Buffer Options for the Bay: Exploring the Trends, Science, & Options for Buffer Management in the Great Bay Watershed

Key Findings from a community assessment

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I. Executive Summary

In New Hampshire, land use decisions involving buffer lands surrounding water bodies are often made by communities and individual landowners. These decisions are influenced by many factors, including local regulations and governance structures, prevailing culture, the community's economic and natural resources, and the often diverse perspectives of its citizens. Efforts at any scale to protect, restore, or manage buffers in support of water quality protection or other ecosystem services must keep these local considerations in mind if they are to succeed. To address this need, this report presents an analysis of the local factors influencing buffer-related decision-making within four communities in the Exeter-Squamscott subwatershed and the relevance of these factors to communities throughout the wider Great Bay watershed. This study's overarching goal is to help outreach, communication, and technical assistance efforts related to buffers become more targeted, relevant, and helpful for Great Bay communities and the practitioners who work with them on this issue.

This analysis was commissioned by Buffer Options for the Bay (BOB) project, a grant-sponsored collaboration of public, academic, and nonprofit organizations dedicated to enhancing the capacity of New Hampshire stakeholders to make informed decisions that make best use of buffer lands to protect water quality, guard against storm surge and sea level rise, and sustain fish and wildlife in the Great Bay region. The project defines buffers as naturally vegetated segments of land directly upslope of a water resource, such as a lake, stream, river, pond, estuary, or other wetland type.

Using a combination of interviews with community stakeholders and document review for the four focal communities, the study examined the values, perspectives, and concerns that influence decisions about buffers; the challenges and opportunities associated with different buffer management options; and the information gaps and support needs experienced by local decision makers. A total of 38 individuals were interviewed in 28 interviews: 13 municipal staff (code enforcement officers, planners, town administrators or managers, other), ten municipal board members (conservation commission, planning board, select board, and zoning board members), and 15 other stakeholders (engineers, wetland scientists, developers, regional planners, and other outreach and technical assistance providers). This analysis reports on the perceptions heard from the interviewees. Findings from this analysis were then tested via survey for their relevance to communities throughout the Great Bay watershed. Seventy-three people from at least 28 communities responded to the survey, generally showing an overwhelming degree of agreement with the CA findings.

Chief findings from the CA analysis include the following:

- While responses to questions about community values varied, the analysis did identify some common types of values that provide important context for efforts to conserve, restore, or manage buffers. Values mentioned included the following:
  —*Protection* of property rights and privacy, hydrological benefits of buffers (e.g., flood storage), and public health;
  —*Preservation* of community character, which is defined by factors including a sense of history,

public areas for children and families to recreate, a town center, walkability, open space, town pride and reputation, and engaged citizens and school system;
—*Importance of water, particularly local water bodies,* which is manifested by access to water, views, and clean water for drinking water and recreation;
—*Habitat*: Natural resources, wildlife and forests, especially as in relation to community character;
—*Financial vitality* conferred by adjacent water bodies, which make communities desirable places to live and do business, enhance property values, and help sustain the tax base, and also contribute to avoided costs (e.g., by protecting water quality, avoiding flood damage and pollution events that impact property values, enhancing tourism and public health).

- Buffer-related decisions are inherently complex at the local level, requiring decision-makers to balance many factors, including community character, natural resource protection, environmental concern, economic development and growth, respect for property rights, abutter concerns, and support for local agriculture and forestry.

- While buffers have public benefits, their regulation does not affect all community members equally. Buffer management is seen as more burdensome for homeowners than developers and associated challenges are especially pronounced with waterfront properties. Another equity concern is that lower watershed communities benefit from the water quality impacts of buffer regulations in upper watershed communities.

- Property rights and privacy concerns are major impediments to buffer protection. Many view their land as an investment for their children and some fear that regulations related to buffers will prevent them from subdividing their property and maximizing its value for heirs. Consistent with the state's "live free or die" culture, some observed that they should be able to do what they want with their land or expressed frustration regarding conservation of buffers, wetlands, and other resources, i.e, "when is enough, enough?"

- There are unique challenges related to changing community composition. For example, longer term residents may have a stronger connection to the community character and what the community was like in the past (i.e., with less development, more natural resources), and a better awareness of the rationale behind the municipality's ordinance. New residents (especially those coming to New Hampshire from more urban areas) lack that awareness of development trends and what has been "lost" in terms of natural resources and community character. In addition, younger residents and older residents may have different visions and priorities for what they would like their community to be like.

- Buffer decisions are often perceived as a choice between natural resource protection and economic development and, in general, there's a lack of understanding about the potential economic benefits of protecting open space and natural resources. Conservation land (especially

with public access) may be an economic draw, but it also means there's less available land for growth. Buffer regulations were perceived by some as "anti-growth" and adding to the costs of development. Some feared more restrictive buffer regulations would drive developers away.

The findings listed above reflect what was heard in the 28 interviews. To understand if these perceptions hold true for other parts of the Great Bay Watershed, a survey was administered to municipal representatives in all 42 communities surrounding the bay. The survey asked respondents to indicate their level of agreement with the interview results. The **top four findings** with the greatest degree of agreement (>86%) from the 73 survey respondents were as follows:

- Buffer-related decisions are inherently complex, requiring municipalities to balance many factors including property rights, community character, natural resource protection, abutters' concerns and economic growth.
- People may not understand the individual and social benefits of buffers.
- Buffer oversight and enforcement can be logistically difficult and lack capacity.
- Developers want consistent regulations, flexibility in the review process, and not a 'one-size-fits-all' rule.

The results of this analysis are intended to be a resource for the organizations involved in the BOB project and others engaged in helping communities and individuals to better understand local-scale perspectives, experiences, approaches, needs, and opportunities. The analysis process also provided an opportunity to build relationships with local stakeholders through engagement in interviews. The purpose of this effort is to ensure that the BOB project's evaluation of options and product development processes are grounded in the realities communities are facing and informed by the perspectives of key stakeholders.

The team also has conducted several reviews of the biophysical literature that underpins buffer management, an economic analysis of the values placed on the water quality benefits provided by buffers, a buffer-focused GIS analysis of the Great Bay region and a policy analysis. The results of these analyses are captured in individual reports, available at www.bufferoptionsnh.org/reports. They also have been integrated into a web site (www.bufferoptionsnh.org) intended to inform discussions around buffer management in the region, open the door to new and needed research; and encourage strategic investment. Finally, the team created a collective action plan (www.bufferoptionsnh.org/action-plan) to encourage collaboration among outreach professionals as they work with stakeholders on advancing effective buffer policy and practice at the community and state levels.

II. Community Assessment Interview Findings

A. COMMUNITY VALUES

Thirty eight stakeholders were interviewed to gain an in-depth understanding of the buffer-related decision-making process at the local level. Each interview included questions related to perspectives, preferences, challenges, and opportunities related to regulatory and nonregulatory approaches to buffer implementation and management. Individual land owners were not interviewed as a part of this project; the focus was on municipal decision makers and developers who work with towns and cities. (For more on community and interviewee selection; the methods underpinning the interviews, watershed survey, and analysis; and resources that contributed to this work, please see this report's appendices, starting on page 23.) This document reflects the team's analysis of the interviews and survey data and is organized in a way that summarizes responses regarding challenges and barriers, reflections on buffer policy and regulations, articulated needs that were expressed during the interviews, and ideas about how to communicate about buffers. Throughout this analysis, it was clear that people understand the issue of buffers in the context of broader societal and personal values. When asked directly, responses varied between communities and between interviewees (even within the same community), but generally people referenced the following values:

- *Protection*
  - Property rights and privacy
  - Hydrological benefits of buffers, such as flood storage
  - Public health

- *Community character and culture*
  - Community character and history, especially rural/agricultural character
  - Public areas for children to play/families to recreate
  - Town center, walkability, open space, "quality of life"
  - Town pride, community reputation
  - Engaged citizens
  - School system

- *Water-related*
  - Water views and access
  - Clean water for drinking water and recreation
  - Generally stronger connection to local river (or other water body) than to Great Bay

- *Habitat*
  - Natural resources and endangered species
  - Natural resources in the community, e.g., forests that contribute to community character.

- *Financial connection*
  - Desirable place to live and do business, e.g., near the bay, a river, fun town, etc.
  - Property values, e.g., property as an investment for one's children
  - Affordable housing, low taxes, economic growth, sustainability of the tax base
  - Cost avoidance. e.g., related to water treatment, flood impacts, pollution impacts on property values and tourism, etc.

Some of these values are easier to connect to buffers than others. Here are a few ways to learn more about a community's values when embarking on buffer-related work:

- Review the municipality's master plan and zoning ordinance for descriptions of values.
- Gather information about relevant past votes, e.g., funding for land conservation.
- Conduct informal or semi-structured interviews with community stakeholders; try to get a variety of perspectives, five at the very least. Ask interviewees to describe the key values of the community that come to mind, as well as what they personally value most about living in the community. A survey may also work, but results will be less rich.
- Consider hosting a community dialogue or focus groups to get more in-depth information.

Use the values you identify to inform the way you communicate in the community. For example, make connections between buffers and protecting their values; gather additional information to capture the benefits and downsides of buffers related to those values; and identify several options for the community that connect to and help protect these values. Some education work may be needed to make the connection between certain buffer functions and the community's values clear.

B. OVERARCHING THEMES

The different values that people bring to a conversation about buffers likely influence some of the overarching themes found in this assessment. These themes are key, contextual take-home lessons that don't necessarily fit into the subsequent findings categories, but the team felt were important to capture and convey due to their prevalence in the interviews.

- **It's challenging to balance the different factors in decision making:** Buffer-related decisions are complex and often call upon decision-makers to balance a number of factors.

- Community character
- Natural resource protection
- Environmental concerns
- Economic development and growth
- Purpose of a municipality's ordinance
- What's best for the town
- Respecting property' rights
- Abutters' concerns
- Supporting agriculture/forestry

- **Inequity of burden:** While buffers have public benefits, they do not affect all landowners equally.
  - Navigating buffer regulations is more burdensome for homeowners than developers and may be more challenging for residential than commercial developers.
  - This is especially an issue with waterfront property, which may include higher value land, but also is subject to greater restrictions. Often, owners purchase the property to be able to see the water.
  - Provisions to "grandfather" longer-term landowners into new regulations can be perceived, in a way, as forgiving past buffer impacts.
  - Landowners who developed by previous rules may not understand new regulations.

- **A strong sense of property rights:** Property rights and privacy concerns are a major impediment to buffer protection.
  - Many fear that regulations will prevent subdividing the property for their children. They see their land as an investment for their children.
  - The "live free or die" mentality plays a role in New Hampshire, i.e., "It's my land, I can do what I want."
  - "When is enough, enough?" is a common perspective, especially as it relates to regulation, conservation land, buffers, wetlands, etc.

- **Competition:** Natural resource protection is perceived as competing with economic development and growth.
  - The good, "easy" land has been developed and the "challenged [for development] land" is remaining, resulting in more pressure to reduce the size of buffers.
  - Wetlands and buffers contribute to higher site work and approval process costs, which can kill projects and make development more expensive.
  - Some feel a need for more development to pay for infrastructure, grow the tax base, and achieve their vision for the community. Conservation is an economic draw, but it also means there's less available land to develop. There appears to be a lack of awareness and understanding about the economics of open space.
  - If other communities have less restrictive buffers, will developers go there instead? Some fear that more restrictive buffers will drive developers away, while others were not

as worried about driving away development, wanting to maintain the community character. If developers move up into the watershed, though, that still affects downstream communities, i.e, through water quality and economic impacts, so individual communities' decisions affect their neighbors.
    - Some feel that buffers ruin economic development potential and property values and natural resource protection stifles economic growth. The sense is that the two are mutually exclusive.
    - Some see buffers as anti-growth. For example, buffers and other regulations lower density and contribute to less affordable housing and attract fewer young people.
    - Some think rural communities don't have enough development pressure to need buffers, however, some upper watershed communities may have a stronger connection to their community character and more resistance to growth, and may view buffers more favorably.

C. CHALLENGES & BARRIERS

Interviewees were asked about challenges related to implementing or working with buffers. This section groups their responses into themes. Reflecting on these challenges can help partners interested in advancing buffers to target their efforts.

- **Municipal decision-making process**
    - Municipal decision-making process is parcel-by-parcel; it's hard to take a town-wide view.
    - Each application should be evaluated on its own merit, but municipal boards fear setting a precedent and getting sued. This fear can influence decision-making.
    - The town meeting process slows down decision-making and regulatory change.
    - SB2 (a form of town meeting that has a deliberative session and a voting session) leads to people voting without knowing what they're voting for.
    - Municipalities are dealing with bigger issues than buffers.

- **MS4 (Municipal Separate Storm Sewer System) permit:** Impending MS4 permit has been an excuse to wait on strengthening the buffers—some think the permit might make the municipality further expand buffers.

- **Municipal boards:**
    - Conservation commissions lack power and a formal role in the decision-making process.
    - Zoning board challenges include timing, (i.e., by the time they get a case, it's either going to happen or has already happened; they're dealing with people caught violating the regulation, rather than proactively coming before the board) and subjective criteria.
    - There's often a shortage of board members, especially young people and people with technical expertise and legal knowledge. It seems especially hard to fill the zoning board.
    - Turnover affects the personality of the board, contributes to inconsistency, and results in a loss of institutional knowledge. Boards probably need ongoing outreach due to turnover.

- Boards often lack technical expertise and aren't comfortable with technical language.
- Boards have to deal with developers and consultants that threaten the takings clause and bring in lawyers, show up to board meetings with new information, or bully the boards.
- Developers are from outside the community, so municipalities need to defend their values.
- Boards get incomplete, poorly filled out applications, but are under pressure to decide.
- It can be difficult for board members (volunteers) to attend trainings.
- Some boards are worried about developing a reputation for being anti-development.
- There are questions and different perspectives about whether boards should compromise or stick strictly to the ordinance.
- Board members are often older and may have a different vision for the municipality than younger residents.

- **Municipal ordinance**
  - Piecemeal revisions of the ordinance are problematic. Municipalities are dealing with the zoning boundaries that were determined decades ago, which may not fit today's needs.
  - It's not just the ordinance, but also how it's enforced and decision makers' visions for the municipality.

- **Enforcement**
  - Municipalities and the state lack capacity for oversight and enforcement.
  - Enforcement can be logistically difficult, e.g., how to effectively monitor and implement a no-clearing buffer or fertilizer restriction? What's the punishment for buffer violations? Timing of enforcement opportunities isn't ideal, e.g., violations can occur after inspection.
  - Code enforcement officers may lack a clear connection to the rationale for buffers, and often have other priorities for code enforcement above buffers.
  - If a municipality feels like it doesn't have the capacity to enforce a buffer ordinance, staff and board members may be reluctant to consider the ordinance in the first place.
  - Code enforcement officers sometimes hear people say, "Why didn't someone tell me I couldn't do this?" People often don't take responsibility to find out regulations proactively.

- **Lack of understanding, awareness, and connection:**
  - There is a broad lack of understanding and awareness of 1) the functions and values of wetlands and importance of buffers; 2) drinking water sources, quality, and threats; 3) rationale for regulation, especially buffers; and 4) purpose of municipal boards and existence of municipal regulations.
  - People tune out the importance of buffers (and other environmental protections and municipal regulations), or think it doesn't apply to them. Most (especially newcomers) aren't aware of the ordinance, let alone buffers. It can be difficult to understand the benefits of some municipal regulations. Do residents who violate buffers or other regulations not know or not care? Benefits from environmental resources are externalized, and there is a disconnect from cumulative impacts.
  - There's a broad disconnect from the environment. It can be difficult to maintain and grow a

sense of connection to the municipality's history and values, especially with newcomers and changing demographics. Shifting baselines are also a challenge, for example, a disconnect from the municipality's agricultural past, different perceptions of "rural," different baselines for water quality, etc.
    - It is tough to engage community members, especially younger residents. The "bedroom community" nature and changing demographics contribute to lack of participation, loss of connection to the past, unfamiliarity with the process, and sometimes divisiveness and tension due to different visions for the town.

- **Science**
    - Trust in science seems to vary depending on the issue.
    - People want a final number for buffer width recommendations. Ranges based on the pollution of concern (nitrogen, phosphorus, sediment, wildlife habitat, etc) contribute to the perception that buffers are arbitrary and the science isn't adequate.
    - There is generally a preference for engineered solutions over natural solutions and a sense that we can engineer around any obstacle.

- **Challenges for developers**
    - Inconsistency between communities makes it hard to know what to expect, for example, board personalities, relationships, level of expertise, and comfort level in asking questions and dealing with developers and consultants. Some communities are very resistant to growth and change. Conservation commissions are an especial wildcard because the degree to which they are involved and empowered in the decision-making process varies.
    - Navigating municipal, state, and federal regulations can be confusing and frustrating.
    - Developers feel like they don't have an avenue to get involved and don't trust the process.
    - One bad developer abuses the regulations and communities get gun-shy.

- **Trust and integrity**
    - Some feel regulations and the decision-making process lack integrity.
    - Regulations have unintended consequences.
    - Fear of risk or liability impedes innovation.
    - Wetland identification, evaluation, and delineation methodologies need to be trustworthy.
    - Consultants (wetland scientists and engineers) may face pressure in their decisions and develop reputations for being developer-friendly or not based on their work. Despite the certification requirements, competence among consultants can vary.
    - A history of mistrust and skepticism between stakeholders impacts decision-making. One community opinion leader or small group can direct or derail the process.
    - Transparency, trust, and relationships are critical.

D. PERSPECTIVES ON POLICY OPTIONS

The goal of the Buffer Options for the Bay project is to comprehensively understand the different approaches to buffer management that are used now and those that could be used in the future to encourage buffer use. In support of this, the team asked interviewees for their perspectives on state and local regulatory process for buffers. Questions and ideas that were associated with different buffer management options are summarized in the table below.

Option	**Perspectives/Questions**
Buffer widths	● Lack of understanding of different widths for different functions; complex ● Could buffer width be determined by hydrology? ● Not all wetlands are equal. Are small buffers even worth having?
No-clearing buffer	● Problematic (can result in clearing over a few years) ● Difficult to enforce
Overlay district	● The same buffer applies to everything – is there a way to treat buffers differently in particular areas of the community?
Prime wetlands	● Some fear everything will end up as prime, so they don't pursue designation.
Variable buffers	● *Communities B and D:* Arbitrary; seems more complicated; would lead to a larger battle between experts; boards don't want to have to push back against wetland scientists; might incentivize wetland scientists to deem a wetland low-quality so it would get a smaller buffer; some feel it's a fair compromise ● *External Stakeholders* have many different perspectives: o Cumbersome, confusing, requires much more technical expertise o Relatively simple, more reasonable than one arbitrary buffer o Some would rather have one buffer and educate decision-makers about reasons to waive the buffer in some cases o Mixed feelings about whether the science supports this approach o Depends on integrity of wetland identification,evaluation, and delineation
Cluster development	● *Pros:* Cost-effective; can save land and save money on infrastructure ● *Cons:* Perception that it burdens the land because of higher density "clusters"; lot dimensions aren't sufficient; minimum acreage doesn't always work

Option	Perspectives/Questions
Incentives	● Ideas: Performance incentives, tax breaks or refunds, density bonuses, transfer of development rights, buffer trading, incorporate into MS4 permit ● How would a tax break impact municipalities' budget/resources?
Other	● A utility seems like a more equitable approach ● Significant interest in allowing stormwater BMPs in exchange for reduced buffers; but many of these practices require long-term/perpetual maintenance, which does not always get done; some think mechanized design provides more opportunities to protect water quality than buffer restoration; stormwater requirements seem less controversial than buffers – developers feel they can recoup the costs of the engineered BMPs ● Municipalities are interested in looking into current use, transfer of development rights, residential-scale wetlands "banking," performance zones, and impact fees (question about open space restriction) ● Focus open space acquisition on buffers
Mitigation	● Some view the current approach (put upland elsewhere in conservation) as a land grab, think the ARM ratio is crazy; formulas are disingenuous ● Developers tend to like the in-lieu fee option (easier, more appealing than using part of the property to build a wetland) ● Need a better option, like LID ● Funds should stay local ● Make sure buffer restoration projects are eligible for ARM funding

Additional interview responses related to the current regulatory framework were grouped into the following topics:

- **Streamlining the permitting process**
  - It doesn't seem like there's a benefit to the lengthy, costly decision-making process. Developers want to reduce the costs of getting approval and developing the site. Funds saved through reduced site costs and streamlined process could support local projects.
  - Some want a one-stop-shop for all permits, or at least simplification or consolidation all of the wetland/shoreland regulations.
  - Municipalities could have a professional technical advisory committee, so all stakeholders meet early in an application process and discuss any potential issues and concerns.
  - The current process discourages improvements and innovations. If the process were streamlined, developers would put in BMPs and LID.
  - Other ideas: State review board instead of towns individually hiring their own engineers; upper-level board of communities to which developers can appeal.

- **State regulatory framework**
  - Stricter state regulations and stronger state support for municipalities and their ordinances are needed.
  - Shoreland Water Quality Protection Act (SWQPA): Generally, positive feedback; could be stronger, but at least provides some protection; consider translating SWQPA to wetlands.
  - There is a low rate of denial for state shoreland permits and a high "more information request" rate, especially for wetland permits; more outreach to get better applications is needed.
  - Generally, there is support for a statewide buffer—it would provide uniformity, clarity, and consistency; might help support affordable housing (allowing greater density/reducing costs of development); and at least provides a safety net for municipalities without a buffer.
    - The lack of a state buffer calls municipalities' buffer regulations into question. Municipalities want to feel that the state and courts support their ordinances.
    - Concerns: Would the statewide buffer supplant municipalities' buffers? Local rule is important in NH. Some think it would be easier to challenge local ordinances if there's a state buffer. Would communities use a science-based statewide buffer or continue to use their own buffer, which some perceive as being arbitrary or based on restricting growth? Would longtime residents be grandfathered into the rules?

- **"Thick" versus "thin" ordinance, "bulletproof" zoning versus case-by-case:** Some municipal stakeholders fear a lengthy ordinance will scare developers away (and the potential economic benefits that come from development in the community), but other statements indicate that there are advantages to a more detailed ordinance.
  - Municipalities with a clear, comprehensive ("thicker," longer) ordinance may have more stability and less staff/board turnover.
  - A clear ordinance helps developers know what to follow to avoid issues. A less clear ordinance leaves more up to interpretation and can create more gray area.
  - Clients think that municipalities with "thinner" regulations will be easier, but consultants tend to prefer "thicker" regulations. It's more predictable and easier to advise clients.
  - Developers want consistency with regulations but also flexibility in the review process, i.e., want to know what to expect and how to design a project, but not a 'one-size-fits-all' rule.
  - Granting lots of variances doesn't necessarily mean the regulations are too strict; it could mean the board or town has developed a permissive attitude toward the ordinance.

