

## DURHAM CLIMATE ADAPTATION MASTER PLAN CHAPTER

### Public Input Sessions: 10/21/2021 and 10/27/2021 – Compiled Notes

#### PARTICIPANTS

- Anita Mathur (resident)
- Barbara Dill (planning board)
- Carden Welsh (Council, conservation commission)
- Carol Prescott (resident)
- Cat Ashcraft (UNH/resident)
- Cathy Fletcher (Sustainability Fellow)
- Charlotte Hitchcock (Heritage Commission)
- Chuck Hotchkiss (town council)
- Deborah Alberts (Great Bay Stewards)
- Ellie Lonske (Planning Board and Energy Committee)
- Greg Lund (resident)
- John Carroll (ag, land stewardship)
- Julie Bobyock (UNH – Environmental Science Major)
- Katharine Duderstadt (resident/UNH faculty)
- Liz Durfee (resident)
- Mike Drooker (parks and rec, land stewardship)
- Peter Wolfe (resident)
- Robin Mower (resident)
- Sally Needell (Town Council, land stewardship)
- Stan Reczek (library trustee)
- Theresa Walker (ag)
- Todd Selig (town administrator)
- Tom Brightman (land stewardship coordinator)

#### OVERARCHING COMMENTS

- Improve agricultural inclusion (see Theresa and Ag Commission comments/email)
- Septic discussion should be improved (2/3 of the town is on septic) (Theresa may have some data/resources on this)
- Carden: In the discussion some of the language moved into alarmist language (hot days, thousands of people flooding the hospital). Need to be aware of this and tone it down a bit. When writing about CC, don't seem hysterical or alarmist, but be realistic.
- Robin: Useful to have coordination from Conservation/Agriculture/Energy committee and Planning Board. Planning needs to be informed by experts. Could be included as a goal?
- Robin: Move background info of narrative to a supplemental document (like energy, ag, and natural resources chapters) and focus on what we can do about it. Cross reference with other chapters that give more information on things.
- Robin: Todd's quote of purpose of climate change chapter. If it's about risks of flooding it narrows the focus of the climate chapter rather than the broader scope we've taken. Maybe a new quote from Todd with a broader focus?
- Todd: Chuck mentioned this earlier but can we somewhere (in one of the appropriate goals) include the Town's interest/efforts at evaluating community power aggregation (NH Community Power Coalition) to provide a higher percentage of green electricity to Durham households and businesses at an affordable rate as the default electric provider?
- Stan – overarching questions/comments:
  - Highlighting critical enablers; if not highlighted at some point the rest of the plan isn't going to happen; enablers are related in part to the barriers that would frustrate the plan from being implemented (economic/financial, political, cultural, magnitude of disruptions that we face)
  - Plan does not acknowledge that we're going to get this done by doing x, y, z – need to acknowledge enhanced need for advocacy and funding
  - On the one hand, I really like the plan – it's well done; but, I don't come away with a sense of urgency; without a sense of urgency, I fear that this will continue to run through the typical planning process that takes decades; need timeframes and urgency

- Should we address barriers that would frustrate the plans that are laid out here?
- Kathy: Thinking in the long term, but there is urgency associated with it
  - Lots of nitpicky things to say about the science, but appreciate that this is going from zero to 100, so getting this out is important
  - What happens next? How often is it revised?
  - You need to get it out fast or it will need to be revised with new scenarios and projections when the new IPCC AR6 is published. This could delay things for much longer.
- Mike: Durham utilizes the products of the most emitting activities; what can we do about that? Not just the emission of the greenhouse gases, but other activities that we do engage in just because of the way we live

