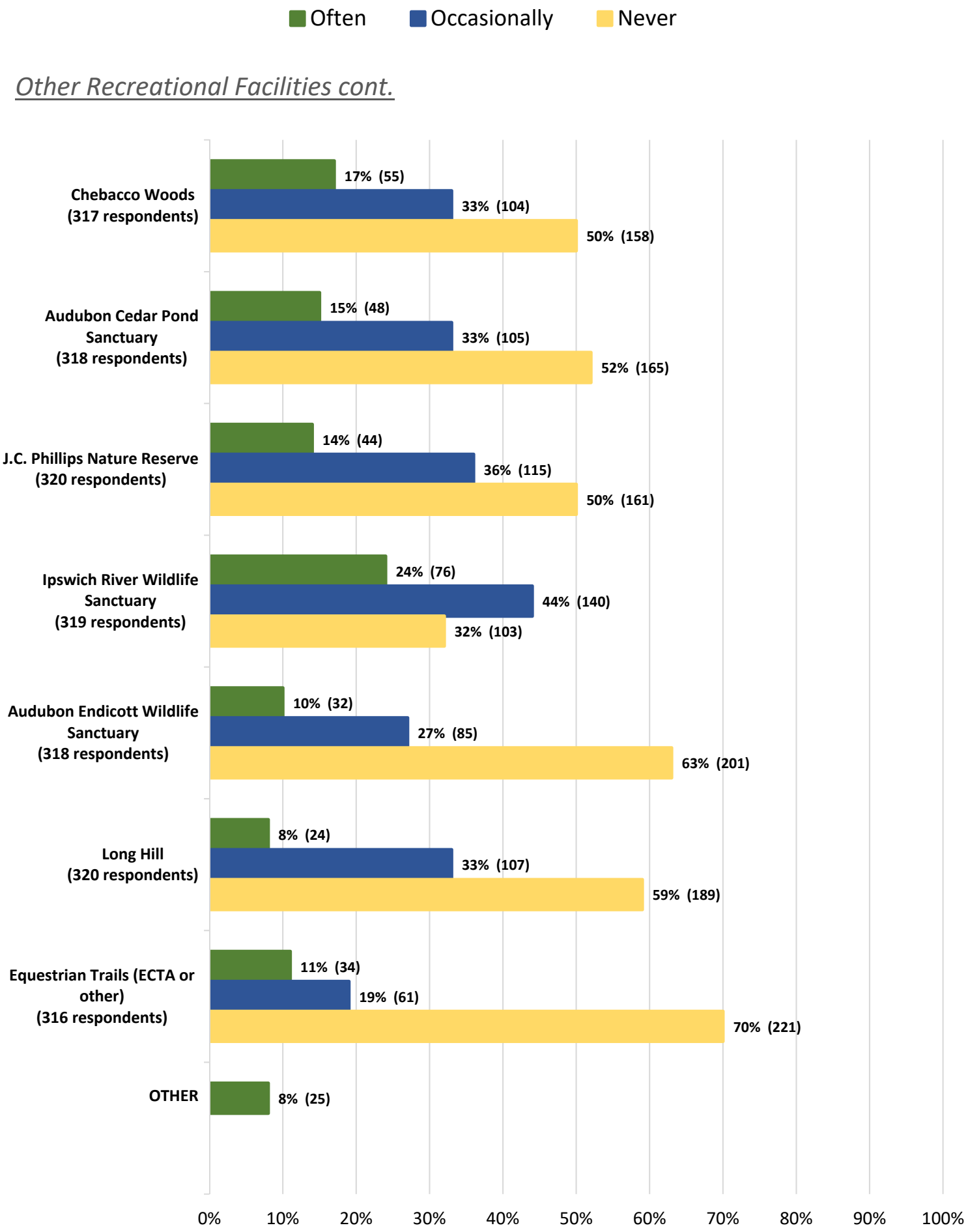
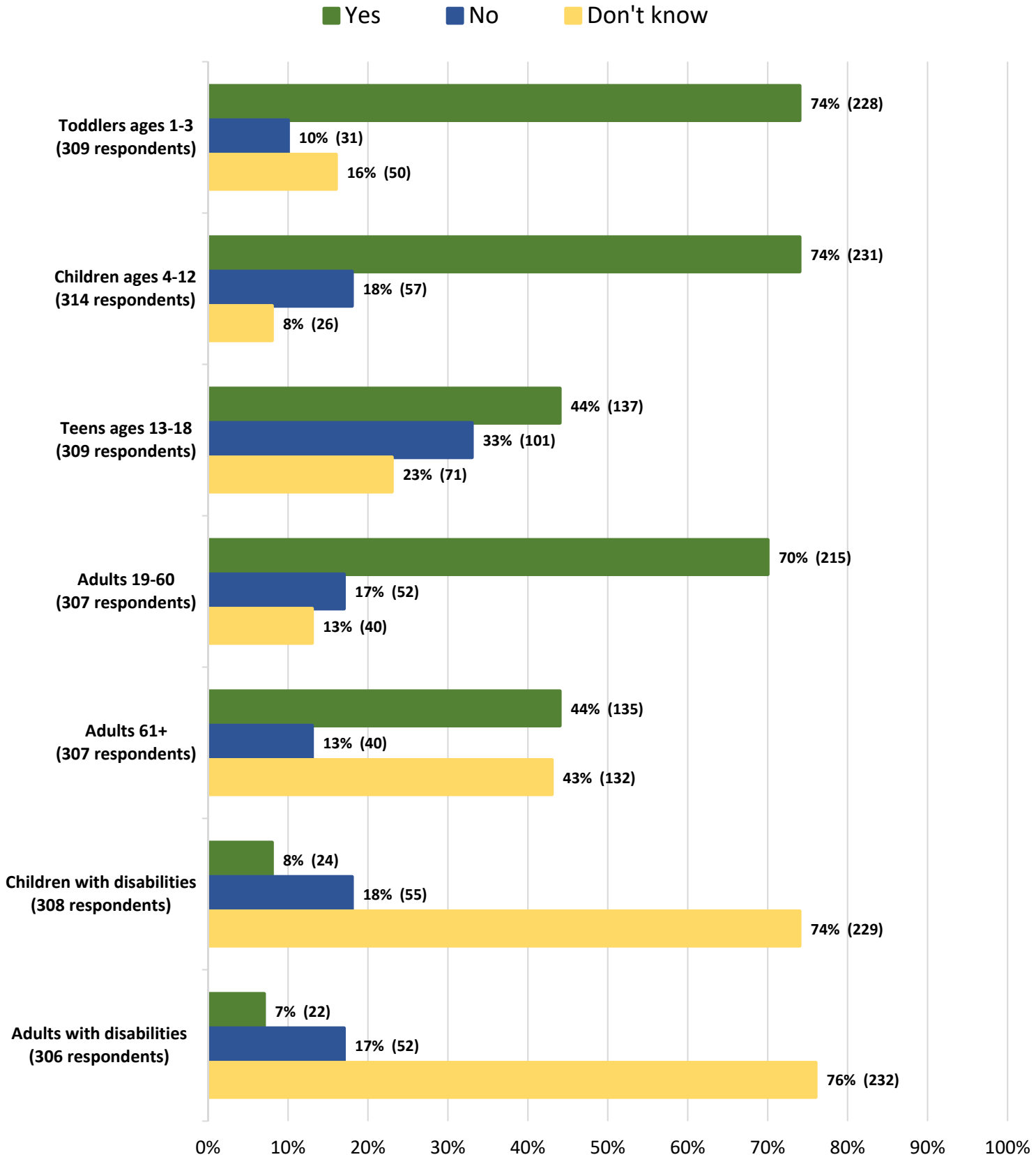


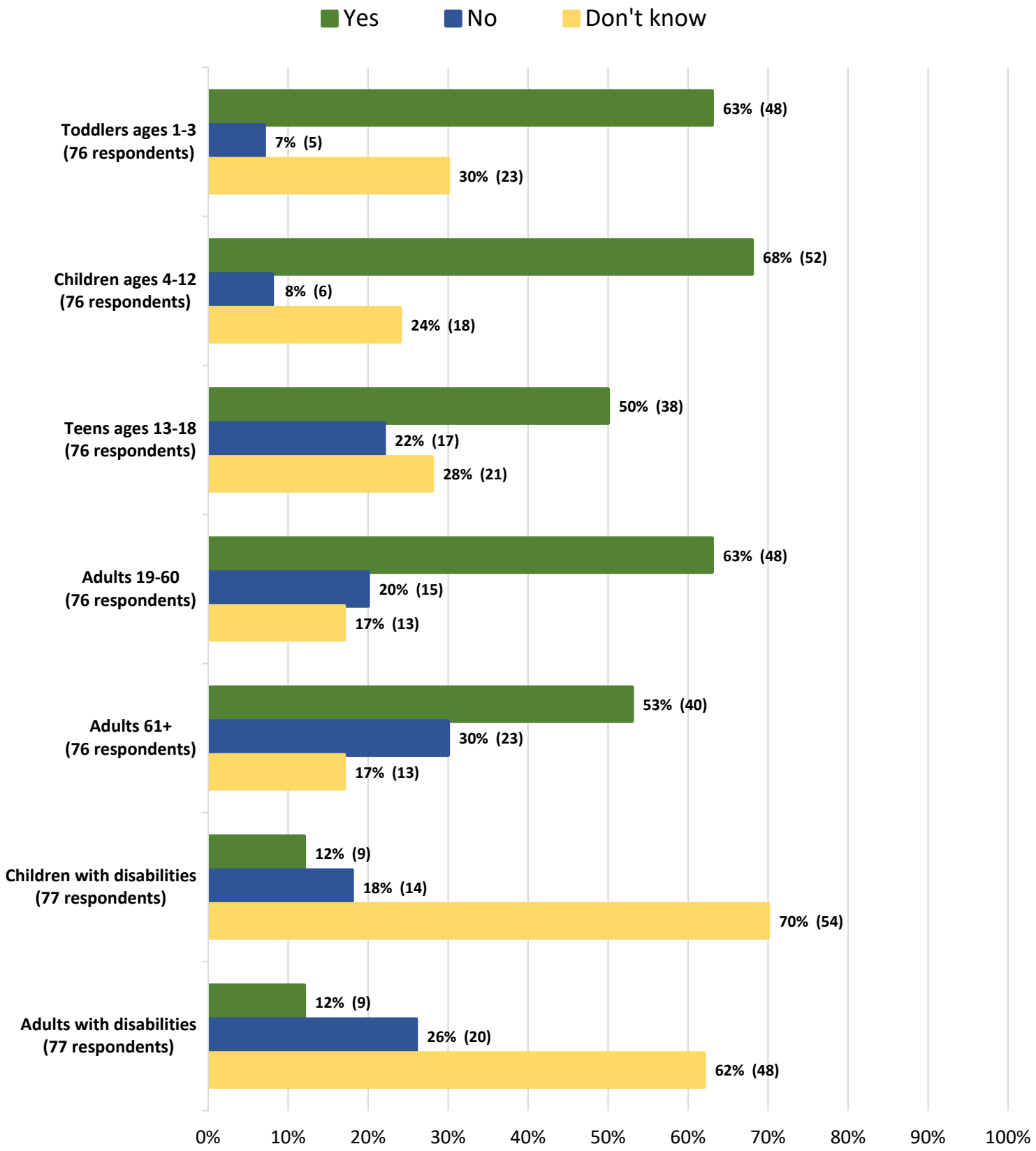
Q7. How often do you/family members use the following facilities?	
Other *(please specify place & frequency of use)*	
1	I wasn't even aware of most of those places
2	"Myopia Fields" the beautiful fields behind Patten Park. Weekly with my dogs.
3	Appelton Farm trails, Frequently
4	Appleton Farms
5	Appleton farms grass rides -- often; Bradley Palmer state park -- often; Pingree school xc trails -- occasionally
6	Bradley Palmer
7	Bradley Palmer and Willowsale for xc skiing, walking and Mtn biking
8	Bradley Palmer for cycling and mountain biking 1 / month
9	Crane's
10	Cutler and Winthrop schools ball fields
11	Long walks around both Hamilton and Wenham on sidewalks/Biking with kids through Wenham and Hamilton to get lunch/play at parks
12	Myopia schooling field
13	Myopia Schooling Fields (for dog walking - not a Myopia member) - Often
14	Note- Above, Pingree Park playground has not existed for a year + after it was torn down, and West Wenham is not in usable condition for Tennis, Basketball. Definitely an Underused property!!
15	Occasional use of trails adjacent to Pleasant Pond parking lot.
16	Our children / family used all of the above intensely in previous years when they were younger including the pool. What are the rec spaces available for teens
17	Public roads for cycling
18	Some of the above locations we used when the children were younger
19	Trails off patton park/myopia and behind pincer school
20	Trails on Gordon College campus — often
21	Used to use lakeview Golf Course, but gross error by BoS not to allow a town vote has lost us the best scenic and historic view in the town!

22	Walking in area around Pleasant Pond over to Lake Drive and PineTree in Hamilton
23	We used all of the playgrounds a lot when our kids were younger - I still believe quality playgrounds are important for the town even though we don't use them much now
24	Wenham cemeteries are used for walking. Why is there no mention of the sidewalks? They are the most used item in town for recreation..
25	Willowdale - always for Mtn bikes

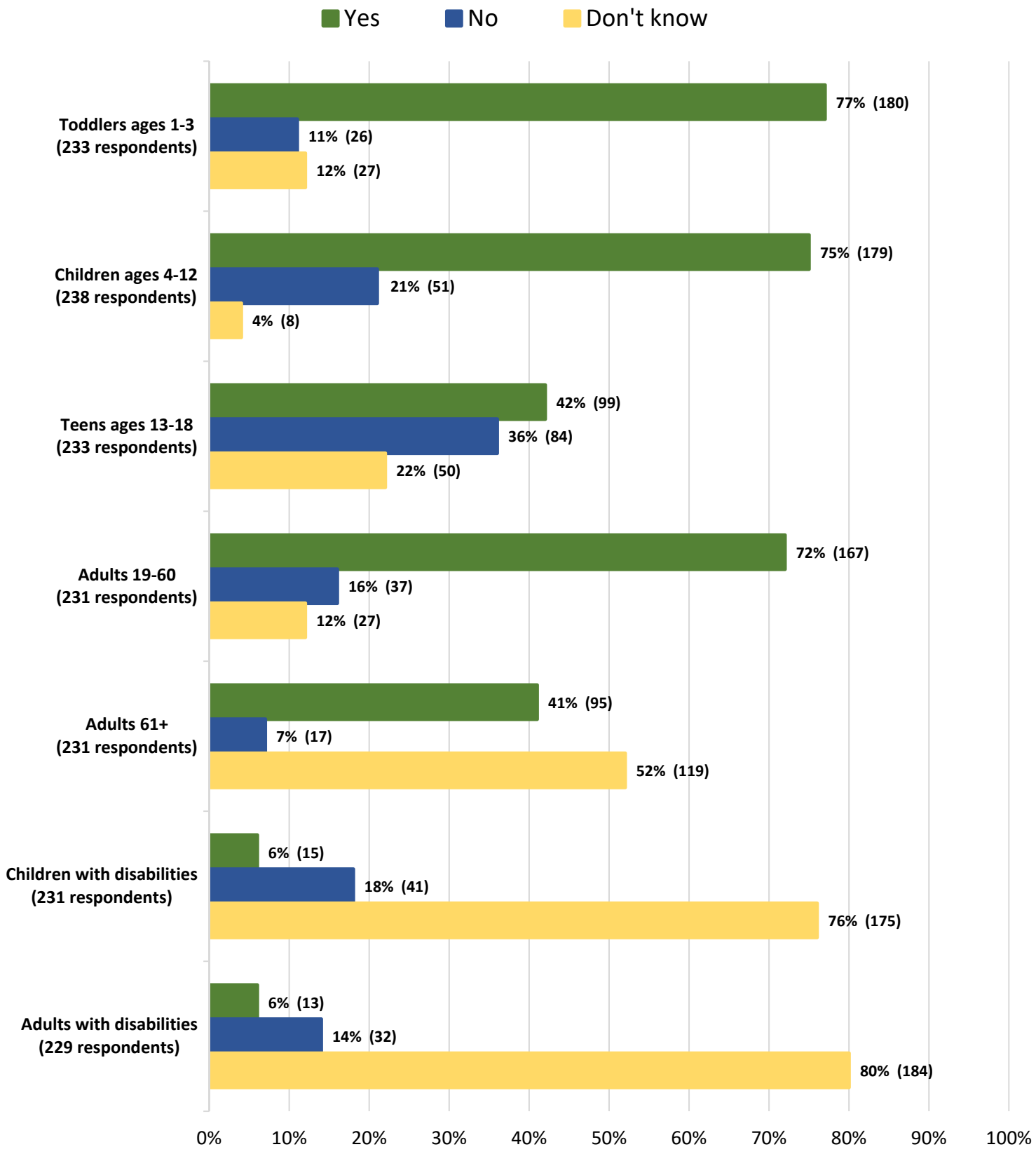
Q8 Do you think the following age groups have sufficient recreational opportunities?



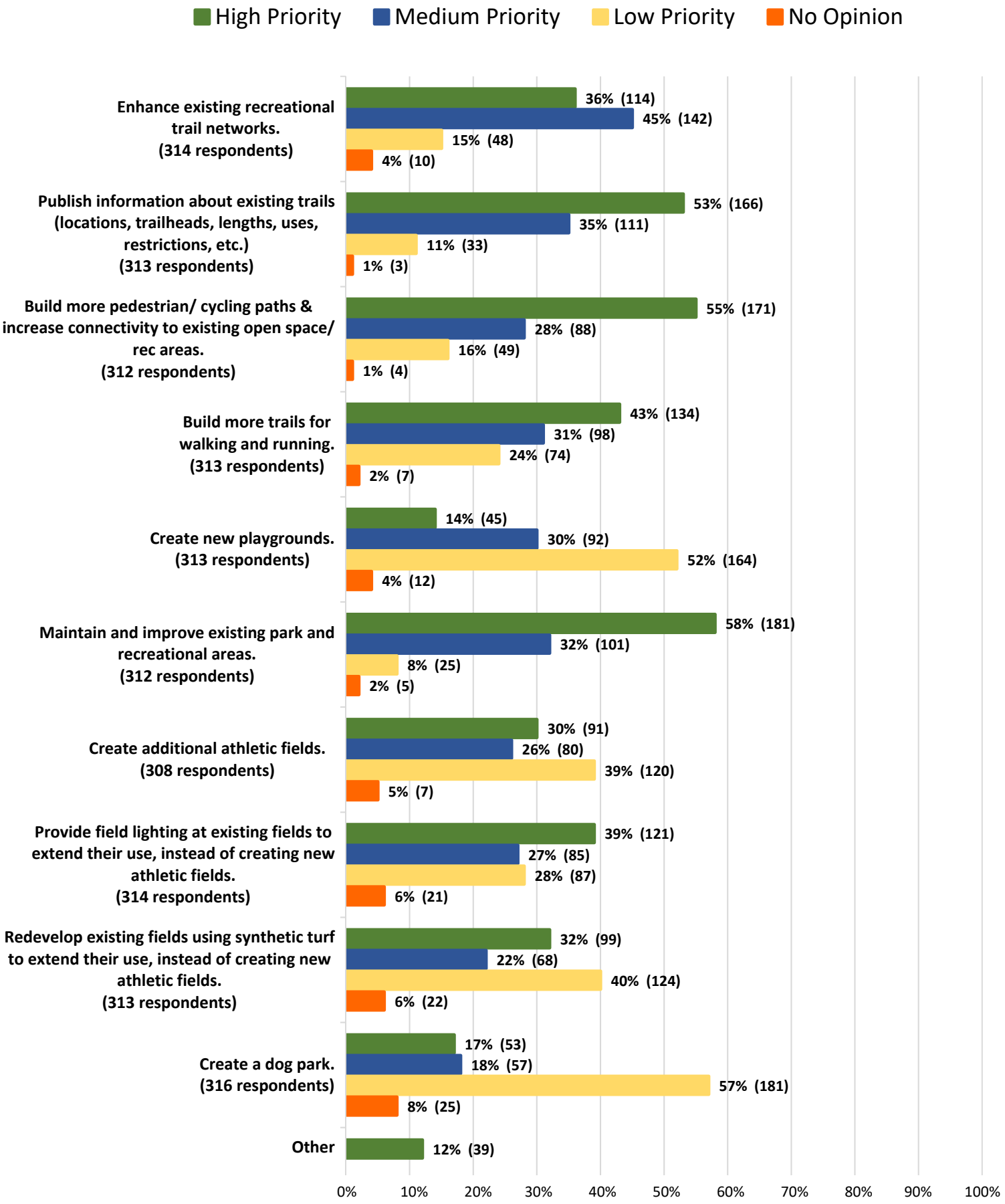
Q3 vs. Q8 How residents with **NO** children under 18 in the household answered, "Do you think the following age groups have sufficient recreational opportunities?



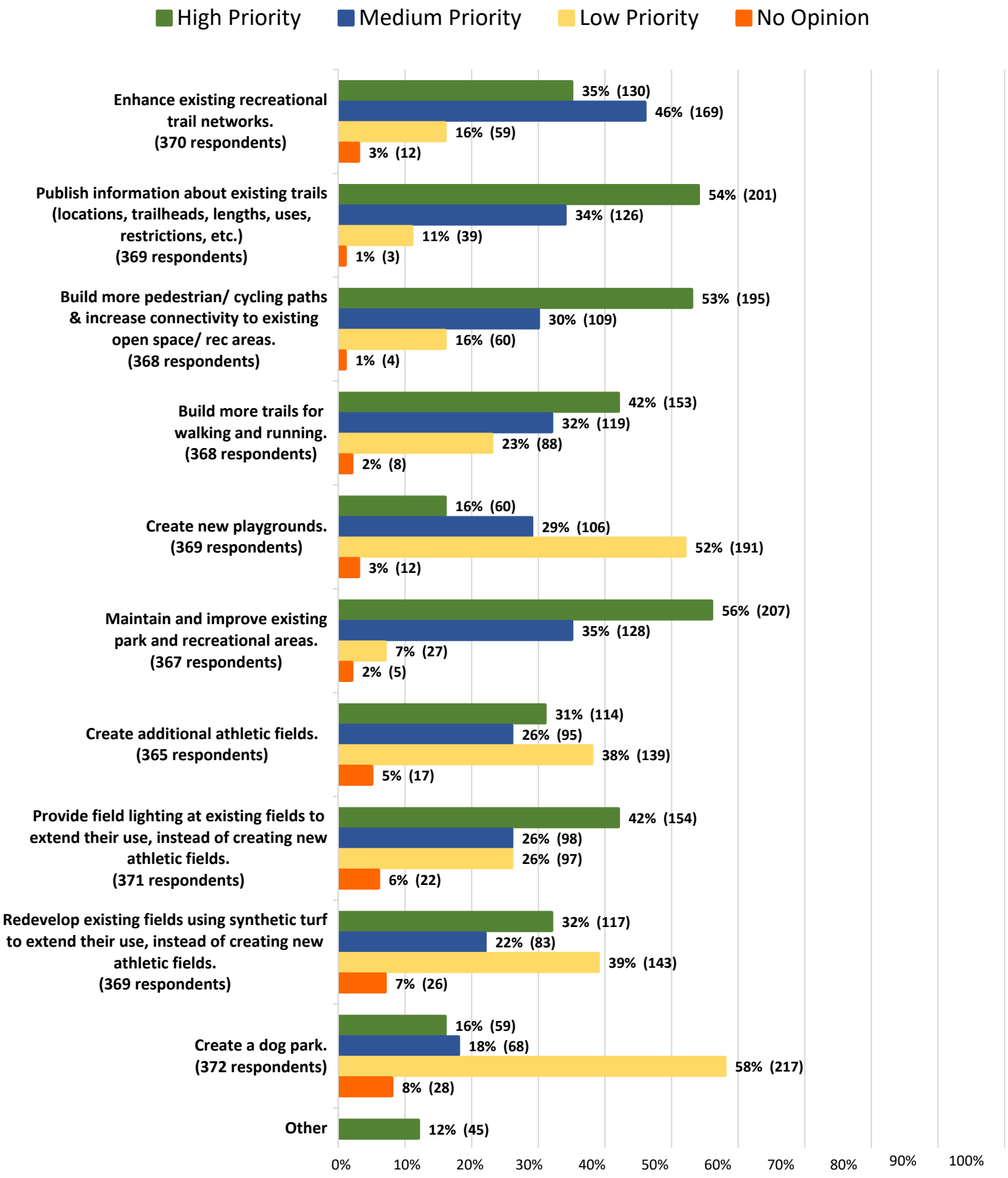
Q3 vs. Q8 How residents **WITH** children under 18 in the household answered, "Do you think the following age groups have sufficient recreational opportunities?



Q9 How should we provide for a wide range of recreational opportunities for all residents?



Q9 (incl Hamilton residents) How should we provide for a wide range of recreational opportunities for all residents?



9. How should we provide for a wide range of recreational opportunities for all residents?

Other *(please specify)* ***(*Hamilton resident)***

1	A nice dog park (not just a chainlink box), a no leash pet trail, an exercise trail, and a new Pingree playground get my vote
2	A turf field is a must. It is shameful that we do not have at least 1 turf field
3	And restrict dogs from most trails/parks. Dog owners are not cleaning up well after their pets where we walk.
4	Athletic fields priority - 1 Longmeadow 2 Turf at HS - lighting necessary for both
5	Bike path along Walnut Rd. and other key roads to commuter rail station.
6	Create a skate park for skateboards and scooters. The tweens have literally nothing to do besides organized sports on athletic fields and basketball hoops.
7	Create a skate park PLEASE!!!! Charlestown is too far away!
8	Dog park is a great idea! In general, I think improving what we have is best place to start, including better connectivity with sidewalks/paths.
9	emphasis on importance of dog park
10	Ensure High School in particular has enough recreational space, once in a lifetime opportunity now, keeping our schools competitive preserves our entire community and housing values
11	I do not want turf fields. Artificial turf is full of toxins.
12	I have selected No Opinion to register my opposition to some options.
13	I would like to see the Pingree Park playground re-built but other than that I don't think additional playgrounds are needed.
14	I'm not sure that adding light to fields would accomplish the same goal as adding additional fields.
15	Improve existing trails for strollers, improve teahouse field for sports
16	Improve sidewalks. Find ways to open access to Wenham Lake.
17	instead of building new playgrounds update play structures to be handicap accessible
18	Leave open spaces untouched so that all of us can enjoy and be creative about enjoying nature.
19	Make outdoor art garden - labyrinth, sculptures, outdoor chess, galleries, concert stage, etc.
20	more athletic fields are crucial! A turf field is needed.
21	My children are older now and did not attend the public middle or high school, however, I think it is imperative that a turf field be installed for the schools and rec programs in order to be competitive with other towns and to increase safety with sports. A high school field hockey program should not be playing on the bumpy grassy field at Fairhaven.
22	Once Pingree is built the playgrounds will be in better condition

23	Pave existing trails, and most of all CREATE BETTER RUNNING/BIKING OPTIONS SO THAT PEOPLE AREN'T RESORTING TO RUNNING OR BIKING ON 2-LANE ROADS WITH NO SHOULDERS.... EXTREMELY DANGEROUS, AND SHOCKING THAT SAFER OPTIONS HAVEN'T BEEN CREATED / INVESTED IN. PEOPLE DON'T ACCEPT THIS VOID OF SAFETY IN OTHER DEVELOPED TOWNS. "QUAINT/RURAL" SHOULD NOT RESULT IN WITH "UNSAFE", BUT NEITHER SHOULD IT BE DISCOURAGE "ACTIVITY". NEED TO MODERNIZE THIS.
24	Regarding athletic fields, I think maintaining/improving what we have and likely adding more is important. I don't know enough about tradeoffs between turf vs grass to have an informed opinion on that
25	Since the towns lease fields to private school, etc., we must already have enough.
26	Strongly opposed to using artificial turf! Not interested in spending tax payers money on dog parks.
27	Synthetic fields are a health hazard
28	synthetic turf and lights at the high school way overdue and clearly would help alleviate usage of town fields.
29	The word “sufficient” is subjective. Current town fields are in awful condition. Reduced DPW = collapsing fields/parks
30	There are opportunities in local communities so Wenham does not need to provide a wider range of recreational opportunities; taxes need to provide the basic services to all residents.
31	There is too much emphasis on recreation here; where are the proposals for open space and wildlife preservation, continuation of agriculture, and protection of our monuments?
32	Too many dog owners let their dogs run free in parks where they are not supposed to be! Dog owners bring dogs to sporting events which is against the rules.Dogs run free at the Canal--dog walkers do not have control of the dogs.Fine owners and create a dog park with the funds.
33	Traffic control for bikers and pedestrians -HIGH priority
34	Turf field at the High School with lights should be a top priority.
35	We need CLEAN bathrooms at Patton Park!!!!!! This should be the first priority for everyone!
36	Wenham doesn't need a dog park, we have plenty of spaces for dog owners to walk. Please don't add night lighting to any of your fields. We need to be home when it gets that dark (and cold) out.
37	who says that we need new athletic fields? maybe new academic resources would be better
38	Yes! A dog park, please!
39	You are asking the wrong questions here! The object is to preserve open space and natural resources of Wenham; the above "priorities" all increase usage and development attracting further development - exactly the oppostite of what the Town needs. Connecting the trails and completing the sidewalk system is a legitimate safety issue to get joggers, pedestrians, and especially our children out of the streets and out of harm's way.
40*	**Dog park not needed, lots of areas /trails for dogs**
41*	**if Dogs allowed - enforce picking up their droppings & enforce leash; charge $ to use bathrooms and keep them clean**
42*	**No synthetic turf!**
43*	**Turf field should be at high school.**

10. The Town has the right of first refusal on the properties identified on the map above if they are being sold for a different use. Currently, they are used for agriculture, forestry, or recreation and taxed accordingly under a State program known as Chapter 61. Which, if any, of these parcels would you recommend for acquisition if the Town had that option? Independent of the Town's ability to finance the acquisition cost for any specific parcel(s), please identify Map/Parcel from this map and suggest a proposed use. A hi-res PDF of this map is also available here: *Wenham Chapter Lands Map 2017*

(Open-Ended Response)

1	136 Grapevine
2	136 Grapevine - Flag Football Fields/Youth Soccer 9 Maple Street - Park/Open Space w/Playground
3	136 Grapevine Road
4	136 Grapevine Road
5	136 Grapevine Road, Wide trails, easy to access.
6	136 Grapevine to extend trail network so you could go from iron rail properties and connect to trail network in Chebacco woods and behind Gordon college
7	136 Grapevine, 69 Cherry St., 94 Main St.
8	136 Grapevine, 94 Main, 74 Cherry, 212 Topsfield
9	212 Topsfield Road 62 Maple St 74 Cherry maybe 87 Main Street.
10	212 Topsfield Road, 9 Maple Street; 87 Main Street, 94 Main Street; 74 Cherry Street; 69 Cherry Street
11	24/9, 9/4, 26/13, 18/64, 18/2
12	51 maple
13	51 Maple St.
14	52 and 61 Maple street and 69 and 74 cherry
15	57 Dodges Row
16	60 main st
17	60 main st- mixed use commercial (transit oriented) 9 maple st (huge parcel, some commercial development, some preserved open space or farming), 212 Topsfield Rd (farming, scenic vista)
18	60 Main St, 97 Main St
19	60 Main St. & 9 Maple

20	60 Main Street
21	60 Main Street, as Tender Crop farm anything off of main as you come into the town.
22	60 Main - lost due to terrible BoS arrogant decision. Now more vehicle traffic on 1A expected, Main Street Cemetery boundary buffer compromised, and historic scenic view inaccessible to citizens. 9 Maple - the largest parcel and expected to change ownership sooner rather than later. Must be tip priority for purchase of development rights to preclude massive development on this parcel that will overwelm our town's services and schools. 94 Main Street - 2nd highest priority now; liable to development at anytime here given the fate of similar Lakeview Golf Course. Severe impact on town services and schools as this parcel is large enough for a major development, that would add even more traffic to 1A. 74 Cherry and 212 Topsfield and 87 Main, historically agricultural properties, take action to keep them as such these being among the last of this category. 136 Grapevine and 57 Dodges Row should be next priority; close enough to Gordon that they may acquired by the college for massive development like current college properties. Loss of tax base and with property going to this tax-exempt organization that makes significant use of town services.
23	62 Maple St.
24	62 Maple St., Wenham. Affordable Housing
25	69 and 74 cherry street
26	69 Cherry and 9 Maple st
27	69 Cherry St. Map 18, Lot 2 74 Cherry St. Map 18, Lot 64 Open space!
28	74 Cherry and 69 Cherry
29	74 Cherry Street
30	74 Cherry Street -- could trails connect the Wenham Canal to Pleasant Pond?
31	74 Cherry Street to be maintained as is.
32	74 Cherry Street to connect to the canal and the trails there. Any of the other lots would be good if the town needed more athletic fields.
33	74 Cherry Street walking trails
34	74 cherry, 9 maple, 94 main
35	74 Cherry, as an extension, improvement and maintenance of the canal and trails
36	87 & 64 Main
37	87 and 94 Main
38	87 Main Street for commercial use....to bring our tax rate DOWN
39	87 Main, 74 Cherry St, 99 Cherry St, 96 Larch Row, 94 Main st
40	87 Main; 94 Main; 69 Cherry; 74 Cherry; 212 Topfield
41	9 Maple

42	9 Maple - preserve open space/habitats, agriculture, trails 74 Cherry & 69 Cherry - preserve habitats, trails 94 Main - recreation 87 Main - agriculture 212 Topsfield - agriculture
43	9 maple for athletic fields
44	9 Maple St
45	9 Maple St
46	9 Maple St
47	9 Maple St
48	9 Maple St- Trails & lacrosse/ ball fields
49	9 Maple Street
50	9 maple street
51	9 Maple Street 60 Main Street 94 Main Street Grapevine Road
52	9 Maple Street,
53	9 maple, 74 cherry, 69 cherry, 94 main, 60 main
54	9 maple. Huge area of land located in close proximity to many family neighborhoods.
55	9, 51 and 62 Maple Street parcels
56	94 Main 74 Cherry 9 Maple
57	94 Main St.
58	94 Main st: keep as a town owned golf course 9 Maple st- such a large parcel could be for mixed recreational use.
59	94 Main Street
60	94 Main Street
61	94 Main Street
62	94 Main Street 87 Main Street
63	94 Main Street, Both Cherry Street parcels
64	94 main street. soccer/baseball/football fields at least one of which should have lights.
65	94 Main, 60, Main, 87 Main, 74 cherry st, 60 Cherry St - all these parcels are in central position for a good recreational park (art playground, community garden, etc)
66	All of them
67	All of them

68	All parcels on Main Street should be of interest to the town for either recreation development and/or some commercial development; 9 Maple
69	ALL properties listed, especially: 62 Maple St 9 Maple St Topsfield rd Cherry st
70	All the Main St parcels.
71	All!
72	Angelini- farm Canaan- farm Burnett- affordable housing/ watershed protection / trails Lakeview- already screwed- Clemenzi Wenham Country Club- conservation restriction - keep as golf course
73	Any of the Maple St. Parcels or Cherry St.
74	Any of those properties that could be used for sports fields. Our HS athletic fields are an embarrassment - compare to surrounding communities.
75	Any property on Cherry and Main Streets, as well at 9 Maple Street.
76	any/all when available
77	Anything that can be used for athletic fields....
78	As I believe our top priority should be field space and or protecting space for future school needs, I would want to look into those that can be used for those purposes.
79	As many as they can Large ones on rte1a are key as big and core to town feel
80	Bad question. It depends on what the town does with it afterwards. For example: Hamilton has not done well with the Patton estate.
81	Build affordable housing instead. Build houses to increase revenue and thus lower taxes for elderly
82	Cherry and Maple Street
83	Cherry Street, Main Street (1A), Maple Street
84	Difficult to answer. This depends on other competing proposals and/or size. The bigger the better in some cases. Location - such as buffers to wetlands, rivers, and lakes - is more important.
85	Dodges Row
86	Don't know.
87	Don't know.
88	don't understand the makeup or the topography of the lots to make a recommendation
89	Grapevine Road
90	Grapevine Road
91	I do not know. I like to try different ones.
92	I don't feel qualified to make this decision. I believe it is worth exploring whenever possible.