- **Other issues raised related to regulation**
  - Who is regulated? People tend to blame/focus on developers, but farmers and residents have an impact, too. Regulations should apply to landscapers and contractors, not just landowners.
  - How to implement a buffer when development is already there?
  - Wetland regulations are more controversial and difficult to comply with than shoreland regulations. This may be due in part to a broader awareness of the values of shoreland

versus the values of wetlands; the presence of state shoreland buffer requirements which delineate limits/permissions and provide some consistency, in contrast to wetland buffer regulations, which vary between municipalities and may lead to more discretionary decisions.
    - Water doesn't follow political boundaries.
    - Development of municipal ordinances tends to be retroactive (i.e., responding to issues as they arise)rather than proactive.
    - How to deal with delayed and cumulative impacts?

E. COMMUNITY AND STAKEHOLDER NEEDS & OPPORTUNITIES TO SUPPORT THEM

In the course of the interviews, everyone was asked to reflect on what could be improved in relation to working with buffers, and they were also asked what kinds of resources would be helpful. This list reflects what the interview team heard from the interviewees, and has helped to inform the action plan being created for this project.

- **Municipal decision-making**

Process

- Hold regular "all boards" meeting to foster synergy, communication, and relationships.
- Designate a "quarterback" or municipal point-person to shepherd each project and keep other municipal stakeholders up-to-date or create a repository of project information/status.
- Build dialogue between municipal government and citizens.
- Need internal support for ordinance, decision-makers, and process.
- Conduct peer reviews for natural resource identification and evaluation.
- Consider a more formalized process for conservation commission involvement (some municipalities empower conservation commissions more than others).
- Having elected board members versus appointed members may work better.

Products

- Create a workflow of the municipal process to give to developers/applicants and use to identify communication/coordination opportunities.
- Create a checklist to make expectations for applications clear.
- Help communities develop a list of projects ready for ARM funding.

Capacity

- Hold trainings on buffers and LID for board members, especially ZBA and Select Board members (so they can support the other boards) and code enforcement officer.
- Encourage towns to hire an environmental planner.
- Empower boards to stand up for their ordinance/authority.
- Put a permanent conservation representative on the ZBA.
- Make municipal boards/staff aware of existing resources/services they can utilize.
- Create a ZBA training/advisory program and provide more guidance in ordinance for what ZBA should evaluate, especially regarding impacts on wetlands and buffers.

- Encourage boards to use legal counsel and provide trainings regarding case law and takings.
- Support maintenance of institutional knowledge and help them deal with turnover.
- Encourage municipalities to utilize their ability to bring in experts for review.

MS4 (Municipal Separate Storm Sewer System) permit

- MS4 permits could be a mechanism to incentivize buffers and raise awareness. Buffers are a low-cost, effective way to mitigate nutrient inputs. Need to better tie MS4 to wetlands.

- **Municipal ordinances**
  - Better definition of permitted and prohibited activities is needed.
  - Model ordinance: teach boards why it's written that way and how to implement it.
  - Incorporate a regular review of the ordinance.
  - Make sure ordinance backs up boards' right to seek external review.

- **Enforcement**
  - Elevate Code Enforcement Officer (CEO) role to emphasize monitoring and enforcing wetland/shoreland protections or consider an additional staff person focused on enforcing natural resource regulations.
  - Designate a shared CEO between multiple towns, dedicated to enforcing natural resource regulations.
  - State should inspect more permits after they are issued.

- **More information about**

Science

- More information about isolated wetlands and the functions, values, and benefits of buffers for those wetlands is needed.
- How far does pollution travel, for example, from septic systems?
- Incremental benefits of increasing buffer widths—are there diminishing returns?
- Tracking nitrogen loading impact of buffers is needed.

Economics

- Does the open space benefit for property values make up for reduced number of lots?
- More on property values and their connection to water quality and clarity is needed.
- More on the tax implications of buffers, i.e., can you use the acreage of your property taken up by buffers as a "donation" on your taxes? How do buffers affect property taxes/values?

Policy and decision-making

- Can stormwater BMPs be implemented in exchange for a reduced buffer?
- Can we provide clarification and guidance for ZBA on making decisions about variances?
- Look into the option of determining buffer width based on hydrology (flood elevation maps).
- Explore enforcement questions and challenges.
- Need to further explore incentives and other non-regulatory options.
- Look at current use—minimum lot size is prohibitive; consider a similar but more inclusive program.

- Explore options to expand New Hampshire's impact fees policy to encompass open space preservation.
- Consider investigating the idea of a 'utility' or 'trading' approach for buffers.

Technical/mapping

- Provide more info about GIS data sources; wetland data sources don't line up; which to use?
- Buildout analysis—what a community would look like with different buffer widths.

- **Tools/resources that could be helpful**
  - Coherent story or synthesis of good information about buffers
  - A matrix with buffer-related management options with associated scientific information
  - Diagram of buffer or setback requirements; diagram of buffer widths for different purposes
  - Table comparing municipalities' buffers
  - FAQ sheet about why we have these regulations
  - More resources and clarification on making decisions about variances (e.g., hardship)
  - A "road map" or template for how to develop in difficult corridors with wetlands issues
  - More readily available zoning records
  - GIS (especially for code enforcement officers), and also more information about GIS data sources – wetland data sources don't line up; which to use? Note: GIS resources don't replace on the ground soil or wetland mapping for actual site/project design.
  - Aerial photo showing where resources are and the extent of development; then a buildout analysis showing how much you'd lose, impact of different buffer widths
  - GIS layer for NHDES permit applications (e.g., look at Subsurface Systems Bureau data for the number of new septic systems per year to identify development hotspots)
  - Low-cost recommendations for stormwater BMPs
  - Policy and guidelines for testing wells
  - Provide samples of approved permits and tools to determine when permits are needed
  - Interactive tool, internet platform, or app
  - Professional outreach materials about buffer regulations and the value of buffers
  - Presentations: use photos of old postcards of local water bodies to connect to the audience's memory and emotion and highlight change over time.
  - Webinars, Moodle (online trainings), and Prezi

- **Raising understanding/awareness**
  - Clarify and raise awareness about drinking water sources and quality; people value water resources but may not be aware of or understand the things that protect water quality.
  - Engage lake associations and watershed groups
  - Foster local champions (e.g., award/recognition for buffer-related work)
  - Municipality should lead by example

- **Potential motivations**
  - Limited water supply—can't afford to buy water from somewhere else
  - Tourism—need to protect our water

- Past water contamination issue in the community
- A community (and environment) we can be proud of is a better place to do business
- Humanize the values of buffers – flood storage, drinking water, property values
- Who's involved in a proposal makes a difference; community members or external experts?

- **Outreach to citizens**
  - Newcomers and new property owners are priority audiences for information and outreach.
  - Raise awareness about community's drinking water sources.
  - Connect citizens to local natural resources through access, engagement, and education.

- **Outreach to developers/applicants/contractors:**
  - Do more outreach on application requirements and process to foster better applications.
  - Do outreach to real estate firms, developers, landscapers, and contractors.
  - Educate contractors/builders on BMPs and the value of buffers.

F. COMMUNICATIONS

Stakeholder interviews were an excellent way to learn how to best to communicate about buffers. Key feedback the team received included the following:

- Use what resonates: water quality, community benefits, clean water, space for children to play, financial connection, local level, and a shorter-term view.
- Understand what tends to not resonate widely: Habitat, wildlife, or the inherent value of nature.
- Focus on success stories; recognize the positive impacts developers have had, not just the negatives.
- Bring forward stories of egregious buffer impacts in the community.
- Clarify "buffers" and "setbacks."
- Show photos of buffers before and after restoration.
- Use every avenue for communication, e.g., social media, posters in municipal offices.
- Incorporate buffer-related topics into school curricula.
- Use first-hand experiences. There are different views about whether we can learn from other communities, i.e, "we're all in this together" versus "we can't relate to stories unless they're from truly comparable communities." There is a strong emphasis on communities' individuality and uniqueness.

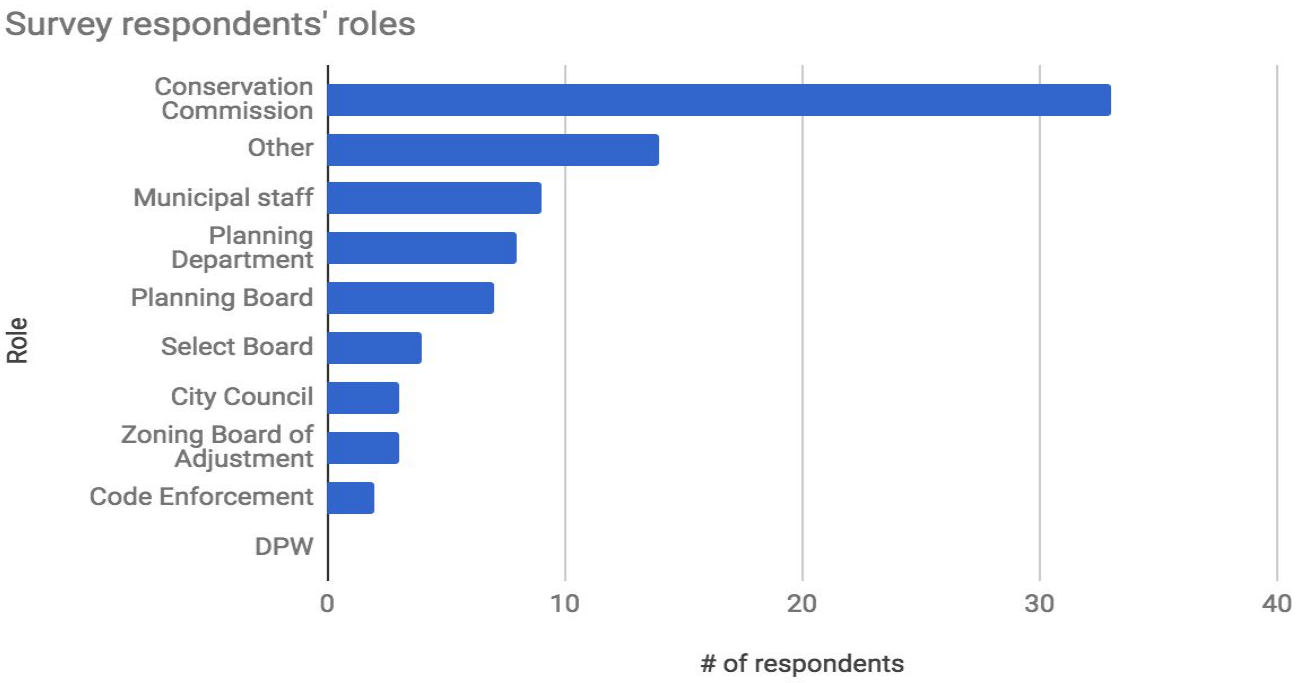
III. Testing Subwatershed Findings For Broader Relevance

To test the findings of their assessment of stakeholder perspectives in four communities in the Exeter/Squamscott subwatershed, the BOB team conducted a survey of 42 municipalities in the Great Bay watershed. (All survey responses are compiled in Appendix E.) Survey questions were framed to assess whether the findings held true throughout the watershed or there were key issues that had not been captured. Recipients were asked to respond to 25 questions based on their experiences related to

buffers in their town. Twenty questions were multiple choice with three options: *yes, no,* and *not that I recall.* Each asked whether a perspective that emerged in the subwatershed assessment had been witnessed or experienced in the respondent's community. Three questions were open-ended and two asked for individuals' roles and communities they represent. The survey was designed to take less than ten minutes to complete; the average completion time was ten minutes and seven seconds.

Survey Audience

The survey was emailed to individuals on the Great Bay National Estuarine Research Reserve Coastal Training Program's town-specific contact list of municipal officials, including Select Board or City Council members, Planning Boards, Conservation Commissions, Zoning Boards, Departments of Public Works, Code Enforcement Offices, and town administrators. The introductory email asked everyone to forward the email to peers, and the survey was sent out through several partner email contact lists, including the N.H. Association of Conservation Commissions, Piscataqua Region Estuaries Partnership, and University of New Hampshire Cooperative Extension. The survey was open for 2.5 weeks and 73 completed surveys were received.



"Other" write-in responses included: Local Land Trust (3,) Open Lands Committee (2), Private consultant (1), Consultant Planner (1), Former Conservation Commission (1), Local River Advisory Committee (1), Land Stewardship Committee (1), Energy Committee (1), Regional watershed group (1), State Rep./Rep to Lamprey River LAC/former Planning Board/former ZBA (1).

Communities represented by survey respondents: 73 Responses from at least 28 different municipalities (including three of the four CA focal communities)

# of respondents	Communities
7	Exeter
5	Portsmouth
4	Barrington
3	Dover Lee Madbury Newmarket Raymond
2	Brentwood Durham Fremont Greenland New Castle Stratham
1	Candia Hampton Hampton Falls Kensington Kingston *Kittery (ME)* Newington North Hampton Rochester Rollinsford Rye *Salisbury (MA)* Seabrook Wakefield
Others:	
9	No response
2	Multiple
1	Confidential Strafford and Rockingham Counties New Hampshire Lamprey River Watershed Neutral

Results

The survey results show overall strong watershed-wide agreement with the findings of the Exeter/Squamscott subwatershed assessment, with responses from a broad representation of types of stakeholders from at least 25 of the 42 N.H. municipalities in the Great Bay watershed. (More detailed responses are in Appendix E.) The table below shows the 20 buffer perspectives from the CA findings with the associated percentage of respondents who answered “yes” - that the perspective had been witnessed or experienced in the respondent’s community. The perspectives are ordered from highest agreement to lowest agreement, and color-coded by the following categories of percent agreement:

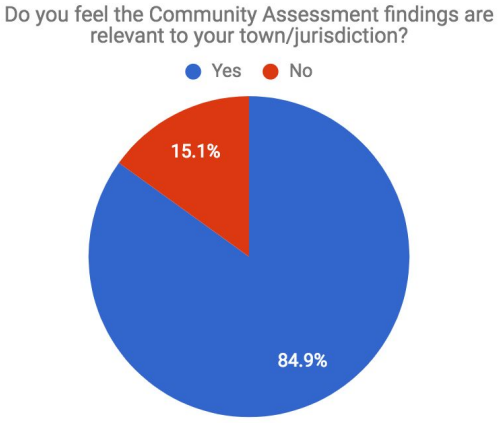
Very high agreement	80-100%	General agreement	40-60%
Strong agreement	60-80%	Weak agreement	<40%

Survey Query/Statement	% yes
Buffer-related decisions are inherently complex, requiring municipalities to balance many factors including property rights, community character, natural resource protection, abutters' concerns & economic growth.	94.52
People may not understand the individual and social benefits of buffers.	87.67
Buffer oversight and enforcement can be logistically difficult and lack capacity.	86.30
Developers want consistent regulations, flexibility in the review process, and not a 'one-size-fits-all' rule.	86.30
Some see buffers as an anti-growth policy.	78.08
Property rights are a major impediment to buffer protection.	77.46
It can be difficult to maintain and grow a sense of connection to the municipal history and values with changing demographics.	75.34
Buffer decisions are often perceived as a choice between natural resource protection and economic development.	75.00
Technical assistance is needed to show how to implement a buffer ordinance under the current development conditions.	75.00
Some fear that buffer regulations will prevent them from subdividing a property and maximizing its value for heirs.	73.97
Ordinances need better definition of permitted and prohibited activities.	67.12
Buffers have public benefits but buffer regulations don't affect all landowners equally.	64.38
There is an interest in allowing stormwater BMPs in exchange for reduced buffers yet BMP's require maintenance, and there is evidence that the maintenance does not get done.	61.11
Buffer-related applications should be evaluated on their merits, but municipal boards fear setting a precedent and getting sued which influences decision making.	60.27
There is generally a preference for engineered solutions over natural solutions, and a sense that we can solve any issue with an engineered approach.	57.53
Some feel buffer regulations and the decision-making process with buffers lack integrity.	53.42
Wetland regulations are controversial because they actually allow more flexibility, with discretionary approval or denial being dependent on site conditions.	50.68
The lack of a state buffer undermines municipal buffer regulations.	47.95
Survey Query/Statement	**% yes**
Buffer width ranges for various protections i.e. for nitrogen, phosphorous, flood control, or wildlife habitat contribute to the perception that buffers are arbitrary.	46.58
Dealing with buffers is more burdensome for homeowners than developers.	36.99

What are the biggest buffer management issues in your municipality?

There were 76 responses (some individuals described multiple issues). These responses correlate well with and support the findings of the CA. There were no new topics noticed in the responses to this question that were not already captured in the CA. See responses in Appendix E.

Do you feel the Community Assessment findings are relevant to your town/jurisdiction?



Key buffer-related perceptions that you have heard in your municipality that were not represented in this survey:

There were 34 responses, which broke into six categories. Of the responses, only a few were new or a new nuance of the buffer perspectives already captured in the CA. These include:

- Some believe that increased buffer regulation is a slippery-slope toward state rather than local control of town destiny
- A distrust of science and that buffers really don't matter
- It is the nibbling away at the edges issue that concerns me (e.g., homeowners that return for ZBA adjustments multiple times)
- People love buffers
- Some have talked about balancing the rights of the property owners vs. the public interest in resource protection, but I don't think it is as prevalent here as in other less liberal parts of the State.

IV. Appendices

Appendix A. Resources

State

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Winnicut River Subwatershed

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The Four Focal Communities

Resource	Chester	Exeter	Fremont	Stratham
Master Plan	X (2006, some chapters updated 2015)	X	X	X (1998)
Zoning Ordinance	X (2015)	X (2016)	X (2015)	X (2015)
Zoning Map	X	X	X	X
Community Profile	X (2015)	X (2015)	X (2015)	X (2015)
Community Survey	X (2015)			
Source Water Protection Plan	X			
New Hampshire's Changing Landscape Database	X	X	X	X
LRPP	X (2004)			
Conservation Focus Areas Map	X (2006)	X (2006)	X (2006)	X (2006)
Visioning Session	X (2015)		X (2013)	
Community Planning Assessment Report	X			
Stream Buffer Characterization	X	X	X	X

Natural Resource Inventory		X (2012)	X (2008)	X (2011)
Open Space Report			X (2010)	
Community Planning Roadmap			X (2010)	
Build-Out Analysis and Map	X (2008)			X (2004)
Water Resource Management Plan			X (2010)	X (1990)
Rockingham Planning Commission Map Sets		X	X	X

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Local

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Appendix B. Acronyms and Abbreviations Used

BOB	Buffer Options for the Bay
CA	Community Assessment
GBE	Great Bay Estuary
GBNERR	Great Bay National Estuarine Research Reserve
GIS	Geographic Information Systems
LID	Low-Impact Development
MS4	Municipal Separate Storm Sewer System
NH	New Hampshire

NHDES	New Hampshire Department of Environmental Services
PREP	Piscataqua Region Estuaries Partnership
TNC	The Nature Conservancy
UNH	University of New Hampshire

Appendix C. Methods

A. Planning Process and Input Opportunities

Developing the plan for this assessment was an iterative process that engaged the Buffer Options for the Bay (BOB) project team and its advisory committee. Steve Miller and Lisa Graichen began by drafting a work breakdown structure (Appendix D) that incorporated feedback from team members Cory Riley and Dolores Leonard. Steve and Lisa presented this at the second project team meeting and the first advisory committee meeting and documented input. An external (to the project) technical review panel also provided feedback, and Steve and Lisa documented their responses to the panelists' comments and questions. Team members had additional opportunities to provide input on the plan and the selection of the focal subwatershed and communities via email and a webinar. They also commented on preliminary assessment results at a subsequent meeting. Lisa and Team members Michele Holt-Shannon, and James Houle convened with advisory committee member John Coon to inform the analysis approach for interview data. (See Appendix E for documentation of feedback received on the community assessment.)

B. Community Assessment Timeline

2015

- Fall: Engagement team drafted Community Assessment plan
- November 9: Project Team meeting, received feedback on plan

2016

- January 21: Advisory committee meeting, received feedback on plan and subwatershed selection
- February: Technical review panel provided feedback on plan and subwatershed selection
- March 8: Subwatershed selection webinar with project team members
- March: Engagement team responded to input from project team, advisory committee, and technical review panel; finalized selection of the subwatershed and four focal communities
- May through August: Steve and Lisa conducted interviews; Lisa and Gabrielle MacIver (Carsey Fellow with NH Listens) (Michele's student) transcribed them;
- July 13: Project team provided feedback on preliminary results, reporting approach, and gaps
- July 26: Small group meeting to discuss community assessment analysis approach
- July through September: Transcribed interviews, analyzed results, drafted component synthesis
- September 19: Analysis meeting with Steve, Lisa, Jamie, and Michele
- Early October: Compiled survey feedback from project team and advisory committee
- October 13: Analysis meeting with Steve, Lisa, Jamie, and Michele
- October 18: Advisory committee meeting, feedback on preliminary results
- December 13: Project team meeting, presented final draft report of interview findings and

conceptual model
- January-February: Shared interview findings report with interviewees for verification

2017
- January: Second round of technical review
- January-February: Shared interview findings report with interviewees for verification
- Spring and summer: Tested findings from Exeter-Squamscott subwatershed with other communities throughout the Great Bay watershed

C. Subwatershed and Community Selection

In the grant proposal funding this assessment, we indicated we would focus our work on one or two subwatersheds and three to five communities within these. We decided it would be the best use of our time and capacity to focus on one subwatershed and dig into four of its communities, rather than cover two communities in two subwatersheds. We began with the list of communities that comprise each subwatershed as delineated in the *2015 Piscataqua Region Environmental Planning (PREPA) Report*. However, if a community fell substantially in two different subwatersheds, we considered that community in both lists for the purposes of evaluating subwatersheds based on project needs. We also focused on New Hampshire communities, though there are ten Maine communities in the Great Bay watershed.

With input from the project team and advisory committee members, we determined that the subwatershed should include a group of communities that has the following characteristics.

1. **Show differing levels of progress in terms of buffer-related regulations**, based on the 2015 PREPA report cards for shoreland protection and freshwater wetlands. Team members were interested in learning about the barriers faced by those communities making less headway (according to PREPA) and the successful experiences of the higher performing communities.

2. **Include both MS4 (Municipal Separate Storm Sewer System) and non-MS4 communities (or those with a waiver).** The team wanted to understand whether there are differences in the perspectives, challenges, and opportunities related to buffers between communities that are regulated under this program and those that are not.