## BUILT INFRASTRUCTURE – Goal #1: Accomplish objectives set forth in the Global Covenant of Mayors agreement

1	Support actions set forth in the University’s Climate Action Plan (WildCAP 2021), particularly those where the Town is listed as a partner <ul style="list-style-type: none"><li>• Robin: what is the climate action plan for UNH? We need to know what it is.</li><li>• Michael: Review WildCAP2021 to decide if actions should be directly brought into the implementation plan.</li><li>• <a href="https://www.unh.edu/sustainability/operations/air-climate">https://www.unh.edu/sustainability/operations/air-climate</a></li></ul>
2	Amend land use regulations and policies to increase the use of electric vehicle technology (i.e., revise parking regulations to require that a percentage of spaces be electric vehicle ready, create a fee structure that would allow for the Town to purchase additional charging stations for public use, etc.) <ul style="list-style-type: none"><li>• Peter: Land use amended not just EV (wetland, shoreline zoning) solar – much broader to include climate.</li><li>• Robin: Define electric vehicle ready, need to encourage it but we’re talking about EV charging stations. Fee Structure: NH requires state level legislation for things, is this one Durham can actually do?</li><li>• Mike – distribution system of renewable is going to be different; needs to be redundant; need to accept this fact and pay for this to build up the infrastructure</li></ul>
3	Increase number of local destinations connected by sidewalks, safe bike routes, and accessible public transportation <ul style="list-style-type: none"><li>• Kathy – include safe transit for electric scooters and motorized skateboards. Wonderful for reducing cars. (But currently treacherous to pedestrians and not very safe on the roads)</li></ul>
4	Increase the frequency, dependability, and use of public transit <ul style="list-style-type: none"><li>• Robin: public transit is primarily UNH based. How does this filter through to the non-UNH community? Seems more relevant to a non-Durham community rather than Durham’s residents. Take a look at the non-UNH Durham community’s public transit needs.</li></ul>
5	Review the zoning ordinance to ensure it does not place unnecessary restrictions or barriers on residential/small business renewable energy installations and identify opportunities to encourage these types of installations <ul style="list-style-type: none"><li>• Todd – need to acknowledge tremendous conversation around aesthetics re: solar and preserving rural gateways; balance preserving one set of goals while pursuing another</li></ul>
6	Implement emission reduction strategies set forth in the Town’s Carbon and Nitrogen Inventory (i.e., transition the municipal fleet to hybrid-electric vehicles and exercise the buy-out options for the Town’s solar power purchase agreements)
7	Revise criteria in the Guidelines for Acquiring Legal Interest in Conservation/Open Space Land document to include carbon sequestration and air pollution reduction <ul style="list-style-type: none"><li>• Deb: Does that mean the town will accept donations for tax free?</li><li>• Michael: If someone donates an easement it would decrease taxes.</li><li>• Deb: Undeveloped land near Bunker Creek that would be a carbon sink that they want to conserve. Town should consider small pieces. This area offers wildlife opportunities.</li><li>• Carol: Education support to make residents more aware of sequestration. <b>Oyster farming and other farming activities.</b></li><li>• Carden: We get proposals to buy/take over someone’s land. We need to look for land that has the best environmental uses. If we pull carbon sequestration (basically, leave the trees) in as a sole virtue, we need a broad criteria such as all env. Benefits. Not just carbon.</li></ul>
8	Identify ways to begin shifting from natural gas to electric energy powered by renewable sources <ul style="list-style-type: none"><li>• Carden: We’re shifting from coal as well as natural gas and this should be reflected.</li><li>• Chuck – energy committee has joined the energy power coalition of NH</li></ul>
9	Explore additional options to increase the use of renewable energy sources by residents and business owners in Durham

- Peter: Promote. Make stronger.
- Robin: In this list as well as others, there is encouraging non-municipal people which is really tricky....how does the town (government and boards) do that? Energy district/PACE would be perfect for this point. We might want to be explicit about working with other municipalities about this.
- Kathy – seems that Town owns a lot of property; best place to start could be to put solar panels on all the schools and municipal buildings
  - Todd – solar panels on ice rink, library, police station, and gravel pit in Lee; power generated from Lee fully offsets electric load for all other municipally owned infrastructure (except for the WWTP)

#### OTHER FEEDBACK

- Peter: New action: Investigate amendments to community power agreements and include micro-grids.
- Michael: Solar ordinance is under review by the City Council. Struggle balancing free standing installations with scenic views. The Town has found a balance.
- Cat: Connections between goals (e.g., goals 2, 3, and 4). Conversation with connecting with EV parking with other transportation related actions. Should not be operating in a silo. Helps to meet equity goals to make sure we are being inclusive.
- John: **Included farmland as infrastructure needs to be introduced.** Land that can produce food can be considered infrastructure.
- Sally: Some things Durham is already doing. Low hanging fruit: recycling/composting IMAC (integrated management advisory committee) committee? Water barrel for residents. More active role in educating residents.
- Robin: Overall, ideas sounds great but might be impossible for towns in NH. They sound too inspirational. Todd: There are **free** structures we can provide but should look into collaborations and grants. Coordination with other master plans needs to be considered.
- Stan: Is there opportunity to address increase energy efficiency and storm resiliency through building codes? Is there value to be more specific about identifying how/mechanism for addressing these things
- Barbara: Has the Durham energy committee been contacted? They don't seem to be included here. (Todd: Yes, involved in steering committee.)
- Mike: Use of the word carbon bothers me; people generally refer to carbon when they mean greenhouse gases

