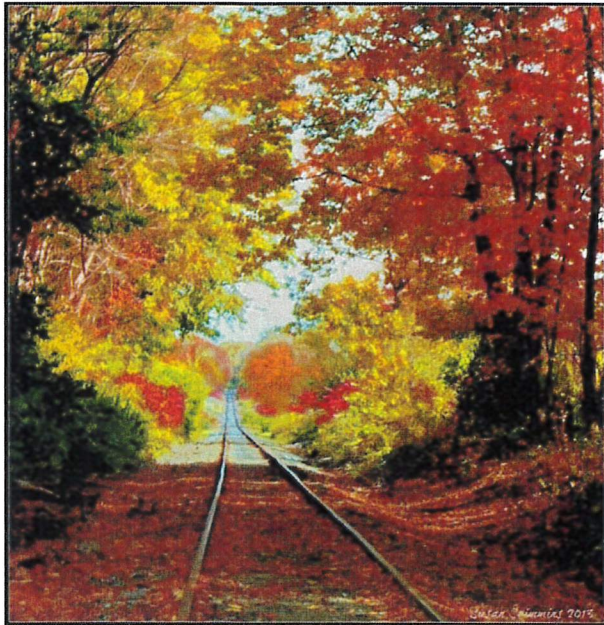


Town of Greenland, NH



2021 Master Plan Update

Adopted 03.2021



Photos Courtesy of Chief Tara Laurent, Greenland Police Department

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Note: The Coastal Hazards and Adaptation Chapter, prepared by the Rockingham Planning Commission, was adopted by the Planning Board on April 19, 2018, and is considered a part of this Master Plan.



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CERTIFIED COPY – 2021 Master Plan Update

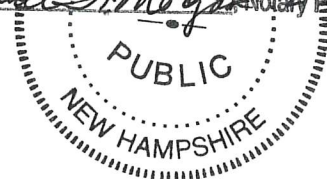
The Planning Board certifies that the 2021 Master Plan Update was adopted at the public hearing held Thursday, March 04, 2021.

NAME	POSITION	SIGNATURE
Steve Gerrato	Co-Chairman	<i>Stephen Gerrato</i>
Stu Gerome	Co-Chairman	<i>Stu Gerome</i>
Frank Catapano	Member	<i>Frank Catapano</i>
John McDevitt	Member	<i>John McDevitt</i>
Catie Medeiros	Member	<i>Catie Medeiros</i>
Dave Moore	Member	<i>Dave Moore</i>
Steve Smith	Board of Selectmen's Rep	<i>Steve Smith</i>
Bob Dion	Alternate	<i>Bob Dion</i>

County of Rockingham, ss.
State of New Hampshire
On this 4th day of March, 2021

noted above
known to me or proven to be the instrument subscriber,
personally appeared before me and acknowledged that
he/she executed the foregoing instrument.

Marquitta Mayhew Notary Public



Chapter One: Community Survey

During early summer of 2019, a community wide survey was undertaken to gauge citizen's opinions on land use related issues in Greenland. To reach out to the community to the maximum extent possible, paper surveys were mailed to 1,971 Town residents. To collect the responses, Survey Monkey was used to create an easy tabulation program. Residents could either complete the survey online or submit the written survey that was then entered into Survey Monkey.

A total of 368 responses were received, resulting in a response rate of 18.6%. The full survey responses are outlined in the Appendix; they are partially summarized here.

- Encourage/support the development of single-family homes, in open space developments.
- Treasure the semi-rural atmosphere, location, school system, low tax rate and natural resources.
- Protect the community's water supply.
- Growth rates should be monitored to ensure increases are appropriate.
- To diversify the tax rate, encourage non-residential development along Rt. 33.
- Overwhelming support to address traffic concerns along Rt. 33 within the next five years. In addition, the safety of the intersections of Breakfast Hill Road and Post Road should be investigated.
- Additional recreation opportunities are needed in Town, including increasing access to Great Bay.
- Town services are strongly supported, including the Police, Transfer Station, School System, Town Administration, snow removal and the Fire Department.

The survey questions, responses and written comments can be found in the Appendix.

Chapter Two: A Vision for Greenland

The Visioning Process

RSA 674:2 sets forth the purpose and description of a Master Plan, stating at a minimum a Master Plan shall include a vision and land use section. Section (a) states *“a vision section that serves to direct the other sections of the plan. This section shall contain a set of statements which articulate the desires of the citizens affected by the Master Plan, not only for their locality but for the region and the whole state. It shall contain a set of guiding principles and priorities to implement that vision.”*

To obtain community input, the Planning Board developed a comprehensive survey which was mailed to 1,971 residents as well as being available on the Town’s website. The surveys were collected over a four-week period and resulted in 368 responses, an 18.6% response rate.

Visioning Process Highlights

From the data received in the various outreach efforts, a few trends emerged that had strong support from the vast majority of the respondents. When asked “What do you consider the most desirable features of Greenland?”, the top responses included:

- a. Semi-rural atmosphere
- b. Location/seacoast area
- c. School System
- d. Tax Rate
- e. Natural Resources

Overall Community Vision

The following points are intended to reflect the vision of the citizens of Greenland regarding the overall growth and development of the Town; they are the overarching characteristics that define the quality of life, citizenry and social fabric of the community. The citizens of Greenland want a town with the following key characteristics:

- Encourage/support the development of single-family homes, in open space developments.
- Protect the community’s water supply.
- Growth rates should be monitored to ensure increases are appropriate.
- To diversify the tax rate, encourage non-residential development along Rt. 33.
- Overwhelming support to address traffic concerns along Rt. 33 within the next five years.

- Additional recreation opportunities are needed in Town, including increasing access to Great Bay.
- Town services are strongly supported, including the Police, Transfer Station, School System, Town Administration, snow removal and the Fire Department.

Moving forward, planning-related policy initiatives should consider the following:

- Low impact development should be encouraged.
- Appropriate land use regulations can guide new development at a rate and in locations that will maintain the “look and feel of our Town”.
- Respect and maintain important environmental features in the community.
- Improvements to dangerous intersections should be addressed through a thoughtful planning process.
- The protection of our aquifers is critical to meeting the current and future needs for water.
- The availability of recreational assets for all age groups should be maintained and when appropriate, expanded to meet demand.
- School enrollment levels and projections should continue to be monitored to anticipate potential capital facility needs.
- Continue to maintain and support scheduled repairs, maintenance and improvements for the Town’s roads and bridges.
- Continue to utilize the Capital Improvement Program as an efficient means of prioritizing the Town’s expenditures for community facilities and maximize the communication among those preparing the program and the participation of the community in the preparation process.
- A diverse, vibrant economy is essential in order to have a diverse tax base; commercial & industrial uses should be encouraged.
- Key roads and intersections in the community should be analyzed for necessary improvements.
- Recognize Greenland's place in the seacoast region and consider opportunities for joint planning with neighboring towns.

Chapter Three: Population and Housing

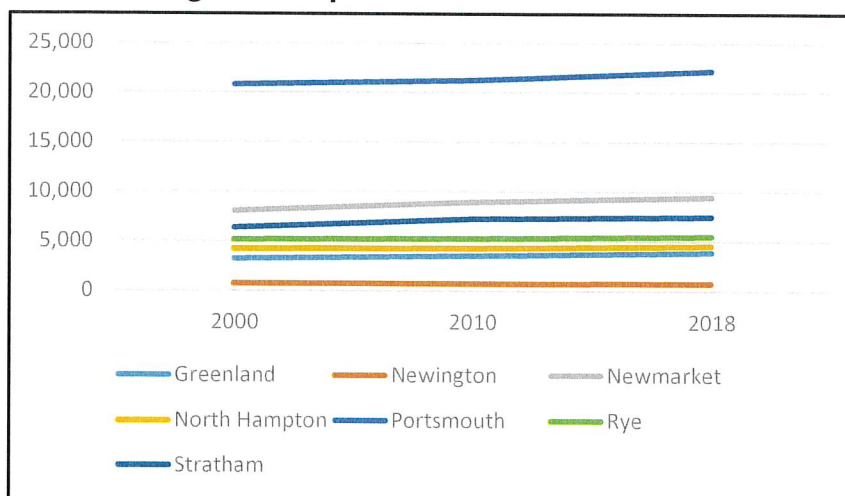
Population

Since 2000, the Town of Greenland's population has increased by 21.1% as outlined in Table One and Figure One. Over this timeframe, Greenland ranked first in the region in the rate of population growth. Although all communities have increased in population, dramatic increases have not been seen.

Table One
Population Trends 2000 - 2018¹

Population				2010 - 18
Town	2000	2010	2018	% Change
Greenland	3,208	3,549	3,886	9.50%
Newington	775	753	799	6.11%
Newmarket	8,027	8,936	9,455	5.81%
North Hampton	4,249	4,301	4,579	6.46%
Portsmouth	20,784	21,233	22,166	4.39%
Rye	5,143	5,298	5,494	3.70%
Stratham	6,355	7,255	7,492	3.27%
Region	45,333	47,776	49,985	4.62%

Figure One
Regional Population Trends 2000-2018



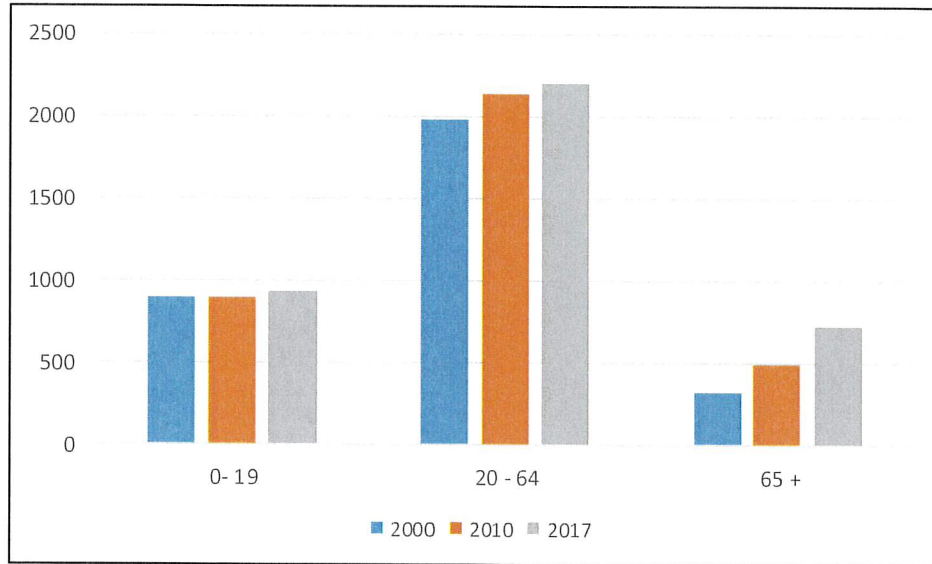
As with many communities in New Hampshire and New England, Greenland is greying and is doing so rapidly. As outlined in Table Two and Figure Two, since 2000 those under the age of 19 have only increased by 3.7 % while those over the age of 65 have increased by 44%. Surprisingly, the median age has only increased 5.6 years over the 17-year time frame.

¹ US Census Bureau, American Factfinder 2013-2017 American Community Survey & OEP

**Table Two
Age Trends**

Age Range	2000	2010	2017	% Change 2010 - 2017
0- 19	898	900	934	3.78%
20 - 64	1985	2147	2209	2.89%
65 +	323	502	723	44.02%
Median Age	38.1	43.8	43.7	

**Figure Two
Age Profile**



This aging trend may not only impact school enrollments, but also the real estate market. If a significant number of over 65 residents decide to downsize or relocate within the short timeframe, the market may become oversaturated with homes impacting pricing and time on market. In addition, the need to address services related to older residents may increase, placing further demands on some Town departments.

Housing

As a semi-rural community, single family homes dominate as the main housing type in Greenland, with multi-family units significantly lower. There are no manufactured housing units in Greenland. Table Three summarizes the housing types in the community.

Since 2010, Greenland has added 271 housing units, increasing its housing stock by 17.67%. Based upon regional housing data, Greenland ranked first out of seven regional communities in new housing growth. In addition, the community has the third highest percentage of single-family homes in the region and the third lowest percentage of multi-family housing units as outlined in Table Three.

Table Three
Regional Housing Growth Rates²

Town	2010	2017	% Change	% Totals
Greenland				
Single Family	1,077	1,304		76.8%
Duplex & Multi	350	394		23.2%
Total	1,443	1,698	17.67%	
Newington				
Single Family	237	255		73.9%
Duplex/Multi/Other	85	90		26.1%
Total	322	345	7.14%	
Newmarket				
Single Family	1,677	1,638		38.3%
Duplex/Multi/Other	2,266	2,636		61.7%
Total	4,140	4,274	3.24%	
North Hampton				
Single Family	1,450	1,573		81.8%
Duplex/Multi/Other	146	349		18.2%
Total	1,914	1922	0.42%	
Portsmouth				
Single Family	4,219	4,320		38.4%
Duplex/Multi/Other	6,078	6,919		61.6%
Total	10,625	11,239	5.78%	
Rye				
Single Family	2,298	2,355		80.7%
Duplex/Multi/Other	449	563		19.3%
Total	2,852	2,918	2.31%	
Stratham				
Single Family	2,093	2214		76.0%
Duplex/Multi/Other	704	699		24.0%
Total	2,864	2,913	1.71%	

² NH Office of Strategic Initiatives

Workforce Housing

The Workforce Housing legislation took effect on January 1, 2010 (RSA 674:58 – 674:61). This statute requires communities to allow for “a reasonable and realistic opportunity for the development of workforce housing, including multi-family housing”. Owner occupied workforce housing units must be permitted in the largest area zoned for residential uses. In addition, multi-family uses (at least five units per building) must be permitted, although a specific minimum land area is not required.

For the Town of Greenland, workforce housing is defined as being affordable to a family earning \$94,300³ a year (owner occupied), which translates into a maximum affordable home purchase price of approximately \$312,500. For renters, the maximum affordable rent for the region is \$1,270 a month including utilities with a maximum income of \$50,920 (60% of median area income). Over the last 12 months the median price for a single-family home in Greenland was \$840,400 and the median condominium price was \$423,000. At this time (November 2019), there are 17 single family homes on the market with the least expensive listed at \$368,000; there are only two condominiums presently on the market with the least expensive listed at \$349,500. Obtaining reliable data on the current rental market is very difficult, with few units listed for rent. Five units were found on Craigslist, with three being single family homes. One studio was listed at \$1,200 a month. The current market conditions in Greenland are placing pressures on the availability of workforce housing units in the community.

Workforce housing applications that are denied or are approved with conditions that have a substantial adverse effect on the viability of a project have the right to petition the court for a hearing within six months. If a hearing is not granted within this time frame, a referee may be appointed to decide the case. The statute does provide a provision that allows communities to take into consideration their existing housing stock if it is “sufficient to accommodate its fair share of the current and reasonable foreseeable regional need”. If such a finding is determined, then “the municipality shall be deemed to be in compliance with....the statute”.

In 2015 the Rockingham Regional Planning Commission adopted the Regions’ Master Plan, including a Housing Chapter that included a Housing Needs Assessment. New Hampshire Housing Finance Authority and NH Center for Public Policy developed a housing needs model taking into consider demographic employment trends. Based on this analysis the model estimated that Greenland would need to add 46 “affordable” workforce housing units (owner and renter) by the year 2020.

Soils in Greenland can be very challenging for housing development, including multi-family. This is especially true when on-site septic and wells are proposed. Access to municipal sewer is limited to two commercial properties in Greenland. The City of Portsmouth supplies water to some portions of the community, but a majority of Greenland is served by on-site wells. These environment conditions must be taken into consideration if higher density workforce housing is going to be permitted. Multi-family housing is allowed by Special Exception in the Commercial A zone. Duplex units are allowed by Conditional Use Permit (CUP) in the Residential R and Commercial A zone.

³ HUD & NHHFA income and purchase price estimate, 2019.

Recommendations

1. In areas where sewer is presently available, consider allowing multi-family housing with a provision to set aside 20 – 25% of the units as workforce.
2. Review areas in the community with access to public water and if adequate soils exist, consider allowing multi-family housing with 20-25% of the units set aside for workforce housing.
3. In the R Zone, consider allowing a 20% density bonus if half of the increased density is allocated to workforce housing.
4. Consider reducing the density for duplex units, if one of the units is allocated for workforce housing.

Chapter Four: Community Facilities

Police Department

The Greenland Police Station was constructed in 2002 and totals 6,709 square feet (first floor 4,514 square feet and 2,257 square feet). The station sits on a 1.62-acre site.

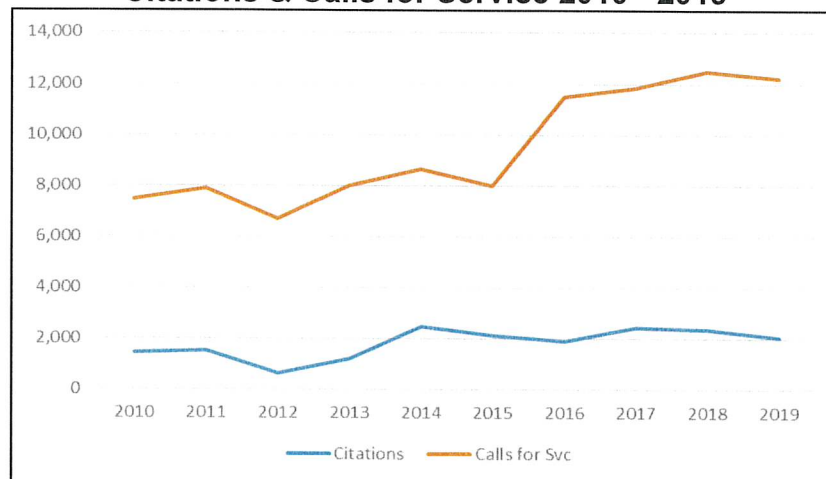
The Police Department presently has a staff of eight full time officers, five part-time officers, and one administrative assistant/dispatcher. In 2010 the Police Department responded to 7,465 calls for service, which has risen to 12,216 in 2019, representing a 63.6% increase over the 10-year period time period as detailed in Table One and Figure One.

Table One
Call Volume 2010 - 2019

Year	Citations	Arrests	Incidents	Accidents	Calls for Svc
2010	1,438	102	273	123	7,465
2011	1,537	116	229	134	7,893
2012	651	80	241	89	6,719
2013	1,197	53	160	116	8,004
2014	2,478	103	168	109	8,668
2015	2,146	47	167	133	8,013
2016	1,905	65	162	122	11,506
2017	2,445	58	144	128	11,842
2018	2,358	68	143	146	12,481
2019	2,046	73	150	133	12,216

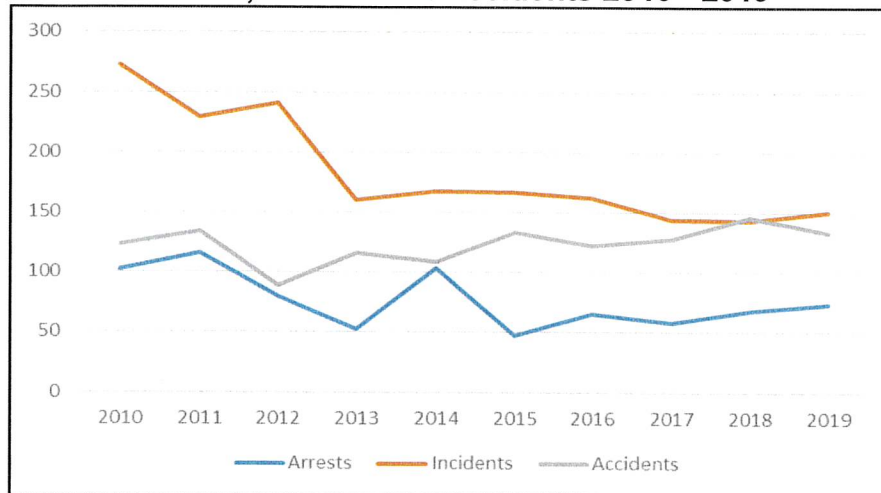
Although Calls for Service have seen a dramatic increase since 2010, citations have remained fairly stable.

Figure One
Citations & Calls for Service 2010 - 2019



Arrests and incidents have declined since 2010, while the quantity of accidents have ranged from 100 to 150 a year; see Figure Two.

Figure Two
Arrests, Incidents & Accidents 2010 - 2019



The Police Chief feels staffing levels are presently adequate to meet present needs in the community. However, as the Town continues to grow the necessity for additional staffing may increase. The existing police station should meet the department's needs for the foreseeable future.

Fire Department

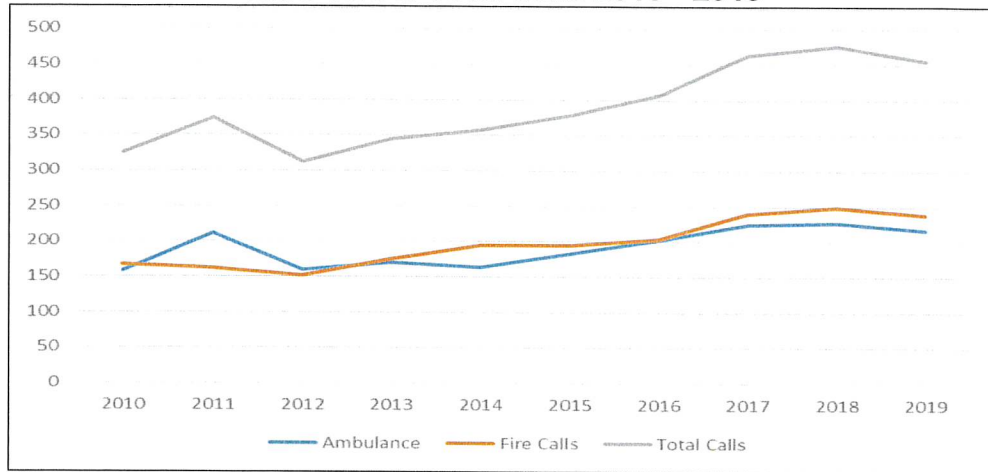
The Greenland Central Fire Station is located behind the Municipal Offices on Town Square. Present staffing includes two full-time employees and 15 on-call volunteer paid staff. The department provides both fire and ambulance services to the community. The Fire Chief noted maintaining an on-call fire department has been challenging in today's environment and it is believed that over time, more full-time staff will be required in order to adequately respond to daily emergency calls.

Calls to the department have grown over the last 10 years as detailed in Table Two and Figure Three. Overall calls have increased 40.3%, with ambulance calls increasing 37.3% and fire related calls increasing 43.1%.

Table Two
Call Volume 2010-2019

Fire Calls	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ambulance	158	212	160	170	164	183	203	224	227	217
Fire Calls	167	162	152	175	194	195	204	240	249	239
Total Calls	325	374	312	345	358	378	407	464	476	456

**Figure Three
EMS-Fire & Total Calls 2010 - 2019**



The Fire Department has mutual aid agreements with North Hampton, Stratham, Newington, and Portsmouth as well as with Pease Air National Guard for fire and EMS backup. Additionally, the department has a contract with Exeter Hospital to provide paramedic response to specific types of medical emergencies.

Table Four outlines the community's major fire apparatus.

**Table Four
Major Fire Apparatus**

Vehicle Description	Condition
2007 Spartan Pumper	New
2013 Ambulance	Excellent
2003 Ford F250	Good
2016 KME Reel Truck	Excellent
1987 MCK (Fire Engine)	Good
2009 Mack Tanker	Good

Future Needs

The Fire Department facility was built in 1981 with a 3,000 square foot bay area and 1,200 square feet devoted to office space. New siding was recently installed around the perimeter of the building. Over the last few years, the need for a new fire station has been discussed. The most recent design outlined a 12,254 square foot fire station consisting of an eight bay 9,456 square foot first floor building that included areas for offices, meeting space and gear storage. In addition, a 2,798 square foot second floor is planned that would include a meeting room, bunk rooms and storage areas. No decisions have been made relative to these plans, but it is anticipated that the voters will be asked to support a new facility in the near future.