3. **Are geographically diverse.** The team wanted to characterize differences in the perspectives, values, and opportunities between the more inland communities and those closer to the bay.

Based on these criteria, the Lamprey River and Exeter-Squamscott subwatersheds rose to the top of our list. We reviewed GIS work conducted by project team member Pete Steckler from the New Hampshire Chapter of The Nature Conservancy to identify areas within the Great Bay watershed with the greatest opportunity for protecting buffers. Subsequently, our technical team identified the Exeter-Squamscott, Oyster-Bellamy, and Winnicut River subwatersheds as their top options given that these all have large

areas that have been identified as important for salt marsh migration and significant opportunities for buffer protection or restoration adjacent to both tidal and freshwater riparian habitat. Ultimately, we selected the Exeter-Squamscott subwatershed because of the overlap between our criteria for community context and the technical team's priorities.

We then dug into the characteristics of communities within these subwatersheds to identify three or four on which to focus. We considered where there have been recent or ongoing projects. For example, several communities were working on buffer ordinances through PREPA grants and we hoped to learn about those efforts. However, we also wanted to look at those that hadn't received as much technical assistance or outreach and those with varying characteristics, including population density, per capita income, impaired waters, type of drinking water source, presence of a watershed committee, and presence of important agricultural soils.

Our goal was to identify communities with enough diversity to enable us to learn about buffers in a range of contexts and see what might be common and what might be unique about their approaches to buffer management and the challenges and opportunities. Our technical team had suggested Newfields, Stratham, Newmarket, and Exeter as potential communities, and we decided to include Stratham and Exeter, but also Fremont and Chester in order to reach further inland/upper watershed and less developed communities.

Table 1. Summary of Subwatershed Assessment Against the Major Criteria

Subwatershed	**# of towns**	**Major criteria**			
		Mixed levels of progress with shoreland protection?[1]	**Mixed levels of progress with freshwater wetlands?[1]**	**Mix of MS4 and non-MS4 communities? (2013)[2]**	**Geographic mix of communities, i.e., close to Great Bay and further inland?[3]**
Lamprey	12	Yes	Yes	Yes (2 MS4, 2 waiver, 3 non MS4)	Yes
Exeter-Squamscott	13	Yes	Yes	Yes (6 MS4, 5 waiver)	Yes
Coastal	8 (NH)	Yes	Mostly low levels of progress	Yes (3 MS4, 1 waiver)	No
Oyster-Bellamy	5	Yes	No	Yes (1 MS4, 2 waiver)	Some
Hampton-Seabrook	5	Mostly low	Mostly low	Yes (2 MS4, 1 waiver)	No

Table 1. continued. Summary of Subwatershed Assessment Against the Major Criteria

Subwatershed	# of towns	Major criteria			
		Mixed levels of progress with shoreland protection?[1]	Mixed levels of progress with freshwater wetlands?[1]	Mix of MS4 and non-MS4 communities? (2013)[2]	Geographic mix of communities, i.e., close to Great Bay and further inland?[3]
Salmon Falls	7 (NH)	No	Mostly low	Yes (2 MS4, 3 non)	Yes
Winnicut	3	No	No	No (2 MS4)	No

1. Piscataqua Region Estuaries Program, 2015 Piscataqua Region Environmental Planning Assessment, http://prepestuaries.org/prepa/

2. Information retrieved from: https://www3.epa.gov/region1/npdes/stormwater/nh.html

3. Based on a visual assessment

Table 2. Additional Criteria to Inform the Selection of Focal Communities within the Exeter-Squamscott Subwatershed

Exeter-Squamscott subwatershed	PREPA 2015: Shorelands[1]	PREPA 2015: Freshwater Wetlands[1]	MS4 Mix[2]	Geographic mix[3]	Pop. density (people per sq. mi)[4]	Per capita income[4]	Impaired waters[5]	Exeter River as drinking water supply?[6]
Brentwood	45	17	Waiver	Inland	267.2	$37,506	Yes (AL)	
Chester	25	33	Waiver	Inland	184	$39,816		
Danville	5	0	Yes	Inland	378.5	$31,443		
East Kingston	20	0	Waiver	Inland	250.5	$39,366		
Exeter	75	50	Yes	Inland/close to Great Bay	728.1	$37,972	Yes (AL, PCR)	Yes
Fremont	75	50	Waiver	Inland	250.5	$36,331	Yes (AL)	
Kensington	5	0	Yes	Inland	175.8	$49,435		
Kingston	55	100	Yes	Inland	305.1	$37,266		
Newfields	50	0	Waiver	On GB	230.5	$50,700		
Newmarket*	20	50	Yes	On GB	710	$32,244	Yes (Lamprey – AL, PCR, SF, FC)	No (Lamprey)
Raymond*	0	0	Yes	Inland	353.2	$27,755	Yes (AL)	
Sandown	0	17	Yes	Inland	434	$37,507	Yes (AL)	
Stratham	20	0	Yes	On GB	481.8	$56,550	Yes (AL, PCR, FC, SF)	

1. Piscataqua Region Estuaries Program, *Piscataqua Region Environmental Planning Assessment 2015, http://prepestuaries.org/prepa/*
2. Information retrieved from: https://www3.epa.gov/region1/npdes/stormwater/nh.html.
3. Based on a visual assessment.
4. From 2015 Community Profiles, Economic and Labor Market Information Bureau, NH Employment Security.
5. From NHDES 2014 draft list of threatened or impaired waters that require a TMDL (10/14/15); Aquatic Life (AL), Primary Contact Recreation (PCR), Shellfishing (SF), Fish Consumption (FC).
6. From NHDES Drinking Water Source Assessment Program: retrieved from:
   http://des.nh.gov/organization/divisions/water/dwgb/dwspp/reports/index.htm
   The four highlighted municipalities are those selected for the focus of the community assessment.
   * = Addition to PREPA's list of communities in the subwatershed.

Once the focal subwatershed and communities were selected, we compiled resources specific to the subwatershed and municipalities (see Appendix A). These resources were used to develop profiles that summarized the communities' approaches to buffers and prepare for the interviews. In addition, we assessed the four communities' ordinances by comparing to the PREPA report and New Hampshire Department of Environmental Services (NHDES) model ordinances.

We then conducted interviews with 38 stakeholders to gain a more in-depth understanding of the buffer-related decision-making process at the local level, perspectives and preferences, and challenges and opportunities related to both regulatory and nonregulatory approaches, as well as implementation. We compiled relevant resources, such as zoning ordinances, from all watershed communities, with a focus on those in New Hampshire. We developed a simple inventory of the municipalities' shoreland and wetland buffers. Since specific ordinances are complicated and difficult to compare to each other, we grouped these into three general categories: 1) no cut-no disturbance buffer, 2) limited cut or managed buffer, and 3) no buffer and captured the width of the buffer. This did not include setbacks.

D. Interview and Analysis Process

Identifying interviewees

Steve Miller and Lisa Graichen visited the four town halls to introduce the project and establish initial connections. We asked our initial points of contact for suggestions for municipal representatives (staff and board members) whom we should interview about buffers. We reached out to these stakeholders via email to describe the project and the interview. In several cases, one town representative would make the connection via email for us. During each interview, we asked for suggestions for further interviewees and continued this process. In addition to the municipal representatives, we also interviewed other stakeholders involved with buffer-related decisions in their work and have familiarity with the focal towns. These stakeholders included engineers, wetland scientists, planners, and developers. These interviewees were suggested by the municipal representatives we interviewed and identified by searching meeting minutes from the focal towns. Especially with the developers, we found more success in scheduling interviews if another interviewee made the initial connection for us. Here is a summary of the types of stakeholders we interviewed in the four communities:

Interviewees: Distribution of Roles		
13 Municipal staff:	**10 Municipal board members:**	**15 Other stakeholders:**
● 4 Code enforcement officers ● 4 Planners ● 3 Town administrators or managers ● 2 Other	● 4 Conservation commission members ● 2 Planning board members ● 2 Zoning board members ● 2 Select board members	● 4 Engineers ● 2 Wetland scientists ● 3 Developers ● 4 Regional planners ● 2 Other outreach and technical assistance providers

Interviewees: Demographic Information (not self-reported)
11 female, 28 male 100% Caucasian

We continued the interviews until we felt a sense of triangulation and suggestions for additional interviewees were redundant. In total, 38 individuals were interviewed in 28 interviews (some interviews included multiple individuals). We presented our progress and preliminary findings to the project team in July 2016, and while a few gaps were noted (namely landowners, especially agricultural), we were advised to analyze the transcripts we had thus far and decide whether to conduct more interviews (and if so, with whom).

Interview Approach

We developed a list of questions to guide the interviews based on the goals of the project—and community assessment component in particular—as well as feedback from the project team, advisory committee, and external technical review panel. The interviews were generally semi-structured, with some falling more into the unstructured category. We began each with an overview of the project, the purpose of the interview, and a description of how the information would be used. We then asked if they were okay if we recorded the conversation. Recording enabled us to fully participate in the interview, knowing that we could transcribe the recording later. All but two interviews were recorded.

Lisa and Steve conducted most interviews together, though Lisa conducted five and Steve conducted four independently. Most interviews were with one person to try to ensure he or she was comfortable describing his or her perspectives. However, there were several instances with two, three, or four interviewees in the same conversation. We agreed to these because we wanted to be respectful of their time, we wanted to engage as many people as possible, and if a joint interview was preferable to the interviewees, we wanted to accommodate that preference.

The questions varied depending on the interviewee's role, since their involvement with buffer-related decisions varied; some were, for example, conservation commission members, while others were

engineers. We also would adapt the conversation to include particular questions we had about the municipality the interviewee represented, including, for example, specific questions about the town's zoning ordinance. The interviews were largely unstructured because we wanted to allow the interviewee to discuss the ideas, issues, and stories that came to mind. We also wanted the flexibility to ask additional questions that arose. We had fluid, rich, and candid conversations that ranged from about 45 minutes to more than two hours, though typically they were in the 90-minute range. Below are lists of the types of questions we typically asked of the municipal and consultant interviewees.

Questions for municipal stakeholders (staff and board members):

1. How long have you lived in Stratham?
2. How long have you been in your current role for the town, and have you served on any other boards or committees in the past?
3. How would you describe Stratham, what would you say are the major values or characteristics that are important to the town? Have there been any changes over time?
4. What does the decision-making process look like when you get an application that impacts the buffer? Could you walk us through the process, i.e, who's involved, what are the steps, what are the questions that you ask? What is your role in the process?
5. Confirmed our understanding of the Zoning Ordinance components related to buffers, then asked if there are any other components that relate to buffers.
6. How well do you feel the current regulatory framework is working? What works well, and what doesn't?
7. What are the major challenges to implementing buffers?
8. What could be improved (in the ordinance or implementation)?
9. Are there any non-regulatory approaches (like incentives) that you think might work here?
10. Are there any resources (information, content or mechanism, funding, training, assistance, etc.) that would be helpful in improving buffer management?
11. Stratham is on the most recent list for MS4 regulated communities—is there any consideration of buffers in relation to meeting these permit requirements?
12. Is there anything else you'd like to share?
13. Who else should we talk to?

Questions for other stakeholders (engineers, wetland scientists, etc.):

1. What is your professional role? How long have you been doing this kind of work?
2. What is the geographic scope of your work?
3. What types of clients do you work with?
4. Can you describe for us what a typical project looks like and what your involvement is?
5. Do you have any experiences with Chester, Exeter, Fremont, or Stratham?
6. Have you noticed any differences in terms of how buffers are managed or how these decisions are made in different communities? If so, have you noticed any factors that contribute to successful buffer management or good decision-making processes?
7. Do you have any perspectives about the buffer management options that communities in this area tend to employ (what works well/what doesn't)?

8. Have you noticed any changes over time (in approaches to managing buffers, decision-making process, etc.)?
9. Do you deal with the state regulatory framework in your work? If so, is it challenging to navigate the overlap between municipal and state processes? Are there any opportunities for improvement there?
10. What are some of the perspectives or concerns about buffers that you hear from clients/stakeholders?
11. What are the challenges related to buffers in your work? What do you think could be improved? (e.g., buffers would work better if communities had ____ resources or capacity, or if municipal board members had training in ____)
12. Are there resources related to buffers that would be helpful in your work?
13. Is there anything else you'd like to share?
14. Who else should we talk to?

Recordings were uploaded to a computer and named using a standard filing system. Lisa transcribed the first ten interviews, and Gabrielle MacIver transcribed the remainder. Transcriptions were shared between a limited number of project team members through a shared Google Drive folder. Care has been taken to protect interviewees' confidentiality. Only the component leads and community assessment analysis team members have access to the transcriptions, and the initial analysis steps done by Lisa and Steve will result in a degree of separation between the findings and the source.

Analysis Process

The analysis process was informed by Grounded Theory methods for qualitative research (Birks and Mills, 2011; Charmaz 2006; Corbin and Strauss, 2015; Goulding 2002; and Houle 2015). Lisa developed a memo for each interview by reviewing the transcript and any notes from the interview then writing a summary of the key themes, capturing demonstrative quotes where useful, and recording reflections and insights where they arose. Through an iterative process of condensing these memos, Lisa developed a spreadsheet of all of the ideas from each memo, maintaining the identifying interviewee number as well as the category identifying the type of stakeholder. In order to keep some distance between the specific interviewee and the findings, we assigned the following categories:

- Internal (within a municipality)
    - Professional (e.g., staff)
    - Volunteer (e.g., unpaid board members)

- External (not within a specific municipality)
    - Professional (e.g., wetland scientist, engineer, developer, planner, etc.)

A small group (Steve, Lisa, Jamie, and Michele) convened to discuss the findings, using post-it notes with each idea from the memos, with those from "internal" interviewees color-coded to identify the associated community. We then began organically grouping similar ideas and continued until all ideas were assigned a category. We organized the "internal" interviewees' ideas first, and then the "external"

interviewees' ideas. For the external interviewees, we did not force the same categories from the internal round, but many of the same categories emerged. After all of the post-it notes were sorted, Lisa created a spreadsheet compiling the results of the categorization. From there, Lisa worked through each category, condensing like ideas and describing higher-level themes. Eventually, a summary of the key themes from the interviews emerged, and Steve, Jamie, and Michele reviewed the draft to provide feedback. Finally, the draft summary was sent to all of the interviewees for verification in early 2017.

E. Approach: Testing Subwatershed-level Results for Broader Relevance

Purpose of the Watershed-Wide Vetting survey

The Community Assessment (CA) was based on interviews with municipal board members and staff, as well as other stakeholders, in four municipalities in the Squamscott/Exeter subwatershed of the Great Bay watershed. This document is a report of the vetting of those results throughout the larger Great Bay watershed of 42 municipalities. The survey (all survey responses compiled in Appendix E) was developed to find out the extent to which the findings of the Buffer Options for the Bay (BOB) Community Assessment are representative of all the Great Bay municipalities, to see if the key findings broadly hold true, and to find out if there were key issues regarding buffers that are not captured in the CA. The survey asked municipal representatives who were not part of the CA process to answer 25 questions based on their experiences and what they have directly witnessed or experienced in their town regarding buffers and buffer perspectives. Twenty of the survey questions were multiple choice with three simple options (yes, no, not that I recall), asking whether the buffer perspective (from the CA findings) presented in the question had been witnessed or experienced in the respondent's community. Three questions were open-ended questions, and the last two questions asked for individuals' roles and communities they represent. The survey was designed to take less than ten minutes to complete, and the average time to complete the survey was ten minutes and seven seconds.

Survey Audience

The survey was emailed to individuals on the Great Bay National Estuarine Research Reserve Coastal Training Program's town-specific contact list of municipal officials (including Select Board or City Council members, Planning Board, Conservation Commission, Zoning Board, Department of Public Works, Code Enforcement, and town administrators). In the introductory email, we asked everyone to forward the email to peers, and the survey was sent out through several partners' email contact lists as well (N.H. Association of Conservation Commissions, Piscataqua Region Estuaries Partnership, UNH Cooperative Extension). The survey was open for 2.5 weeks, and 73 completed surveys were received.

Appendix D. Work Breakdown Structures

Subwatershed Selection Overview and Work Breakdown Structure (November 23, 2015)

Why are we doing this?

We are selecting a subwatershed to dig deeper into the barriers, perspectives, and opportunities related to buffer management at the local level. The project team and Advisory Committee will contribute to

the selection of one subwatershed and 2-4 communities within that subwatershed. The Community Assessment, and perhaps some additional GIS work if needed, will then focus on those communities.

How will we do it?

There will be several layers of input into the subwatershed selection process. We are conducting some preliminary scoping (looking at existing resources, talking with colleagues, and perhaps sending a survey to municipal officials throughout the watershed to gauge needs and interest). Based on these efforts, we will develop a set of criteria and supporting materials for the selection process. We will give the project team an opportunity to vet the criteria and supporting materials, and also to suggest subwatersheds and communities to work with based on their experience (and any watershed-scale analysis results that are available by that time). Then we will engage the Advisory Committee at the January 13th meeting to get their feedback on the selection criteria and their suggestions for subwatersheds and communities. We will document and compile all suggestions then work to select the subwatershed and communities most supported by the AC and project team and those that best fit the criteria.

Steps and timing (see WBS below for more details)

1) Conduct preliminary watershed-scale community assessment to inform the process (Sept. – Dec. 2015)
2) Get input on selection criteria from project team members (11/9/15); proceed with preliminary evaluation of subwatersheds based on these criteria to present to Advisory Committee (Nov. 2015 – Jan. 2016)
3) Get input on selection criteria and suggestions from AC (January 2016)
4) Incorporate AC feedback; finalize selection of subwatershed and communities (Jan. – Feb. 2016)
5) Invite communities to participate and invite representatives to join the AC (February 2016)
6) Implement Community Assessment (see Community Assessment WBS for more details)

Progress to Date

- Compiled PREPA report information to help with selection
- Conducted several informal interviews to inform the process
- Compiled/updated contact information for municipal officials/board members (still some gaps)
- Started compiling ideas for criteria; discussed criteria at 11/9 project team meeting
- Started initial evaluation of subwatersheds against draft criteria to present to AC for feedback

Next Steps

- Finish preliminary evaluation of subwatersheds
- Provide opportunity for project team input on criteria/preliminary recommendations
- Prepare for selection process at 1/13 AC meeting (e.g., preparatory material to send in advance)

SUBWATERSHED SELECTION: work breakdown structure	
1. Framing	**1.1 Conduct Preliminary Watershed-scale Community Assessment/Scoping** ● Compile available resources (e.g., PREPA) related to municipalities' buffer protection status ● Conduct informal interviews with colleagues working throughout the watershed to get ideas for criteria and initial suggestions for subwatersheds or communities to consider ● Compile ideas for criteria to guide this decision ● Compile contact list of municipal officials/board members in the watershed (for sending surveys in the future and for following up with the selected communities) ● May develop survey to send to municipal reps throughout the watershed to gauge need/interest ● Develop resources (e.g., brief report on results of this initial scoping, maybe maps?) to support the feedback process with both the project team and Advisory Committee ➢ **Level of effort and timing:** 40 hours; September through December 2015 ➢ **Responsible:** Lisa and Steve ➢ **Dependencies on other parts of project:** If there are any watershed-scale GIS results available by January 2016, it would be helpful to integrate that with the subwatershed choice (e.g., where are the areas of greatest need or the opportunities for greatest impact)

2. Doing	**2.1 Get Project Team's Input on Subwatershed Choice** ● Send draft criteria to the project team for review ● Offer opportunity for project team to suggest subwatershed/communities ● Revise resources for AC based on feedback and compile suggestions to consider as ➢ **Level of effort and timing:** up to 5 hours; November – December 2015 ➢ **Responsible:** Lisa? ➢ **Dependencies on other parts of project:** Project team members' input will be informed by what they need for their components **2.2 Get Advisory Committee's Input on Subwatershed Choice** ● Send preparatory materials related to subwatershed choice to Advisory Committee in preparation for the 1/13 meeting ● Develop agenda and facilitation plan to support this component of the 1/13 meeting ● Conduct 1/13 meeting – vet selection criteria with AC and get their suggestions for a subwatershed and communities to work with; compile notes and offer opportunity for AC and project team to review ➢ **Level of effort and timing:** 10 hours, including 1st AC meeting (overlaps with AC engagement WBS); December 2015 – January 2016 ➢ **Responsible:** Steve and Lisa ➢ **Dependencies on other parts of project:** Resources to send to the AC to prep for 1/13 meeting may be informed by any watershed-scale results available by that time; need project team's participation in 1/13 meeting **2.3 Incorporate Feedback and Recommendations from Project Team and Advisory Committee to Select the Subwatershed and Communities** ● Compile suggestions from project team and AC ● Look for consensus or majority opinion on which subwatershed and communities should be selected ● Report back to project team for final opportunity to review (if needed) ➢ **Level of effort and timing:** up to 5 hours (process to resolve choice depends on degree of consensus); January 2016 ➢ **Responsible:** Steve and Lisa, coordinating with other component leads as needed ➢ **Dependencies on other parts of project:** The final decision process may be dependent on the range of input received from the AC and project team – if there is general consensus about the subwatershed and communities to choose, this will be a simple process; if not, we may need to go back to the component leads or full project team to work through any major differences of opinion.

3. Wrapping Up	**3.1 Report back to the Project Team and Advisory Committee on the Results** ➢ **Timing:** February 2016 ➢ **Responsible:** Lisa (maybe coordinating with Dolores on a BOB update to the project team) **3.2 Adapt Community Assessment Plan as needed** ● Refine plan according to the selected subwatershed and communities ● Invite communities to participate and invite several representatives from the subwatershed and communities to join the Advisory Committee (send them resources to get up to speed) ➢ **Level of effort and timing:** up to 5 hours; February 2016 ➢ **Responsible:** Steve and Lisa

Community Assessment Overview and Work Breakdown Structure (November 23, 2015)

Why are we doing this?

The community assessment will help us better understand the barriers, opportunities, values, perspectives, and social/political context related to buffer management. By focusing on 2-4 communities within one subwatershed, we aim to get an in-depth understanding of the context for buffer-related decisions at the local level. This component will yield a summary report and will feed into the "clarifying the issue" synthesis. The results will also inform the option evaluation stage, as we will have an improved understanding of what may or may not work in certain communities and why.

How will we do it?