## BUILT INFRASTRUCTURE – Goal #2: Increase resilience of the built environment

1	Ensure that capital improvement projects (i.e., drainage system improvements, street reconstruction, culvert/bridge design, water/sewer pipe replacement, etc.) are evaluated for climate impacts, using the NH Coastal Flood Risk Summary, Part II: Guidance for Using Scientific Projects (2020, and as updated)
2	Evaluate options to reduce impacts from sea-level rise and storm surge flooding to sections of roadway on Back River Road and Cedar Point Road
3	<p>Prioritize culverts identified in the C-RiSe Assessment and the NH Tidal Crossing Project for more immediate replacement/resizing schedules in the capital improvements program to mitigate future flooding</p> <ul style="list-style-type: none"><li>• John: More emphasis on culverts. Many culverts need work. Expense on public works. Storms and SLR. Vital roads for connectivity. Significant attention needs to be paid. Fosters article of results from First Street Foundation – insurance for properties. Study in New England and NH. SRPC needs to give this more attention. Risk to those property owners.<ul style="list-style-type: none"><li>○ FYI from Lisa: Note recent experience from a Newmarket resident re: First Street data discrepancies.</li></ul></li></ul>
4	<p>Encourage NHDOT to use the NH Coastal Flood Risk Summary, Part II: Guidance for Using Scientific Projections when designing future road/bridge improvement projects along Route 4 in areas vulnerable to projected sea level rise and storm surge</p> <ul style="list-style-type: none"><li>• Nathalie: NHDOT may actually be required to do this per state law (double check)</li></ul>
5	<p>Research and promote the use of pavement materials that are more resilient to climate impacts, including extreme heat, groundwater rise, increased freeze/thaw cycles, and more extreme precipitation</p> <ul style="list-style-type: none"><li>• Peter: Site plan regulations to require impervious surfaces to help deal with stormwater runoff.</li><li>• Kathy: Also need to consider heat flux in terms of heat island effects; seems like there are more and more parking lots that will impact heat</li></ul>
6	Evaluate adaptation options to address vulnerable infrastructure identified in the C-RiSe Assessment, including sewer and water pipes, the lift station near Beards Creek, and Beards Creek dam
7	<p>Conduct an update to the sea level rise scenarios and floodplain analysis on the tidal portion of the Oyster River (this assumes the Mill Pond Dam is removed)</p> <ul style="list-style-type: none"><li>• Deb: Question about silt coming down river if the dam was removed? If there will be more projects for living shorelines. Will revisit in the natural and working lands section. If neighborhoods wanted to create their own living shorelines, would there be an advisory committee that could help with that.<ul style="list-style-type: none"><li>○ Lisa: Resource that might be helpful on that front: landowner technical assistance program could provide opportunities (<a href="https://seagrant.unh.edu/LTAP">https://seagrant.unh.edu/LTAP</a>) – new project starting now will translate that to a neighborhood approach.</li></ul></li><li>• Sally: (page 25 – no longer accurate) – what if the dam stays in place? Drought and SLR. Removal and restoration with updated information.</li><li>• Kathy – this analysis should be done assuming that all dams will be removed in the future</li></ul>
8	<p>Investigate the feasibility of a stormwater utility program</p> <ul style="list-style-type: none"><li>• Carden: Was this mentioned in the chapter? It’s a good idea but should be talked about in the actual chapter.</li><li>• Robin: State-enabled program, no municipality in the state has implemented it and it’s fraught with political issues, requires regional partnerships and political will.</li></ul>
9	<p>Provide green infrastructure bonds or incentives for green infrastructure developments that may encourage developers to go beyond minimum design requirements</p> <ul style="list-style-type: none"><li>• Todd: Can you explain what green bonds are? And whether the Town wants to take the risk? Suggest changing this to “explore” or “investigate” whether green infrastructure bonds are right for Durham</li><li>• Cat: Has there been any discussion revising minimum design requirements?</li></ul>

- Cat: Where it makes sense to update town documents (conservation criteria, local land use regulations)
- Robin: Can we actually do anything since there's not state legislation? Todd suggested a change of language to "investigate feasibility of..."