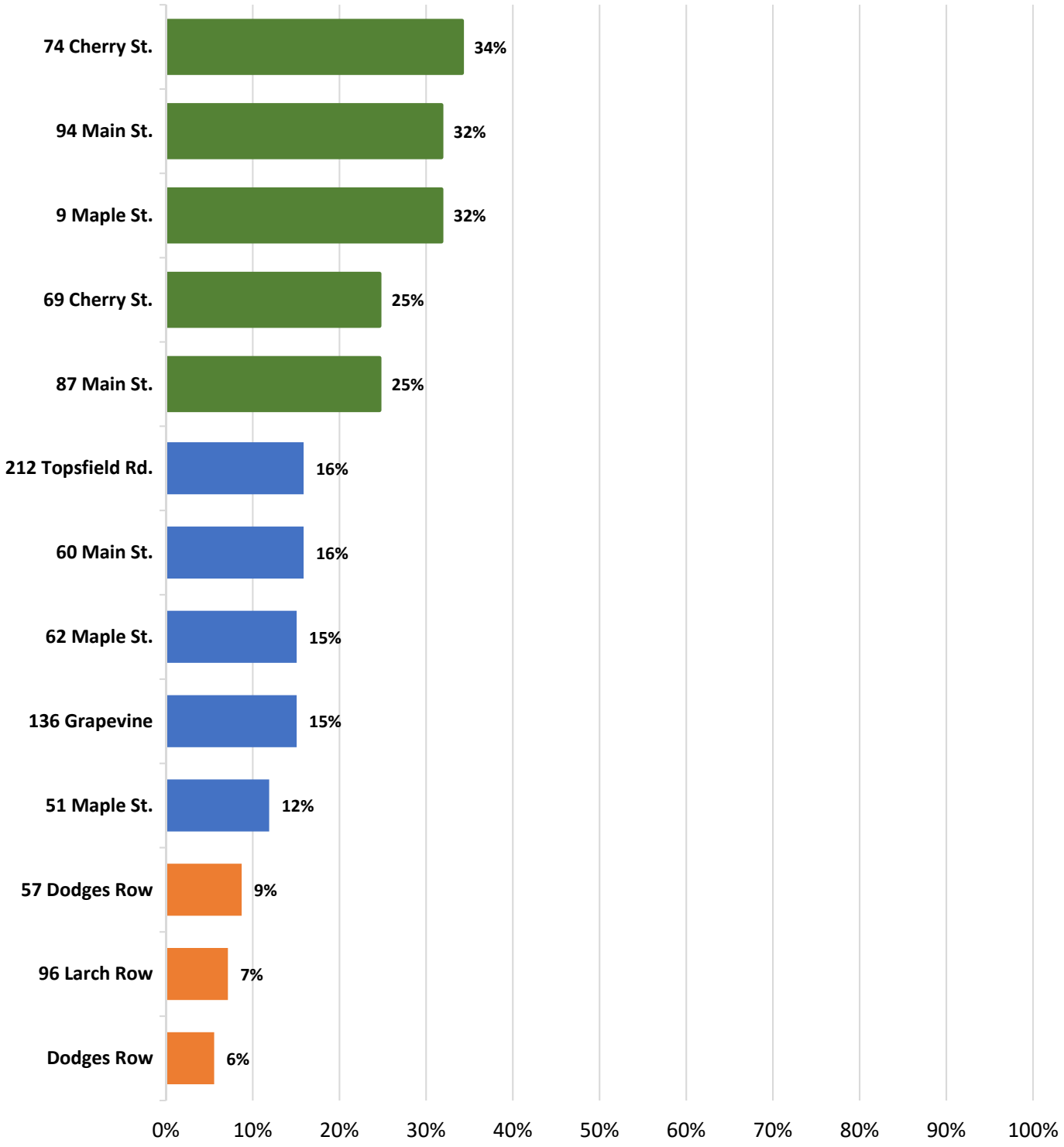
93	I don't know enough about these pieces of land to make an input. I would say that the impact of development on the environment and water use and water resources already under pressure would be significant. Buy near existing open space. Buy where we need playgrounds in other neighborhoods. I would support a nice office park on half of the golf course, rather than have it all housing or high density housing.
94	I don't think any of these properties would be a high priority for the town
95	I would support acquisitions of any of these properties.
96	It seems to me that the best properties would be those that are the most accessible to the largest group of people.
97	Lakeview should have been #1 can we ever reverse this????? might the development fall through??? 60 Main street, then, in order: 94 Main street, 87 Main stree,t 74 Cherry, 69 Cherry, 96 Larch, 51 Maple, 136 Grapevine, 212 Topsfield, 62 Maple, 57 Dodges, 51 Maple
98	Lots #2 & #64
99	Main Street former golf course area
100	map 18 lot 64
101	Map 23, lot 16 Map 24, lot 9 Map 24, lot 3 Map 9, lot 4 Map 18, lot 2 Map 18, lot 64
102	Map 26 Parcel 13 Continued agricultural use
103	Map 26, Lot 13 Map 27, Lot 33 Map 18, Lot 2 Map 24, Lot 9 Map 18, Lot 64
104	Map 27, Lot 33 and map 27, lot 36
105	Map 28 Lot 5C for trails Map 18 Lot 64 and Lot 2 for conservation, and agricultural leasing Map 24 Lot 9 for sports fields
106	map 41 lot 10 - grapevine road
107	Map 9 lot 4, Map23 Lot 16, Map 24 Lot 3, Map 24 Lot 9, Map 18, Lot 64, Mar 18 Lot 2, Map 27 Lot 33, 57 Dodges Row,
108	Map 9 Lot 4; Map 27 Lot 33; Map 26 Lot 13; Map 24 Lot 9
109	None don't think the town should develop these
110	None! The town of Wenham does not need to spend taxpayer money to purchase more land. Taxes in Wenham are way too high now. We have plenty of playgrounds, playing fields...open space.
111	None. Stop spending my money on your hobbies.
112	Not sure
113	Not sure. We live in west Wenham - any biking/walking paths that could connect to other ones around here would be great, if some of them could connect to Rail Trail? Cedar Pond area paths?
114	Parcel 60 main St - merged golf course if Dev falls through... 87 main St soccer fields or Mtn bike course, 74 cherry bike trails
115	parcels that offer some ability to pay for expenses of acquisition/ maintenance i.e. energy production or minimal development maintaining vista/open space and provide paths
116	Properties on Main street.

117	Really hard to tell from this map without discussion of purpose
118	save them all, please. that said, the three parcels on main street are essential so that new dense housing could be placed THERE....population density, walkable, in the middle of the town instead of in the periphery.
119	Somewhere on Maple Street - with good off-street parking.
120	The sites on Main Street.
121	Those on Cherry and Main Street
122	Town fields are over used and a mess. DPW resources appear to be limited which doesn't help
123	West Wenham , Maple st is a priority.
124	Would buy two parcels, one one west wenham and one on east side of town to balance off Patton park usage. A nice well lit walking path somewhere would be good.
125	Would need more information on current use and land type. Fields, wood lot, existing infrastructure, surrounding lot use.
126	Would need to review more info

Q10 Which, if any, of the Chapter 61 parcels would you recommend for acquisition if the Town had that option?

(Please identify Map/Parcel and suggest a proposed use.)

Respondents: 126



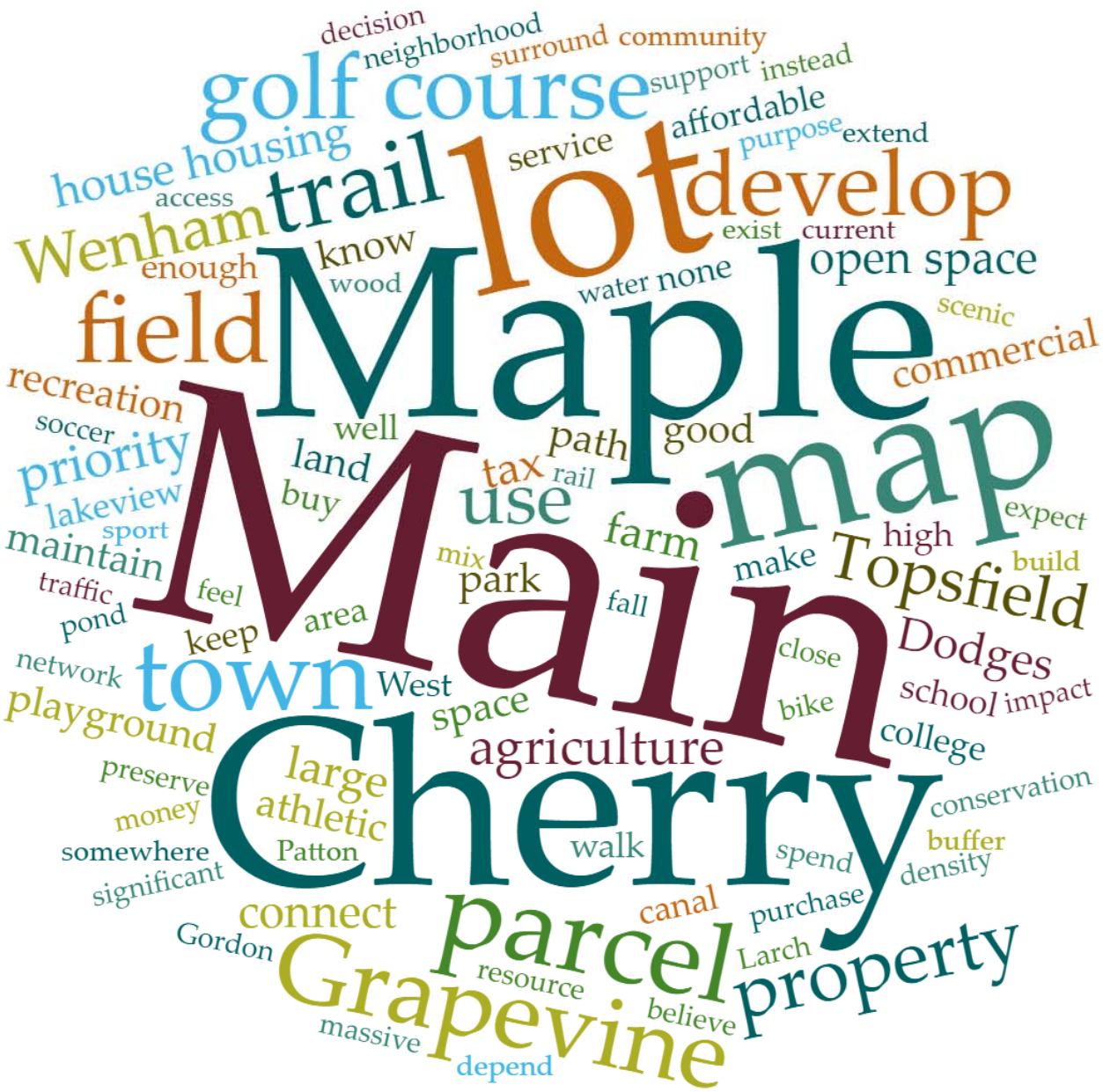
Q10 – keyword count

Main	58
Maple	42
Cherry	41
lot	37
map	31
parcel	16
town	15
field	14
Grapevine	14
trail	14
develop	13
golf course	13
property	11
use	11
Topsfield	8
Wenham	8
agriculture	6
priority	6
connect	5
Dodges	5
farm	5
house housing	5
large	5
open space	5
tax	5
1A	4
athletic	4
commercial	4
good	4
know	4
land	4
maintain	4
park	4

path	4
playground	4
recreation	4
space	4
affordable	3
area	3
buy	3
canal	3
college	3
enough	3
high	3
keep	3
lakeview	3
make	3
none	3
school	3
service	3
walk	3
well	3
West	3
access	2
believe	2
bike	2
buffer	2
build	2
close	2
community	2
conservation	2
current	2
decision	2
density	2
depend	2
exist	2

expect	2
extend	2
fall	2
feel	2
Gordon	2
impact	2
instead	2
Larch	2
massive	2
mix	2
money	2
neighborhood	2
network	2
Patton	2
pond	2
preserve	2
purchase	2
purpose	2
rail	2
resource	2
scenic	2
significant	2
soccer	2
somewhere	2
spend	2
sport	2
support	2
surround	2
through	2
traffic	2
water	2
wood	2

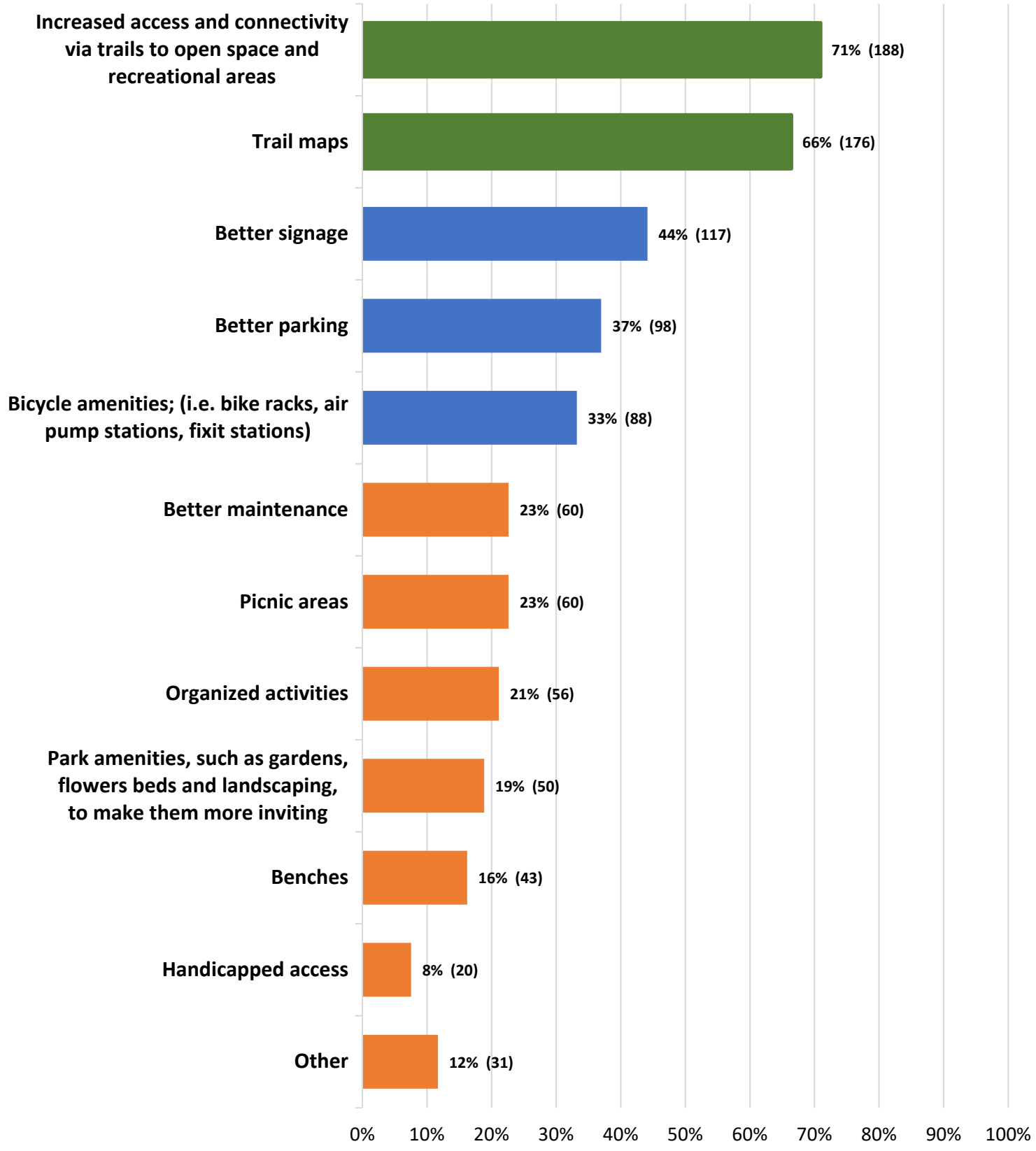
Q10 – keyword wordcloud



Q11 What would increase your use of existing open space and recreational areas, both active (i.e. fields) and passive (i.e. trails)?

(Choose all that apply.)

Respondents: 265



11. What would increase your use of existing open space and recreational areas, both active (i.e. fields) and passive (i.e. trails)? (Choose all that apply.)

Other (please specify)

1	A place to walk at night.
2	A trail / field where dogs are not expected to be on a leash would be great
3	Access to wildlife - my kids LOVE the Ipswich river wildlife sanctuary & the danvers swamp walk because it provides access to checking out animals in their natural habitat.
4	allow dogs
5	Art - kids need inspiration and history as much as they need fresh air and physical activities.
6	As a retired couple, we find there are more than adequate recreational areas and opportunities.
7	Bathrooms. Families need them.
8	Being able to safely bike there from my home (Larch Row).
9	Better info disseminated on what's available. I learned of some new places from this survey and lived here for years before I knew of Wenham Canal.
10	Better maps via an app that could also provide information about the environment, history, etc. of a location. This could be an opportunity for orgs across the community (Wenham Museum, HM Library, Greenbelt, Trustees, ECTA, Myopia, etc.) to collaborate on providing information.
11	bike paths to access without having to drive there
12	Could we please build a bridge over the washed-out section of the trail alongside the Wenham Canal?
13	Dog Park
14	fairhaven playing field needs much better care. It is embarrassing when away teams visit.
15	Half of these places I've never heard of before.
16	I am already a pretty big user of local open space.
17	I currently often use them and don't believe they need enhancements. As I mentioned, I believe effort and resources should be dedicated to preventing further development.
18	It would be good to make people aware of them. I know some of them and have done a lot of research but some of the ones listed are new to me.
19	Keeping dogs (and horses) off of trails, such as the rail trail and Cedar Pond, where there is much wildlife to protect and enjoy.
20	Leash laws! Too many aggressive dogs with irresponsible owners off leash everywhere. Especially at the Wenham Canal.
21	Losing 200 pounds
22	marked trails for specific length/ timed walks

23	Maybe have used seasonal equipment available at the rev dept that could be reserved like mtn bikes or xc skis for people to try out new activities
24	N/A
25	None of the above! Wenham is in good shape. And we don't need to help purchase land in Hamilton so the neighbors there can avoid lower income housing near them.
26	Not sure
27	Sports fields, sports fields, sports fields! Especially for our High School
28	Take care of the facilities!
29	Traffic safety, signage—I'm not sure how to get to some spots listed above
30	We already use the trail system around both Hamilton & Wenham.
31	You are on the wrong track here; all of this is increasing human impact on Wenham's natural areas! The question should focus on what priorities are needed to preserve or enhance the natural state of Wenham's open space so that future generations of Wenham citizens will have a green healthy environment.

12. Do you have any other thoughts about Open Space & Recreation in Wenham that you would like to share with us?

(Open-Ended Response)

1	As evident at the open meeting at the Library the committee has inadequately researched the subject of Wenham open space and is too narrowly focused on "recreation" as once again evidenced with this survey. Members of the committee were often not aware of or conversant with, and must fully research and include consideration of the following: The current use and condition of already town owned parcels; at least one of your committee members did not even know there is a town beach! Our citizen's legal rights to traditional path ways such as Cherry Street to Fowler's Island. Our citizen's legal rights to utilize lakes, ponds, and waterways in Massachusetts; why are portions of Miles River inaccessible being held in private ownership? what legal access is available to Cedar Pond, Muddy Pond and other waters? Condition of our forests, street trees, and trees in our parks, cemeteries, monument and municipal building lots. Has the committee made the needed efforts to coordinate with Tree Warden, Cemetery Commission,and DPW? Has the committee coordinated with the Historic Commission to determine its capabilities to maintain open space and to determine what historic places and homes should be included in our prioritization of open space vistas? Need to document all the private property deeds that include conservation restrictions and ensure they are complied with. Need to include the concept of scenic view; there is value in preserving viewpoints for wildlife, lakes and ponds, vistas of stonewalls and fields and such, as well as wanting to purchase parcels of land. Need a comprehensive land-use map for all the land in town. The map above showing Chapter 61 land is very important but still just one aspect of open space land use in Wenham. Understanding financial limitations the committee ought to establish innovations by purchasing development rights on green buffer zones extending back from the full length of the street frontage if full purchase of a property is unaffordable. On properties being developed; keeping new buildings out of sight of roads will reduce the sense of clutter and congestion. How about acquiring strips of land between adjacent house lots and encircling developments to ensure green buffers and providing pathways off of main streets and sidewalks. As much can be done with regulations to keep at least a sense of open space as can be done with land purchases given limited funds. The committee need to address not only the use but also the condition of our open space particularly our forests as disease and pests have destroyed our elms and chestnuts, and now our ash and hemlock trees are going.The replacement of our many lost street trees is another way to keep the natural attractiveness of Wenham. Is the committee fully supporting a fully funded and active town Tree Warden? The committee needs to address the political issue of getting the decision-making back in the hands of the citizens by sponsoring a town meeting warrant to move property acquisition decisions out of the BoS hands and back to the citizens at a Town Meeting. The committee needs to address the financial issues; what is being done to get state funds, to raise private contributions, to solicit donations of property development rights or voluntary conservation easements, to shift voter interest towards supporting open space acquisition versus other town expenditures, to coordinate with CPA committee for funds and have a warrant article ready for borrowing funds so as to be ready to purchase when a property becomes available. The committee needs to determine Gordon College's plans for further land acquisition and development. The committee needs to coordinate with bordering towns and the Salem - Beverly Water Board so that open space, vistas, and wildlife corridors are mutually protected along town boundaries and around waters. The committee needs to coordinate with NGOs; what are the future plans of Rails - to Trails, Trustees of Reservations, Essex County Greenbelt, Audubon, and others on their plans for properties they own in town or along our borders.
2	As one of the founding members of the Pleasant Pond Association who worked to complete the landscape restoration project at the pond I would like to see a weed management program for the pond. Investment in additional plantings and maintainance at the pond is needed and the summer gatekeeper program should be utilized more effectively for this purpose. Would offer a supervisor position for a retired senior to oversee the pond and they could be given tax break for there time .
3	1A need stop light ? Bike path Support existing parks, not new ones Thank you!!
4	Boulder Lane development is a conundrum but we will certainly lose the forrested buffer that gives Wenham its rte 128 character if a build-out is allowed. It is a primary habitat for much wildlife and forest that benefits our entire community. It represents underappreciated open space in our community.
5	Can we have the school bus stop benches designed as part of the town beautification project please? that will help to improve few places on our walking trails too (Pleasant st for example). There are a couple of benches that are falling appart. Also maybe have an option for residents to be able to buy these benches for heavy used stops (Pleasant/Longfellow). thank you
6	Could we please build a bridge over the washed-out section of the trail alongside the Wenham Canal?
7	Create income generating avenues. For instance, a parcel of farm land that people can lease by the 1/4 to 1/2 acre in order to start farming. There is farmland in Newburyport that provides these opportunities for people wanting to go into farming but unable to purchase acres of land for warming.

8	Developing more land for mini mansions puts an undo burden on our school system. Protecting land not only saves the environment but in the end saves taxpayers $
9	Enhance what trails / areas that already exist at a minimal cost to tax payers and better utilize CPA funds for open space. Approach owners of large acreage for a donation of space for specific activity and don't duplicate opportunities that are not well used. Increase winter opportunities in town for fishing, sledding, skating, skiing, snow shoeing, etc.
10	Even though our kids won't benefit from it, I truly believe a turf field at the High School is a priority.
11	For example, the canal has great potential. The resource is not advertised and is unknown to most residents. The parking lot is difficult and uninviting. Benches or table off trail could really add to the appeal. Can you canoe on it? Fish in it? Add some signage regarding use and history? Etc.
12	Generally Wenham has a well allocated amount of open space and recreation. Important to continue to invest in the open spaces as they are an integral part of the Wenham community.
13	Gordon College offers many recreational opportunities that are not advertised. These should advertised more. Also, there is up land in back of the Iron Rail property that is owned by the town. At one point it appears there were boardwalks leading out to this area. Those could be repaired to gain access for recreational use. I personally feel we should look to do something else with the West Wenham Playground. First, there's no playground. There is no parking to speak of there. In the 3-4 times I've gone there for a walk, I have never seen another sole. The Wenham Canal is great! It would be helpful to improve the small areas that become flooded and make the trail impassable. Is the Wenham Canal available for kayaking? Could it be? The Main Street Cemetery should not be a dog walking park.
14	Great survey. Hope we can achieve half of what is required. Trail maps, signage, and parking are top priorities.
15	Having grown up in Beverly, I am shocked by the conditions of our parks and fields. You can’t neglect them and expect them to remain safe and beautiful.
16	I am in favor of keeping open space, however Wenham taxes are very high, and as a retired resident, I am concerned about cost to taxpayers. Our existing parks and playgrounds, as well as trails for hiking should be well maintained. Children and adults with handicaps should always be a top priority. Affordable housing should be our main concern going forward.
17	I am really in favor of the dog park.
18	I believe enough exists for youth sports. This seems to have been the most important thing for the Town in past years. We have to more on from that. Making sure nothing else gets built along Main Street will keep the rural feel of the town. Do think that additional affordable housing will be needed to keep our numbers where it needs to be. The Maple Street location would take care of that for us many years to come.
19	I love the outdoors and our community's natural and historical resources. I also understand that there is a limit as to what the community can reasonably afford for preservation of these resources. I do think that a holistic view is going to be required that recognizes the need for not only preservation of spaces and places, but also affordable housing and new revenues through tax increases both on the current tax base and via well-thought out future development. It will pain me to see it happen, but I think the reality is that some of the parcels on this map will need to become affordable housing and commercial development. No one will want it on their street, but for the benefit of the community at large I believe it's inevitable.
20	I tax breaks for agriculture/forestry, should actually be actively doing those activities. Not a horse i a barn.activutirs
21	I tend to go outside of Hamilton Wenham for walking (with and without dog) and biking trails. I was surprised to see all the references to them right in Wenham - sounds like there are opportunities I don't know about. I suggest communicating what's available, and making the information easy to access. I also think it's nice that you took the time to send out a survey and listen to everyone. Thanks!
22	I think the space we have is wonderful. I have few complaints. There were many places on your list I dont know about. Wish there were a better way to know about these. Have found out most info through word of mouth.
23	I think the Town should acquire the Boston Conference Center, 64 Pleasant Street - a former YMCA Malden Day Camp if/when it comes for sale which would increase utilization of this property and fill some holes in our rec program. See http://wp.bostonconferencecenter.com/
24	I would hate for the Wenham Country Club property to go the way that the Bill Flynn golf course did. I would think that it would make a nice municipal course that the town could operate rather than be cut up and sold as house lots. As noted above, I think that the town needs to create a bond so that the Open Space and Recreation Plan has some teeth to it and identified properties where we have first right of refusal can be acted upon quickly. I also think the CPA funds which are earmarked for open space and recreation should be used to reimburse or restock the available OSR Plan funds.

25	I would hope that the school department, and the town as a whole is thinking seriously about the money that it is willing to invest in fields for football. There is a growing consensus among health care experts that young people should not be playing this sport. It would seem to me that there should be, and may be, a growing de-emphasis on football endorsed by public schools even at the high school level. It should be on the minds of everyone involved in planning positive recreational opportunities for our young people.
26	I would like to see CPA funds used to purchase land around the high school for a better "campus" experience.
27	I would love to see a skate park or a pump track or something for our pre-teens and teens. Here are some ideas collected from a group in Boulder CO: Parks for teens: 10 features teens want to see Published on 02-12-2015 at 10:08 In many parts of the world, park designers have turned to nature play as a way to foster connections to nature, increase social and cooperative play, and facilitate more physical activity. In many instances, these parks are designed for pre-teen children. Like more traditional playgrounds, these spaces often exclude teenagers through their design. Yet in a variety of projects facilitated by Growing Up Boulder – a child-friendly city initiative in Boulder, Colorado, USA – teens have requested parks where they feel welcome and that have design features that can integrate them into a broader public sphere. For example, in a participatory process with Junior Rangers involved in Boulder's open space planning, teens found a city playground at the edge of open space land. Designed for much younger ages, teens found creative means to play with toddler swings and other equipment. In discussion, one of the teens said, "We want parks for teens, too. I am so tired of having moms yell at us." Be a place for all ages 10 teen-friendly features: The City of Boulder's Parks and Recreation department and Youth Opportunities Advisory Board asked teens what features they would want to see in city parks. This list is also consistent with Growing Up Boulder's participatory work with teens for public space planning and neighborhood design. Ten of the most consistent features teens in Boulder have requested for public space include: WiFi – Teens repeatedly have said they would like a study space with shelter from rain and tables to work in groups. WiFi is a critical aspect of this, as well as for accessing music and other media with phones. Movie Nights – Teens like the idea of a central performance space that can show a wide range of movies for all ages and interests. Food Trucks and Cafés – From tacos to coffee, teens want access to affordable and diverse food options, representing a variety of cultures and food interests. Interactive Lighting and Art – Teens are drawn to interactive spaces, whether they be interactive lights (as found in the New York City's Pulse Park), or interactive sculptures that allow climbing or play. In response to a solar-powered giraffe sculpture, one teen suggested providing a whole field of African animals that were interactive, such as hippo that spits water or a crocodile to climb on. Importantly, teens not only wanted interactive art pieces (that light or are otherwise playful), but they also wanted places where the public could create the art, such as a graffiti wall, mural wall, or inspirational chalk board with questions such as "What do you love about Boulder?" or "What are your goals?" (Growing Up Boulder 2015). Play Spaces for both Children and Adults – Many teens want to play, but do not feel free to do so in playgrounds designed with structured equipment for specific ages. Parks that mix play types are more effective at enabling teen play. For example, at Lizard Log Park, designed by Fionna Robbe in Western Sydney Parklands, Australia, large swings that require cooperation also facilitate more teen play. Other types of play spaces that teens request include fields for pick-up games of soccer or ping-pong tables. Younger teens consistently ask for more active forms of play, such as zip lines or parkour courses that allow risk taking (Growing Up Boulder 2015). Study Space – As mentioned for WiFi in parks, teens repeatedly request places where they can hang out and complete school work together outside. These spaces could be simple picnic tables that have some shelter from the elements, a grove of trees with tables and benches, or a tree house for teens. In a public space planning project in Boulder, elementary students wanted a treehouse from which they could read, watch the creek, and listen to birds. At the end of the process, teens also said such a place was important for them, stating: "treehouses are for teens, too!" (Growing Up Boulder 2015). Trees, Flowers, Nature – Teens also consistently say that they enjoy being in nature while spending time with their friends. In this case, nature often serves as a backdrop for other experiences, but is appreciated for its aesthetic and restorative qualities, nonetheless. Teens envisioned a study space in a grove of trees, which is part of the City of Boulder's new Civic Area plan. Like many of the features in this list, teens wanted to see natural features integrated with other functions, such as studying. Some other examples include a koi pond or a pond with colored lights. Music Events – In a small neighbourhood park designed for and by teens in Malmö, Sweden, music was an integral feature. The park allows teens to hook up their own phone to a musical system with speakers, lights, and interactive benches, which allow teens to select music, hang out, and dance. There are time and volume limits on these features to respect the neighbourhood's needs for quiet and darkness at night. At times, we have heard from teens that they don't go to parks because they are "for little kids." When we showed them the park from Malmö, they said, "can we have one of those here, too?" Lighting and safety features – Teen girls in particular, request lighting and emergency call boxes for safety. This can extend the length of time teens have access to the park and can also provide an enjoyable walk through public spaces instead of going around it during dusk or darkness. Water features – Teens repeatedly request features for water play with younger siblings and friends as well as water fountains for sound and visual interest. This can be highly designed fountains, such as the Crown Fountain in Millennium Park, Chicago or simple creek play, with boulders to hop across. Many teens with roots in Latin America particularly like fountain features, which bring a cultural consistency from many Latin American plazas. None of these ideas are out of this world.... but they do take creativity and dedication and resources for development and maintenance. Let's step out of the box, Wenham....let's show other communities how we can build a smart community for our youth by combining open space with modern conveniences to promote creativity while being outside!
28	i would love to see more bike paths or lanes, to provide increased safety for the children and families that ride bikes through town.

29	If one looks at the existing open space map, the majority of open space is Beverly-Salem water supply land being used without formal agreements in place, and Chapter property which the town has no permission to use or ownership stake in. With the exception of Cedar Pond (Audubon land), the Town has very little protected passive open space that the public has access to. Improving access and connectivity, should be secondary goals. The main goal should be to aggressively pursue open space acquisition for passive uses to mirror successful open space plans for similar rural communities. The recent Hamilton-Wenham recreational facility study did not highlight very substantial needs for expanding or improving active recreation uses in Wenham/shared Hamilton-Wenham resources. Permanent fee-simple purchases of land intended for passive uses should be clearly stated as the main priority. The town should consider ways to expand open space requirements in the existing zoning regulations.
30	If we do not have the staff to maintain these areas, then why addresss so many goals! If the fields my kids play on are any indication of how effective these open space plans are, then please redirect funds elsewhere.
31	Increase the size of the gymnasium attached to the library. Create a fitness center/gym.
32	It would be great to tour these sites. More publicity about bike trails would be great—I don't really know where they are. I would love to be able to safely bike from Iron Rail down Walnut St to the train/grocery store. Visible bike paths would help. Thanks for all you are doing!
33	Keep agriculture alive in Wenham!
34	Keep open spaces open No condos no more housing
35	Keep Wenham rural.
36	Keeping our children safe and busy is of the highest priority
37	Large open spaces should be preserved if at all possible. The rural nature and surfeit of undeveloped land containing sensitive and flourishing ecosystems forms as much as any other element the identity and special attractiveness of Wenham. This does not have to bankrupt the town. The town should join with organizations such as the Essex County Greenbelt and Trustees of Reservations, as well as private landowners, to purchase conservation easements on important tracts. The town should should have a strategic plan or set of strategic priorities and objectives which aim to keep intense residential and commercial development within certain areas or zones in the future, similar to the "greenbelt" concept which is the prevailing zoning law in the UK. As to playing fields, while that is a related issue, it is not as pressing as some would argue. There are plenty of playing fields now -- the town should partner more actively with the sports organizations to manage, maintain and use the fields more efficiently. The question of putting astro-turf or lights on given fields should be addressed on a case-by-case basis and if necessary, which it may be, should involve joint public and private investment and may involve floating a bond and paying over a period of years with town and private money, as well as income generated from the field/s itself. Many nearby towns have seen turf fields with lights pay for themselves over a short period of years.
38	Leash laws! Too many aggressive dogs with irresponsible owners off leash everywhere. Especially at the Wenham Canal.
39	Maybe town could purchase some old season equipment from sports stop and rent it out to people for a small fee... tennis/ pickle ball racquets/ maybe basic bikes from local shop or make arrangement with a sporting goods retailer to do same
40	More playing fields for our children. At least one turf field. Restrict development of businesses and homes to maintain land.
41	My answers above are actually Hamilton/Wenham not just Wenham in terms of recreation for people ie. H/W rec dept I think there should be more neighborhood playgrounds. not just the tea house. I think you have to find a balance between remaining static and keeping the town live and moving forward, you can't let the town stagnate. Thoughtfully allowing more housing, having some plans for some economic development (business park on the golf course), having housing that reflects the age structure of future populations so that people can downsize and remain in their home town, and people can start families and move back to their home town. Plan a way to have cycle paths around town and into town. I would like to see a weekly farmers market at the town hall / wenham museum (and traffic lights at that junction with 1A) A community has to have a central place to meet outdoors- Wenham doesn't have that in the main central area, I think a park with gardens, refreshments, parking and a band stand, maybe on the other half of the golf course.