Once the subwatershed and communities have been selected, we will reach out to members of the communities (e.g., municipal officials or other contacts we might have) to invite them to participate. We will use the following methods in the community assessment:

- Review existing resources (e.g., master plans and newspapers) and identify existing community groups (e.g., a local watershed group)
- Observe relevant community meetings (e.g., conservation commission and planning board meetings) and review meeting minutes
- Conduct interviews and surveys
- Conduct focus groups
- Employ stakeholder mapping methods (e.g., Susan Clark's *Policy Process*)

We anticipate engaging municipal officials and board members (e.g., selectmen, planning board members, conservation commission members, etc.), as well as individuals involved with local watershed or conservation organizations, developers, consultants, and other stakeholders as needed. We will use stakeholder mapping to identify the community members involved with and/or affected by buffer-related decisions and guide our investigation into their knowledge, attitudes, perspectives, and values.

Steps and timing (see WBS below for more details)

1) Develop community assessment plan and get project team and AC feedback. (Sept. 2015 – Jan. 2016)
2) Once subwatershed and communities have been chosen, refine the assessment plan as needed and compile resources specific to those towns. (Jan. – Feb. 2016)
3) Implement the community assessment plan in each community, documenting findings and lessons learned along the way. Methods will include review of existing resources (e.g., master plans); observing relevant community meetings (e.g., conservation commission meetings); conducting surveys and interviews with municipal officials, landowners, and other stakeholders; and conducting two focus groups in each community. Share progress with team as needed. (Feb. – April 2016)
4) Analyze results, draft community assessment report, and share with project team and AC. Incorporate findings with development of final products. (May – Sept. 2016)
5) Follow up with communities to share results of project. (Sept. 2017?)

Progress to Date

- Drafted community assessment plan; presented to project team 11/9
- Developed criteria for subwatershed/community selection, within input from some project team members at 11/9 meeting; started evaluating subwatersheds against those criteria

Next Steps

- Continue to prep for implementation
- Get feedback from AC on community assessment plan and subwatershed/community selection criteria/recommendations (Jan. 2016)
- Refine plan once subwatershed and communities are selected
- Invite representatives from the subwatershed/communities to join the Advisory Committee once selected

COMMUNITY ASSESSMENT: work breakdown structure	
1. Framing	**1.1 Develop Community Assessment Plan** ● Draft plan, get feedback from project team (11/9) and AC (1/13); revise as needed ● Develop materials for surveys, interviews, and focus groups, and guidance for meeting observation ● Invite communities and refine plan based on subwatershed/communities selected ➢ **Level of effort and timing:** 20 hours; September 2015 – January 2016 ➢ **Responsible:** Steve and Lisa, with input from Michele and Jamie ➢ **Dependencies on other parts of project:** Feedback from project team members on the plan **1.2 Select Subwatershed and Communities** ● (See subwatershed selection WBS for more details) ➢ **Level of effort and timing:** 40 hours; October 2015 – January 2016 ➢ **Responsible:** Steve and Lisa, with input from Jamie (Diffusion of Innovation) and other project team members ➢ **Dependencies on other parts of project:** Ideally some input from the GIS work about the opportunities for greatest impact
2. Doing	**2.1 Implement Community Assessment Plan** ● Compile existing resources for the communities selected ● Begin stakeholder mapping for the communities to identify specific community members that need to be engaged and set up the framework for investigating their perspectives, values, etc. ● Determine which community meetings will be relevant to attend and find out schedule/contacts; collect past meeting minutes ● Conduct interviews, surveys, and focus groups ● Compile/organize data, document lessons learned, share progress with team ➢ **Level of effort and timing:** 200 hours? January – February 2016 review existing resources and prep for engagement in communities; March – April 2016 conduct interviews/surveys/focus groups ➢ **Responsible:** Steve and Lisa, with support from Michele on focus groups ➢ **Dependencies on other parts of project:** May need some information/resources from the literature review and mapping work to use in community meetings **2.2 Analyze Results and Develop Report** ● Analyze existing resources, survey data, interview transcripts/notes, focus group notes/products, meeting observation notes, etc. ● Draft Community Assessment report ➢ **Level of effort and timing:** 20 hours; May through August 2016 ➢ **Responsible:** Lisa and Steve ➢ **Dependencies on other parts of project:** Just staying up to date with other components' progress and results to ensure our analysis and reporting is most relevant and useful to the project team

3. Wrapping Up	**3.1 Share Findings/Report with Project Team and Advisory Committee** ● Share draft report and findings with project team and discuss integration with other project components ● Present findings at September 2016 AC meeting (preliminary results conference) ● Revise report based on feedback ➢ **Level of effort and timing:** 5 hours; August – September 2016 ➢ **Responsible:** Lisa and Steve ➢ **Dependencies on other parts of project:** Just staying up to date with other components' progress and results to ensure our presentation of findings is **3.2 Integrate Community Assessment Findings with Evaluation of Options Process and Development of Final Products** ● Make sure relevant findings from Community Assessment inform the process of evaluating options with the Advisory Committee and the development of final products ➢ **Level of effort and timing:** 5 hours; September 2016 – July? 2017 ➢ **Responsible:** Lisa and Steve, collaborating with Dolores on final products ➢ **Dependencies on other parts of project:** Overlaps with the Advisory Committee work (Steve and Lisa also responsible) and with the product development work (Dolores and Cory) **3.3 Determine Appropriate Follow-up with Communities Involved** ● This could be another meeting to present the results of the Community Assessment (i.e., September 2016), or the results of the whole project (September 2017) ➢ **Level of effort and timing:** TBD ➢ **Responsible:** Lisa and Steve ➢ **Dependencies on other parts of project:** May want some participation from other project team members at these follow-up presentations

Appendix E. Documentation of Feedback

Project Team meeting, November 9, 2015

Afternoon Breakout re: subwatershed selection criteria and resources – Steve M., Jamie, Michele; Cory, Simone, Steve C. joined later

- Michele – which towns have more people <30 years old (disproportionate aging is an issue in NH) → resiliency for decision making, maybe economic component (Dover, Durham vs. Exeter)
    - Assumption – community demographics (age) impacts decision making
    - Jamie – lots of general work (younger – more innovative, progressive), but when it gets to a specific item (like managing buffers), demographics likely less important; small cross-section of community is involved in local decisions (tend to be older)
- Base it on connection already demonstrated, what colleagues have noticed (re: willingness)
- Jamie – specifically target what we want out of this study
- Cory: 1) Community context – what does it look like around Great Bay (PREPA) (influences Implementation Plan); 2) Subwatershed selection/community assessment – opportunity for additional work to get them over the hump (e.g., land trust, technical assistance)
    - Needs Assessment – barriers, opportunities, motivating factors
    - Typologies → test elsewhere
- Representativeness? Barriers are going to be very community-specific
    - Ask about typical local barriers as well as specific (jump start for implementation plan)
- What do we need to know about these communities to do work effectively?
- Need an operational definition of "success" (communities – leading); early success + capacity; PREPA + lit review; open space plan; long-term – habitat/WQ protection, flood attenuation
- Opportunity + high-value combos – what's already out there, where we could learn the most
    - Local context + partner intervention opportunities
    - Land + history of working together
- Thinking at subwatershed level – makes sense but doesn't happen at municipal level; land conservation does take it into account (connectivity); what can partners do to fill those gaps?
- Look at local and regional master plans
- Potential criteria:
    1. Upper watershed + lower (distance from Great Bay; opportunities)
    2. MS4/non-MS4
    3. One or more communities with a lot of work to do, or one that has tried and keeps failing
    4. Urban/rural
    5. Need to capture town effort, success/failure – want a range
- Write out assumptions – what we think we are going to get out of these criteria?
- Better to have a range – help products be more informative
- Oyster River subwatershed would be tough
- Steve C. – rural/urban not primary criteria for me, but upper/lower yes
    - Greenland – failure on buffers; interesting community in lower watershed
- Abutters of Great Bay or riverine?
- Which criteria trump others?
- Squamscott or Lamprey; Exeter – Brentwood/Danville
- Winnicut has a lot of activity already (watershed-wide plan)
- Look at what other work is going on, capacity
- Approach: Interview – focus group – interview (skip initial interviews when we can – efficient)

    - Start with administrator, staff, planner → who should we talk to (who works on buffers)
    - Will be more complicated in larger communities
    - Phone calls to gauge interest?
- Selection process:
    - PREPA → segment, cross-section; overlay with GIS results → select communities
    - Develop selection process hypothesis
    - Criteria → AC, tech review
- Policy – state level + other states → what are the options right now for towns/state agencies
- Could that work here? How do we translate options to NH?
- Helpful to have state rep. → from communities selected
- Check with Kirsten Howard – PREPA maps/data? How far along each town is – color-coded
- Touch base with technical team
- Resources: Vesey dissertation; RPCs – good source of information

Advisory Committee meeting, January 21, 2016

Discussion re: Subwatershed Selection

- Michele: Our project defines Stratham as part of Winnicut watershed.
    - *Jamie: We won't ignore communities because they may be defined as part of watershed differently.*
    - Julie: Perhaps we could have some communities that are crossovers.
    - Tin: And state of Maine. ☺
- Ruth: In terms of the size of subwatersheds, might look for one with more options (more communities).
- Julia: Why isn't willingness to participate higher, doesn't it limit everything?
    - *Lisa: Planning to rank based on the criteria and then see who will work with us.*
- Is it your goal that you will pick a subwatershed and that all communities will participate?
    - *Lisa: Our goal is to work in ideally 4 communities within a subwatershed, look for consistencies and areas where communities are distinct. We may also look at testing what we learn in other areas of the watershed.*
- ?: What about having what percentage of river is tidal as criterion? Or what about whether community has an active riverine group?
- Kyle: Our experience is that PREPA can be misleading because of question wording (e.g., Durham). Have had some communities question report, there have been disagreements.
- ?: May want to look at population density as it relates to the need for buffers and the ability to implement and enforce buffers.
- Michele: Add whether the watershed has a watershed association as part of the criteria.
- Duane: Community willingness could inadvertently bias results, you may want to pick subwatershed with most towns in it if you are worried about participation in general.
- ?: It would be interesting to see how towns with different demographic/economic characteristics impact willingness to implement.
- *David: We are looking at barriers, but if communities unwillingness is a barrier, we will be biasing. Lisa: we will look at how we can address capacity limitations.*
- Duane: The end user is us, but communities need to understand how this will benefit them. More of a messaging thing.
    - *Steve M: We've been struggling with this, why would communities want to participate?*

- Marcy: Want to emphasize the value of understanding those communities that can't or won't come to table, what the barriers are, what resources would get them over that hump, and how to create incentives.
- Jack: To the extent that there is a political barrier where you have to get past rifles and pitchforks, would be good to think about how to address that.
- *Jamie: If we narrow down communities, we want to verify those assumptions in PREPA.*
- Julie: If you do come up with a list of criteria it will be ranking a community relative to how rankings came out in others – subjective, not all criteria are equal. Also looking at where impaired waters are today could be important.
- Cat: Re: MS4 and non-MS4, is there a middle ground for communities, i.e. "not yet"? Maybe also look to those communities that might become MS4.
- Duane: Was one watershed RPC and SPC?
- Julie: Timeframe? *Winter/spring.* Coordination challenge.
- Julie: What do people get out of this?
    - *Cory: How should we redirect our resources so we can meet communities where they are with what they need?*
    - Julie: Communities as mentors—they can tell us how best they can actually help us (how best to spend money, etc.). Tell them expectations and potential benefits.
    - Jack: Who did you reach out to at town level? *Steve: Diverse.* Did you hear back more from cons coms or planning boards*? Cons coms*. Think about that.
    - Duane: I would be nervous if existing grants programs focused just on these communities. There may be other communities with valuable resources with respect to buffers that might lose out.
    - *Cory: Not either/or. Would not be refocusing everything, but maybe making a more strategic effort.*
    - *Jamie: The key is to go back to selection criteria, we want these subwatersheds to have components that are relevant to other places. Looking for commonalities in other places.*
    - *Cory: Goes to question about scale. Buffers are site specific, let's use that and leverage it, opportunity to do something and then spread it more broadly.*
    - Duane: If you are talking about making a measurable difference, your criteria don't reflect it.
    - *Cory: Pete's analysis will be incorporated so we understand opportunities related to preserving function, etc.*
- Michele: When you look at CWP's criteria for selecting a watershed, it's a small area. Look at the Lamprey – they have a lot of social infrastructure. But if they haven't done this by now, then I don't know how this is going to happen there. So part of me wants to look at a smaller watershed. Oyster/Bellamy or Winnicut, ideal size but they don't have the social infrastructure.
    - ?: Seems like GB communities are most at risk and have the most projects. There's a lot going on in these communities. Durham always seems to be tapped out. Maybe moving out to those communities that do not get most attention (maybe the yellow areas in Pete's map). We don't necessarily get out to the Lees, etc. Maybe one of each and compare results.
- Julie: Agree. Also important to understand commercial development potential. Winnicut. Don't see any issue with marrying this with our project of special merit (PSM). A lot of issues you brought up in mapping are relevant. Don't like one-size-fits-all buffer programs. You should look at things from a functional standpoint. That's one thing I'd like to support with our PSM.
- *Rachel: Prefer something like "Ecological function-driven buffers." Can't wait to see the rest of*

Pete's presentation. We can do a science-based approach that will matter to communities.

- *Mary Ann: I would echo comments about need versus capacity. DES wetland mitigation rules will come into effect February 1st and will require communities to have lists of mitigation opportunities, etc. or they will go into the General ARM Fund. If they have list, funds will be more likely to stay within that community; if they don't have the list, funds would go into general state fund. That would be a win win for a communities to understand how they can tie into those.*
- Duane: It would be helpful to know if the river serves as a drinking supply.
- Marcy: Variability on scientific end has to be matched on finance and investment end. Where will be the places where financial investment will be more likely because they (communities, investors) will see how it will have an impact with value.
    - Michele: We are doing a "what's our water worth" redo and ROI on buffers with respect to water quality and that would be valuable.
- Michele: ROI on buffers re: water quality; there are 3 Winnicut towns: Greenland, North Hampton, and Stratham; the "related groups/activities" column should be corrected to read NH Rivers Council Winnicut River Watershed Association and VRAP, NHRC Watershed Steward(TM) Program." The WRWC is a program of the NHRC. You may wish to standardize all local river management advisory committee names to the river(s) name and "LAC" (except for the Lamprey Advisory Committee), e.g., "Oyster River LAC." I would replace the "designated-limited activity" with "Cocheco River LAC" as they do exist, despite their recent dormancy (and has discussed merging with the Isinglass River LAC). There is also a Lamprey River Watershed Association and a different group that makes decisions on National Park Service funding.

Technical Review Panel, January – February 2016

- Limited value with observing community meetings and reviewing minutes. Spend more effort on the third task – the personal interviews with municipal officials and stakeholders.
- Linking an understanding between local perspectives with Bay-wide is critical but hard to get cohesive messages across these groups. For this knowledge database – identified as a final report currently – to be successful it needs to be well designed and maintained throughout the project.
- There could be a report back directly to the communities, especially the ones that were a focus of your interviews/focus groups.
- Develop an instrument (discussion guide) that can guide these interviews to ensure consistency across interviewers and interviewees, based on initial research and some preliminary interviews.
- Also investigate community planners' and decision makers' preferred formats for the end-product(s), what communication methods would best reach this audience.
- Give the focus group participants an understanding of how you plan to retain, build, and apply the information. You need a knowledge database product as part of or separate to the report.
- It might be helpful to compare a community outside of the Great Bay watershed to see if there are barriers, opportunities, etc., that are unique to the seacoast region vs. other NH locations.
- You need to be able to identify at least one person in each community that is very familiar with the local regulations and has experience with using them in real world applications (likely a municipal planner or a long serving Planning Board or Conservation Commission member).
- Be more product-oriented in this assessment so you illustrate you are in for the long haul with communities, creating a series of products that become the intellectual property of communities that evolves over time. Steer away from static products to dynamic ones where communities want them to evolve (e.g., online database, mapping tools, apps).
- In addition to the list of factors for choosing which watershed communities to work with, include

"history of flood damage." This may help indicate whether people perceive streams and buffers to be static or dynamic, what kinds of "ecosystem services" may be rendered from buffer protection, and the feasibility of establishing and maintaining buffers.

- It sounds as if you will be using the results of the policy analysis as input for some of your investigations. Your time frame may need to shift to accommodate the policy analysis.
- Need a clearly defined and designed DSS, and clearly articulated products (e.g., report, knowledge database, GIS database communication through an online decision support mapping tool).
- Try to ascertain where community planners are most accustomed to getting information.
- What perceptions do people have about enforcing buffer regulations at the community level? Setbacks may be considered during site plan review, but what about vegetation management? Do local zoning regulators feel they have the capacity to address this challenge?
- Include people who are not very actively involved or interested in these issues to have a representative view of their opinion as well.
- Include developers/consultants into the conversation since they work across communities/regions they may have a different perspective.

Response to Technical Review Panel, March 2016

1) Feedback reinforced an approach we already planned to take:

- Suggestion to develop a discussion guide for the "informal interviews" with colleagues. We do plan to do this, and "semi-structured" was probably a more suitable word than "informal."
- Suggestion to identify at least one person in each community who is very familiar with the local regulations and has experience using them in real-world applications. This is an important step we anticipated doing but had not explicitly included in the plan as a "choice."
- Suggestions to investigate where community planners/decision makers are getting information about natural resource planning and enforcement of buffer regulations. These are in line with the types of questions we will include in the community assessment.
- Suggestion to include those who are not actively involved or interested in these issues to minimize skewing our results, e.g., developers and consultants. We have a consultant on the Advisory Committee and hope to invite a developer to join the Committee once the subwatershed selection is finalized. We have been discussing how to reach those not interested and will continue to think about our options for accomplishing this.

2) We will make a change based on this feedback:

- Suggestion to follow up with communities that participate in the interviews and focus groups. We had planned to follow up at the end of the project, but it may make sense to report back sooner (fall 2016) to share results of how each community's assessments and how they compare to the other communities. For communities interested in doing buffer-related work, this will lay the groundwork for going back to them after the project is complete.
- Suggestion: add history of flood damage to community selection criteria. We will explore how we can incorporate that into the community selection process.

3) We may make a change based on this feedback:

- Suggestion that there may be limited value in observing community meetings and reviewing minutes. We may observe a few meetings to investigate their usefulness, but they are not likely to be major components of our data gathering efforts.
- Suggestion that comparing our results to a community outside of the Great Bay watershed could

put the study into context. Following this advice is resource dependent. We plan to test our subwatershed-level results with other communities in the watershed. If we have additional time and capacity to test our results beyond the watershed, we will consider that.

4) ***Not currently planning to make a change based on this feedback:***
   - Suggestion to develop and maintain a "knowledge database" or "decision support system," rather than just a static final report. This interesting idea goes beyond the scope and resources of our projects.
   - Suggestion to investigate stakeholders' preferred formats for end products. We plan to investigate stakeholder information needs, language-related barriers, and preferred sources of information. This information will inform the *content* of those products. However, given that the intended users of these products are those who support communities in making buffer-related decisions, we will tailor the formats for their needs.
   - Suggestion that our timeline may need to shift to accommodate the policy analysis timing. We will use preliminary results—i.e. different options for buffer management—from the Policy Analysis work to accomplish our Community Assessment work at this time.

Project Team webinar, March 8, 2016

Jamie Houle, Tom Ballestero, Paul Stacey, Ellie Baker, Steve Miller, Rachel Stevens, Cory Riley, Pete Steckler, Michele Holt-Shannon, Lisa Graichen, Dolores Leonard

Purpose: Identify subwatershed(s) and begin discussion of criteria for community selection

Agenda

- Review of subwatershed selection process undertaken by Stakeholder Engagement team (Steve/Lisa)
- Overview of technical team subwatershed selection process (Pete)
- Identify subwatershed(s) that align with engagement and technical teams' criteria (all)
- General criteria for community selection (Steve/Lisa/Pete/Cory)
- Next steps (Steve/Lisa)

Action items

- Start to explore communities in the Exeter-Squamscott subwatershed; if they are saturated move on to Oyster/Bellamy or Lamprey.
- Pete will share info about coastal partners meeting for those interested in a presentation of additional maps (Send to Dolores to bundle into BOB update.)
- Engagement team will consult AC members already working with communities of interest.
- All: Send any info you have about concurrent or recent projects in Exeter-Squamscott subwatershed you think the community assessment team should keep in mind.
- Cory/Dolores will work with community assessment team on language to frame project and its intentions for communities.

Discussion of engagement team's criteria for subwatershed/community selection (Steve/Lisa)
Lisa reviewed process for developing criteria and applied it to their analysis. Lamprey and Exeter-Squamscott (E/S) subwatersheds rose to top, with the caveat that there are no non-MS4 communities in the E/S (just MS4 communities and communities with waivers). Asked group if including non-MS4 communities is critical for this analysis (i.e., eliminating E/S from consideration; alternatively,

could move forward with E/S and include non-MS4 communities in the broader "testing" of the subwatershed results in the future). (See ppt and handout.)

- Clarified reasons for community assessment, i.e., understanding communities' values related to buffers, perspectives about different buffer management options, etc.
- Consensus that MS4 was not a deal breaker. Noted that MS4 is a stormwater permit and does not have bearing on buffer regulations, more about closed drainage systems in municipality, though it was noted that having a non-MS4 community would get at motivations such towns would have for advancing buffers.
- Some emphasized need to look at diversity of landscapes, e.g., areas with a lot of impervious cover and areas with less impervious cover.
- Point made that baseline assumptions from PREPA need to be validated in communities we assess (e.g., know that Durham's PREPA is not correct). Understood, but we were going with idea that using PREPA to select communities to study works because it is an apples to apples comparison (if it's wrong it's wrong in same way).
- Clarified we are talking about one subwatershed, but we will try to ground-truth what we do there with representative groups around the Great Bay watershed.
- Recommendation to look at communities with different types of government and might be good to include an agriculture-heavy town.

Overview of technical team subwatershed selection process (Pete)

Pete and David looked at three layers:

1) Buffer layer shows clusters of opportunities for protection, i.e. either not developed, restorable, etc. Buffer width varied according to water body classification.
2) Salt marsh migration – areas where marsh will persist and/or migrate under different SLR – Lots of potential in E/S, Oyster-Bellamy, and Winnicut.
3) 2015 Wildlife Action Plan update – Lamprey stands out.

- Emphasized lower watershed, one reason being that potential for some services like nutrient attenuation were greater there Also salt marsh migration potential is bigger there. For E/S subwatershed, thought that Exeter, Newfields, Stratham, and Newmarket would be a nice mix of built up and more rural/residential communities. For Oyster-Bellamy, thinking Durham and Madbury. For Winnicut: Greenland and Stratham.