Highway Department

The Town Highway Maintenance Garage is a 2,400 square foot warehouse type structure built in 1985. It includes three garage bays used for equipment repair as well

as serving as a storage area for the highway truck and associated equipment. In addition, there is a separate Public Works Garage, located next to the Fire Station. It is a small building that serves to hold winter maintenance equipment owned by a private contractor who maintains the roads in the winter. The Town currently does not have a Road Agent or Public Works Director. The Selectmen's designee handles any issues regarding Greenland's 30 +/-miles of road by contracting out snow plowing, road paving, culvert maintenance, line painting, and other such projects. Money is requested from the voters each year to add to the Road Capital Reserve Fund for upgrades to Town roads consistent with the Pavement Condition Assessment completed by Underwood Engineers in 2016.

Future Needs

No long-term improvements to the 2,400 square foot Town Highway Maintenance Garage are planned, as the building may potentially be demolished in the future; it is the possible site of a proposed new fire station. The Public Works Garage is in need of some exterior renovations including siding.

Town Administrative Services

The Town's Administrative Services are located in the Town Offices. The one-story building totals 3,444 square feet and is attached to the Fire Department. The building, constructed in 1979, sits on 13.9 acres of land.

Future Needs

The HVAC system is out of date and upgrades should be considered in the near future. Space may also be a limiting factor as the Town grows and staffing needs increase. The building has limited storage for sensitive files that need to be retained. Board meetings sometimes fill the conference room to capacity and as such, additional space for meetings would be beneficial.

Weeks Public Library

The voters recently approved a major 8,470 square foot addition and renovation to the Library with groundbreaking occurring in 2020. The project will address many ongoing space needs and will provide ample space for years to come. The facility will provide additional meeting space options for community groups.

Greenland Central School

The Greenland Central School is located on a 9.5-acre Post Road parcel, comprising of approximately 90,000 square feet of space. The School provides educational services for approximately 420 students in grades pre-K to 8. The School has the capacity of 525 students. Students in grades 9-12 attend Portsmouth High School under an Authorized Regional Enrollment Area (AREA) agreement; at this time, the annual per student cost of \$17,800. Since initial construction of the Greenland Central School in 1921 (currently the stone portion of the building), the School has been renovated and additions have been completed in the years of 1954, 1965, 1994, and 2004. The school employs 46 full/part-time employees and 29 support staff.

The School property provides opportunities for outdoor education, academic enrichment, and recreation. The recreation facilities include a gymnasium, a stage, a multipurpose room, and two irrigated athletic fields. An extensive playground facility provides activity space for all students that attend the School as well as Town residents. The facility also holds Town meetings, various special events, Scouts training, and serves as the Town's emergency shelter in the instance of natural or man-made disaster.

In 2017 the Greenland School Board adopted a Class Size Guideline as follows: Grades K – 2: 15 to 18 students; Grades 3 – 5: 17 to 20 student and grades 6 - 8: 18 to 22 students.

Since 2010, elementary enrollments have increased 18.3%, while high school enrollment has increased by 8.2% as outlined in Table Five.

Table Five
School Enrollments 2010 - 2019

Schools	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
K to 8	355	364	375	391	397	394	397	416	413	421
9 to 12	158	153	157	156	154	159	158	168	166	171
Total	513	517	532	547	551	553	555	584	579	591

Future Needs

The general condition of the school facilities is very good. Short term improvements currently deemed necessary include adding a new wall in the media center to create a new classroom, removing a wall in Room 105 in order to create a classroom and general roof maintenance.

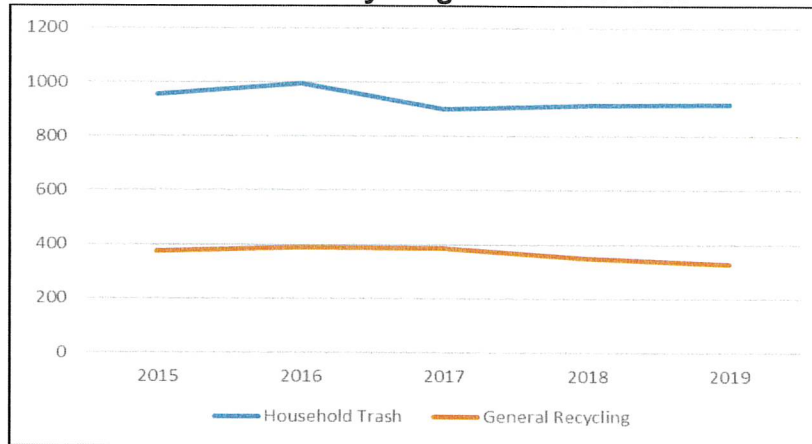
Recycling, Composting and Brush Dump

Located behind the Municipal Offices is the Town Recycling Facility/Transfer Station, and includes a trash compactor, a brush dump and a recycling area. Since 2015, the quantity of materials handled at the facility has been declining, with trash quantities declining 3.7% and recycling 12.5% as outlined in Table Six and Figure Four. This trend is somewhat surprising, given that the community has been growing in population, albeit slowly.

Table Six
Transfer Facility Material Trends

	2015	2016	2017	2018	2019
Household Trash	954	994	899	914	918
General Recycling	376	391	385	351	329

Figure Four
Trash and Recycling Trends 2015-19



Chapter Five: Transportation

The region's transportation network plays a critical role in shaping the quality of life in Greenland. Although the Town is bisected by Interstate 95, it is NH Route 33's division of the community that plays a greater day to day role in impacting the daily lives of Greenland's residents. Even though Route 33 has been highlighted time and again for improvements in both local, regional, and State improvement plans, little progress has been made in addressing peak AM and PM traffic congestion that has inflicted Greenland. The unmitigated explosive growth of Pease (2.2 million square feet of space), which has brought unparalleled economic growth to the region, has been both a blessing and a curse. While the State and the City of Portsmouth have enjoyed bountiful revenues from such development, traffic related impacts to the Town of Greenland have been ignored or excused away citing 'federal restrictions' buried within Pease's founding paperwork. Although other transportation related issues certainly need attention within the community, Greenland citizens left no doubt in their responses to the Master Plan survey that the traffic related impacts along NH Route 33 impacts their lives daily and must be addressed immediately.

Transportation Network

Roads

Situated on the seacoast area of New Hampshire, Greenland's transportation infrastructure is largely focused on vehicular travel. The two major highways are Route 33 running east to west and Route 151 running north to south. Interstate 95 runs north to south through the eastern section of the Town; however, there is no access within Greenland's borders. Subsidiary roads include Winnicut Road to Stratham off Route 33 and Breakfast Hill Road serving Rye from Route 151. Based on NHDOT data, Greenland maintains 36.04 miles of Class V roads, with 8.94 miles of non-maintained Class VI roadways. State Class II roadways total 13.75 miles.

Table One outlines traffic counts for roads with the highest volume of traffic in Greenland. NH Route 33 has the highest volumes of traffic, with activity remaining relatively consistent over the last five years.

**Table One – Average Annual Daily Trips
Greenland 2015 - 2019**

Location	2015	2016	2017	2018	2019
NH 33 & Willowbrook		16,106			13,090
NH Rt. 22 Ocean Rd. at Portsmouth TL	29,000		30,172		29,348
Breakfast Hill Rd. E. of NH 151	3,605		3,037		3,135
NH 151/Ports. Ave & Rt. 33 (near DD)		6,093		5,354	5,418
NH 33 at Winnicut River		21,012	20,080		20,728

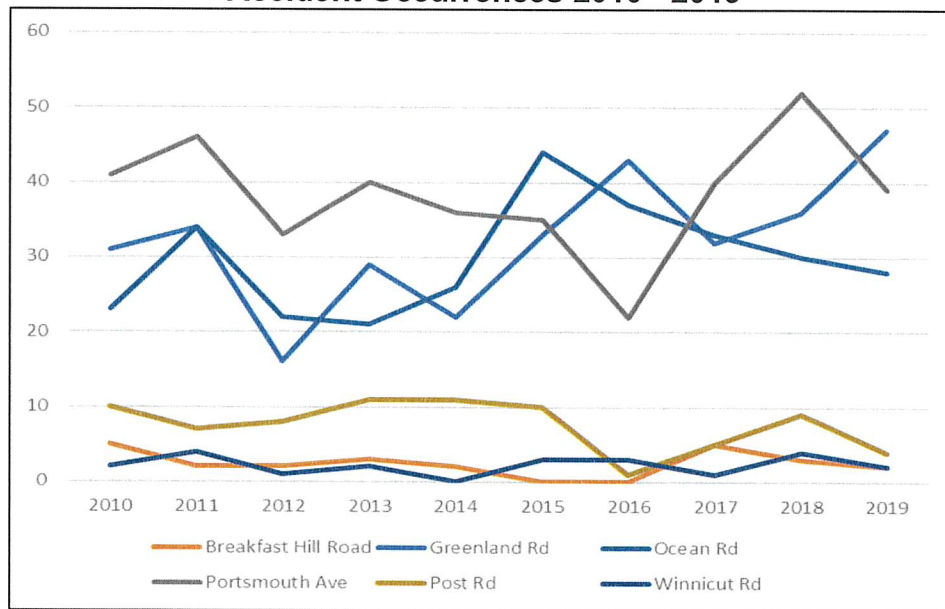
Safety

Table Two & Figure One highlight streets with the greatest accident rates over the last 10 years. Portsmouth Avenue and Greenland Road have the highest accident rates, followed by Ocean Road and Post Road.

Table Two
Accidents 2010-2019

Road	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Totals
Breakfast Hill Road	5	2	2	3	2	0	0	5	3	2	24
Greenland Rd	31	34	16	29	22	33	43	32	36	47	323
Ocean Rd	23	34	22	21	26	44	37	33	30	28	298
Portsmouth Ave	41	46	33	40	36	35	22	40	52	39	384
Post Rd	10	7	8	11	11	10	1	5	9	4	76
Winnicut Rd	2	4	1	2	0	3	3	1	4	2	22

Figure One
Accident Occurrences 2010 - 2019



Reviewing key intersection data along Route 33, Table Three outlines the level of accidents at four key intersections. The Winnicut Road intersection has the highest level of accidents and is currently operating at a Level of Service F.

Table Three
Accidents at Four Key Intersections

Intersection	2017	2018	2019	2020	Totals
Dearborn Road / Willowbrook Avenue / Rt. 33	1	2	6	3	12
Van Etten Drive / Rt. 33	2	3	4	1	10
Cushman Way / Rt. 33	0	3	1	1	5
Winnicut Road / Rt. 33	4	12	5	4	25

Key Transportation Considerations

Pavement Condition Assessment

Proper maintenance of local roads is critical to controlling future capital costs for municipalities. As roads age, the cost to repair accelerates to the point where the only solution is to rebuild the roadway, which is a very expensive solution. Staying ahead of road maintenance challenges will save tax dollars in the long run, avoiding costly road rebuilding projects.

To that end, the Board of Selectmen initiated a Pavement Condition Assessment Analysis in 2016 for all of Greenland's roads with the objective to:

- Inventory and assess the Town's roadways.
- Develop a weighted rating system to help establish a hierarchy for maintenance and repairs.
- Develop a priority list for road repairs and maintenance.
- Determine appropriate repair strategies for different road conditions.
- Develop a 10-year CIP for roadway repairs and maintenance.
- Develop a recommended yearly budget for road repairs and maintenance.

Funding priorities are a constant struggle in any municipality but avoiding necessary road repairs will only increase future costs for Greenland residents. Following the recommendations outlined in the Pavement Report, in the long run, will reduce major road repairs costs.

Route 33

The Route 33 corridor has been the focus of traffic analysis for years. The 2007 Master Plan noted a 1991 Kimball-Chase/NHDOT study on the then Route 101 (Route 33) to identify problem areas along the roadway. Nine areas of concern were identified, four of which were located within Greenland. The study prioritized the Route 151 intersection, Winnicut Road/Bayside Road intersection, Portsmouth Avenue/Tuttle Lane intersection and Ocean Road.

In 2018, the community learned of a proposed 1,200,000 square foot development at Pease (a 35% increase in building area at the industrial park). Given concerns raised in the community as to the potential increased impacts associated with such a large development, Vanasse & Associates, Inc. was hired to evaluate three key intersections along the Route 33 corridor. They included Greenland Road/Ocean Road; Portsmouth Avenue/Rt. 151 and Rt. 33/Winnicut Road/Bayside Road. Both the Ocean Road and Rt. 151 intersections were found to be operating at an acceptable Level of Service (LOS) C.

The remaining intersection, Winnicut and Bayside Roads, to no one's surprise, is at failure. The intersection is operating at an overall Level of Service (LOS) E during peak weekday morning times and LOS C in the evening. During the morning peak hour, back up queue lengths can exceed 5,000 feet. During the evening peak hour, the Route 33 westbound approach operates at a LOS E and can also have queue lengths that exceed 5,000 feet. These delays have led to increases in accidents, as highlighted in

Table Two above. In addition, such delays have hindered emergency responses, creating life/safety issues as well as impacting the daily lives of Greenland residents as they “attempt” to travel about the community. Adding trips to the corridor that is already at failure during peak travel times will only further exacerbate the horrendous conditions that exist. Although the development project was accepted by the Portsmouth Planning Board, only a “shell” of the building was approved, and any occupancy details will require further Planning Board review. The community will have to monitor all future developments occurring at Pease to ensure its concerns for impacts to Route 33 are addressed. Negotiating offsite mitigation of any future development at Pease and advocating with the PDA and City of Portsmouth to address traffic along Route 33 should continue to be a high priority of municipal officials.

To address the intersection operating failures occurring at the Winnicut Road/Bayside Road intersection, a linchpin within the Route 33 corridor, the Planning Board requested the Rockingham Planning Commission (RPC) undertake a preliminary analysis of a roundabout to the intersection. This preliminary analysis demonstrated that a two-lane solution would operate at a LOS A, while a one lane option would operate at a LOS D during the AM peak and LOS E during the evening peak hour. Additional analysis and engineering will be required in order to fully understand the design and cost factors associated with this design approach. As this intersection also lies next to a bridge, additional engineering challenges may exist that will have to be resolved.

Although not the ideal solution, the next step for addressing the Rt. 33/Bayside Road /Winnicut Road intersection is to submit a project proposal to the Rockingham Planning Commission that will be included in the Long-Range Transportation Plan and be part of the prioritization process for the State Ten Year Plan. This process should be adopted immediately. The basic project information required to move forward with this initiative includes:

- Outline a Proposed Project Scope: What is being proposed to be implemented? What alternative improvements are being considered?
- Outline a Project Purpose: What transportation problem is the project attempting to address?
- Outline Need: What evidence indicates that there is a need for the project?
- Outline Community Support: How supportive is the community? Evidence of support, such as surveys, comments from public meetings, etc.
- Estimated Construction Cost: A reasonable cost estimate of the improvements proposed.
- Town Interest in Providing Matching Funds: Local funds are not required (especially on a State highway); however, some cost sharing on the part of the Town can accelerate the project timeline. Given the extreme impacts being felt along the corridor, local funds should be considered.

Further Intersection Analysis

Aside from the traffic related concerns along the Route 33 corridor, residents highlighted two intersections in the community as being problem areas. The intersection of Breakfast Hill Road/Post Road along with the intersection of Portsmouth Avenue/Post Road. These intersections received the most comment (aside from Rt. 33

intersections) in the Master Plan community survey. The Rockingham Planning Commission is willing to undertake an analysis of these two nodes.

Recommendations

- Aggressively pursue funding to upgrade the Route 33/Winnicut Road/Bayside Road intersection that is presently operating at a LOS E. Review all design options including road widening, signalization, and roundabout.
- Work with the Town of Stratham to undertake a corridor study from the intersection of Greenland Road to Sandy Point Road in Stratham. The analysis should investigate corridor speed, roadway geometry and striping.
- Investigate pedestrian and bicycle improvements (bike lane) along the Route 33 corridor including the bridge over the Winnicut River.
- With Greenland having legal abutter status, continue to monitor all development proposals at Pease. Strongly advocate for offsite improvement contributions given the strong nexus that exists between development occurring at Pease and its direct impacts to the Route 33 corridor.
- Engage the services of the RPC to evaluate the intersection of Breakfast Hill Road and Post Road, along with the intersection of Portsmouth Avenue and Post Road. A significant number of Town residents raised concerns with these two intersections in the Master Plan community survey.
- The Board of Selectmen and Budget Committee should continue to fund road improvements recommended in the Pavement Condition Assessment Report. Failure to do so will lead to increased road repair costs for Greenland taxpayers. Monies should be set aside every year to address these identified road improvements.
- The Planning Board should continue to emphasize cross connections between adjoining commercial sites to reduce turning movements on major traffic corridors.

Chapter Six: Public Utilities

Major public utilities serve a limited area in Greenland, with a majority of homes served by on-site wells and septic systems. However, there are areas of the community that do have access to utilities, and they are highlight here.

Existing Conditions

Gas

Northern Utilities, Inc., a public utility regulated by the NH Public Utilities Commission (NH PUC), is the natural gas supplier for the seacoast region, including Greenland. The Granite State Gas Transmission System operates a high pressure (500 PSI) eight-inch transmission line which crosses Greenland in a diagonal manner from southwest to northeast. It enters the Town at the southwest corner, at a point about 1,000 feet to the south of and roughly parallel to Union Road, and exits near Great Bog, near the intersection of Route 33 and Interstate-95. This line has been tapped for distribution purposes within Town. The Granite State transmission line is the main gas supply line to Northeast Utilities.

A gas distribution line presently exists at the junction of Ocean Road and Route 33, down to Alden Avenue and extends down the Public Service of NH power line where a connection is established that brings natural gas service to Greenland Central School via Post Road. That line is capped just before the cemetery on the northern side, approximately 50 feet from the school. If the Town decides to establish a Village District, the extension of gas service to this area would seem logical.

Water

A majority of residents in Greenland are served by on-site domestic well water. However, portions of the community in the area of Portsmouth Avenue/Post Road and Ocean Road are serviced by the City of Portsmouth Water Department (see Water and Sewer Infrastructure Map). Greenland Well, which is located off Post Road adjacent to the Greenland Recreation Fields, is a municipal drinking well for the City of Portsmouth and has a withdrawal capacity of approximately 460 gallons per minute. This well serves the residents of Greenland and Portsmouth.

Sewer

Only limited sewer service is available in Greenland at this time. Two private agreements exist between Travel Centers of America (15,000 gallons per day), the Lowes/Target Center (20,000 gallons per day) and the City of Portsmouth, which allowed private sewers mains to service their sites. (see Water and Sewer Infrastructure Map)

On November 19, 2013, an inter-municipal agreement was signed between Portsmouth and Greenland to allow for the extension of public sewer service into the community. The agreement is valid through the year 2023.

In 2012, Tighe & Bond completed a Sewer Extension Study which reviewed a service area in excess of 1,000 acres in the eastern area of the community. The Study

reviewed a number of design options and finalized a Four Phase plan to serve this high-density area in Greenland (Sewer Study Phase Plan). In 2012 dollars, the estimated cost for these improvements totaled \$21,416,000. If 20-year bonding costs were considered, the total probable cost was estimated to be \$28,775,000. Phase 1 of the sewer extension program is the lynchpin of this utility expansion, extending sewer from Portsmouth down Portsmouth Avenue until it joins with NH Route 33; extensions off this main line are also planned as part of this phase. This phase was estimated to cost \$11,981,000 in 2012, which included bonding costs.

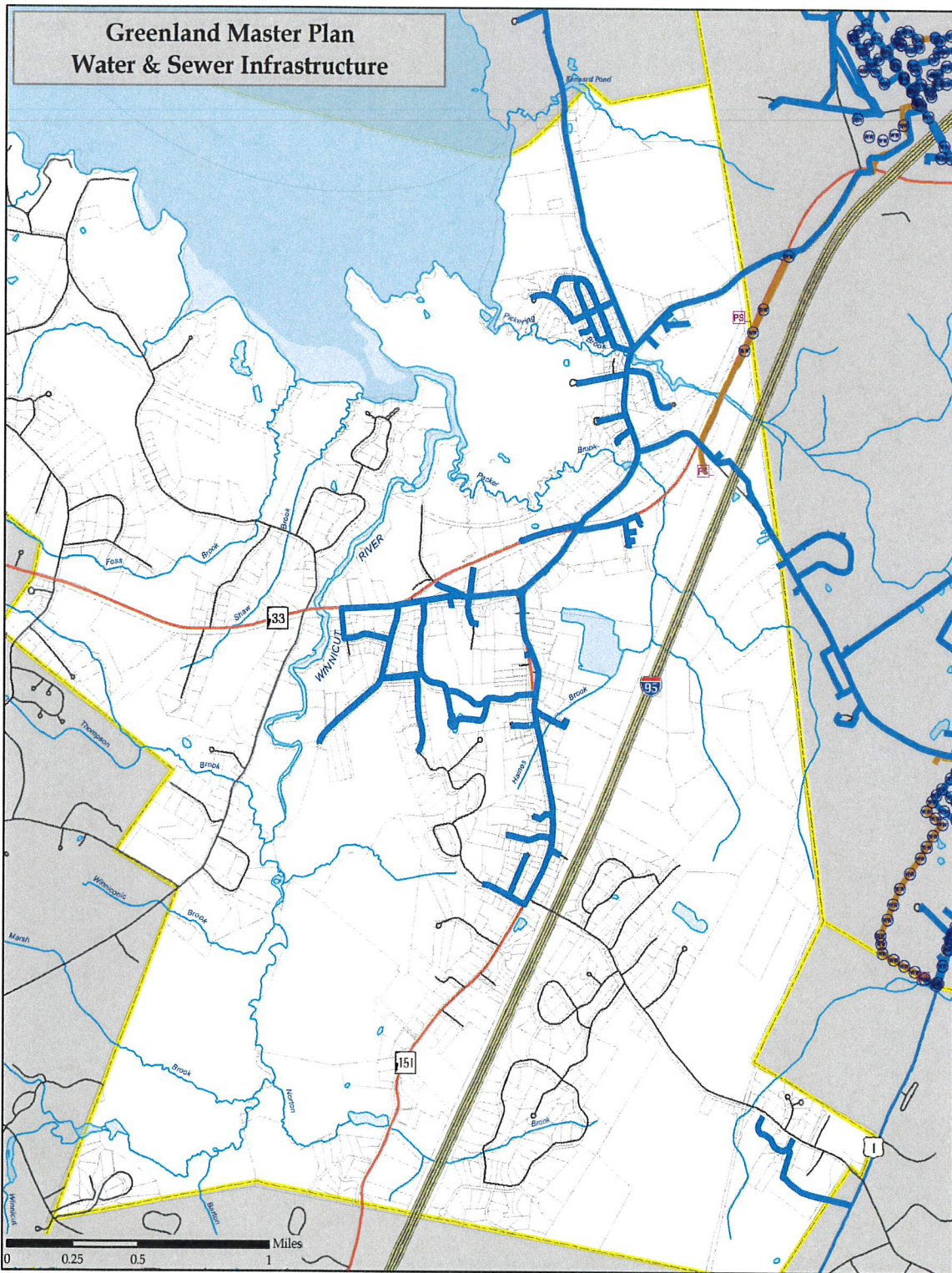
Recommendations

Water

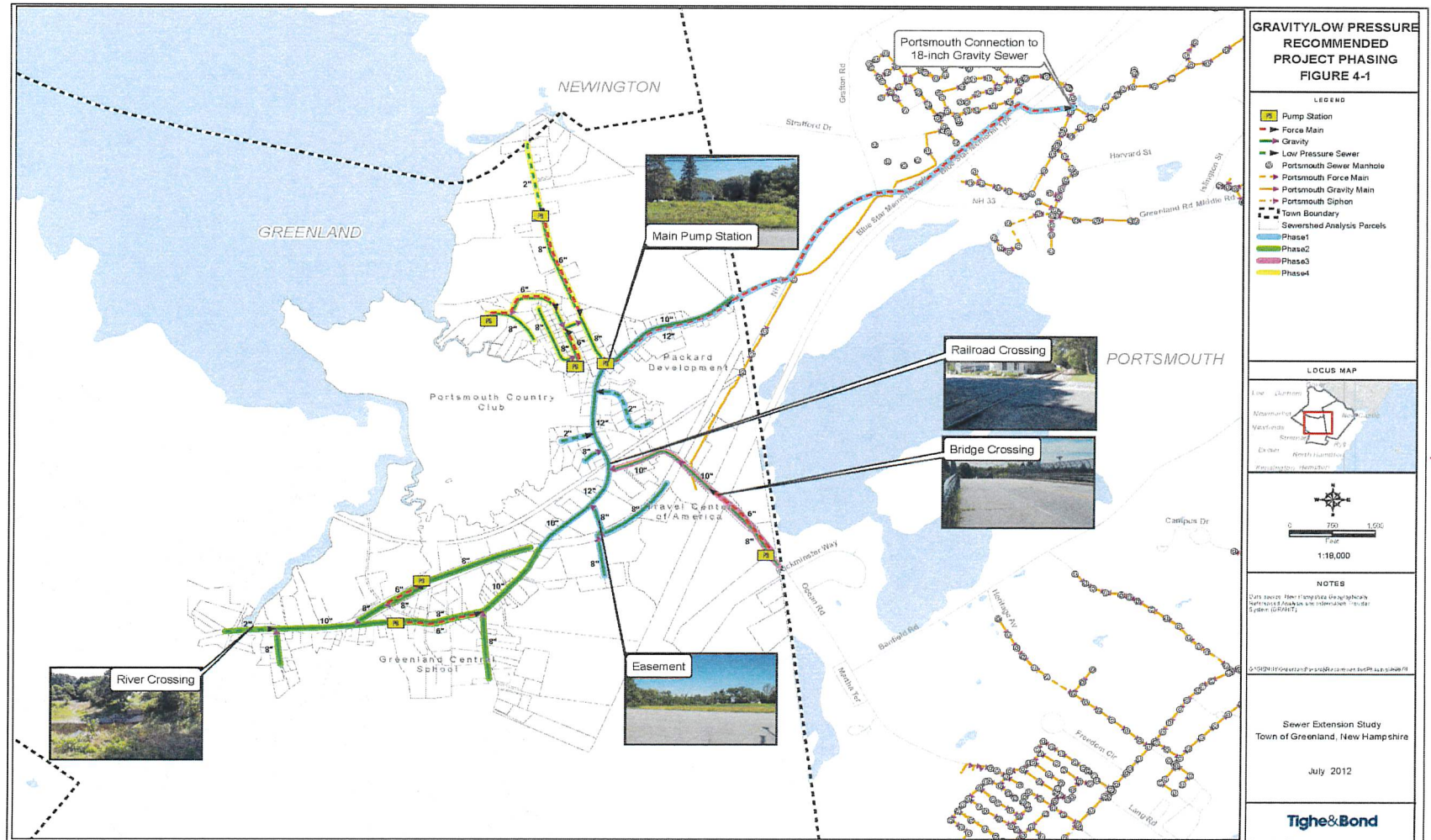
1. Continue to monitor and strengthen the Aquifer Protection Ordinance to discourage vast commercial extraction of groundwater resources, as well as require Best Management Practices (BMP's) and Low Impact Development (LID) standards for any new development that may occur within the District.
2. Monitor EPA's rules governing small MS4 Towns and stormwater and be proactive in regard to implementing policies that alleviate the Towns burden of ensuring clean surface and groundwater. In addition, develop sound stormwater management guidelines for future growth.
3. Continue to monitor water quality for PFAS and other contaminants in the area of the Coakley Landfill.