#### OTHER FEEDBACK

- Michael: Reach out to April and Rich from public works to get their thoughts.
- Greg: Has UNH developed a study on impervious coverage vs. forested areas? Lots of pavement. Salt use. Look at impervious coverage datasets.
- Liz: Stormwater management on private property. Improve drainage on residential lands. Outreach and engagement are needed. Existing development.
- Carol: Coastal flood risk, groundwater (saline intrusion) rise an issue even with drought.
- Peter: Zoning changes to the shoreline protection district and wetlands overlay district. Reference line. Do not take any consideration SLR.
- Tom: Aboveground electrical infrastructure needs to be reviewed. To improve the Town's resiliency to icing and other hazards – bury utilities. Commercial core requires utilities to be buried to be downtown. Expanding to other areas would need a feasibility study.
- Robin: Encourage/support wording.... what does this mean? How do we encourage DOT to do this? It's not an actionable goal. Treat the language to make it more action-based.
- Theresa: Ag and food production is not addressed in a way that is proactive work plan. More in the suggestions she will email to us.
- Mike: if a place has flooded once, it's going to flood again; since we haven't come up with a way to prevent flooding from happening again, we do know where the flooding takes place; we should retreat, not put our infrastructure in floodplain areas and come up with an incremental/acceptable retreat from flood zones; everything else is just trying to hold the tide back
  - Kathy: Yes! Agree about looking ahead and redesigning our community on a large landscape scale.

### BUILT INFRASTRUCTURE – Goal #3: Improve local hazard mitigation and emergency operations planning

- 1 Ensure that evacuation plans are completed in coordination with surrounding towns and agencies in the coastal region to implement timely and comprehensive planning and notification for coastal storm events; routes should be reviewed periodically to evaluate risk and consider long-term planning efforts.
  - Sally: Identify isolated properties from flooding. Where those properties are.
- 2 Include public transportation network vulnerabilities in evacuation planning
- 3 Mark evacuation routes with signage and communicate routes to the public
  - Todd – Durham is not within the nuclear evacuation zone, so the Town doesn't have permanent evacuation route signs; will evaluate post routes as appropriate; don't necessarily post them ahead of time because the issue may change when time (e.g., roads may be closed due to flooding); move up and combine with #1 and say "as appropriate"
- 4 Use scenario planning (i.e., traffic demand model) to determine how potential infrastructure failures at certain points in the network would affect emergency response and evacuation processes
  - Robin: Rte 155A/Mast Rd was not mentioned as vulnerable in the chapter but packers falls road floods (oyster river spot) so should be mentioned.
- 5 Investigate opportunities to share costs, at the regional level, of infrastructure resilience improvements that benefits multiple communities or agencies
- 6 Update the Town's Hazard Mitigation plan to include a co-occurrence map showing natural disasters and extreme events and the compounding effects on the community, environment, and infrastructure
- 7 Identify opportunities to improve emergency communications between the Town and residents
  - Robin: Need to identify gaps as well as improve communications.
- 8 Increase awareness of municipal resources available to support residents sheltering in place during storms
  - Cat: Not just during storms events – other hazards too
  - Robin: Be specific about elderly large apartment buildings.... are those things we should be looking at in more detail?

#### OTHER FEEDBACK

- Michael: Reach out to fire and police departments to get their input.
- Liz: Capacity at shelters. What would happen if we had to shelter again in place during a large-scale pandemic? How people get there if they don't have transportation. How do we accommodate people in a large gathering?
- Cat: What are the kinds of hazards that we want to be prepared for.
- Cat: Connections between how the transportation networks are connected?
- Anita: Are these goals being inclusive with the school district? Need to coordinate with the school district on these types of actions.
- Carol: Question: wildfires out west. Risk assessment for wildfires?
- John: Connectivity dependent. Madbury, Dover, Newmarket. No jurisdiction outside Town, identify areas in surrounding Towns related to flooding that would disrupt large transportation corridors. Evacuation routes and supply chains.
- Tom: Wildfire in Dover. Nuclear plant? What is the risk? Look to RPC for data on nuclear plant.
- Kathy: Human part of emergency response is also really critical; do we have enough emergency volunteers? Do we have a network? In Natick, MA – I knew who to contact in my neighborhood Lisa: This may be an intersecting goal with community; could signal where goals/actions intersect.
- Stan: There are critical enablers that need to be considered if any of this is going to happen; they are currently scattered throughout; earlier we referenced green bonds, here we mention need to collaborate with communities; is there a way to pull out and highlight enablers? Funding, collaborators, etc. Kathy: Yes! Agree!