Discussion:

- Noted that E/S has best overlap between engagement team and technical team criteria. Agreed to start with E/S but remain open to moving on if those communities are saturated/not interested in participating.
- Caution that there is a lot happening in the E/S and that communities may be over-committed. Lamprey has more flexibility and more to choose from. Either way important to be careful that we get our hands on existing info and don't ask the same questions.
- Community willingness seems to be overarching, if there's enough overlap between engagement team and technical team (E/S) let's go see if they are willing; if not, then we can dig in more on other options.
- Clarified next steps: This info will ground what we learn and share about options for buffer management. Nothing in it for the community for the short-term, but could set them up for work later. Process is evaluate town characteristics, conduct investigatory interviews, then focus groups—all aimed at getting at deeper understanding of community values relates to buffers. Community sanction important. Want to keep an eye on number of interviews—20 in each

community might be too much.

- Process for reaching out to communities could be two-step, i.e, are you interested in participating in the project, then this is specifically what we are looking for. Phone call/email combination. Want to be careful about the ask and how project is framed. Not about steering people to one option or another, it's about laying out the options and the values attached to them. Need a new positive frame for this. Dolores and Cory can help with that.
- Concern noted that people you want to hear from are ones who have issues with buffers but may be less inclined to participate. How to get over that hurdle? Towns will know who we should reach out to. Also could talk to consultants who have worked on both sides of the issue.
- The E/S towns the tech team put forward are on the bay – Pete clarified there are a lot of important upland opportunities in those communities, they have both tidal and freshwater areas as well. Engagement team wants to try to include a community further upstream as well, but Pete's note is helpful.

General criteria for community selection (Lisa)

Lisa reviewed additional information about communities within this watershed, e.g., characteristics like population density, percent value of commercial areas (i.e., how predominant/important are commercial areas in the community), income, impaired waters, drinking water supply, etc. Lisa will send it out if people want to dig in.

- No issues voiced with any of the particular towns.
- Point made that we also have to consider the watershed, e.g., impervious cover impact on buffers. Some of Pete's maps address that and people can attend meeting where he will present them again. He will let us know. Also can look at layers on NH Granit.
- Important to consider both areas that are developed, where protecting buffers would be especially important, in addition to those areas that are not as developed that have a lot of protection opportunities. Also important to think about communities where you would expect a lot of growth. Where can you get ahead of wave? Look at Census data and talk to RPC about communities that have huge growth projections (recent Granite State Futures project).
- Check in with AC members – may have knowledge about specific communities to help us choose.

Project Team meeting, July 13, 2016

Discussion re: Community Assessment

- Status: Interviews with 31 stakeholders so far; lots of interesting results to dig into; thinking about how to approach analysis/reporting (esp. re: protecting interviewees' confidentiality)
- Potential gaps: landowners, farmers/ag land owners; Jamie suggested taking stock of what we have so far and letting that guide any gaps we try to fill
    - Think about protection/restoration pieces of decision-making framework
- Feedback on reporting approach – what works, what doesn't, opportunities; emphasize challenges at local level
    - Are there characteristics/demographics that help or hinder implementation? E.g., in what kinds of communities do you find more comprehensive buffer regulations?
    - Find out how communities address buffers within their planning efforts (i.e., which boards/staff members are aware/involved?)
- Conversations are identifying lots of challenges/issues, but not always specific needs/solutions – may need creative brainstorming with PT to think about how to address issues for Action Plan

Breakout Discussion re: Community Assessment Case Study Idea

- Could do studies of the 4 focus towns, but also incorporate other relevant ones for relevant communities in the watershed
- Look at regulatory history, challenges, history of ordinance development, community context, decision-making process – especially the ZBA, any "champions" who may have been involved
- Could still be valuable to include case studies in instances when ordinances were rejected or there was pushback after an ordinance was passed – to illustrate stumbling blocks, etc.
- Could look at the interactions/relationships between municipal boards to examine their effectiveness/consistency in decision-making
- If addressing the view that buffers can be used as a means to manage growth/constrain development, should also articulate the fact that there are innovative design options that encourage flexibility of development (i.e. provide examples of towns that have strong buffer regulations that are still economically thriving, or look at site designs – initial design proposed, show influence of buffers, then show redesign and that project was still successful)
- Need to think about how to protect interviewees' confidentiality, communities' identity...

Analysis Approach meeting, July 26, 2016

Michele Holt-Shannon, Jamie Houle, John Coon, Lisa Graichen, Carrie Portrie

NEXT STEPS:

- Jamie share resources re: mixed methods grounded theory with Lisa and Michele
- Michele will check in on timeline for transcription (aiming to finish up the first week of August)
    - Lisa will make sure Michele has recordings for interviews conducted since initial file transfer
- Lisa work on pulling together community profiles (context for theming)
- Lisa/Steve will write a memo for each transcript (capturing "snippets" and any major impressions)
- Lisa will check in during August to schedule small group meeting in September for 1st cut at theming
    - Michele/Jamie – Think about design (e.g., who needs to be in the room) In the meantime
- Lisa/Steve work on outline/matrix that could include all info (e.g., ordinance assessment, other resources) in addition to the interview results (John's suggestion, Kerry's example)
- Lisa follow up with John re: preliminary results summary, Google Docs troubleshooting

TIMELINE:

Late July – Early August	● Develop community profiles for the four communities (Lisa/Steve) ● Wrap up interviews (Lisa/Steve) ● Complete transcribing (Michele's students)
August	● Develop memo for each interview (Lisa/Steve) ● Lisa schedule September group meeting ● All – think about design for group theming work in September
September	● Small group convene to start theming process (Michele, Jamie, John, Lisa, Steve, Cory Riley, David Patrick, Dolores Leonard; who else?
October 18	● Advisory Committee meeting

ARCHITECTURE:

1. **Community: Fremont / Chester / Exeter / Stratham**
    a. **Internal**
        i. *Professional:* code enforcement officers, town planners, town managers/administrators (n=12)
        ii. *Volunteer:* members of Conservation Commission, Planning Board, Zoning Board, Selectboard (n=10)
    b. **External**
        i. *Professional:* engineers, wetland scientists, developers, regional planners; i.e., work intersects with buffers/they work with communities in different capacities (n=13)

OTHER NOTES:

- Lisa/Steve doing a couple more interviews over next week or two, then pausing to focus on analysis
- Discussed potential to use Nvivo – doesn't seem like it will be needed for this (integrated assessment – not generating new data; not aiming to publish)
- How we set up the architecture/categories – depends how much we want to dig in/tease out; can start with more categories and lump/combine if appropriate
- A few instances of overlap (e.g., engineer who used to serve on town's planning board – both perspectives/experiences)
- Process: data (transcripts + notes) → coding
    - 1st step – re-read transcripts, ID key points, capture important quotes, write memo for each
        - At top of each memo, write categories the interviewee falls into (e.g., Fremont – Internal – Volunteer)
    - Then do the sticky note exercise (pulling out themes, "binning" into categories)
        - E.g., Michele creates bullet points → sticky notes on sheets of paper (printed memos) around the room; can combine key points from memos within categories, start to look for themes across categories; see if there are differences (may not be)
    - Potentially form a conceptual theory about buffer implementation in communities
- Talked about other potential categories for architecture – think we are going to look at the four communities separately first, then identify any differences worth investigating further
    - Other characteristics to track – municipal budget, level of development (maybe corresponds to population), how many town staff, proximity to Great Bay, upper/lower watershed communities, regulated/non-regulated (MS4)
        - Community profiles, contextual landscape
- Outline all the potential info we'll be pulling together in advance (interviews + anything else) – important to have an organized structure in advance
- Another consideration – protecting anonymity of interviewees
- Also can do more work in the late fall to "test" findings in other communities

Project Team and Advisory Committee survey feedback, October 2016

Respondents:

Abigail Lyon	Piscataqua Region Estuaries Partnership	(AC)
Cory Riley	Great Bay National Estuarine Research Reserve	(PT)
Dave Patrick	The Nature Conservancy	(PT)
Jay Diener	Hampton Conservation Commission	(AC)
John Coon	UNH	(AC)
Kalle Matso	Piscataqua Region Estuaries Partnership	(PT)
Kyle Pimental	Strafford Regional Planning Commission	(AC)
Laura Deming	NH Audubon	(AC)
Lisa Graichen	Great Bay National Estuarine Research Reserve	(PT)
Marcy Lyman	Bullard Fellow	(AC)
Michele L. Tremblay	New Hampshire Rivers Council	(AC)
Paul Stacey	Great Bay National Estuarine Research Reserve	(PT)
Steve Couture	NHDES Coastal Program	(PT)
Steve Miller	Great Bay National Estuarine Research Reserve	(PT)
Tin Smith	Wells National Estuarine Research Reserve	(AC)
Tom Ballestero	UNH Stormwater Center	(PT)
Anonymous		(PT)
Anonymous x5		(AC)

Would you use the Community Assessment information in your work?

Yes: 12 *Maybe/unsure: 6* *No response: 4*

- I would use these findings to plan and prioritize outreach/education efforts to address communities' needs; also would use the inventory of municipalities' buffers to determine where to focus efforts related to NH Hampshire, understanding which communities are likely to be receptive to our engagement is of obvious importance. More broadly, successful environmental protection necessitates understanding stakeholder perspectives and framing information and outreach accordingly. The community assessment provides a valuable snapshot of perspectives towards buffers, that will help TNC in identifying the most effective ways to promote adoption of the use of buffers in the coastal watershed.
- To understand the perspectives, engage them, and to use this information in the design of future buffer outreach, education and policy.
- It suggests to me that better science needs to be applied, and a "one-size fits all" approach is viewed as "protective." Converged with science, we might be able to show HOW protective and guide local decisions towards a more quantitative assessment of level of protection so they can make better decisions of how protective they want to be. The decision can then be based on environmental benefits in the context of human health and welfare.
- Still seems vague and needs hard strategies and deadlines, as well as more site- and town-specific incentives and outcomes.
- To check/test our knowledge/assumptions/approaches.
- In theory this information would be very helpful, however we would need the information to be vetted at the local level to ensure accuracy.

- For restoration projects and for the Council's Watershed Steward™ Program.
- Not sure of its relevance to Maine communities.
- It will be helpful to understand the current community values of communities we are working in and their perceptions and misperceptions.
- Already have knowledge about the information in the Executive Summary.
- Helpful in understanding degree of understanding/awareness of science and application of science in decision-making, to understand what communities need in terms of information/training and support.
- Support for decisions on buffer management and protection.
- The buffer ordinance inventory is directly tied with the PREPA work at PREP and incorporating that data into the State of Our Estuaries report. Additional information about the community context will better inform technical assistance providers in promoting increased buffers in a particular community. No one size fits all for buffers, and it's important to connect with a community's values when attempting to increase natural resource protections. Having a list of the most up-to-date information (policy recommendations, science, etc.) is also helpful for municipalities who need to be able to draw on expertise when working to increase buffer protections.
- I don't work on this topic presently.

Would it be useful for you to have access to the compilation of Community Assessment resources?
Yes: 13 *Maybe/unsure: 4* *No response: 5*

- Google Drive is fine.
- Not sure what has been missed, I would want access to this, maybe as pdfs on a website as separate docs with a one sentence description?
- We have access to most of the items on this list already, but having a well-organized online repository for these resources is helpful.
- Concise summary with full report for reference.
- I like the organization. The last page and a half seemed more like lit review summary than a resource.
- They would be most useful if organized, summarized, digested and written up in a review document by experts for general consumption. The Policy Analysis interim report is a good example of how that should be done.
- The information is useful to me as a researcher. As far as its utility to organizations, I have no comment.
- It is always good to know about available resources that may be helpful in making recommendations in our community.
- I think the way that it is presented is fine. The list is broken down by spatial location (i.e. state, subwatershed) and if folks want more information they can easily use their Google machines to find the report or document. Two resources that may want to be added are the Oyster River Integrated Watershed Plan for Nitrogen Reductions (VHB) and the Salmon Falls Collaborative: Action Plan.
- Documents related to the Maine portions of the watersheds were missing.
- There are many hyperlinks to the resources, which is great, but I know there are more resources that are shown that are stored on the internet. For instance, the Land Conservation Plan for NH's

Coastal Watershed. It would also be helpful to have the resources searchable by keywords/topics. For instance, if you are looking for a resource that addresses agricultural buffers you could find them, or if you want to find information about climate change and buffers you could search for that.

- It's a good compilation; already have access to, use, and apply most of the resources listed.
- Website... maybe a page on the GB reserve site?
- Perhaps a website with drop down menus of the different subwatersheds to direct communities and technical assistance providers with the most relevant info. I'm wondering too, not having had a great deal of time to dive into the resources themselves, if it makes sense to have them organized by topic as well. Categories could include 'scientific reasoning for buffer widths', 'case studies', 'educational templates/examples', etc. Trying to think of a way for other communities to not have to reinvent the wheel in terms of outreach. See what has worked, and build upon those examples. I realize the audience for this project is not communities specifically, but having technical assistance providers with access to all of this information will help inform communities in their buffer projects.

Are there other resources that cover this type of information that you would typically use?

Yes: 6 *No: 8* *No response: 8*

- PREPA for some information about communities' ordinances, though we've been told (and have found) that there are some discrepancies.
- Not all in one place.
- Local needs assessments of municipal decision makers about buffer design, implementation, and enforcement.
- Maybe PREPA to some extent. It would be nice to have this supplement the PREPA.
- It's a pretty good list, but translation of science into law is always messy. It would be helpful to integrate how the biophysical structural-functional conditions is translated into the largely metaphysical outcomes of buffers regulation and management at the local level, and what the compromises are for both environment and society – a tough integration to make.
- We would typically do an internet search on whatever the subject is.
- Flood risk products from FEMA? These may include HAZUS reports (cost estimates for potential losses) and depth grids that detail flood depths for different flooding scenarios. I'm not sure if this is relevant or not.
- Resources from federal agencies (e.g. EPA, NOAA, NRCS, etc.).
- Not that I have seen in one central location. Often drawing upon the expertise of multiple people for any given project on buffers.

What mechanism would be most useful for reporting the interview findings?

A synthesis of all of our key findings	Individual summaries of findings broken out by topic area (e.g., summary of findings re: state-level policy)	Individual summaries of findings from the 4 focal communities	Individual summaries of findings from the different types of stakeholders	A compilation of relevant quotes from our interviews	Case studies
14	**13**	**7**	**8**	**4**	**7**

(6 did not respond)

- I would want the community-specific stuff to inform very specific projects we do with them in the future. Quotes are excellent fodder for grants to address their issues. Case studies provide context and help other communities understand how their challenges are like or not like other towns.
- I can see utility in all of these approaches. Case studies are always helpful, especially if success is achieved!
- All are useful, but in hopes of making changes for the better, key findings and individual summaries would be the most valuable agent of change. Never forget that existing community policy and management defines what's on the books and how they implement management; it does not give it any brand of effectiveness. That needs a fresh and continuing assessment.
- The ultimate goal is a Great Bay watershed with natural buffers. To achieve this, people need to see the real benefits and costs.
- Case studies: It is always helpful to see how various bodies in other towns handled similar situations.
- Perhaps some of the more detailed information could be included in an appendix? That way if folks wanted more information they could get it. Also, was there a reason the four communities were all in Rockingham? Was there any thought given to including a community from Strafford as part of the focal communities? Many consider themselves Great Bay communities.
- All of this information would be helpful. The case studies would be helpful for the Council's ongoing community-based social marketing work with its Watershed Steward™ Program. We like to see what incentives and social barrier removal tools are accepted and what are not accepted.
- List of people interviewed and in which capacity they responded.
- A synthesis of key findings by topic area would be most useful. The findings from the focal communities maybe be helpful for the part of the report that addresses the focal communities since the information is likely to provide good context. Helpful to use as “learn from experience” examples.
- Having a summary of findings broken out by topic area will be useful in knowledge transfer with other communities. Although only a few communities were interviewed, the lessons learned and struggles/barriers are often similar. Similarly it would be helpful to have the summary from different types of stakeholders, although that might be able to be wrapped into the different topic areas (i.e. barriers for Conservation Commissions, vs. barriers for engineers, etc.).

Is the draft inventory of municipalities’ buffers helpful? Can you envision using this information?
Yes: 11 *Maybe/unsure: 5* *No: 1* *No response: 4*

- Helpful to get a sense of which communities actually have buffers and which don't. Might help to have a brief, higher-level written summary – i.e., how many communities have no cut buffers, how many don't; any subwatershed-level summaries.
- I think we should all know this type of basic info walking into a project in a place- my only thing here is how will we keep it current (with PREP?) – filtering would be good.
- We don't have a specific use for this information right now, but it is really helpful to have a sense of the range of different approaches being used and commonalities. In the future, I could see us using this information in a number of ways: 1) to advocate for changes in state policy (for example, wetland rules) 2) to be able to point towards "progressive" communities as examples when working in the watershed.
- To understand the buffer landscape on the municipal level, in outreach and education to show what others are doing and why, and to target/recruit buffer leaders and those that may need help.
- How is this different than PREPA?
- I can see its value, and it is formatted in a way that would be useful to me.
- A graphical form would be much better, and then information about how this buffer happened (what was the mechanism) as well as demonstrable benefits.
- In making recommendations to various boards/departments in our town, it is always helpful to point out how what we propose compares to other similar towns.
- As I mentioned before, this is great – it just needed the stamp of approval from each community to ensure things are up-to-date and accurate.
- I think that communities being able to see where they stand with other municipalities is often the first step to raising the bar with local ordinances.
- Maine communities have not yet been included.
- I'd recommend the key on the right side of the first page repeat on later pages. We need to keep in mind that this is a snapshot in time and ordinances and regulations change. I'd recommend that the user be able to sort the information by community name too.
- The color-coded format does not translate to black/white printing. Suggest using symbols to denote different types of buffers.
- Love that you broke out wetland/shoreland. Would be helpful to indicate state standards as well. I would love to add who administers the buffer (e.g., ConCom, Planning/Zoning Boards).
- Yes, this is definitely something that PREP will/does use with the PREPA report. What about different buffer widths for different bodies of water (e.g. fourth order streams, 2nd order streams, lakes, ponds, etc.) as these can vary within a municipality. It would be helpful to see which communities are meeting or exceeding the recommended distances for buffers from NHDES. Highlight where work needs to be done. Where is this going to live also once created? PREP has been discussing incorporating buffer/setback data into SOOE and working to keep it updated. Worried about having this information live in multiple locations.
- What are examples of certain buffer widths, conditions? Examples of where the buffer works well, and where there are challenges.

Do you have any suggestions for integrating the Community Assessment findings with other components of the project?

- We've been talking with Cat and Trevor about the Regional Resilience Project, and the idea of visually 'mapping' the policy/decision-making framework – i.e., which stakeholders are involved and how, and what laws/policies are involved. Might be helpful to consider some sort of visualization for the community assessment + policy findings.
- Looks like link to variable width science, linking some community perspectives to policy analysis and statewide regulations, want to make sure capacity gaps and training needs are part of action plan, curious if the economic benefits could be summarized in Dana's work.
- I believe it is central to all the other components, and that all components should use the CA findings in their recommendations/findings.
- Linking to state level policy is important!
- I think that's what this project is about – as I noted above, how do we turn the curve on improving buffers management and value for both the environment and community health and welfare? Without the context of good science and socioeconomic analysis, rules are simply rules with no quantifiable outcome. They will certainly vary in outcomes depending on many biophysical and application factors. I do cringe when I see that this or that rule "protects" buffers – very misleading.
- Linking these to the more global system and the value of each in achieving the long-range goal.
- Outreach and engagement?
- The conservation community, especially land trusts, need to be included (perhaps they are) as they are both advocates for buffers but also provide permanent protection.
- When discussing the focal communities, the Community Assessment findings should be integrated as helping to set the stage of the individual communities.
- It would be useful to have a summary of findings for each community that includes a report of what they do or do not have for regulatory buffers and other water resources protections. Compare their attitudes and practices to how they do/do not implement protection measures.

Additional feedback sent by Marcy Lyman – **Community assessment:** I would add and emphasize in the Community Assessment the role of outreach to landowners, municipal decision-makers to advance knowledge, awareness and application of knowledge of science of buffers and different strategies for conservation/management. That would reinforce the finding in the Policy Executive Summary that DES wants more outreach tools around buffers.

Advisory Committee meeting, October 18, 2016

Participants:

Project Team	Advisory Committee
Cory Riley, *Great Bay NERR*	Cat Ashcraft, *UNH*
Dana Bauer, *Clark University*	John Coon, *UNH/consultant*
Dolores Leonard, *Roca Communications*	Tracy Degnan, *USDA NRCS RCCD*
Jamie Houle, *UNH Stormwater Center*	Laura Deming, *NH Audubon*
Kalle Matso, *PREP*	Jay Diener, *Hampton Conservation Commission*
Lisa Graichen, *Great Bay BNERR*	Duane Hyde, *Southeast Land Trust of NH*
Paul Stacey, *Great Bay BNERR*	Marc Jacobs, *wetland scientist*
Pete Steckler, *TNC*	Julie LaBranche, *Rockingham RPC*
Rachel Stevens, *Great Bay NERR*	Ruth Ladd, *Army Corps of Engineers*
Simone Barley-Greenfield, *NHDES/PREP*	Marcy West Lyman, *Fellow at Harvard Forest*
Steve Couture, *NHDES*	Julia Peterson, *NH Sea Grant/UNH Cooperative Extension*
Steve Miller, *Great Bay NERR*	Tin Smith, *Wells NERR*
Shea Flanagan, *TNC*	Abigail Gronberg-Lyon, *PREP*
	Dave Sharples, *Town of Exeter*
	Aaron Hume, *Town of Chester*

Community Assessment Roundtable:

- **Analysis categories** [see handout]
  - Clarify what 'regulatory short-circuit' category means
  - 'Water resources' appears on community side but not external?
  - Decision-making process and enforcement = very important

- **How to present information?**
  - Try to tell a cohesive story
  - Tie back to different values and functions of buffers
  - Highlight key tensions (e.g., enforcement – capacity), give relevant examples/quotes
  - Example of what worked and what did not work (successes/failures)
  - Quotes, website (key categories with rotating quotes)
  - ID the issues that come up frequently, but also the outliers
  - Synthesizing key themes more useful than quotes
  - Case studies – use example of proactive town and how they made it happen
    - Examples: Hampton Falls (relaxed buffer because "too many variances"); Exeter (engaged citizens group)
    - Key content = end result – start with that, then outline process that got them there
  - Think about benefits of buffers – economics, quality of life, water quality, municipal solvency (tax base), health and safety, etc. → need to treat buffers as assets

- **Gaps to fill/directions to pursue in Year 2**
  - Are the findings applicable to the rest of the watershed?
  - Property owners – randomly pick via tax records; select a range (e.g., <5 acres, 100+ acres); ID shoreland property owners through online GIS (e.g., Newington)
  - Tax assessors? Look into/clarify tax benefit situation – e.g., "Loss of value" on property –

claim it as a donation on taxes?
    - Issues of aggregation (single parcel / cumulative effects)
    - How do you incentivize it?
    - State reg?
    - Maybe further explore non-regulatory options, sounds like interviewees weren't clear on/aware of non-regulatory options; what are the carrots vs. sticks (overlap with policy)
        - Esp. land conservation options – maybe talk with conservation organization reps
            - E.g., holding buffer easements, esp. on small parcels – difficult for conservation organization; how to foster more aggregated approach (e.g., lake association – get everyone to agree to do it...)
        - Current use? Minimum size issues (can we make CU apply to smaller size lots)
    - More on property values – e.g., connection to water quality/clarity
    - Demographic information, growth pressures → connect to interview findings
    - Connections between perspectives toward growth/development and the interview findings?
    - What's the infrastructure for technical assistance in the state?

