

PATH TO RESILIENCE

PHASE II: UPPER WATERSHED NEEDS &
OPPORTUNITIES ASSESSMENT

Summary Report

January 2022

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| | | |
|------|--|----|
| 1. | Introduction | 1 |
| 1.1. | Phase II Process | 2 |
| 2. | Hazards | 4 |
| 3. | Community Regulations, Actions, and Interests | 5 |
| 3.1. | Planning & Land Use Regulations..... | 5 |
| 3.2. | Development Pressure..... | 8 |
| 3.3. | Input on Environmental and Natural Resource Topics..... | 8 |
| 3.4. | Sensitive Topics | 10 |
| 4. | Engaging the Communities | 11 |
| 4.1. | How Communities Like to Receive Information..... | 11 |
| 4.2. | Community Partners | 11 |
| 4.3. | Resources..... | 12 |
| 4.4. | Interest in Receiving Technical Support and/or funding | 12 |
| 4.5. | Project Ideas | 12 |
| 4.6. | Interest in Attending Workgroup Meetings | 13 |
| 4.7. | Contact and Champions | 13 |
| 5. | Survey..... | 14 |
| 6. | Conclusion | 17 |
| 6.1. | Needs, Opportunities, and Next Steps..... | 17 |

1. Introduction

Goal:

Learn about the needs and values of upper watershed communities (Figure I) and opportunities for outreach and engagement in New Hampshire’s coastal watershed related to extreme weather and the long-term impacts of climate change to tailor future climate adaptation and resilience programming by the NH Coastal Adaptation Workgroup (CAW) and CAW partners in these places.

Objective:

Expand work in the watershed by conducting an upper watershed community needs and opportunities assessment and a coastal/upper watershed transfer event to share lessons learned.

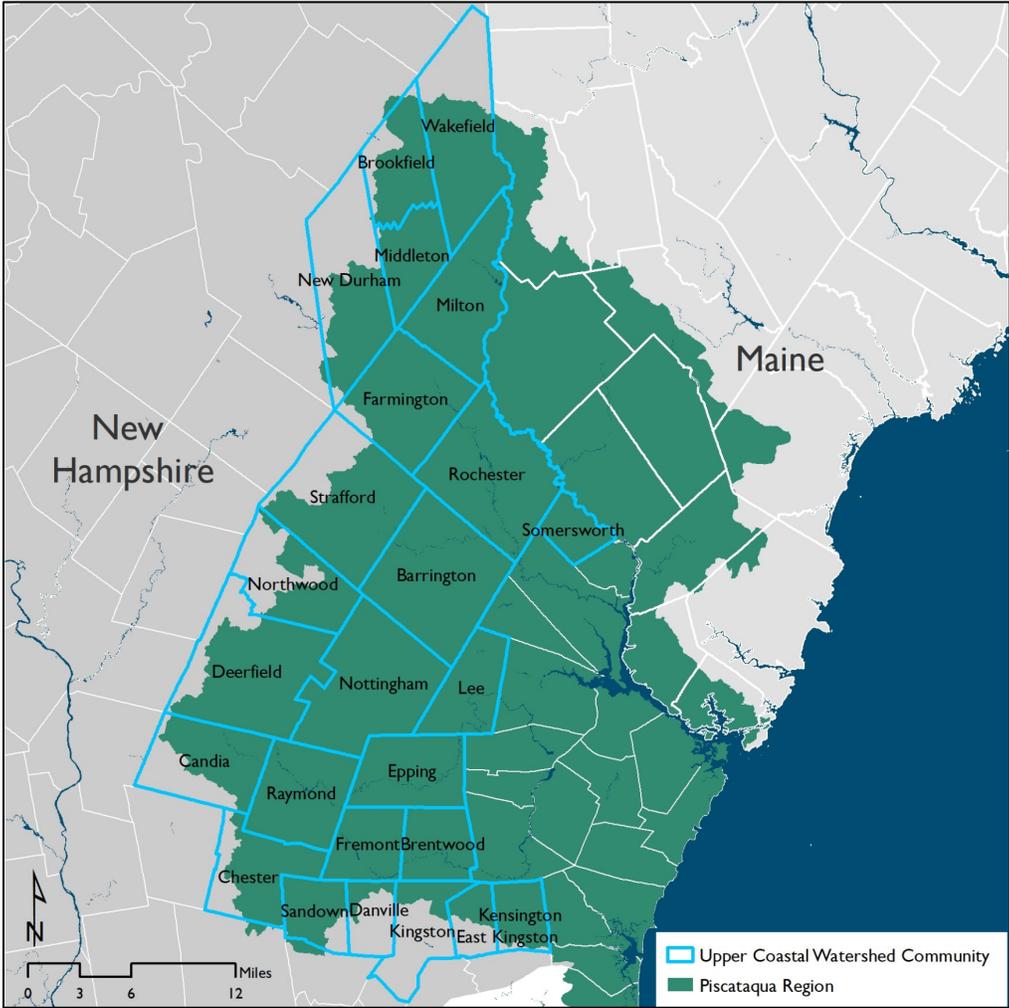


Figure I. Map of communities in the upper coastal watershed.