**NATURAL & WORKING LANDS – Goal #4: Protect wildlife habitat and manage natural resources**

1	<p>Protect critical grassland habitat from development and implement management plans to conserve grassland habitats on Town-owned lands</p> <ul style="list-style-type: none"> <li>• Peter: Zoning changes to take place</li> </ul>
2	<p>Conserve and restore corridors between habitat blocks to facilitate wildlife movement, and minimize future loss or fragmentation of habitats</p> <ul style="list-style-type: none"> <li>• Deb: Barrington changed pathways with trail systems in Stonehouse Forest to protect wildlife movement. Durham could do the same thing on some of their properties.</li> <li>• Carol: Question #2 private properties with conserving wildlife corridors. Education to homeowners. Action is more focused on larger tracts of land for land protection. Using GIS data from new mapping.</li> </ul>
3	<p>Protect areas identified in the sea-level marsh migrating model (SLAMM) as opportunities for salt marsh migration and where possible, remove physical barriers to salt marsh migration</p> <ul style="list-style-type: none"> <li>• Sally: Salt marsh migration if the dam was removed. Get “take action for wildlife conservation cohort” to get back together? Should conservation commission be given authority to provide input on shoreline protection and wildlife corridor areas (not just wetlands).</li> </ul>
4	<p>In suitable areas, install living shorelines along the coastal banks to prevent erosion and stabilize the shoreline</p> <ul style="list-style-type: none"> <li>• Carden: in more extreme SLR scenarios, are living shorelines even worth doing? Will massive changes mean living shorelines will even survive?</li> </ul>
5	<p>Revise criteria in the Guidelines for Acquiring Legal Interest in Conservation/Open Space Land document to include flood storage</p> <ul style="list-style-type: none"> <li>• Lisa: Streamline with other actions related to these guidelines</li> </ul>
6	<p>Improve the condition of stream crossings that have restricted aquatic organism passage</p> <ul style="list-style-type: none"> <li>• Tom: Joint prioritization using AOP. How you would prioritize those culverts for repair and upgrades.</li> <li>• Sally: Culverts and stream crossing</li> <li>• Nathalie: This is another action where it may make sense to note the co-benefits of tidal crossing replacement (i.e., improve resilience of built infrastructure, restore tidal hydrology, improve aquatic organism passage) – there is a tidal crossing replacement action under a previous goal</li> </ul>
7	<p>Assess the feasibility of establishing permanent conservation status on publicly owned, but not currently permanently protection lands, so their integrity and ability to provide ecosystem services remains unchanged</p> <ul style="list-style-type: none"> <li>• Peter: Zoning for solar arrays needs to change</li> <li>• Robin: Wagon hill farm is challenging example because some would have liked to see it put in conservation. Obtaining funding by keeping it out? How do we approach putting</li> <li>• Todd: Peter Smith felt that we should wait to use Wagon Hill as a match against a broad grant opportunity=using an easement. Other concern: creating conservation can limit use of the property. It depends on what the uses are and what the language of the easement is, but there’s not development rights.</li> <li>• To summarize: Robin: We need a list of the town-owned lands that are publicly owned but not protected at this point.</li> </ul>
8	<p>Identify areas suitable for solar arrays and areas to avoid, such as sensitive wildlife habitat</p>
9	<p>Consider minimum density requirements, especially in areas such as mixed-use zones to encourage development patterns that minimize impacts on open space and important natural resources</p> <ul style="list-style-type: none"> <li>• Peter: Density requirements residential areas in downtown high 40K, need to reduce to 20K. Allow for more open space and increase housing options.</li> <li>• Sally: Definition of open space doesn’t mean there are no trees. Clarification for open space, purpose, and goals.</li> <li>• Carden: Broaden the goal, consider minimum density requirements and additional zoning changes.</li> </ul>



- Robin: Very complex goal...does this also mean to consider extending town water and sewer that have more acreage/building and septic needs? When changing zoning, this needs to be considered.
- Kathy: Don't understand minimum density requirement; don't we want to encourage high density?
- Todd: I think the intent is to encourage high density in small areas in order to preserve natural resources elsewhere
- Barbara: Wording problem may be "consider minimum density requirements" which is not the intent of the action
- Chuck: Need to consider minimum density requirements in order to achieve the goals that Todd talked about
- Mike: Dark side to urbanization/cluster zoning; misleading because the footprint of the urban area is much larger than the visible area; the footprint extends where the waste is being disposed and where the utilities are sources/delivered; densification isn't necessarily a desirable goal; prime example is NYC which owns Delaware county NY and has a police department to keep people out of it

#### OTHER FEEDBACK

- Deb: Durham is doing a good job with drinking water, stormwater, etc. Being a leader.
- Deb: More emphasis on salt marshes as a source of carbon sequestration.
- John: Solar and agriculture can work well together. Animal grazing. Farming and solar arrays on the same land. Official conservation commission representative on the PB.
- Peter: Conservation commission makes recommendations to PB on projects, does not give their voice much authority. PB doesn't pay enough attention to conservation commission. How can that be changed? Locally, given them more authority.
- Carden: Could we order the goals in the most important to least important?
- Theresa: Elevate food production and food security within the chapter!
- Theresa (for Ag Committee): problem with this section, ag is mentioned but no discussion is included in the section. Ag can only be maintained through future ag activity. This section: ag should have same level of discussion as natural lands and climate change impacts. Wildlife and ag habitat need to be integrated. Identify ag lands that will be vulnerable to SLR and reference them in the chapter. Where are we going to get 15% of our food? We need to talk about conserving farmland but ALSO about growing food. --- more is discussed in the email Theresa will send.
- Mike – wildlife habitat is human habitat also