- **Community Assessment-related Action Plan ideas**
    - Average citizens – need community education, communication
        - # of voters = indicator of community involvement
        - Issue perceived as very complex, technical
        - Dealing with turnover, burnout, difficulty getting volunteers, bedroom community
    - Education at different levels/to different audiences – To get ordinance passed, who do you have to educate? Everyone, or just focus on certain segments of the population?
    - Address comfort level with info about buffers and with experts in front of them?
    - Mitigation? Very complex for community boards to be determining; need technical assistance on mitigation (ARM, etc.)
    - How can we integrate with maps and policy analysis? Build a community resource that guides them through the process.
    - How to start treating buffers as town assets – all should contribute
    - ID mitigation parameters – % of services, ratio – seems risky to entrust that to municipal volunteers; maybe some training opportunities there?

- **Other notes/thoughts**
    - Upper watershed town – more rural, less strict regs; lower watershed town – stronger reg, but more built up; buffer table – look at any connections between interview results
        - Also, SWQPA disproportionately geared toward 3rd/4th (lower watershed)
    - Buffers affect developed vs. undeveloped properties differently
    - Community side – no one wants to be the enforcer (discomfort, affects relationships)
    - Pressure on towns (e.g., recession → pressure to relax regs)
    - See Molly's survey – Strafford
    - Jay will send Lisa updates on Hampton re: buffer inventory

Community Assessment Component Response to Feedback (November 2016)

CATEGORY	FEEDBACK	FROM (if relevant)	COMPONENT RESPONSE	OTHER NOTES
ANALYSIS/REPORTING	Need hard strategies/deadlines and more site- or town-specific incentives and outcomes	Survey	ACTION PLAN	Developing town-specific strategies is probably beyond the scope of the interim report, but will capture in Action Plan
ANALYSIS/REPORTING	Analysis categories - clarify what 'regulatory short-circuit' category means	AC meeting 2	INTERIM REPORT	
ANALYSIS/REPORTING	Water resources appears on community side but not external? (analysis categories)	AC meeting 2	INTERIM REPORT	
ANALYSIS/REPORTING	Tie findings back to different values and functions of buffers	AC meeting 2	INTERIM REPORT	
ANALYSIS/REPORTING	Highlight key tensions (e.g., enforcement - capacity), give relevant examples/quotes	AC meeting 2	INTERIM REPORT	
ANALYSIS/REPORTING	Example of what worked and what did not work (successes/failures)	AC meeting 2	INTERIM REPORT	
ANALYSIS/REPORTING	ID issues that come up frequently, but also outliers	AC meeting 2	INTERIM REPORT	
ANALYSIS/REPORTING	Synthesizing key themes is more useful than quotes	AC meeting 2	INTERIM REPORT	
ANALYSIS/REPORTING	Demographic information, growth pressures --> connect to interview findings	AC meeting 2	INTERIM REPORT	
ANALYSIS/REPORTING	Connections between perspectives toward growth/development and the interview findings?	AC meeting 2	INTERIM REPORT	
ANALYSIS/REPORTING	Upper watershed town - more rural, less strict regs; lower watershed town - stronger reg, more built up; buffer table - look at connections to interview results?	AC meeting 2	INTERIM REPORT	
ANALYSIS/REPORTING	Pressure on towns (e.g., recession --> pressure to relax regs)	AC meeting 2	INTERIM REPORT	
ANALYSIS/REPORTING	See Molly's survey - Strafford	AC meeting 2	INTERIM REPORT	
ANALYSIS/REPORTING	Preferences for reporting interview findings - 1) synthesis of all of our key findings, 2) individual summaries of findings broken out by topic area, 3) individual summaries of findings from the different types of stakeholders, 4) case studies (tied), 4) individual summaries of findings from the 4 focal communities, 5) compilation of relevant quotes from our interviews	Survey	INTERIM REPORT	
ANALYSIS/REPORTING	Include more detailed information as an appendix	Survey	INTERIM REPORT	
ANALYSIS/REPORTING	List of people interviewed	Survey	INTERIM REPORT	*Will include a list of the types of people we interviewed but not their names
ANALYSIS/REPORTING	Quotes, website (key categories with rotating quotes)	AC meeting 2	UNSURE	Depends on format of final products; can consider including quotes on website/report, but may not be rotating

Community Assessment Component Response to Feedback (November 2016)

CATEGORY	FEEDBACK	FROM (if relevant)	COMPONENT RESPONSE	OTHER NOTES
ANALYSIS/REPORTING	Have a summary of findings for each community that includes a report of what they do or do not have for regulatory buffers and other water resources protections. Compare their attitudes and practices to how they do/do not implement protection measures.	Survey	INTERIM REPORT	Will try to achieve this as much as we can in the interim report
ANALYSIS/REPORTING	Emphasize in the CA the role of outreach to landowners, municipal decision-makers to advance knowledge, awareness, and application of knowledge of science of buffers and different strategies for conservation/management.	Marcy Lyman email	ACTION PLAN	
BUFFER INVENTORY	How to keep it current	Survey	ACTION PLAN	
BUFFER INVENTORY	How is this different from PREPA?	Survey	CLARIFICATION	Focuses on vegetated buffers, based on a review of communities' ordinances, rather than a survey; provides more detail; attempts to address some of the discrepancies noted in PREPA
BUFFER INVENTORY	Higher level written summary	Survey	INTERIM REPORT	
BUFFER INVENTORY	Filtering option (e.g., sorting by community name)	Survey	INTERIM REPORT	
BUFFER INVENTORY	Need stamp of approval from communities - make sure it's up-to-date and accurate	Survey	INTERIM REPORT	
BUFFER INVENTORY	Include Maine communities	Survey	INTERIM REPORT	
BUFFER INVENTORY	Repeat the key on each page	Survey	INTERIM REPORT	
BUFFER INVENTORY	Keep in mind this is a snapshot in time, regulations change	Survey	INTERIM REPORT / ACTION PLAN	
BUFFER INVENTORY	Case studies - use example of proactive town and how they made it happen; key content = end result + outline process that got them there	AC meeting 2	INTERIM REPORT?	Will consider this approach for reporting our findings
BUFFER INVENTORY	Graphical form would be better	Survey	UNSURE	Not sure how to make a graphical form of this because of the level of detail, hard to distill to a graph
BUFFER INVENTORY	Information about how the buffer happened (what was the mechanism) and demonstrable benefits	Survey	INTERIM REPORT?	Probably beyond the scope
BUFFER INVENTORY	Indicate state standards too	Survey	INTERIM REPORT	
BUFFER INVENTORY	Add who administers the buffer (e.g., CC, Planning Board, Zoning Board)	Survey	UNSURE	This information isn't always provided in the ordinance, and may not be the same as what happens on the ground.
BUFFER INVENTORY	Show different buffer widths for different bodies of water	Survey	UNSURE	

Community Assessment Component Response to Feedback (November 2016)

CATEGORY	FEEDBACK	FROM (if relevant)	COMPONENT RESPONSE	OTHER NOTES
BUFFER INVENTORY	Show which communities are meeting or exceeding the recommended distances for buffers from NHDES, highlight where work needs to be done	Survey	INTERIM REPORT	Good suggestion
BUFFER INVENTORY	Where is this going to live? Worried about having this information live in multiple locations.	Survey	UNSURE	Think this will be more of an internal document for the organizations involved in the project, but can discuss potential issues, overlap with PREPA/SOOE, etc.
BUFFER INVENTORY	Examples of where the buffer works well and where are the challenges	Survey	INTERIM REPORT?	I think we can summarize some examples from our interviews and resource review, etc.
ENFORCEMENT	Community side - no one wants to be the enforcer (discomfort, affects relationships)	AC meeting 2	INTERIM REPORT / ACTION PLAN	
GAPS	Are the findings applicable to the rest of the watershed?	AC meeting 2	BOB YEAR 2?	
GAPS	Talk to property owners	AC meeting 2	BOB YEAR 2?	
GAPS	Talk to tax assessors? Clarify the tax benefit situation (e.g., "loss of value" on property can be claimed as a donation on taxes?)	AC meeting 2	BOB YEAR 2?	
GAPS	Talk with conservation organizations/land trusts	AC meeting 2	BOB YEAR 2?	
GAPS	Need to vet the info at the local level to ensure accuracy	Survey	BOB YEAR 2?	
GAPS	Strafford communities	Survey	BOB YEAR 2?	
GAPS	How to incentive buffers?	AC meeting 2	INTEGRATION	POLICY
GAPS	State reg?	AC meeting 2	INTEGRATION	POLICY
GAPS	Maybe further explore non-regulatory options	AC meeting 2	INTEGRATION	POLICY
GAPS	Look at issues with current use	AC meeting 2	INTEGRATION	POLICY
GAPS	More on property values - connection to water quality/clarity	AC meeting 2	INTEGRATION	ECONOMICS, TECHNICAL
INTEGRATION	Include capacity gaps and training needs in Action Plan	Survey	ACTION PLAN	
INTEGRATION	Include the conservation community, especially land trusts - advocates for buffers, provide permanent protection	Survey	BOB YEAR 2?	
INTEGRATION	Link to variable width science	Survey	INTEGRATION	We can compile our findings about perspectives about variable buffers, then see if there is science from the lit review to support this approach
INTEGRATION	Link to economic benefits from Dana's work	Survey	INTEGRATION	We will work with Dana to see what her work can address related to the CA findings

Community Assessment Component Response to Feedback (November 2016)

CATEGORY	FEEDBACK	FROM (if relevant)	COMPONENT RESPONSE	OTHER NOTES
INTEGRATION	Link community perspectives to policy analysis and statewide regulations	Survey	INTEGRATION	
INTEGRATION	All other project components should use CA findings in their recommendations	Survey	INTEGRATION	
INTEGRATION	Saying a rule "protects" buffers is misleading	Survey	INTEGRATION	Will keep in mind for communication/language in products
INTEGRATION	Integrate how biophysical structural-functional conditions are translated into metaphysical outcomes of buffer reg/mgmt. at local level, what the compromises are for the environment and society	Survey	INTEGRATION	
INTEGRATION	Think about benefits of buffers - economics, quality of life, water quality, municipal solvency, health and safety --> need to treat buffers as assets	AC meeting 2	INTEGRATION / ACTION PLAN	
INTEGRATION	How can we integrate with maps and policy analysis? Build a community resource that guides them through the process	AC meeting 2	INTEGRATION / ACTION PLAN	
INTEGRATION	Visually 'map' the policy/decision-making framework	Survey	INTERIM REPORT?	Will explore potential options/need
OTHER	Include capacity gaps and training needs in Action Plan	Survey	ACTION PLAN	
OTHER	Issues of aggregation (single parcel/cumulative effects)	AC meeting 2	ACTION PLAN	
OTHER	Average citizens need community education, communication	AC meeting 2	ACTION PLAN	
OTHER	# of voters = indicator of community involvement	AC meeting 2	ACTION PLAN	
OTHER	Dealing with turnover, burnout, difficulty getting volunteers, bedroom community	AC meeting 2	ACTION PLAN	
OTHER	Education at different levels/to different audiences - to get ordinance passed, who do you have to educate? Everyone, or just focus on certain segments of the population?	AC meeting 2	ACTION PLAN	
OTHER	Address comfort level with information about buffers and with experts in front of them	AC meeting 2	ACTION PLAN	
OTHER	Mitigation? Very complex for community boards to be determining; need technical assistance on mitigation (ARM, etc.)	AC meeting 2	ACTION PLAN	
OTHER	How to start treating buffers as town assets - all should contribute	AC meeting 2	ACTION PLAN	
OTHER	ID mitigation parameters - % of services, ratio - seems risky to entrust that to municipal volunteers; maybe some training opportunities there?	AC meeting 2	ACTION PLAN	
OTHER	Buffer SWOT team to support communities	AC meeting 2	ACTION PLAN	
OTHER	Target audiences - provide funding to help audiences go through the process of considering buffer options, identifying actions, etc.	AC meeting 2	ACTION PLAN	
OTHER	Education and outreach to watershed groups	AC meeting 2	ACTION PLAN	

Community Assessment Component Response to Feedback (November 2016)

CATEGORY	FEEDBACK	FROM (if relevant)	COMPONENT RESPONSE	OTHER NOTES
OTHER	Support communities on legal issues	AC meeting 2	ACTION PLAN	
RESOURCE LIST	Two resources you may want to add: Oyster River Integrated Watershed Plan for Nitrogen Reductions (VHB) and the Salmon Falls Collaborative Action Plan	Survey	INTERIM REPORT	
RESOURCE LIST	Documents related to the Maine portions of the watersheds were missing	Survey	INTERIM REPORT	
RESOURCE LIST	There are many hyperlinks to the resources, which is great, but I know more of resources shown are available online (e.g., Land Conservation Plan for NH's Coastal Watershed)	Survey	INTERIM REPORT	
RESOURCE LIST	It would be helpful to have the resources searchable by keywords/topics. For instance, if you are looking for a resource that addresses agricultural buffers you could find them, or if you want to find information about climate change and buffers you could search for that	Survey	INTERIM REPORT?	Will try to accomplish this depending on capacity
RESOURCE LIST	Flood risk products from FEMA? These may include HAZUS reports (cost estimates for potential losses) and depth grids that detail flood depths for different flooding scenarios	Survey	INTERIM REPORT?	Will explore relevance and if useful, will add to resource list
RESOURCE LIST	Maybe as PDFs on a website as separate docs with a one-sentence description	Survey	UNSURE	If final product is a website, can explore options for compiling PDFs
RESOURCE LIST	Concise summary with full report for reference	Survey	UNSURE	Unsure of the degree to which we'll be able to do an in-depth report of all of the resources, but depending on capacity and need/usefulness we'll summarize what we can
RESOURCE LIST	Organized, summarized, digested, and written up in a review document by experts for general consumption, e.g., policy analysis interim report	Survey	UNSURE	Unsure of the degree to which we'll be able to summarize/synthesize all of the resources like the policy analysis, but depending on capacity and need/usefulness we'll do what we can
RESOURCE LIST	Website - maybe a page on the GB Reserve site?	Survey	ACTION PLAN	
RESOURCE LIST	Perhaps a website with drop down menus of the different subwatersheds to direct communities and technical assistance providers with the most relevant info.	Survey	ACTION PLAN	
RESOURCE LIST	Would it make sense to have the resources organized by topic as well? Categories could include 'scientific reasoning for buffer widths', 'case studies', 'educational templates/examples', etc.	Survey	INTERIM REPORT?	Can try to do a topical organization as well
RESOURCE LIST	Other resources from federal agencies (EPA, NOAA, NRCS, etc.)	Survey	INTERIM REPORT	Will try to incorporate some of these resources as well.

Community Assessment Component Response to Feedback (November 2016)

CATEGORY	FEEDBACK	FROM (if relevant)	COMPONENT RESPONSE	OTHER NOTES
OTHER	Don't forget that policy does not guarantee effectiveness	Survey	INTEGRATION / ACTION PLAN	Agreed; can highlight some of the challenges with enforcement and implementation from the interviews and identify some action plan items related to this; policy team may be looking into policy effectiveness
OTHER	People need to see the real benefits and costs	Survey	INTEGRATION / ACTION PLAN	Agreed; hoping the economic analysis can start giving us some of this information
OTHER	What's the infrastructure for technical assistance in the state?	AC meeting 2	INTERIM REPORT? / ACTION PLAN	Not sure how much of this we'll capture in the interim report, but can note in Action Plan at least
OTHER	SWQPA disproportionately geared toward 3rd/4th (lower watershed)	AC meeting 2	INTERIM REPORT? / INTEGRATION?	Will keep in mind for the interim report; may be relevant to other components as well - keep in mind during integration work as well
OTHER	Buffers affect developed vs. undeveloped properties differently	AC meeting 2	INTERIM REPORT? / INTEGRATION?	Will keep in mind for interim report and integration
OTHER	Trying to think of a way for other communities to not have to reinvent the wheel in terms of outreach. See what has worked, and build upon those examples. I realize the audience for this project is not communities specifically, but having technical assistance providers with access to all of this information will help inform communities in their buffer projects.	Survey	ACTION PLAN	

Community Assessment Technical Review 2: Feedback and Response

Handling Technical Review Feedback: Cory's recommended approach

1. **Make sure the report is credible:** If the review came back and indicated that the report was "credible," all changes are optional. If the review indicated that the credibility was mixed or it was not credible, get in touch with the reviewer to see what changes are critical to get to credible.
2. **Consider which recommendations to address in your report:** When conducting this step, please keep the following criteria in mind:
    a. Is the recommendation consistent with something we have already agreed is a high priority for us to address in year 2? See this document for the results of the last advisory committee. If the technical review repeats a priority, we should address it.
    b. Is the recommendation a fairly straightforward edit or change that makes sense to you

and is relatively easy to do? If yes, go ahead and make that change.

c. Is the recommendation a great idea that would require additional work or analysis that we were not planning on doing in year 2? If yes, please add it to the action plan.

d. Dolores and I had these criteria in mind as we read through the technical reviews, and then we discussed each recommendation and "coded/highlighted" each idea in one of three colors. You can see what it looks like here. Green indicated that we would address the comment because it was consistent with criteria a or b above, yellow indicated we wanted feedback from some of our policy partners so will require additional discussion (we scheduled that meeting for this week with Simone and Steve Couture), and red meant that we did not feel the need to address that comment as it did not meet the criteria above.

3. **Make sure to set up a meeting to get feedback right away if you are not sure what to do with a comment.**
4. **Make sure you add potential Action Items to the action plan.**

Steve Miller worked through all the reviews - his comments are in **Blue Bold,** using Cory's same color pattern (described above) for what to do with a comment. Any and all changes were then made to the Community Assessment document and posted on Google Drive. The only change to the document was to shift Sections V and VI to the Appendices.

Responses from Reviewer #1

- **Document name: BOB_community assessment_lit review-TNC-zf.doc**
- **File path:** GBNERR/BOB PROJECT/BOB Project Shared Drive/Technical review panel/Panel reviews 2017
- **Link:** https://docs.google.com/document/d/1J7TZkuxgeV91SlzsSygBjxQVh21VaDEOSWEasLuh8qA/edit?usp=sharing

1. Please choose your level of agreement with the following statement: "The analysis is sufficiently credible (i.e., meets standards for technical adequacy) to support decision-making around riparian buffer management in the Great Bay Estuary Watershed." To indicate your level of agreement, please bold or underline one of the following choices:

Community Assessment

Strongly agree
Agree – so for us all changes to the document are optional.
Mixed
Disagree
Strongly Disagree

Literature Review

Strongly agree
Agree
Mixed
Disagree

Strongly Disagree

2. Please comment qualitatively on the credibility of the analysis. Please highlight key strengths and weaknesses. Please make suggestions on key citations, methods, case studies that, if included, would strengthen the analysis.

Community Assessment

With such a strong Delphic approach to interviewing and illustrating the diversity of types of planners and geographies, I expected to see a stat on men versus women interviewed, and also ethnicity. Diversity is key to environmental viewpoints, reinforced by the interview questions (i.e. viewpoints on policy, types of clients). No change needed to the document.

I really liked the differentiation between internal and external remarks. That is an important delineation. Excellent.

The overarching themes could be conveyed better than a bullet outline**. I believe this has been addressed with the addition of the section that Christos T. added to the document.** I would encourage either shortening sentences, bolding specific parts of a sentence, or even create a table first of categories and "terms," that describe the themes, then have the narrative bullets below. Being succinct and making the themes pop in report is key to readings capturing the high-level messages. I would repeat this format for challenges & barriers. Policy options is closer to what I had in mind of being succinct. Also, highly encourage an executive summary in this regard – highlighting the top themes, challenges, barriers and policy options. What key messages do you want someone to walk away with if they have limited time but are interested? You've captured the reader who want to dive in, but not the reader who wants the high-level overview. This also applied to needs and opportunities. **A huge amount of time went into categorizing and shortening sentences. At this point there is no time to continue on this process. As this report is for the Project Team, readability/conciseness is not as important at this point. I will add this to the Action Plan as a concise two pager on the CA will be valuable to several Actions Items once the project is complete.**

In section VI consider a couple short paragraphs, again high-level, that describe the most important points about recommendations. Do this before the bulleted list. A list like this is usually for a project team, but not a wider audience, so better to give folks "the most important answers" first. **This will be added to the action plan**.

Sections V and VI seem more like Appendices to me. **This change will be made to the document**.

Responses from Reviewer #2

- **Document name: BOB: combined_policy_analysis__community_assessment_MK_tech_review**
- **File path:** GBNERR/BOB PROJECT/BOB Project Shared Drive/Technical review panel/Panel reviews 2017
- **Link:** https://docs.google.com/document/d/1I2q9am-T-E01-_dStREycqPzsdtomo-3cmufIERdXQs/edit?usp=sharing

1. Please choose your level of agreement with the following statement: "The analysis is sufficiently

credible (i.e., meets standards for technical adequacy) to support decision-making around riparian buffer management in the Great Bay Estuary Watershed." To indicate your level of agreement, please bold or underline one of the following choices:

Strongly agree
Agree – so again for us all changes to the document are optional.
Mixed
Disagree
Strongly Disagree

2. Please comment qualitatively on the credibility of the analysis. Please highlight key strengths and weaknesses. Please make suggestions on key citations, methods, case studies that, if included, would strengthen the analysis.