This report summarizes the input received during discussions with representatives from five communities located in the upper coastal watershed: Barrington, Kingston, New Durham, Rochester, and Somersworth. The focus of this report is on synthesizing the differences and similarities between needs and opportunities of the communities and the different stakeholders that provided input.

1.1. Phase II Process

Barrington, Kingston, New Durham, Rochester, and Somersworth were selected for the needs and opportunities assessment using a focal criteria matrix developed for this project. The intent was to select communities with geographical, social, economic, and environmental diversity. Input from the project team also factored into the decision of which communities to engage in this assessment. The focal criteria matrix with data for 25 communities within the upper coastal watershed in New Hampshire is included in **Appendix A**.

A list of questions to ask each community was developed with the project team and refined after data was collected for the focal criteria matrix. Refer to **Appendix B** for the list of questions.

The questions were provided to each community in advance of each meeting. Two project team members met with representatives of Barrington, Kingston, New Durham, and Somersworth over Zoom for 1.5 hours. One team member attended a joint Planning Board-Conservation Commission meeting to present the questions to Rochester and then discussed the input further over a follow up phone call with the City's Director of Planning and Development.

The community representatives that participated in the discussions varied by community and included staff, 'environmental champions,' and local board and commission members. These individuals were identified by the project team and by the staff and volunteers that the project team initially reached out to. Notes from the community discussions are included in **Appendix C**.

Project Team

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Community Interview Participants

Barrington

Ken Grossman, Conservation Commission Chair;
Matt Towne, Resident

Kingston

Evy Nathan, Conservation Commission Chair;
Marghi Bean, Conservation Commission

New Durham

Bob Craycraft, Planning Board and Conservation Commission

Rochester

Planning Board members;
Mark Jennings, Conservation Commission;
Dan Nickerson, Conservation Commission;
Shanna Saunders, Director of Planning and Development

Somersworth

Michelle Mears, Director of Planning and Community Development;
Sarah Eckstein, Sustainability Committee Chair and Conservation Commission

The information and preliminary findings in this summary report are not intended to represent a comprehensive, complete, or vetted response from the municipality or the community as a whole. Rather, the information included here provides insight from stakeholders in each community that may guide CAW's future engagement of upper watershed communities and potential project areas and topics that communities may be most interested in and receptive to.

Following the discussions, a short online survey was released to collect input from the broader community. Responses from the survey are summarized in this report and included in **Appendix D**.



2. Hazards

Hazards have impacted communities differently, and individuals' awareness, recollection, and perception of the impacts of hazards on their communities also vary.

Of the four hazards that the community stakeholders were specifically asked about – flooding, drought, increased temperature, and storm events – flooding was the most recognized hazard. Localized flooding was identified in Barrington, Kingston, Somersworth, and Rochester. New Durham cited runoff as a concern due to water quality impacts. In Barrington, Richardson's Dam was identified as a hazard. Kingston noted flood mitigation projects in the Great Pond area and culvert upgrades that had subsequently reduced flood impacts. The Mother's Day floods of 2006 and 2007 were mentioned by Somersworth and Rochester stakeholders.

Stakeholders from Kingston and New Durham commented on the impacts of drought on wells. Conversely, Rochester noted that no water restrictions had been necessary in recent years.

In Kingston, increased temperature caused children at summer camps to be sent home early.

The ice storm of 2012 was a notable event that resulted in power loss for two weeks in Kingston. More recently, ice storms have impacted Rochester.

Insights

- The degree to which stakeholders identified flooding as a hazard varied, but all communities cited locations that flood and/or recalled past flood events.
- It is likely that other hazards have caused impacts to individuals and the municipalities that were not captured by the discussion.
- Most, but not all of the community representatives were familiar with the multi-hazard mitigation plans. Multi-hazard mitigation plans, which communities update every five years, are likely the most comprehensive and accurate source of information about hazards, however they may not include the most recent events or challenges. There is an opportunity for the Regional Planning Commissions and others who prepare multi-hazard mitigation plans to incorporate information about and actions to address climate resiliency into the plans. Many plans already incorporate information about climate change.
- Include public works staff and road agents in the discussion when asking communities about impacts of hazards, and in particular when seeking information about flooding.

3. Community Regulations, Actions, and Interests

3.1. Planning & Land Use Regulations

With the exception of Somersworth, the communities did not identify any recent long-term or environmental plans. Somersworth stakeholders reported completing a GIS-based Natural Resources Assessment with SPRC in 2016. SPRC completed a similar project in Barrington, however this did not come up during the discussion with Barrington. The Natural Resources Assessments in Barrington and Somersworth are intended to provide additional guidance on prioritizing lands for future conservation efforts based on the co-occurrence of existing natural resources. Somersworth identified the opportunity to address recent or current storm impacts in their upcoming master plan update. The City is hoping to have a climate action plan as part of the master plan, if funded. Participation of Somersworth's City Planner in the Phase II interview was helpful for collecting information about planning and regulations.