## NATURAL & WORKING LANDS – Goal #5 Improve resilience to invasive species

- 1** Implement strategies from the Town’s Integrated Pest Management Approach and continue to improve, adapt, and respond to invasive plant management
  - Todd: Expand on Town’s integrated pest management approach; most people (including Todd ☺) are probably not familiar with what this is
- 2** Identify land/property management goals and use prevention, early detection, and rapid response to reduce the impacts of invasive plants on Town-owned land
- 3** Conduct education, including workshops, and outreach efforts that increase invasive plant awareness among the public, volunteers, and the Town staff.
  - Robin: This is a very useful goal because people don’t know what to do with invasives.
  - Kathy: Yes on education! I have no idea what to look for regarding invasive species...and what to do if I find them on our own property.
- 4** Continue to survey, map, and monitor current and potential invasive plants and select control methods (i.e., cultural, mechanical, or chemical) based on science and current technology to eradicate the known invasive species and reduce the environmental impacts they cause
  - Carden: Change wording to respond to (or other wording) instead of eradicate species because it’s impossible to eradicate them.

### OTHER FEEDBACK

- Michael: The conservation commission has been looking into pest management with UNH cooperative extension. Natural sources as the best option. Chemical treatment works well if implemented using best management practices. Need more education on that.
- Michael: Continue to manage invasive plants on Town-owned properties.
- Greg: Is there any talk with UNH about glossy buckthorn forest on Foss Farm? Clear cut several years ago. Coordination more with UNH is needed on their lands. More holistic approach.
- Tom: Biggest issue is the funding and finding people to do the work. Developing funding mechanism or proactively using existing resources to reduce the shortfall. Education to landowners.
- Peter: Wanted to hire consultant to remove – wouldn’t do it. Training needed?
- John: Use of animals to help eradicate invasives along fencing (goats). Examples throughout the US. Sheep to graze under power lines. Needs to be managed.
- Sally: Timber harvest at Doe Farm before they were devastated (reduced damage). Red Pine scale was the issue (6 months to a year). Restore land in anticipation of the change. Anticipating impacts from different species? Beetles fungus? How to manage? Being able to head off. What can be learned? What species will be more resilient.
- Tom: Hemlock wooly adelgid is going to be a major problem. Manage for resiliency as opposed to managing for what is there. More diverse.
- Nathalie: I think I would be careful with how you use the term “resilience” throughout, particularly in how this goal is phrased – perhaps a better word is “control and prevent/eradicate invasive species and known environmental impacts...”

## NATURAL & WORKING LANDS – Goal #6 Ensure the long-term sustainability of the Town’s working lands

- 1 Use sustainable forest management practices on Town-owned forests and incorporate climate into forest management plans
  - Michael: Lower case “t” for community not government
  - Stan: Trees, shrubs that we now have as native species are not preservable; finding the environment progressively less friendly for them; how do we appropriately acknowledge the potentially significant changes and how do we proactively manage that? It may be that we don’t preserve native vegetation (might be wasted effort); more than forests, also includes trees planted downtown; not a good plan to plant trees that may not survive in the long term; need to appreciate the magnitude of the changes that may be coming and actions should reflect that
- 2 Reduce point- and nonpoint sources of pollution from roads, agricultural fields, and residential and commercial development to maintain healthy, resilient ecosystems
  - Theresa and Robin: Impervious surface, stormwater, and UNH are a big deal in the built environment. Need to coordinate with them here.
  - Nathalie: There could be a nexus here with protecting water quality for Durham’s oyster aquaculture (which could be considered working waters)
- 3 Work with private landowners to support conservation of undeveloped lands for long-term sustainability
  - Robin: We need to coordinate with UNH on this!
- 4 Conduct education and outreach to raise awareness about the effects of climate change on working and natural lands
- 5 Incorporate climate adaptation and mitigation benefits into criteria for prioritizing future land conservation
  - Lisa: Need to streamline with other recommendations about land conservation.
  - Chuck: This sounds similar to an action under an earlier goal; may be potential to combine/streamline