Sewer

1. Consistent with the Goals of the Mixed-Use Overlay District, leverage development proposals within the District to extend sewer service into the community.
2. Ensure the existing Inter-Municipal Agreement is renewed at its expiration on November 19, 2023.



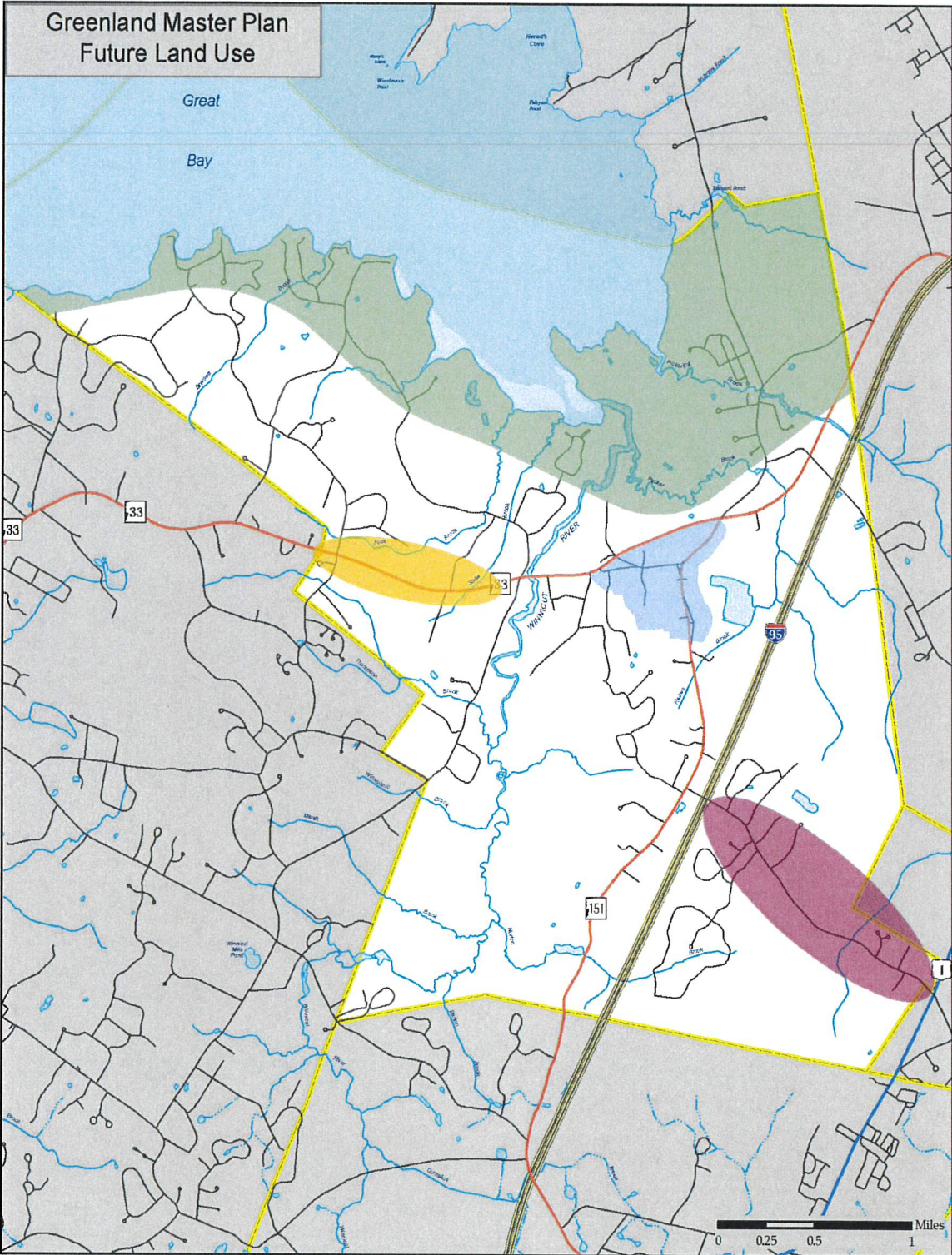
Greenland Sewer Study Phase Plan



Chapter Seven: Future Land Use

As a policy document, the Master Plan establishes general policies and goals to guide future land uses of the community. The future land use policies found in this chapter are a representation of the desired direction of future development in Town and are graphically depicted on the Future Land Use Map. These are general guidelines that may be put forth as zoning amendments by the Planning Board and adopted by Greenland voters.

- a. Review zoning requirements for the areas adjoining Great Bay as they relate to density for residential development. This area of the community is a sensitive ecological area and thoughtful considerations should be undertaken to protect this region. In addition, the predicted rise in sea levels is another challenge for this neighborhood, potentially impacting drinking water supplies and septic systems. Setbacks from the Bay, depth to ground water, septic system requirements and protecting existing portable water sources should be considered.
- b. The creation of a Village Zoning District in the area of Portsmouth Avenue and Post Road was highlighted in the 2005 Master Plan but never implemented. This area of the community is considered the “downtown” of Greenland, with small lots and a mix of uses and densities. If sewer is ever extended into this area, the creation of a Village Zoning District is strongly encouraged, allowing for an expanding mixture of residential and non-residential developments. Context design standards could accompany these ordinances, assuring that the character of the neighborhood is maintained.
- c. The area along Breakfast Hill Road should be reviewed for the appropriateness of the existing zoning density for this corridor. The Coakley Landfill may influence decisions in this area of the community.
- d. The expansion of allowable non-residential uses along Route 33, west of Tide Mill Road, should be considered.



- Future Land Use**
- Breakfast Hill Rd Neighborhood
 - Great Bay Sensitivity Area
 - Mixed Use/Village Center
 - Rural Professional



Coastal Hazards and Adaptation Chapter



Adopted by the
Greenland Planning Board
April 19, 2018

I. Introduction

Like other coastal municipalities in New Hampshire, Greenland is confronted by a challenging set of land use and hazard management concerns that includes flooding from rising sea levels and storm surge in Great Bay, extreme precipitation events, coastal erosion, and impacts to critical coastal habitats. Greenland has experienced significant impacts during extreme and moderate coastal storm events, extreme rainfall events, and localized flooding from more frequent seasonal highest tides along shorefront land abutting Great Bay, the Winnicut River and other tributaries. These observed impacts may be exacerbated by changes in climate that could cause future increases in the frequency and intensity of storms and rates of sea-level rise. Flooding is compounded by increased stormwater runoff from development and impervious surfaces.

Projected changes in climate and coastal conditions will present challenges to many sectors of municipal governance, asset and infrastructure management, sustainability of recreation and tourism, and protection of natural resources and coastal ecosystems. Adapting to changing conditions will play an important part in the Town's strategic planning and actions in the future. Effective preparedness and proactive land use management can help the Town reduce its future exposure and improve resilience to increased flood risks, minimizing economic, social, and environmental impacts.

The Coastal Hazards and Adaptation Chapter addresses the following topics:

Present and Future Coastal Hazards

Future Impacts to Coastal Assets and Resources

Other Climate Related Impacts

Future Growth Demands

Community Adaptation and Resilience

Recommendations for Long-Term Adaptation and Resilience Strategies and Actions



*King Tide marker at the end of Tide Mill Road
Photo credit: Laura Byergo*

⁴ Preparation of this chapter was funded by the NH Coastal Program

II. Vision

A. Vision Statement

Proactive strategies are identified and implemented that address the impacts of coastal hazards, and ensure the community is better prepared to protect the security, health and safety of its citizens, provide for a stable and viable economic future, and create a more sustainable and climate resilient community.

Greenland identifies the following major goals relating to coastal hazards and climate adaptation:

- Critical infrastructure – roads, culverts, railway corridors, and utilities - are protected against impacts from flooding and other coastal hazards and made more resilient to these hazards.
- Salt marshes, wetlands, and shoreland buffers are protected and maintained to provide flood storage, reduce flood and storm damage, and to provide estuarine and riparian habitats to move inland as water levels rise.
- Emergency access and evacuation routes are maintained or enhanced, if necessary.
- Private property owners are encouraged to take protective measures to reduce flood risks, including threats to private septic systems and drinking water wells at risk from both rising groundwater levels and saltwater intrusion.
- Residents and businesses are aware of, and better prepared, to respond and adapt to coastal hazards and extreme precipitation events.

B. Issues of Local and Regional Significance

Based on the 2017 Town of Greenland Climate Risk in the Seacoast (C-RiSe) Vulnerability Assessment, prepared by the Rockingham Planning Commission, and local knowledge of flooding hazards, the following issues of local and regional significance should be addressed in future policy, planning, regulatory and non-regulatory initiatives by the town, state, community, and other stakeholders.

http://www.rpc-nh.org/application/files/7814/9400/9371/Greenland_CRiSe_Assessment_Report_Final.pdf

Adapt municipal and State roads, bridges, culverts, and stormwater systems.

Adapting State and local roads and their associated infrastructure so these systems are functioning and efficient is critical to the growth and stability of the Town and the Seacoast region. These systems are vital during storm events when evacuation routes can be impacted by flood waters.

Control flooding and protect natural resources with sound land use and development standards and targeted land conservation projects.

Implementing sound land development standards to protect salt marshes, coastal and inland wetlands, and shoreland buffers is a low-cost way to protect infrastructure. Marshland and wetlands, and the undeveloped land adjacent to them, are on the front lines of coastal adaptation, absorbing flood waters and providing space for freshwater and estuarine habitats to move inland as water levels rise. Consideration should be

given to how natural and developed landscapes can complement one another, not at the detriment to either one. All of Greenland's tidal wetlands will be impacted by sea level rise and storm surge, with an estimated 15% at these wetlands most vulnerable negative impacts, including loss of upland vegetation.

Maintain function of septic systems and drinking water wells.

The majority of homes and businesses in Greenland are served by private septic systems and drinking water wells, with 28% of homes served by municipal water supply. Maintaining both the private and public systems is critical to the health and safety of the community. Over time, improvements to these systems may be necessary to adapt to rising seas, saltwater intrusion into freshwater systems, and storm-related flooding and power outages. The Town should monitor options for drinking water supply and wastewater treatment for neighborhoods in flood prone areas.

Work with the railway to identify solutions to protect the railway corridor from rising water levels.

The railway running through Greenland is threatened by flooding due to projected sea level rise and storm surge in several locations. In some areas, the railway bed may act as a dam, preventing water from flowing upstream, exacerbating flooding on the Bay side of the railway corridor.

Dedicate funds for infrastructure improvements.

As infrastructure ages and environmental conditions change due to sea-level rise and increased precipitation and stormwater runoff, the cost of maintaining critical infrastructure will grow with time. Identifying new methods for raising funds to do this will be necessary to lessen the burden on taxpayers.

Increase preparedness and raise awareness of flooding and coastal hazards in the community.

Residents need to be engaged and informed about how to protect themselves and their homes in the face of rising seas, coastal storms, and increased precipitation during extreme weather events. Being proactive about planning to respond to these changing conditions is the best course of action but one that needs more attention.

III. Present and Future Coastal Hazards

A. Past and Present Coastal Hazards

Coastal Storms

A wide range of coastal storms have affected Greenland in the past including extreme rainfall, Nor'easters, hurricanes, tropical storms, and highest tides. Typical impacts from these types of events include flooding from high tides, storm surge, and rainfall, resulting in road closures, disruption of businesses and schools, and increased demand for municipal emergency services.

The severity of flood events depends upon several factors and different types of storm events. A 100-year/1% chance precipitation event is based on the volume of rainfall (in inches) within a 24-hour period. A 100-year/1% chance coastal storm event is based on storm surge elevation which is influenced by tide stage, wind (direction, speed, and duration), and seasonal astronomical cycles.

Today, extreme precipitation and coastal storm surge (e.g., the 100-year or greater storm event) are the most immediate risk and threat resulting in flooding and property damage, while sea-level rise poses a more long-term risk of increased daily tidal flooding.

The New Hampshire seacoast has experienced many significant storm events in the last 50 years including extreme precipitation, Nor'easters, and storm surge. In recent years the New Hampshire seacoast has narrowly escaped two major storm events – Hurricane Irene (2011) and Super Storm Sandy (2012). The likelihood of such storms reaching our area, with surges of 12 or more feet, has become an increasing concern as heavily developed coastal areas are at high risk of flood impacts (as documented in the Tides to Storms report, 2015).

Figure 2 - Recent storm and flood events in Greenland

Event	Type	Rainfall/ Snow	Inland Flooding	Tidal Flooding	High Winds	Surge Height	Tide Stage
February 1972	Nor'easter			✓	✓		
Blizzard of 1978	Nor'easter	33" snow					
August 1991	Hurricane Bob						
October 1991 "Perfect Storm"	Nor'easter			✓	✓	+3.5'	
October 1996	Tropical Storm	14" rain	✓	✓		500-yr	High
Mother's Day May 2006	100-year+	14" rain	✓				
Patriot's Day April 2007	Nor'easter	6.5" rain	✓		✓		
Super Storm Sandy 2012	Tropical Storm	5" rain	✓	✓	✓		
King Tide 2014	Extreme Tide	None		✓			High
King Tide 2015	Extreme Tide	None		✓			High
King Tide 2016	Extreme Tide	None		✓			High
King Tide 2017	Extreme Tide	None		✓			High

B. Projected Future Conditions

Studies published in the last five years, including the U.S. Global Change Research Project, 2014 National Climate Assessment, report updated trends and projections for several parameters influenced by changes in climate including sea levels, coastal storms, and precipitation. Information about New Hampshire trends and projections is summarized in sections 1-3 below.

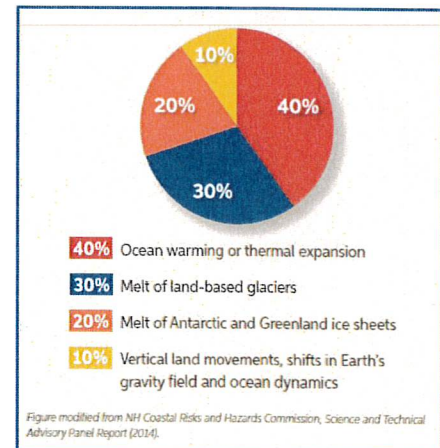
1. Sea-Levels and Coastal Storm Surge⁵

Sea-Level Rise

Figure 4 shows the percent contribution of various factors that influence sea levels worldwide. Ocean warming and melting of land-based glaciers are the major drivers of sea-level rise.

Based on local tide gauge data, sea-level along the New Hampshire coastline has risen an average of 0.7 inches per decade since 1900. More recent reports show that the rate of sea-level rise has increased to approximately 1.3 inches per decade since 1983. The 2014 U.S. National Climate Assessment reports projected ranges of plausible sea-level rise scenarios from 0.6 feet to 2.0 feet by 2050 and from 1.6 feet to 6.6 feet by 2100.

Figure 3 - Primary factors contributing to sea-level rise worldwide.



Storm Surge

Among the scientific literature, there is insufficient basis to draw a specific conclusion whether storm surges will increase in the future. However, future storm surges will occur on top of higher sea levels. Considering changes in storm surge and high-water levels due to sea-level rise alone, today's extreme surge events such as a 100-year storm will result in increased coastal flooding and expansion of the coastal floodplain over time.

2. Precipitation⁶

Recent studies show the mean annual precipitation in the Northeast has increased by approximately 5 inches or more than 10%, from 1895 and 2011, and has experienced a greater than 50% increase in annual precipitation from storms classified as extreme events (100-year/1% annual chance or greater event). Climate models are uncertain about future increases in annual precipitation but project increases that could be as high as 20% in the period 2071-2099 compared to 1970-1999. Most of the increases may occur in winter and spring with less increase in the fall and perhaps none in the summer.

In 2014, the Northeast Regional Climate Center (NRCC) Extreme Precipitation Atlas was published, improving the accuracy of rainfall data for a range of storm events applied to engineering and science research. The NRCC atlas is the new standard used by the NH Department of Environmental Services, Alteration of Terrain Bureau, for the design of stormwater management systems in permitting development projects. Prior to release of the NRCC atlas (2014), engineers and researchers used National Weather Service Technical Paper No. 40 Precipitation Atlas (TP-40, 1960) based on data from the 1960's. Comparing rainfall data from the TP40 Atlas and the NRCC Extreme Precipitation Atlas in Figure 4, rainfall from extreme events (50-year and 100-year storm

⁵ Paul Kirshen, Cameron Wake, Matt Huber, Kevin Knuuti, Mary Stampone, Sea-level Rise, Storm Surges, and Extreme Precipitation in Coastal New Hampshire: Analysis of Past and Projected Future Trends (2015), Prepared by Science and Technical Advisory Panel for the New Hampshire Coastal Risks and Hazards Commission.

⁶ Paul Kirshen, Cameron Wake, Matt Huber, Kevin Knuuti, Mary Stampone, Sea-level Rise, Storm Surges, and Extreme Precipitation in Coastal New Hampshire: Analysis of Past and Projected Future Trends (2015), Prepared by Science and Technical Advisory Panel for the New Hampshire Coastal Risks and Hazards Commission.

events) has increased 25% and 35% respectively in Greenland. For example, Figure 4 shows an increase of 2.3 inches of precipitation for the current 100-year storm event as reported from the new NRCC precipitation atlas.

Figure 4 - Data for a range of 24-hour rainfall events (TP40, 1961 and NRCC, 2014).

Source	24-hour Rainfall Event						
	1-year	2-year	10-year	25-year	50-year	100-year	500-year
TP40*	2.6	3.1	4.4	5.2	5.8	6.5	not reported
NRCC	2.6	3.2	4.8	6.1	7.3	8.8	13.46

* The NH Department of Environmental Services, Alteration of Terrain Bureau, has replaced the TP-40 Atlas with the NRCC Atlas (2014) as the rainfall standard for permitting the design of stormwater management systems.

Consistent with comparison of the precipitation data from the old TP-40 Atlas and the new NRCC Atlas, Figure 5 shows that the frequency of extreme precipitation events, those greater than 4 inches in a 24-hour period, has increased significantly since 1990 compared with the period from 1950-1990.

Extreme precipitation is also projected to increase with the occurrence of extreme rainfall events during summer and fall influenced by changes in tropical storm activity as the rainfall amounts produced by tropical storms is projected to increase. In general, total annual precipitation is expected to increase as is extreme precipitation.

3. Temperature⁷

In the last century, annual and seasonal temperatures have warmed by almost 2°F and lake ice-out dates are occurring earlier. Regional climate assessments report expected changes in seasonal temperatures:

- Warmer winters with 20-50 fewer days per year below 32°F. (Based on data from climate projection grids for southern NH, the number of days when MINIMUM temperature was below 32°F from 1980-2009 was 142. Source: <http://www.climatesolutionsne.org/assessments#map>)
- Hotter summers with 3-7 additional days per year above 90° F (compared to about 10 days per year above 90°F during the period 1970-1999).

Extreme Precipitation Events (>4") 1950-2009

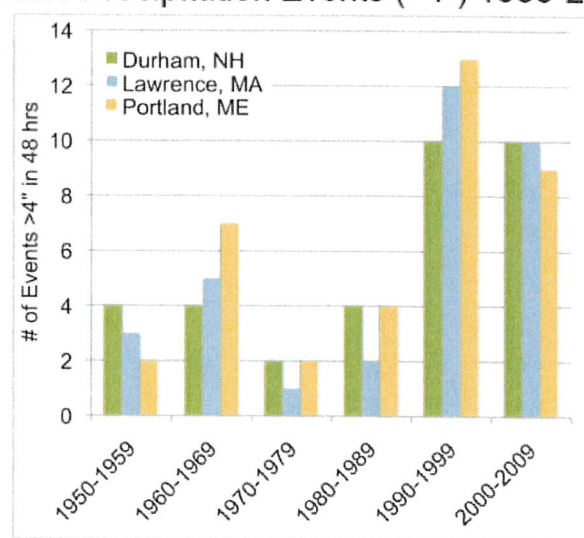


Figure 5 - Total number of events with greater than four inches of precipitation in 48 hours per decade since 1950.⁴

⁷ Wake, C., Burakowski, E., Kelsey, E., Hayhoe, K., Stoner, A., Watson, C., & Douglas, E. (2011). *Climate Change in the Piscataqua/Great Bay Region: Past, Present, and Future*. Carbon Solutions New England. Retrieved from www.carbonsolutionsne.org/resources/reports/pdf/greatbayreport_online.pdf

IV. Future Impacts to Coastal Areas

A. Vulnerability Assessment

In 2017, the Rockingham Planning Commission completed the Climate Risk in the Seacoast (C-RiSe) Vulnerability Assessment for Greenland which evaluated the risk and sensitivity of roadways, infrastructure and natural resources to sea-level rise and storm related flooding. As shown in Figure 6, the Tides to Storms assessment applied a range of sea-level rise scenarios at 2100, similar to those reported in the 2015 U.S. National Climate Assessment. The Tides to Storms assessment produced statistical data and mapping as part of a regional report and a customized assessment report for Greenland. The Greenland data is reported in this section.