Representatives from Kingston noted that the Town had almost met its goal of protecting 20-30% of its land, as identified in its master plan. It is assumed that the other communities have master plans with chapters on natural resources and water resources, however these were not explicitly referenced during the discussions. Rochester has a Downtown Master Plan that emphasizes green infrastructure.

The community stakeholders were asked about environmental regulations. A summary of responses is included in Table I. The response from the stakeholders was variable; several environmental regulations and aspects of development project review as well as some gaps and room for improvement were identified. In Barrington, the Planning Board provides the Conservation Commission with the opportunity to comment on a variety of environmental impacts as specified in the Town's Subdivision Regulations. The Kingston Conservation Commission members noted that stormwater, wetland and shoreland buffers, and groundwater protection are reviewed. New Durham has a stormwater management ordinance, wetland regulations, shorefront conservation overlay with more stringent standards than the state, a water quality protection overlay district, and a limited floodplain overlay. Many of New Durham's ordinances were developed many years ago and could be revisited.

Barrington, New Durham, and Somersworth noted their conservation subdivisions. New Durham can mandate the conservation subdivision standards when certain environmental features are triggered. Somersworth requires a special use permit for a traditional subdivision as compared to a conservation subdivision for the purpose of preserving open space.

As with identifying recent planning efforts, the input that the communities provided about the environmental topics that are regularly reviewed during site plan and subdivision review may have also been influenced by the role of the stakeholder. It is reasonable to assume that municipal staff may be able to respond to questions about regulations more readily than volunteers who may not be as familiar with specific provisions of a community's regulations or the project review process, particularly if the volunteers do not sit on the Planning Board. The responses to the questions about environmental regulations also reflected the level of detail in which the interviewer asked the question. For example, individual regulations were not discussed one by one in Barrington. Review of regulations during the site and subdivision process was not discussed at all with Rochester. However, the City's land use

regulations do require identification and/or review of wetlands, aquifers, floodplains, review of impervious surfaces and preparation of stormwater management plans, and landscaping. The City encourages energy efficiency. It was noted that Rochester Conservation Commission leans more towards conserving land than regulating land use.

Table 1. Input received on environmental regulations

| | Barrington | Kingston | New Durham | Rochester | Somerset |
|--|--|---|--|------------------|--|
| Stormwater Management | Conservation Commission reviews plans before they go to the Planning Board | Yes. Every plan. Excellent town engineer | Ordinance triggered by area of lot disturbed or approximating water body | Not discussed | Not discussed |
| Energy efficiency, LEED standards | Not discussed | No | Not currently addressed. Has come up. Not in regs. Some people want to see this more. | Not discussed | Lighting regs – have to put timers on outdoor parking lights, make sure its downlit and shielded, but otherwise no energy efficient standards |
| Wetland or shoreland buffers | Conservation Commission reviews plans before they go to the Planning Board | Yes. Very closely watched. Good town ordinances, people do get variances. | Yes. Working on this now. Shorefront conservation overlay district is more stringent than state. Water quality protection overlay district riparian buffer ordinance applies to new subdivisions | Not discussed | Recently updated wetland buffer |
| Floodplains | Not discussed | | | Not discussed | Not discussed |
| Shade trees | Not discussed | Lost many of them. | | Not discussed | Not really. Always ask about landscaping regs, architects must sign off if landscape isn't irrigated, one Conservation Commission and Planning Board member might be looking at developing something for regs, Conservation Commission comments if it impacts the wetland buffer |
| Impervious surfaces | Not discussed | Check every plan for this | Falls under stormwater management/erosion control ordinance, could be beefed up. Developed with CTAP grant through PREP years ago by Appledoer Engineering. | Not discussed | Lot cover restrictions |



| | Barrington | Kingston | New Durham | Rochester | Somersworth |
|---------------------------------|-------------------|--|--|------------------|---|
| Open space | Not discussed | Master plan has a goal, almost there. Work with SELT. Conserving a mitigation piece for a Costco going in with a huge parking lot. Using ARM fund for mitigation | Open Space Conservation Subdivision Ordinance is an option for applicants. Can be mandated when certain environmental features are triggered (water source, perennial stream, agricultural land, new road infrastructure to minimize cost. Ordinance could be reviewed. No development under this yet. | Not discussed | Conservation subdivision regs allowed by right, traditional subdivision only allowed through special use permit in order to preserve open space, traditional sub required to have some kind of natural resources protection |
| Groundwater protection | Not discussed | Yes. Not sure on specifics, in a big aquifer, have all the water they will need | Overlay district is largely around Rt 11 traffic corridor. | Not discussed | Have an overlay district at Willand Pond but that could definitely be looked at (like developing an aquifer protection overlay) |
| Surface water protection | Not discussed | Ordinances about that | Buffers, shoreline overlay, wetland overlay district – some protections, could be beefed up | Not discussed | No |
| Drinking water supply | Not discussed | All private wells, this left up to the Planning Board and engineers. | Big concern – other ordinances/overlay districts get at that. Mostly private wells and septic as a few community wells | Not discussed | Not right now |

The Phase II discussions did not include a complete audit of regulations in each community. The [Piscataqua Region Environmental Planning Assessment \(PREPA\)](#) is a good source of information for understanding and comparing the regulations that communities have adopted and identifying opportunities to enhance regulations.