### OTHER FEEDBACK

- Deb: How to inform residents on risk of SLR? Mailing out information directly to homeowners to educate them on risk and how to mitigate their risk. Septic system risk.
- Cat: Discussion of septic system? Expansion of sewer? How does that fit into this chapter?
- Tom: More in-depth definition of sustainable forest management (wildlife, economic).
- John: Community gardens at meadows and wagon hill. Potential of large food production beyond what is developed. Town owned even though it is managed by citizens. Wagon hill could increase 100% meadows can be magnified 10x. Both are on Town owned land. Enormous potential.
- Sally: Intent for farming at other locations. Identify those locations?
- Theresa: Ag is seen as source of pollution. Not denying that but it’s seen in a negative tone. Working lands includes food production...more in the notes she will send but to summarize: Elevate food production and improve tone of articulate language in goals and the chapter.
- Carden: Septic systems: something we’re going to have to deal with (goal seven maybe)
- Theresa: Drinking water systems and UNH—are an asset in terms of research and knowledge and USDA climate hub is housed at UNH. We have so many resources right on campus relating to everything we’re talking about today. Include UNH as an asset in the chapter.
- Robin: How do we define working lands? **Follow up with Robin on how it’s defined in the chapter and where it is.**
- Stan: Support Mike’s earlier comment re: using greenhouse gases vs carbon; methane becomes the issue when it comes to agricultural activities and is many times more damaging to the environment than carbon

## COMMUNITY – Goal #7 Ensure the Town’s local economy and social capital is resilient to a changing future

- 1** Consider creating a new position within the Planning Department that would be responsible for all resilience and adaptation efforts

  - Anita: The school has their own sustainability report/strategic plan. <https://orcsd.org/common/pages/DisplayFile.aspx?itemId=16701204> Pages 20-82. I think it would be great to get the town to work with the school district on goals that overlap.
  - Lisa: Maybe an opportunity to coordinate with school district on a new joint position?
  - Anita: There is also a video presentation of the ORCSD sustainability report here – it starts at about 1:26:35 <https://www.youtube.com/watch?v=ASVuZPcyXc4>
  - Peter: #1 not going to happen for a new position. Suggest partnering with UNH part-time position. May not make economic sense.
  - Robin: Highly unlikely for a town this size.
  - Carden: This is superfluous and potentially harmful because all the people in the town should be aware of climate change, there shouldn’t be one specific person planning for climate change, everyone should be doing this. It’s not a worthy cost for the town.
  - Nathalie – could this position sit in Todd’s office to oversee coordination among all departments? Similar to model of housing these types of positions in the Governor’s office at the state level or in mayor’s offices of major cities
  - Todd – add mitigation and education of other departments
- 2** Prepare for an increase in climate migration (i.e., support additional municipal services and affordable housing stock, ensure future development is guided out of vulnerable areas, plan to be a welcoming community for newcomers)

  - Peter: Durham doesn’t want workforce housing. Need more.
  - Robin: Climate induced HUMAN migration.
  - Mike: Highly support; as we speak there are people risking their lives to escape where they are living that has become unlivable; must be taken into account
  - Chuck: A lot of migration for political or economic reasons also has roots in climate issues.
  - Kathy: Change “climate migrants” to “demographic change” (the populations along with Seacoast will increase and diversify from Boston to Portland regardless of climate)
- 3** Develop loan programs to assist local businesses in implementing climate adaptation measures and emergency preparedness planning

  - Carden: We’re not going to give loans to people.
  - Todd: Change to investigate/evaluate possible loan programs.
- 4** Support local businesses to assess supply chain impacts and vulnerabilities and identify strategies to improve resilience

  - Robin: How do we begin to do this? Suggest eliminating this one.
  - Carden: Agree with robin. Business owners know their own supply chain better than we can.
  - Todd: I simply question the extent to which we’ll be able to meaningfully impact global supply chains on a local level.
- 5** Improve social resilience by increasing social capital and civic engagement and by reducing socioeconomic vulnerabilities

  - Deb: Can you clarify?
  - Lisa: Ability of individuals to be able to adapt. About reducing underlying stressors. Economic challenges.
  - Robin: Sounds appropriate for a larger town or city than Durham. A resilient community based on social capital will fare better in climate disasters. There needs to at least be some clarification.