Figure 6 - Sea-Level Rise Scenarios used in the tides to Storms Vulnerability Assessment
(Rockingham Planning Commission, 2015)

Time Period*	"Intermediate Low"	"Intermediate High"	"Highest"
Year 2050	0.6 ft.	1.3 ft.	2.0 ft.
Year 2100	1.7 ft.	4.0 ft.	6.3 ft.

Sea-level rise and storm surge are measured from Mean Higher High Water which is the water elevation based on the average of the highest tides over a 19-year period. In Seacoast New Hampshire, Mean Higher High Water is 4.4 feet. Storm surge is the area flooded by the current 100-year/1% chance storm event or greater.

Figure 7 - Summary of Tides to Storms Assessment Data

Sea Level Rise (SLR) Scenarios	SLR 1.7 ft.	SLR 4.0 ft.	SLR 6.3 ft.	SLR 1.7 ft. + storm surge	SLR 4.0 ft. + storm surge	SLR 6.3 ft. + storm surge
Infrastructure (# of sites)	0			2 - Outdoor Recreation Sites: Great Bay Discovery Center and Portsmouth Country Club		
Critical Facilities (# of sites)	0			2 - Bio-Spray and dam at Country Club Pond		
Transportation Assets (# of sites)	1 Railroad			1 Railroad		
Residential Structures (# of homes)	0	0	3	4	9	26
Uplands (acres)	51.0	119.8	224.0	162.5	261.3	375.5
Roadways (miles)	0	0	0.23	0.76	1.16	1.40
Freshwater Wetlands (acres)	2.83	9.53	18.83	13.97	23.41	33.76
Tidal Wetlands (acres)	115.59	123.74	124.94	124.35	125.21	125.95
Aquifers (acres)	0	0	0.08	0.01	0.29	1.22
Wellhead Protection Areas (acres)	10.99	16.20	29.18	20.90	34.31	54.15
Conserved and Public Lands (acres)	59.72	112.16	178.10	142.14	198.76	253.11
Wildlife Action Plan (acres)	129.50	199.57	285.62	236.24	313.27	389.42
Conservation Focus Areas (acres)	130.21	190.30	248.95	218.16	265.89	312.22
100-year Floodplain (acres)	136.07	202.22	210.84	207.12	212.52	222.47
Assessed Value of Parcels Impacted	\$72,300,700	\$74,659,700	\$77,676,500	\$81,371,600	\$83,017,300	\$93,990,000

Note: Storm surge refers to the 100-year floodplain as depicted on the FEMA Flood Insurance Rate Maps (2015, preliminary). Upland refers to land above mean higher high water (highest tidal extent). Impacts to the 500-year floodplain were calculated using the full extent of the 500-year floodplain which includes areas within the 100-year floodplain.

Flooding from sea-level rise and storm surge are projected along Great Bay and the shorelines of the Winnicut River, Pickering Brook, Packer Brook, Haines Brook, Shaw Brook, and Foss Brook. Land development in these areas is primarily residential, but rising water level will also impact agricultural land along Great Bay and land associated with the Portsmouth Country Club. Roads, culverts, the railway corridor, and some structures are at risk of flooding. A summary of impacts to road and transportation infrastructure, critical facilities, and natural resources from future sea-level rise and storm related flooding are presented in this section and Figure 8 below.

Roads and Transportation Infrastructure

Local roadways in Greenland are more highly susceptible to flooding than the State roadway network. Local roads identified to be at risk from flooding from sea-level rise and storm surge are Shore Road, Meloon Road, Swan Terrace, Great Bay Drive West, Bayside Road, Caswell Drive and Bruce Court. State roadways affected include Route 33/Greenland Road between Golf and Ski Warehouse, located at 1680 Greenland Road, and Rizzo Warehouse/British Aisles, located at 1634 Greenland Road. In addition, the railway line running through Greenland is at risk of flooding or rail bed erosion in several locations.

Critical Facilities

There are no critical facilities susceptible to projected sea-level rise and only two facilities at risk due to sea-level rise and accompanying storm surge flooding: the dam at Country Club Pond and the Bio-Spray parcel.

Natural Resources

Salt marsh and sand beaches provide natural protection against floods and storm surge. The assessment indicates that tidal wetland systems and freshwater wetlands will be heavily impacted by flooding from sea-level rise. Estuarine and marine wetlands are the most impacted natural resources in Greenland, with approximately 126 acres impacted under the highest sea-level rise scenario (6.3 feet plus storm surge). Over 15% of Greenland's tidal wetlands are projected to be impacted.

Changes in the daily tidal condition and seasonal high tides will affect the stability of these systems and their ability to sustain surface elevations that keep pace with rising water levels. Although a large number of acres are flooded by coastal storm surge, these events are infrequent and of short duration so do not result in sustained conditions that might influence the health and function of tidal wetland systems. Impacts that might occur during storm events include erosion, excessive sedimentation and deposition of debris, and loss of salt marsh vegetation.

Figure 8 - Example of a Living Shoreline



Example of a living shoreline (Photo Credit: Vance Miller, from Living Shorelines Academy)

Figure 9 - Natural Water Resources (acres, year 2100)

Sea Level Rise (SLR) Scenarios	SLR 1.7 ft.	SLR 4.0 ft.	SLR 6.3 ft.	SLR 1.7 ft. + storm surge	SLR 4.0 ft. + storm surge	SLR 6.3 ft. + storm surge
Natural Water Resources (acres)						
Wellhead Protection Areas	10.99	16.20	29.18	20.90	34.31	54.15
Estuarine and Marine Wetlands	115.59	123.74	124.94	124.35	125.21	125.95
Freshwater Wetlands	2.83	9.53	18.83	13.97	23.41	33.76
Stratified Drift Aquifers	0.00	0.00	0.08	0.01	0.29	1.22
Total water resources	129.41	149.47	173.03	159.23	183.22	215.08

Tidal Salt Marsh

Tidal marshes are susceptible to climate change, especially sea-level rise (SLR). In 2015, NH Fish and Game and Great Bay National Estuarine Research Reserve used a modeling tool, Sea Level Affecting Marshes Model (SLAMM), to project where salt marsh may persist or migrate inland based on changes in sea level. Protecting land where salt marsh can potentially migrate as sea levels rise is a good strategy to enhance coastal resiliency.

Results of the SLAMM simulation in Greenland are as follows:

- 230.9 acres of salt marsh in Greenland
- 0.03 acres of salt marsh are “lost” or no longer exist in 2025 under any sea-level rise scenario
- 230.9 acres of salt marsh are “persistent”, meaning the salt marsh continues to persist under any one or more of the sea-level rise scenarios
- 71.9 acres of dry land have “potential” to become salt marsh under any one or more of the sea-level rise scenarios

Tidal salt marshes need be able to grow in elevation as water levels rise in Great Bay. Allowing marshes to migrate inward is critical. Tidal restrictions such as dredging, dams, and municipal infrastructure can block a zone of retreat into upland buffers.

What do marshes need to remain healthy while sea levels rise?

- Tidal flooding – remove barriers to hydrology
- Sediment source – remove barriers to sediment supply
- Zone of retreat into upland buffer – remove shoreline barriers and provide areas for marsh migration

Freshwater Wetlands

With the increase in frequency and severity of extreme weather events associated with climate change, New Hampshire is experiencing greater erosion, flooding, habitat loss, and infrastructure damage. In the *2011-2017 New Hampshire Wetlands Program Plan*, the State recognized the importance of tidal and non-tidal wetlands for flood control, water quality protection, wetland habitat, and water recharge for both groundwater and

surface waters. Not only do wetlands offer significant environmental values, but confer significant social and economic benefits, such as flood mitigation.

The Town of Greenland's 2010 Natural Resources Inventory recommends several freshwater wetland complexes for protection and/or restoration for the important role these complexes provide in water quality protection, flood mitigation, and wildlife habitat.

Land Conservation

Significant acreage with priority habitats may be affected by projected sea-level rise and increased precipitation events. The Land Conservation Plan for New Hampshire's Coastal Watersheds identified three conservation focus areas along the Great Bay coastline: Bayside Point, Fabyan Point, and Lower Winnicut River. For information about these priority habitats, refer to the Climate Change section of the Wildlife Action Plan (<http://www.wildlife.state.nh.us/wildlife/wap.html>) and the Land Conservation Plan for New Hampshire's Coastal Watersheds.

(https://forestsociety.org/sites/default/files/Coastal_Plan%20compressed.pdf)

There are ten conservation properties impacted by rising sea levels and storm surge: Emery, GCNE easement, Great Bay Shoreline South, Great Bay WMA, Hughes #1, Leonard Weeks and Descendants, Portsmouth Country Club, Sandy Point, Smith Tract, and a Town of Greenland parcel.

The Town may consider aligning its land protection strategies by incorporating criteria in its land conservation selection process that takes into account the value and benefits of protecting critical ecosystems (wetlands, agricultural fields) in areas projected to have high flood risk in the future. These values and benefits include cost avoidance associated with flood storage, infrastructure protection, erosion and sediment control, support of fish and wildlife, nutrient cycling, and carbon storage.

V. Other Climate-Related Impacts

A. Drinking Water and Wastewater Treatment

Rising groundwater levels due to changes in sea level and saltwater intrusion may impact water resources including private drinking water wells and wellhead protection areas. Emerging research from the University of New Hampshire indicates that groundwater levels and saltwater intrusion could cause effects further inland than the immediate coast.

Rising groundwater levels and increased precipitation could compromise the function of individual septic systems and both private and municipal stormwater management infrastructure. These system failures may result in increased transfer of pollutants to groundwater, surface waters, wetlands, and estuarine systems.

For these reasons, coastal municipalities are encouraged to collaborate on planning for future regional and municipal drinking water and wastewater treatment needs.

B. Economy

The NH Coastal Risks and Hazards Commission Report (2016) acknowledges New Hampshire's coastal region as an important economic driver for the State and consistently ranks above the national average for job growth. The report states the following statistics about New Hampshire's coastal economy:

- The Gross Regional Product of the coastal region totaled approximately \$11 billion in 2014, with 16% derived from the finance and insurance industry and 13% coming from the manufacturing industry.
- Between 2002 and 2016 job growth for the coastal region was 12.8%, outpacing both the State and national job growth rates of 5.9% and 10.4%, respectively.
- As of Q3 2016, the coastal municipalities supported 109,070 jobs.
- In 2014, the coastal region exported \$15.5 billion worth of goods and services, imported \$14.1 billion worth of goods and services, and produced and consumed \$5.9 billion worth of goods and services locally, making the region a net exporter of goods and services.

OUR ECONOMY is the systematic and productive exchange and flow of goods, services, and transactions that must be intact, functioning, and resilient to coastal risks and hazards in order to create and sustain a high quality of life in coastal New Hampshire. (CRHC Report, 2016)

Impacts from sea-level rise and storm surge flooding can have an effect on the overall municipal tax rate by influencing land values, decisions made about infrastructure investments, need for and delivery of critical services, and maintenance of infrastructure and facilities. The economic vulnerability of a municipality can be evaluated by determining the exposure of its property tax base to coastal hazards. As shown in Figure 10, the Tides to Storms project (RPC, 2015) analyzed the number of tax parcels in Greenland affected by each of the six sea-level rise and storm surge scenarios evaluated. The number of impacted parcels ranges from 135 to 202, with aggregated values of \$72,300,700 to \$93,990,000.

Figure 10 - Parcels and assessed value by sea-level rise and storm surge scenario.

Sea Level Rise (SLR) Scenarios	SLR 1.7 ft.	SLR 4.0 ft.	SLR 6.3 ft.	SLR 1.7 ft. + storm surge	SLR 4.0 ft. + storm surge	SLR 6.3 ft. + storm surge
Parcels and Assessed Value						
Parcels Affected (# of parcels)	135	141	152	160	170	202
Aggregate Value of Parcels (\$ value)	\$72,300,700	\$74,659,700	\$77,676,500	\$81,371,600	\$83,017,300	\$93,990,000

A significant portion of the economy in New Hampshire's State, regional and local economies may be vulnerable to changes in climate and coastal conditions such as extreme storms and sea-level rise. New Hampshire's coastal region is an important economic driver for the State and consistently ranks above the national average for job growth. The natural resources that draw residents, visitors and businesses to coastal New Hampshire are a cornerstone of our quality of life. Residents, visitors, and

businesses depend on clean water for drinking, swimming, and boating; salt marshes and eel grass beds are critical habitat for commercial and recreational fisheries; and beaches draw hundreds of thousands of visitors that boost the State economy and tax income. In addition to providing recreational opportunities and wildlife habitat, forest and agricultural land and uplands provide materials for heating, building and construction, and farm and food products.

C. Emissions and Energy Use

Climate change mitigation refers to the reduction of greenhouse gas (GHG) emissions through reduction in the burning of fossil fuels, energy efficiency and conservation, use of renewable and alternative energy sources, and carbon dioxide (CO₂) and carbon storage in living plants. Increased emissions also impact air quality which can pose serious health risks to certain populations in regions where air quality is impaired.

Many factors influence transportation emissions including land development patterns, land cover conversion, individual preferences and behavior, convenience, and fuel pricing. Nationwide, the transportation sector contributes roughly 28% of the total greenhouse gas emissions each year. As of 2012, the transportation sector alone accounted for 43% of greenhouse gas emissions in New Hampshire, making it the largest single contributor at rates significantly higher than the national average.⁸

D. Human Health

The Town recognizes that climate change can impact human health; however, municipalities rely primarily on federal and State agencies that regulate environmental conditions and provide public services to address human health impacts from climate change. This chapter does not suggest recommended actions by the Town but does acknowledge the general types of human health impacts that are already occurring and may continue or escalate as climate changes in the future.

Climate change affects human health and well-being in many ways, including impacts from increased extreme weather events, rising temperatures in both cold and warm months, wildfire, decreased air quality, threats to mental health, and illnesses transmitted by food, water, and disease-carriers such as mosquitoes and ticks. Increasing exposure to environmental pollutants and atmospheric emissions in recent decades has caused concern over its effect on public health, environmental ecosystems, and climate worldwide.⁹ Human health impacts are intensified with increasing levels of exposure which are likely to worsen with climate variability and change.¹⁰

Air pollution (ozone, pollen, mold, dust) and heat exposure have a range of mild to severe health effects and can aggravate chronic diseases, including cardiovascular and respiratory diseases, and respiratory conditions such as asthma.

⁸ NH Department of Environmental Services

⁹ Center for Disease Control and Prevention: *Climate and Health*. (n.d.). Retrieved from <http://www.cdc.gov/climateandhealth/effects/allergens.htm>.

¹⁰ Melillo, J., Richmond, T., & Yohe, G. (2013). *Climate Change Impacts in the United States: Human Health Chapter*. U.S. Global Change Research Project.

According to the Centers for Disease Control and Prevention, New Hampshire and specifically Rockingham County, have one of the highest occurrences of Lyme disease in the country and among the New England states. Climate change may increase the presence of ticks and Lyme disease with warmer winters which allow ticks to persist year-round and increases in the population of its host species (mice, deer). Other diseases carried by insects may increase with growing insect populations and expanding geographic ranges of certain insect species.

VI. Future Growth and Development

Planning for future growth and development should consider the implications of existing and projected future coastal hazard such as areas subject to flooding and erosion. Land use decisions will largely dictate where new development and redevelopment occurs, and where it will not. Sustaining the services provided by natural features such as salt marsh, freshwater wetlands and natural shoreline processes will be an important aspect of managing coastal high-risk areas into the future.

A. Growth and Development

1. Population

As reported by the U.S. Census, the population of Greenland is reported as 2,707 in 1990, 3,227 in 2000, and 3,549 in 2010. The current population is estimated to be 3,724. The Town has grown by 37.5% from 1990 to 2015.

2. Land Use Changes and Regulations

Impervious Surfaces

From 1990 to 2010, impervious surfaces (paved roads, parking lots, roofs) in Greenland have increased from 6.7% (450 acres) to 15.7% (1,055 acres) of the total land area in Greenland (6,722 acres). Referring back to Figure 5, the amount of precipitation associated with 50-year to 100-year or greater storms events has increased in the last 40 years resulting in more frequent flooding and failure of older infrastructure not designed to manage this increased runoff volume. Over the last several years, the Greenland Planning Board has been increasingly concerned about flooding related to increased impervious cover. The Board has discussed ways to reduce the risks and impacts of flooding as the Town continues to grow and develop.

Studies show that impervious surface cover exceeding 10% of a watershed area can negatively affect water quality and the health and diversity of aquatic species. Locally, pollutants discharged in stormwater runoff routinely result in closure of shell-fishing areas in Great Bay.

Non-Point Source Pollution

Coastal erosion and sediment transport during storm events can introduce pollutants to salt marshes and freshwater wetlands near the coast. The changes in precipitation documented in the Northeast Regional Climate Center - Extreme Precipitation Atlas increases the volume of stormwater runoff generated from impervious surfaces during moderate to severe storm events. Stormwater runoff often contains harmful pollutants that are discharged into waterways, wetlands, and salt marshes.

Shoreline Stabilization

Maintaining the stability of the shoreline along Great Bay, Winnicut River and other tributaries requires keeping sea grass healthy and propagating to secure the mudflats and sediment in place. Human encroachments cause the structure of these mudflats to weaken and the sediment to be transported by runoff.

3. Land and Zoning Districts Impacted by Sea-level Rise and Storm Related Flooding¹¹

Upland impacted by flooding from 1.7 feet of sea-level rise is low while impacts increase with 4.0 feet and 6.3 of sea-level rise. The most heavily impacted areas are residential neighborhoods along Shore Drive, Meloon Road, Bayside Road, Fairview Terrace, Great Bay Drive West, Bruce Court and Caswell Drive, shoreland associated with the Great Bay Discovery Center and shoreland and upland associated with Portsmouth Country Club.

Figure 11 - Acres of upland impacted by sea-level rise and storm surge.

Sea-Level Rise (SLR) Scenarios	SLR 1.7 ft.	SLR 4.0 ft.	SLR 6.3 ft.	SLR 1.7 ft. + storm surge	SLR 4.0 ft. + storm surge	SLR 6.3 ft. + storm surge
Acres of upland impacted	51.0	119.8	224.0	162.5	261.3	375.5
% Upland impacted	0.08%	1.88%	3.52%	2.55%	4.11%	5.90%

Total Upland in Greenland = 6,357 acres. Upland refers to land above mean higher high water (highest tidal extent) and excludes wetlands.

Greenland's coastal area is predominantly developed as single-family dwellings, served by private septic systems, and drinking water wells. Conservation and open space lands in these areas can act as important flood storage areas and buffer development from damaging flood waters, wind and erosion, and by allowing salt marsh and freshwater wetlands systems to store flood waters and migrate inland as conditions change. Preserving these natural landscapes and ecosystems will be an important strategy for mitigating and protecting developed areas from future impacts.

B. Planning for Public Safety

1. Hazard Mitigation Plan

FEMA requires that municipalities maintain an updated and approved Hazard Mitigation Plan in order to qualify for federal disaster relief, grant funding, and participation in the National Flood Insurance Program. The Plan documents the Town's exposure to past, current, and future natural hazards, and recommends specific actions to reduce risk from these hazards. Greenland's 2015 Hazard Mitigation Plan includes the following recommendations that address coastal hazards:

- **Review Existing Infrastructure:** Evaluate existing infrastructure (roads, bridges, storm water management devices, etc.) for repair replacement needs. Emphasis on infrastructure critical during hazard situation (e.g., evacuation route, culverts).

¹¹ Tides to Storms Coastal Vulnerability Assessment, 2015 prepared by Rockingham Planning Commission

- **Repair/Replace Infrastructure:** Implement schedule for repair or replacement of infrastructure in need. Incorporate into CIP or as warrant articles.

The Town may incorporate information from the Tides to Storms Coastal Vulnerability Assessment as part of its next scheduled Hazard Mitigation Plan update including maps, statistics of future impacts, and recommended adaptation strategies to reduce risk and vulnerability of municipal assets and resources.

2. Emergency Operations Plan

The Emergency Operations Plan is maintained by Greenland's Emergency Management Director. The Plan provides a comprehensive set of protocols that are activated in the event of an emergency, natural disaster or other situation that poses a threat to public safety and the Town.

Incorporating new information about changes in weather, extreme events and long-term climate change can enhance emergency planning. The Town could reduce its risk and exposure by incorporating coastal hazards and risks assessments in municipal emergency management and hazard mitigation plans and improving connections and efficiencies between these plans. Collaborating with private sector representatives to evaluate and identify necessary improvements to emergency communications systems preparedness can ensure 911 and other critical communications services remain operational during emergencies and disasters. Local officials recognize the need to update a regional comprehensive emergency evacuation plan for coastal flood and storm events that includes early notification to highest risk areas and properties.

VII. Community Adaptation and Resilience

A. Ways of Adapting and Being Resilient

Incorporating the latest flood trends and future projections into municipal planning and projects will minimize vulnerability and prove beneficial even if future hazards turn out to be less extreme than anticipated.

Adapting to changing conditions means designing buildings, roadways, utilities, and other infrastructure that account for flooding or modifying uses of land that are compatible under a wide range of conditions. The process of adapting creates buildings and systems that are more **resilient** and better able to perform under changing conditions with fewer impacts.

Adaptation – Adjustments in ecological, social, or economic systems in response to actual or expected climatic change and their effects or impacts. It refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change.
[<http://unfccc.int/focus/adaptation/items/6999.php>]

Resilience - A capability to anticipate, prepare for, respond to, and recover from significant multi-hazard threats with minimum damage to social well-being, the economy, and the environment.
[<http://epa.gov/climatechange/glossary.html>]

1. Land Development and Natural Resource Protection

To the extent necessary based on expected impacts, the Town should integrate comprehensive land use and environmental planning with floodplain management approaches that prevent and minimize impacts from coastal hazards. Establishing minimum regulations that consider vulnerability assessment information can support appropriate amendments to land development standards, building codes, floodplain management, erosion hazard zones, and stormwater management. Implementing strategies and tools (such as land use regulations, incentives, and building codes) can maintain or restore pervious surfaces, provide pollution reduction, protect vegetated buffers, and protect water quality.

Over time and as warranted, additional approaches may include adoption of flood hazard overlay districts that include higher development standards that minimize impacts from natural hazards and climate change. In the long-term, prohibiting development in areas subject to chronic flooding and erosion can ultimately reduce risk and exposure along the coast. In the future, finding ways to acquire at-risk private properties and adapting them for new uses, such as recreational areas, will ensure continued enjoyment of coastal living.

Land use and development regulations can be focused to reduce vulnerability while protecting ecosystem services. One of the most effective strategies is to conserve land that allows coastal habitats and populations to adapt to changing conditions while protecting natural functions that protect people, structures, and facilities. Watershed-based plans can include comprehensive water resource management principles focused on changes in hydrology resulting from climate change. Maintaining or restoring critical natural systems, such as salt marsh and sand dunes, will ensure greater protection from storm surge and long-term impacts of sea-level rise. Best management practices for shoreline development can include alternatives to shoreline hardening, bank stabilization techniques, and vegetation restoration.

2. Infrastructure and Building Guidelines

Increased precipitation and sea-level rise will produce more inland runoff and localized flooding in addition to coastal flooding. Experts recommend that for floodplain and coastal locations, where there is little tolerance for risk (e.g., costly to repair or serves a critical function), that the following guidelines be used in the siting and construction of infrastructure and facilities.¹²

- The range of sea-level rise scenarios from the Intermediate High to the Highest (Figure 4) be applied as follows:
 - **Determine** the time period over which the system is designed to serve (either in the range 2014 to 2050, or 2051 to 2100).
 - **Commit** to manage to the Intermediate High condition but be **prepared** to manage and adapt to the Highest condition if necessary.
 - Be **aware** that the projected sea-level rise ranges may change and adjust if necessary.

¹² Paul Kirshen, Cameron Wake, Matt Huber, Kevin Knuuti, Mary Stampone, *Sea-level Rise, Storm Surges, and Extreme Precipitation in Coastal New Hampshire: Analysis of Past and Projected Future Trends (2015)*, Prepared by Science and Technical Advisory Panel for the New Hampshire Coastal Risks and Hazards Commission.

- Development projects continue to use the present frequency distributions for storm surge heights and be added to projected ranges for sea-level rise. The flood extent of the current 100-year storm surge will increase as sea level rises, and the 100-year floodplain will be flooded more frequently by smaller surges as sea level rises.
- At a minimum, infrastructure is designed using precipitation data from the current Northeast Regional Climate Center (Cornell) atlas and infrastructure be designed to manage a 15% increase in extreme precipitation events after 2050. Infrastructure design should incorporate new precipitation data as it is published or updated.