42	My sense is many residents are not aware of the many resources and options that already exist. Efforts to maintain, improve and promote the existing areas should be a high priority. Efforts to preserve and protect open space from future development should also be a high priority. Organizing activities that would introduce residents to the available resources would also likely increase use (i.e., local walks and hikes, annual clean-up initiatives, etc. that would get the community more involved). Segregating trails for walking/jogging and cycling/mountain biking would also help. Signs to educate people using the resources about carry-in/carry-out trash policies, or the location of the receptacles for trash, dog waste, etc. should be added. Receptacles should be added (or increased) in popular areas.
43	No
44	Not sure
45	Once we lose our open space it is gone forever. The town needs to plan for the future and allot funding for the purchase , upkeep, and development of open space.
46	Open space is a commodity when lost is (typically) not re-found. Wenham should preserve existing open space (for many of the above-mentioned benefits) and look to increasing preservation of open space. I am confused on agricultural-based tax breaks. Does this mean that a giant property (with multi-million dollar properties) with 1 or 2 horses gets a tax break? Is this fair to the more legitimate farm-lands in the area...? Or is this fair to the smaller properties that do not have a horse and continue to see increasing property tax? I am all for preserving farm-lands, but not all farm-lands are created equal (the property off Larch Row produces food for people = farming; hiring someone to take care of a horse on your property for a tax break is not farming).
47	Open space is precious. It is moderately ok if it is farmed or left to timeber and to Nature. ONCE LAND IS DEVOTED TO BUILDINGS IT IS LOST FOREVER!!! New construction is best placed in town and urban centers, adjacent to mass transportation and to services, etc. The periphery is best left open and undeveloped or left in farm or forest. Owners of open family parcels need be celebrated and encouraged to both instil self sufficiency in their youth so that those youth don't need to 'harvest' the land; and to turn over or devote their open land to the greater good (!!! what an idea !) of the community. Get covenants on the land while the older generation has the power and before the older generations persuaded to pass the land to the youth. (The temptation to sell the land is so great for the younger generation).
48	Open spaces are why we live here. Without them, the town is less desirable and property values can decline and the town's tax base with it.
49	Our needs have changed as a family. When the kids were younger and we participated and coached youth sports, we were in desperate need for more field space. A turf field was especially needed for spring lacrosse, and the high school should absolutely have one. As we've aged and kids have moved on to college/boarding school, my husband and I are looking for more trail walking and hiking with our dog. We often go to Appleton farms. We are fortunate to own our own pool and tennis court, but prior to having our own tennis court, we used the towns a lot. I would definitely want to see those maintained. The town pool is wonderful for the community.
50	Please make saving open space a TOP PRIORITY LOSING BILLY FLYNN'S WAS A SHAME! Don't lose any more land!!!!!
51	Preserving the town's character should always be front and center as a high priority when making decisions about projects. Projects that potentially threaten the character or jeapardize the school system should be moved aside quickly regardless of what developers offer to temp us. Long term thinking must prevail. We dodged a bullet up at penguin hall thank goodness.
52	Protecting the entrance to town, the farm and golf course are important at least with a deep setback.
53	Raise money from private entities if people want to do any of the above mentioned.
54	Skateboarding/ Bike park. The old skateboarding park in Hamilton kept these activities to one location. A new modern park would be great for our community and keep skateboarding off the streets and kids safe in one location.
55	Start approaching the large landowners and see if they have a plan. Discuss options involving the Town.
56	Stop spending my money on your hobbies.

57	Thank you for putting this together. I love living in Wenham. The open fields, the old well maintained, stone walls, the woods and trails make it a beautiful town.
58	Thanks for doing this.
59	There are inadequate fields for high school athletics. The idea of simply lighting the current fields, and then not needing any additional fields is short sighted. The field hockey teams from Hamilton-Wenham play on THE most inadequate field in their conference. While most of the other teams play on turf, we continue to use a bumpy, bare-spotted grass field. Year after year, if there is rain, the field gets torn up. I'm not sure why the field is NEVER improved if we are going to force the team to continue to play on it. I'm pretty sure that just planting more grass on all the bare spots would alleviate that part of the problem.
60	There is a definite need for more playing fields for athletics - we have an active community that needs more areas for these events. But, also having the access to trails, dog walking and biking. There's a great opportunity to corporate all of these things into open space for all to use!
61	There should be turf fields available in town, at least at HWHS. The cost of turf is high up front, but the long term costs in comparison to the usage rate far exceeds maintaining and utilizing grass fields. Especially in considering the consistently changing weather and the impact a wet season/stretch can have on maintenance and use.
62	This is critical for kids and property values and feel of town.
63	Towns (Hamilton and Wenham) should use open space or take by eminent domain land to build new schools. The physical condition of our schools is embarrassing, at best. We are the only town in the area without a newer high school. And the "renovation" done in the late 1990's was simply a paint job. There are still original chalkboards and desks in that building.
64	Turf field and lights must be a priority. There is no legit reason why our towns do not have it. Should be priority #1
65	Two of my children currently play HS sports. Two more of my children are still in elementary school. We travel to many other towns for games. HW sports fields / facilities are by far the worst. Investing in our school's athletics with new fields, lighting, etc. is long overdue! Our property values would benefit greatly if our school facilities/ athletics were valued by the towns. It would help foster a sense of community-especially amongst our teens.
66	We already have a lot of green spaces, just because we are not an urban town. I'm not sure we really need more public open space, since there are already lots. Better parking at some places would be good. And more signage and publicity for these spaces would help a lot.
67	we have a lot of open space as it is...but it is a priority to maintain the space...for example with clean bathrooms at the parks and I think it would be a. good idea to turn Topsfield Rd playground into a dog park.
68	We have so many great trails and paths in Wenham, but no trail maps are available on site to entice you to explore if you are unfamiliar with where you are.
69	We must do everything we can to discourage development of large parcel. Land acquisition and development of affordable housing are key concepts which the Town simply must do more to accomplish.
70	We need to protect Wenham's open spaces for future generations. Also, there is not enough field space for children to play team sports.
71	We would like to see the CPA defunded by Wenham. We feel that too much money has gone to recreation - the pool was the final straw! It is a hardship for many of us and it has not produced anything that we personally value, that is, more affordable housing and open space for the protection of the natural landscape and wildlife. Now turf fields are being discussed - really?
72	Wenham does a great job already but any improvements to our outdoor spaces or more of them is great and a big reason people like living here.
73	Wenham is blessed with much open space that includes recreation land and facilities. We should maintain these areas and facilitate their use. We do not need to spend more of out tax money to acquire more land or build more facilities for play and recreation.
74	Wenham really needs more business development than open space. Love what we currently have.
75	West Wenham should be utilized. New/additional playgrounds aren't necessary- private fundraising is improving most in town already, that is what is needed- improvements.

76	Winter Indoor Sports (soccer,flag football, ,etc) is floursihing in high demand. Consider purchase of open spaces and building an indoor sports facility (hockey rink and indoor turf field). This could be a huge money maker for the town and a valuable asset for youth sports organizations.
77	Would love a tracked cross country trail system!
78	You are all doing a great job and this survey is fantastic! We live in one of the most beautiful communities in the country, which is also amazingly one of the oldest. Please let's preserve it. There are plenty of overdeveloped communities and communities with lower tax rates to choose from if that is what someone prefers. Please keep the Wenham the special place that it is.
79	You're doing a fantastic job - we love the tail trail and the canal - also, the new pool is a big hit with our children - we're open to additional ideas for open space that don't raise taxes significantly - such as CPA - Thank you

Q12 – keyword count

town	58
open space	53
park	36
field	34
Wenham	32
land	30
use utilize	26
play	25
property	20
many	19
need	19
community	18
trail	18
develop	17
plan	17
school	17
think	15
committee	14
keep	14
light	14
recreation	14
space	14
tax	14
want	14
area	13
feature	13
high school	13
house housing	13
priority	13
great	12
people	12
place	12
pond	12

sport	12
activity	11
bike biking	11
maintain	11
purchase	11
street	11
children	10
design	10
fund	10
new	10
public	10
tree	10
turf	10
well	10
access	9
farm	9
go	9
lot	9
love	9
playground	9
available	8
dog	8
increase	8
make	8
opportunity	8
private	8
resource	8
thank	8
walk	8
water	8
youth	8
affordable	7
build	7

exist	7
future	7
grow	7
idea	7
important	7
include	7
interactive	7
main	7
money	7
nature	7
preserve	7
time	7
way	7
allow	6
bench	6
canal	6
golf course	6
CPA	6
example	6
feel	6
get	6
kid	6
large	6
map	6
much	6
parcel	6
path	6
project	6
protect	6
real	6
request	6
acquisition	6

Q12 – keyword wordcloud

Appendix C. Natural Heritage & Endangered Species Program (NHESP) Fact Sheets

a. Level Bog
b. Blue-spotted Salamander
c. Wood Turtle
d. Eastern Box Turtle
e. Northern Leopard Frog
f. Eastern Pondmussel
g. Dwarf Rattlesnake-plantain
h. Pale Green Orchid
i. Vasey's Pondweed
j. Pod-grass

Level Bog

State Rank: S3 - Vulnerable

Level Bog with rhodora in flower, leatherleaf and scattered larch. Photo: Steven Roble, NHESP.

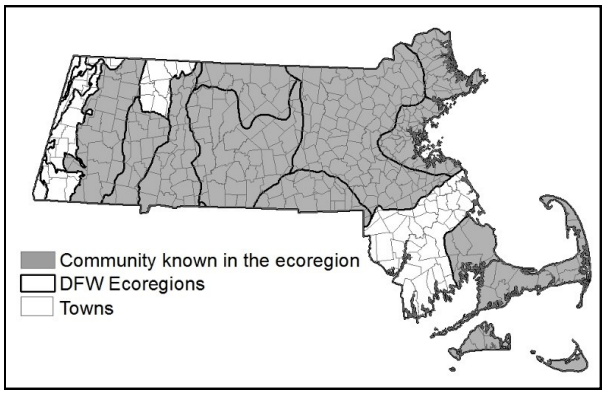
Level Bogs are dwarf-shrub peatlands, generally with pronounced hummocks and hollows in sphagnum moss. These wetland communities are very acidic and nutrient-poor because the peat isolates them from nutrients in groundwater and streams.

Description: Level Bogs are peatlands - wetlands with incompletely decomposed plant material (peat) that accumulates when saturated year round by water that is cool, acidic, poorly oxygenated, and low in nutrients. They receive little or no stream flow and they are isolated from the water table, making them the most acidic (pH ~3 to 4), and nutrient-poor of peatland communities. Level bogs develop along pond margins, at the headwaters of streams, and in pockets within large basins. The word "level" is used to differentiate Massachusetts' bogs from the raised bogs of more northern latitudes where peat becomes so thick that the only way nutrients enter the system is through precipitation. Massachusetts' climate is not cold enough for raised bogs to develop.

Characteristic Species: Sphagnum is the most common plant in all acidic peatlands, forming a mat that the vascular plants grow on, and producing most of the peat that underlies the community. Level Bogs are characterized by a mixture of tall and short shrubs that are predominantly in the heath family. Leatherleaf is dominant with other shrubs typically including rhodora, sheep laurel, bog laurel, bog rosemary, Labrador tea, highbush blueberry, and low-growing large and small cranberry. Scattered, stunted trees (primarily tamarack and black spruce, with red maple saplings) occur throughout. A mixture of specialized bog plants grow on the hummocky sphagnum surface, including carnivorous pitcher plants and sundews.

Differentiating from Related Communities: Natural communities on acidic peatlands all occur on sphagnum peat. The depth, density, and strength of the underlying peat control the structure and composition of each type of peatland community through the extent that plants growing on it are isolated from nutrients carried by ground water. In Level Bogs the sphagnum peat tends to be deep and well developed, graminoids may be present but not dominant, and shrubs are dominated by leatherleaf. Kettlehole Level Bogs are a subset of Level Bogs that occur in kettleholes in sandy glacial outwash. They are typically small (<3 acres), round, and they lack inlets and outlets. Atlantic White Cedar Bogs have sparse canopy cover of Atlantic white cedar trees over sphagnum on peat. Acidic Graminoid Fens are dominated by graminoid and herbaceous species and lack extensive shrubs. Sea-level Fens occupy the interface between estuarine marshes and upland, and include both estuarine and palustrine species. Interdunal Marsh/Swales occur as part of a coastal dune system. Some are fen-like on shallow peat, but occurring in dune systems is the defining characteristic. Acidic Shrub Fens (ASF) are composed primarily of low-growing, interwoven shrubs. ASF are wetter with a less well-developed sphagnum mat than other acidic peatlands. Spruce-Tamarack Bogs are acidic forested peatlands with an overstory of black spruce and tamarack.

Cranberry on a sphagnum mat. Photo: Steven Roble, NHESP.



Habitat for Associated Fauna: Acidic peatlands are inhospitable to many animal species. Winged animals and large terrestrial animals can use peatlands as part of their habitat. Moose and white-tailed deer use acidic peatlands for browsing and grazing, and their trails are often evident across the peat mat. Bears are attracted to the cranberries and blueberries in season. The acidity and low oxygen content of Level Bogs make them poor habitat for most amphibians and reptiles, although some species can breed in the shallow pools that form among the sphagnum hummocks. Many species of dragonflies and damselflies inhabit acidic peatlands, especially where there is adjacent open water.

Examples with Public Access: Bog surfaces are damaged by trampling; sites with boardwalks are best suited to visitation such as Ponkapoag Bog (DCR), Canton; Poutwater Pond (DCR), Sterling; Black Pond Nature Preserve (TNC), Norwell; Hawley Bog, Hawley.

Level Bog hummocks and hollows with larch. Photo: Steven Roble, NHESP.

Natural Heritage & Endangered Species Program

www.mass.gov/nhesp

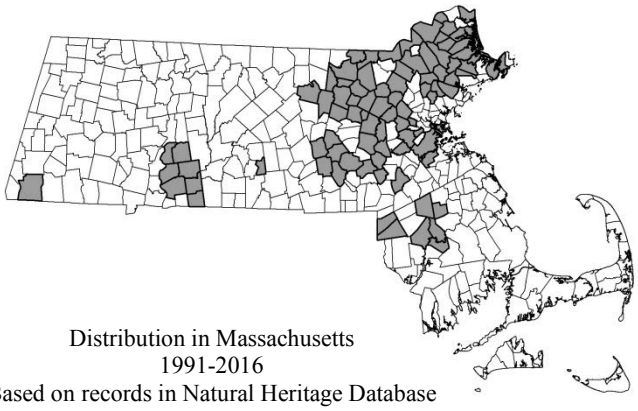
Massachusetts Division of Fisheries & Wildlife

Blue-spotted Salamander
Ambystoma laterale

State Status: **Special Concern**
Federal Status: **None**

DESCRIPTION: Blue-spotted Salamander is a medium-sized salamander with conspicuous markings of randomly distributed, sky-blue spots, blotches, and flecks on a base color of dark gray to black. While the blue markings are abundant over the entire body in juveniles, they tend to be more concentrated along the sides and on the limbs in adults. Adults measure 3–5 inches (7.5–13 cm) in total length. The tail is laterally compressed (especially in sexually active males) and is proportionally longer in males than in females. Blue-spotted Salamander is in the family of mole salamanders, and so it has distinctively long toes and a stockier build relative to other groups of salamanders in our region.

Larvae have bushy, external gills and a broad caudal fin that extends well onto the back. Young larvae are not easily distinguished from those of other *Ambystoma* species. Older larvae can still be difficult to identify, but they are generally characterized as brownish with a yellowish lateral stripe, whitish/unpigmented undersides, and a heavily dark-mottled caudal fin.



Distribution in Massachusetts
1991-2016
Based on records in Natural Heritage Database
Map updated 2016

Blue-spotted Salamander
Photo by Leo P. Kenney

SIMILAR SPECIES: Blue-spotted Salamander is a member of an intricate group of salamanders known as the *Ambystoma jeffersonianum* complex. The complex consists of two bisexual species, Jefferson Salamander (*A. jeffersonianum*) and Blue-spotted Salamander, and a group of unisexual *Ambystoma* of a hybrid lineage. Unisexual *Ambystoma* in this complex have variable nuclear genomes consisting of complements of both Blue-spotted Salamander and Jefferson Salamander, and a mitochondrial genome derived from Streamside Salamander (*A. barbouri*), a species currently occurring in Kentucky, Ohio, Indiana, Tennessee and West Virginia. The original species pairing that led to the hybrid unisexual lineage is not yet known, but recent studies suggest that today's unisexual *Ambystoma* and *A. barbouri* from western Kentucky share a maternal ancestor from ~5 million years ago. The unisexual *Ambystoma*, whose populations almost always consist entirely of females, co-occur with local populations of true Blue-spotted Salamanders and Jefferson Salamanders and are able to perpetuate through complicated reproductive mechanisms involving the use

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Massachusetts Division of Fisheries & Wildlife

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www.mass.gov/nhesp

of sperm from males of the two species. The resulting offspring are unisexuals having varying ploidy levels (usually 3-4 sets of chromosomes, but occasionally 2 or 5) and varying complements of *A. jeffersonianum* vs. *A. laterale* nuclear genomes (depending on which of the species is present at a given site, and which reproductive mechanism plays out for a given egg).

The unisexual *Ambystoma* are very similar in appearance to Blue-spotted Salamander and Jefferson Salamander, forming a continuum from the black base color, prominent blue spots/blotches, and narrow snout of Blue-spotted Salamander, to the grayish-brown coloration, diffuse blue flecks, and wide snout of Jefferson Salamander. Blue-spotted Salamander can often (but not always) be distinguished from unisexual *Ambystoma* in the field by size and coloration; adult unisexuals tend to have a gray to gray-brown base color (instead of black) and are noticeably larger (typically ≥70 mm snout-vent-length, ≥7 g) than Blue-spotted Salamander (typically ≤60 mm, ≤6 g).

Unisexual *Ambystoma* (top) and Blue-spotted Salamander (bottom).
Photo by Jacob E. Kubel

Some people confuse the lead/gray color phase of Eastern Red-backed Salamander (*Plethodon cinereus*) for Blue-spotted Salamander. However, Eastern Red-backed Salamander is much leaner in overall appearance and, although it has a rather uniform peppering of minute, light-colored flecks along its lower sides, the pattern is quite inconspicuous relative to the larger, bolder, randomly distributed spots/blotches of Blue-spotted Salamander. Perhaps the easiest way to tell the two species apart, though, is to examine the toes. They are very short and stubby in Eastern Red-backed Salamander, but long and fingerlike in Blue-spotted Salamander.

RANGE: Blue-spotted Salamander is largely restricted to glaciated areas of North America. The species ranges from Newfoundland, Quebec, and the Maritime Provinces south to northern New Jersey and west to eastern Iowa, Minnesota, and southeastern Manitoba. Within Massachusetts, Blue-spotted Salamander is distributed primarily throughout Essex, Middlesex, and eastern Worcester counties, with scattered populations occurring in Norfolk, northern Bristol, and eastern Hampden counties, and in the Brookfields. Only two populations west of the Connecticut River have been confirmed (both in Sheffield). Almost all populations of Blue-spotted Salamander in Massachusetts contain unisexual *Ambystoma*.

The precise distribution of Blue-spotted Salamander in eastern Hampshire, eastern Franklin, and northwestern Worcester counties is not well understood. Observation data from that region are based largely on egg masses and adult unisexuals, which cannot always be assigned reliably to a particular taxon within the *A. jeffersonianum* complex by appearance alone. Planned genetic investigations throughout the region will eventually confirm whether each previously observed population contains Blue-spotted Salamanders, Jefferson Salamanders, or both species.

HABITAT: Adult and juvenile Blue-spotted Salamanders inhabit relatively mature deciduous and mixed deciduous-coniferous forests and woodlands with sandy to loamy soils. In Massachusetts, low-elevation sites are preferred, often in association with glacial outwash deposits, extensive swamp forests (cedar or maple), or swampy floodplain forests. Vernal pools, shrub swamps, wooded swamps, and floodplain swamps and marshes are used by adults for breeding and by larvae for growth and development. Although there is considerable variability among individual wetlands known to be used in Massachusetts, Blue-spotted Salamanders seem to prefer those having relatively long hydroperiods, dark water, and moderate to high densities of multi-stemmed shrubs (especially *Cephalanthus occidentalis*). In some situations, dense emergent vegetation also seems important. Abundant detritus and absence of predatory fish (or presence of dense

vegetation providing refuge from fish) are additional characteristics of typical breeding sites.

A typical buttonbush shrub swamp used by Blue-spotted Salamander.
Photo by Jacob E. Kubel

In the terrestrial environment, thick leaf litter, abundant coarse woody debris, loose soils, predominantly closed-canopy tree cover, and abundant rodent tunnels are trademarks of good-quality microhabitat for adult and juvenile Blue-spotted Salamanders. Most adult individuals reside within several hundred meters of their breeding wetland. Data from one site in Massachusetts suggest that approximately half of adults inhabit forest >100 m away from the breeding wetland, with females wintering disproportionately farther from the wetland than males. Other research suggests that local salamander distribution around a breeding site may be influenced by habitat integrity, with salamanders residing closer to a wetland (on average) in intact forest, but occupying areas farther from the wetland when a forest patch is fragmented (e.g., by development). Of course, variability in the distribution of high-quality microhabitat around a breeding site is also likely to influence the distribution of individual salamanders around the wetland.

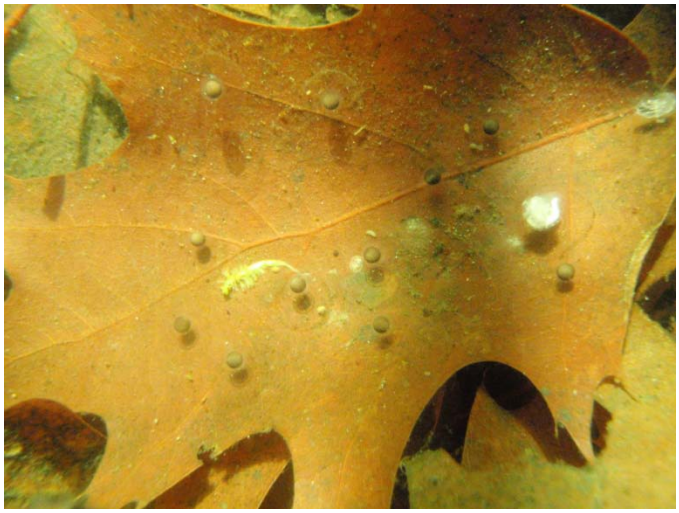
LIFE CYCLE/BEHAVIOR: As the family name "mole salamander" implies, adult and juvenile Blue-spotted Salamanders spend the majority of their time underground or hidden beneath rocks, logs, leaf litter, or other debris. During rainy or otherwise humid nights in the warmer months of the year, individuals may occur on the ground surface for purposes of foraging, dispersal, or migration to breeding sites. However, most hours of the year are spent under leaf litter, in rodent tunnels, or in other subsurface cavities. Winters are spent below the frost line, presumably in vertical rodent tunnels or root channels, as has been observed in other mole salamanders.

During March or early April (depending on the timing of winter thaw and warm rains), adult Blue-spotted Salamanders emerge from their underground retreats and migrate en masse to their breeding wetlands. Breeding migrations are typically triggered by a steady rain with ambient air temperature holding above 40°F. Given those conditions, salamander movement may begin shortly after sunset and continue through the night, with peak activity occurring between an hour after sunset and midnight. Not all individuals can complete their journey in a single evening. Therefore, migrations may occur over the course of several nights to a couple of weeks, depending on the timing, duration, and frequency of suitable weather conditions. If nocturnal rains are slow to materialize during the normal migratory period, the salamanders may settle for drizzle or a low fog, or even migrate beneath the cover of leaf litter (still moist from snowmelt or ground thaw).

Once in their breeding wetland, Blue-spotted Salamanders engage in an elaborate courtship similar to that of Jefferson Salamander. Various stages may be repeated or abandoned multiple times when a female is not receptive to a male, or when competing males disrupt or otherwise interfere with one another, but courtship generally proceeds as follows. The male Blue-spotted Salamander approaches a female, orients his body perpendicular to hers, and nudges her side with his snout several times. He then swims over the female, clasps her body behind her forelegs (with his own), and holds her for several minutes. During that time, the two salamanders may swim about as a clasped pair or just rest on the pool bottom. Eventually, the male (while clasping the female) begins rubbing his chin over her snout in a side-to-side motion and vibrates or rubs his hind limbs along her sides. He then releases the female, moves forward while vibrating his body, and arches and undulates his tail. She follows and noses his cloaca. The male then deposits one to several spermatophores on the bottom substrate of the wetland. The female moves over the spermatophore and picks up its seminal fluid (or even the entire spermatophore) with her cloacal lips, drawing it into her body.

In the pairing of male and female Blue-spotted Salamanders, reproduction then proceeds via normal fertilization of the eggs by sperm obtained from the spermatophore(s) (i.e., syngamy of haploid gametes). However, in the pairing of male Blue-spotted Salamanders with female unisexual *Ambystoma*, reproduction proceeds via any of several possible mechanisms (collectively termed kleptogenesis) that do not involve traditional syngamy. Most commonly, the female produces unreduced, polyploid ova, and the male's sperm merely activates embryonic development in the eggs without contributing any genetic material, thereby resulting in offspring that are genetic clones of the unisexual mother. This is one reason why unisexual *Ambystoma* are believed to greatly outnumber true Blue-spotted Salamanders in most local populations.

After mating, a female Blue-spotted Salamander (or unisexual *Ambystoma*) may deposit her eggs singly or in small clusters nested within a loose, clear, gelatinous matrix (egg mass). Egg masses of Blue-spotted Salamanders normally contain 1–10 eggs each, while masses produced by unisexual *Ambystoma* may contain as many as 30 eggs. Eggs and egg masses of both groups are typically attached to the twigs of submerged shrubs or to leaves, twigs, and other detritus on the bottom of the wetland. Eggs may also be attached to submerged grass blades or simply scattered on the bottom substrate. Blue-spotted Salamanders tend to produce up to several hundred mature ova, and so a single individual can account for multiple egg masses found at a wetland.



Blue-spotted Salamander eggs at the bottom of a vernal pool.
Photo by Jacob E. Kubel

Hatching occurs in 3–4 weeks, whereupon the bushy-gilled, fully-aquatic larvae spend the next 2–3 months in the wetland. The salamander larvae feed voraciously on zooplankton, insect larvae (e.g., mosquitoes), and other aquatic organisms, increasing in body size and developing front and hind limbs as spring advances into summer. Metamorphosis then occurs in July or August, depending on when the wetland begins to dry, when food resources become limited, or on other factors. At this time, the larvae develop lungs, resorb their gills, and seek cover beneath stones, woody debris, leaf litter, or other detritus in moist or saturated portions of the wetland basin. There, the juvenile salamanders will wait for an opportunity to leave the basin and disperse into the surrounding forest (typically during an evening rain).

Following dispersal from natal wetlands, juvenile salamanders will reside in the forest, feeding on snails, earthworms, beetles, and other small invertebrates. Upon reaching sexual maturity in approximately 2 years, most individuals will return to their natal wetland to breed, starting the cycle anew. Others will have sought out new ground, joining another segment of the local breeding population, or pioneering a new one of their own.

Maximum life expectancy of Blue-spotted Salamander is unknown. Mark-recapture studies of other mole salamanders indicate that adult survivorship is relatively high, and individuals may live for several years or more with regularity. Accounts of salamanders held in captivity suggest a possible lifespan greater than 10 years.

POPULATION STATUS IN MASSACHUSETTS:
Blue-spotted Salamander (including its unisexual associates) is legally protected and listed as Special Concern pursuant to the Massachusetts Endangered Species Act (M.G.L. c. 131A) and implementing regulations (321 CMR 10.00). As of January 2015, approximately 177 local populations have been documented among 97 towns since 1990. Primary threats to Blue-spotted Salamander in Massachusetts are habitat loss, habitat degradation, road mortality, and emerging infectious disease. The most common types of habitat loss are the clearing of forests and the filling (or draining) of vernal pools during residential, commercial, industrial, mining, or agricultural development. Habitat degradation typically occurs when development fragments habitat (e.g., creates gaps between forest habitat and breeding wetlands), chemical applications

(e.g., pesticides, deicing salts, fertilizers) pollute breeding wetlands, or commercial logging operations disrupt forest ecology (e.g., compact soils, reduce leaf litter, introduce or increase growth of non-native, invasive vegetation). High road densities and traffic volumes tend to result in increased levels of adult salamander mortality; in extreme cases, road mortality functions as a barrier between upland and breeding habitats. Known and potential impacts of several pathogens/emerging infectious diseases (e.g., ranavirus, *Batrachochytrium salamandrivorans*) are not completely understood, but outbreaks could result in severe and widespread salamander mortality.

MANAGEMENT RECOMMENDATIONS: At a local scale, sites of known occurrence of Blue-spotted Salamander should be managed to develop or maintain mature forest conditions within approximately 1,000 feet of confirmed and potential breeding wetlands. Such management should aim to minimize forest loss/fragmentation, road traffic, soil compaction, and introduction/growth of invasive, non-native vegetation. Forest type should be maintained as deciduous or mixed deciduous-coniferous. Fallen trees, branches, leaves, and other detritus should be allowed to accumulate on the forest floor. Hydrology of breeding wetlands should not be altered in ways that might reduce hydroperiod within the March through August time period. Breeding wetlands should be protected from chemical pollution, and basin structure should not be altered without special permits from the Massachusetts Division of Fisheries and Wildlife and/or the Department of Environmental Protection. Breeding wetlands should not be filled or used for dumping of yard waste or refuse.

At the landscape scale, area of mature upland forest between local populations of Blue-spotted Salamander should be maximized to maintain dispersal corridors and, therefore, genetic exchange between populations. Land acquisition/protection efforts for maintaining habitat connectivity should prioritize areas with low road densities and traffic volumes. A land-protection strategy may best serve long-term persistence of local populations where they occupy relatively large, connected areas containing abundant breeding habitats. However, lands supporting small, peripheral, or isolated populations are also worth protecting for maintenance of genetic diversity at the state level.

Populations of Blue-spotted Salamander that do not contain unisexual *Ambystoma* are very rare in Massachusetts (and in New England, in general). Therefore, identification and protection of these "pure populations" is considered a high conservation priority. Biological inventory, research, land acquisition, and environmental regulation are several actions that should be utilized to help meet that goal.

Stronger controls are necessary to guard against the introduction and spread of amphibian pathogens and infectious disease. For example, national policy and enforcement regarding importation of exotic wildlife in the global pet trade should be improved to reduce and minimize the volume of diseased animals entering the country. Within Massachusetts, field biologists, anglers, and other outdoor enthusiasts should adopt and promote appropriate equipment-sanitation procedures when outdoor activities span wide geographic areas. A statewide amphibian monitoring program that includes sampling for pathogens and disease outbreaks is needed.

Active management of Blue-spotted Salamanders and their habitats is a developing interest. For example, construction of vernal pools to enhance breeding opportunities at sites where wetland habitats are scarce is a continuing line of research. Citizens play an active role in conservation by helping adult salamanders cross roads safely during their breeding migrations, thereby increasing survivorship and reproductive output.

Blue-spotted Salamanders are not readily visible to motorists when crossing roads. *Photo by Jacob E. Kubel*

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

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Citizens are encouraged to assist with conservation of Blue-spotted Salamanders in additional ways. For example, observations of Blue-spotted Salamanders (or associated unisexual *Ambystoma*) should be reported to the NHESP, as land-protection efforts for the species are dependent on knowing where local populations occur. Collection and submission of data for the certification of vernal pool habitat is another beneficial action, as it indirectly affords certain legal protections to salamander habitats.

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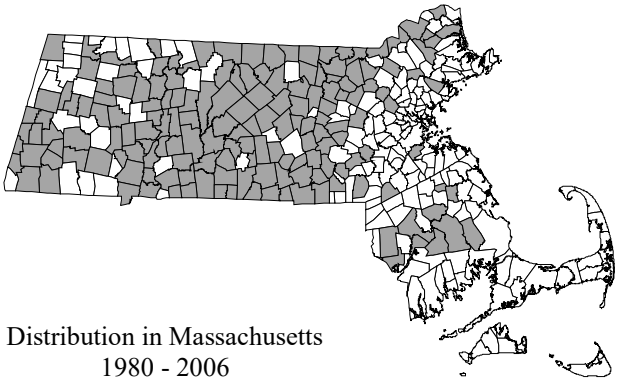
Massachusetts Division of Fisheries & Wildlife

Wood Turtle
Glyptemys insculpta

State Status: **Special Concern**
Federal Status: **None**

DESCRIPTION: The Wood Turtle is a medium-sized turtle (14-20 cm; 5.5-8 in) that can be recognized by its sculpted shell and orange coloration on the legs and neck. The carapace (upper shell) is rough and each scale (scute) rises upwards in an irregularly shaped pyramid of grooves and ridges. The carapace is tan, grayish-brown or brown, has a mid-line ridge (keel) and often has a pattern of black or yellow lines on the larger scutes. The plastron (lower shell) is yellow with oblong dark patches on the outer, posterior corner of each scute. The head is black, but may be speckled with faint yellow spots. The legs, neck, and chin can have orange to reddish coloration. Males have a concave plastron, thick tail, long front claws, and a wider and more robust head than females. Hatchlings have a dull-colored shell that is broad and low and a tail that is almost as long as their carapace, and they lack orange coloration on the neck and legs.

Photo by Mike Jones



Distribution in Massachusetts
1980 - 2006
Based on records in
Natural Heritage Database

SIMILAR SPECIES: The habitat of the Eastern Box Turtle (*Terrapene carolina*) and the Blanding's Turtle (*Emydoidea blandingii*) may overlap that of the Wood Turtle, but neither has the Wood Turtle's pyramidal shell segments. Unlike the Wood Turtle, the Box and Blanding's turtles have hinged plastrons into which they can withdraw or partially withdraw if threatened. The Northern Diamond-backed Terrapin (*Malaclemys terrapin*) has a shell similar to that of the Wood Turtle. However, its skin is grey and it lives only near brackish water, which the Wood Turtle avoids.

RANGE: The Wood Turtle can be found throughout New England, north to Nova Scotia, west to eastern Minnesota, and south to northern Virginia. The Wood Turtle appears to be widespread in Massachusetts. However, it should be kept in mind that little is known about the status of local populations associated with the majority of these sightings. Most of the towns have fewer than 5 known occurrences.

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Massachusetts Division of Fisheries & Wildlife

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HABITAT IN MASSACHUSETTS: The preferred habitat of the Wood Turtle is riparian areas. Slower moving mid-sized streams are favored, with sandy bottoms and heavily vegetated stream banks. The stream bottom and muddy banks provide hibernating sites for overwintering, and open areas with sand or gravel substrate near the streams edge are used for nesting. Wood Turtles spend most of the spring and summer in mixed or deciduous forests, fields, hay fields, and riparian wetlands, including wet meadows, bogs, and beaver ponds. Then they return to the streams in late summer or early fall to their favored overwintering location.

LIFE CYCLE & BEHAVIOR: The Wood Turtle typically spends the winter in flowing rivers and perennial streams. Full-time submersion in the water begins in November, once freezing occurs regularly overnight, and continues until temperatures begin to increase in spring. It may hibernate alone or in large groups in community burrows in muddy banks, stream bottoms, deep pools, instream woody debris, and abandoned muskrat burrows. The Wood Turtle may make underwater movements in the stream during the winter; however, extended periods of activity and emergence from the water do not occur until mid-March or early April.

In spring, Wood Turtles are active during the day and are usually encountered within a few hundred meters from the stream banks. They have relatively linear home ranges that can be a half mile in length in Massachusetts (M. Jones, unpubl data). They will use emergent logs or grassy, sandy, and muddy banks to soak up the spring sun. During the summer months they feed in early successional fields, hayfields, and forests.

Wood Turtles are opportunistic omnivores; their diet consists of both plant and animal matter that is consumed on land and in the water. The Wood Turtle occasionally exhibits an unusual feeding behavior referred to as "stomping." In its search for food, this species will stomp on the ground alternating its front feet, creating vibrations in the ground resembling rainfall. Earthworms respond, rising to the ground's surface to keep from drowning. Instead of rain, the earthworm is met by the Wood Turtle, and is promptly devoured.

Although the peaks in mating activity occur in the spring and fall, Wood Turtles are known to mate opportunistically throughout their activity period. Males have been observed exhibiting aggressive behavior such as chasing, biting, and butting both during the mating season and at other times. A courtship ritual "dance" typically takes place at the edge of a stream or brook for several hours prior to mating. The dance involves the male and female approaching each other slowly with necks extended and their heads up. Before they actually touch noses, they lower their heads, and swing them from side to side. Copulation usually takes place in the water. Courting adults may produce a very subdued whistle that is rarely heard by observers. A female may mate with multiple individuals over the course of the active season.