Mike Kline review of the Policy Synthesis and Community Assessment Reports:
The report is organized by regulatory and non-regulatory approaches and case studies. I have found that a useful outline for analyzing actions or the incentives for action would be:

Regulatory
Technical Assistance
Funding Assistance
Education/Outreach

This outline is worth considering, since many if not all the non-regulatory approaches fit within these categories and many of the findings / recommendations coming out of the Community Assessment Report may be readily described under these categories. Different jurisdictional levels (fed/state/muni) have varying programs that offer these services and incentives. An interesting question is: what is the appropriate focus of each jurisdictional level? (Might be good to have a chart that shows jurisdiction.)

The policy report seems to lump together buffer policies for wetlands, lake shorelands, and riverine systems. They all have dynamic processes, and buffers play an important role in these processes, but rivers, streams, and their associated floodplains, are particularly dynamic due to their existence in higher gradient valley settings (i.e., they have slope). While the preponderance of buffer literature examines the role of vegetative buffer widths on the moderation of overland flows and surface roughness (in addition to WQ and habitat benefits), it only touches lightly on the role buffers play in stream energetics (equilibrium-based processes). The evolution of riparian buffer management has largely been silent on this buffer function, and, from my experience, this serious scientific oversight is borne out of 200+ years of stream channelization and the perception that streams (like their wetland and lake counterparts) are static systems. Similarly, buffer protection has become synonymous with vegetation management and therefore we miss the important linkage between stream, riparian, and floodplain (equilibrium) functions.

My recommendation is that the policy synthesis should acknowledge the growing awareness of the role of buffers in achieving the dynamic stream equilibrium conditions that we now know to be critical for public safety, water quality, and aquatic ecosystem integrity. Once we make this acknowledgement, stream buffers can (and should) be described as having of two separate but overlapping components: the “development setback” and a “naturally vegetated zone.” I have written several papers that described the importance of this distinction, but, in summary, the setback not only provides for the

vegetated zone but avoid encroachments (investments) that bring about deleterious stream channel management.

Ill-considered buffer management has also been a driver of stream channelization. I have seen people identify the requirements for buffer vegetation maintenance as the reason they seek public assistance to hard armor a stream. I have seen natural resource agencies use public funds, appropriated for water quality improvement, to "stabilize" a historically straightened stream for the purpose of protecting a buffer they just planted.

I recommend that the policy synthesis recognize that buffers for wetlands, lakeshores, and streams provide different functions, which should differentiate our management, and very likely changes the way local communities perceive regulation at the state and municipal levels.

The Community Assessment did not consider setbacks. In Vermont the linkage of buffer setbacks to public safety, property protection, economic resiliency, and lower liabilities has begun to turn around many of the local protestations heard when buffers are promoted solely for their natural values. Once a community decides that setbacks are in their best interests, the conversation over protecting a vegetative zone becomes much easier.

Besides making note of the above argument, I have no recommendations for enhancing the community assessment report. It's good data and paints an accurate picture of what practitioners have heard in local communities since buffer protection has become a thing. It provides a good foundation for the recommendation that the state needs to exert jurisdiction if buffer protection is really going to happen.

My last offerings relate to the Vermont Case Study. On Page 30 it states that the River Corridor Protection Area is comprised of a meander belt component and a riparian buffer component. This should read that the River Corridor is comprised of a meander belt..... In the few places that refer to the term "River Corridor Protection Area" it should be just "River Corridor."

The Vermont Clean Water Initiative is described but it should be noted in this paragraph that this fund is used for River Corridor Easements and buffer restoration work and factors prominently as a state funding incentive for riparian management. One of the greatest incentives Vermont has created is the increased state cost share from the state Emergency Relief and Assistance Fund (ERAF) to help communities recover from flood disasters, if they've adopted river corridor protection (see attached Act 110 report).

Lastly, on page 31 of the Policy Synthesis, under the title of "Municipal Land Use Regulation," there is a description of the Vermont statutes requiring municipalities to send floodplain development and river corridor development proposals to the state (my Program) for technical review and to see if it complies with local regulations. This is huge. The lack of technical capacity at the local level is mentioned over and over again in the Community Assessment Report. In Vermont this technical assistance is one way to overcome this deficiency and maintain some local control. Last year we reviewed over 800 local projects and sent back, not only an evaluation of regulatory compliance, but feedback on how and why the town should protect their floodplain assets. This is a big commitment, but an increasingly effective approach to protecting dynamic streams, floodplains, and riparian buffers. **This will be added to the action plan.**

Summary of Interviewee Feedback on Draft Community Assessment Report

The following is the initial email sent by Steve Miller on 1/24/17 to all the people interviewed for the Community Assessment:

> Good afternoon,
>
> I am very pleased to be sending you the Draft *Buffer Options for the Bay Community Assessment*. As you recall Lisa and I promised to run this by everyone who agreed to be part of the Community Assessment and to be "interviewed" by us about buffers. The conversations we had were extremely rich with information and it took a lot longer to transcribe, compile, and categorize the perspectives we heard. I believe the extra time taken to be thoughtful and fair to the information was well worth it.
>
> Great care was taken to accurately represent all we heard as well as keep everyone we talked to anonymous. I believe we have done both and we very much want your review of the draft report.
>
> I know that the document will take some time to review and I want to give you as much time as possible for your review. As such please send me your comments by February 21, 4 weeks from now. Please let me know:
>
> - Did we accurately capture your perspective(s) on buffers?
> - Are there other perspectives that you know of that we missed and should be included?
> - Do you feel we compromised your identity in any way that should be changed? If so, where in the document and how should this be changed?
> - Is there any missing information that would be helpful, or information that needs edits/correction?
> - Any other input?
>
> This document is currently being reviewed by the project Technical Review panel. Once I have the Tech Review and your reviews, a second draft report will be produced for review outside of the Project Team in other Great Bay watershed municipalities to test if it accurately captures watershed wide perspectives on buffers.
>
> Of course if you have any questions do not hesitate to ask. Many of you know that Lisa recently accepted a full time position with UNH Cooperative Extension. So while we have lost her from the Buffer Project, she is now a valued colleague and I will keep her apprised of the status of this report.

Attached are two docs. The BOB CA DraftF and the BOB CA Interim Report Appendices. The BOB CA DraftF is the main document that I'd like your feedback on, but welcome any input on the appendices.

Sincerely,

Steve

A second reminder was sent on 2/6/17 and a third reminder on 2/24/17.

Below is a summary of the responses received, with any potentially identifying content removed to preserve anonymity.

1. Five responses came in acknowledging receipt of the document, with no edits or comments in the document itself:
    - I think [community x] and their zoning is portrayed accurately in the report. I don't think anything was missed, not was [community x]'s identity compromised. There is nothing we add at this point.
    - Thank you for this important body of work. You all did a nice job capturing all sides of the community! I feel it accurately captures the variety of perspectives we hear here. I know with much of our future developments falling into the complex parcels with lots of wetland/buffer constraints we will really benefit from some guidance on the connection between buffers and water quality, LID, what types of BMPs would be needed to perform the functions we lose from our natural buffers.
    - I have not been ignoring your pleas, just don't have a spare moment. Now that this is the third request I took a few minutes to review. I'm sorry to say I do not have time to read cover to cover these 100 pages, but it looks like a great report, great information, and intense preparation! I have no comments and admire all your hard work!
    - I have printed the document to review, but things are crazy. I hope to have back to you by 3/3. Thanks.
    - No real edits but I believe you have captured most of the issues surrounding buffers (perhaps a little puny). Good job.
2. I have attached a marked up of the draft that identifies my comments. I hope this is what you had in mind for feedback. There is a tremendous amount of (very good) work in that draft. Hats off to you, Lisa and the other authors (and congratulations to Lisa on her new opportunity).
    - *Here are this interviewee's responses comments in red text:*
        - Page 16
            - Trust in science seems to vary depending on the issue. *Could this be because science has (intentionally) become more politicized?*
        - Page 17 - grammatical/wording edits
        - Page 18
            - Significant interest in allowing stormwater BMPs in exchange for reduced buffers; BMP's require long-term / perpetual maintenance and

there is plenty of evidence that the maintenance does not get done; some think mechanized design provides more opportunities to protect water quality than buffer restoration; stormwater requirements seem less controversial than buffers – developers feel they can recoup the costs of the engineered BMPs

- Page 19
  - Wetland regs are more controversial and difficult to comply with than shoreland regs. If wetland regs are more controversial it is partly because they actually allow more flexibility which results in more 'negotiation' and discretionary approvals/denials. Shoreland regs tend to dictate limits up front.
  - Ordinances are retroactive and responsive rather than proactive. This strikes me as unfair and/or inaccurate. It is more incumbent on applicants and their representatives to be proactive. The state and towns usually have no idea a project is coming.
- Page 20
  - Consider a more formalized process for Conservation Commission involvement. Some towns require a Special Permit or Conditional Use Permit from the PB or ZBA which requires interaction and thus empowers the CC.
- Page 21
  - Technical/mapping (subsection of "more information about" section)
    - More info about GIS data sources (e.g., wetland data sources don't line up; which to use?). None of these GIS resources replaces on-the-ground soil or wetland mapping for actual site/project design.
  - **Tools/resources:**
    - GIS (especially for code enforcement officers), and also more information about GIS data sources – wetland data sources don't line up; which to use? None of these GIS resources replaces on-the-ground soil or wetland mapping for actual site/project design

3. Thank you for sending along the draft community assessment. It is an incredibly impressive document full of very rich information. I've read through it three times, and probably could read through it a few more to capture everything. The challenges and barriers section I found very useful (even if slightly overwhelming). It provides us an opportunity to confront the challenges early on and not be surprised by them as they come up in a community project. Also the section on "More Information About" will hopefully guide some future research to answer those questions. I'm already thinking of ways to start incorporating some of these findings in [my work]. Below are the answers to your specific questions as well as some suggestions. Great work!
   - **Did we accurately capture your perspective(s) on buffers?** Yes.

- **Are there other perspectives that you know of that we missed and should be included?** Not that I can think of.
- **Do you feel we compromised your identity in any way that should be changed? If so, where in the document and how should this be changed?** No.
- **Is there any missing information that would be helpful, or information that needs edits/correction?** See below.
- **Any other input?**
  - Under section VI. Community Assessment: Buffer Ordinance Inventory Summary I'm assuming the first table does not include state standards? It's something we are struggling with... as well. For communities that don't have a specific shoreland ordinance, but rely on the Shoreland Water Quality Protection Act, does it make sense to say they don't have a shoreland buffer? I'm asking because again it's something we are trying to get our heads around...
  - The tables under VI. Community Assessment: Buffer Ordinance Inventory Summary could benefit from a brief description of the table. (i.e. Number of communities with a buffer (wetland or shoreland) within the subwatershed, etc.). Right now it's a little confusing to interpret. Also what is the difference between a 0 value and - value in the table? Looks like 0 is only reported when there is a value for the other (SL for example), but Lamprey River for limited cut/managed buffer has 0/0 reported.

4. Two comments in the document:
   - "Yes!" in response to our goal statement.
   - Communities' perspectives and decisions about buffers: Have there been any discussions about using the term "buffer?" I find that the bulk of the public does not recognize that a "buffer" is a layer of protection along the shoreline. I'm not certain it's a "water word that works". Certainly ok for this publication – I just wanted to capture this thought.

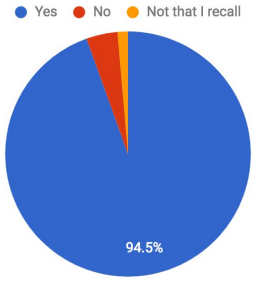
Community Assessment Watershed-Wide Vetting Survey Results

Questions 1 – 20: Summary of signals of agreement with buffer perspectives from the CA findings

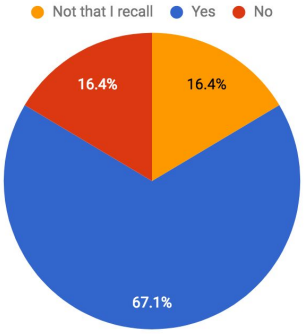
Very high agreement	80-100%	General agreement	40-60%
Strong agreement	60-80%	Weak agreement	<40%

Q1 (73 responses)	Q2 (73 responses)

Buffer-related decisions are inherently complex, requiring municipalities to balance many factors including property rights, community character, natural resource protection, abutters' concerns and economic growth.

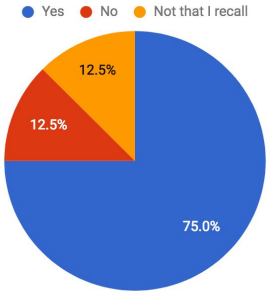


Ordinances need better definition of permitted and prohibited activities.



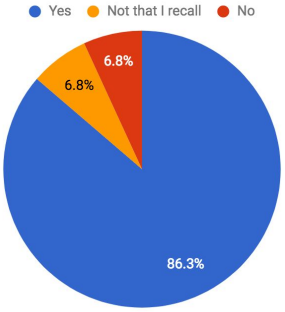
Q3 (72 responses)

Buffer decisions are often perceived as a choice between natural resource protection and economic development.



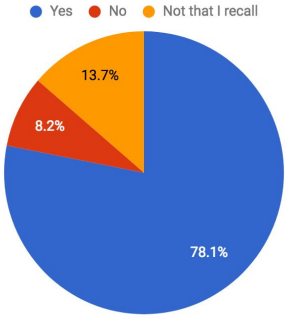
Q4 (73 responses)

Buffer oversight and enforcement can be logistically difficult and lack capacity.



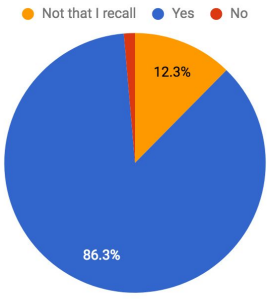
Q5 (73 responses)

Some see buffers as an anti-growth policy.



Q6 (73 responses)

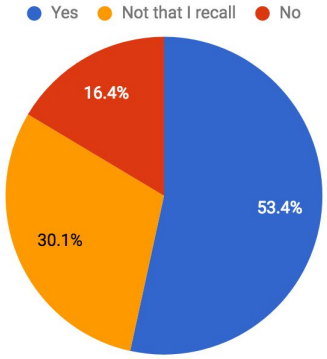
Developers want consistent regulations, flexibility in the review process, and not a 'one-size-fits-all' rule.



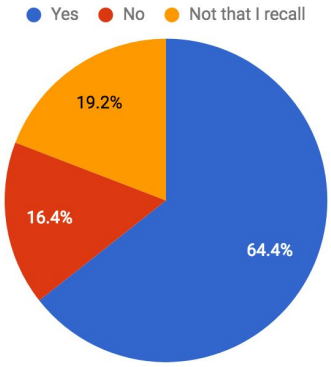
Q7 (73 responses)

Q8 (73 responses)

Some feel buffer regulations and the decision-making process with buffers lack integrity.

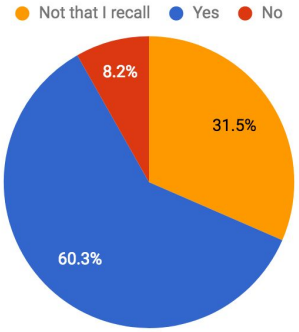


Buffers have public benefits, but buffer regulations don't affect all landowners equally.



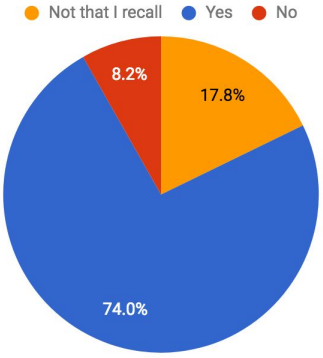
Q9 (73 responses)

Buffer-related applications should be evaluated on their merits, but municipal boards fear setting a precedent and getting sued, which influences decision making.



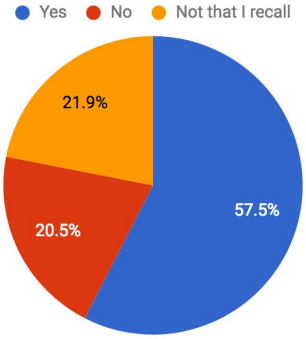
Q10 (73 responses)

Some fear that buffer regulations will prevent them from subdividing a property and maximizing its value for heirs.



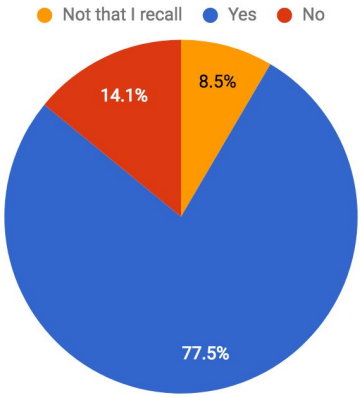
Q11 (73 responses)

There is generally a preference for engineered solutions over natural solutions, and a sense that we can solve any issue with an engineered approach.



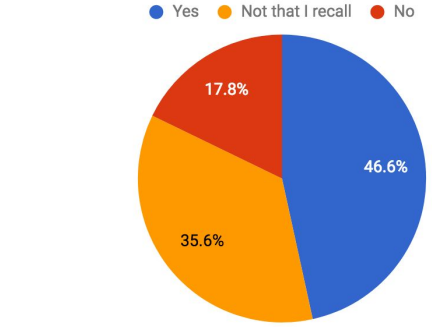
Q12 (71 responses)

Property rights are a major impediment to buffer protection.



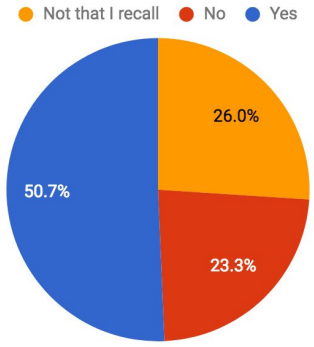
Q13 (73 responses)

Buffer width ranges for various protections (e.g., for nitrogen, phosphorous, flood control, or wildlife habitat) contribute to the perception that buffers are arbitrary.



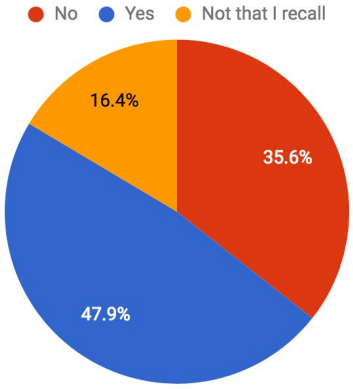
Q14 (73 responses)

Wetland regulations are controversial because they actually allow more flexibility, with discretionary approval or denial being dependent on site conditions.



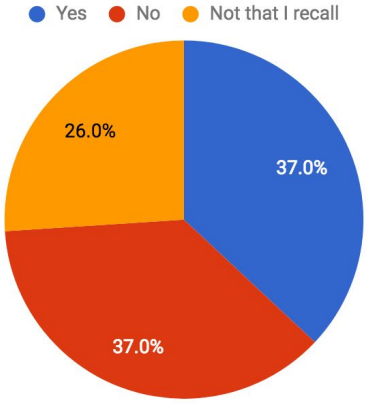
Q15 (73 responses)

The lack of a state buffer undermines municipal buffer regulations.

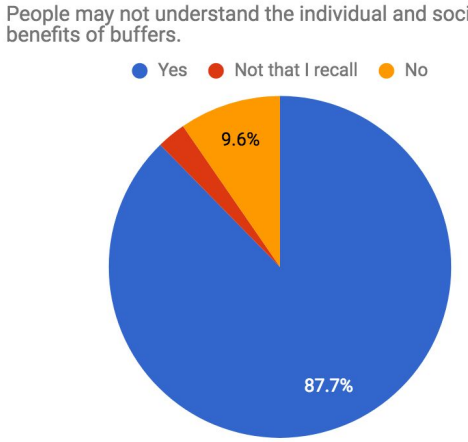


Q16 (73 responses)

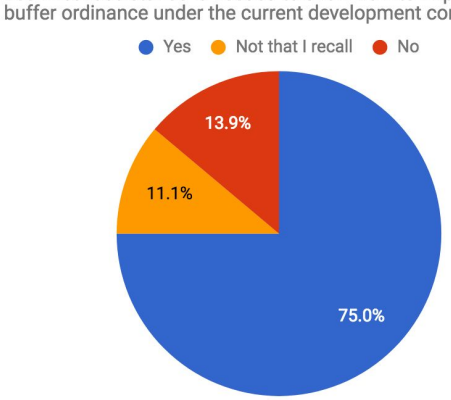
Dealing with buffers is more burdensome for homeowners than developers.



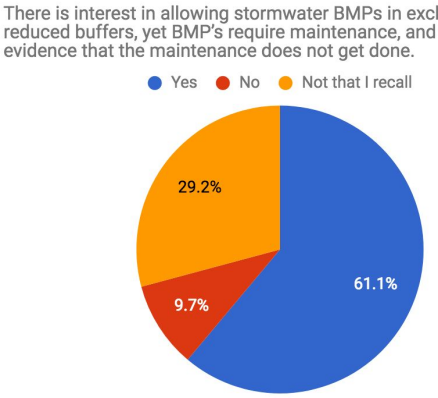
Q17 (73 responses)



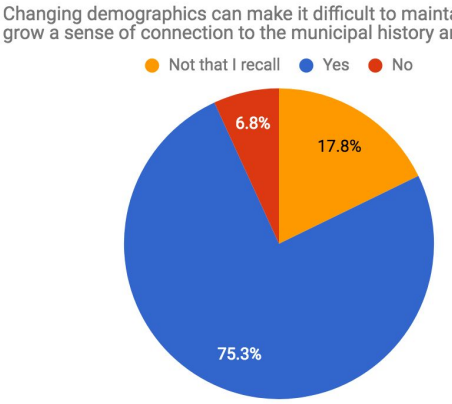
Q18 (72 responses)



Q19 (72 responses)



Q20 (73 responses)



21. What are the biggest buffer management issues in your municipality?

Responses are organized in categories, with some consolidation of similar ideas. 76 responses.

Category	Response
Municipal framework	Tax system that encourages maximum use of land and property rights law that supports the system
	Wetlands and setbacks
	Each town has its own set of regulations - there is no consistency.
	Fairness; balancing buffer protection with economic development
	It is difficult to apply buffers to lots with existing homes that are then subdivided, subjecting the mother lot to our buffer ordinance.