The communities were also asked about recent projects and examples of projects that other communities may be interested in. Somersworth recently updated its wetland buffer. The City has a groundwater overlay district at Willand Pond but could update it using the state’s model ordinance for groundwater protection.

Somersworth noted the need to work on large scale solar and energy efficiency standards. The City is working on electric vehicle planning and regulations. The City’s site plan regulations were updated to include MS4 (Municipal Separate Storm Sewer System) in 2021.



One project that other communities may be interested in is Somersworth's recently completed apiculture regulations for bees. Another is New Durham's ongoing PREPA project, which is looking at buffer regulations in the Aquifer Overlay District and Open Space Conservation Subdivision Regulations, enhancing a proposed Shorefront Conservation Overlay District, and determining the feasibility of merging the Wetland Conservation Overlay District and Water Quality Protection Overlay District while strengthening buffers.

Insights

Volunteers were generally extremely informed about projects and regulations in their communities. Speaking to planning staff and planning board members directly would be useful for gathering information about the specifics of land use regulations.

3.2. Development Pressure

All five communities cited high development pressure. A large, urban, multi-use project is underway in Barrington. Somersworth experienced an increase in building permits of about 40% this year. Kingston noted an increase in both commercial development and residential housing. New Durham has experienced a lot of redevelopment and expansion of homes. Both Kingston and New Durham noted an increase in the conversion of seasonal residences to year-round use. Rochester has seen several large subdivisions.

3.3. Input on Environmental and Natural Resource Topics

The community stakeholders were asked about a variety of environmental and natural resource topics in order to collect input on their concerns and interests. The input is summarized in Table 2. Note that the absence of information does not necessarily indicate a lack of concern or interest by the community.

In general, there was awareness of invasive species and algal blooms but not an overwhelming interest in these topics. Stewardship is a key role of conservation commissions and the community stakeholders indicated that conservation commissions are active stewards of conservation land. Forestry and agriculture came across as being more important topics in New Durham and Kingston than the other communities. In New Durham, there is concern about drinking water and the viability of private wells.

Interest in large scale solar and progress towards adopting regulations was variable. Barrington and Kingston had a slightly controversial history with this topic. Similarly, the presence of electric vehicle charging stations and regulations was mixed across each community; Barrington, Kingston, and New Durham stakeholders were not aware of any charging stations in their communities, while Rochester has one station and Somersworth is looking into regulations.

Table 2. Input received on specific topics

| | Barrington | Kingston | New Durham | Rochester | Somersworth |
|--------------------------------|---|---|--|--|--|
| Invasive species | Yes but no conversations about a general plan; Nippo Lake Association working on algal bloom project; lots of work to reduce runoff into the lake; alum treatment project; blue green algae at Swain's lake | Powwow Pond filling with vegetation and turning into a meadow | Managing invasives at places like Birch Ridge Community Forest; Milfoil in Merrymeeting River | Concern with several terrestrial invasives on conservation land | Looks more at terrestrial than aquatic invasives. Conservation Commission would like an invasive species management plan across city-owned land |
| Algal blooms | Lots of work to reduce runoff into the lake; alum treatment project; blue green algae at Swain's lake Working on Nippo Lake Watershed Management Plan with SRPC, DES | Country Pond and Greenwood Pond have algal blooms | Looking at cyanobacterial blooms | Not discussed | Willand Pond has some issues but not necessarily algal blooms |
| Stewardship | Conservation Commission monitors; Trails Committee monitors | Very involved in forest management; 5 town forests, active trails subcommittee; Friends of Kingston Open Space (FOKOS) is an active group working on protecting more open space; Easements monitored annually | Conservation Commission collaborates with others (land trusts, SPNHF); Merrymeeting Lake Association is heavily involved in land protection. | Conservation Commission is good at conserving land; Conservation Commission asked about funding for conservation | Lack of baseline documentation for all the city-owned properties; City has open space that is not conserved; Interested in developing criteria for conservation projects; don't have a big conservation fund |
| Farms & agriculture | Brasen Hill Farm (former Warren Farm); small farms; cattle off Rt 202 | Bakey Farm, Coombs Farm, Evergreen Farm, Hilltop/Kent Farm on Rt III | Agriculture and forestry ethic in town; Bickford Farm, blueberry farms, farm stand scale sized farms, some cows, pigs, hayfields; Active forestry – some people understand shifts in plant community composition and the economic implications | Not discussed | Has an equestrian farm, used to be a farmers market at Goodwin Community Health |
| Drinking water | Has a water district but mostly private wells | All private wells - during the 2016 drought people lost their wells and were drawing from the Plains well, that is contaminated with PFAS now | Big concern now; Primarily private wells | Not discussed | Not discussed |
| Electric vehicles | Not aware of any charging stations; new Mobil station north of Rt 9 would be a good place | No EV charging planned, need community interest | Not aware of anything about EV charging stations but Town Admin would know more | Hannaford has a Tesla charging station | Currently looking at developing regulation |