In Massachusetts, most nesting occurs over a four-week period, primarily in June. Nesting sites may be a limited resource for Wood Turtles. Females are known to travel long distances in search of appropriate nesting habitat (average straight line distance of 244 m/800 ft). Once they have arrived at a suitable nesting area, there may be multiple nesting attempts or false nests that occur over the course of several days, prior to laying eggs. They abort attempts when disturbed (e.g., by human activities) early in the process or they hit a large rock while digging. Female Wood Turtles lay one clutch a year and often congregate in a good nesting area. Clutch size in Massachusetts averages 7 eggs (Jones, 2004, pers. comm.). Hatchling emergence occurs from August through September. The life span of the adult Wood Turtle is easily 46 years and may reach as much as 100 years.

THREATS: Hatchling and juvenile survival is very low and the time to sexual maturity is long. These characteristics are compensated by adults living a long time and reproducing for many years. Adult survivorship must be very high to sustain a viable population. These characteristics make Wood Turtles vulnerable to human disturbances. Population declines of Wood Turtles have likely been caused by hay-mowing operations, development of wooded stream banks, roadway casualties, incidental collection of specimens for pets, unnaturally inflated rates of predation in suburban and urban areas, forestry and agricultural activities, and pollution of streams.

MANAGEMENT RECOMMENDATIONS: Using a turtle habitat model developed by UMass and NHESP records, Wood Turtle habitat needs to be assessed and prioritized for protection based on the extent, quality, and juxtaposition of habitats and their predicted ability to support self-sustaining populations of Wood Turtles. Other considerations should include the size and lack of fragmentation of both riverine and upland habitats and proximity and connectivity to other relatively unfragmented habitats, especially within existing protected open space. This information will be used to direct land acquisition and to target areas for Conservation Restrictions (CRs), Agricultural Preservation Restrictions (APRs), and Landowner Incentive Program (LIP) projects.

Mowing and nest site creation guidelines developed by NHESP should be followed on properties managed for Wood Turtles. These practices will be most practical on state-owned conservation lands. However, these materials are also available to town land managers and private landowners.

Alternative wildlife corridor structures should be considered at strategic sites on existing roads. In particular, appropriate wildlife corridor structures should be considered for bridge and culvert upgrades and road-widening projects within or near Wood Turtle habitat. Efforts should be made to inform local regulatory agencies of key locations where these measures would be most effective for Wood Turtle conservation.

Educational materials are being developed and distributed to the public in reference to the detrimental effects of keeping our native Wood Turtles as pets (an illegal activity that reduces reproduction in the population), releasing pet store turtles (which could spread disease), leaving cats and dogs outdoors unattended (particularly during the nesting season), mowing of fields and shrubby areas, feeding suburban wildlife (which increases the number of natural predators on turtles), and driving ATVs in nesting areas from June-October. People should be encouraged, when safe to do so, to help Wood Turtles cross roads (always in the direction the animal was heading); however, turtles should never be transported to "better" locations. They will naturally want to return to their original location and likely need to traverse roads to do so.

Increased law enforcement is needed to protect our wild turtles, particularly during the nesting season when poaching is most frequent and ATV use is common and most damaging.

Forestry Conservation Management Practices should be applied on state and private lands to avoid direct turtle mortality. Seasonal timber harvesting restrictions apply to Wood Turtle habitat and to upland habitat that occurs up to 600 ft (183 m) beyond the stream edge. Motorized vehicle access to timber harvesting sites in Wood Turtle habitat is restricted to times when the Wood Turtle is overwintering. Bridges should be laid down across streams prior to any motorized equipment crossing the stream in order to maintain the structural integrity of overwintering sites.

Finally, a statewide monitoring program is needed to track long-term population trends in Wood Turtles.

ACTIVE PERIOD

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

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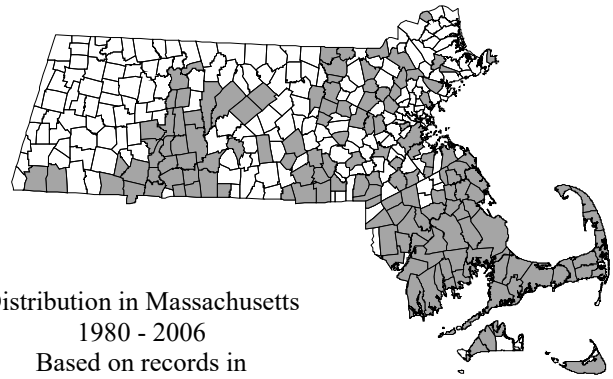
Massachusetts Division of Fisheries & Wildlife

Eastern Box Turtle
Terrapene carolina

State Status: **Special Concern**
Federal Status: **None**

DESCRIPTION: The Eastern Box Turtle is a small terrestrial turtle ranging from 11.4–16.5 cm (4.5–6.6 in.) in length. It is so named because a hinge on the lower shell (plastron) allows it to enclose head, legs, and tail completely within the upper (carapace) and lower shells. The adult box turtle has an oval, high-domed shell with variable coloration and markings. The carapace is usually dark brown or black with numerous irregular yellow, orange, or reddish blotches. The plastron typically has a light and dark variable pattern, but some may be completely tan, brown, or black. The head, neck, and legs also vary in color and markings, but are generally dark with orange or yellow mottling. The Eastern Box Turtle has a short tail and an upper jaw ending in a down-turned beak. The male box turtle almost always has red eyes, and females have yellowish-brown or sometimes dark red eyes. Males have a moderately concave plastron (females' are flat), the claws on the hind legs are longer, and the tail is both longer and thicker than the females. Hatchlings have a brownish-gray carapace with a yellow spot on each scute (scale or plate), and a distinct light-colored mid-dorsal keel (ridge). The plastron is yellow with a black central blotch, and the hinge is poorly developed.

Photo by Liz Willey



Distribution in Massachusetts
1980 - 2006
Based on records in
Natural Heritage Database

SIMILAR SPECIES: The Blanding's Turtle (*Emydoidea blandingii*) may be confused with the Eastern Box Turtle. Often referred to as the "semi-box turtle," the Blanding's Turtle has a hinged plastron enabling the turtle to pull into its shell, but with less closure than in the Eastern Box Turtle. Both may have yellow markings on the carapace; however, the markings on a Blanding's Turtle are spots or flecks rather than blotches. An adult Blanding's Turtle is larger than the box turtle (15-23 cm; 6-9 in. in shell length). While both will be found nesting in similar habitat, the Blanding's Turtle is essentially aquatic whereas the Eastern Box Turtle is terrestrial. Eastern Box Turtle hatchlings could be confused with Spotted Turtle hatchlings, because both have spots on each scute. However, the Spotted Turtle lacks a mid-dorsal keel.

RANGE: The range of the Eastern Box Turtle is from southeastern Maine; south to northern Florida; and west to Michigan, Illinois, and Tennessee. Although Eastern Box Turtles occur in many towns in Massachusetts, they are more heavily concentrated in the southeastern section of the state.

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HABITAT IN MASSACHUSETTS: The Eastern Box Turtle is a terrestrial turtle, inhabiting many types of habitats. It is found in both dry and moist woodlands, brushy fields, thickets, marsh edges, bogs, swales, fens, stream banks, and well-drained bottomland.

LIFE CYCLE & BEHAVIOR: The Eastern Box Turtle hibernates in the northern parts of its range from late October or November until mid-March or April depending on the weather. Box turtles overwinter in upland forest, a few inches under the soil surface, typically covered by leaf litter or woody debris. As soil temperatures drop, the turtles burrow into soft ground. Overwintering is usually not communal, although several may overwinter within close proximity of one another. Some individuals may emerge prematurely during warm spells in winter and early spring. When this occurs, they may perish from exposure if there is a sudden cold snap. During the spring, Box Turtles start to forage and mate in the forest and fields.

In summer, adult Box Turtles are most active in the morning and evening, particularly after a rainfall. To avoid the heat of the day, they often seek shelter under rotting logs or masses of decaying leaves, in mammal burrows, or in mud. They often scoop out a "form" (a small domelike space) in leaf litter, grasses, ferns, or mosses where they spend the night. These forms may be used on more than one occasion over a period of weeks. Though known as "land turtles", in the hottest weather they frequently enter shaded shallow pools and puddles and remain there for periods varying from a few hours to a few days. In the cooler temperatures of spring and fall, box turtles forage at any daylight hour.

The Eastern Box Turtle is omnivorous, feeding on animal matter such as slugs, insects, earthworms, snails, and even carrion. Box Turtles also have a fondness for mushrooms, berries, fruits, leafy vegetables, roots, leaves, and seeds.

Females reach sexual maturity at approximately 13 years of age. Mating is opportunistic and may take place anytime between April and October. Courtship begins with the male circling, biting, and shoving the female. Afterward, the premounting and copulatory phases take place. Females can store sperm and lay fertile eggs up to four years after mating.

Females nest in June or early July and can travel great distances to find appropriate nesting habitat. They may travel up to approximately 1600 m (1 mile), many of them crossing roads during their journey. Nesting areas may be in early successional fields, meadows, utility right of ways, woodland openings, roadsides, cultivated gardens, residential lawns, mulch piles, beach dunes, and abandoned gravel pits. Females sometimes exhibit nest site fidelity, laying eggs in close proximity to the previous years' nest. Females typically start nesting in the late afternoon or early evening and continue for up to five hours.

THREATS: There are several reasons the Eastern Box Turtle is under threat in Massachusetts: habitat destruction resulting from residential and industrial development; road mortality; collection by individuals for pets; mowing of fields and early successional habitat during the active season; unnaturally inflated rates of predation in suburban and urban areas; disturbance of nest sites by ATVs; and genetic degradation due to the release of non-native (pet store) turtles. The release of non-native species could also transmit disease, which may become an issue in Massachusetts, but is not currently a problem.

MANAGEMENT RECOMMENDATIONS:
Using NHESP records, Eastern Box Turtle habitat needs to be assessed and prioritized for protection based on the extent, quality, and juxtaposition of habitats and their predicted ability to support self-sustaining populations of box turtles. Other considerations should include the size and lack of fragmentation of habitat and proximity and connectivity to other relatively unfragmented habitats, especially within existing protected open space.

Given limited conservation funds, alternatives to outright purchase of conservation land is an important component to the conservation strategy. These can include Conservation Restrictions (CRs) and Agricultural Preservation Restrictions (APRs).

Habitat management and restoration guidelines should be developed and implemented in order to create and/or maintain consistent access to nesting habitat at key sites. This is most practical on state-owned conservation lands (i.e. DFW, DCR). However, educational materials should be made available to guide private landowners on the best management practices for box turtle habitat.

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Alternative wildlife corridor structures should be considered at strategic sites on existing roads. In particular, appropriate wildlife corridor structures should be considered for bridge and culvert upgrades and road-widening projects within box turtle habitat. Efforts should be made to inform local regulatory agencies of key locations where these measures would be most effective for turtle conservation.

Educational materials need to be developed and distributed to the public in reference to the detrimental effects of keeping our native box turtles as pets (an illegal activity that slows reproduction in the population), releasing pet store turtles (which could spread disease), leaving cats and dogs outdoors unattended (particularly during the nesting season), mowing of fields and shrubby areas, feeding suburban wildlife (which increases numbers of natural predators on turtles), and driving ATVs in nesting areas from June to October. People should be encouraged, when safe to do so, to help box turtles cross roads (always in the direction the animal was heading); however, turtles should never be transported to "better" locations. They will naturally want to return to their original location and likely need to traverse roads to do so.

Increased law enforcement is needed to protect our wild populations, particularly during the nesting season when poaching is most frequent and ATV use is common and most damaging.

Forestry Conservation Management Practices should be applied on state and private lands to avoid direct turtle mortality. Motorized vehicle access to timber harvesting sites in box turtle habitat should be restricted to the times when box turtles are inactive during the winter, preferably when the ground is frozen. Motorized vehicles should not be used for soil scarification.

Finally, a statewide monitoring program is needed to track long-term population trends in Eastern Box Turtles.

Active Period

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

REFERENCES:

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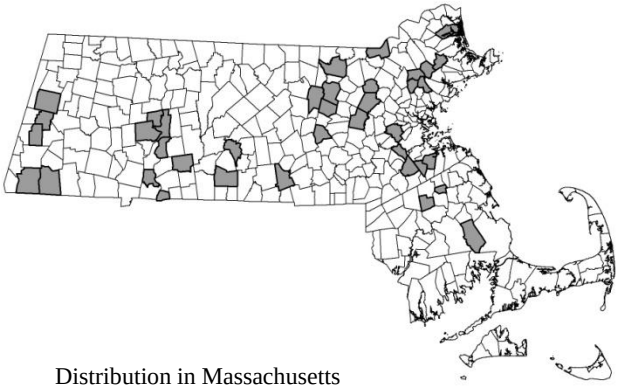
Massachusetts Division of Fisheries & Wildlife

Northern Leopard Frog
Lithobates pipiens

State Status: **None**
Federal Status: **None**

DESCRIPTION: The Northern Leopard Frog is a medium-sized, spotted frog with variable coloration. Spots are always dark (black or brown), rounded (circular to elliptical), encircled by a thin, light-colored (whitish to neon green) halo, and distributed irregularly over the back and sides of the body. The dorsal base color of Northern Leopard Frog can vary from a dull tan to a brilliant green. The undersides are white and unmarked. Length (from snout to vent) is 2–3.5 inches (5–9 cm), with females typically larger than males (especially when gravid). Tadpoles have olive to brownish-colored bodies with whitish bellies and dark-speckled tails.

SIMILAR SPECIES: Pickerel Frog (*L. palustris*) is commonly confused with Northern Leopard Frog. However, the "spots" of Pickerel Frog are typically dark brown bordered by a thin line of black, rectangular in shape, and distributed in two parallel rows down the back (as well as a single prominent row along each side). The dorsal base color of Pickerel Frog is always brownish (never green), and the inner thighs of adults and older juveniles are colored bright yellow to orange.



Distribution in Massachusetts
1990-2015
Based on records in Natural Heritage Database
Map updated 2015

Northern Leopard Frog
Photo by Bill Byrne

RANGE: Northern Leopard Frog occurs across most of northern North America, ranging from southern Quebec west to southern Alberta and eastern portions of Washington, Oregon, and California. The range extends across New England, New York, the Great Lakes States and the Upper Midwest, south to Arizona and New Mexico. Disjunct populations occur in Labrador and the southern Northwest Territories.

Within Massachusetts, populations of Northern Leopard Frog are scattered among portions of at least 8 counties: Berkshire, Essex, Hampden, Hampshire, Middlesex, Norfolk, Plymouth, and Worcester. Recent data suggest the species is distributed sparsely, but it is abundant locally.

HABITAT: Northern Leopard Frog utilizes both aquatic and terrestrial habitats. Aquatic habitat usually consists of extensive floodplain marshes or large, semi-permanent to permanent shrub swamps associated with margins of streams, rivers, lakes, and ponds. Such wetland systems are often circumneutral to calcareous and contain much emergent vegetation (e.g., *Typha* spp.,

Cephalanthus occidentalis). Aquatic habitat is used primarily for overwintering and breeding. During late spring through early fall, Northern Leopard Frogs disperse widely into upland fields, grasslands, and wet meadows. Forested areas, including regenerating clearcuts, are also used. Where appropriate habitat mosaics are contiguous, local populations may span miles.

A small Northern Leopard Frog stream in western Massachusetts.
Photo by Jacob E. Kubel

LIFE CYCLE/BEHAVIOR: Northern Leopard Frogs spend winters in shallow, excavated "pits" at the bottoms of ponds and other permanent wetlands where they lie dormant until ice thaws and waters begin to warm in mid- to late March. In Massachusetts, the breeding season usually commences in early to mid-April, whereupon the frogs become active and move into shallower waters with emergent vegetation, or migrate to breeding sites. When overland movements are necessary to reach breeding sites, they tend to occur during warm (>40°F), nocturnal rains, coincident with breeding migrations of mole salamanders (*Ambystoma* spp.) and Wood Frogs (*Lithobates sylvaticus*). Once daytime temperatures start to reach 50°F and nighttime temperatures hold in the mid- to high 40s, male Northern Leopard Frogs begin calling to attract mates.

The call of the Northern Leopard Frog consists of two sequences. The first is a slow, guttural crescendo of staccato "knocking" notes. The second is a series of several short, nasal grunts. Calling activity is generally slow, truncated, and sporadic during cool temperatures and at the beginning of the breeding period. However, once warm, sunny days and warm nights arrive, many males erupt into a full chorus of calling for a period of several days to a week. The overlapping calls of dozens of males have a resonant, ethereal quality and cannot be mistaken for any other animal.

Females, already carrying eggs, evaluate the males and select their mates. The male grasps the female from above with his forelimbs tucked securely beneath hers, holds her in place, and fertilizes her eggs as she releases them into the water (a behavior termed "amplexus"). The eggs are deposited in a mass that resembles a flattened sphere and contains up to 6,000 individual eggs.

Eggs hatch in several weeks, whereupon the frog tadpoles remain in the water for a period of 2–3 months. During that time, the tadpoles feed on algae, plant matter, organic debris, and possibly small animal matter filtered from the water or scraped from surfaces. As the tadpoles grow, they develop limbs and metamorphose into small, juvenile frogs in July or August.

Recently metamorphosed frogs tend to congregate near the margins of their natal wetlands, feeding along banks or under the cover of floodplain vegetation. During late summer and early fall, adults and sub-adults return from upland fields, meadows, and forested swamps to their overwintering sites where they, too, will forage along the margins of the wetlands until cold temperatures force them into deep water for the winter.

When gravid, female Northern Leopard Frogs are distinguished easily from males merely by their girth.
Photo by Jacob E. Kubel

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The diet of juvenile and adult Northern Leopard Frogs consists primarily of invertebrates, with crickets and grasshoppers being reported favorites. Juveniles are believed to mature in 2 years, with total life expectancy seldom exceeding 4 years in the wild.

POPULATION STATUS IN MASSACHUSETTS: As of May 2015, approximately 30 local populations had been documented among 38 towns since 1990. Historical records indicate the species once occupied parts of Bristol County, but recent surveys have failed to detect the species there. The sparse distribution of Northern Leopard Frog in Massachusetts, combined with an apparent contraction in its range both within the state and elsewhere in New England during the past several decades, has led to concerns about population declines and uncertainty about its conservation status.

A Northern Leopard Frog from Norfolk County, Massachusetts.
Photo by Brian Bastarache

Primary threats to Northern Leopard Frog in Massachusetts are habitat loss, habitat degradation, road mortality, and emerging infectious disease. The most common type of habitat loss is residential, commercial, industrial, or mining development in upland fields, meadows, and shrublands. However, filling of vernal pools may also result in loss of valuable stopover habitat in landscapes where individuals disperse long distances between population centers.

Habitat degradation typically occurs when development and roads fragment habitat (e.g., create gaps between upland-wetland habitat mosaics), chemical applications (e.g., pesticides, deicing salts, fertilizers) pollute breeding wetlands, or acid deposition changes water chemistry. High road densities and traffic volumes may result in increased levels of frog mortality; in extreme cases, roads function as physical barriers between upland and breeding habitats. Noise pollution from increasing road densities and traffic volumes may alter frog calling behavior in ways that either impair breeding activity or result in certain tradeoffs that could conceivably reduce reproductive fitness.

Several pathogens/emerging infectious diseases (e.g., *Batrachochytrium dendrobatidis*, ranavirus) are affecting amphibian populations throughout the world and could be impacting Northern Leopard Frogs in Massachusetts. Of particular concern is the potential spread of exotic pathogens via the commercial pet trade. Many amphibians in New England appear to be coping with the amphibian chytrid fungus (*Batrachochytrium dendrobatidis*), but they might not be so resilient to novel diseases introduced by animals imported from other countries.

MANAGEMENT RECOMMENDATIONS: At a local scale, Northern Leopard Frog sites should be managed to develop or maintain meadows and grasslands adjacent to confirmed and potential breeding wetlands. Such management should focus on sites where threats to frogs (e.g., chemical pollution, roads) are absent or minor. When possible, mowing of grasslands and wet meadows should be done on a rotational basis or in the fall. Hydrological regimes of overwintering sites and breeding wetlands should not be altered in ways that reduce hydroperiod at critical times or permanently inundate floodplains. Riparian buffers should be established in agricultural areas where chemical applications are used or soil erosion is occurring.

At the landscape scale, habitat mosaics consisting of marshes, wet meadows, grasslands, and swamp forest should be maintained to provide dispersal corridors and and, therefore, allow for genetic exchange between local populations. Land acquisition/protection efforts for maintaining habitat connectivity should prioritize rural areas with low road and development densities. A land-protection strategy may best serve long-term persistence of local populations and preservation of metapopulation dynamics where Northern Leopard Frogs occupy relatively large, connected areas containing suitable upland and wetland habitat mosaics. However, lands supporting small, peripheral, or isolated populations are also worth protecting for maintenance of genetic diversity at the state level.

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Upland fields bordering floodplain marshes represent an ideal habitat configuration for Northern Leopard Frogs in Massachusetts.
Photo by Jacob E. Kubel

Stronger controls are necessary to guard against the introduction and spread of amphibian pathogens and infectious disease. For example, national policy and enforcement regarding importation of exotic wildlife in the global pet trade should be improved to reduce and minimize the volume of diseased animals entering the country. Within Massachusetts, field biologists, anglers, and other outdoor enthusiasts should adopt and promote appropriate equipment-sanitation procedures when outdoor activities span wide geographic areas. A statewide amphibian monitoring program that includes sampling for pathogens and disease outbreaks should be developed.

Citizens are encouraged to assist with conservation of Northern Leopard Frog by reporting observations of the species to the NHESP, as land-protection and other conservation efforts are dependent on knowing where local populations occur. Citizens may also provide important information by reporting incidents of mass amphibian mortality.

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Massachusetts Division of Fisheries & Wildlife

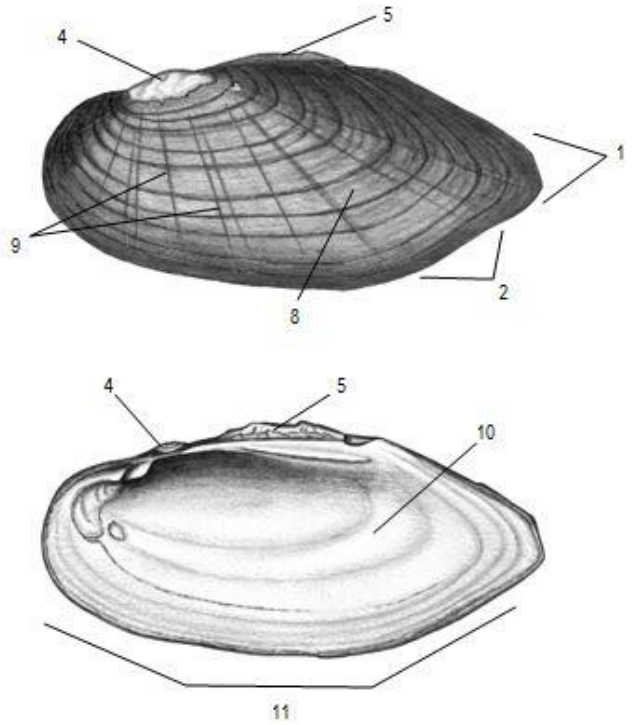
Eastern Pondmussel
Ligumia nasuta

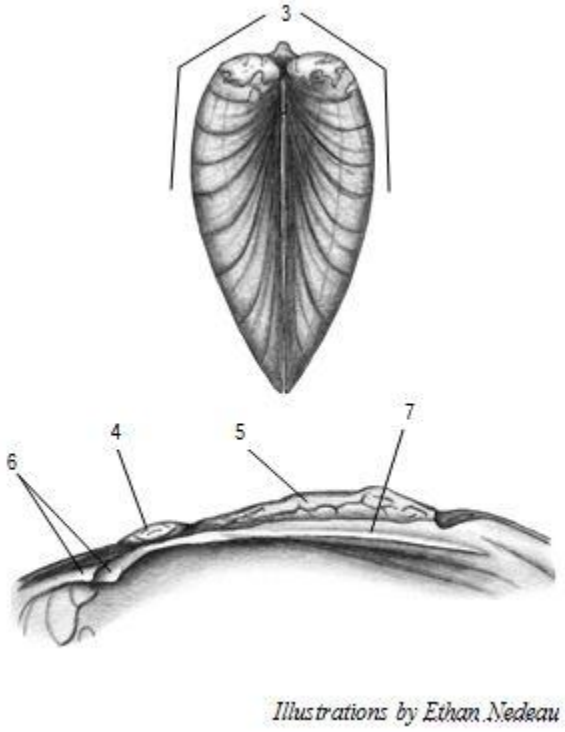
State Status: **Special Concern**
Federal Status: **None**

DESCRIPTION: The Eastern Pondmussel is a medium-sized to large mussel that may exceed six inches (150 mm) in length. The shape is distinctly elongate or elliptical and the posterior end tapers to a blunt point (1). Shells of sexually mature females may be slightly more rounded toward the posterior ventral margin (2) than males or adolescent females. Shells are laterally compressed (3), and despite being thin, they are quite strong. Beaks are low (4) and barely extend beyond the line of the hinge (5). Hinge teeth are well developed but delicate; the left valve has two pseudocardinal teeth and two lateral teeth, and the right valve has two pseudocardinal teeth (6) and one lateral tooth (7). The periostracum (8) is yellowish or greenish-black in young individuals, but usually dark brown or black in older specimens. Shell rays (9) are sometimes evident on those individuals with a light-colored periostracum. The nacre (10) is usually purple, pink, or silvery-white.

SIMILAR SPECIES IN MASSACHUSETTS: Due to its elongate shape (11), pointed posterior end (1), and laterally compressed shell (3), the Eastern Pondmussel is easy to distinguish from all other species in Massachusetts.

RANGE: The Eastern Pondmussel is distributed throughout Atlantic coastal drainages from Virginia to New Hampshire and in the eastern Great Lakes region. It is most abundant in southeastern Massachusetts, particularly in large coastal plain ponds on the mainland





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Massachusetts Division of Fisheries & Wildlife

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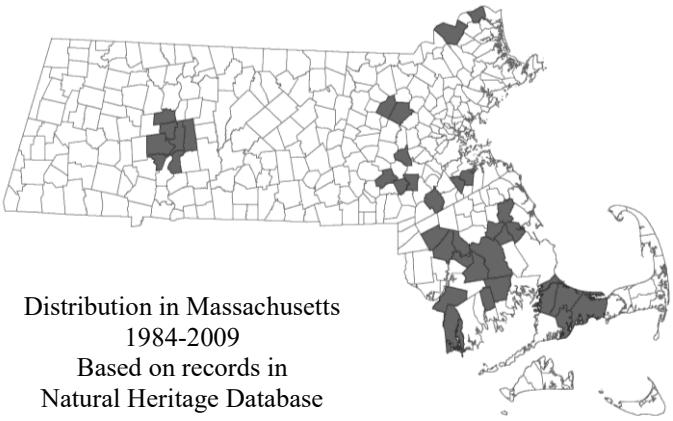
and on Cape Cod. Small populations also occur in the central Connecticut River Valley, especially in low-gradient sections of several tributaries to the Connecticut River.

HABITAT: The Eastern Pondmussel inhabits streams, rivers, and small to large lakes and ponds. It exhibits no distinct preference for substrate, depth, or flow conditions. It has been found at relatively high densities at depths of 15-25 feet in coastal ponds where the substrate was primarily mud (Nedeau and Low 2008), and in shallow rivers with relatively strong currents and a substrate of gravel and cobble (Nedeau 2008). In the Connecticut River watershed, populations are known primarily from streams and rivers (Nedeau 2008), but in eastern Massachusetts, including Cape Cod, there are more lake and pond populations.

BIOLOGY: Eastern Pondmussels are essentially sedentary filter feeders that spend most of their lives partially burrowed into the bottoms of rivers, streams, lakes, and ponds. Eastern Pondmussels, like all freshwater mussels, have larvae (called glochidia) that must attach to the gills or fins of a vertebrate host to develop into juveniles. Sexually mature female Eastern Pondmussels use papillae along their mantle margins to lure potential host fish; this behavior was described by Corey et al. (2006). Displaying females tend to migrate toward the surface of the sediment, and may even lie fully unburied on the surface of the sediment to increase their visibility to fish. They will also part their valves widely, exposing more of the mantle edge. Host fish for this species have not yet been determined, though the mussel's range suggests that its hosts have some affinity for coastal areas. Closely related species have been reported to parasitize centrarchids (sunfishes and bass), as well as the Banded Killifish. These fish species occur throughout the Eastern Pondmussel's range in Massachusetts and southern New England. Little else is known about the biology of the Eastern Pondmussel.



Distribution in Massachusetts
1984-2009
Based on records in
Natural Heritage Database

POPULATION STATUS IN MASSACHUSETTS: The Eastern Pondmussel is a Species of Special Concern in Massachusetts, as well as in Connecticut and New Hampshire. A few sizeable populations exist in coastal plain ponds of eastern Massachusetts; however, riverine populations in the state are generally sparse with the exception of a couple of tributaries to the Connecticut River. The species is currently known from 24 lakes/ponds and 13 rivers; however, fewer than ten of these sites support sizeable populations. There are an additional 34 historic occurrences that have not been documented in the last 25 years and therefore are not subject to MESA protection. Surveys of historic sites and a careful status review are needed.

THREATS: Because Eastern Pondmussels are essentially sedentary filter feeders, they are unable to flee from degraded environments and are vulnerable to the alterations of water bodies. Eastern Pondmussels occur in lakes and rivers, and the threats in these two habitats are slightly different. Overlapping threats include nutrient enrichment, sedimentation, non-native and invasive species, and the many consequences of urbanization. River populations of Eastern Pondmussels are threatened by alteration of natural flow regimes, encroachment of river corridors by development, habitat fragmentation caused by dams and road-stream crossings, and a legacy of land use that has greatly altered the natural dynamics of river corridors (Nedeau 2008). Lake populations are challenged by intense development, modification, and recreational use of sensitive shoreline habitats, and by increasing eutrophication. Dams and other stream barriers in the rivers that connect lakes to coastal waters may also affect lake populations of Eastern Pondmussels. Invasive plants and animals, such as European Milfoil and Asian Clams, are having severe impacts on the fragile ecology of coastal plain ponds. The ultimate consequences on Eastern Pondmussels and other native species are not completely known, but the prognosis is bleak. In addition, the long-term effects of regional or global problems such as acidic precipitation, mercury, and climate change are considered severe, but little empirical data relates these stressors to mussel populations.

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CONSERVATION AND MANAGEMENT RECOMMENDATIONS: Discovery and protection of viable mussel populations is critical for the long-term conservation of freshwater mussels. Currently, much of the available mussel occurrence data are the result of limited presence/absence surveys. In addition, regulatory protection under MESA only applies to rare species occurrences that are less than 25 years old. Surveys are critically needed to monitor known populations, evaluate habitat, locate new populations, and assess population viability so that conservation and restoration efforts, as well as regulatory protection, can be effectively targeted. Coastal plain ponds are critical to the long-term viability of the Eastern Pondmussel in Massachusetts, and these habitats are also experiencing intense development pressure and recreational use. Understanding this threat and developing conservation and management strategies is a high priority for NHESP. The NHESP has produced *Freshwater Mussel Habitat Assessment* and *Survey Guidelines* and has been working with qualified experts to conduct surveys. Other conservation and management recommendations include:

- Understand the effects of shoreline development and recreational use of lakeshores;
- Maintain naturally variable river flows and limit water withdrawals;
- Identify, mitigate, or eliminate sources of pollution to water bodies;
- Identify dispersal barriers for host fish, especially those that fragment the species range within a river or watershed, and seek options to improve fish passage or remove the barrier;
- Maintain adequate vegetated riparian buffers along rivers and lakes;
- Protect or acquire land at high priority sites.

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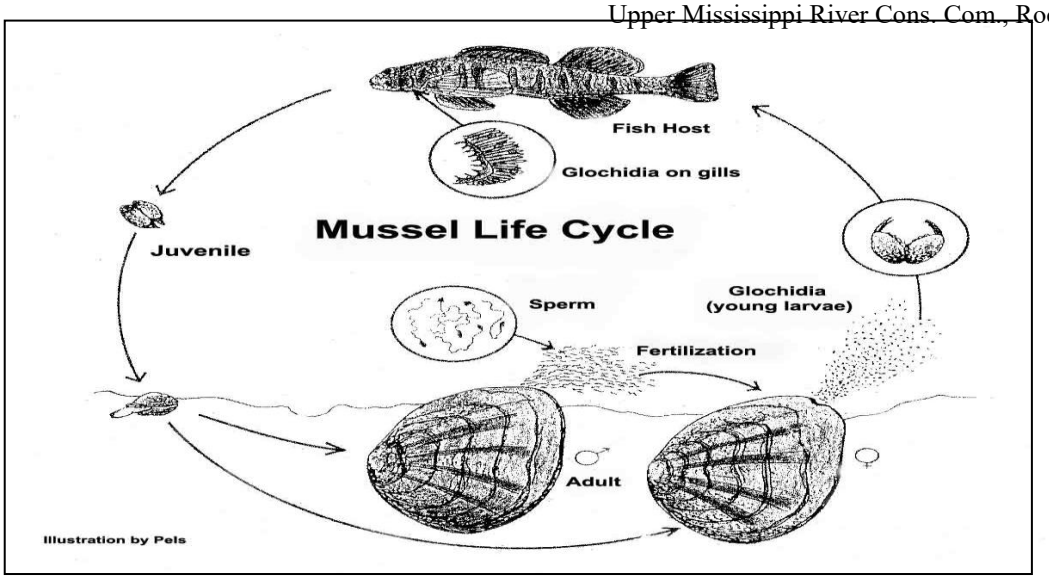

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Massachusetts Division of Fisheries & Wildlife

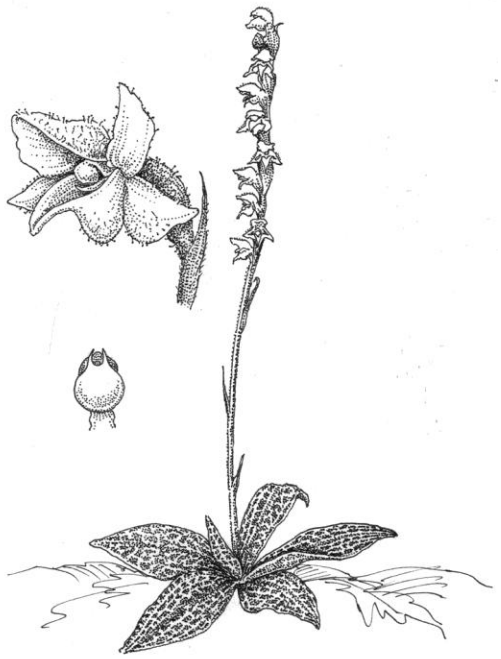
Dwarf Rattlesnake-plantain
Goodyera repens
(L.) R. Br.

State Status: **Endangered**
Federal Status: **None**

DESCRIPTION: Dwarf Rattlesnake-plantain is a small white orchid (family Orchidaceae) of shady conifer or mixed hardwood-conifer forests. The striking dark green leaves, which are variegated with white or pale green markings along the veins, are much more conspicuous than the small white flowers. The leaves are evergreen, oval-shaped, about 2.5 cm (1 inch) long, and arranged in a dense basal rosette. The flower stalks are leafless, grow singly from the centers of the rosettes, and are usually about 15 cm (6 inches) tall. Numerous small flowers about 4 mm long are arranged in a loose spiral around the stem but are typically twisted to the side such that on most plants the spikes of flowers appear one-sided. Plants spread by underground horizontal stems and are often found growing in small clonal patches of several plants.

AIDS TO IDENTIFICATION: Identification of Dwarf Rattlesnake-plantain requires the evaluation of several characters, and careful, precise measurements. Plants with the following characteristics can be identified as Dwarf Rattlesnake-plantain with a high degree of confidence, but some plants will fall somewhat outside these conservative specifications and will need further investigation (see Similar Species below). This species blooms in midsummer.