3. Town Actions to Address Coastal Hazards

Climate Risk in the Seacoast (C-RiSe) Vulnerability Assessment

In 2017, Town staff and boards participated in the development of a Town-specific Vulnerability Assessment with the Rockingham Planning Commission. Through a series of meetings, maps, and statistical information about impacts to roadways, critical infrastructure and natural resources was evaluated. Staff and board members provided their perspectives on critical issues facing the Town and drafted recommendations to address current and future flood hazards which were included in a final report and map set for the Town. Information from these maps and report are being incorporated into this chapter.

Not a lot of data or local information exists about what residents and businesses have done or are doing to accommodate and adapt to coastal hazards and climate change. However, many residents have installed generators to supply electricity in the event of power outages.

VIII. Recommendations for Long-Term Adaptation and Resilience Strategies and Actions

The goal of becoming a resilient community is to sustain the local economy, implement sound land use and development, protect natural resources and their functions, and ensure public safety. To address the potential future impacts of climate change, the Town can benefit by collaborating with state agencies, other municipalities, and technical service providers. The following recommendations can serve as a guide to short-term and long-term actions that can be implemented incrementally over time as conditions warrant.

Municipal Policy and Planning

The Board of Selectmen and Town Administrator may lead implementation of the following recommended strategies and actions with assistance from municipal departments, boards, and commissions as necessary.

- M1 Strengthen municipal capacity to utilize the best available science related to potential future impacts of climate change and its risks in order to improve decision-making and action planning.

- M2 Identify funding to support preparation of an application to the FEMA Community Rating System Program, a voluntary program whereby the municipality takes specific actions to reduce flood risk and receives discounted flood insurance premiums for NFIP policy holders.
- M2 Utilize the best available climate science and flood risk information for the siting and design of new, reconstructed, and rehabilitated municipal structures and facilities.
- M3 Collaborate with private sector representatives to evaluate and identify necessary improvements to emergency communications systems preparedness to ensure 911 and other critical communications services remain operational during emergencies and disasters.
- M4 Incorporate coastal hazards and risks assessments in municipal emergency management and hazard mitigation plans and improve connections and efficiencies between these plans.
- M5 Begin discussions with elected officials, the Planning Board and Zoning Board of Adjustment about long term land use development standards, building code, and zoning options in areas at high risk for flooding and erosion.
- M6 Consider vulnerabilities of local tax base, state economic development plan, retention or replacement of economic resources, at risk populations and population migration.
- M7 Adapt economic development planning approaches to respond to changing environmental conditions, leverage shifting opportunities, and promote resilience and sustainability planning as economic development strategies.
- M8 Explore options for provision of drinking water and wastewater treatment in neighborhoods at risk of saltwater intrusion into wells and leach fields.

Land Use and Natural Resource Strategies

The Planning Board, Conservation Commission, Town Planner and Code Enforcement Officer may lead implementation of the following recommended strategies and actions with assistance from other municipal departments and organizations, such as the Winnicut River Watershed Coalition, as necessary.

- L1 Adopt land development regulations aimed at minimizing impervious surfaces and stormwater flooding and reducing or preventing non-point source pollution.
- L2 Revise building codes and septic system and drinking well design standards to enable adaptive and innovative construction techniques and designs to protect these structures from flooding and rising groundwater levels (e.g., elevating above base flood elevation, wet and dry flood-proofing).
- L3 Over time and as warranted, consider adoption of flood hazard overlay districts that include higher development standards that minimize impacts from natural hazards and climate change.
- L4 Require development project approvals to include drainage maintenance plans for stormwater infrastructure and streams or open drainage ways on site.
- L5 Maintain or restore critical natural systems such as salt marsh and agricultural fields to ensure greater protection from storm surge and long-term impacts of sea-level rise. Employ best management practices for shoreline development such as bank stabilization techniques and vegetation restoration as alternatives to shoreline hardening.
- L6 Utilize existing State and federal grant programs for natural resource restoration.

- L7 Develop natural resource restoration plans that explicitly consider future coastal risk and hazards, and the ecological services that they provide.
- L8 Encourage appropriate buffers and setbacks that promote ecosystem services (e.g., flood storage, storm surge protection, habitat, recreation).
- L9 Be aware of opportunities to upgrade structures and facilities, such as freshwater and tidal crossings, that can create barriers to tidal flow and habitat migration, particularly those that will be impaired or severely impacted by sea-level rise, storm surge, or extreme precipitation.
- L10 Engage in best practices for invasive species planning and removal and incorporate climate considerations in invasive species removal plans.
- L11 Identify the areas where erosion and shoreline instability exist and prioritize areas for nature-based approaches (e.g., mud flat and salt marsh restoration).
- L12 Protect future marsh migration areas identified by marsh migration modeling.
- L11 Improve designs for dams, culverts, and bridges to maintain existing function and reconnect fragmented surface waters (wetlands, lakes, ponds, rivers, and streams) and protect high quality habitat for aquatic organisms.
- L13 Incorporate in plans and implement strategies to prepare and adapt coastal recreational resources based on best available climate science.
- L14 Assess existing and future recreational areas for their potential to provide storage for flood waters and stormwater runoff.
- L15 Preserve freshwater wetlands, forestlands, agricultural fields, and recreational areas that serve to minimize climate change impacts, including floodwater mitigation, water storage in times of drought, and migration of wildlife habitat.
- L 16 Support the work of the Winnicut River Watershed Coalition, including the Coalition's Better Backyard Campaign, designed to protect the integrity of the Winnicut River and its tributaries, as well as Great Bay. (<http://www.winnicutcoalition.org>)
- L17 Consider a municipal tree planting program, such as the Tree City USA program, to mitigate effects of climate change and contribute to carbon sequestration.
- L18 Consult the 2010 Town of Greenland Natural Resources and the 2006 Greenland Conservation and Land Stewardship Plan, for recommendations regarding natural resource protection opportunities and priorities for stewardship of town owned land.

Local, Regional and State Coordination

The Board of Selectmen and Town Administrator may lead implementation of the following recommended strategies and actions with assistance from municipal departments, boards, and commissions as necessary.

- R1 Coordinate with municipalities and private water companies to evaluate water resources, drinking water needs, and wastewater treatment for the seacoast region.
- R2 Coordinate with the NH Department of Transportation on anticipated improvements to State and local roadways most vulnerable to flooding and leverage funding necessary for such improvements.
- R3 Coordinate the evacuation route planning with Portsmouth, Newington, Rye, North Hampton, and Stratham. Incorporate early communication and notification into regional evacuation route planning.

Community Preparedness and Awareness

The Town Administrator and municipal departments may lead implementation of the following recommended strategies and actions with assistance from the Planning Board, Conservation Commission, and civic organizations as necessary.

- C1 Form a citizen led committee to address flood impacts and act as an advocacy group for the community on flood related issues of concern.
- C2 Provide informational materials about flood risk reduction at public and community events.
- C3 Schedule events at the Library or other public venues featuring topics relating to coastal hazards and preparedness, and climate adaptation.
- C4 Provide information through outreach to residents and businesses about alternative approaches, reducing risk and lowering insurance premiums through adaptation.
- C5 Provide information through outreach to residents and businesses about the benefits of living shorelines.
- C6 Implement the FEMA High Water Mark Initiative to illustrate past flood elevations and future water levels associated with the 100-year storm surge and projected sea-level rise. <https://www.fema.gov/high-water-mark-initiative>
- C7 Provide outreach and information to residents about how to clean up after a storm event (e.g., drainage ways, driveway culverts etc.).
- C8 Continue participating in and supporting the Winnicut River Watershed Coalition.
- C9 Continue participation in the NH Coastal Adaptation Workgroup to facilitate, coordinate, provide technical information, and convene public outreach events about climate adaptation.
- C10 Partner with federal and state agencies as well as regional and local organizations to expand resources for education, outreach, and coordination.
- C11 Encourage the incorporation of climate science and information about the risks and hazards associated with changing climatic conditions in public school curriculum.
- C12 Improve information available to property owners and prospective buyers about coastal hazards and vulnerabilities.
- C13 Improve consumer protection disclosure of properties vulnerable to coastal flooding.
- C14 Distribute flood protection safety information to property owners in high-risk areas.
- C15 Encourage homeowners to obtain flood insurance through the National Flood Insurance Program, and in moderate to low-risk areas, to purchase a Preferred Risk Policy.
- C16 Encourage landowners to preserve the beneficial functions of natural features like wetlands, salt marsh, and shorelines.

There are a variety of ways Greenland can prepare and adapt to coastal hazards. The New Hampshire Coastal Risks and Hazards Commission (CRHC) Report, titled Preparing New Hampshire for Projected Storm Surge, Sea Level Rise, and Extreme Precipitation (2016) outlines six guiding principles for action:

<http://www.nhcrhc.org/wp-content/uploads/2016-CRHC-final-report.pdf>.

1. **Act Early.** Start planning now. Being proactive will save money in the long run when compared to a more traditional reactionary approach to flood management.
2. **Collaborate and Coordinate.** Take manageable steps to prepare over the long run.
3. **Respond Incrementally.** As the science improves, adjust your approach to match expected conditions.
4. **Incorporate Risk Tolerance in Design.** Work together across sectors and with neighboring municipalities to maximize impact.
5. **Revisit and Revise.** Design projects based on willingness to accept risk associated with unacceptable performance. Risk tolerance will likely vary based on the importance and cost of maintaining or replacing a structure.
6. **Make “No Regrets” Decisions.** Take actions that offer multiple benefits to your municipality, and will, therefore, provide added value regardless of the flood scenario that occurs.

Appendix

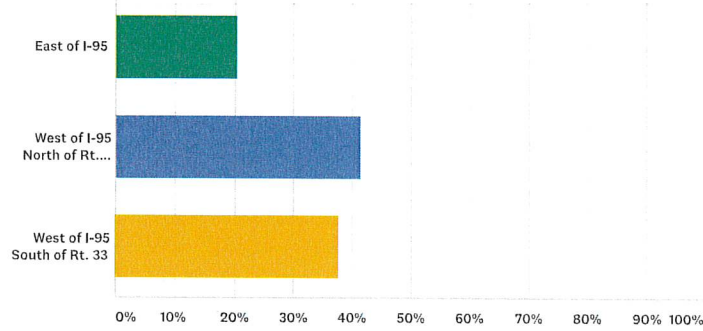
Community Survey Results & Written Comments



Greenland Master Plan Community Survey 2019

Q1 What area of the community do you reside?

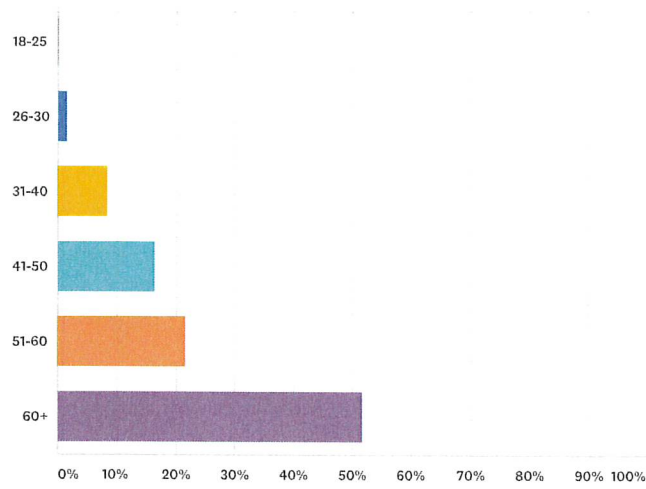
Answered: 338 Skipped: 30



ANSWER CHOICES	RESPONSES	
East of I-95	20.41%	69
West of I-95 North of Rt. 33 (Great Bay side)	41.72%	141
West of I-95 South of Rt. 33	37.87%	128
Total Respondents: 338		

Q2 Age Bracket

Answered: 363 Skipped: 5

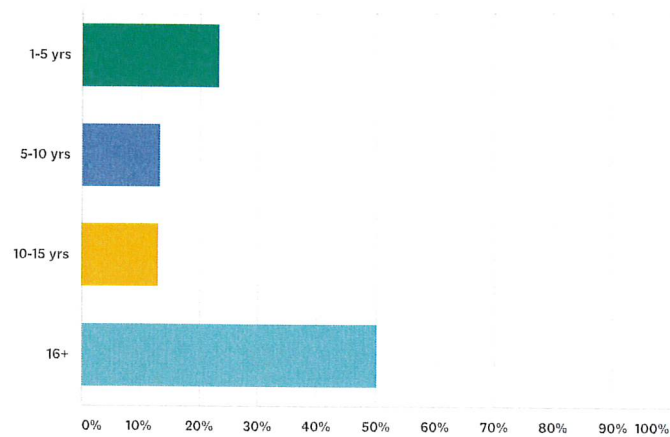


ANSWER CHOICES	RESPONSES	
18-25	0.28%	1
26-30	1.65%	6
31-40	8.54%	31
41-50	16.53%	60
51-60	21.76%	79
60+	51.79%	188
Total Respondents: 363		

Greenland Master Plan Community Survey 2019

Q3 How long have you lived in Greenland?

Answered: 364 Skipped: 4

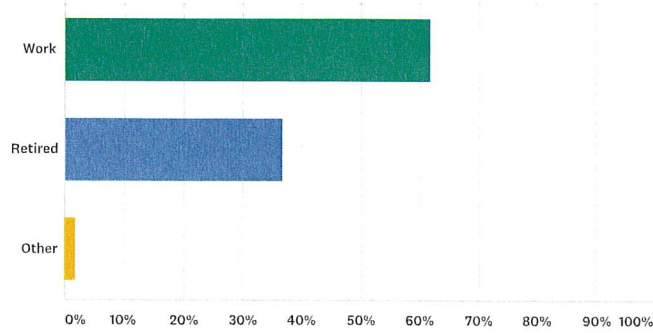


ANSWER CHOICES	RESPONSES	
1-5 yrs	23.35%	85
5-10 yrs	13.46%	49
10-15 yrs	13.19%	48
16+	50.27%	183
Total Respondents: 364		

Greenland Master Plan Community Survey 2019

Q4 Do you work or are you retired?

Answered: 363 Skipped: 5



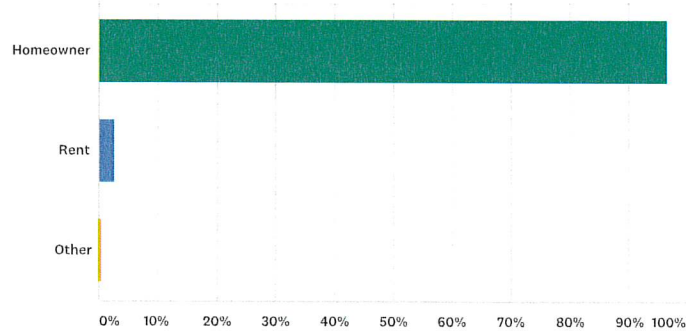
ANSWER CHOICES	RESPONSES	
Work	61.98%	225
Retired	36.91%	134
Other	1.93%	7
Total Respondents: 363		

#	OTHER (PLEASE SPECIFY)	DATE
1	work, retired	6/11/2019 3:02 PM
2	work, retired	6/11/2019 1:14 PM
3	work, retired	6/11/2019 12:10 PM
4	work, retired	6/11/2019 8:09 AM
5	actively support local historical society and church	6/7/2019 3:33 PM
6	work, retired	6/6/2019 11:57 AM
7	work, retired	6/6/2019 9:23 AM
8	Stay at home mom	6/3/2019 4:37 PM
9	stay at home	5/30/2019 11:06 AM

Greenland Master Plan Community Survey 2019

Q5 Are you a homeowner or do you rent?

Answered: 367 Skipped: 1

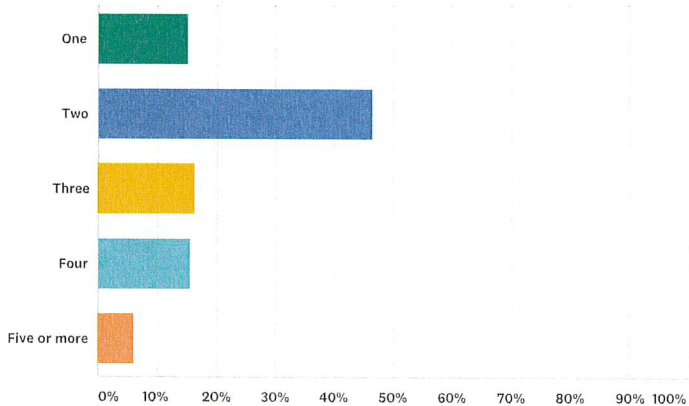


ANSWER CHOICES	RESPONSES	
Homeowner	96.73%	355
Rent	2.72%	10
Other	0.54%	2
Total Respondents: 367		

#	OTHER (PLEASE SPECIFY)	DATE
1	live with relative	6/14/2019 9:27 AM
2	Caretaker for father, no rent	6/13/2019 3:41 PM

Q6 Individuals in your household.

Answered: 365 Skipped: 3

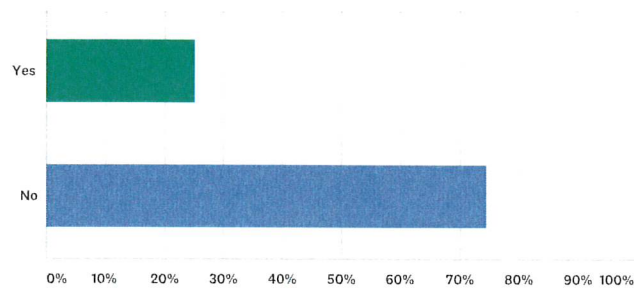


ANSWER CHOICES	RESPONSES	
One	15.34%	56
Two	46.58%	170
Three	16.44%	60
Four	15.62%	57
Five or more	6.30%	23
Total Respondents: 365		

Greenland Master Plan Community Survey 2019

Q7 Do you have school age children living with you?

Answered: 363 Skipped: 5

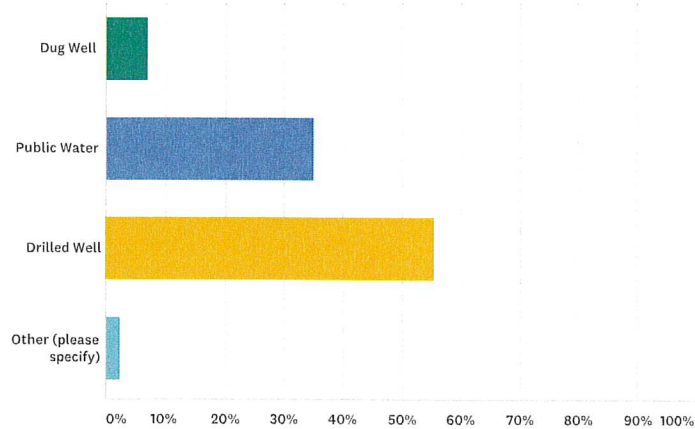


ANSWER CHOICES	RESPONSES	
Yes	25.34%	92
No	74.66%	271
Total Respondents: 363		

Greenland Master Plan Community Survey 2019

Q8 What type of water system do you have?

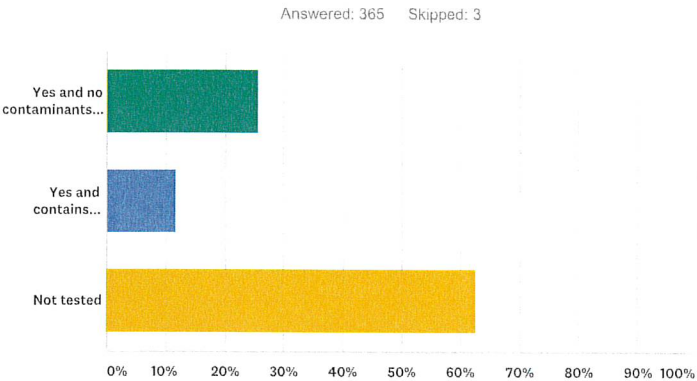
Answered: 365 Skipped: 3



ANSWER CHOICES		RESPONSES	
Dug Well		7.12%	26
Public Water		35.07%	128
Drilled Well		55.62%	203
Other (please specify)		2.47%	9
Total Respondents: 365			

#	OTHER (PLEASE SPECIFY)	DATE
1	Very concerned w/Coakley Landfill; please do something about this!	6/14/2019 2:38 PM
2	Not sure if my well is dug or drilled	6/14/2019 11:07 AM
3	Well-not sure if dug or drilled	6/13/2019 3:59 PM
4	spring	6/11/2019 12:10 PM
5	Dug & drilled wells	6/11/2019 11:21 AM
6	Well - not sure what kind	6/8/2019 10:01 AM
7	Dont know if dug or drilled well	6/6/2019 3:41 PM
8	well, but not sure what kind	6/2/2019 12:21 PM
9	well but I don't know if dug or drilled	5/31/2019 4:25 PM

Q9 Within the past three years, have you had your water tested and if yes did it contain contaminants?

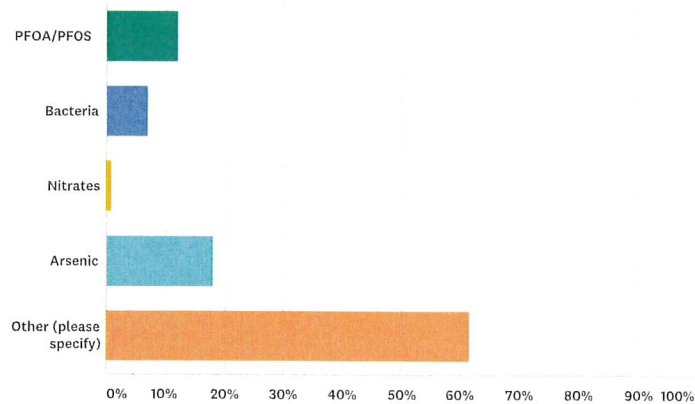


ANSWER CHOICES	RESPONSES	
Yes and no contaminants where found	25.75%	94
Yes and contains contaminants	11.78%	43
Not tested	62.74%	229
Total Respondents: 365		

Greenland Master Plan Community Survey 2019

Q10 If your water does contain contaminants, what elements have been found?