| | Barrington | Kingston | New Durham | Rochester | Somersworth |
|--------------|--|--|--|---|---|
| Solar | Past interest in solar farms 6-8 years ago but lacked support of neighbors | Wants to put solar on closed landfill, not all agree | Not aware of anything about solar but Town Admin would know more | Topic of discussion | Need to work on regulations for large scale solar |
| Other | | | | Stream management and navigability of Cocheco River; Stormwater management and nitrogen | Water quality / pollution at Willand Pond |

Insights

It would be beneficial to emphasize the broad impacts of climate change, in addition to the environmental implications, when approaching new communities about climate change. Framing climate change as an environmental problem may alienate individuals or communities who feel that environmental regulations are sufficient. Connecting to the social and economic impacts may hit home more.

3.4. Sensitive Topics

The community stakeholders were asked whether there were any topics to avoid. There were no major red flags, however the following was shared:

- Barrington has a history of controversial discussions about large scale solar farms. There is some hesitancy to post information about energy on social media pages as there could be push back. By extension it could be assumed that climate adaptation would receive similar pushback.
- New Durham is a conservative community with a strong ethic for sustainable forestry and agriculture. When it comes to protecting water resources, the community may be more amendable to management strategies than restrictions in buffers. A general sentiment in New Durham is that residents do not want the same requirements as the coastal communities.
- A Conservation Commission member in Rochester expressed frustration with NHDES and the ARM fund.
- Kingston noted that a discussion about resilience needs to be timed properly and go to the right committee.

4. Engaging the Communities

4.1. How Communities Like to Receive Information

The stakeholders identified a variety of ways that they like to receive information. Due to the fact that individuals' preferences for receiving information varies quite a bit and a limited number of people participated in this discussion, the input from communities is aggregated. Individuals listed the following:

- Town/City website
- Town/City newsletter
- Facebook
- Email
- Having outside agencies come and present to Conservation Commission
- Channel 22
- Could try fold up signs on busy roads
- Newspaper
- Flyers sent to Conservation Commission
- Direct mailing with property tax bills.

4.2. Community Partners

The interviewees from the five communities identified numerous organizations and agencies that they had partnered with:

- Southeast Land Trust (SELT)
- Moose Mountains Regional Greenways (MMRG)
- Society for the Protection of New Hampshire Forests (SPNHF)
- NH Department of Environmental Services (NHDES)
- NH Land and Community Heritage Investment Program (LCHIP)
- Natural Resources Conservation Service (NRCS)
- Natural Heritage Bureau
- NH Fish and Game
- The Nature Conservancy (TNC)
- Strafford Regional Planning Commission (SRPC)
- Rockingham Planning Commission (RPC)
- University of New Hampshire Cooperative Extension (UNHCE) (for pollinator project)
- Piscataqua Region Estuaries Partnership (PREP)
- Great Bay Resources Protection Partnership
- Rockingham County Conservation District
- Nippo Lake Association
- Merrymeeting Lake Association
- Kingston Lake Association
- Lamprey River Advisory Committee
- Isinglass River Advisory Committee
- Exeter River Local Advisory Committee
- The Nature Conservancy
- Bakey Elementary School
- Sanborn High School Science Department
- Directors of Camp Lincoln
- Neighboring Towns.

New Durham noted that some people look at lake associations as elitists. It is possible that there could be a similar sentiment about CAW or CAW partners. While multiple communities indicated good

working relationships with NHDES, one Rochester stakeholder expressed frustration with NHDES and the ARM program in particular.

Refer to Appendix B for notes on which of the above organizations and agencies each community identified.

4.3. Resources

Overall, the interview format was not conducive to gathering input on the resources utilized by communities. This was exacerbated by the fact that most of the stakeholder interviewees were volunteers, who can reasonably be expected to be less aware of the resources and less likely to use them on a regular basis than staff might.

Despite this limitation, stakeholders did provide useful feedback. The Barrington Conservation Commission relies on the maps and information provided by applicants. Somersworth lacks a GIS staff person and relies on SRPC a lot. The Somersworth Conservation Commission has used the GRANITview mapper. The Kingston Conservation Commission stakeholders indicated that they had tried to use the viewer but experienced difficulties. Kingston uses resources including NHDES, the Natural Heritage Bureau, Fish and Game, UNH Cooperative Extension, Exeter River Local Advisory Committee, Connect the Coast, and overlay maps that are available in the Town Hall.