- Largest leaves, including petioles, 3 cm (1 ¼ inches) or less long.
- Flowers, excluding their stout green stalks, 4 mm or less long.
- Pouch of the lower flower-lip pronounced and about as deep as it is long.

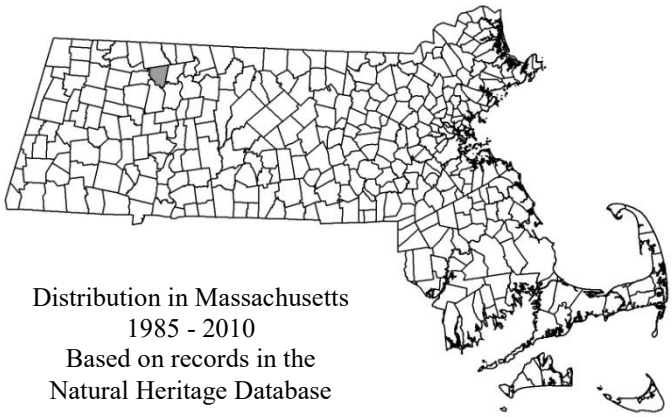


Dwarf Rattlesnake-plantain showing the evergreen leaves patterned around the midvein and the leafless flower stalk with a one-sided appearing loose spiral of flowers. The insets show the enlarged individual flower with its pronounced pouch and the round rostellum with its tiny, diagnostic beaks. Illustration: Elizabeth Farnsworth.

SIMILAR SPECIES: Three rattlesnake-plantain species occur in Massachusetts. The Downy Rattlesnake-plantain (*G. pubescens*) is easily differentiated from Dwarf Rattlesnake-plantain by its densely flowered, cylindric flower spikes (i.e., not appearing one-sided) and leaves with a broad white stripe along the mid-vein as well as along the lateral veins (Dwarf Rattlesnake-plantain has white or pale green markings along secondary veins, but never along the mid-vein). The Checkered Rattlesnake-plantain (*G. tesselata*), a common Massachusetts species, is a hybrid of Giant Rattlesnake-plantain (*G. oblongifolia*), a species that is not known from Massachusetts, and Dwarf Rattlesnake-plantain. There is overlap in most of the diagnostic characteristics used to separate Dwarf Rattlesnake-plantain from Checkered Rattlesnake-

plantain and some individuals cannot be easily placed with either species.

The best characteristic for diagnosing problematic plants is the length of the rostellar beaks; they are 0.2 to 0.6 mm and shorter than the body of the stigma in Dwarf Rattlesnake-plantain, and 0.6 to 1.7 mm and equal to or longer than the body of the stigma in Checkered Rattlesnake-plantain. The rostellum is a lobe of the stigma, circular to elliptical in outline, found at the top of the column (complexly fused and modified reproductive parts) in the center of the flower. The beaks are a pair of lobes at the top of the rostellum. Using this diagnostic characteristic requires familiarity with the orchid flower morphology and experience with conducting fine botanical measurements. A professional botanist should be consulted to verify the identification of this species.



Distribution in Massachusetts
1985 - 2010
Based on records in the
Natural Heritage Database

RANGE: Dwarf Rattlesnake-plantain has a range that circles the globe in the north-temperate zone. It is transcontinental in Canada with northern limits in Alaska, the Yukon, and Newfoundland, and southern limits in British Columbia, New Mexico, South Dakota, Tennessee, and North Carolina.

POPULATION STATUS: Dwarf Rattlesnake-plantain is listed under the Massachusetts Endangered Species Act as Endangered. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. One current population is known from Franklin County; others are historically recorded from Berkshire, Essex, Franklin, Hampshire, Norfolk, and Worcester Counties.

HABITAT IN MASSACHUSETTS: There are few Massachusetts records for Dwarf Rattlesnake-plantain and most are from historic collections lacking habitat notes. Records from "pine woods," "under hemlock," "spruce woods," and "hemlock swamp" are in keeping with published habitat preferences for the species (shady coniferous or mixed forests). Two Massachusetts records from "mid-successional hardwood forest" and "rich woods" seem atypical.

THREATS/MANAGEMENT RECOMMENDATIONS: The single extant Massachusetts population (as of 2010) is on conservation land and has no known threats or management needs. All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

Flowering Time in Massachusetts

Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
												■	■	■									

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Diagnostic table for Dwarf Rattlesnake-plantain and Checkered Rattlesnake-plantain

	Dwarf Rattlesnake-plantain	**Checkered Rattlesnake-plantain**
Stems	Typical: 15 cm Range: 3–18 cm	Typical: 20 cm Range: 6–23 cm
Leaf length including Petiole	Typical: 1–3 cm Range: 1–3 cm	Typical: About 4 cm Range: 1.4–5.5 cm
Flower spike length	Typical: About 4.5 cm Range: 2.5–6 cm	Typical: About 6 cm Range: Up to 10 cm
Perianth (flower parts) length	Typical: 4 mm Range: 3–5.5 mm	Typical: 5mm Range: 3.8–7.1 mm
Lip	With pronounced pouch, nearly as deep as long	With shallow pouch, obviously longer than deep
Rostellar beak length	0.2–0.6 mm	0.6–1.7 mm

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Massachusetts Division of Fisheries & Wildlife

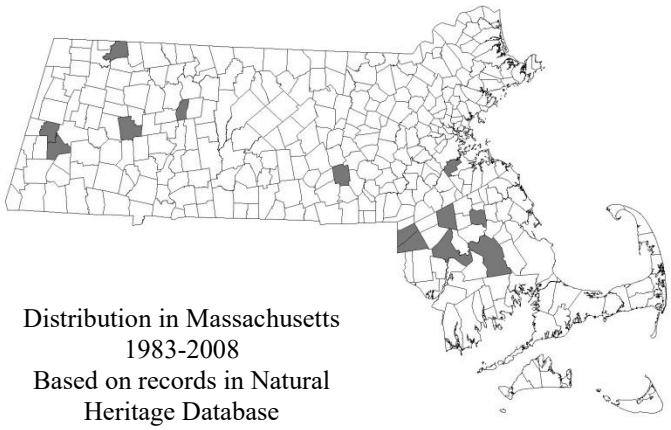
Pale Green Orchid
Platanthera flava (L.) Lindley var. *herbiola* (R. Br.) Luer

State Status: **Threatened**
Federal Status: **None**

DESCRIPTION: Pale Green Orchid (*Platanthera flava* var. *herbiola*) is a perennial orchid (family Orchidaceae) known in Massachusetts from a variety of rich moist habitats.

AIDS TO IDENTIFICATION: Pale Green Orchid has a single stem, 15 to 60 cm (6-24 in.) in height, which arises from a subterranean cluster of fleshy, tuber-like roots. The stem bears 2 to 5 broad, shiny green leaves, 7 to 20 cm (3–8 in.) long, which are alternate, clasping, and sheathing, and decrease in size towards the inflorescence. The inflorescence is a loose spike of 10 to 40 small greenish or greenish-yellow flowers, which are interspersed with elongate leafy bracts. The flowers are irregular in shape, with a prominent hood, an oblong, sometimes wavy-edged lip, which widens at the base to form auricles, and an oblong, downward pointing, nectar-bearing spur. Flowers are present from about mid-June to mid-July.

SIMILAR SPECIES: Long-bracted Orchid (*Coeloglossum viride*), is a similar species, but it generally has longer bracts, a shorter, more sac-like spur, and darker, duller green leaves than Pale Green Orchid.



Distribution in Massachusetts
1983-2008
Based on records in Natural Heritage Database

Adapted from Minnesota's Endangered Flora & Fauna, Coffin & Pfannmuller, eds. State of Minnesota, Dept. of Nat. Res. 1988.

HABITAT: In Massachusetts, Pale Green Orchid inhabits open to semi-shaded habitats in rich, moderately acidic wet areas subject to seepage, intermittent flooding, or water level fluctuation. Documented habitats for this species include wet meadows, boggy floodplains, open floodplain woods, river shore seeps, and hillside seeps. Associated species vary according to habitat type, but may include Red Maple (*Acer rubrum*), White Ash (*Fraxinus americana*), False Nettle (*Boehmeria cylindrica*), Jewelweed (I*mpatiens capensis*), Skunk Cabbage (*Symplocarpus foetidus*), Cinnamon Fern (*Osmunda cinnamomea*), Regal Fern (*O. regalis*), Marsh Fern (*Thelypteris palustris*), and Sensitive Fern (*Onoclea sensibilis*).

THREATS: A major threat to Pale Green Orchid is over-shading or competition from invasive exotic or aggressive native species. Invasive species of particular concern include Glossy Buckthorn (*Frangula alnus*), Japanese Barberry (*Berberis thunbergii*), and Garlic Mustard (*Alliaria petiolata*). Other threats to Pale Green

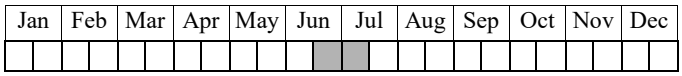
Orchid include any activities within its habitat that disrupt the natural hydrologic regime, degrade water quality, or that result in destruction of plants, or in major soil disturbance. Examples include water flow regulation, input of nutrients or pollutants from lawns or septic systems, and trampling or damage from recreational use of the habitat.

RANGE: The range of Pale Green Orchid encompasses much of eastern and central North America, from the maritime provinces south to Georgia, and west to Ontario and Kansas.

POPULATION IN MASSACHUSETTS: Pale Green Orchid is listed under the Massachusetts Endangered Species Act as Threatened. All listed species are legally protected from killing, collection, possession, or sale, and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. Pale Green Orchid is currently known from Berkshire, Bristol, Franklin, Hampshire, Norfolk, Plymouth, and Worcester Counties, and is historically known from Dukes, Essex, Hampden, Middlesex, and Suffolk Counties.

MANAGEMENT RECOMMENDATIONS: As with many rare species, the exact management needs of Pale Green Orchid are not known. Sites should be monitored for invasions of exotic plants, particularly Glossy Buckthorn, Japanese Barberry, and Garlic Mustard. If exotic or aggressive native plants are shading or out-competing Pale Green Orchid, a vegetation control management plan should be developed in consultation with the Massachusetts Natural Heritage & Endangered Species Program. Pale Green Orchis locations that receive heavy recreational use (e.g., hiking, ORV use) should be carefully monitored for plant damage or soil disturbance; trails can sometimes be re-routed to protect the rare plant population. All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

Flowering time in Massachusetts



Updated 2015

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

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Natural Heritage & Endangered Species Program

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Massachusetts Division of Fisheries & Wildlife

Vasey's Pondweed
Potamogeton vaseyi
Robbins

State Status: **Endangered**
Federal Status: **None**

DESCRIPTION: Vasey's Pondweed (*Potamogeton vaseyi*) is a delicate, submersed aquatic herb in the Pondweed family (Potamogetonaceae), with erect stems that are rooted in the substrate. Fertile individuals have two types of foliage: expanded floating leaves and slender submersed leaves. Submersed blades are light green, sessile, and linear-filiform (≤ 1 mm wide), with acute to almost bristle-tipped apices. Floating blades are greenish brown, petioled, and elliptical to obovate with obtuse apices. Flowers are inconspicuous and arranged in cylindrical spikes raised above the water surface. Fruits are small and seed-like, obovoid, and distinctly keeled. Leafy winter-buds (turions) are common in submersed leaf axils.

AIDS TO IDENTIFICATION: Identification of pondweeds (*Potamogeton* spp.) requires use of a technical manual. Vasey's Pondweed is identified by translucent, one (to three) veined, submersed blades and small stipules completely free from the leaf bases. Reproductive individuals have small (0.6–1.5 cm long, 3–8 mm wide) floating blades with five to nine veins, and small, dorsally keeled fruits with short recurved beaks. Small, soft turions are common in leaf axils or on axillary branches from early summer to fall. Plants should be identified in fruit, when fruits and vegetative features are distinctive. Vasey's Pondweed is difficult to locate in late summer as plants typically deteriorate by mid-August.

SIMILAR SPECIES: Individuals of Vasey's Pondweed with floating leaves resemble those of the common Northern Snail-seed Pondweed (*P. spirillus*); however, Vasey's Pondweed is distinguished by its free stipules, keeled and beaked fruits, presence of winter-buds, and lack of any submersed spikes. Plants without floating leaves closely resemble other common narrow-leaved pondweeds such as Slender Pondweed (*P. pusillus*) and Leafy Pondweed (*P. foliosus*). Vasey's Pondweed can be separated from the former species by its lack of nodal glands and from either species by its strictly axillary turions. Both Slender Pondweed and Leafy Pondweed can have terminal turions in addition to those on short axillary branches. Leafy Pondweed may also have wider submersed blades (up to 2.3 mm) than Vasey's Pondweed.

Reproductive individuals of Vasey's Pondweed have linear submersed leaves as well as expanded floating leaves with petioles (top). Flower spikes are raised above the water surface (bottom). Photos by Jennifer Garrett.

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Massachusetts Division of Fisheries & Wildlife

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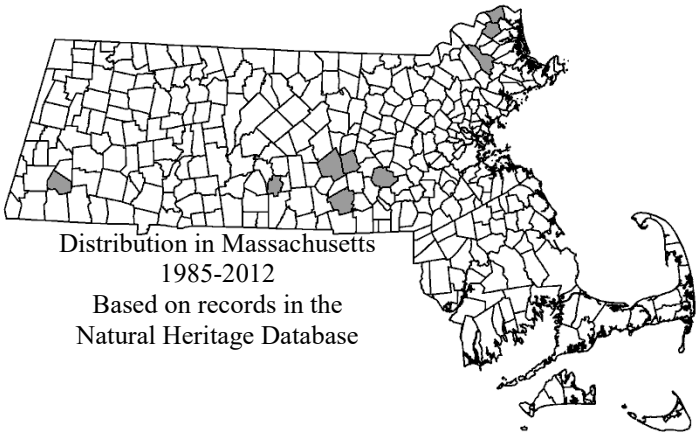
HABITAT: Vasey's Pondweed occurs in freshwater lakes, ponds, and slow-moving rivers in quiet, open water up to 2 m deep. It generally favors acid to moderately alkaline waters. Plants found in association with Vasey's Pondweed include Slender Pondweed (*P. pusillus*), Flatstem Pondweed (*P. zosteriformis*), Big-leaved Pondweed (*P. amplifolius*), Water Crowfoot (*Ranunculus aquatilis*), Common Bladderwort (*Utricularia macrorhiza*), Nuttall's Water-weed (*Elodea nuttallii*), and Eurasian Water-milfoil (*Myriophyllum spicatum*).



Distribution in Massachusetts
1985-2012
Based on records in the
Natural Heritage Database

RANGE: Vasey's Pondweed occurs from southern New Brunswick west to Quebec, and south to Minnesota, Illinois, Pennsylvania and New Jersey.

POPULATION STATUS IN MASSACHUSETTS: Vasey's Pondweed is listed under the Massachusetts Endangered Species Act as Endangered. All listed species are protected from killing, collecting, possessing, or sale, and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. This species is currently known from Berkshire, Worcester, Middlesex, and Essex Counties, and also occurred historically in Franklin and Norfolk Counties.

THREATS AND MANAGEMENT RECOMMENDATIONS: As for many rare species, exact management needs for Vasey's Pondweed are not known. However, because this plant occurs in open waters, any alteration in the hydrologic regime, water quality, or erosion and sedimentation rates could presumably impact the species. Competition from invasive aquatic species may also reduce the available habitat for Vasey's Pondweed. Mechanical or non-specific chemical control of invasive species may threaten populations of Vasey's Pondweed. All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

Flowering and Fruiting in Massachusetts

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

REFERENCES:

Crow, G. E., and C.B. Hellquist. 2000. *Aquatic and Wetland Plants of North America*. Vol. 2. University of Wisconsin Press, Madison.

Les, D.H., N.M. Murray, and N.P. Tippery. 2009. Systematics of two imperiled Pondweeds (*Potamogeton vaseyi, P. gemmiparus*) and taxonomic ramifications for Subsection *Pusilli* (Potamogetonaceae). *Systematic Botany* 34: 643–651.

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Massachusetts Division of Fisheries & Wildlife

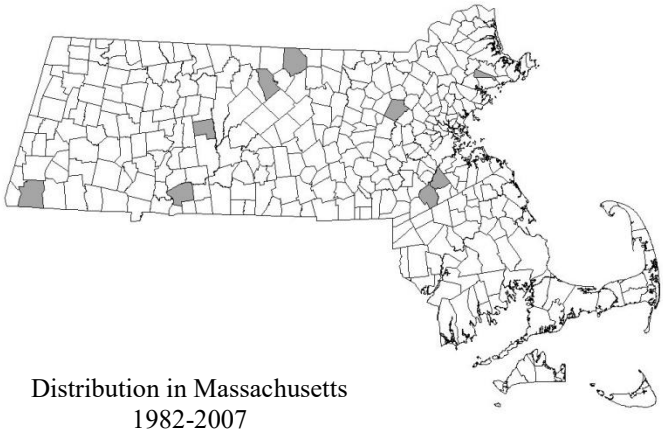
Pod-grass
Scheuchzeria palustris L.

State Status: **Endangered**
Federal Status: **None**

DESCRIPTION: Pod-grass (*Scheuchzeria palustris*) is an erect rush-like plant of open peatlands, with a cluster of greenish flowers, sheathing opposite leaves, and a zig-zag stem. Pod-grass, which blooms from May until July, is the sole species in its family (Scheuchzeriaceae).

Aids to identification: The zig-zag stem of Pod-grass grows 9 to 18 inches (20–40 cm) in height. The leaves are alternate, erect, and linear; they are 2 to 12 inches (5–30 cm) in length and about 0.1 inch or less (1–3 mm) in width. The stem leaves are well-separated, whereas the basal leaves are tightly clustered, with dilated bases that sheath the lower stem. The inflorescence consists of three to ten racemes of yellow-green flowers, each with three tepals (undifferentiated outer flower parts, similar to sepals and petals). Fruits are 0.2 to 0.3 inch (6–8 mm), and consist of three diverging follicles, or "pods," each with one or two small black seeds. A good time to survey for this species is from early July to early September, when the conspicuous fruit are present.

Gleason, H.A. 1952. *The New Britton and Brown Illustrated Flora of the Northeastern United States and Adjacent Canada*. Published for the New York Botanical Garden by Hafner Press. New York.



Distribution in Massachusetts
1982-2007
Based on records in
Natural Heritage Database

Similar species: Pod-grass has unique characteristics, and there are no other species in its genus or family. Species of the Arrow-grass family (Juncaginaceae) are closely related, but they have basal leaves only (no stem leaves). Some rushes (family Juncaceae) are superficially similar, but rushes have two perianth whorls (analogous to sepal and petals) rather than one, and the flowers are often subtended by leafy bracts.

Habitat in Massachusetts: Pod-grass inhabits open acidic peatlands, often in areas that are dominated by sedges and sphagnum mosses (*Sphagnum* spp.). Associated species include Tawny Cotton-grass

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Massachusetts Division of Fisheries & Wildlife

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(*Eriophorum virginicum*), White Beak-sedge (*Rhynchospora alba*), Slender Woolly-fruited Sedge (*Carex lasiocarpa* var. *americana*), Large Cranberry (*Vaccinium macrocarpon*), Water-willow (*Decodon verticillatus*), Leatherleaf (*Chamaedaphne calyculata*), and Pitcher-plant (*Sarracenia purpurea*).

Threats: Threats to Pod-grass include changes in the water quality due to inputs of road salt or nutrients from septic systems or adjacent fertilized land (residential areas, golf courses, agricultural fields); alterations to the natural hydrologic regime that affect water levels; invasions by exotic invasive plant species such as Common Reed (*Phragmites australis* ssp. *australis*), Glossy Buckthorn (*Frangula alnus*), and Purple Loosestrife (*Lythrum salicaria*); trampling at sites with heavy recreational use; and over-shading from dense growth of associated shrubs, such as Leatherleaf.

Range: The range of Pod-grass extends across much of the northern United States (north of Virginia, Indiana, Wyoming and California); and discontinuously in New Mexico and Canada (minus Nunavut and Yukon Territories). Pod-grass is also rare in Alaska, Connecticut, Idaho, Montana, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, Wyoming, Alberta, and Labrador. It is historically known from Illinois, Iowa, and West Virginia, and its status is under review in several states.

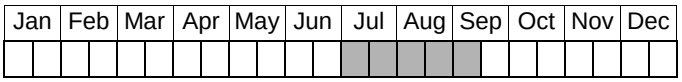
Population status in Massachusetts: Pod-grass is listed under the Massachusetts Endangered Species Act as Endangered. All listed species are legally protected from killing, collection, possession, or sale, and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. Pod-grass is currently known from Berkshire, Hampshire, Middlesex, Norfolk, and Worcester Counties, and is historically known from Essex, Franklin, and Hampden Counties.

Management recommendations: As with many rare species, the exact management needs of Pod-grass are not known. Protecting the habitat of this species requires maintaining high water quality and natural, stable water levels; this may involve restricting use of road salt and fertilizers in adjacent areas, and regulating water drawdown if the wetland has a dam or is used for irrigation.

Pod-grass habitat sites should be regularly monitored to enable early detection of invasive exotic species and to determine if the plants are becoming over-shaded. Acidic, low-nutrient peatlands are generally inhospitable to many exotic species, but invasions can occur, particularly on the edges where nutrient levels are slightly higher, and in areas with anthropogenic nutrient inputs. At sites where Pod-grass is becoming over-shaded by dense shrubs, careful thinning can be implemented to restore an open character to the habitat.

To avoid inadvertent harm to rare plants, all active management of rare plant populations (including invasive species removal) should be planned in consultation with the Massachusetts Natural Heritage & Endangered Species Program.

Fruiting time in Massachusetts



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Appendix D. Letter from Lynn Harper, Habitat Protection Specialist, NHESP

a. BioMap2 Wenham

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Jack Buckley, *Director*

January 22, 2018

Lynn Duncan
The Ciccolo Group, LLC
6 Daniels Road
Wenham, MA 01984

RE: Wenham Open Space and Recreation Plan

Dear Ms. Duncan:

Thank you for contacting the Massachusetts Natural Heritage and Endangered Species Program (NHESP) regarding the Open Space and Recreation Plan for the Town of Wenham. Enclosed is information on species listed under the Massachusetts Endangered Species Act (MESA), as well as on Priority Natural Communities, Certified and Potential Vernal Pools, Coldwater Fishery Resource streams and rivers, and other aspects of biodiversity documented in our database for the Town of Wenham. The Town is encouraged to include this letter and associated materials in the Open Space and Recreation Plan.

MESA-listed Species

According to the NHESP database, the Town of Wenham currently has habitat for the following rare species listed under MESA:

- Blue-spotted Salamander (Ambystoma laterale, Special Concern)

Fact sheets on this species may be downloaded from our website at http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/mesa-list/list-of-rare-species-in-massachusetts.html. The Town is encouraged to include this fact sheet in its Plan.

Priority Natural Communities

There is one type of Priority Natural Community documented to NHESP from Wenham:

- Level Bog

Fact sheets on this natural community may be downloaded from our website at http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/natural-communities/natural-community-fact-sheets.html. The Town is encouraged to include this fact sheet in its Plan.

Vernal Pools

As of this date, there are 8 Certified and 50 Potential Vernal Pools documented from Wenham. Most of the Potential Vernal Pools are likely able to be certified; the Town is encouraged to certify vernal pools on its own properties and to require developers to certify pools on any property requiring permits from the Town.

Coldwater Fishery Resources

There are no Coldwater Fisheries Resource streams in Wenham.

BioMap2

Six areas within Wenham are *BioMap2* Core Habitat. They include 1 Aquatic Core, 1 Forest Core, 1 Priority Natural Community Core, 3 Wetland Cores, and areas for 3 Species of Conservation Concern.

Adjacent to and overlapping some of these Core Habitats in Wenham are two areas of *BioMap2* Critical Natural Landscape, including 1 Aquatic Buffer, two Landscape Blocks, and 3 Wetland Buffers. For an explanation of *BioMap2* and the Core Habitats within Wenham, please see the attached *BioMap2* Report.

Discussion

In a town like Wenham, which is largely already developed, it can be hard to decide which areas are the highest priorities for conservation actions. The Town should consider carefully these suggestions for inclusion in its Open Space and Recreation Plan:

- Land Protection: The Town and its conservation partners should consider concentrating on adding on to already protected lands, as well as conserving wetlands:
  - In the northwestern corner of Wenham, Mass Audubon and the Salem-Beverly Water Supply Board protect much of the Wenham Swamp. There are a few unprotected parcels or parts of parcels adjacent to the protected land; these can be targets for future protection efforts.
  - Along Miles Brook at the Beverly line, the Wenham Conservation Commission and the Essex County Greenbelt Association own conservation restrictions. Unprotected, undeveloped parcels adjacent to these conserved parcels can be targets for additional protection.
  - Gordon College owns a large parcel surrounding Coy Pond, with the campus on the south side of the pond. Much of the undeveloped part of this parcel is wetlands, including areas adjacent to the Pond that are *BioMap2* Core Habitat for a Wetlands Core. These wetlands and adjacent uplands can be targets for protection.
  - At the north end of the Beverly Airport, there is a large area of undeveloped land that is mostly wetlands. While this is not habitat for rare species, conserving these wetlands and their adjacent, buffering uplands will help conserve biodiversity in general.

- Habitat Management: The Town should assess its conservation and water supply areas for the presence of invasive species. If invasives are present in substantial numbers or areas, consider removing them. (Note that the Division of Fisheries and Wildlife has offered grants to fund such activities in the past and is hoping to do so again in the future).
- Regulation: The Town should support and encourage its Conservation Commission to enforce the provisions of the Massachusetts Wetlands Act. While there is no local board or official charged with enforcing the provisions of the Massachusetts Endangered Species Act, the Town could consider having the Conservation Commission and the Building Inspector notify development applicants of the presence/absence of Priority Habitat of Rare Species on the applicant's property.
- Education and Outreach: Developing community support for conservation of biodiversity is essential for successful efforts at land protection, habitat management, and regulation. Offering field trips on Town conservation areas, writing articles on conservation for local websites and newspapers, and encouraging local students to conduct biological surveys and observations on conservation areas are a few of the low-cost ways to build support that will pay off in the future.

The Town of Wenham is to be commended for undertaking production of an Open Space and Recreation Plan. Please do not hesitate to call me at 508-389-6351 if you have any further questions.

Sincerely,

Lynn C. Harper
Habitat Protection Specialist
Massachusetts Natural Heritage & Endangered Species Program

BioMap2

CONSERVING THE BIODIVERSITY OF MASSACHUSETTS IN A CHANGING WORLD

Wenham

Produced in 2012

This report and associated map provide information about important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is <u>not</u> intended for use in state regulations.

Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries & Wildlife

The Nature Conservancy
Protecting nature. Preserving life.™

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Elements of *BioMap2* Critical Natural Landscapes

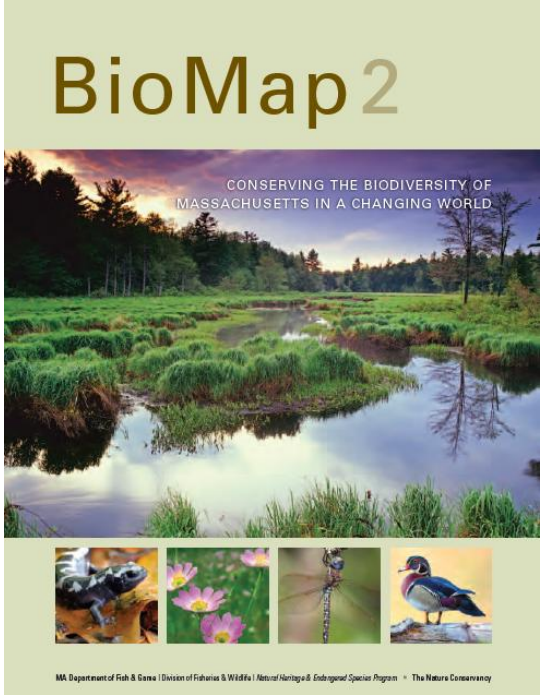
Critical Natural Landscape Summaries

Introduction

The Massachusetts Department of Fish & Game, through the Division of Fisheries and Wildlife's Natural Heritage & Endangered Species Program (NHESP), and The Nature Conservancy's Massachusetts Program developed *BioMap2* to protect the state's biodiversity in the context of climate change.

BioMap2 combines NHESP's 30 years of rigorously documented rare species and natural community data with spatial data identifying wildlife species and habitats that were the focus of the Division of Fisheries and Wildlife's 2005 State Wildlife Action Plan (SWAP). *BioMap2* also integrates The Nature Conservancy's assessment of large, well-connected, and intact ecosystems and landscapes across the Commonwealth, incorporating concepts of ecosystem resilience to address anticipated climate change impacts.

Protection and stewardship of *BioMap2* Core Habitat and Critical Natural Landscape is essential to safeguard the diversity of species and their habitats, intact ecosystems, and resilient natural landscapes across Massachusetts.



Get your copy of the *BioMap2* report! Download from www.mass.gov/nhesp or contact Natural Heritage at 508-389-6360 or natural.heritage@state.ma.us.

What Does Status Mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act, M.G.L. c.131A, and its implementing regulations 321 CMR 10.00. Rare species are categorized as Endangered, Threatened or of Special Concern according to the following:

- Endangered species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.
- Threatened species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- Special Concern species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition NHESP maintains an unofficial watch list of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated by any law or regulations, but they can help to identify

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ecologically important areas that are worthy of protection. The status of natural communities reflects the documented number and acreages of each community type in the state:

- Critically Imperiled communities typically have 5 or fewer documented sites or have very few remaining acres in the state.
- Imperiled communities typically have 6-20 sites or few remaining acres in the state.
- Vulnerable communities typically have 21-100 sites or limited acreage across the state.
- Secure communities typically have over 100 sites or abundant acreage across the state; however, excellent examples are identified as Core Habit to ensure continued protection.

In 2005 the Massachusetts Division of Fisheries and Wildlife completed a comprehensive State Wildlife Action Plan (SWAP) documenting the status of Massachusetts wildlife and providing recommendations to help guide wildlife conservation decision-making. SWAP includes all the wildlife species listed under the Massachusetts Endangered Species Act (MESA), as well as more than 80 species that need conservation attention but do not meet the requirements for inclusion under MESA. The SWAP document is organized around habitat types in need of conservation within the Commonwealth. While the original BioMap focused primarily on rare species protected under MESA, *BioMap2* also addresses other Species of Conservation Concern, their habitats, and the ecosystems that support them to create a spatial representation of most of the elements of SWAP.

BioMap2: One Plan, Two Components

BioMap2 identifies two complementary spatial layers, Core Habitat and Critical Natural Landscape.

Core Habitat identifies key areas that are critical for the long-term persistence of rare species and other Species of Conservation Concern, as well as a wide diversity of natural communities and intact ecosystems across the Commonwealth. Protection of Core Habitats will contribute to the conservation of specific elements of biodiversity.

Critical Natural Landscape identifies large natural Landscape Blocks that are minimally impacted by development. If protected, these areas will provide habitat for wide-ranging native species, support intact ecological processes, maintain connectivity among habitats, and enhance ecological resilience to natural and anthropogenic disturbances in a rapidly changing world. Areas delineated as Critical Natural Landscape also include buffering upland around wetland, coastal, and aquatic Core Habitats to help ensure their long-term integrity.

The long-term persistence of Massachusetts biological resources requires a determined commitment to land and water conservation. Protection and stewardship of both Critical Natural Landscapes and Core Habitats are needed to realize the biodiversity conservation vision of *BioMap2*.

Components of Core Habitat

Core Habitat identifies specific areas necessary to promote the long-term persistence of rare species, other Species of Conservation Concern, exemplary natural communities, and intact ecosystems.

Rare Species

There are 432 native plant and animal species listed as Endangered, Threatened or Special Concern under the Massachusetts Endangered Species Act (MESA) based on their rarity, population trends, and threats to survival. For

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Table 1. Species of Conservation Concern described in the State Wildlife Action Plan and/or included on the MESA List and for which habitat was mapped in *BioMap2*. Note that plants are not included in SWAP, and that marine species such as whales and sea turtles are not included in *BioMap2*.

Taxonomic Group	MESA-listed Species	Non-listed Species of Conservation Concern
Mammals	4	5
Birds	27	23
Reptiles	10	5
Amphibians	4	3
Fish	10	17
Invertebrates	102	9
Plants	256	0
Total	**413**	**62**

BioMap2, NHESP staff identified the highest quality habitat sites for each non-marine species based on size, condition, and landscape context.

Other Species of Conservation Concern

In addition to species on the MESA List described previously, the State Wildlife Action Plan (SWAP) identifies 257 wildlife species and 22 natural habitats most in need of conservation within the Commonwealth. *BioMap2* includes species-specific habitat areas for 45 of these species and habitat for 17 additional species which was mapped with other coarse-filter and fine-filter approaches.

Priority Natural Communities

Natural communities are assemblages of plant and animal species that share a common environment and occur together repeatedly on the landscape. *BioMap2* gives conservation priority to natural communities with limited distribution and to the best examples of more common types.

Vernal Pools

Vernal pools are small, seasonal wetlands that provide important wildlife habitat, especially for amphibians and invertebrate animals that use them to breed. *BioMap2* identifies the top 5 percent most interconnected clusters of Potential Vernal Pools in the state.

Forest Cores

In *BioMap2*, Core Habitat includes the best examples of large, intact forests that are least impacted by roads and development, providing critical habitat for numerous woodland species. For example, the interior forest habitat defined by Forest Cores supports many bird species sensitive to the impacts of roads and development, such as the Black-throated Green Warbler, and helps maintain ecological processes found only in unfragmented forest patches.

Wetland Cores

BioMap2 used an assessment of Ecological Integrity to identify the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

Aquatic Cores

To delineate integrated and functional ecosystems for fish species and other aquatic

Species of Conservation Concern, beyond the species and exemplary habitats described above, *BioMap2* identifies intact river corridors within which important physical and ecological processes of the river or stream occur.

Components of Critical Natural Landscape

Critical Natural Landscape identifies intact landscapes in Massachusetts that are better able to support ecological processes and disturbance regimes, and a wide array of species and habitats over long time frames.

Landscape Blocks

BioMap2 identifies the most intact large areas of predominately natural vegetation, consisting of contiguous forests, wetlands, rivers, lakes, and ponds, as well as coastal habitats such as barrier beaches and salt marshes.

Upland Buffers of Wetland and Aquatic Cores

A variety of analyses were used to identify protective upland buffers around wetlands and rivers.

Upland Habitat to Support Coastal Adaptation

BioMap2 identifies undeveloped lands adjacent to and up to one and a half meters above existing salt marshes as Critical Natural Landscapes with high potential to support inland migration of salt marsh and other coastal habitats over the coming century.

The conservation areas identified by *BioMap2* are based on breadth and depth of data, scientific expertise, and understanding of Massachusetts' biodiversity. The numerous sources of information and analyses used to create Core Habitat and Critical Natural Landscape are complementary, and outline a comprehensive conservation vision for Massachusetts, from rare species to intact landscapes. In total, these robust analyses define a suite of priority lands and waters that, if permanently protected, will support Massachusetts' natural systems for generations to come.

Legal Protection of Biodiversity

BioMap2 presents a powerful vision of what Massachusetts would look like with full protection of the land most important for supporting the Commonwealth's biodiversity. While *BioMap2* is a planning tool with *no regulatory function*, all state-listed species enjoy legal protection under the Massachusetts Endangered Species Act (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00). Wetland habitat of state-listed wildlife is also protected under the Wetlands Protection Act Regulations (310 CMR 10.00). The *Natural Heritage Atlas* contains maps of Priority Habitats and Estimated Habitats, which are used, respectively, for regulation under the Massachusetts Endangered Species Act and the Wetlands Protection Act. For more information on rare species regulations, and to view Priority and Estimated Habitat maps, please see the Regulatory Review page at http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/.

BioMap2 **is a conservation planning tool that does not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the** *BioMap2* **vision is fully realized, we must continue to protect our most imperiled species and their habitats.**

Massachusetts Division of Fisheries and Wildlife
1 Rabbit Hill Road, Westborough, MA 01581
phone: 508-389-6360 fax: 508-389-7890

Understanding Core Habitat Summaries

Following the Town Overview, there is a descriptive summary of each Core Habitat and Critical Natural Landscape that occurs in your city or town. These summaries highlight some of the outstanding characteristics of each Core Habitat and Critical Natural Landscape, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific fact sheets at www.mass.gov/nhesp.