Answered: 99 Skipped: 269



ANSWER CHOICES	RESPONSES	
PFOA/PFOS	12.12%	12
Bacteria	7.07%	7
Nitrates	1.01%	1
Arsenic	18.18%	18
Other (please specify)	61.62%	61
TOTAL		99

#	OTHER (PLEASE SPECIFY)	DATE
1	N/A	6/14/2019 4:51 PM
2	Iron, sulfur	6/14/2019 2:38 PM
3	Not tested	6/13/2019 7:08 PM
4	Not at current standards, arsenic found, but feel this is normal for this area, high in iron & magnesium	6/13/2019 3:41 PM
5	Arsenic & Hard - need softner system	6/13/2019 3:16 PM
6	Rust	6/13/2019 2:25 PM
7	Iron, Sodium	6/11/2019 12:57 PM
8	Dissolved solids high	6/11/2019 12:03 PM
9	Nitrates, Arsenic	6/11/2019 10:24 AM
10	N/A	6/10/2019 8:27 PM
11	Iron	6/10/2019 7:47 PM
12	did not test	6/9/2019 9:43 AM
13	not tested - received notice from public water on their testing	6/9/2019 8:07 AM
14	none	6/8/2019 10:01 AM
15	No contaminants	6/7/2019 5:21 PM
16	Public water	6/7/2019 1:56 PM
17	Hard water elements	6/7/2019 12:00 PM
18	None	6/7/2019 11:08 AM
19	N/A	6/7/2019 9:13 AM
20	N/a	6/7/2019 7:25 AM
21	not tested	6/6/2019 5:51 PM
22	Too much chlorine	6/5/2019 4:02 PM
23	Lead,copper,iron,PFOA,PFOS	6/5/2019 3:45 PM
24	In 5 years Arsenic & PFOS/PFOA	6/5/2019 12:14 PM
25	Magnesium & arsenic	6/5/2019 10:46 AM
26	many contaminates no PFOA's	6/5/2019 8:37 AM
27	No tests. This ? should have conditional logic	6/5/2019 7:46 AM
28	Arsenic, Radon, Nitrates	6/3/2019 9:22 PM

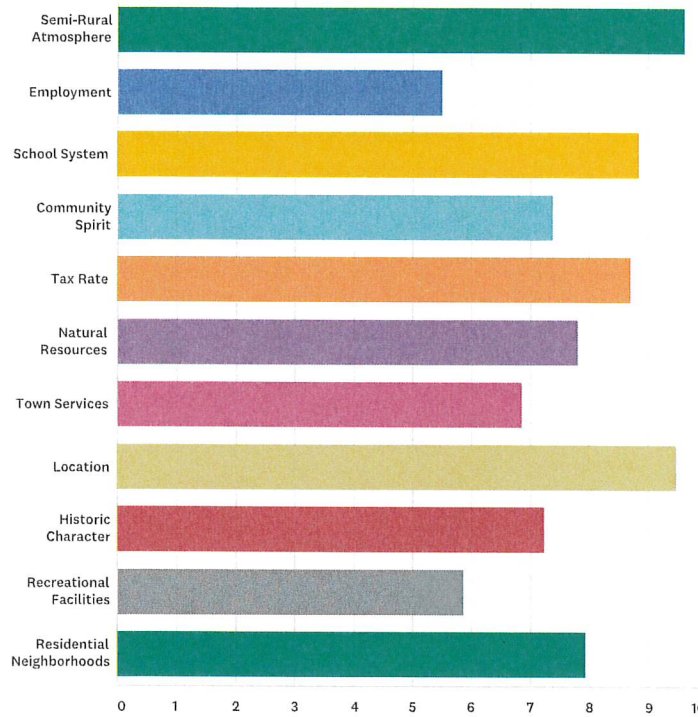
Greenland Master Plan Community Survey 2019

29	Na	6/3/2019 6:39 PM
30	Not tested	6/3/2019 4:37 PM
31	Not tested	6/3/2019 1:19 PM
32	Not tested	6/3/2019 1:14 PM
33	Not Tested	6/3/2019 10:43 AM
34	N/A	6/3/2019 9:50 AM
35	Iron	6/3/2019 9:41 AM
36	na	6/3/2019 9:28 AM
37	No contaminants found	6/3/2019 7:27 AM
38	None	6/2/2019 7:10 PM
39	N/a	6/2/2019 6:55 PM
40	Arsenic and radon	6/2/2019 5:08 PM
41	none	6/2/2019 2:38 PM
42	Not Tested	6/2/2019 1:45 PM
43	we need to get ours tested - we are too close to that contaminated area for my liking	6/2/2019 12:21 PM
44	Under the legal limit for several listed above, but none flagged for concern	6/2/2019 9:46 AM
45	Hasn't been tested	6/2/2019 9:21 AM
46	na	6/1/2019 10:44 PM
47	Not tested	6/1/2019 6:06 PM
48	Nitrates, arsenic & magnesium	6/1/2019 3:08 PM
49	none	5/31/2019 6:30 PM
50	I don't know	5/30/2019 9:15 PM
51	None	5/30/2019 9:09 PM
52	None	5/30/2019 8:07 PM
53	N/A	5/30/2019 5:14 PM
54	Not applicable. No contaminants found.	5/30/2019 3:47 PM
55	N/A	5/30/2019 2:24 PM
56	n/a	5/30/2019 1:26 PM
57	Haven't had water tested	5/30/2019 12:10 PM
58	N/A	5/30/2019 11:57 AM
59	No testing!	5/30/2019 11:57 AM
60	Not tested	5/30/2019 11:42 AM
61	Not tested	5/30/2019 10:54 AM

Greenland Master Plan Community Survey 2019

Q11 What do you consider the desirable features of Greenland? Select 5; Rank 1 (most Important) -5

Answered: 357 Skipped: 11

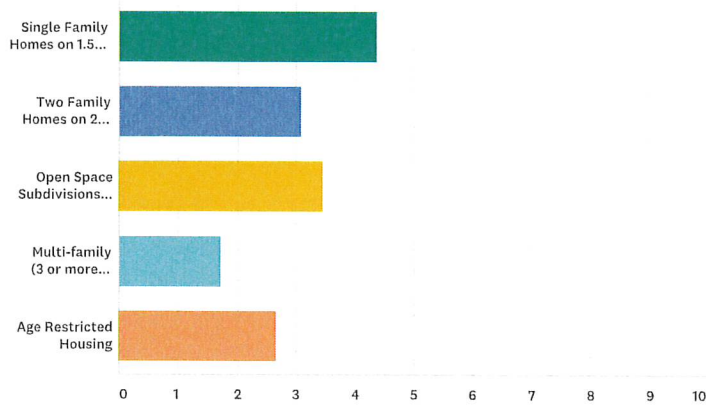


	1	2	3	4	5	6	7	8	9	10	11	TOTAL	SCORE
Semi-Rural Atmosphere	42.24% 128	22.44% 68	13.86% 42	10.56% 32	7.59% 23	0.66% 2	0.66% 2	0.33% 1	1.32% 4	0.33% 1	0.00% 0	303	9.65
Employment	7.58% 5	0.00% 0	9.09% 6	16.67% 11	7.58% 5	12.12% 8	13.64% 9	3.03% 2	4.55% 3	9.09% 6	16.67% 11	66	5.53
School System	20.86% 39	27.81% 52	16.04% 30	13.90% 26	13.37% 25	2.14% 4	0.53% 1	2.67% 5	1.07% 2	0.53% 1	1.07% 2	187	8.88
Community Spirit	2.88% 4	15.11% 21	11.51% 16	22.30% 31	27.34% 38	4.32% 6	4.32% 6	4.32% 6	4.32% 6	2.16% 3	1.44% 2	139	7.40
Tax Rate	15.93% 36	24.78% 56	20.80% 47	15.93% 36	15.49% 35	1.77% 4	0.88% 2	1.33% 3	0.88% 2	0.44% 1	1.77% 4	226	8.72
Natural Resources	6.34% 9	16.20% 23	21.13% 30	21.13% 30	14.08% 20	7.75% 11	4.93% 7	2.82% 4	1.41% 2	2.11% 3	2.11% 3	142	7.82
Town Services	1.74% 2	9.57% 11	17.39% 20	16.52% 19	25.22% 29	2.61% 3	7.83% 9	6.09% 7	6.09% 7	4.35% 5	2.61% 3	115	6.89
Location	33.88% 103	22.37% 68	17.76% 54	18.09% 55	5.59% 17	0.66% 2	0.33% 1	0.99% 3	0.00% 0	0.00% 0	0.33% 1	304	9.50
Historic Character	5.37% 8	9.40% 14	18.12% 27	16.11% 24	26.85% 40	5.37% 8	3.36% 5	3.36% 5	6.71% 10	4.03% 6	1.34% 2	149	7.25
Recreational Facilities	2.13% 2	5.32% 5	11.70% 11	18.09% 17	20.21% 19	2.13% 2	5.32% 5	6.38% 6	4.26% 4	17.02% 16	7.45% 7	94	5.87
Residential Neighborhoods	6.42% 14	13.76% 30	24.77% 54	18.81% 41	25.23% 55	1.83% 4	0.92% 2	2.75% 6	1.83% 4	0.92% 2	2.75% 6	218	7.95

Greenland Master Plan Community Survey 2019

Q12 What type of housing should Greenland encourage? Rank 1 (Most Important) -5

Answered: 352 Skipped: 16

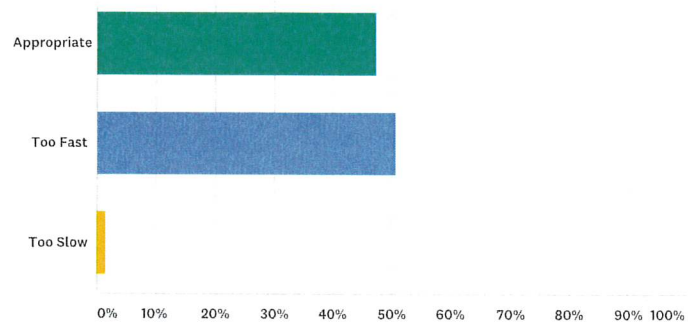


	1	2	3	4	5	TOTAL	SCORE
Single Family Homes on 1.5 acres	70.55% 230	13.50% 44	6.75% 22	2.45% 8	6.75% 22	326	4.39
Two Family Homes on 2 acres	3.09% 8	36.68% 95	29.73% 77	28.57% 74	1.93% 5	259	3.10
Open Space Subdivisions (Homes on small lots with open space preserved)	22.70% 64	28.37% 80	28.37% 80	14.18% 40	6.38% 18	282	3.47
Multi-family (3 or more units)	3.92% 10	4.31% 11	9.41% 24	26.27% 67	56.08% 143	255	1.74
Age Restricted Housing	13.16% 35	15.41% 41	22.93% 61	23.31% 62	25.19% 67	266	2.68

Greenland Master Plan Community Survey 2019

Q13 Which statement best characterizes Greenland's rate of residential growth over the last five years?

Answered: 362 Skipped: 6

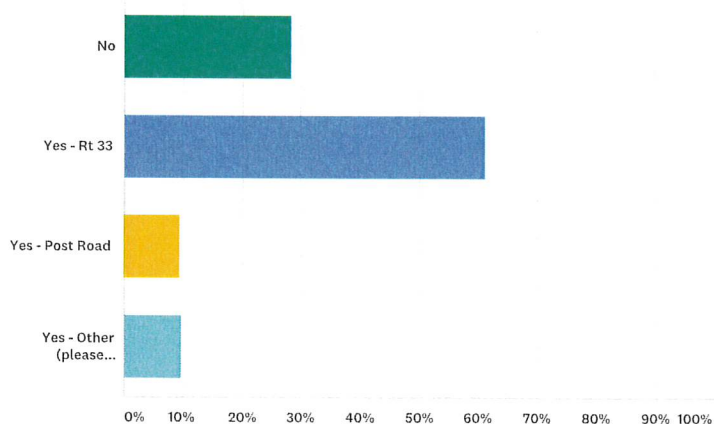


ANSWER CHOICES	RESPONSES	
Appropriate	47.51%	172
Too Fast	50.83%	184
Too Slow	1.66%	6
TOTAL		362

Greenland Master Plan Community Survey 2019

Q14 Should the Town encourage commercial and industrial growth to diversify the tax base? If yes, where in the community should growth occur?

Answered: 365 Skipped: 3



ANSWER CHOICES	RESPONSES	
No	28.49%	104
Yes - Rt 33	61.37%	224
Yes - Post Road	9.59%	35
Yes - Other (please specify)	9.86%	36
Total Respondents: 365		

#	YES - OTHER (PLEASE SPECIFY)	DATE
1	Industrial only on 33	6/14/2019 3:31 PM
2	Roads off 33	6/14/2019 2:54 PM
3	Where allowable/appropriate	6/14/2019 2:34 PM
4	East of I95	6/14/2019 2:01 PM
5	Greenland needs new restaurants/bars	6/14/2019 1:50 PM
6	Rt33 cannot handle any more traffic; out of control now	6/14/2019 1:37 PM
7	Rt 33 - East of Winnicutt River	6/14/2019 10:30 AM
8	Rt 33 - if there's a way to divert the traffic off Rt 33 since traffic already a problem in AM & PM	6/13/2019 3:16 PM
9	Rt 33 already congested (Industrial growth within 1 mile from I95 with the ability to have access to I95 with ramps)	6/13/2019 2:47 PM
10	Both Rt 33 & Post Rd	6/13/2019 2:25 PM
11	Rt. 33 & Post Rd.	6/11/2019 3:45 PM
12	Portsmouth Ave. (Town Hall Side), eventual small business boutique type stores	6/11/2019 3:16 PM
13	Breakfast Hill just past the power lines, both sides of the road	6/11/2019 1:14 PM
14	Space next to Target	6/11/2019 12:34 PM
15	Could expand commercial/industrial areas already in place	6/11/2019 12:21 PM
16	Rt. 33 & along I95 behind Novel Ironworks	6/11/2019 11:33 AM
17	Around the "Town Center" although that would be difficult because of houses. Behind School?	6/11/2019 11:22 AM
18	Current industrial zones; redevelopment on 33	6/11/2019 9:09 AM
19	Commercial only!!! - Focus on locally owned shops	6/10/2019 11:26 AM
20	I think it can continue on 33 from the Tractor Supply store down toward Pease only.	6/7/2019 3:09 PM
21	Expand commercial zoning	6/7/2019 7:25 AM
22	Ocean Rd	6/6/2019 8:54 PM
23	Either depending on business	6/6/2019 3:50 PM
24	33 and Ocean Road area	6/6/2019 1:24 PM
25	NO INDUSTRIAL	6/6/2019 10:09 AM
26	Around Ocean Road	6/5/2019 1:27 PM
27	Rt 33 East of Ocean Rd	6/5/2019 1:23 PM

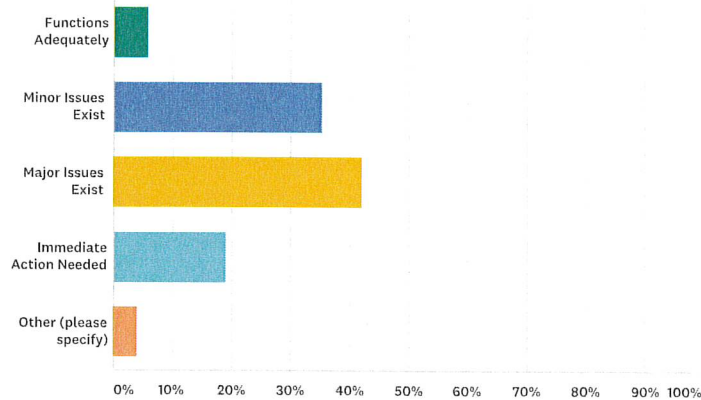
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28	Target and Lowe's plaza	6/5/2019 12:54 PM
29	Not sure	6/5/2019 10:46 AM
30	Rt 33 near Target, not where 33 drops to a 2 lane road	6/5/2019 9:06 AM
31	More commercial on 33	6/3/2019 6:50 PM
32	If on Rt 33, improvements will need to be made to traffic patterns	6/2/2019 12:21 PM
33	More commercial on 33. HOWEVER, continue to ensure that it is done a responsibly as it has been done so far. The planning board has done an incredible job not turning 33 into Rte 1 in Saugus or Rte 9 in Framingham. Keep up the good work!! Thanks for making McDonalds not look like a modern urban building, hiding the outdoor goods at Tractor Supply, making Lowes and Target fit and as unobtrusive as possible. Keep up the good work and thank you for your service!!	6/2/2019 8:53 AM
34	From Dunkin Donuts to Lowes	5/31/2019 10:10 PM
35	Create an Industrial park	5/31/2019 12:34 PM
36	Rt 33 and Ocean Road	5/30/2019 7:09 PM

Greenland Master Plan Community Survey 2019

Q15 What is your opinion of the traffic levels along Rt. 33 during the AM/PM commuting times?

Answered: 353 Skipped: 15



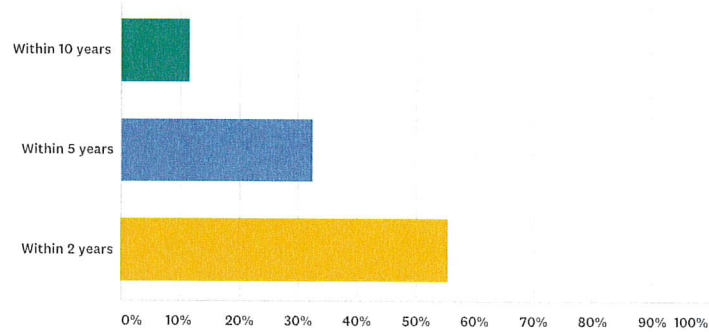
ANSWER CHOICES	RESPONSES	
Functions Adequately	5.95%	21
Minor Issues Exist	35.41%	125
Major Issues Exist	42.21%	149
Immediate Action Needed	19.26%	68
Other (please specify)	4.25%	15
Total Respondents: 353		

#	OTHER (PLEASE SPECIFY)	DATE
1	Annoying but doable	6/14/2019 4:51 PM
2	Retired--no effect	6/14/2019 2:20 PM
3	But getting worse	6/13/2019 3:50 PM
4	4 lane	6/11/2019 12:10 PM
5	Busy for short periods during commuting times, but empty otherwise. Don't expand the church to accommodate Christmas attendance.	6/11/2019 11:22 AM
6	State of NH problem, not PDA	6/11/2019 8:16 AM
7	Not out much	6/11/2019 7:18 AM
8	It's absolutely terrible. I live on Bayside and now that light becomes backed up with folks from Stratham coming through Great Bay to my light in order to avoid the long line of cars along 33.	6/7/2019 3:09 PM
9	need a traffic circle at Winnicut Rd and 33 intersection	6/6/2019 5:51 PM
10	All the time!!	6/5/2019 9:55 AM
11	I don't take 33 for AM or PM so I'm not sure	6/4/2019 3:01 PM
12	High Traffic volume @ Peak work times	6/4/2019 9:23 AM
13	need center turn lanes	6/2/2019 2:38 PM
14	Jammed intersections	6/2/2019 11:22 AM
15	Can't handle capacity at peak times	5/31/2019 9:05 AM

Greenland Master Plan Community Survey 2019

Q16 If you believe traffic along Rt. 33 is a concern, how soon should the matter be addressed?

Answered: 318 Skipped: 50



ANSWER CHOICES	RESPONSES	
Within 10 years	11.64%	37
Within 5 years	32.70%	104
Within 2 years	55.66%	177
TOTAL		318

Greenland Master Plan Community Survey 2019

Q17 What are the three worst intersections in Town? Do NOT include roads intersecting with Rt.33

Answered: 148 Skipped: 220

ANSWER CHOICES	RESPONSES	
1.	100.00%	148
2.	35.81%	53
3.	20.95%	31

#	1.	DATE
1	This is a real question?	6/18/2019 1:46 PM
2	N/A	6/14/2019 4:51 PM
3	Church Ln/Post Rd	6/14/2019 3:05 PM
4	Newington Rd/Portsmouth Ave	6/14/2019 2:28 PM
5	Post Rd & Church lane	6/14/2019 2:20 PM
6	All Intersect with Rt. 33	6/14/2019 2:02 PM
7	Rt 33 & Winnicut	6/14/2019 2:01 PM
8	Portsmouth Ave & Post Rd	6/14/2019 1:50 PM
9	Church Ln/Post Rd	6/14/2019 1:33 PM
10	Post Rd onto Breakfast Hill Rd	6/14/2019 12:19 PM
11	Church Lane & Old Post Road	6/14/2019 12:15 PM
12	Post Rd/Portsmouth Ave near library	6/14/2019 11:53 AM
13	No intersections, but detours to Portsmouth Ave. by 18 wheelers	6/13/2019 4:04 PM
14	Great Bay Light	6/13/2019 3:50 PM
15	Rt 151 & Newington Rd	6/13/2019 3:46 PM
16	Rt 151 & Newington Rd	6/13/2019 2:57 PM
17	Breakfast Hill & Post Road	6/13/2019 2:19 PM
18	Breakfast Hill & Post Road	6/13/2019 2:10 PM
19	Orchard Hill & Tidewater Farm Rd (poor visibility)	6/13/2019 2:06 PM
20	The only roads with problems INTERSECT with Rt. 33!!	6/13/2019 1:16 PM
21	McDonalds & Ocean Road	6/13/2019 1:07 PM
22	Portsmouth Ave @ Suds & Soda	6/12/2019 9:49 AM
23	Breakfast Hill Rd & Post Rd	6/12/2019 9:42 AM
24	Church Ln/Post Rd	6/11/2019 4:24 PM
25	Breakfast Hill Rd & Post Rd	6/11/2019 4:11 PM
26	Portsmouth Ave/Newington Rd	6/11/2019 4:02 PM
27	Portsmouth Ave & Post Rd	6/11/2019 3:54 PM
28	All non-Rt. 33 intersections are fine!!	6/11/2019 3:08 PM
29	All intersect with Rt. 33	6/11/2019 3:02 PM
30	Winnicut Rd	6/11/2019 2:54 PM
31	Newington Rd/Portsmouth Ave	6/11/2019 2:49 PM
32	All intersect with Rt. 33	6/11/2019 1:47 PM
33	Dumb question	6/11/2019 1:23 PM
34	All Intersect with Rt. 33	6/11/2019 12:57 PM
35	Breakfast Hill Rd & Post Rd	6/11/2019 12:40 PM
36	Church Ln/Post Rd	6/11/2019 12:29 PM
37	Church Ln/Post Rd	6/11/2019 12:24 PM
38	Osprey Cove, Waters Edge	6/11/2019 12:21 PM
39	All intersect with Rt. 33	6/11/2019 12:15 PM
40	Breakfast Hill Rd & Post Rd	6/11/2019 12:10 PM
41	Breakfast Hill & Post Road	6/11/2019 11:33 AM
42	Newington Rd. & Portsmouth Ave.	6/11/2019 11:27 AM
43	Rt 33, Bayside	6/11/2019 11:21 AM
44	Rt 33	6/11/2019 11:15 AM
45	Breakfast Hill Rd & Post Rd	6/11/2019 10:58 AM
46	Portsmouth Ave, Greenland Rd	6/11/2019 10:21 AM

Greenland Master Plan Community Survey 2019

47	Along Rt 1	6/11/2019 9:09 AM
48	Breakfast Hill Rd & Post Rd	6/11/2019 8:05 AM
49	Rt 33 & Portsmouth Ave	6/11/2019 7:51 AM
50	Portsmouth Ave turning onto 151	6/10/2019 8:27 PM
51	Winnicut & Spring Hill	6/10/2019 7:01 PM
52	Breakfast Hill Rd & Post Rd	6/10/2019 6:35 PM
53	Post Rd/School	6/10/2019 4:31 PM
54	Portsmouth Av and Post Rd	6/10/2019 11:26 AM
55	Breakfast Hill	6/9/2019 9:43 AM
56	I only have experience with the 33 intersection problems	6/9/2019 8:07 AM
57	Route 33 is the cause of the only problems I am aware off - and they are terrible	6/8/2019 10:01 AM
58	Mostly just on 33	6/8/2019 8:37 AM
59	Moulton and Post (obstructed view by tree growth & pot holes)	6/8/2019 8:18 AM
60	Newington road	6/7/2019 9:12 PM
61	Church Lane and Post Road	6/7/2019 3:33 PM
62	breakfast hill and route 1	6/7/2019 1:31 PM
63	(the first) Caswell Drive and Bayside Road, (tough hill to right)	6/7/2019 12:00 PM
64	Na	6/7/2019 11:08 AM
65	N/A	6/7/2019 9:13 AM
66	We need a atop sign on the Tuttle side of the post office	6/7/2019 7:25 AM
67	33 is the problem	6/6/2019 5:51 PM
68	Post Rd & Breakfast Hill Rd	6/6/2019 4:06 PM
69	Church Ln/Post Rd	6/6/2019 11:57 AM
70	Breakfast Hill Rd & Post Rd	6/6/2019 10:31 AM
71	Park Ave/Post Rd	6/6/2019 10:09 AM
72	Cemetery Lane/Portsmouth Ave	6/6/2019 10:00 AM
73	Winnicut	6/6/2019 9:48 AM
74	All intersect with Rt. 33	6/6/2019 9:31 AM
75	Post Rd, & Portsmouth Ave, near Greenland Church	6/5/2019 8:25 PM
76	Exeter Road/Post Road	6/5/2019 8:18 PM
77	Church In. and Post Road	6/5/2019 4:04 PM
78	Post Rd & Breakfast Hill Rd	6/5/2019 4:02 PM
79	None, we're a small town	6/5/2019 3:55 PM
80	Dearborn (formally Great Bay) but that intersects with 33...	6/5/2019 12:54 PM
81	Post Road & Breakfast Hill Road	6/5/2019 12:14 PM
82	Post Road & Breakfast Hill Road	6/5/2019 12:09 PM
83	Dearborn Road & Great Bay Road	6/5/2019 11:09 AM
84	Bayside Road	6/5/2019 10:54 AM
85	Breakfast Hill/Post Road	6/5/2019 10:36 AM
86	Great Bay	6/5/2019 9:55 AM
87	Community around Church to Post Road	6/5/2019 9:49 AM
88	post road & 151	6/5/2019 9:06 AM
89	No opinion outside Rt 33	6/5/2019 7:46 AM
90	Truck stop red llight runners	6/4/2019 3:01 PM
91	Post Road and Breakfast Hill Road	6/4/2019 1:58 PM
92	No others come even close to problems at Rt. 33	6/4/2019 10:50 AM
93	merge by llibrary	6/4/2019 10:30 AM
94	NEAR CHURCH	6/4/2019 10:25 AM
95	Tuttle Lane	6/4/2019 10:18 AM
96	Breakfast Hill and Post	6/4/2019 9:33 AM
97	Winnicut Rd & Spring Hill Rd	6/4/2019 7:16 AM
98	Breakfast Hill Rd & Post Rd	6/3/2019 7:06 PM
99	Breakfast Hill Rd & Post Rd	6/3/2019 6:44 PM
100	Na	6/3/2019 6:39 PM
101	Breakfast Hill Rd and Route 1	6/3/2019 1:19 PM
102	None	6/3/2019 1:14 PM