New Durham has some experience using GRANITview. The Town has also used the PREPA, Southeast Watershed Alliance Model Stormwater Standards, and the NHDES Model Groundwater Ordinance. Rochester has used the NHDES Model Groundwater Ordinance as well.

Insights

There is an opportunity to provide education and training about the many resources and tools available.

4.4. Interest in Receiving Technical Support and/or Funding

Stakeholders in Somersworth, Barrington, Rochester, and New Durham expressed an interest in receiving technical support and/or funding. Without a specific offer available, there was some hesitancy to commit to this. Kingston stakeholders indicated that volunteers are busy and this question should be brought to the Select Board and Highway Department. New Durham is looking at hiring a Town Planner and noted that any external help would be useful. Somersworth mentioned a handful of projects such as master plan chapters and regulations that could be good candidates for support from CAW or CAW partners. A Rochester stakeholder directly asked if funding was available before the interview started.

Interest may be stronger if there is specific technical assistance or funding available at the time the question is asked.

New Durham pointed out that the community does not always think to look to PREP or other organizations that are engaged in coastal work because historically some initiatives were more focused on the coast than upper watershed.

4.5. Project Ideas

Barrington stakeholders indicated that they would solicit input from the Conservation Commission. During their October 14, 2021, meeting, Commission members provided the following input:

- Culvert upgrade project at the dam on the Goodwill site could be considered resiliency
- Ask the Town to consider resiliency from the ‘planning aspect’
- Ask the Regional Planning Commission for input on what the Town should do regarding resiliency
- There should be sustainability standards in all development plans
- Salt use in winter is harming lakes and streams and causing permanent damage. The Commission approved a vote to send a letter to the Select Board that would support road agents in planning to reduce salt and sand usage which addresses the issue of dying trees and lake and stream pollution.

Kingston stakeholders would like to conduct outreach to the community to build support for natural resources. They are also interested in networking with other conservation commissions. Participating in a [bio blitz](#) was mentioned as a possible project.

New Durham expressed interest in infrastructure projects like culvert sizing, which is at the forefront of what the Highway Department is working on. A lot of existing road infrastructure is substandard so this is another possible project area. New Durham stakeholders noted that projects that demonstrate financial impacts or saving money will be more likely to be embraced.

Rochester intends to develop an update to its Natural Resources master plan chapter.

Somersworth would like to do a more full-fledged Natural Resources Inventory. The City would also like to incorporate climate in its master plan update and to develop a more in depth, comprehensive, and holistic sustainability plan. The Conservation Commission would like to develop a matrix for evaluating conservation land and to prepare an invasive species management plan for City-owned property. Introduction of available climate resources as well as mapping tools like GRANITview may be a good project to engage Somersworth boards and committees.

4.6. Interest in Attending Workgroup Meetings

Stakeholders were asked about their interest in participating in a workgroup. Responses indicate general interest but limited capacity:

- Barrington – yes but volunteers have limited capacity
- New Durham – yes but it’s a matter of finding someone with the time to do it
- Somersworth – a bimonthly meeting would be preferred
- Kingston – suggested a workshop at NH Association of Conservation Commissions instead, maybe a quarterly meeting but no more frequent than that, webinars and Zoom meetings are preferred

It is likely that integrating resilience work into existing practices, policies, and planning efforts may be a more appropriate way to engage communities, particularly if volunteers are targeted.

4.7. Contact and Champions

Table 3 summarizes the staff, volunteers, and others that stakeholders in each community recommended that CAW and CAW partners contact with information and resources. Additional individuals from each community are identified in the interview responses in Appendix B.

Table 3. Recommended contacts in each community

| | Barrington | Kingston | New Durham | Rochester | Somersworth |
|---|------------|----------|------------|-----------|-------------|
| Planning Staff | X | | | X | X |
| Town Admin | X | | X | | |
| Other Staff | | | | | |
| Conservation Commission | X | X | X | X | X |
| Sustainability Committee | | | | | X |
| Trails Committee | | X | | | |
| Planning Board | | | X | | |
| Select Board/ City Council | | X | X | | |
| Lake, Pond, or River Committee(s) | | X | | | |
| Other Specific Individuals from the Community | X | X | | | |

Code enforcement officers, road agents, and public works staff were cited as individuals who may be better able to provide information on hazards than volunteers, particularly related to flooding.

Email and Facebook were noted as preferred contact methods for future communications.

5. Survey

A short survey was released in each of the five Phase II Communities to gather input from community members. The survey link was shared with the interviewees for distribution to boards, staff, and the public via municipal websites, newsletters, listservs, and social media. Results from the survey are included in Appendix D and summarized below.