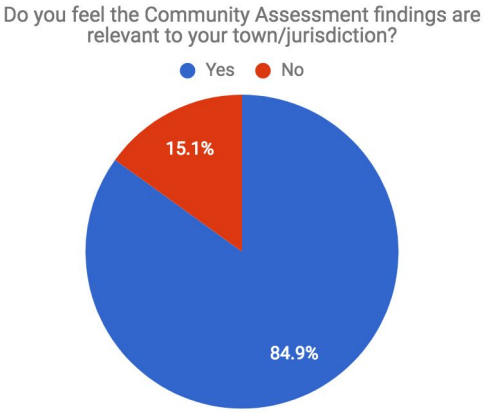
	Resistance
	Those advocating for sewer to allow for high-density apartments, which will erode the environment and require costly services; impacts from commercial development and increasing population
	Impacts from commercial development and increasing population
	Modifying/strengthening buffer regs in response to sea-level rise and increased rainstorm activity
	Limited resources
	Adequate regulations/definitions
	Zoning Board always gives variances for people to build in the buffers; Planning Board too easily grants special exceptions for construction in buffers
Enforcement	Enforcement, lack of maintenance, need for ongoing monitoring, oversight; lack of capacity/resources for administration and enforcement; compliance issues; logistical challenges in inspecting/enforcing
	Dependent on neighbor reporting neighbor - violations often go unreported/unnoticed
	Town looks to State to enforce buffer protection for prime wetlands and shoreline protection. Everything else regarding buffers is negotiable.
	Conservation commission has no teeth; voluntary; no dedicated staff person for conservation/buffers
	Delineation
	Trying to build capacity to ensure that existing state regs and town ordinances are followed.
Education	Interpreting DES regs; shoreline buffer regs are hard to understand; expensive to meet requirements
	Lack of awareness of buffer zones, lack of public understanding (i.e., of why we have buffers, value and importance of buffers, enforcement); local boards/commissions don't understand the irreplaceable value of natural systems and the benefits of buffers and open space
	That buffer issues are not arbitrary but relate to stated public policy objectives and science to provide their rationale and justification in the event of legal challenges
	Lack of education for residents, communities, and folks working with the community (municipality, realtors, landscapers, developers, etc.); getting the information out to residents in a non-biased way
Size of buffer and allowed uses/ activities	Flexibility would be easier with a higher standard. Buffers are too small to protect the resource.
	Have a wetland building setback but no buffers. No protection for vernal pools (and aren't mapped).
	The one-size-fits-all application of buffer regulations does not work to the best interest of the environment and the landowner in all cases.
	Difference between state and municipal buffer requirements.
	Establishing buffers for development projects and for timber harvesting.
	We have defined setback requirements in most cases and address buffers on individual plans. Buffer BMP recommendations would be helpful.
Agenda-driven	Buffer regs being used by "no growth" groups to stifle development and prevent landowners from realizing their total land value
	Landowner rights/property right control issues; people do not want any rules applied to their property that prevent them from doing anything they want to do. Live Free or Die mentality.
	Although developers know they have to deal with buffer ordinances, the citizenry feel regulations are overzealous and impeding projects and infringing on property rights.
	Pro-development mindset; developers want to extend development within buffers.
	Balancing property rights, public benefit, development constraints, enforcement capacity, and individual attitudes. It is definitely not a "one issue" problem but a multi-faceted challenge. While education is important it does not seem to be solving the problem. The property rights issue seems to

	trump the knowledge that they are important.
	Unwillingness of homeowners being told what they can do with their property. Desire to run lawns down to water, hardscape, and have docks. People preferring formal landscape plans to natural habitats. Herbicides and/or fertilizers.
Condition or amount of buffer	Most of the buffers in town are already compromised. While buffer regulations were strengthened in 2017, they are not retroactive on areas where buffers are already compromised.
	Two major rivers plus extensive wetlands (unmapped and undefined locally) impact much of the town's effort to make decisions for development vs. conservation.
	Large buffer impacts in new developments due to the remaining developable land being full of wetlands and perception that the Con Com is anti-development
	Sites already existing within buffers -- sometimes for many years
	Quality of wetland versus management relevance
	Lack of flexibility based on the quality/type of resource being buffered, and uses within the buffer (e.g., lawn versus more natural cover)

Don't know/None/I'm not sure (8 responses)

22. Do you feel the Community Assessment findings are relevant to your town/jurisdiction?

73 responses; very high agreement



23. Please list any key perceptions related to buffers that you have heard in your municipality that were not a part of this survey.

Responses are organized into basic categories, with some consolidation of similar ideas. 34 responses.

Category	**Response**
Agenda-driven	Increased buffer regulation is a slippery-slope toward state rather than local control of town destiny.
	Some have talked about balancing the rights of the property owners vs. the public interest in resource protection, but I don't think it is as prevalent here as in other less liberal parts of the State.
	Buffer issues generate us vs. them attitudes (i.e., property rights vs. resource protection).
	Buffers are unnecessary. Some distrust science and think that buffers don't matter.
	Buffers are perceived as a taking / Buffers limit landowner rights.
	Buffers are valuable and necessary to protect the environment/natural resources and infrastructure.

	People love buffers.
Municipal process	The nibbling away at the edges - i.e., homeowners that return for ZBA adjustments multiple times
	The number of and the varying setbacks of the buffers.
	Existing homes should be grandfathered from any buffer ordinance changes that are stricter. Perception of unfairness - i.e., “my neighbor was able to do it...”
Size of buffer	Difference of opinion re: appropriate size
	Resistance to enacting buffer regulations based on wetland functions and values.
	Additional buffers for unique wetland features like cedar swamps and vernal pools.
	All wetlands are treated the same, regardless of benefit to public or environment.
	Arbitrary buffer widths determined through political process (what can get passed). Better to define widths based on primary intent for protection (i.e., water quality vs. wildlife would have different widths). Highlight most important wetland function/value and set appropriate width (based on literature). Less-defined regulation for planning, but allows for case-by-case considerations.
Education	New residents moving into existing housing aren’t educated about shoreline protection or buffer regs. People moving in from areas without water resources have no knowledge of buffers.
	My own municipality is doing a poor job of communicating with citizens. I have "heard" very little.
Enforcement	Penalties are not strong enough or enforced when buffers are breached
Other	Right of ways
	Vernal pool issues

None that I know / N/A (8 responses)

Appendix F. Additional Maps for Subwatershed/Community Selection

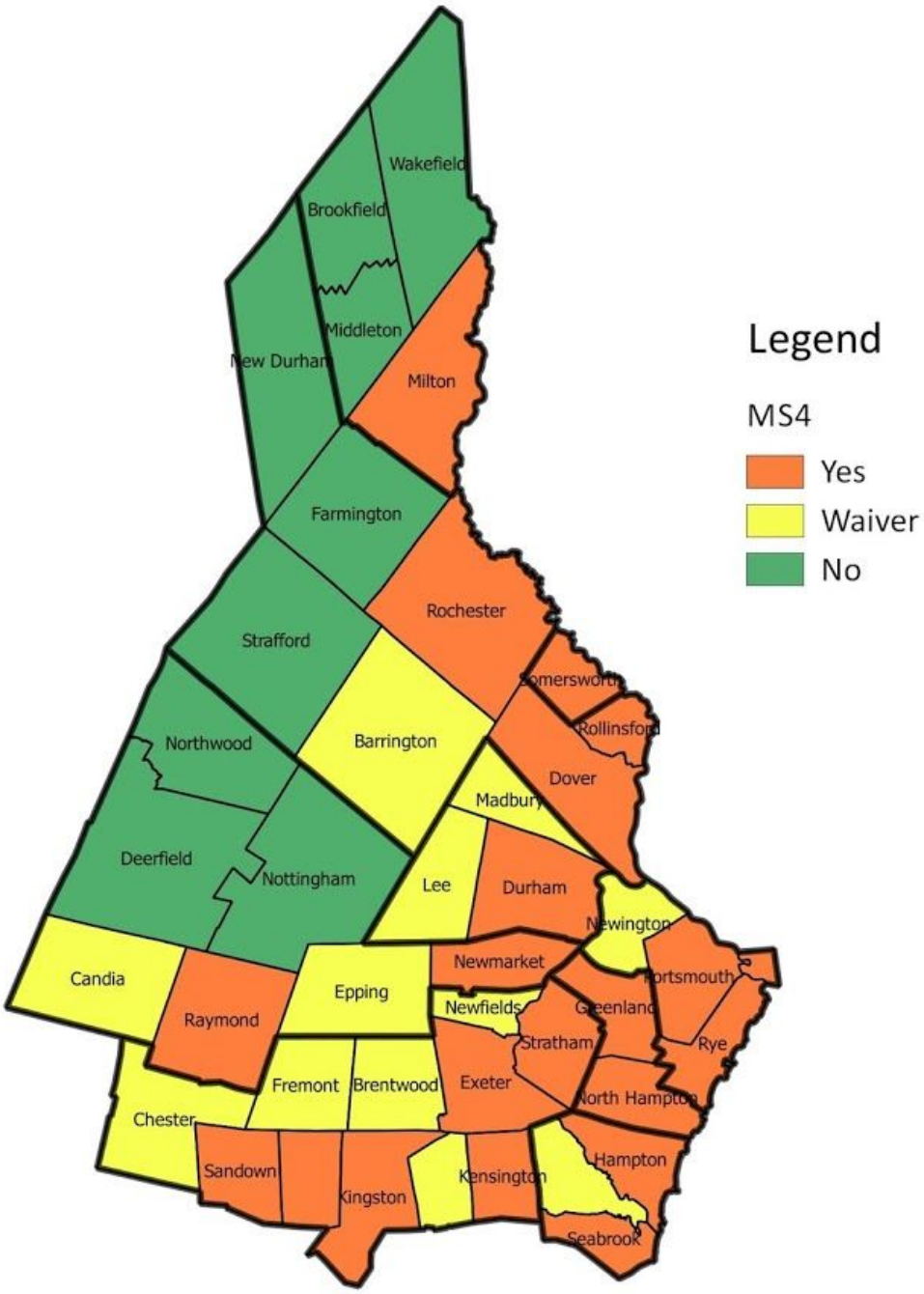


Figure 1. Map of MS4 permit status of Great Bay watershed communities.

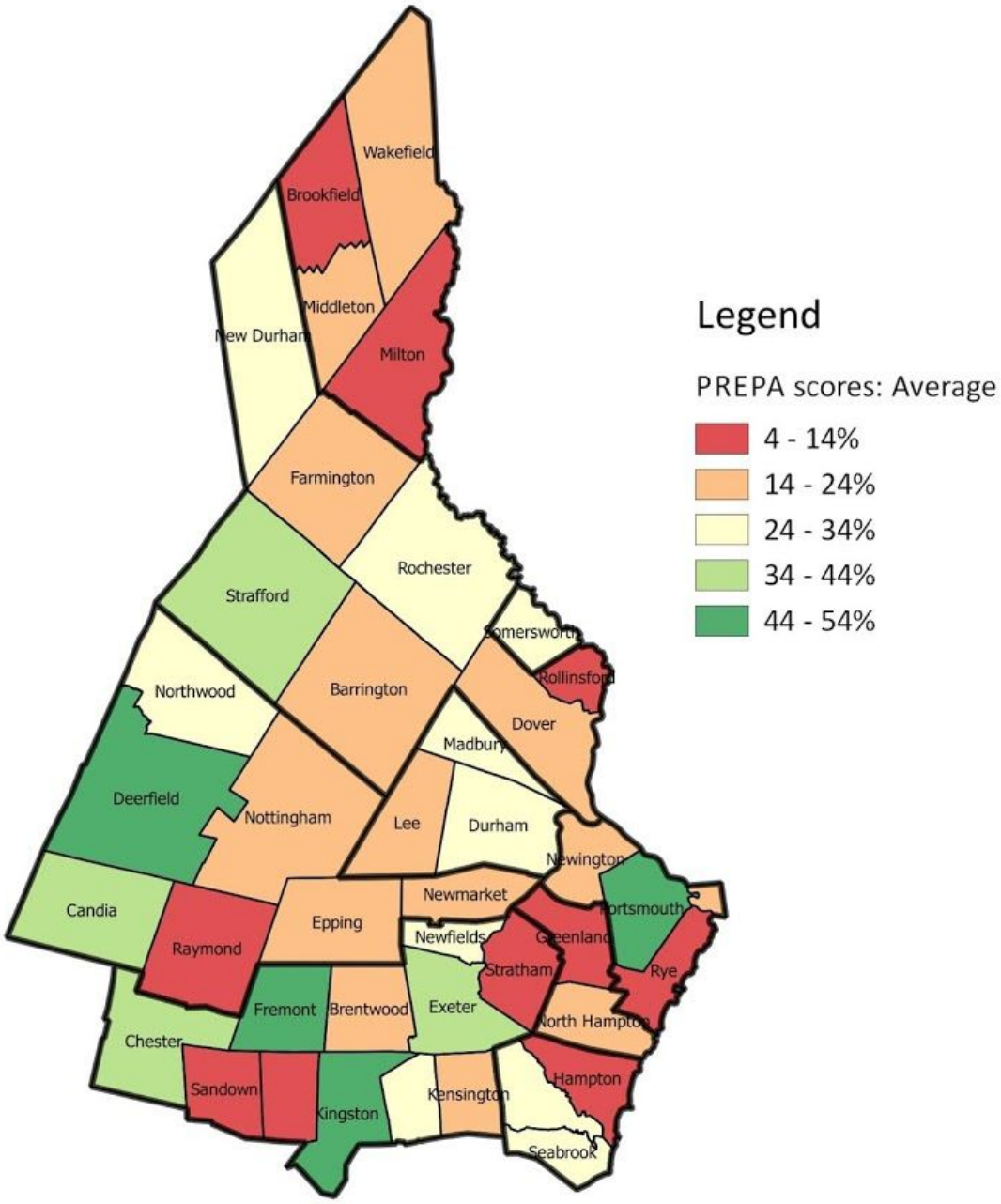


Figure 2. Average PREPA 2015 report card scores for Great Bay watershed communities.

Appendix G. Interview Findings Conceptual Model Narrative & Guidance

Description

Here is a basic conceptual model for factors in buffer action, based on the Buffer Options for the Bay Project's Community Assessment interviews with municipal staff and volunteers, developers, consultants, planners, and other stakeholders. The full Prezi-based conceptual model with additional details can be found here: https://prezi.com/o-xruprh6jrp/. Trust is at the center of our findings, with four main elements along the two major axes that need to be balanced, like a scale or a spinning top: Municipal Context, State Context, Community Members' Values, and Community Members' Knowledge and Awareness. There are also several external factors that can play a role, including: a local water contamination event or history of local pollution problems; science/information; developers; and third parties (e.g., BOB partners).

How can this model be used?

This model provides a framework for understanding our interview findings, as well as a tool for discussing and designing potential interventions to support better buffer management.

- **This model can be used by the Buffer Options for the Bay Project Team partners to have a dialogue around how our individual work can and should fit together; where our strengths and**

weaknesses may be; an impact versus effort comparison of potential actions; and opportunities to focus and coordinate our efforts more efficiently for greater impact.

- **Individual partner organizations may use the model to think about how their efforts contribute to the overall picture and where to focus based on their areas of expertise, capacity, and strength.**

- **The model may be used to identify leverage points and opportunities in specific communities.** For example, if we know that Community A already has a strong culture of valuing water resources, we can probably focus on some of the other components. But if Community B is severely lacking a sense of connection to these resources, that is a critical piece to try to build. If there isn't a strong community awareness of and value for the resources buffers are trying to protect, trying to work on a statewide or municipal buffer policy may not be successfully passed or enforced, so it is important to keep all of these factors in mind prior to and while implementing any particular action.

Guiding questions to walk through the model

If thinking more generally about your work's intersection with buffers:

1. Where does my (or my organization's) strength/expertise/capacity fit into this model?
2. Which areas are gaps in my (or my organization's) particular focus, expertise, or capacity? Do I know other partners who have strengths or capacity to fill these gaps?
3. Do I need to adjust my approach in any way based on this model?

If thinking about approaching buffer-related work in a particular community:

1. What do I know about the municipal context, community members' values, community members' knowledge and awareness, and the municipality's relationship with the state?
2. What do I know about issues of trust in this community? (e.g., certain partners or sources of information that are more trusted than others; trust issues between particular boards; trust of the State government; trust of science; etc.)
3. What else do I need to find out?
4. What areas jump out as potential leverage points or opportunities? Consider comparing a suite of potential actions you could take based on effort vs. impact.
5. Given what I know about this community, how does that affect the approach to working on buffers here? For example, is there one key area that needs work (e.g., building community members' level of knowledge and awareness, before trying to tackle a new municipal ordinance)? Can I anticipate and proactively address any potential roadblocks?

Appendix H. Buffer Ordinance Inventory Summary

The following summary of Great Bay municipalities' buffers is based on a review of each municipality's zoning ordinance. This review was focused specifically on the presence or absence of a vegetated buffer (either a no cut-no disturb buffer or a limited cut/managed buffer, or some sort of combination of the two). Setbacks (e.g., for structures or septic systems) are not included. Wetland and shoreland buffers are distinguished, since they often (though not always) are treated separately in municipal zoning ordinances.

Note: This inventory has not been verified with communities, and just represents a "snapshot" of the municipal ordinances as of December 2016 (based on the most recent version of the ordinance found online). In addition, the widths of each community's buffer vary, as well as what the buffers apply to (see the full inventory table for more detail).

In general, there seems to be much more consistency between the Maine municipalities' ordinances in relation to buffers; the buffer widths and language are often very similar if not the same. There is much greater variability between the New Hampshire municipalities' buffers.

	New Hampshire (42)		**Maine (10)**	
	WETLANDS	SHORELAND	WETLANDS	SHORELAND
No Cut-No Disturb Buffer	15	13	-	-
Limited Cut / Managed Buffer	13	13	8	2
No Buffer	11	11	-	-
Combination (vegetated + limited)	3	2	2	8
Just references SWQPA	0	3	-	-

Here is the breakout by subwatershed:

Subwatershed *(includes ME and NH municipalities)*	**No Cut-No Disturb Buffer**	**Limited Cut / Managed Buffer**	**No Buffer**	**Combination (no-cut + limited cut)**	**Just references SWQPA**
	WL / SL*	WL / SL	WL / SL	WL / SL	WL / SL
Cocheco	4 / 3	3 / 2	0 / 2	-	-
Exeter-Squamscott	6 / 5	3 / 2	2 / 4	-	-
Hampton-Seabrook	1 / 1	2 / 2	-	-	-
Lamprey	3 / 3	0 / 0	4 / 2	-	0 / 2
Oyster-Bellamy	1 / 1	2 / 3	1 / 0	-	-
Salmon Falls	0 / 0	9 / 5	3 / 1	1 / 6	1
Winnicut	1 / 1	0 / 0	1 / 1	-	-
Coastal	0 / 0	3 / 2	0 / 1	3 / 3	-

*WL / SL = Wetland / Shoreland

WETLANDS

	No Cut-No Disturb Buffer	Limited Cut / Managed Buffer	No Vegetated Buffer	Combination of No Cut-No Disturb and Limited Cut / Managed Buffer
NH	Brentwood Deerfield Exeter Greenland Hampton Falls Kensington New Durham Newfields Newmarket Northwood Rochester Rollinsford Sandown Strafford Stratham	Barrington Chester Dover Durham Farmington Fremont Hampton Kingston Milton New Castle Rye Seabrook Somersworth	Brookfield Candia Danville East Kingston Epping Lee Middleton North Hampton Nottingham Raymond Wakefield	Madbury Newington Portsmouth
ME		Acton Berwick Eliot Lebanon North Berwick Sanford Wells York		Kittery South Berwick

SHORELAND

	No Cut-No Disturb Buffer	Limited Cut / Managed Buffer	No Vegetated Buffer	Combination of No Cut-No Disturb and Limited Cut / Managed Buffer
NH	Brentwood Candia Deerfield Exeter Farmington Greenland Hampton Falls Kingston New Durham Newfields Northwood Rochester	Chester Dover Durham Fremont Hampton Lee Middleton Milton New Castle Rye Seabrook Somersworth	Barrington Brookfield Danville East Kingston Epping Kensington Newington North Hampton Nottingham Rollinsford Sandown	Madbury Portsmouth

	Stratham	Strafford	*Communities that just reference SWQPA*:* Newmarket Raymond Wakefield	
ME		Acton Berwick Eliot Kittery Lebanon North Berwick Sanford South Berwick		Wells York

*SWQPA = Shoreland Water Quality Protection Act

Appendix I. Opportunities For BOB Team To Use These Findings

Policy (NHDES)

- Consider interviewees' perspectives about policy options, what works and what doesn't, and what the challenges are – especially around a statewide buffer.
- Consider policy options that incentivize buffers and/or provide flexibility.
- Provide outreach to potential applicants about application requirements and process.
- Involve developers, consultants, and other stakeholders in discussions about buffer policy.
- Identify opportunities to streamline the permitting process.
- Ensure that communities feel supported by the State to enforce their own regulations; address any potential conflicts or issues of overlap between municipal and state regulations
- Allocate more resources to State oversight and enforcement. Review permit denial rates, violation rates, and enforcement rates, and identify opportunities for improvement. Consider opportunities to support municipal enforcement capacity as well.

Land Conservation (TNC, GBNERR)

- Focus land acquisition on buffer areas and support buffer restoration projects.
- Consider these findings in outreach and communication efforts to municipalities and other stakeholders (e.g., some communities feel they already have 'enough' conservation land, so maybe they don't need buffers). Collaborate with partners to coordinate messaging and prioritize efforts.
- Build awareness about the economics of open space and stewardship best management practices.
- Make sure municipalities and landowners are aware of conservation opportunities.

Municipal Training/Outreach (GBNERR, PREP, Stormwater Center)

- Use these findings to design outreach/education efforts to address communities' needs.
- Recruit local buffer leaders and recognize champions.
- Use the inventory of municipalities' buffer ordinances to determine where to focus efforts, and to point towards "progressive" communities as examples.
- Link buffers to the human health/welfare benefits as well as the environmental benefits, and work with communities to determine how protective they want to be.
- Develop a buffer outreach plan with strategies, deadlines, and town-specific approaches.
- Make sure communities are aware of existing resources and technical assistance providers (e.g., regional planning commissions can provide GIS capacity).
- Engage developers, consultants, and other stakeholders in buffer-related outreach and projects.
- Address capacity gaps and challenges identified by interviewees (e.g., legal questions, enforcement).
- Start with communities' values, and show connections between buffers and protecting those values (see suggestions on page 2).

Research (Stormwater Center, Clark University, GBNERR, UNH)

- Integrate the ecological, economic, and social science to answer buffer-related questions.

- Determine whether and how to address information and product needs expressed by interviewees.

Communication (all)

- Consider these findings when communicating with stakeholders about buffers (and other natural resource management issues) (e.g., base buffer-related messaging around communities' values).
- Address challenges with communicating science (e.g., range of buffer width recommendations creates a sense of uncertainty).
- Consider whether and how to address the product needs identified by interviewees.