Greenland Master Plan Community Survey 2019

103	Post and Newington	6/3/2019 9:41 AM
104	na	6/3/2019 9:28 AM
105	No more lights	6/3/2019 9:04 AM
106	Portsmouth Ave & Post Rd	6/3/2019 8:48 AM
107	?	6/3/2019 8:39 AM
108	Rt 33 is worst	6/3/2019 7:27 AM
109	Breakfast hill and post rd	6/2/2019 9:19 PM
110	Moulton and Post	6/2/2019 6:55 PM
111	33 is the problem	6/2/2019 5:08 PM
112	c	6/2/2019 2:38 PM
113	They're all on 33	6/2/2019 1:45 PM
114	Breakfast Hill Road and Route 1 - that traffic light getting out of Greenland is WAY too short!!	6/2/2019 12:21 PM
115	Line of site at Vardon (east entrance) and Winnicut	6/2/2019 8:53 AM
116	Winnicut/bayside	6/1/2019 10:44 PM
117	Y	6/1/2019 8:57 PM
118	Seriously? Anything intersecting with Rt 33. Especially	6/1/2019 3:08 PM
119	Post Road and Portsmouth Ave	6/1/2019 11:58 AM
120	No serious concerns	6/1/2019 5:07 AM
121	Post Rd and Portsmouth Ave (Gazebo)	5/31/2019 10:10 PM
122	Post/Portsmouth	5/31/2019 7:18 PM
123	none	5/31/2019 6:30 PM
124	Post Road and Portsmouth Ave	5/31/2019 1:38 PM
125	Portsmouth Ave. and Newington Rd.	5/31/2019 1:14 PM
126	Post Rd and Breakfast Hill	5/31/2019 12:34 PM
127	X	5/31/2019 7:42 AM
128	They all intersect 33.	5/30/2019 10:44 PM
129	Moulton av and Post rd	5/30/2019 9:24 PM
130	The one by suds and soda	5/30/2019 9:15 PM
131	In and out of school in mornings	5/30/2019 8:43 PM
132	no opinion	5/30/2019 8:07 PM
133	Post Road and Breakfast Hill Road	5/30/2019 7:09 PM
134	Rte 151 and 33	5/30/2019 6:48 PM
135	Post/Breakfast Hill	5/30/2019 5:23 PM
136	Post rd and Portsmouth Ave	5/30/2019 5:14 PM
137	Bayside	5/30/2019 4:48 PM
138	Not sure	5/30/2019 3:47 PM
139	Portsmouth Ave and Post Rd	5/30/2019 3:07 PM
140	Post Rd and Portsmouth Ave	5/30/2019 2:08 PM
141	Church Lane and Post Road (yield sign)	5/30/2019 1:48 PM
142	this is a non-issue outside of rt. 33	5/30/2019 1:26 PM
143	Breakfast Hill and Route 1	5/30/2019 11:57 AM
144	No opinion	5/30/2019 11:57 AM
145	post road and portsmouth ave (right next to gazebo)	5/30/2019 11:52 AM
146	No issues	5/30/2019 11:42 AM
147	none	5/30/2019 11:41 AM
148	Post Road/151/Portsmouth Ave. "Y"	5/30/2019 10:54 AM
#	2.	DATE
1	Winnicut Rd/Spring Hill	6/14/2019 2:28 PM
2	Rt 33 and Post office	6/14/2019 2:01 PM
3	Breakfast Hill & Post Rd	6/13/2019 3:46 PM
4	Dearborn Rd. & Water's Edge	6/13/2019 2:06 PM
5	Dearborn Road & Great Bay Road	6/13/2019 1:07 PM
6	Ocean Rd, Rt 33	6/12/2019 9:49 AM
7	Great Bay Rd	6/12/2019 9:42 AM
8	Ocean Rd, Rt 33	6/11/2019 4:02 PM
9	Portsmouth Ave/Post Rd	6/11/2019 12:40 PM
10	Portsmouth Ave/Post Rd	6/11/2019 12:29 PM

Greenland Master Plan Community Survey 2019

11	Ocean Rd, Rt 33	6/11/2019 10:21 AM
12	Church Lane & Post Rd	6/11/2019 7:51 AM
13	Moulton turning Left onto 151 (bushes/trees in line of sight)	6/10/2019 8:27 PM
14	Winnicut Rd and Post Rd	6/10/2019 11:26 AM
15	post	6/9/2019 9:43 AM
16	because I live on Post Road	6/9/2019 8:07 AM
17	Portsmouth Ave & Newington (pot holes)	6/8/2019 8:18 AM
18	Breakfast Hill	6/7/2019 9:12 PM
19	breakfast hill and post rd	6/7/2019 1:31 PM
20	Na	6/7/2019 11:08 AM
21	Post Rd & Church Lane	6/6/2019 10:31 AM
22	School Crossings	6/6/2019 10:09 AM
23	151	6/6/2019 9:48 AM
24	Breakfast Hill and Post Road	6/5/2019 4:04 PM
25	Lafayette Rd & Breakfast Hill Rd	6/5/2019 4:02 PM
26	Dunkin Ds red light runners	6/4/2019 3:01 PM
27	Breakfast Hill Road and Route One (Lafayette Road)	6/4/2019 1:58 PM
28	Moulton Ave & Post Rd	6/3/2019 6:44 PM
29	Na	6/3/2019 6:39 PM
30	No more lights	6/3/2019 9:04 AM
31	Post Rd & Church Lane	6/3/2019 8:48 AM
32	Rt 33 is worst	6/3/2019 7:27 AM
33	c	6/2/2019 2:38 PM
34	They're all on 33	6/2/2019 1:45 PM
35	because everyone runs red lights and there is absolutely no	6/1/2019 3:08 PM
36	Any Road that DOES intersect with RT 33	6/1/2019 11:58 AM
37	Dearborn and Great Bay	5/31/2019 10:10 PM
38	Post/Moulton	5/31/2019 7:18 PM
39	none	5/31/2019 6:30 PM
40	Post Rd and Breakfast Hill	5/31/2019 1:14 PM
41	Post Rd and Portsmouth Av	5/31/2019 12:34 PM
42	Bayside and 33	5/30/2019 9:15 PM
43	Breakfast hill rd	5/30/2019 8:43 PM
44	no opinion	5/30/2019 8:07 PM
45	Post Road and Church Land	5/30/2019 7:09 PM
46	Bayside and 33	5/30/2019 6:48 PM
47	Post Rd and Breakfast Hill rd	5/30/2019 5:14 PM
48	Great bay road/33	5/30/2019 4:48 PM
49	Portsmouth Ave and Newington Rd	5/30/2019 2:08 PM
50	Breakfast Hill and Post Road	5/30/2019 11:57 AM
51	No opinion	5/30/2019 11:57 AM
52	post road and portsmouth ave (closer to library)	5/30/2019 11:52 AM
53	"	5/30/2019 11:42 AM
#	3.	DATE
1	Rt 33 anywhere	6/12/2019 9:49 AM
2	Church Ln/Post Rd	6/12/2019 9:42 AM
3	Portsmouth Ave/Newington Rd	6/11/2019 12:29 PM
4	Breakfast Hill Rd, Post Rd	6/11/2019 10:21 AM
5	Rt 33/Great Bay Rd/Willowbrook Ave	6/11/2019 7:51 AM
6	Breakfast Hill and Post Rd	6/10/2019 11:26 AM
7	so am not aware of other problematic areas	6/9/2019 8:07 AM
8	Post and Portsmouth Ave "Y"	6/8/2019 8:18 AM
9	Post rd and portsmouth ave	6/7/2019 1:31 PM
10	Na	6/7/2019 11:08 AM
11	Portsmouth Ave/Post Rd	6/6/2019 10:09 AM
12	Weeks Road and Tide Mill Road	6/5/2019 4:04 PM
13	Ocean Rd to Lafayette Rd	6/5/2019 4:02 PM

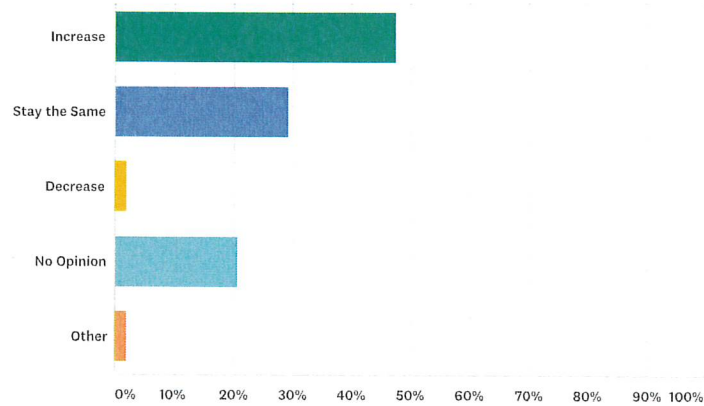
Greenland Master Plan Community Survey 2019

14	Na	6/3/2019 6:39 PM
15	No more lights	6/3/2019 9:04 AM
16	Rt 33 is worst	6/3/2019 7:27 AM
17	c	6/2/2019 2:38 PM
18	They're all on 33	6/2/2019 1:45 PM
19	enforcement. Period.	6/1/2019 3:08 PM
20	Post Rd and Breakfast Hill	5/31/2019 10:10 PM
21	Post/Breakfast Hill	5/31/2019 7:18 PM
22	none	5/31/2019 6:30 PM
23	Tuttle lane	5/30/2019 8:43 PM
24	no opinion	5/30/2019 8:07 PM
25	Post Road and Portsmouth Avenue	5/30/2019 7:09 PM
26	Ocean Road and 33	5/30/2019 6:48 PM
27	Ocean rd	5/30/2019 4:48 PM
28	Post Road yield by library	5/30/2019 11:57 AM
29	No opinion	5/30/2019 11:57 AM
30	breakfast hill and post road	5/30/2019 11:52 AM
31	"	5/30/2019 11:42 AM

Greenland Master Plan Community Survey 2019

Q18 Recreational opportunities in Greenland should:

Answered: 346 Skipped: 22

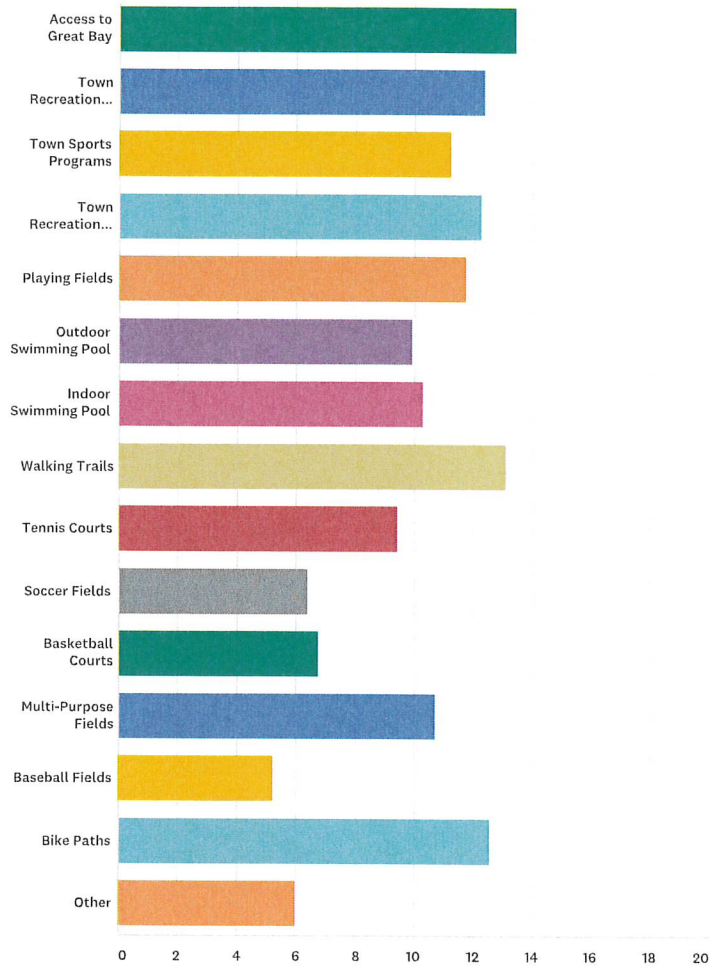


ANSWER CHOICES	RESPONSES	
Increase	47.69%	165
Stay the Same	29.19%	101
Decrease	2.02%	7
No Opinion	20.81%	72
Other	2.02%	7
Total Respondents: 346		

Greenland Master Plan Community Survey 2019

Q19 If you believe recreational opportunities should be increased, rate your top five choices from 1 (Most Important) - 5.

Answered: 228 Skipped: 140



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Access to Great Bay	46.25% 74	14.37% 23	18.75% 30	9.38% 15	5.63% 9	1.25% 2	1.88% 3	0.00% 0	0.00% 0	0.00% 0	0.63% 1	0.00% 0	0.63% 1	0.00% 0	1.
Town Recreation Programs	13.64% 15	25.45% 28	17.27% 19	13.64% 15	18.18% 20	4.55% 5	3.64% 4	0.91% 1	0.00% 0	0.00% 0	0.91% 1	0.00% 0	0.91% 1	0.91% 1	0.
Town Sports Programs	6.67% 4	11.67% 7	18.33% 11	15.00% 9	15.00% 9	11.67% 7	6.67% 4	5.00% 3	6.67% 4	1.67% 1	1.67% 1	0.00% 0	0.00% 0	0.00% 0	0.
Town Recreation Center	19.39% 19	13.27% 13	20.41% 20	17.35% 17	18.37% 18	1.02% 1	1.02% 1	5.10% 5	0.00% 0	0.00% 0	0.00% 0	4.08% 4	0.00% 0	0.00% 0	0.
Playing Fields	18.18% 12	12.12% 8	7.58% 5	18.18% 12	19.70% 13	4.55% 3	7.58% 5	6.06% 4	4.55% 3	1.52% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.
Outdoor Swimming Pool	10.17% 6	13.56% 8	6.78% 4	11.86% 7	13.56% 8	6.78% 4	6.78% 4	8.47% 5	3.39% 2	3.39% 2	3.39% 2	0.00% 0	0.00% 0	5.08% 3	6.
Indoor Swimming Pool	14.29% 9	15.87% 10	7.94% 5	9.52% 6	11.11% 7	3.17% 2	4.76% 3	6.35% 4	7.94% 5	4.76% 3	1.59% 1	3.17% 2	6.35% 4	3.17% 2	0.
Walking Trails	26.04% 44	28.40% 48	18.34% 31	14.20% 24	6.51% 11	0.59% 1	0.00% 0	1.78% 3	1.78% 3	1.18% 2	0.59% 1	0.59% 1	0.00% 0	0.00% 0	0.
Tennis Courts	1.64% 1	6.56% 4	11.48% 7	24.59% 15	8.20% 5	3.28% 2	3.28% 2	1.64% 1	14.75% 9	8.20% 5	8.20% 5	3.28% 2	1.64% 1	3.28% 2	0.

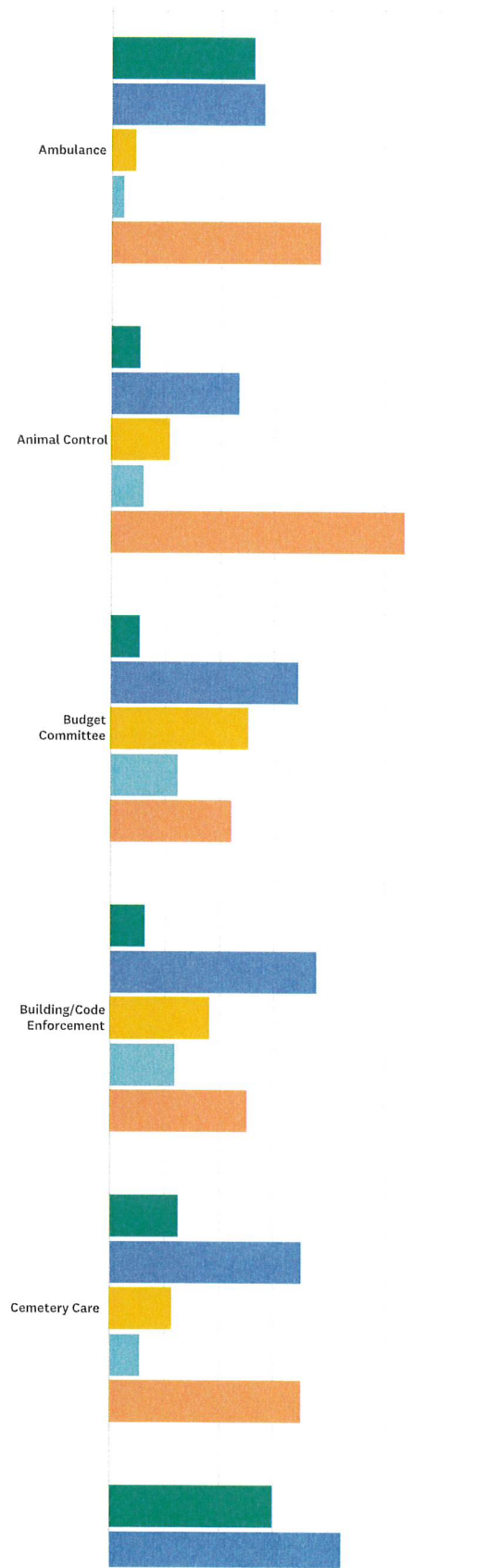
Greenland Master Plan Community Survey 2019

Soccer Fields	0.00% 0	0.00% 0	0.00% 0	2.63% 1	10.53% 4	0.00% 0	7.89% 3	5.26% 2	2.63% 1	34.21% 13	18.42% 7	13.16% 5	0.00% 0	5.26% 2	0.
Basketball Courts	0.00% 0	2.33% 1	11.63% 5	4.65% 2	6.98% 3	0.00% 0	0.00% 0	9.30% 4	4.65% 2	2.33% 1	25.58% 11	16.28% 7	13.95% 6	2.33% 1	0.
Multi-Purpose Fields	12.22% 11	8.89% 8	11.11% 10	16.67% 15	23.33% 21	6.67% 6	2.22% 2	2.22% 2	0.00% 0	1.11% 1	1.11% 1	7.78% 7	6.67% 6	0.00% 0	0.
Baseball Fields	0.00% 0	5.13% 2	2.56% 1	5.13% 2	2.56% 1	2.56% 1	5.13% 2	0.00% 0	5.13% 2	5.13% 2	5.13% 2	7.69% 3	28.21% 11	25.64% 10	0.
Bike Paths	16.56% 27	30.06% 49	25.15% 41	11.04% 18	7.98% 13	1.23% 2	0.61% 1	0.61% 1	0.61% 1	0.61% 1	0.00% 0	0.61% 1	0.00% 0	4.29% 7	0.
Other	8.00% 4	4.00% 2	4.00% 2	14.00% 7	12.00% 6	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6.00% 3	4.00% 2	48.

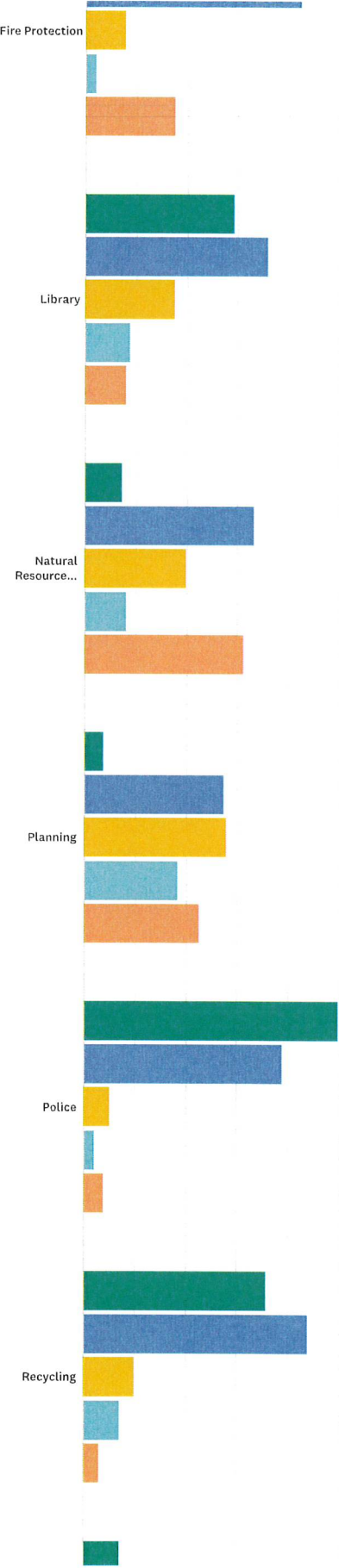
Greenland Master Plan Community Survey 2019

Q20 Please rate the following Town Services:

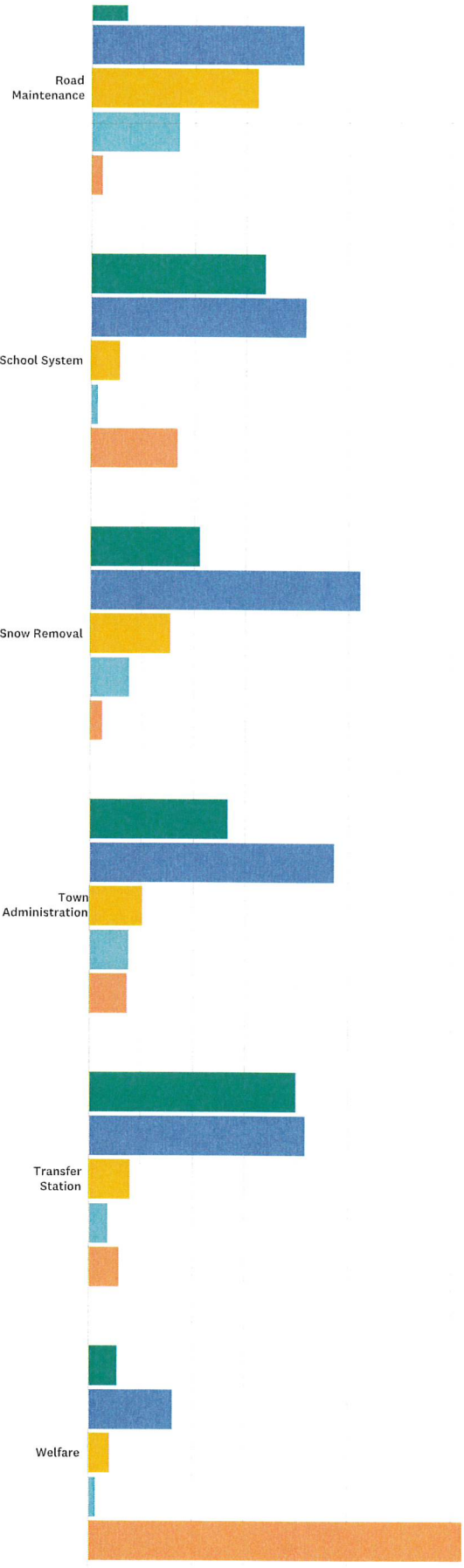
Answered: 357 Skipped: 11



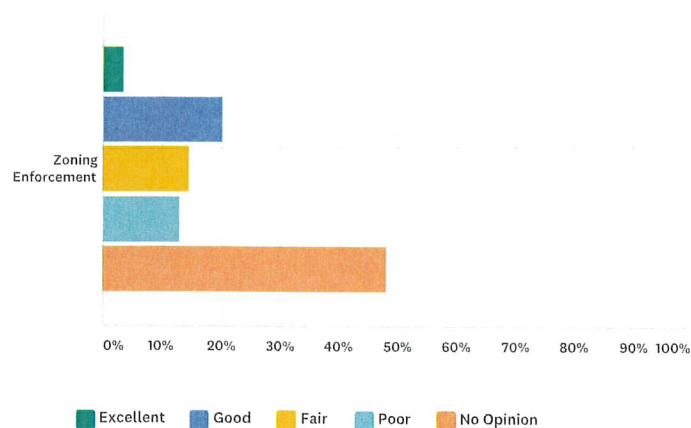
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Greenland Master Plan Community Survey 2019