Additional Information

For copies of the full *BioMap2* report, the Technical Report, and an interactive mapping tool, visit the *BioMap2* website via the Land Protection and Planning tab at www.mass.gov/nhesp. If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

Contact the Natural Heritage & Endangered Species Program

By phone	508-389-6360
By fax	508-389-7890
By email	natural.heritage@state.ma.us
By Mail	100 Hartwell Street, Suite 230 West Boylston, MA 01583

The GIS datalayers of *BioMap2* are available for download from MassGIS at www.mass.gov/mgis.

Town Overview

Wenham lies within the Southern New England Coastal Plains and Hills Ecoregion, an area comprised of plains with a few low hills. Forests are mainly central hardwoods with some transition hardwoods and some elm-ash-red maple and red and white pine. Many major rivers drain this area.

Wenham at a Glance

- Total Area: 5,210 acres (8.1 square miles)
- Human Population in 2010: 4,875
- Open space protected in perpetuity: 1,546 acres, or 29.7% percent of total area*
- *BioMap2* Core Habitat: 799 acres
- *BioMap2* Core Habitat Protected: 681 acres or 85.2%
- *BioMap2* Critical Natural Landscape: 906 acres
- *BioMap2* Critical Natural Landscape Protected: 711 acres or 78.5%.

BioMap2 Components

Core Habitat

- 1 Exemplary or Priority Natural Community
- 1 Forest Core
- 3 Wetland Cores
- 1 Aquatic Core
- 2 Species of Conservation Concern Cores**
  - 2 amphibians, 1 plant

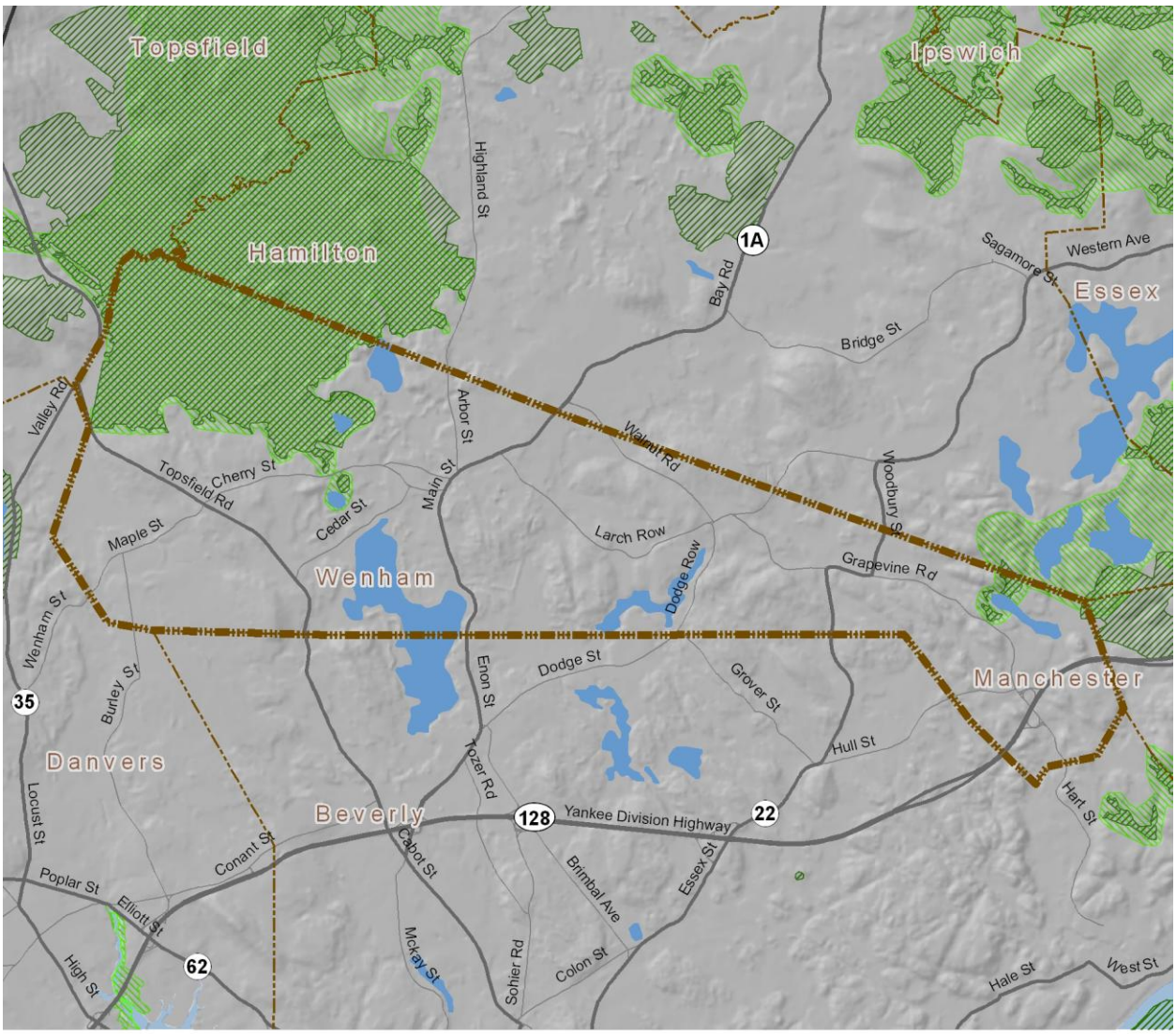
Critical Natural Landscape

- 2 Landscape Blocks
- 3 Wetland Core Buffers
- 1 Aquatic Core Buffer

* Calculated using MassGIS data layer "Protected and Recreational Open Space—March, 2012".

** See next pages for complete list of species, natural communities and other biodiversity elements.

BioMap2 Core Habitat and Critical Natural Landscape in Wenham



BioMap2 Core Habitat

BioMap2 Critical Natural Landscape

1 Mile

Species of Conservation Concern, Priority and Exemplary Natural Communities, and Other Elements of Biodiversity in Wenham

Amphibians

Northern Leopard Frog, (*Rana pipiens*), Non-listed SWAP
Blue-spotted Salamander, (*Ambystoma laterale*), SC

Plants

River Bulrush, (*Bolboschoenus fluviatilis*), recently de-listed

Priority Natural Communities

Level Bog, S3

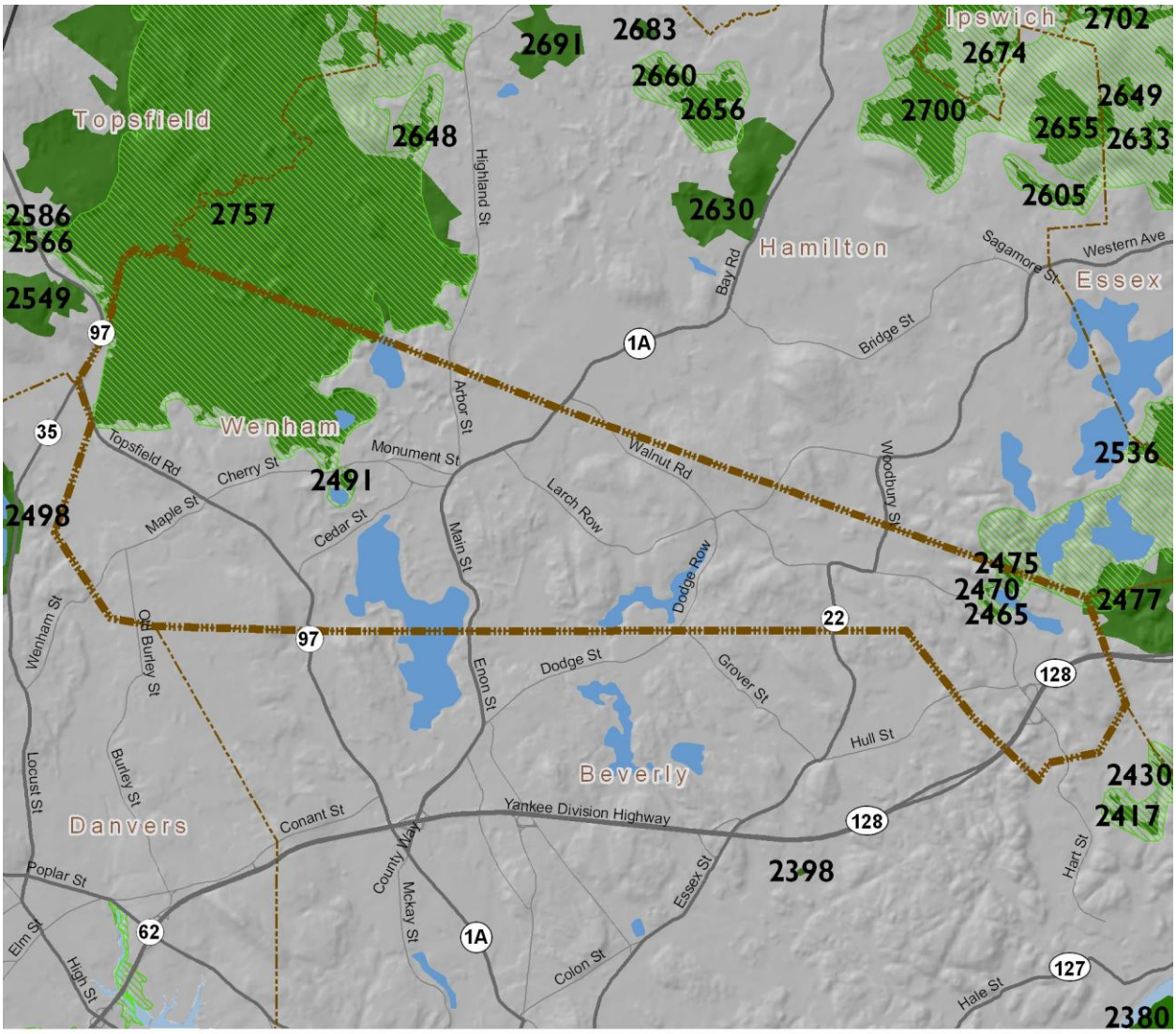
Other *BioMap2* Components

Forest Core
Aquatic Core
Wetland Core
Landscape Block
Aquatic Core Buffer
Wetland Core Buffer

E = Endangered
T = Threatened
SC = Special Concern
S1 = Critically Imperiled communities, typically 5 or fewer documented sites or very few remaining acres in the state.
S2 = Imperiled communities, typically 6-20 sites or few remaining acres in the state.
S3 = Vulnerable communities, typically have 21-100 sites or limited acreage across the state.

BioMap2 Core Habitat in Wenham

Core IDs correspond with the following element lists and summaries.



BioMap2 Core Habitat

BioMap2 Critical Natural Landscape

1 Mile

Natural Heritage & Endangered Species Program

Massachusetts Division of Fisheries and Wildlife
1 Rabbit Hill Road, Westborough, MA 01581
phone: 508-389-6360 fax: 508-389-7890

Elements of *BioMap2* Cores

This section lists all elements of *BioMap2* Cores that fall *entirely or partially* within Wenham. The elements listed here may not occur within the bounds of Wenham.

Core 2465
- Wetland Core

Core 2470
- Wetland Core

Core 2475
- Wetland Core

Core 2477
- Species of Conservation Concern
  - Blue-spotted Salamander — *Ambystoma laterale* — SC

Core 2491
- Priority & Exemplary Natural Communities
  - Level Bog — S3

Core 2757
- Forest Core
- Aquatic Core
- Wetland Core
- Species of Conservation Concern
  - Blue-spotted Salamander — *Ambystoma laterale* — SC
  - Northern Leopard Frog — *Rana pipiens* — Non-listed SWAP

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Core Habitat Summaries

Core 2465

A 3-acre Core Habitat featuring Wetland Core.

Wetland Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

Core 2470

A <1-acre Core Habitat featuring Wetland Core.

Wetland Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

Core 2475

A 10-acre Core Habitat featuring Wetland Core.

Wetland Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

Core 2477

A 173-acre Core Habitat featuring a Species of Conservation Concern.

Adult and juvenile Blue-spotted Salamanders inhabit upland forests during most of the year, where they reside in small-mammal burrows and other subsurface retreats. Adults migrate during late winter or early spring to breed in vernal pools and fish-free areas of swamps, marshes, or similar wetlands. Larvae metamorphose in late summer or early fall, whereupon they disperse into upland forest.

Core 2491

A 4-acre Core Habitat featuring a Priority Natural Community.

Level Bogs are dwarf-shrub peatlands, generally with pronounced hummocks and hollows in sphagnum moss. These wetland communities are very acidic and nutrient-poor because the peat isolates them from nutrients in groundwater and streams. This large example of Level Bog is largely in good condition, despite its being bisected by a rail line that disrupts its hydrology. There is great variation in the bog's development across the site.

Core 2757

A 3,349-acre Core Habitat featuring Forest Core, Wetland Core, Aquatic Core, and Species of Conservation Concern.

Forest Cores are the best examples of large, intact forests that are least impacted by roads and development. Forest Cores support many bird species sensitive to the impacts of roads and development and help maintain ecological processes found only in unfragmented forest patches.

Wetland Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

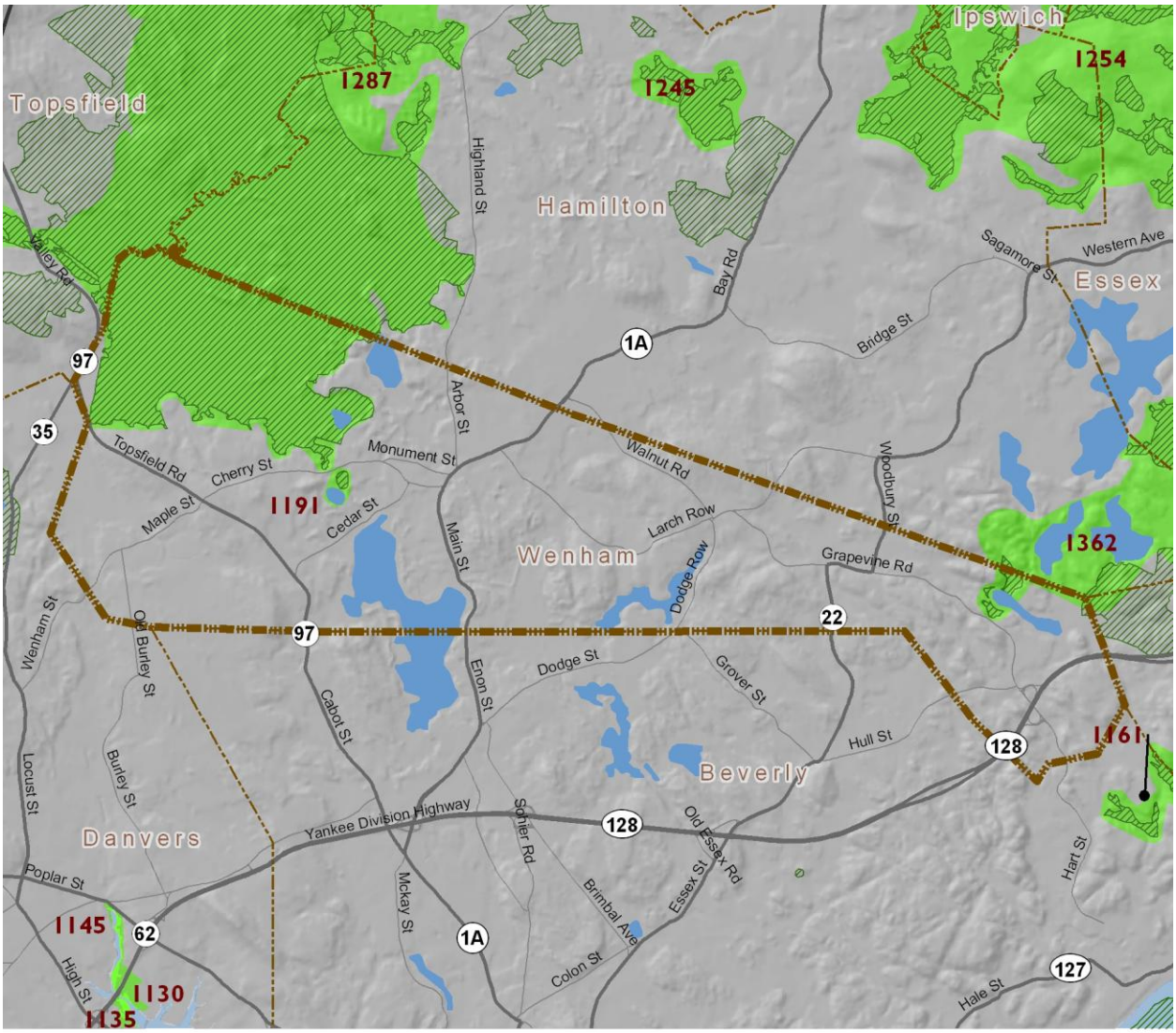
Aquatic Cores are intact river corridors within which important physical and ecological processes of the river or stream occur. They delineate integrated and functional ecosystems for fish species and other aquatic Species of Conservation Concern.

Adult and juvenile Blue-spotted Salamanders inhabit upland forests during most of the year, where they reside in small-mammal burrows and other subsurface retreats. Adults migrate during late winter or early spring to breed in vernal pools and fish-free areas of swamps, marshes, or similar wetlands. Larvae metamorphose in late summer or early fall, whereupon they disperse into upland forest.

Adult Northern Leopard Frogs are found in marshes, wet meadows, and peatlands in the narrow transition zone between open water and uplands; they retreat to the water of ponds and small streams when threatened. The herbivorous tadpoles require open water of sufficient permanence for their development.

BioMap2 Critical Natural Landscape in Wenham

Critical Natural Landscape IDs correspond with the following element lists and summaries.



Natural Heritage & Endangered Species Program

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phone: 508-389-6360 fax: 508-389-7890

Elements of *BioMap2* Critical Natural Landscapes

This section lists all elements of *BioMap2* Critical Natural Landscapes that fall *entirely or partially* within Wenham. The elements listed here may not occur within the bounds of Wenham.

CNL 1191

Wetland Core Buffer

CNL 1287

Aquatic Core Buffer
Landscape Block
Wetland Core Buffer

CNL 1362

Aquatic Core Buffer
Coastal Adaptation Area
Landscape Block
Tern Foraging Area

Critical Natural Landscape Summaries

CNL 1191

An 18-acre Critical Natural Landscape featuring Wetland Core Buffer.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

CNL 1287

A 5,713-acre Critical Natural Landscape featuring Aquatic Core Buffer, Wetland Core Buffer and Landscape Block.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

Landscape Blocks, the primary component of Critical Natural Landscapes, are large areas of intact predominately natural vegetation, consisting of contiguous forests, wetlands, rivers, lakes, and ponds, as well as coastal habitats such as barrier beaches and salt marshes. Pastures and power-line rights-of-way, which are less intensively altered than most developed areas, were also included since they provide habitat and connectivity for many species. Collectively, these natural cover types total 3.6 million acres across the state. An Ecological Integrity assessment was used to identify the most intact and least fragmented areas. These large Landscape Blocks are most likely to maintain dynamic ecological processes such as buffering, connectivity, natural disturbance, and hydrological regimes, all of which help to support wide-ranging wildlife species and many other elements of biodiversity.

In order to identify critical Landscape Blocks in each ecoregion, different Ecological Integrity thresholds were used to select the largest intact landscape patches in each ecoregion while avoiding altered habitat as much as possible. This ecoregional representation accomplishes a key goal of *BioMap2* to protect the ecological stages that support a broad suite of biodiversity in the context of climate change. Blocks were defined by major roads, and minimum size thresholds differed among ecoregions to ensure that *BioMap2* includes the best of the best in each ecoregion.

This 4,878-acre Landscape Block is the ninth largest of 62 Blocks in the ecoregion. Unlike Landscape Blocks in much of the state that are dominated by upland forests, over 45% of this Landscape Block is made up of important wetland habitats. This Block is relatively well protected by public and private entities.

CNL 1362

A 50,627-acre Critical Natural Landscape featuring Aquatic Core Buffer, Landscape Block, Coastal Adaptation Area, and Tern Foraging Area.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

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This 8,989-acre Landscape Block is the fourth largest of 62 Blocks in the ecoregion. Unlike Landscape Blocks in much of the state that are dominated by upland forests, this coastal Landscape Block is dominated by unique and important salt marsh, barrier beach, and estuary habitats.

The coastal habitats of Massachusetts are particularly vulnerable to potential sea-level rise in the next century, which many estimates suggest is likely to exceed one meter. Therefore, in addition to prioritizing current coastal habitats, the creators of *BioMap2* examined the landward side of salt marshes to determine where these habitats might move to as sea levels rise. Undeveloped lands adjacent to and up to one and a half meters above existing salt marshes were identified, and included as Critical Natural Landscapes with high potential to support inland migration of salt marsh and other coastal habitats over the coming century.

Terns range widely from their breeding colonies to forage. While the breeding and staging areas for Roseate, Arctic, Common, and Least Terns were included in the Species of Conservation Concern Core Habitat for *BioMap2*, tern foraging areas were included in *BioMap2* as part of Critical Natural Landscape. The extent of foraging habitat for Arctic, Common, and Roseate Terns depends on the size of the breeding colony. For Least Tern, all shallow marine and estuarine waters within 2 miles of recent colony sites and up to 1 mile offshore were mapped as foraging habitat.

Help Save Endangered Wildlife!

Please contribute on your Massachusetts income tax form or directly to the

Natural Heritage & Endangered Species Fund

To learn more about the Natural Heritage & Endangered Species Program and the Commonwealth's rare species, visit our web site at www.mass.gov/nhesp.

Appendix E. Memo dated February 27, 2018

MEMO

TO:	Open Space and Recreation Commission
CC:	Margaret Hoffman, Planning Coordinator
FROM:	Lynn Duncan, AICP
DATE:	February 27, 2018
RE:	Discussion with Chris LaPointe, Greenbelt, The Trustees of Reservations

As we begin to think about how to prioritize parcels for potential acquisition, as well as other specific recommendations, I want to update you on my discussions with local non-profit organizations.

Last month I spoke with Chris LaPointe of Greenbelt, Essex County's Land Trust. He identified the following parcels as high priority for protection by Greenbelt, as well as others. The first four parcels are under the temporary protection of Chapter 61.

- Angelini Farm, 212 Topsfield Road – One of Greenbelt's goals is to preserve farmland. Could be acquisition, Conservation Restriction (CR), or Agricultural Preservation Restriction (APR). He noted that Greenbelt is exploring the possibility of acquiring farms to lease to farmers on a long-term basis. There are ground lease models available. He has had conversations with Land for Good. [Land for Good is a non-profit organization whose mission is to ensure the future of farming in New England by putting more farmers more securely on more land. Since 2004 they have provided support and expert guidance to help farmers, landowners and communities navigate the complex challenges of land access, tenure and transfer.]
- Canaan/ Tendercrop Farm, 87 Main Street, is a priority, and he noted that Tendercrop Farm is having success with the property.
- The Streeter property, including 9 and 51 Maple Street, is a priority because of its size. It may be the largest remaining undeveloped property in Wenham, according to Chris. In terms of connectivity it ranks lower since it does not directly connect to other conservation land, but it is large enough in and of itself to be worthy of protection. There is a 4.3 acre-parcel adjacent to the Streeter property that becomes important if the Streeter parcel is protected.
- Wenham Country Club Golf Course, 94 Main Street – Greenbelt might be interested in a Conservation Restriction that could protect the land for a golf course and/or agriculture. He noted that he has spoken with the landowner in this regard. Chris gave an example about a project in Rowley where Greenbelt now holds a Conservation Restriction jointly with the Town

of Rowley. He noted that both the towns of Ipswich and Boxford have a bonding program. He thought that the bonding program in Ipswich allowed the Board of Selectmen to authorize up to $500,000 in bonding without Town Meeting authorization.

- 20 Larch Row, privately-owned. Frontage on Larch Row and extends to rear of Post Office; approximately 51 acres containing significant portion of wetlands and flood hazard areas. On other side of railroad tracks is the Reynolds Farm owned by the Conservation Commission, which is currently leased for agriculture to The Food Project.
- Gordon College – land is important for water supply protection and habitat. Does the College have a master Plan for its property?
- Greenbelt is also theoretically interested in large estates, as these owners are often willing to donate Conservation Restriction, and over time, a lot of contiguous land and trail connections become protected. He noted that Greenbelt has several of these CRs.
- Greenbelt has acquired three parcels since 2000 and a number of additional CRs. I will be updating the list of Protected Parcels with this information.

He also served as President of Hamilton Wenham Open Land Trust (HWOLT) through 2017. He did not have any recommendations from HWOLT. He noted that they were not as active as in the past. Since 2002 HWOLT acquired a parcel as part of the development of The Boulders, which is a now partly a 43-plot community garden.

Chris met with the Open Space and Recreation Committee in February, 2017. He would like to meet with the OSRC on a regular basis, perhaps every six months, to get an update on what is going on in Wenham relative to open space protection.

I spoke with David Santomenna at The Trustees of Reservations (TTOR). He said that there is not a lot of property that TTOR considers high priority in Wenham for their purposes (remember that they are a State-wide organization). He said that TTOR had taken a look at the land proposed for the Spring Hill Subdivision because it is adjacent to their Long Hill property. However, the land was high-priced and they decided that the core of Long Hill was well-buffered, so they did not make a run at it. He thought the property of the most interest is Canaan Farm (now Tendercrop Farm) because of its agricultural use and contribution to maintaining a scenic corridor along Route 1A.

I left a message with Carol Lloyd, Director of Trail Management at ECTA, and will update you with further information.

Appendix F. Parcel Ranking Matrix Instructions

Parcel Ranking Matrix

PURPOSE

The variable character of different sites presents a significant challenge for municipalities when assessing parcels for future acquisition. Most communities have a detailed and objective process for evaluating large capital expenditures, but that usually does not include land purchases. There needs to be a mechanism to compare land parcels in context with one another and for their ability to fill multiple municipal needs and community-wide goals.

Evaluating individual parcels for potential acquisition requires a thorough process, based on objective criteria, in-order-to publicly justify land acquisition decisions. This is especially important when prospective open space and recreation land parcels are "competing" for limited acquisition funds. Furthermore, a decision to decline an offer or Right of First Refusal must also be defensible, based on the best available data for that parcel.

The purpose of this parcel ranking matrix is to help communities make informed, timely land use decisions, particularly on the purchase of properties or exercise of the Town's option on Chapter 61 lands. This matrix will aid the community by prioritizing parcels to better:

- Determine how and where to spend precious dollars;
- Determine where to focus preservation efforts;
- Anticipate future maintenance;
- Determine if individual parcels could serve multiple uses;
- Be prepared for when parcels come on the market;
- Show transparency and rationale to the community when parcels are/are not acted upon.

OVERVIEW

This parcel ranking matrix has been developed using an Excel spreadsheet. There are eleven resource categories of questions which are NOT listed in any order of priority. This matrix allows the municipality to evaluate parcels with a transparent set of criteria, and rank those parcels against others with similar qualities and utility to the community. The tool allows any user to quantify information to evaluate specific parcels within different categories of criteria, comprised of robust and complete data sets. The scoring system is further described below. The totals for each question are then summed to produce a total score for each land parcel, thus establishing a "priority list" of sites for acquisition or protection.

The matrix spreadsheet should be filled out by an appropriate municipal staff person, Board or Committee. Efforts should be made to reach out to other departments for technical assistance to answer the questions completely. For example, the Assessor's Office can help with Chapter

Land classifications. The Public Works Department would be helpful with well-head areas. The Planning or Community Development Departments can be a resource for important plans and reports that mention specific parcels. Local or regional land trusts, conservancy organizations or wildlife refuges may have key information on vernal pools, vulnerable species or migration patterns, not to mention their own prioritized protection "wish-lists". Efforts should also be made to conduct site visits whenever possible, or at least visual inspections from roadside and/or property boundaries.

EVALUATION

It is important to think long-term and high-value when evaluating parcels for acquisition. Parcels that are flat and cleared/partially cleared (such as active farmland or other large Chapter 61 land) can be valuable to the Town for multiple purposes, even if a proposed use or project may be years away. While a municipality may choose not to answer the Municipal Use questions in this section if focused solely on preservation, a parcel that may check multiple criteria boxes may be more valuable to the community long term. Think creatively about land use, school enrollment and residential growth patterns. Consider existing municipal land and future needs, as demand for municipal services grows with population increases.

However, it is also important to note that evaluating preservation resources in the context of municipal needs may lead to an erroneous conclusion about their relative value. What a high score actually indicates is that parcels that rank high for preservation value may also have high value for other needs, especially if the parcel is farmland or other cleared, level property. The matrix can then show the possibility of multiple uses on a single parcel. The higher the ranking, the more uses the parcels could sustain. A community may determine that two sets of comparison are needed, running models for preservation only, and again for all resource criteria.

The system's ease of use, consistency of information, transparency of methodology and straightforward scoring ensure its value as an implementation tool. The information gleaned from the matrix can easily be reproduced, updated, shared and incorporated immediately for local and regional planning strategies. Scoring can be further enhanced by working with the GIS department to create a cumulative score Matrix Map, thereby visually identifying parcel size, parcel connections, geographic patterns, scoring trends and potential target areas.

This tool will not only help prioritize investment, but also serve as a gauge to monitor progress of implementation. The property rankings should be run every year to remove parcels that have been sold or preserved, and to add appropriate new parcels. It is good to note that, with this decision matrix in place, the Town will be able to evaluate any parcel as needed in the future, i.e. should a large, non-Chapter land parcel suddenly and unexpectedly come on the market.

INSTRUCTIONS

PART 1 – MATRIX SET-UP

The following items should be completed to set-up the matrix before answering the parcel evaluation questions:

- **PARCEL SELECTION**: The municipality first needs to decide - which parcels will be evaluated? Will only those parcels designated as Chapter 61, 61A or 61B be evaluated? Or only those parcels which are undeveloped? Or parcels over a certain size? Or those deemed eminently developable or especially vulnerable to development thus resulting in a corresponding loss of community character?

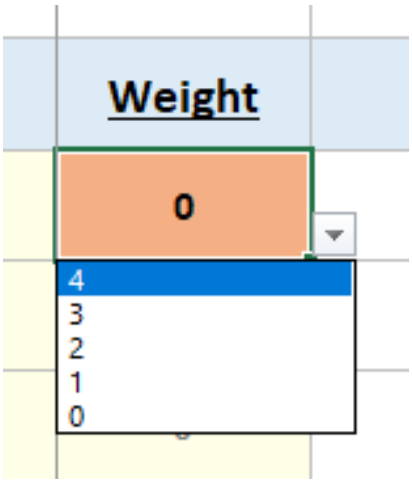
- **PARCEL NAME:** Type the local name, address & plate/parcel reference in the top row (cells C1-AA1), i.e. McDonald Farm, 123 Main Street, 10-233. ALT+enter will allow text to be entered on a second line.

McDonald Farm, 123 Main St., 10-233	Smith Estate 1 First St., 06-44	Greyhound Rescue, 4 Elm St., 04-16	Jones, 3 First St., 06-45

- **PLANS, REPORTS & RECOMMENDATIONS:** List important local, regional or state planning documents (i.e. Master Plan, Community Development Plan, Commonwealth Compact, UPWP, etc.) where the criteria reads "Insert plan/report/recommendation, Year" (cells A5-A16). Several parcels may be referenced in the same plan. If the parcel is called out in the plan/report, select YES. Think beyond your local plans and look at regional and state planning documents as well. Reach out to other private organizations, non-profits & State agencies or programs - land trusts, conservations organizations, fish & wildlife associations, trail groups, etc. - to see if parcels are on any of their prioritized parcel lists, recommendations or have come up often in their discussions.

Master Plan, 2012
Community Development Plan, 2004
Recreation Plan, 2015
Watershed Protection Plan, 2013
Heritage Landscapes, 2009
Housing Production Plan, 2016
Oak River Tand Trust - Prioritized Parcel List, 2017
Historical Commission - National/State Register Study List, 2017

- **WEIGHT:** Each individual resource criteria can be weighted to reflect its importance relative to community goals, values & planning objectives. These weights run on a scale of 0 – 4. The subtotal for each resource criteria will be multiplied by the weight the municipality assigns, to produce a weighted subtotal score. The weight is selected once per resource criteria and is carried through all questions in that category.



If all criteria are equally important to the community, leave each weight at 1. But if other categories have a higher concern, that resource criteria can be weighted at 4, the highest weight assigned to any category. If a category is currently not relevant to or a low priority for the community, the questions can still be answered, but assigned a weight of 0. This way the weight can be changed at a later date, and the questions have been answered consistently across all resource categories.

If the municipality is looking for a parcel suitable only for development of drinking water resources, all other criteria can be assigned a 0 weight and only those suitable parcels would be ranked. Any resource criteria assigned a 0 weight will not be included in the ranking.

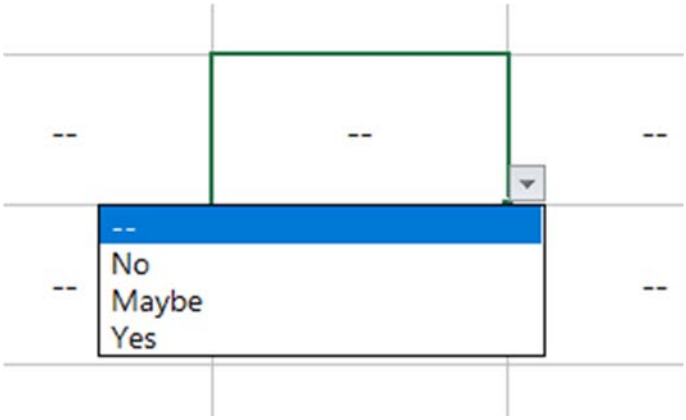
For 2018, the criteria are weighted based on public input from the first Forum and the Community Survey as follows:

- Drinking Water Resources - 4
- Links/Connectivity/Trails - 3
- Natural Resources and Scenic Views - 2
- Agriculture and Historic Preservation - 1

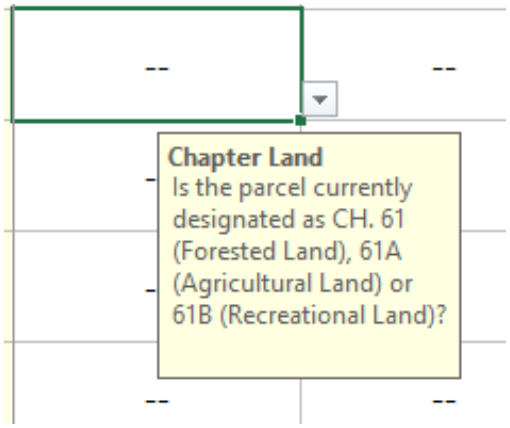
Weights can be changed in the future. This adaptability makes the matrix valuable long-term, so that if and when town priorities change, weights can be easily changed and the completed matrix will still be functional.

PART 2 – ANSWERING QUESTIONS

- **ANSWER SELECTION:** Answers to questions are chosen from a pre-set selection in each cell. Just click on the cell and an arrow will appear with a drop-down list.



- **HELP TEXT & DEFINITIONS:** For certain questions, there may be help text that appears to the right of the answer cell, giving you additional guidance or definitions. Hit the ESCAPE key to make lingering text boxes disappear.



- **ANSWER VALUES:** Answers are assigned numerical values which are then tabulated to a final score seen at the bottom of the sheet. All cells are initially defaulted to "- -" which is zero points. There are no negative numbers, meaning, no answer deducts points from the overall score.