A total of 182 individuals participated in the survey. Ninety-four participants provided their email address to be added to the CAW email distribution list. There was a high response rate in Somersworth (102 people) and Barrington (63 people), accounting for 57% and 35% of total responses, respectively. Seven people from Rochester, four people from Kingston, and two people from New Durham responded to the survey.

A majority of the survey respondents were residents (86%), followed by municipal board, commission, or committee members (13%). Participants who identified as municipal employees or owners of a business in the community accounted for 5% each of total respondents.

Participants were asked to rank their level of concern about several environmental topics, hazards, and climate change impacts as high, medium, or low. The highest ranked topics were invasive species and/or pests, followed by drinking water supply, drought, and algal blooms in ponds and lakes (Table 4). Note that this contrasts with input from the interviewees, who did not express as much interest in invasives. Survey participants were more concerned with high heat than severe weather or increased rainfall. Riverine flooding ranked lowest. Refer to Appendix D for a list of other concerns that residents identified.

Table 4. How concerned are you about the following?

| Topic | Weighted Average |
|--|------------------|
| Invasive species and/or pests | 2.97 |
| Drinking water supply | 2.87 |
| Drought | 2.81 |
| Algal blooms in ponds and lakes | 2.77 |
| High heat days | 2.56 |
| Severe weather events (i.e., hurricanes, extreme precipitation events, severe winter storms) | 2.44 |
| Impacts of warmer winters on tourism and recreation opportunities | 2.25 |
| Wildfires | 2.15 |
| Urban heat island effect | 1.99 |
| Increased rainfall | 1.98 |
| Riverine flooding | 1.94 |

The survey included a question about how respondents prefer to receive information. Nearly 70% of respondents indicated that they prefer to receive emails about information, events, projects, and opportunities (Table 5). This was followed by reading online or print newspapers (53% of respondents). Six percent of participants identified other avenues such as radio, word of mouth, getting personally involved, looking up news, Lake Associations, and talking to neighbors.

Table 5. How do you like to receive information?

| Method | Percent |
|--|---------|
| Receive emails about information, events, projects, opportunities | 69% |
| Read the newspaper (print and/or online) | 53% |
| Learn about projects, events, and information on social media | 37% |
| Subscribe to monthly newsletters | 33% |
| Watch YouTube or other short, informational videos | 31% |
| Attend a presentation or workshop | 27% |
| Attend virtual meetings or presentations | 24% |
| Learn about projects, events, and information at Selectboard, Planning Board and other local board and commission meetings | 15% |
| Review meeting minutes | 13% |
| Review meeting recordings on local public access channel or online | 13% |
| Receive information through school district | 13% |
| Other (please specify) | 6% |

Participants were also asked about what they are interested in learning about. There was greatest interest in learning about the impacts of climate change on natural resources and water resources, information about what the community is doing or has done to lessen the impacts of hazards, and strategies to increase resilience to climate change (Figure 1). Participants expressed the least interest in the impacts of climate change on tourism.