	EXCELLENT	GOOD	FAIR	POOR	NO OPINION	TOTAL
Ambulance	26.37% 82	28.30% 88	4.50% 14	2.25% 7	38.59% 120	311
Animal Control	5.46% 16	23.55% 69	10.92% 32	6.14% 18	53.92% 158	293
Budget Committee	5.35% 17	34.59% 110	25.47% 81	12.26% 39	22.33% 71	318
Building/Code Enforcement	6.56% 21	37.81% 121	18.44% 59	11.88% 38	25.31% 81	320
Cemetery Care	12.65% 41	35.19% 114	11.42% 37	5.56% 18	35.19% 114	324
Fire Protection	29.88% 98	42.38% 139	7.93% 26	2.13% 7	17.68% 58	328
Library	29.24% 100	35.96% 123	17.84% 61	8.77% 30	8.19% 28	342
Natural Resource Protection	7.42% 23	33.23% 103	20.00% 62	8.06% 25	31.29% 97	310
Planning	3.81% 12	27.30% 86	27.94% 88	18.41% 58	22.54% 71	315
Police	49.71% 171	38.95% 134	5.23% 18	2.03% 7	4.07% 14	344
Recycling	35.78% 122	43.99% 150	9.97% 34	7.04% 24	3.23% 11	341
Road Maintenance	7.06% 24	41.18% 140	32.35% 110	17.06% 58	2.35% 8	340
School System	33.94% 112	41.82% 138	5.76% 19	1.52% 5	16.97% 56	330
Snow Removal	21.39% 74	52.60% 182	15.61% 54	7.80% 27	2.60% 9	346
Town Administration	26.73% 89	47.45% 158	10.51% 35	7.81% 26	7.51% 25	333
Transfer Station	40.06% 137	41.81% 143	8.19% 28	3.80% 13	6.14% 21	342
Welfare	5.67% 16	16.31% 46	4.26% 12	1.42% 4	72.34% 204	282
Zoning Enforcement	3.59% 11	20.26% 62	14.71% 45	13.07% 40	48.37% 148	306

Greenland Master Plan Community Survey 2019

Q21 Comments

Answered: 127 Skipped: 241

#	RESPONSES	DATE
1	Our town does not care how we vote, why do we vote when it does not count? Shame on you! DO YOUR JOB!	6/18/2019 1:46 PM
2	Lack of protection of the aquifer; water contaminants due to Coakley Landfill. Not enough action by Town boards.	6/14/2019 3:31 PM
3	Transfer station open one more day a week would be nice	6/14/2019 3:25 PM
4	Lower speed limit on Post Road	6/14/2019 3:05 PM
5	Please consider bringing Coast bus back in town. I think people would use it if it was available (Next Generation, Bramber Vallee, people w/disabilities)	6/14/2019 2:54 PM
6	Please do something about landfill. There are many families w/children. This is very concerning and will also have an impact on the value of our homes if we choose to sell. Thank you!	6/14/2019 2:38 PM
7	Guy at transfer station does nothing & just watches while my 82 yo mother struggles to get her trash into the bin (every time)	6/14/2019 2:34 PM
8	Jogging trails: hot top/dirt; widen bridge on 33; widen 33 to 2 lanes each direction for the longest way possible (border to border).	6/14/2019 2:24 PM
9	Only lived in Greenland 1.5 years; still unfamiliar with many aspects of Town services	6/14/2019 2:20 PM
10	I was not allowed to put a 10x15 porch on side of my house because it was less than 30' from road, but the house is 15' from road. Doesn't make sense.	6/14/2019 1:50 PM
11	Looking forward to the Library expansion	6/14/2019 1:26 PM
12	See notes on paper! Charlotte has it.	6/14/2019 11:53 AM
13	Love Greenland!!	6/14/2019 11:07 AM
14	I prefer small town NH without all the high price amenities of a big city. Neighbor helping neighbor and self sufficiency. My taxes have increased 300% in 19 years and I don't feel I am receiving any increase in benefits or services.	6/14/2019 10:30 AM
15	Greenland doesn't think of the older people in Town. Everything is schools & recreation. Taxes this year went up terribly for the seniors. Other than the Veteran credit, no hope for seniors. Very yuppie Town!!	6/13/2019 4:04 PM
16	Thanks for opportunity to express opinions, but nothing is as important as addressing Coakley Landfill and getting Town water to replace lousy wells.	6/13/2019 3:59 PM
17	#18 - We already have 5 fields in Town, we don't need anymore and can't take care of the fields we have now!!	6/13/2019 3:09 PM
18	#14 - Taxes never go down	6/13/2019 2:57 PM
19	Haven't lived here long enough to judge, also we only live here 6 months out of the year.	6/13/2019 2:47 PM
20	Why do you have 4 coaches for boys teams and NONE for girls - in the local elementary school? (As of 2017 Annual Report)	6/13/2019 2:25 PM
21	Bike paths along Breakfast Hill & Post Road	6/13/2019 2:10 PM
22	Achieve more recycling of 1. clear glass 2. corrugated paperboard 3. steel cans, etc. to reduce the Town's tipping expense. Enforce more recycling by charging a "per bag" fee on all non-recycled trash.	6/13/2019 2:06 PM
23	I would like to see space for a dog park, a skating rink to put up in the winter, more sidewalks for the kids to walk safely, a swap shop established for gently used items at the Transfer Station, and a town composting area at the transfer station.	6/13/2019 1:39 PM
24	Taxes are excessively high especially for over 55 communities with no children in the school district and many services not covered by the Town. (Trash, Road maintenance, plowing, sewer/septic, etc)!! 2/3 of tax bill goes for school district!!	6/13/2019 1:26 PM
25	Lived here in 08-09, returned and am renting now for 2.5 yrs, work in Portsmouth. Rte. 33 is a mess now with way too much traffic at ALL times. Houses for sale on Rt 33 are not selling due to traffic. I'm looking to buy but no where that requires Rt 33 travel.	6/13/2019 1:22 PM
26	Town Administration might get better now that Karen Anderson is done. She was VERY rude & ignored residents concerns. I have lived here for a long time and the recent tax increase is ridiculous!!	6/13/2019 1:16 PM
27	#20 - Library: Wonderful but the building needs help. #21 - Need more diversity on Board of Selectmen	6/13/2019 12:21 PM
28	#13 - Not a resident long enough to assess #14 - I would not have a commercial Impact on Post Rd., many residential homes.	6/13/2019 12:16 PM
29	Need water main brought down Breakfast Hill Road due to Coakley Landfill contamination Issue!	6/12/2019 9:55 AM
30	Transfer Station employees need a bathroom! Those men are great & work hard through snow, wind, rain & hot sun. Porta potty is a poor excuse!	6/12/2019 9:42 AM
31	Library rated poor because of inadequate building not the staff	6/11/2019 4:24 PM
32	The Town has grown & changed in the 20+ yrs I've lived her, & it seems it has become very divided, particularly around issues with budget impacts such as the library and fire station. Hopefully, updating the Master Plan will help control future growth. I feel some members of our boards are very biased on certain issues, but appreciate the commitment they make to the town.	6/11/2019 4:15 PM

Greenland Master Plan Community Survey 2019

33	Speed of traffic on Post Rd major problem	6/11/2019 4:11 PM
34	The library and fire dept do great work despite limitations on facilities. They could do better if they had the right tools/buildings.	6/11/2019 3:54 PM
35	Enlarging Weeks Public Library is essential for the continued growth of the Town and quality of life.	6/11/2019 3:41 PM
36	No more multi or 2 family homes please! Enough is enough; has changed the flavor of the town. Let's try to keep it kind of looking rural.	6/11/2019 3:20 PM
37	Greenland needs to be a "Town". As a friend told me, Greenland is just a sign along the highway; there is no Town.	6/11/2019 3:16 PM
38	Good town in which to live!	6/11/2019 3:12 PM
39	Please limit sprawl and keep tax rate low!!	6/11/2019 3:08 PM
40	Transport for Seniors?!	6/11/2019 3:04 PM
41	We love Greenland	6/11/2019 3:02 PM
42	Build the library already	6/11/2019 2:54 PM
43	When will the library be completed?!	6/11/2019 2:41 PM
44	Library should be completed before new projects ie fire department	6/11/2019 2:31 PM
45	Town Office; can you say nepotism?	6/11/2019 2:26 PM
46	NO TOWN PROJECTS UNTIL LIBRARY COMPLETED! TOWN office dysfunctional	6/11/2019 1:47 PM
47	Voters choice does not matter in this Town!	6/11/2019 1:23 PM
48	More contract services; eliminate some benefit position incl school; test teachers for ability to teach (outside source); classroom size min 20; eliminate Police Chief (regional goals); start volunteer fire fighter program; school budget should be what the Town can afford, not the school's wish list; make it work.	6/11/2019 1:14 PM
49	Outlaw Roundup & similar poisonous products to protect us and our water	6/11/2019 12:21 PM
50	Regarding #12- None I love Greenland, favorite place ever lived!	6/11/2019 11:27 AM
51	I love living in Greenland & feel fortunate to raise my children here; I feel quite safe. Thank you!	6/11/2019 11:27 AM
52	School system-programs sparse but excellent community spirit. I love the dump, it's a social experience. There's traffic on Rt 33 for about 45 min. in Am & PM. If it is expanded to 4 lanes it will just attract more traffic. Greenland will become "some houses along a miracle mile strip mall.	6/11/2019 11:22 AM
53	Great guys at the Recycling Center and excellent School system!!!	6/11/2019 11:06 AM
54	Rules & regs concerning recycling are too convoluted	6/11/2019 10:36 AM
55	Greenland does a great job balancing low taxes & growth. More green space & development in currently developed areas would be key, eg Rt 33.	6/11/2019 9:09 AM
56	Building/Code Enforcement: attitude; it has become very clear that past and present planning board members and selectman members have put every road block they can to stop expansion of the library project that we have voted in favor of TWICE--not very good stewards of the voters.	6/11/2019 8:16 AM
57	Contact Amazon Corporate and have them look into putting in a Whole Foods next to Target!	6/11/2019 8:05 AM
58	Would like to see answers	6/11/2019 7:51 AM
59	Please make the town snow plows stop running over all of our mailboxes!	6/10/2019 8:27 PM
60	Please lower taxes!	6/10/2019 7:47 PM
61	We like Greenland "as is"! Nice, little NH town.	6/10/2019 7:43 PM
62	Need to reduce spending; cut taxes	6/10/2019 7:40 PM
63	Small retail/commercial throughout town. We need high end restaurant and actual places to walk to	6/10/2019 7:32 PM
64	School expenses getting out of hand; current housing is too expensive	6/10/2019 7:24 PM
65	Dearborn/Rt 33 (understand State of NH): need flashing yellow at minimum w/reduced speed zone or traffic light (I know that won't happen). If coming out of town north on 33, very dangerous. Hope they don't wait for someone to get killed before something is done.	6/10/2019 7:10 PM
66	Road maintenance: awful	6/10/2019 6:35 PM
67	Where I rated "No opinion" are services I haven't had direct exposure to yet.	6/10/2019 4:31 PM
68	Town Hall needs a DROP BOX for after hours for tax bill / fees/ other	6/9/2019 9:43 AM
69	The overdevelopment, especially in areas around Coakley is so stressful and upsetting we are looking to move. I am really disappointed in planning decisions that are straining our school system and budgets - houses that are being built are overpriced and ruining this semi-rural, historic town. There seems to be no efforts to preserve open space, develop access to nature - my kids can't even ride their bikes to school because Post Road is so dangerous! And nevermind the water issue that isn't being taken seriously at all. The middle school part of the school is failing our kids - they are not being challenged, and they took away enrichment. The school has really declined because the main goal has been to adjust to the bigger population, not excel at serving kids at all levels. It's very depressing and we are unhappy. :(We have to drive out of town to go to a good library, to find good trails to walk or bike on, and to access nature. It is a real shame and a total turnaround from when we moved here with high hopes nine years ago. I hope changes are made to stop development before it's too late.	6/9/2019 8:07 AM
70	I have lived in the area for almost 30 years and recently moved to Greenland. I wish there was more of a town center feel to the community and public access to swim and enjoy the incredible waterfront. Route 33 is a nightmare. Any chance some crossroads can be made so locals can get around on a Friday afternoon without getting caught in a traffic jam?	6/8/2019 10:01 AM
71	Pot hole repair needs improvement. Lane Avenue is a hazard.	6/8/2019 8:18 AM

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72	What is the vision for the town? Without a vision to inform and drive planning, the detail is simply a chaotic mix.	6/7/2019 5:21 PM
73	Greenland serves as a bedroom community to surrounding towns. We have a great green space that should be appreciated more for the benefits it brings to Rockingham County and our daily lives. Efforts to bring wild life and natural habitats back to the larger Great Bay area are good but need to be recognized as essential to the larger community, not a luxury.	6/7/2019 3:33 PM
74	No commercial growth on Post Rd. We can't exit side roads because of increase if traffic. Speeding all over town must be enforced. We have many missing road signs.	6/7/2019 1:56 PM
75	Property tax hikes are much too large. We need to CUT spending - not increase it.	6/7/2019 9:13 AM
76	There are a lot of accidents at Post Rd & 33, mostly from people making illegal right turns onto 33. A blinking light by the no turn on red sign would be helpful. Thanks!	6/7/2019 7:25 AM
77	1. Broaden and diversify tax base so that the town doesn't rely so heavily on residential taxes. 2. Traffic calming is needed on Post Road and Portsmouth Avenue -- enforcement of speed limits need to be aggressive -- limit Post Road as a commuter cut-thru between Pease and the North Hampton/Hampton/Seabrook areas. 3. Professional staffing of town government is essential so that the boards and commissions can act on well researched and accurate information and decisions can be implemented. 4. Hold professionally managed consultative meetings within the community AND conduct a professional survey with an professionally selected representative sample of town residents (one that reflects the entirety of the town's population and not just those that voluntarily return surveys on a short timeline.) 5. Once those meetings and surveys are done, use the results to produce a comprehensive master plan and then implement that plan. 6. Don't run the town government in a penny-wise and pound-foolish manner. Expend resources as needed to provide each and every resident with the services and resources needed for their families to thrive. It's NOT a point of pride to have the low tax rate when our streets are in ill-repair, our people have contaminated drinking water, it is more difficult to move around the community and our town government doesn't have effective, professional information to make decisions.	6/6/2019 8:54 PM
78	We need a Smaller brand Supermarket....Much like ALDI. Its a smaller market, located near Target or somewhere on 33 close to Portsmouth area. Aldi is looking for locations. They have information on their website.	6/6/2019 7:54 PM
79	Regarding #14 - I think Rt. 33 is full, therefore I chose Post Rd., maybe other place would work, but hard to imagine where (Breakfast Hill?).	6/6/2019 3:55 PM
80	There is a need for a leaf & garden waste disposal site.	6/6/2019 3:50 PM
81	Snow removal: living on an extension, plow makes a sweep on main road causing a large drift in front of driveway; can't get out with car in moderate snow; have to wait hours for smaller plow to "clean up". This person is an older citizen--hazardous!	6/6/2019 10:31 AM
82	Too much taxes due to increasing recreation expenses; elderly pays for services they don't use. Recreation should be USER TAX.	6/6/2019 10:00 AM
83	Would like to see animal control of families with more than 3 dogs in household. Constant barking before 8 am & after 10 pm is an issue. I love dogs but do not have one & feel neighbors need to respect.	6/6/2019 9:23 AM
84	For the high tax rates & increases, there is nothing here for the aging residents. Roads are too loud, congested & growing too fast making it horrible to live here. Police do nothing to enforce road laws, stop signs, speed limits, littering, Harley noise, etc.	6/5/2019 4:02 PM
85	Pretty bad that Town doesn't plow our roads in our community	6/5/2019 3:55 PM
86	Would love to see more businesses in the Lowe's and Target plaza. Also, wondering if the stoplights on 33 can be timed better (particularly during rush hour) for smoother traffic flow. Thank you!!	6/5/2019 12:54 PM
87	Bayside Road has not been done in the 46 years I have lived here. It needs to be done soon!!	6/5/2019 12:02 PM
88	More recreational opportunities for older residents.	6/5/2019 11:09 AM
89	Snow removal is good/taking out of my mail poor	6/5/2019 10:36 AM
90	Bayside Rd needs to be paved immediately, also just skim & overlay it, don't reconstruct the whole road. The town missed an opportunity last year!!	6/5/2019 9:49 AM
91	slow down housing developments the wild animals have no place to go and are now in our yards and eating everything in the yards. please consider the animals and land before continuing to allow construction. and question #14 - where on Post Road would commercial & industrial growth be appropriate? What is this question?	6/5/2019 8:37 AM
92	I hope the results will be published. The instructions say rank the top five choices in several questions, but SurveyMonkey autofills all of them and doesn't give an easy way to leave any blank, so I ranked them all.	6/5/2019 7:46 AM
93	1) Radon is a significant issue that seems to get buried when people move into the neighborhood. The inspectors are focused on the height of railings for child safety but completely disregard the fact high radon levels will give those same kids cancer. Radon needs to be dealt with transparently and with the same attention that is paid to arsenic levels. 2) Property taxes are not assessed equitably. Value assumptions are made according to the sale of a house on a given street then that same value category is applied to other houses on the same street regardless of myriad other factors involved, e.g., style of house, square footage, lot size, etc. This leads to wildly varying cost-per-square-foot calculations within the same neighborhood.	6/4/2019 3:19 PM
94	GCS has small class sizes as of now, but if developments keep popping up then the school will need to either expand or have bigger class sizes. Do not allow development building until you have considered what it will do to the school.	6/4/2019 3:01 PM
95	The speed limit on Rt. 33 is 50mph for 1.2 miles in Greenland, so cars go 60 through our town. Everywhere else the limit is 40mph. Why do we allow this unsafe condition? Do we have to wait for a death to occur?	6/4/2019 10:50 AM
96	We would very much like to have city water	6/3/2019 7:06 PM
97	Current Planning Board & Select Board working against the voters wishes	6/3/2019 6:57 PM

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98	we need sidewalks so adults and children can walk, run & bike safely between neighborhoods and across town.	6/3/2019 4:31 PM
99	Town services seem commiserate with the tax rate. In other words, the town doesn't provide the same level of services as do other towns, but on the flip side the taxes are lower.	6/3/2019 9:41 AM
100	I am tired of being told each week that something else with a recyclable symbol is not recyclable. This is unacceptable. It is 2019 and we are NOT recycling as much as we used to 10 years ago. Disappointing.	6/3/2019 9:41 AM
101	Residential building should be limited to 1.5 - 2 acres lots. Reduce the residential growth and keep the town small. We don't need the services people from Mass feel we need. Growth only for commercial to supplement taxes. No need for large Fire Dept. town water or sewage. Remove the light at Bayside/Winnicut like it used to be!	6/3/2019 9:04 AM
102	Really nice community to live in.	6/3/2019 8:39 AM
103	1. Encourage Whole Foods to locate on Rte. 33 near Target. 2. Marge Morgan, the Town Clerk, does an excellent job; she is highly responsive.	6/2/2019 10:27 PM
104	We need to have a better town center area!! And we need road work done as well. And we need the library expansion project built!!	6/2/2019 9:19 PM
105	Keep taxes low please	6/2/2019 7:25 PM
106	Love living in Greenland. It would be great if the Rt 33 traffic problem could be helped. I live on the corner of 33 and 151. I've seen a number of accidents on that intersection and daily traffic. I hope that we can eventually build a second lane of traffic on Rt 33 to alleviate traffic congestion.	6/2/2019 1:45 PM
107	Budgeting is pathetic. No long range (5yrs) capital plan. Difficult at best to get info on what's happening in town with no local paper. Library fiasco should be an embarrassment to all town officials. Same for fire station	6/2/2019 12:05 PM
108	Thanks for the opportunity! I hope you get a good response.	6/2/2019 8:53 AM
109	We live on Cushman Way and when trying to take a left into the neighborhood can be pretty scary. People going through that light really step on it, we have almost been hit several times, and there have been a handful of accidents. Please add a turn lane or light or something.	6/1/2019 6:26 PM
110	Police should enforce traffic laws as well as Stratham does.	6/1/2019 3:08 PM
111	Traffic on Rt 33 needs to be addressed	6/1/2019 11:58 AM
112	We voted to expand the library. No do your job and do it. Stop making excuses. Several residential dead ends need repaving.	6/1/2019 8:26 AM
113	Concerned about constantly rising taxes. Town budget allocates too much on unnecessary items.	6/1/2019 5:07 AM
114	Library needs renovation but not at what is currently proposed. Too much money with other infrastructure improvements needed. The town is listening to the voice of a few.	5/31/2019 10:10 PM
115	The road intersections are OK. Driver speed is not. Need greater speed enforcement and some speed limits need to come down if everyone is driving 15mph above the posted limit.	5/31/2019 7:18 PM
116	I think it is more important to do something with the fire station than with the Library. I think there is NOT enough parking at the Library and it is sort of ridiculous to add to it at this time. Sometimes coming thru that area...the public parks in front of the Library and is partly in the road. That seems kinda crazy to me. The fire station needs attention before the library does. Pay Newington to use their beautiful library if that is the case....	5/31/2019 6:45 PM
117	We should not be building a \$3million library. That is an irresponsible waste of money.	5/31/2019 6:30 PM
118	Library overstaffed and doesn't need to expand, budget committee rubberstamps everything, plows take out mailboxes every year	5/31/2019 4:25 PM
119	A comprehensive master plan focused on development of an actual town center/village that blends single family townhouses, multi-family housing, and commercial/retail and community spaces should be a priority. The development of Bramber Valley into an age-restricted community is a TRAGIC lost opportunity for the Town. Transit to Downtown Portsmouth and/or Pease (to link up with existing regional transit) should also be a priority.	5/31/2019 1:50 PM
120	I think there should be more encouragement of walking near the school A sidewalk would help. For the library - I think the children's programs are wonderful but the book selection and space is so limited it makes it hard to rank any higher. A renovated library would allow a ranking of excellent. In the ranked questions in this survey, it is unclear if #1 is best or worst. In my answers, #1 is best.	5/31/2019 10:04 AM
121	Greenland does a fantastic job supporting our kids. We need more rec programs for adults.	5/31/2019 9:05 AM
122	If you time the traffic on route 33 at "rush hour" it takes approx 4-6 minutes to go from Dunkin' Donuts lights to Bayside Road lights. The development in this town is growing too fast with no concern regarding preservation of town forest or open land. The duplex houses cheapen the town. Way way way too much development and not enough conservation of open land. Take care lest we become a "Walmart" of a town.	5/30/2019 9:09 PM
123	We have enough DD Cook duplexes! Public Access to Great Bay would be nice.	5/30/2019 6:48 PM
124	The only reason I rated the library as 'Fair' is the physical building and it's long list of limitations. I think the staff, the hours, and the offerings at Weeks are really great for a town of our size. But, we seriously need the planned improvements to the building.	5/30/2019 2:24 PM
125	I am not in favor of a plan to bring public water in that would require me to cap my well. I have had my water tested and the contaminant level is below that of Portsmouth and does not come with the usage restrictions or significant expense of installation and capping of the well.	5/30/2019 1:26 PM
126	Thank you!	5/30/2019 11:57 AM
127	We've loved our first year in Greenland!	5/30/2019 10:54 AM