Scoring is as follows:

SIZE	
--	
Under 1 acre	1
1-3 acres	2
3-5 acres	3
5-8 acres	4

Y/N/M – Yes is positive choice	
--	
Yes	2
No	0
Maybe	1
Untested	0

N/M/Y – Yes is negative choice	
--	
No	2
Maybe	1
Yes	0

CHAPTER LAND	
--	
Ch. 61	2
Ch. 61A	2
Ch. 61B	2
No	0

TURF	
--	
Flat	5
Moderately Flat	4
Hilly	3
Steep	2
Rocky/ Ledge	1

RATING	
--	
Excellent	5
Above Average	4
Average	3
Below Average	2
Poor	1
Not Tested	0

PERMEABILITY	
--	
Very Rapid	5
Rapid	4
Medium	3
Slow	2
Very Slow	1
Not Tested	0

IMPORTANCE	
--	
Critically Important	4
Very Important	3
Important	2
Low Importance	1
Unimportant	0

- **MULTIPLIER:** The maximum subtotal in any one category is 41 points, as seen in Municipal Uses, which has the most questions. Resource criteria with fewer questions have a multiplier factored in, to bring each criteria's maximum subtotal score to 41. (This multiplier is incorporated into the locked tabulation formula & is not editable.) The purpose of the multiplier is to equalize categories with fewer questions with those with many questions. It is calculated by dividing the maximum subtotal of 41 by the highest possible score for each resource criteria. The first section with overall identifier questions (size, Chapter Land designation, etc.) does not include a multiplier. **The following table outlines the multipliers:**

Resource Criteria	Un-adjusted High Score	Multiplier	Subtotal
I. Drinking Water Resources	18	2.28	41
II. Natural Resources	26	1.57	41
III. Agriculture/Forestry	11	3.73	41
IV. Active Recreation	24	1.71	41
V. Historic Preservation	8	5.13	41
VI. Scenic Views	20	2.05	41
VII. Links/Connectivity/Trails	20	2.05	41
VIII. Accessibility	14	2.93	41
IX. Constructability	16	2.56	41
X. Zoning, Legal & Financial Criteria	16	2.56	41
XI. Municipal Criteria	41	1	41

- **COMMUNITY SURVEY PRIORITIZATION:** Here is some background on the following question in cell A4:

> **How did the 2017 Open Space and Recreation Community Survey prioritize the acquisition of this parcel?**

A community survey was conducted in the fall of 2017, receiving 382 responses from residents. One hundred twenty-six respondents answered the question, "Which, if any, of the Chapter 61 parcels would you recommend for acquisition if the Town had that option?" Responses ranged from 7 - 43 responses for each parcel. **Parcels that were recommended for acquisition are rated on the following scale:**

- 40+ recommendations = critically important
- 31 recommendations = very important
- 15 - 20 recommendations = important
- 7 - 11 recommendations = low importance

Specifically:

- Critically important - 94 Main Street, 9 Maple Street
- Very Important - 69 Cherry Street, 87 Main Street
- Important - 212 Topsfield Road, 62 Maple Street, 136 Grapevine Road, 51 Maple Street
- Low Importance - 57 Dodges Row, 96 Larch Row, Dodges Row (on Beverly line)

Note: 60 Main Street is under agreement and is no longer under consideration for acquisition. 74 Cherry Street has a Conservation Restriction in perpetuity so there is no need for acquisition and it does not need to be evaluated. There is an affordable, senior housing development proposed for a small portion of 62 Maple Street. Since only a portion of the site would potentially be removed from Chapter 61, the remainder of the site should be evaluated.

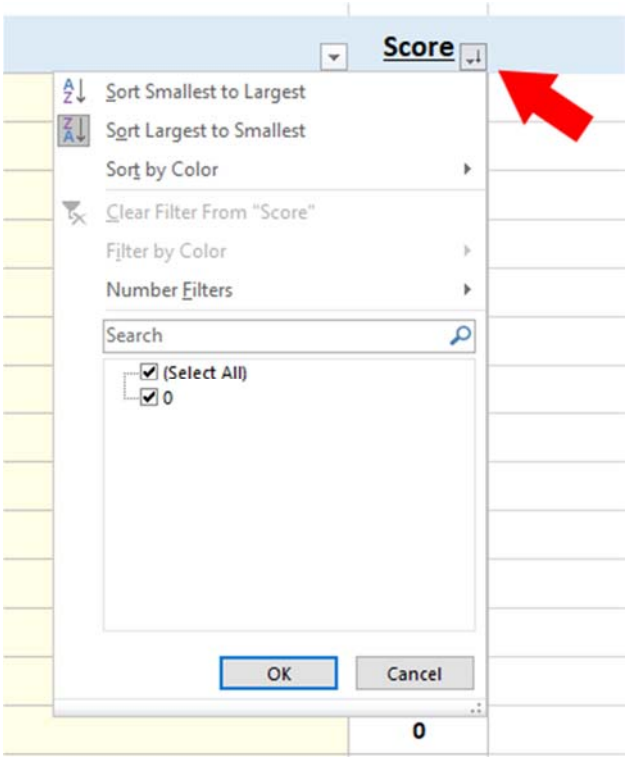
It is noted that many respondents did not answer this question, but the reason for the lack of response is unknown, whether due to lack of information regarding each parcel or lack of interest in acquisition.

PART 3 – PARCEL SCORING

- **TOTAL SCORE:** Overall scores are a total sum value of the weighted subtotals. Any question that does not seem pertinent can be left blank, with the "- -" as the default answer. If a community wishes to score only the water resource category, then leaving the other questions blank will rank only those parcels suitable for water resources. Other parcels that might be appropriate for multiple municipal uses can be ranked using all the criteria.

- The matrix was designed for municipalities to score parcels for many uses, so there is NO such thing as a perfect high score. A higher score means that a parcel is worthy of protection for a variety of reasons & uses.

- **SUMMARY PAGE:** The scores are automatically transferred to a SUMMARY page (Tab 1) – for ease of printing. To sort this tab's scores from highest to lowest, click on the small arrow next to SCORE (cell B6). Select "Sort Largest to Smallest."



- **TIP:** If the parcel name/address/parcel info is running together on the SUMMARY tab, try typing a comma & space after the parcel name & address in the MATRIX tab.

Parcel	Score
McDonald Farm,123 Main St., 10-233	142
Cortez, 5 Oak St., 05-12	140
Albert's Dairy Farm, 14 Whitlock Path, 14-17	137
NE Equestrian Ctr, 4 Maple Ln., 10-113	132
Hopedale, 27 Hemlock Dr., 14-27	127
Smith Estate, 1 First St., 06-44	111
Greyhound Rescue, 4 Elm St., 04-16	98
Jones, 3 First St., 06-45	87

PART 4 – FINAL RECOMMENDATIONS

- **PROCEDURES & RECOMMENDATIONS:** Once assessment of all parcels is complete, further discussion may be needed to review other criteria that are harder to quantify, such as development potential, hazmat or even price, before issuing a recommendation. It will then be up to the municipality to determine which parcels warrant action and which do not, as well as determine what specific action is recommended for each parcel, if any. The items below are offered as an example:

    - Sites having fewer than _____ points receive low protection efforts.*
    - Sites having _____ to _____ points receive medium protection efforts.*
    - Sites having _____ to _____ points receive high protection efforts.*
    - Sites having more than _____ points receive very high protection efforts.*

    ** The municipality will need to determine what low, medium, high & very high preservation efforts entail.*

    - **Final recommendation**
        - ❑ Zoning change
        - ❑ Acquire easement
        - ❑ Conservation restriction
        - ❑ Agricultural preservation restriction
        - ❑ Historic preservation restriction
        - ❑ Development rights
        - ❑ Land lease
        - ❑ Accept as gift/donation
        - ❑ Purchase
        - ❑ No action
        - ❑ Other _____

Appendix G. ADA Access Self-Evaluation

Part I – Administrative Requirements

1. ***Designation of an ADA Coordinator:*** Attach official designation of employee responsible for ADA coordination with name and position title and signed by the chief municipal officer.
2. ***Grievance Procedures:*** This is a procedure for the general public to follow in the event that a complaint must be made.
3. ***Public Notification Requirements:*** Employees and the public must be notified that the community does not discriminate on the basis of disability. Notification must be in a format that is accessible such as large print, simple language and in an auditory form. An "EOE" clause must also be included in any recruitment materials or publications. Please submit copies of these documents and evidence that notices were also made for the visual and learning impaired.
4. Participation of Individuals with Disabilities or Organizations Representing the Disabled Community Completion of the Self-Evaluation must involve people with disabilities. You will need their help on Part II (the Inventory).

The completion of the Self-Evaluation was done in concert with James Reynolds, ADA Coordinator. The consultant conducted site visits with Mr. Reynolds and he reviewed the completed inventories. The associated transition plans were developed jointly.

TOWN OF WENHAM

138 Main Street, Wenham, MA 01984
978-468-5520

June 5, 2018

APPOINTMENT CERTIFICATE

We, the selectmen of Wenham,
by virtue of the authority vested in us by the laws of the Commonwealth,
do hereby appoint

JAMES REYNOLDS

as

ADA COORDINATOR

The one year term will expire on **June 30, 2019**.

Catherine A. Harrison, Chair | John A. Clemenzi | John O. Wilhelm

I hereby accept this appointment.

Signature: _____

The appointee personally appeared before me and has been sworn to faithfully discharge all the duties of the office to which they were appointed.

Signature: _____
Dianne K. Bucco, Town Clerk

Date: June 11, 2018

OML ✓ ETHICS ✓

e 6/6/18

Town of Wenham

Town Hall
138 Main Street
Wenham, MA 01984

Selectmen / Town Administrator
TEL 978-468-5520 FAX 978-468-8014

GRIEVANCE PROCEDURE UNDER THE AMERICANS WITH DISABILITIES ACT

This Grievance Procedure is established to meet the requirements of the Americans with Disabilities Act of 1990 ("ADA"). This may be used by anyone who wishes to file a complaint alleging discrimination on the basis of disability in the provision of services, activities, programs, or benefits by the Town of Wenham.

The Town of Wenham's Personnel Policy governs employment-related complaints of disability discrimination. The complaint should be in writing and contain information about the alleged discrimination such as name, address, phone number of complainant and location, date, and description of the problem. Alternative means of filing complaints, such as personal interviews or a tape recording of the complaint, will be made available for persons with disabilities upon request.

The complaint should be submitted by the grievant and/or his/her designee as soon as possible but no later than 60 calendar days after the alleged violation to: James Reynolds, Town Hall, 138 Main Street, Wenham, MA, 01984.

Within 15 calendar days after receipt of the complaint, James Reynolds or his designee will meet with the complainant to discuss the complaint and the possible resolutions. Within 15 calendar days of the meeting, James Reynolds or his designee will respond in writing, and where appropriate, in a format accessible to the complainant, such as large print, Braille, or audio tape. The response will explain the position of the Town of Wenham and offer options for substantive resolution of the complaint.

If the response by James Reynolds or his designee does not satisfactorily resolve the issue, the complainant and/or his/her designee may appeal the decision within 15 calendar days after receipt of the response to the Board of Selectmen or their designee.

Within 15 calendar days after receipt of the appeal, a representative of the Board of Selectmen or their designee will meet with the complainant to discuss the complaint and possible resolutions. Within 15 calendar days after the meeting, the Board of Selectmen or their designee will respond in writing, and, where appropriate, in a format accessible to the complainant, with a final resolution of the complaint.

All written complaints received by James Reynolds or his designee, appeals to the Board of Selectmen or their designee, and responses from these two offices will be retained by the Town Clerk for at least three years.

Town of Wenham

Town Hall
138 Main Street
Wenham, MA 01984

Selectmen / Town Administrator
TEL 978-468-5520 FAX 978-468-8014

PUBLIC NOTICE

In accordance with the requirements of title II of the Americans with Disabilities Act of 1990 ("ADA"), the Town of Wenham will not discriminate against qualified individuals with disabilities on the basis of disability in its services, programs, or activities.

Employment: The Town of Wenham does not discriminate on the basis of disability in its hiring or employment practices and complies with all regulations promulgated by the U.S. Equal Employment Opportunity Commission under title I of the ADA.

Effective Communication: The Town of Wenham will generally, upon request, provide appropriate aids and services leading to effective communication for qualified persons with disabilities so they can participate equally in the Town of Wenham programs, services, and activities, including qualified sign language interpreters, documents in Braille, and other ways of making information and communications accessible to people who have speech, hearing, or vision impairments.

Modifications to Policies and Procedures: The Town of Wenham will make all reasonable modifications to policies and programs to ensure that people with disabilities have an equal opportunity to enjoy all of its programs, services, and activities. For example, individuals with service animals are welcomed in the Town of Wenham offices, even where pets are generally prohibited.

Anyone who requires an auxiliary aid or service for effective communication, or a modification of policies or procedures to participate in a program, service, or activity of the Town of Wenham, should contact the office of the Town Administrator's Executive Assistant as soon as possible but no later than 48 hours before the scheduled event.

The ADA does not require the Town of Wenham to take any action that would fundamentally alter the nature of its programs or services, or impose an undue financial or administrative burden. Complaints that a program, service, or activity of the Town of Wenham is not accessible to persons with disabilities should be directed to James Reynolds, ADA coordinator at jreynolds@wenhamma.gov; 978-468-5529; or at the COA Building.

The Town of Wenham will not place a surcharge on a particular individual with a disability or any group of individuals with disabilities to cover the cost of providing auxiliary aids/services or reasonable modifications of policy, such as retrieving items from locations that are open to the public but are not accessible to persons who use wheelchairs.

Part II – Program Accessibility

Programming
Recreation Department policy is to provide access to programs as special needs arise.

Facilities
The following facilities are those recreational and conservation facilities in Wenham under the jurisdiction of the Recreation Department and Conservation Commission;

1. Pingree Park
2. Iron Rail Fields (Grapevine Entrance)
3. Iron Rail Fields (Rt. 22 entrance)
4. Buker School Fields
5. Pleasant Pond
6. Wenham Rail Trail
7. DPW Field
8. West Wenham Field
9. Williams Conservation land (Hull Street)
10. Reynolds/Proctor Conservation land (off Larch Row)

The last two properties are under the jurisdiction of the Conservation Commission but are not recreational sites.

> Williams Conservation Land (Hull Street): This site contains 11.5 acres of wooded upland and wetlands with frontage on Hull Street. There are no facilities or marked trails at this site.
>
> Reynolds/Proctor Conservation Land (Larch Row): This site contains 34 acres, mostly open fields with some forest and with frontage on the Miles River. The site is leased for farming during the growing season. There are no trails or other recreational improvements. Should recreational improvements be planned, such as a trail or canoe launch, the issue of accessibility will be revisited.

Facility Inventory and Transition Plan
A facility inventory and transition plan for each of the recreational sites follow. The State inventory form is used; where the information is not applicable, the standard inventory page is deleted.

LOCATION: Pingree Park

This facility contains a 60-foot baseball diamond used by Little League (Cheeseman Field), another 60-foot baseball diamond, and a 90-foot baseball diamond also used for multi-purposes, a new playground, an older playground, and four tennis courts.

ACTIVITY	EQUIPMENT	NOTES
Picnic Facilities	*Tables & Benches*	*Located adjacent to accessible paths* **No**
		Access to Open Spaces **There is no accessible path to the open spaces.**
		Back and Arm Rests **The benches have backs, but no arm rests.**
		Adequate number **There are four picnic tables and several benches located throughout the park. None of the tables or benches are designed to be accessible.**
	Grills	*Height of Cooking Surface*
		Located adjacent to accessible paths
	Trash Cans	*Located adjacent to accessible paths* **No**
	Picnic Shelters	*Located adjacent to accessible paths*
		Located near accessible water fountains, trash can, restroom, parking, etc.
Trails **N/A**		*Surface material*
		Dimensions
		Rails
		Signage (for visually impaired)
Swimming Facilities **N/A**	*Pools*	*Entrance*
		Location from accessible parking
		Safety features i.e. warning for visually impaired
	Beaches	*Location from accessible path into water*
		Handrails
		Location from accessible parking
		Shade provided
Play Areas (tot lots)	*All Play Equipment i.e. swings, slides*	*Same experience provided to all* **Yes, except for surface material. The older playground equipment is located on grass, which is not an accessible surface material. The new playground has a mulch surface, which is also not accessible.**
	Access Routes	*Located adjacent to accessible paths*
		Enough space between equipment for wheelchair
Game Areas: ballfield basketball tennis	*Access Routes*	*Located adjacent to accessible paths*
		Berm cuts onto courts
	Equipment	*Height*
		Dimensions
		Spectator Seating **Cheeseman Field is the only field to have spectator seating, but no accessible spectator seating area is provided.**
Boat Docks **N/A**	*Access Routes*	*Located adjacent to accessible paths*
		Handrails
Fishing Facilities **N/A**	*Access Routes*	*Located adjacent to accessible paths*
		Handrails
	Equipment	*Arm Rests*
		Bait Shelves
		Handrails
		Fish Cleaning Tables
Programming **N/A**	*Are special programs at your facilities accessible?*	*Learn-to-Swim*
		Guided Hikes
		Interpretive Programs
Services and Technical Assistance	*Information available in alternative formats i.e. for visually impaired*	
	Process to request interpretive services (i.e. sign language interpreter) for meetings	

LOCATION: Pingree Park

NOTES: Gravel and dirt parking lot. Estimated number of spaces 35-40, but none are marked. No accessible spaces provided. Two are required.

PARKING			
Total Spaces	***Required Accessible Spaces***		
Up to 25	*1 space*		
26-50	*2 spaces* **Required, but not provided**		
51-75	*3 spaces*		
76-100	*4 spaces*		
101-150	*5 spaces*		
151-200	*6 spaces*		
201-300	*7 spaces*		
301-400	*8 spaces*		
401-500	*9 spaces*		
Specification for Accessible Spaces	***Yes***	***No***	***Comments/Transition Notes***
Accessible space located closest to accessible entrance		**X**	
Where spaces cannot be located within 200 ft of accessible entrance, drop-off area is provided within 100 ft.		**X**	
Minimum width of 13 ft includes 8 ft space plus 5 ft access aisle		**X**	
Van space – minimum of 1 van space for every accessible space, 8 ft wide plus 8 ft aisle. Alternative is to make all accessible spaces 11 ft wide with 5 ft aisle.		**X**	
Sign with international symbol of accessibility at each space or pair of spaces		**X**	
Sign minimum 5 ft, maximum 8 ft to top of sign			
Surface evenly paved or hard-packed (no cracks)	**X**		
Surface slope less than 1:20, 5%	**X**		
Curbcut to pathway from parking lot at each space or pair of spaces, if sidewalk (curb) is present			**There is no curbing.**
Curbcut is a minimum width of 3 ft, excluding sloped sides, has sloped sides, all slopes not to exceed 1:12, and textured or painted yellow			

LOCATION: Pingree Park

NOTES:

SITE ACCESS, PATH OF TRAVEL, ENTRANCES			
Specification	***Yes***	***No***	***Comments/Transition Notes***
Site Access			
Accessible path of travel from passenger disembarking area and parking area to accessible entrance		**X**	**There is no accessible path of travel to the ballfields, playgrounds, or tennis courts.**
Disembarking area at accessible entrance			
Surface evenly paved or hard-packed			
No ponding of water			
Path of Travel There Is no accessible path of travel to the ballfields, playgrounds, or tennis courts.			
Path does not require the use of stairs			
Path is stable, firm and s lip resistant			
3 ft wide minimum			
Slope maximum 1:20 (5%) and maximum cross pitch is 2% (1:50).			
Continuous common surface, no changes in level greater than ½ inch			
Any objects protruding onto the pathway must be detected by a person with a visual disability using a cane			
Objects protruding more than 4" from the wall must be within 27" of the ground, or higher than 80"			
Curb on the pathway must have curb cuts at drives, parking and drop-offs			
Entrances			
Primary public entrances accessible to person using wheelchair, must be signed, gotten to independently, and not be the service entrance			
Level space extending 5 ft. from the door, interior and exterior of entrance doors			
Minimum 32" clear width opening (i.e. 36" door with standard hinge)			
At least 18" clear floor area on latch, pull side of door			
Door handle no higher than 48" and operable with a closed fist			
Vestibule is 4 ft plus the width of the door swinging into the space			
Entrance(s) on a level that makes elevators accessible			
Door mats less than ½" thick are securely fastened			
Door mats more than ½" thick are recessed			
Grates in path of travel have openings of ½" maximum			
Signs at non-accessible entrance(s) indicate direction to accessible entrance			
Emergency egress – alarms with flashing lights and audible signals, sufficiently lighted			

LOCATION: Pingree Park

NOTES: There is one accessible, unisex restroom provided, in addition to the Ladies' restroom.

RESTROOMS – also see Doors and Vestibules			
Specification	***Yes***	***No***	***Comments/Transition Notes***
5 ft turning space measured 12" from the floor	X		
At least one Sink:			
Clear floor space of 30" by 48" to allow a forward approach	X		
Mounted without pedestal or legs, height 34" to top of rim		X	**Sink is 36.5 inches to top of the rim from the floor**
Extends at least 22" from the wall		X	**Sink is 17 inches from the wall**
Open knee space a minimum 19" deep, 30" width, and 27" high	X		
Cover exposed pipes with insulation	X		
Faucets operable with closed fist (lever or spring activated handle)	X		
At least one Stall:			
Accessible to person using wheelchair at 60" wide by 72" deep	X		
Stall door is 36" wide	X		**There are no individual stalls. Exterior door is 36 inches wide.**
Stall door swings out			**The door to the restroom swings in. It is the exterior door, as there are no individual stalls.**
Stall door is self closing	X		
Stall door has a pull latch	X		
Lock on stall door is operable with a closed fist, and 32" above the floor			**Self-locking**
Coat hook is 54" high		X	**There is no coat hook.**
Toilet			
18" from center to nearest side wall	X		**Dimension to side wall is 21 inches.**
42" minimum clear space from center to farthest wall or fixture	X		
Top of seat 17"-19" above the floor	X		
Grab Bars			
On back and side wall closest to toilet	X		
1¼" diameter	X		
1½" clearance to wall	X		
Located 30" above and parallel to the floor		X	**Grab bars are 33.5 inches above the floor.**
Acid-etched or roughened surface		X	
42" long		X	**Grab bars are 37 inches long.**
Fixtures			
Toilet paper dispenser is 24" above floor	X		
One mirror set a maximum 38" to bottom (if tilted, 42")		X	**There is no mirror.**
Dispensers (towel, soap, etc) at least one of each a maximum 42" above the floor	X	X	**The hand dryer is 42 inches above the floor, but the soap dispenser is 45 inches above the floor.**

LOCATION: Pingree Park

NOTES: There are four (4) drinking fountains.

FLOORS, DRINKING FOUNTAINS, TELEPHONES			
Specification	***Yes***	***No***	***Comments/Transition Notes***
Floors			
Non-slip surface			
Carpeting is high-density, low pile, non-absorbent, stretched taut, securely anchored			
Corridor width minimum is 3 ft			
Objects (signs, ceiling lights, fixtures) can only protrude 4" into the path of travel from a height of 27" to 80" above the floor			
Drinking Fountains There are four (4) drinking fountains			
Spouts no higher than 36" from floor to outlet		**X**	**Heights of spouts are 40", 43", 46" and 37"**
Hand operated push button or level controls	**X**		
Spouts located near front with stream of water as parallel to front as possible	**X**		
If recessed, recess a minimum 30" width, and no deeper than depth of fountain	**N/A**		
If no clear knee space underneath, clear floor space 30" x 48" to allow parallel approach	**X**		
Telephones			
Highest operating part a maximum 54" above the floor			
Access within 12" of phone, 30" high by 30" wide			
Adjustable volume control on headset so identified			

Pingree Park Transition Plan

Physical Obstacles

1. No designated accessible spaces.
2. Rough gravel/dirt parking lot.
3. No accessible, hard-packed path from parking lot to playgrounds, tennis courts, or fields.
4. Older playground area has grass surface.
5. The surface material at the new playground is mulch.
6. Accessible restroom does not meet all ADA standards, including standards relative to the sink, location of toilet, grab bars, and dispensers.
7. The Little League Field (Cheeseman Field) is fenced and the gate is not wide enough for wheelchair access.
8. Picnic tables are not accessible.
9. All four drinking fountain spouts are too high.

Necessary Changes

1. Designate two accessible parking spaces, including one van accessible space, with appropriate signage.
2. Install a hard-packed surface for the accessible parking spaces.
3. Install a hard-packed surface at least 36 inches wide to provide an accessible path of travel to the playgrounds, tennis courts, and fields.
4. If the tennis courts are upgraded and used for high school athletic events, install a hard-packed surface for one van-accessible parking space in the tennis court parking lot and designate with appropriate signage.
5. Investigate options for resurfacing of playgrounds to be accessible and improve the surface.
6. Improve the accessible restroom to meet ADA standards.
7. Install a gate with at least a 36-inch opening to provide wheelchair access to the Little League Field.
8. Provide an ADA-compliant picnic table in an appropriate location.
9. Drinking fountains – lower the spouts to 36 inches.

Schedule – FY20/21

Responsible Party – Recreation Department

LOCATION: Iron Rail Soccer Fields – Grapevine Road entrance

ACTIVITY	EQUIPMENT	NOTES
Picnic Facilities **N/A**	*Tables & Benches*	*Located adjacent to accessible paths*
		Access to Open Spaces
		Back and Arm Rests
		Adequate number
	Grills	*Height of Cooking Surface*
		Located adjacent to accessible paths
	Trash Cans	*Located adjacent to accessible paths*
	Picnic Shelters	*Located adjacent to accessible paths*
		Located near accessible water fountains, trash can, restroom, parking, etc.
Trails		*Surface material* **There is a mulched trail on the far side of the parking lot from the accessible spaces that connects the soccer fields and the two entrances. In a number of areas there is grass growing through the mulch. The surface is not accessible.**
		Dimensions **The width is generally 5 to 6 feet, but due to lack of maintenance grass reduces the useable width to only a few feet in several places.**
		Rails **Not necessary.**
		Signage (for visually impaired) **No**
Swimming Facilities **N/A**	*Pools*	*Entrance*
		Location from accessible parking
		Safety features i.e. warning for visually impaired
	Beaches	*Location from accessible path into water*
		Handrails
		Location from accessible parking
		Shade provided
Play Areas (tot lots) **N/A**	*All Play Equipment i.e. swings, slides*	*Same experience provided to all*
	Access Routes	*Located adjacent to accessible paths*
		Enough space between equipment for wheelchair
Game Areas: ballfield basketball tennis	*Access Routes*	*Located adjacent to accessible paths* **No**
		Berm cuts onto courts
	Equipment	*Height*
		Dimensions
		Spectator Seating **Spectator seating is not provided for anyone.**
Boat Docks **N/A**	*Access Routes*	*Located adjacent to accessible paths*
		Handrails
Fishing Facilities **N/A**	*Access Routes*	*Located adjacent to accessible paths*
		Handrails
	Equipment	*Arm Rests*
		Bait Shelves
		Handrails
		Fish Cleaning Tables
Programming **N/A**	*Are special programs at your facilities accessible?*	*Learn-to-Swim*
		Guided Hikes
		Interpretive Programs
Services and Technical Assistance	*Information available in alternative formats i.e. for visually impaired*	
	Process to request interpretive services (i.e. sign language interpreter) for meetings	

LOCATION: Iron Rail Soccer Fields – Grapevine Road entrance

NOTES:

PARKING			
Total Spaces	***Required Accessible Spaces***		
Up to 25	*1 space*		
26-50 **32 marked; about 50 estimated**	*2 spaces* **X required; 4 provided**		
51-75	*3 spaces*		
76-100	*4 spaces*		
101-150	*5 spaces*		
151-200	*6 spaces*		
201-300	*7 spaces*		
301-400	*8 spaces*		
401-500	*9 spaces*		
Specification for Accessible Spaces	***Yes***	***No***	***Comments/Transition Notes***
Accessible space located closest to accessible entrance		**X**	
Where spaces cannot be located within 200 ft of accessible entrance, drop-off area is provided within 100 ft.			
Minimum width of 13 ft includes 8 ft space plus 5 ft access aisle	**X**		
Van space – minimum of 1 van space for every accessible space, 8 ft wide plus 8 ft aisle. Alternative is to make all accessible spaces 11 ft wide with 5 ft aisle.		**X**	
Sign with international symbol of accessibility at each space or pair of spaces	**X**		
Sign minimum 5 ft, maximum 8 ft to top of sign		**X**	**Both signs are attached to the fence. The height at the top of the sign is 43 inches, which does not meet the 5-foot minimum.**
Surface evenly paved or hard-packed (no cracks)	**X**		**Gravel parking lot**
Surface slope less than 1:20, 5%	**X**		
Curbcut to pathway from parking lot at each space or pair of spaces, if sidewalk (curb) is present	**X**		**There are no curbs.**
Curbcut is a minimum width of 3 ft, excluding sloped sides, has sloped sides, all slopes not to exceed 1:12, and textured or painted yellow			**N/A**

LOCATION: Iron Rail Soccer Fields – Grapevine Road entrance

NOTES:

SITE ACCESS, PATH OF TRAVEL, ENTRANCES			
Specification	***Yes***	***No***	***Comments/Transition Notes***
Site Access			
Accessible path of travel from passenger disembarking area and parking area to accessible entrance		**X**	**There is no accessible path to soccer fields. There is a mulched trail on the far side of the parking lot.**
Disembarking area at accessible entrance	**X**		
Surface evenly paved or hard-packed	**X**		
No ponding of water	**X**		
Path of Travel There is no accessible path to soccer fields			
Path does not require the use of stairs			
Path is stable, firm and s lip resistant			
3 ft wide minimum			
Slope maximum 1:20 (5%) and maximum cross pitch is 2% (1:50).			
Continuous common surface, no changes in level greater than ½ inch			
Any objects protruding onto the pathway must be detected by a person with a visual disability using a cane			
Objects protruding more than 4" from the wall must be within 27" of the ground, or higher than 80"			
Curb on the pathway must have curb cuts at drives, parking and drop-offs			
Entrances			
Primary public entrances accessible to person using wheelchair, must be signed, gotten to independently, and not be the service entrance			
Level space extending 5 ft. from the door, interior and exterior of entrance doors			
Minimum 32" clear width opening (i.e. 36" door with standard hinge)			
At least 18" clear floor area on latch, pull side of door			
Door handle no higher than 48" and operable with a closed fist			
Vestibule is 4 ft plus the width of the door swinging into the space			
Entrance(s) on a level that makes elevators accessible			
Door mats less than ½" thick are securely fastened			
Door mats more than ½" thick are recessed			
Grates in path of travel have openings of ½" maximum			
Signs at non-accessible entrance(s) indicate direction to accessible entrance			
Emergency egress – alarms with flashing lights and audible signals, sufficiently lighted			

LOCATION: Iron Rail Soccer Fields – Grapevine Road entrance

NOTES: There is a small building likely used for storage of equipment that is not accessible as there are two steps and a short ramp that exceeds slope requirements.

STAIRS and DOORS			
Specification	***Yes***	***No***	***Comments/Transition Notes***
Stairs			
No open risers			
Nosings not projecting			
Treads no less than 11" wide			
Handrails on both sides			
Handrails 34"-38" above tread			
Handrail extends a minimum of 1 ft beyond top and bottom riser (if no safety hazard and space permits)			
Handgrip oval or round			
Handgrip has a smooth surface			
Handgrip diameter between 1¼" and 1½"			
1½" clearance between wall and handrail			
Doors			
Minimum 32" clear opening			
At least 18" clear floor space on pull side of door			
Closing speed minimum 3 seconds to within 3" of the latch			
Maximum pressure 5 pounds interior doors			
Threshold maximum ½" high, beveled on both sides			
Hardware operable with a closed fist (no conventional door knobs or thumb latch devices)			
Hardware minimum 36", maximum 48" above the floor			
Clear, level floor space extends out 5 ft from both sides of the door			
Door adjacent to revolving door is accessible and unlocked			
Doors opening into hazardous area have hardware that is knurled or roughened			

LOCATION: Iron Rail Soccer Fields – Grapevine Road entrance

NOTES: There is one portable toilet that is not accessible.

RESTROOMS – also see Doors and Vestibules			
Specification	***Yes***	***No***	***Comments/Transition Notes***
5 ft turning space measured 12" from the floor		X	
At least one Sink:			
Clear floor space of 30" by 48" to allow a forward approach		X	
Mounted without pedestal or legs, height 34" to top of rim		X	
Extends at least 22" from the wall		X	
Open knee space a minimum 19" deep, 30" width, and 27" high		X	
Cover exposed pipes with insulation		X	
Faucets operable with closed fist (lever or spring activated handle)		X	
At least one Stall:			
Accessible to person using wheelchair at 60" wide by 72" deep		X	
Stall door is 36" wide		X	
Stall door swings out		X	
Stall door is self closing		X	
Stall door has a pull latch		X	
Lock on stall door is operable with a closed fist, and 32" above the floor		X	
Coat hook is 54" high		X	
Toilet			
18" from center to nearest side wall		X	
42" minimum clear space from center to farthest wall or fixture		X	
Top of seat 17"-19" above the floor		X	
Grab Bars			
On back and side wall closest to toilet		X	
1¼" diameter		X	
1½" clearance to wall		X	
Located 30" above and parallel to the floor		X	
Acid-etched or roughened surface		X	
42" long		X	
Fixtures			
Toilet paper dispenser is 24" above floor		X	
One mirror set a maximum 38" to bottom (if tilted, 42")		X	
Dispensers (towel, soap, etc) at least one of each a maximum 42" above the floor		X	

Iron Rail Soccer Fields (Grapevine Road entrance) Transition Plan

Physical Obstacles

1. No van accessible parking space.
2. Signs do not meet ADA requirements in terms of height.
3. No accessible path to the soccer fields.
4. No accessible spectator area
5. No accessible restroom.
6. The trail does not have an accessible surface.

Necessary Changes

1. Change two of the accessible spaces to van accessible spaces
2. Install poles in order to place signs at the accessible spaces at the appropriate height.
3. Install a hard surface path at least 36 inches wide from the parking lot to a sideline spectator area.
4. Provide a hard surface spectator area adjacent to the accessible path large enough to accommodate multiple handicapped individuals.
5. Upgrade to at least one accessible portable toilet.
6. Install a hard-packed surface along the trail that is at least 36 inches wide.

Schedule - FY21

Responsible Party – Recreation Department

LOCATION: Iron Rail Fields – Route 22 entrance (Rubbly Road)

There are three multi-purpose rectangular fields at Iron Rail, which are accessed either from Grapevine Road or Route 22. Because there is parking at both entrances, two separate forms have been competed for this facility, one for each entrance.

ACTIVITY	EQUIPMENT	NOTES
Picnic Facilities **N/A**	*Tables & Benches*	*Located adjacent to accessible paths*
		Access to Open Spaces
		Back and Arm Rests
		Adequate number
	Grills	*Height of Cooking Surface*
		Located adjacent to accessible paths
	Trash Cans	*Located adjacent to accessible paths*
	Picnic Shelters	*Located adjacent to accessible paths*
		Located near accessible water fountains, trash can, restroom, parking, etc.
Trails		*Surface material* **There is a mulched path, which connects the soccer fields and the two entrances, but the surface is not considered accessible.**
		Dimensions
		Rails **No**
		Signage (for visually impaired) **No**
Swimming Facilities **N/A**	*Pools*	*Entrance*
		Location from accessible parking
		Safety features i.e. warning for visually impaired
	Beaches	*Location from accessible path into water*
		Handrails
		Location from accessible parking
		Shade provided
Play Areas (tot lots) **N/A**	*All Play Equipment i.e. swings, slides*	*Same experience provided to all*
	Access Routes	*Located adjacent to accessible paths*
		Enough space between equipment for wheelchair
Game Areas: ballfield basketball tennis	*Access Routes*	*Located adjacent to accessible paths* **No**
		Berm cuts onto courts
	Equipment	*Height*
		Dimensions
		Spectator Seating
Boat Docks **N/A**	*Access Routes*	*Located adjacent to accessible paths*
		Handrails
Fishing Facilities **N/A**	*Access Routes*	*Located adjacent to accessible paths*
		Handrails
	Equipment	*Arm Rests*
		Bait Shelves
		Handrails
		Fish Cleaning Tables
Programming **N/A**	*Are special programs at your facilities accessible?*	*Learn-to-Swim*
		Guided Hikes
		Interpretive Programs
Services and Technical Assistance	*Information available in alternative formats i.e. for visually impaired*	
	Process to request interpretive services (i.e. sign language interpreter) for meetings	

LOCATION: Iron Rail Fields – Route 22 entrance (Rubbly Road)

NOTES: There is parking on either side of the entrance for 15 to 20 cars and a gravel parking area for 15 to 20 cars for a total capacity of 30-40 cars. The parking is not striped and there are no accessible spaces delineated.