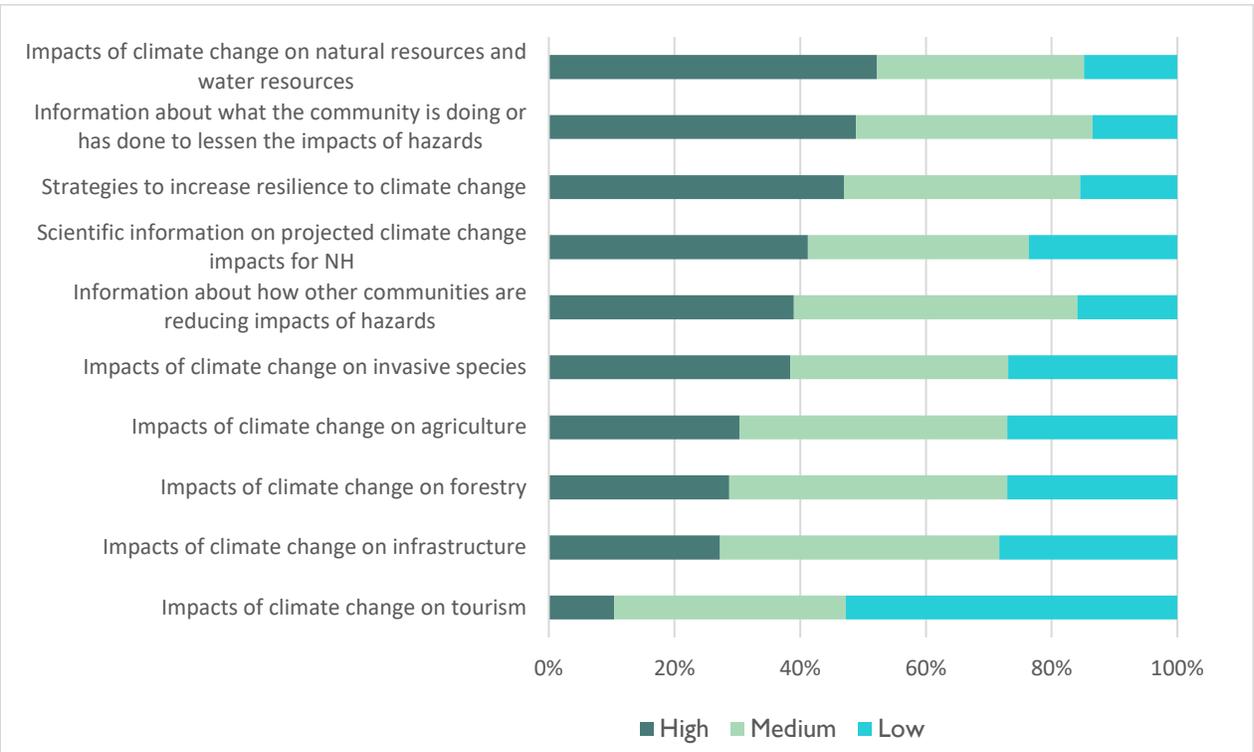


Figure 1. Level of interest in learning about climate-related information

6. Conclusion

The Phase II interviews provided the opportunity to connect with engaged stakeholders in five upper watershed communities. The discussions in each community provided information that can guide future projects and outreach in these and other communities throughout the watershed. The information prepared in the focal community matrix will also be useful for CAW and CAW partners to refer to when refining project ideas and next steps.

If a similar process is repeated in the future, it may be advantageous to involve a larger group of stakeholders in the interviews. It may also be feasible to incorporate some fact finding questions or discussion prompts on resiliency into the Hazard Mitigation Plan update process.

Meeting with the Rochester Planning Board and Conservation Commission was insightful in that it revealed that the set of interview questions was not the most suitable format for a board meeting. It was also a good reminder that there are inherent hurdles with providing information at board meetings, such as time constraints, varying levels of familiarity with the topic, and diverse opinions. However, having a discussion at a board meeting provided a broader perspective on community sentiment compared to the small group Zoom meetings with environmental champions.

One oversight was not dedicating enough time to explaining what was meant by the term ‘resilience’ during the interviews. This term was not used heavily in the interview questions, but it was a part of the project name. One stakeholder accurately noted that the term may not be familiar to all, and that some people probably understand the phrase but not in the context of climate resilience. More background information about the term resilience would have been helpful for the stakeholders. Using terms like ‘hazards’ and ‘severe weather’ help center the discussion around observed events and impacts, however it is possible that this approach limited the insight gathered about how to best address the topic of climate change than if the term climate change had been directly used.

One stakeholder self-described their community as a ‘headwater community’ rather than an ‘upper coastal watershed’ community. This was a good reminder that ‘upper coastal watershed’ may not be an especially meaningful or identifiable label and that it may be advantageous to ask the communities themselves how they recognize themselves within the context of the coastal watershed.

6.1. Needs, Opportunities, and Next Steps

- Develop guidance and materials for integrating climate resilience into the hazard mitigation plans and for obtaining information from communities during the update process. The plan update process is a familiar and ongoing process for municipalities and one that multiple key stakeholders from the community participate in. Barrington is scheduled to update their plan in 2022.
- A regional flood impacts and mitigation workshop involving staff including planners, road agents, public works, and emergency management as well as board members would be a good opportunity to provide information about anticipated future flood impacts, funding options for flood mitigation projects, and examples of projects implemented in different communities.
- During the interview, Kingston stakeholders noted that high temperatures caused closure of summer camps. CAW has not focused on high heat impacts and this could be one opportunity to support both coastal and non-coastal communities. More information is needed on health and

social impacts of high heat on children as well as the economic impacts on school districts that need to upgrade buildings to provide air conditioning and/or improve energy efficiency.

- Partner with NH Association of Conservation Commissions to package information for conservation commissions with detailed information about how to integrate climate resiliency into all the roles of conservation commissions. Share and present information at Conservation Roundtable meetings and invite upper watershed communities to participate.
- Connect with the many partners identified during the interview process to discuss opportunities to integrate and/or build on existing resiliency efforts into their work.
- Identify research and studies that could be conducted by CAW Partners that would require minimal resources (time, funding) from the community but would provide valuable information on topics like drinking water supplies.
- Utilize the CAW email list, local listservs, and other email distribution lists to provide information about events, projects, and opportunities. Survey respondents also indicated that they like to receive information via online and print news sources.
- Provide presentations and trainings on resources and tools such as GRANITview.
- Develop concise guidance for integrating climate resiliency into plans, regulations, and policies that includes questions for communities to address, model language, and links to additional resources.
- Follow up with communities to further discuss how to provide capacity to help implement resiliency efforts.
- Collaborate with organizations identified by the community stakeholders to host an informational zoom meeting for residents and other community members on climate change, impacts, and resiliency efforts.
- Utilize and build off the Focal Community Matrix to identify gaps and opportunities common to multiple municipalities.