PARKING			
Total Spaces	***Required Accessible Spaces***		
Up to 25	*1 space*		
26-50	*2 spaces* **Required**		
51-75	*3 spaces*		
76-100	*4 spaces*		
101-150	*5 spaces*		
151-200	*6 spaces*		
201-300	*7 spaces*		
301-400	*8 spaces*		
401-500	*9 spaces*		
Specification for Accessible Spaces	***Yes***	***No***	***Comments/Transition Notes***
Accessible space located closest to accessible entrance		**X**	**No accessible spaces delineated**
Where spaces cannot be located within 200 ft of accessible entrance, drop-off area is provided within 100 ft.		**X**	**No accessible spaces delineated**
Minimum width of 13 ft includes 8 ft space plus 5 ft access aisle		**X**	**No accessible spaces delineated**
Van space – minimum of 1 van space for every accessible space, 8 ft wide plus 8 ft aisle. Alternative is to make all accessible spaces 11 ft wide with 5 ft aisle.		**X**	**No accessible spaces delineated**
Sign with international symbol of accessibility at each space or pair of spaces		**X**	**No signage**
Sign minimum 5 ft, maximum 8 ft to top of sign		**X**	**No signage**
Surface evenly paved or hard-packed (no cracks)	**X**		**Surface is hard-packed gravel.**
Surface slope less than 1:20, 5%	**X**		
Curbcut to pathway from parking lot at each space or pair of spaces, if sidewalk (curb) is present			**There are no curbs as the lot is not paved.**
Curbcut is a minimum width of 3 ft, excluding sloped sides, has sloped sides, all slopes not to exceed 1:12, and textured or painted yellow			

LOCATION: Iron Rail Fields – Route 22 entrance (Rubbly Road)

NOTES:

SITE ACCESS, PATH OF TRAVEL, ENTRANCES			
Specification	***Yes***	***No***	***Comments/Transition Notes***
Site Access			
Accessible path of travel from passenger disembarking area and parking area to accessible entrance		**X**	**There is no accessible path from the parking area to the soccer field.**
Disembarking area at accessible entrance			
Surface evenly paved or hard-packed			
No ponding of water			
Path of Travel There is no accessible path to the soccer fields			
Path does not require the use of stairs			
Path is stable, firm and s lip resistant			
3 ft wide minimum			
Slope maximum 1:20 (5%) and maximum cross pitch is 2% (1:50).			
Continuous common surface, no changes in level greater than ½ inch			
Any objects protruding onto the pathway must be detected by a person with a visual disability using a cane			
Objects protruding more than 4" from the wall must be within 27" of the ground, or higher than 80"			
Curb on the pathway must have curb cuts at drives, parking and drop-offs			
Entrances			
Primary public entrances accessible to person using wheelchair, must be signed, gotten to independently, and not be the service entrance			
Level space extending 5 ft. from the door, interior and exterior of entrance doors			
Minimum 32" clear width opening (i.e. 36" door with standard hinge)			
At least 18" clear floor area on latch, pull side of door			
Door handle no higher than 48" and operable with a closed fist			
Vestibule is 4 ft plus the width of the door swinging into the space			
Entrance(s) on a level that makes elevators accessible			
Door mats less than ½" thick are securely fastened			
Door mats more than ½" thick are recessed			
Grates in path of travel have openings of ½" maximum			
Signs at non-accessible entrance(s) indicate direction to accessible entrance			
Emergency egress – alarms with flashing lights and audible signals, sufficiently lighted			

LOCATION: Iron Rail Fields – Route 22 entrance (Rubbly Road)

NOTES: There is one portable toilet, but it is not accessible.

RESTROOMS – also see Doors and Vestibules			
Specification	***Yes***	***No***	***Comments/Transition Notes***
5 ft turning space measured 12" from the floor		X	
At least one Sink:			
Clear floor space of 30" by 48" to allow a forward approach		X	
Mounted without pedestal or legs, height 34" to top of rim		X	
Extends at least 22" from the wall		X	
Open knee space a minimum 19" deep, 30" width, and 27" high		X	
Cover exposed pipes with insulation		X	
Faucets operable with closed fist (lever or spring activated handle)		X	
At least one Stall:			
Accessible to person using wheelchair at 60" wide by 72" deep		X	
Stall door is 36" wide		X	
Stall door swings out		X	
Stall door is self closing		X	
Stall door has a pull latch		X	
Lock on stall door is operable with a closed fist, and 32" above the floor		X	
Coat hook is 54" high		X	
Toilet			
18" from center to nearest side wall		X	
42" minimum clear space from center to farthest wall or fixture		X	
Top of seat 17"-19" above the floor		X	
Grab Bars			
On back and side wall closest to toilet		X	
1¼" diameter		X	
1½" clearance to wall		X	
Located 30" above and parallel to the floor		X	
Acid-etched or roughened surface		X	
42" long		X	
Fixtures			
Toilet paper dispenser is 24" above floor		X	
One mirror set a maximum 38" to bottom (if tilted, 42")		X	
Dispensers (towel, soap, etc) at least one of each a maximum 42" above the floor		X	

Iron Rail (Route 22 entrance) Rubbly Road Transition Plan

Physical Obstacles

1. No designated accessible parking spaces.
2. No accessible path to the soccer fields.
3. No hard-packed spectator area.
4. No accessible restroom.
5. The trail does not have an accessible surface. (See Iron Rail at Grapevine Road)

Necessary Changes

1. Make 2 accessible spaces, one to be van accessible.
2. Install signs meeting ADA requirements.
3. Install a hard-packed surface path at least 36 inches wide from the parking lot to a side line spectator area.
4. Provide a hard-packed surface spectator area adjacent to the accessible path large enough to accommodate multiple handicapped individuals.
5. Upgrade to at least one accessible portable toilet.
6. Install a hard-packed trail surface that is at least 36 inches wide. (See Iron Rail at Grapevine Road)

Schedule - FY21

Responsible Party – Recreation Department

LOCATION: Buker School Fields

There are two 60-foot baseball diamonds that are programmed for Little League.

ACTIVITY	EQUIPMENT	NOTES
Picnic Facilities **N/A**	*Tables & Benches*	*Located adjacent to accessible paths*
		Access to Open Spaces
		Back and Arm Rests
		Adequate number
	Grills	*Height of Cooking Surface*
		Located adjacent to accessible paths
	Trash Cans	*Located adjacent to accessible paths*
	Picnic Shelters	*Located adjacent to accessible paths*
		Located near accessible water fountains, trash can, restroom, parking, etc.
Trails **N/A**		*Surface material*
		Dimensions
		Rails
		Signage (for visually impaired)
Swimming Facilities	*Pools*	*Entrance*
		Location from accessible parking
		Safety features i.e. warning for visually impaired
	Beaches	*Location from accessible path into water*
		Handrails
		Location from accessible parking
		Shade provided
Play Areas (tot lots)	*All Play Equipment i.e. swings, slides*	*Same experience provided to all*
	Access Routes	*Located adjacent to accessible paths*
		Enough space between equipment for wheelchair
Game Areas: ballfield basketball tennis	*Access Routes*	*Located adjacent to accessible paths* **No**
		Berm cuts onto courts
	Equipment	*Height*
		Dimensions
		Spectator Seating **No**
Boat Docks **N/A**	*Access Routes*	*Located adjacent to accessible paths*
		Handrails
Fishing Facilities **N/A**	*Access Routes*	*Located adjacent to accessible paths*
		Handrails
	Equipment	*Arm Rests*
		Bait Shelves
		Handrails
		Fish Cleaning Tables
Programming **N/A**	*Are special programs at your facilities accessible?*	*Learn-to-Swim*
		Guided Hikes
		Interpretive Programs
Services and Technical Assistance	*Information available in alternative formats i.e. for visually impaired*	
	Process to request interpretive services (i.e. sign language interpreter) for meetings	

LOCATION: Buker School Fields

NOTES:

PARKING			
Total Spaces	***Required Accessible Spaces***		
Up to 25	*1 space*		
26-50 **27 spaces**	*2 spaces* **Provided at Buker School lot.**		
51-75	*3 spaces*		
76-100	*4 spaces*		
101-150	*5 spaces*		
151-200	*6 spaces*		
201-300	*7 spaces*		
301-400	*8 spaces*		
401-500	*9 spaces*		
Specification for Accessible Spaces	***Yes***	***No***	***Comments/Transition Notes***
Accessible space located closest to accessible entrance		X	**The accessible spaces are located on the far side of the parking lot from the fields. However, the parking lot is shared with the Council on Aging (COA) and the accessible spaces are located closest to the entrance of the COA building. Cars park informally on Perkins Street for games. No accessible spaces designated.**
Where spaces cannot be located within 200 ft of accessible entrance, drop-off area is provided within 100 ft.	X		
Minimum width of 13 ft includes 8 ft space plus 5 ft access aisle		X	
Van space – minimum of 1 van space for every accessible space, 8 ft wide plus 8 ft aisle. Alternative is to make all accessible spaces 11 ft wide with 5 ft aisle.		X	**Neither space is van accessible.**
Sign with international symbol of accessibility at each space or pair of spaces	X		
Sign minimum 5 ft, maximum 8 ft to top of sign	X		
Surface evenly paved or hard-packed (no cracks)		X	
Surface slope less than 1:20, 5%		X	
Curbcut to pathway from parking lot at each space or pair of spaces, if sidewalk (curb) is present			**There is no curbing.**
Curbcut is a minimum width of 3 ft, excluding sloped sides, has sloped sides, all slopes not to exceed 1:12, and textured or painted yellow			**There is no curbing.**

LOCATION: Buker School Fields

NOTES:

SITE ACCESS, PATH OF TRAVEL, ENTRANCES			
Specification	***Yes***	***No***	***Comments/Transition Notes***
Site Access			
Accessible path of travel from passenger disembarking area and parking area to accessible entrance		**X**	**There is no paved access to the ballfields.**
Disembarking area at accessible entrance			
Surface evenly paved or hard-packed			
No ponding of water			
Path of Travel			
Path does not require the use of stairs			**There is no paved access to the ballfields.**
Path is stable, firm and s lip resistant			
3 ft wide minimum			
Slope maximum 1:20 (5%) and maximum cross pitch is 2% (1:50).			
Continuous common surface, no changes in level greater than ½ inch			
Any objects protruding onto the pathway must be detected by a person with a visual disability using a cane			
Objects protruding more than 4" from the wall must be within 27" of the ground, or higher than 80"			
Curb on the pathway must have curb cuts at drives, parking and drop-offs			
Entrances			
Primary public entrances accessible to person using wheelchair, must be signed, gotten to independently, and not be the service entrance			
Level space extending 5 ft. from the door, interior and exterior of entrance doors			
Minimum 32" clear width opening (i.e. 36" door with standard hinge)			
At least 18" clear floor area on latch, pull side of door			
Door handle no higher than 48" and operable with a closed fist			
Vestibule is 4 ft plus the width of the door swinging into the space			
Entrance(s) on a level that makes elevators accessible			
Door mats less than ½" thick are securely fastened			
Door mats more than ½" thick are recessed			
Grates in path of travel have openings of ½" maximum			
Signs at non-accessible entrance(s) indicate direction to accessible entrance			
Emergency egress – alarms with flashing lights and audible signals, sufficiently lighted			

Buker School Transition Plan

Physical Obstacles

1. No designated accessible parking spaces on Perkins Street near the baseball fields.
2. No accessible path to baseball fields from Perkins Street.
3. No hard-packed spectator area for viewing ball games.

Necessary Changes

1. Mark one designated van accessible spaces on Perkins Street with required signage.
2. Install a hard-packed surface path to the ballfields from the designated parking spaces on Perkins Street with a minimum width of 36 inches.
3. Install a hard-packed surface spectator area at both ballfield sidelines large enough to accommodate multiple handicapped individuals.

Schedule – FY21

Responsible Party – Hamilton-Wenham Regional School District; Recreation Dept.

LOCATION: Pleasant Pond Beach

ACTIVITY	EQUIPMENT	NOTES
Picnic Facilities	*Tables & Benches*	*Located adjacent to accessible paths* **There are three picnic tables with attached benches, but they are not designed to be accessible. Path is mulch, not a hard-packed surface.**
		Access to Open Spaces **No**
		Back and Arm Rests **No**
		Adequate number **No**
	Grills ***N/A***	*Height of Cooking Surface*
		Located adjacent to accessible paths
	Trash Cans ***N/A***	*Located adjacent to accessible paths*
	Picnic Shelters ***N/A***	*Located adjacent to accessible paths*
		Located near accessible water fountains, trash can, restroom, parking, etc.
Trails **N/A**		*Surface material*
		Dimensions
		Rails
		Signage (for visually impaired)
Swimming Facilities	*Pools*	*Entrance*
		Location from accessible parking
		Safety features i.e. warning for visually impaired
	Beaches	*Location from accessible path into water* **No. The access to the water is from the sandy beach.**
		Handrails **No**
		Location from accessible parking **No**
		Shade provided **Partial shade, but the location is not accessible**.
Play Areas (tot lots) **N/A**	*All Play Equipment i.e. swings, slides*	*Same experience provided to all*
	Access Routes	*Located adjacent to accessible paths*
		Enough space between equipment for wheelchair
Game Areas: ballfield basketball tennis **N/A**	*Access Routes*	*Located adjacent to accessible paths*
		Berm cuts onto courts
	Equipment	*Height*
		Dimensions
		Spectator Seating
Boat Docks	*Access Routes*	*Located adjacent to accessible paths* **There is a gravel boat-launching ramp adjacent to the beach about 30 yards before the entrance to the parking lot. The ramp has a gradual slope; however, parking is not permitted at this location. This area is also used for fishing, but there are no facilities.**
		Handrails
Fishing Facilities **N/A**	*Access Routes*	*Located adjacent to accessible paths*
		Handrails
	Equipment	*Arm Rests*
		Bait Shelves
		Handrails
		Fish Cleaning Tables
Programming **N/A**	*Are special programs at your facilities accessible?*	*Learn-to-Swim* **There are no formal programs offered. There are lifeguards.**
		Guided Hikes
		Interpretive Programs
Services and Technical Assistance	*Information available in alternative formats i.e. for visually impaired*	
	Process to request interpretive services (i.e. sign language interpreter) for meetings	

LOCATION: Pleasant Pond Beach

NOTES: There is a hard-packed gravel parking area for approximately 18-20 cars, but no spaces are designated.

PARKING			
Total Spaces	***Required Accessible Spaces***		
Up to 25	*1 space* **1 space required, but no handicapped- accessible space is designated.**		
26-50	*2 spaces*		
51-75	*3 spaces*		
76-100	*4 spaces*		
101-150	*5 spaces*		
151-200	*6 spaces*		
201-300	*7 spaces*		
301-400	*8 spaces*		
401-500	*9 spaces*		
Specification for Accessible Spaces	***Yes***	***No***	***Comments/Transition Notes***
Accessible space located closest to accessible entrance		**X**	
Where spaces cannot be located within 200 ft of accessible entrance, drop-off area is provided within 100 ft.		**X**	
Minimum width of 13 ft includes 8 ft space plus 5 ft access aisle		**X**	
Van space – minimum of 1 van space for every accessible space, 8 ft wide plus 8 ft aisle. Alternative is to make all accessible spaces 11 ft wide with 5 ft aisle.		**X**	
Sign with international symbol of accessibility at each space or pair of spaces		**X**	
Sign minimum 5 ft, maximum 8 ft to top of sign		**X**	
Surface evenly paved or hard-packed (no cracks)	**X**		
Surface slope less than 1:20, 5%	**X**		
Curbcut to pathway from parking lot at each space or pair of spaces, if sidewalk (curb) is present			**There is no curbing.**
Curbcut is a minimum width of 3 ft, excluding sloped sides, has sloped sides, all slopes not to exceed 1:12, and textured or painted yellow			**There is no curbing.**

LOCATION: Pleasant Pond Beach

NOTES:

SITE ACCESS, PATH OF TRAVEL, ENTRANCES			
Specification	***Yes***	***No***	***Comments/Transition Notes***
Site Access			
Accessible path of travel from passenger disembarking area and parking area to accessible entrance		**X**	**The path is approximately 6 feet in width and 25 feet in length to the beach. The width is sufficient, but the surface material is mulch and the beach is sand up to the water's edge.**
Disembarking area at accessible entrance			
Surface evenly paved or hard-packed		**X**	**The surface material is mulch.**
No ponding of water	**X**		
Path of Travel			
Path does not require the use of stairs			
Path is stable, firm and s lip resistant			**Surface of path is mulch.**
3 ft wide minimum			
Slope maximum 1:20 (5%) and maximum cross pitch is 2% (1:50).			
Continuous common surface, no changes in level greater than ½ inch			
Any objects protruding onto the pathway must be detected by a person with a visual disability using a cane			**N/A. There are no objects protruding into the walkway.**
Objects protruding more than 4" from the wall must be within 27" of the ground, or higher than 80"			**N/A**
Curb on the pathway must have curb cuts at drives, parking and drop-offs			**There is no curbing.**
Entrances			
Primary public entrances accessible to person using wheelchair, must be signed, gotten to independently, and not be the service entrance			
Level space extending 5 ft. from the door, interior and exterior of entrance doors			
Minimum 32" clear width opening (i.e. 36" door with standard hinge)			
At least 18" clear floor area on latch, pull side of door			
Door handle no higher than 48" and operable with a closed fist			
Vestibule is 4 ft plus the width of the door swinging into the space			
Entrance(s) on a level that makes elevators accessible			
Door mats less than ½" thick are securely fastened			
Door mats more than ½" thick are recessed			
Grates in path of travel have openings of ½" maximum			
Signs at non-accessible entrance(s) indicate direction to accessible entrance			
Emergency egress – alarms with flashing lights and audible signals, sufficiently lighted			

LOCATION: Pleasant Pond Beach

NOTES: There is one portable toilet adjacent to the parking area, but it is not accessible.

RESTROOMS – also see Doors and Vestibules			
Specification	***Yes***	***No***	***Comments/Transition Notes***
5 ft turning space measured 12" from the floor		X	
At least one Sink:			
Clear floor space of 30" by 48" to allow a forward approach		X	
Mounted without pedestal or legs, height 34" to top of rim		X	
Extends at least 22" from the wall		X	
Open knee space a minimum 19" deep, 30" width, and 27" high		X	
Cover exposed pipes with insulation		X	
Faucets operable with closed fist (lever or spring activated handle)		X	
At least one Stall:			
Accessible to person using wheelchair at 60" wide by 72" deep		X	
Stall door is 36" wide		X	
Stall door swings out		X	
Stall door is self closing		X	
Stall door has a pull latch		X	
Lock on stall door is operable with a closed fist, and 32" above the floor		X	
Coat hook is 54" high		X	
Toilet			
18" from center to nearest side wall		X	
42" minimum clear space from center to farthest wall or fixture		X	
Top of seat 17"-19" above the floor		X	
Grab Bars			
On back and side wall closest to toilet		X	
1¼" diameter		X	
1½" clearance to wall		X	
Located 30" above and parallel to the floor		X	
Acid-etched or roughened surface		X	
42" long		X	
Fixtures			
Toilet paper dispenser is 24" above floor		X	
One mirror set a maximum 38" to bottom (if tilted, 42")		X	
Dispensers (towel, soap, etc) at least one of each a maximum 42" above the floor		X	

Pleasant Pond Transition Plan

Physical obstacles

1. No designated accessible parking space.
2. Path to beach is mulch.
3. Water is only accessible from sandy beach.
4. No accessibility to pond for fishing.
5. No accessible restroom.

Necessary Changes

1. Provide one van accessible parking space as close as possible to beach path.
2. Install an ADA-compliant sign to designate the accessible space.
3. Provide an accessible path of travel from the parking lot to the beach by replacing the mulch with a hard-packed surface.
4. Provide access to the water by providing a path at least 36 inches wide with a hard-packed surface instead of sand.
5. Provide an accessible portable toilet.
6. Install a dock next to launch ramp for wheelchair access to the pond for fishing. Dock design must meet ADA requirements.

Schedule – FY21

Responsible Party – Recreation Department

LOCATION: Wenham Rail Trail, Route 97

ACTIVITY	EQUIPMENT	NOTES
Picnic Facilities	*Tables & Benches*	*Located adjacent to accessible paths*
		Access to Open Spaces
		Back and Arm Rests
		Adequate number
N/A	*Grills*	*Height of Cooking Surface*
		Located adjacent to accessible paths
	Trash Cans	*Located adjacent to accessible paths*
	Picnic Shelters	*Located adjacent to accessible paths*
		Located near accessible water fountains, trash can, restroom, parking, etc.
Trails		*Surface material* **Crushed stone and hard-packed gravel**
		Dimensions **Approximately 8 feet wide**
		Rails **None needed. Minimal slope.**
		Signage (for visually impaired) **None**
Swimming Facilities	*Pools*	*Entrance*
		Location from accessible parking
		Safety features i.e. warning for visually impaired
N/A	*Beaches*	*Location from accessible path into water*
		Handrails
		Location from accessible parking
		Shade provided
Play Areas (tot lots)	*All Play Equipment i.e. swings, slides*	*Same experience provided to all*
N/A	*Access Routes*	*Located adjacent to accessible paths*
		Enough space between equipment for wheelchair
Game Areas: ballfield basketball tennis	*Access Routes*	*Located adjacent to accessible paths*
		Berm cuts onto courts
N/A	*Equipment*	*Height*
		Dimensions
		Spectator Seating
Boat Docks	*Access Routes*	*Located adjacent to accessible paths*
N/A		*Handrails*
Fishing Facilities	*Access Routes*	*Located adjacent to accessible paths*
		Handrails
N/A	*Equipment*	*Arm Rests*
		Bait Shelves
		Handrails
		Fish Cleaning Tables
Programming	*Are special programs at your facilities accessible?*	*Learn-to-Swim*
N/A		*Guided Hikes*
		Interpretive Programs
Services and Technical Assistance	*Information available in alternative formats i.e. for visually impaired*	
	Process to request interpretive services (i.e. sign language interpreter) for meetings	

LOCATION: Wenham Rail Trail, Route 97

NOTES: There is a small, unpaved parking lot with space for approximately 6 cars on the Danvers side of the trail. No spaces are marked and there are no accessible spaces.

PARKING			
Total Spaces	***Required Accessible Spaces***		
Up to 25	*1 space* **Required, but not provided**		
26-50	*2 spaces*		
51-75	*3 spaces*		
76-100	*4 spaces*		
101-150	*5 spaces*		
151-200	*6 spaces*		
201-300	*7 spaces*		
301-400	*8 spaces*		
401-500	*9 spaces*		
Specification for Accessible Spaces	***Yes***	***No***	***Comments/Transition Notes***
Accessible space located closest to accessible entrance		**X**	
Where spaces cannot be located within 200 ft of accessible entrance, drop-off area is provided within 100 ft.		**X**	
Minimum width of 13 ft includes 8 ft space plus 5 ft access aisle		**X**	
Van space – minimum of 1 van space for every accessible space, 8 ft wide plus 8 ft aisle. Alternative is to make all accessible spaces 11 ft wide with 5 ft aisle.		**X**	
Sign with international symbol of accessibility at each space or pair of spaces		**X**	
Sign minimum 5 ft, maximum 8 ft to top of sign		**X**	
Surface evenly paved or hard-packed (no cracks)	**X**		
Surface slope less than 1:20, 5%	**X**		
Curbcut to pathway from parking lot at each space or pair of spaces, if sidewalk (curb) is present			**There is no curbing.**
Curbcut is a minimum width of 3 ft, excluding sloped sides, has sloped sides, all slopes not to exceed 1:12, and textured or painted yellow			**There is no curbing.**

LOCATION: Wenham Rail Trail, Route 97

NOTES:

SITE ACCESS, PATH OF TRAVEL, ENTRANCES			
Specification	***Yes***	***No***	***Comments/Transition Notes***
Site Access			
Accessible path of travel from passenger disembarking area and parking area to accessible entrance	**X**		
Disembarking area at accessible entrance	**X**		
Surface evenly paved or hard-packed	**X**		
No ponding of water	**X**		
Path of Travel			
Path does not require the use of stairs	**X**		
Path is stable, firm and s lip resistant	**X**		
3 ft wide minimum	**X**		
Slope maximum 1:20 (5%) and maximum cross pitch is 2% (1:50).	**X**		
Continuous common surface, no changes in level greater than ½ inch	**X**		
Any objects protruding onto the pathway must be detected by a person with a visual disability using a cane			**N/A**
Objects protruding more than 4" from the wall must be within 27" of the ground, or higher than 80"			**N/A**
Curb on the pathway must have curb cuts at drives, parking and drop-offs			
Entrances			
Primary public entrances accessible to person using wheelchair, must be signed, gotten to independently, and not be the service entrance			
Level space extending 5 ft. from the door, interior and exterior of entrance doors			
Minimum 32" clear width opening (i.e. 36" door with standard hinge)			
At least 18" clear floor area on latch, pull side of door			
Door handle no higher than 48" and operable with a closed fist			
Vestibule is 4 ft plus the width of the door swinging into the space			
Entrance(s) on a level that makes elevators accessible			
Door mats less than ½" thick are securely fastened			
Door mats more than ½" thick are recessed			
Grates in path of travel have openings of ½" maximum			
Signs at non-accessible entrance(s) indicate direction to accessible entrance			
Emergency egress – alarms with flashing lights and audible signals, sufficiently lighted			

Wenham Rail Trail Transition Plan

Physical Obstacles

1. No designated accessible parking space.
2. Parking lot is gravel and dirt.

Necessary Changes

1. Install a hard-packed surface for one van accessible parking space.
2. Install ADA-compliant sign to designate the accessible space.

Schedule – FY20

Responsible Party – DPW with Board of Selectman and Border to Boston Trail

LOCATION: DPW Field

Contains one multi-purpose rectangular field with a backstop in one corner. Size does not allow for full-sized, small ball sports. Not used significantly.

ACTIVITY	EQUIPMENT	NOTES
Picnic Facilities **N/A**	*Tables & Benches*	*Located adjacent to accessible paths*
		Access to Open Spaces
		Back and Arm Rests
		Adequate number
	Grills	*Height of Cooking Surface*
		Located adjacent to accessible paths
	Trash Cans	*Located adjacent to accessible paths*
	Picnic Shelters	*Located adjacent to accessible paths*
		Located near accessible water fountains, trash can, restroom, parking, etc.
Trails **N/A**		*Surface material*
		Dimensions
		Rails
		Signage (for visually impaired)
Swimming Facilities **N/A**	*Pools*	*Entrance*
		Location from accessible parking
		Safety features i.e. warning for visually impaired
	Beaches	*Location from accessible path into water*
		Handrails
		Location from accessible parking
		Shade provided
Play Areas (tot lots) **N/A**	*All Play Equipment i.e. swings, slides*	*Same experience provided to all*
	Access Routes	*Located adjacent to accessible paths*
		Enough space between equipment for wheelchair
Game Areas: ballfield basketball tennis	*Access Routes*	*Located adjacent to accessible paths* **There is no accessible path.**
		Berm cuts onto courts **N/A**
	Equipment	*Height*
		Dimensions
		Spectator Seating **No spectator seating is provided.**
Boat Docks **N/A**	*Access Routes*	*Located adjacent to accessible paths*
		Handrails
Fishing Facilities **N/A**	*Access Routes*	*Located adjacent to accessible paths*
		Handrails
	Equipment	*Arm Rests*
		Bait Shelves
		Handrails
		Fish Cleaning Tables
Programming **N/A**	*Are special programs at your facilities accessible?*	*Learn-to-Swim*
		Guided Hikes
		Interpretive Programs
Services and Technical Assistance	*Information available in alternative formats i.e. for visually impaired*	
	Process to request interpretive services (i.e. sign language interpreter) for meetings	

LOCATION: DPW Field

NOTES: Closest parking area is by building used for gymnasium, which is more than 200 feet away. No accessible parking spaces provided.

PARKING			
Total Spaces	***Required Accessible Spaces***		
Up to 25	*1 space*		
26-50	*2 spaces*		
51-75	*3 spaces*		
76-100	*4 spaces*		
101-150	*5 spaces*		
151-200	*6 spaces*		
201-300	*7 spaces*		
301-400	*8 spaces*		
401-500	*9 spaces*		
Specification for Accessible Spaces	***Yes***	***No***	***Comments/Transition Notes***
Accessible space located closest to accessible entrance		**X**	
Where spaces cannot be located within 200 ft of accessible entrance, drop-off area is provided within 100 ft.		**X**	**There is an area that could be used as a drop off area well within 100 feet, but an accessible path would need to be constructed**.
Minimum width of 13 ft includes 8 ft space plus 5 ft access aisle		**X**	
Van space – minimum of 1 van space for every accessible space, 8 ft wide plus 8 ft aisle. Alternative is to make all accessible spaces 11 ft wide with 5 ft aisle.		**X**	
Sign with international symbol of accessibility at each space or pair of spaces		**X**	
Sign minimum 5 ft, maximum 8 ft to top of sign		**X**	
Surface evenly paved or hard-packed (no cracks)		**X**	
Surface slope less than 1:20, 5%		**X**	
Curbcut to pathway from parking lot at each space or pair of spaces, if sidewalk (curb) is present			**N/A**
Curbcut is a minimum width of 3 ft, excluding sloped sides, has sloped sides, all slopes not to exceed 1:12, and textured or painted yellow			**N/A**

DPW Field Transition Plan

Due to the fact that the site is not significantly used and there is no plan at this time to make improvements, there is no transition plan proposed. Further, there are better facilities located elsewhere in town that are recommended for accessibility improvements.

LOCATION: West Wenham Field – Topsfield Road (AKA Higginson Park)

The site contains one tennis court, a half-size paved basketball court, and an open field, which is slightly hilly and not suitable for organized sports. It had been used as a practice soccer field at one time. The basketball court and tennis court are in poor condition.

ACTIVITY	EQUIPMENT	NOTES
Picnic Facilities **N/A**	*Tables & Benches*	*Located adjacent to accessible paths*
		Access to Open Spaces
		Back and Arm Rests
		Adequate number
	Grills	*Height of Cooking Surface*
		Located adjacent to accessible paths
	Trash Cans	*Located adjacent to accessible paths*
	Picnic Shelters	*Located adjacent to accessible paths*
		Located near accessible water fountains, trash can, restroom, parking, etc.
Trails **N/A**		*Surface material*
		Dimensions
		Rails
		Signage (for visually impaired)
Swimming Facilities **N/A**	*Pools*	*Entrance*
		Location from accessible parking
		Safety features i.e. warning for visually impaired
	Beaches	*Location from accessible path into water*
		Handrails
		Location from accessible parking
		Shade provided
Play Areas (tot lots) **N/A**	*All Play Equipment i.e. swings, slides*	*Same experience provided to all*
	Access Routes	*Located adjacent to accessible paths*
		Enough space between equipment for wheelchair
Game Areas: ballfield basketball tennis	*Access Routes*	*Located adjacent to accessible paths* **No. The site is only reached by foot over a 90-foot long dirt and gravel road with a 10% uphill grade.**
		Berm cuts onto courts
	Equipment	*Height*
		Dimensions
		Spectator Seating
Boat Docks **N/A**	*Access Routes*	*Located adjacent to accessible paths*
		Handrails
Fishing Facilities **N/A**	*Access Routes*	*Located adjacent to accessible paths*
		Handrails
	Equipment	*Arm Rests*
		Bait Shelves
		Handrails
		Fish Cleaning Tables
Programming **N/A**	*Are special programs at your facilities accessible?*	*Learn-to-Swim*
		Guided Hikes
		Interpretive Programs
Services and Technical Assistance	*Information available in alternative formats i.e. for visually impaired*	
	Process to request interpretive services (i.e. sign language interpreter) for meetings	

LOCATION: West Wenham Field – Topsfield Road (AKA Higginson Park)

NOTES: Parking is not provided. A sloped area could accommodate 2-3 cars. Spaces not delineated and no accessible spaces provided.

PARKING	
Total Spaces	***Required Accessible Spaces***
Up to 25	*1 space*
26-50	*2 spaces*
51-75	*3 spaces*
76-100	*4 spaces*
101-150	*5 spaces*
151-200	*6 spaces*
201-300	*7 spaces*
301-400	*8 spaces*
401-500	*9 spaces*

Specification for Accessible Spaces	***Yes***	***No***	***Comments/Transition Notes***
Accessible space located closest to accessible entrance		X	
Where spaces cannot be located within 200 ft of accessible entrance, drop-off area is provided within 100 ft.		X	
Minimum width of 13 ft includes 8 ft space plus 5 ft access aisle		X	
Van space – minimum of 1 van space for every accessible space, 8 ft wide plus 8 ft aisle. Alternative is to make all accessible spaces 11 ft wide with 5 ft aisle.		X	
Sign with international symbol of accessibility at each space or pair of spaces		X	
Sign minimum 5 ft, maximum 8 ft to top of sign		X	
Surface evenly paved or hard-packed (no cracks)		X	
Surface slope less than 1:20, 5%		X	
Curbcut to pathway from parking lot at each space or pair of spaces, if sidewalk (curb) is present		X	
Curbcut is a minimum width of 3 ft, excluding sloped sides, has sloped sides, all slopes not to exceed 1:12, and textured or painted yellow		X	

LOCATION: West Wenham Field – Topsfield Road (AKA Higginson Park)

NOTES:

SITE ACCESS, PATH OF TRAVEL, ENTRANCES			
Specification	***Yes***	***No***	***Comments/Transition Notes***
Site Access			
Accessible path of travel from passenger disembarking area and parking area to accessible entrance		X	**No. The site is only reached by foot over a 90-foot long dirt and gravel road with a 10% uphill grade.**
Disembarking area at accessible entrance		X	
Surface evenly paved or hard-packed		X	
No ponding of water			
Path of Travel			
Path does not require the use of stairs			
Path is stable, firm and s lip resistant		X	
3 ft wide minimum		X	
Slope maximum 1:20 (5%) and maximum cross pitch is 2% (1:50).			
Continuous common surface, no changes in level greater than ½ inch			
Any objects protruding onto the pathway must be detected by a person with a visual disability using a cane			
Objects protruding more than 4" from the wall must be within 27" of the ground, or higher than 80"			
Curb on the pathway must have curb cuts at drives, parking and drop-offs			
Entrances			
Primary public entrances accessible to person using wheelchair, must be signed, gotten to independently, and not be the service entrance			
Level space extending 5 ft. from the door, interior and exterior of entrance doors			
Minimum 32" clear width opening (i.e. 36" door with standard hinge)			
At least 18" clear floor area on latch, pull side of door			
Door handle no higher than 48" and operable with a closed fist			
Vestibule is 4 ft plus the width of the door swinging into the space			
Entrance(s) on a level that makes elevators accessible			
Door mats less than ½" thick are securely fastened			
Door mats more than ½" thick are recessed			
Grates in path of travel have openings of ½" maximum			
Signs at non-accessible entrance(s) indicate direction to accessible entrance			
Emergency egress – alarms with flashing lights and audible signals, sufficiently lighted			

West Wenham Field Transition Plan

There is no transition plan proposed for the following reasons:

a) Accessibility to the field area is cost-prohibitive due to the steep slope.
b) The field itself is constrained dimensionally.
c) Due to the site configuration, there is no parking provided.
d) There are no improvements planned for this site.
e) There are better facilities located elsewhere in town that are recommended for accessibility improvements.

Part III: Employment Practices

Please have the ADA Coordinator for your community sign a statement attesting to the fact that the city or town's employment practices are in compliance with the Americans with Disabilities Act. The following major categories must be included in this statement: Recruitment, Personnel Actions, Leave Administration, Training, Tests, Medical Exams/Questionnaires, Social and Recreational Programs, Fringe Benefits, Collective Bargaining Agreements, and Wage and Salary Administration.

James Reynolds
COA Director, Outreach and ADA Coordinator
Council on Aging
10 School Street]
Wenham, MA 01984

Part III: Employment Practices Statement

As the ADA Coordinator for the Town of Wenham, I attest to the fact that the Town of Wenham's employment practices are in compliance with the Americans with Disabilities Act including recruitment, personnel actions, leave administration, training, tests, medical exams/questionnaires, social and recreational programs, fringe benefits, collective bargaining agreements, and wage and salary administration.

Signature
James Reynolds, ADA Coordinator

7/25/2018
Date