	<ul style="list-style-type: none"> <li>• Carden: Do we need the equity language so much? This is Durham’s plan for climate change, stick to climate change and Durham, and stay away from too much discussion on stuff that sounds good but isn’t really about climate change. 34% of people are poor? No way. That’s from the college people, not people who live in a ghetto factory by the river. It’s college students going to college in regular fashion.</li> <li>• Theresa: Climate change has unequal impacts on populations and privileged people don’t usually see these impacts.</li> <li>• Todd: We DO have small welfare case load, elderly populations, some people who need assistance and food for their kids. It’s not a large section but they need to be included in climate change planning and we need to be consider them in this planning.</li> <li>• Kathy: This one seems extremely broad and wonderful; could be its own goal with many other subgoals underneath it</li> </ul>
6	<p>Support student/youth engagement in climate action and municipal decision making</p> <ul style="list-style-type: none"> <li>• Robin: What audience is this? Our decisions today will impact them tomorrow... so who is the exact audience and how would we do that?</li> <li>• Stan: So important to engage younger generation; highly support this one</li> <li>• Kathy: Young people have very different values and aspirations as well and need to be at the table.</li> </ul>
7	<p>Expand compact, mixed-use developments in the downtown to extend walkability and areas for unplanned social interaction</p> <ul style="list-style-type: none"> <li>• Robin: Where could we do this?</li> <li>• Theresa: Weirdly specific goal compared to the other ones.</li> <li>• Reevaluate this goal.</li> </ul>
8	<p>Determine which populations are highly dependent on certain transportation infrastructure (roads, public transportation, etc.) to address how disruptions in the system will affect their safety and well-being</p> <ul style="list-style-type: none"> <li>• Robin: house rich, cash poor older folks who don’t have access to public transportation...should this be considered in this chapter?</li> </ul>
<p><b>OTHER FEEDBACK</b></p> <ul style="list-style-type: none"> <li>• Cat: There appears to be a gap in addressing issues with septic.</li> <li>• Charlotte: Dovetails with septic issue. More attention needs to be paid to ensuring the recharge of stormwater for new development before discharging into a waterbody. Need to emphasis LID.</li> <li>• Deb: Rain gardens are good strategies to incorporate into new developments.</li> <li>• Charlotte: Archaeological sites along the shoreline. Not publicly known. SLR is likely to cover them up. Need to protect heritage.</li> <li>• John: Opportunity to discuss food security. Central valley of great plains, Midwest, California, Mexico. Very distant. Dealing with wildfire and drought. insecure situation. More recognition. New England can produce more food. Too heavy dependance of loss of transport activity (rail and truck). Immediate region. Cannot assume those connections will be there in the future. Regional effort. Weakest part of the chapter. Great concern. Migration of people from other places elsewhere in the country.</li> <li>• Sally: Elevation of flood areas for construction of new development? Increases to regulations? New data is available.</li> <li>• Carol: Agricultural capabilities at UNH. Greenhouses and other alternative options. Extend growing season. Use longer warming days.</li> <li>• Theresa: The word equity comes into play here. Equity inclusion/diversity language needs to be included in this section!</li> <li>• Todd: Cedar Point Road is a marginal area and might have some challenges in the next 50 years...need to identify these vulnerable areas in the chapter</li> </ul>	

## COMMUNITY – Goal #8 Improve existing food, public health and safety, and housing conditions

1	Make resources for residents experiencing food insecurity more readily available via the Durham town website <ul style="list-style-type: none"><li>Theresa: but also increase local food production and people able to produce their own food.</li></ul>
2	Consider adopting a local food procurement ordinance <ul style="list-style-type: none"><li>John: More explanation needed. Insight on how that would work. Expand on this action.</li><li>What does this mean? Kyle responded that it might be a “strategy” or “policy” rather than an “ordinance” and Michael concurred.</li><li>Theresa: What does this look like?</li><li>Todd: Change to “evaluate and consider adopting”</li></ul>
3	Incorporate additional trees and native vegetation, while also preserving mature trees, into the downtown landscape and other Town-owned properties to help lower surface and air temperatures by providing shade <ul style="list-style-type: none"><li>Sally: Land use regulations to support street trees. Allow need trees to mature. Challenging to enforce.</li><li>Stan: Flag comment from earlier to make sure tree species that are planted are suitable and can withstand projected changes</li><li>Todd: Taken on its face, this might lead someone to say that we should not cut a tree anywhere, ever, no matter what; I think we’re trying to say that we should be cognizant of where trees are important and play a role; need to be cognizant that much of Durham is protected/conserved; need to find a way to marry housing stock/affordable housing with trees in a balanced way</li><li>Stan: Can reliably say that there are going to be significant changes; we may not be able to preserve mature trees; recommend using more nuanced language to indicate that we may need to invest in preserving new species (not mature species)</li><li>Kathy: Trees make a really big difference in terms of heat...not only from shading but also because they cause mechanical turbulence mixing warm air up and cool air from aloft down to the surface.</li></ul>
4	Provide information about vectors and vector-borne diseases to the public, offer tips on how residents can protect themselves with a focus on children <ul style="list-style-type: none"><li>Tom: Focus on residents with other pre-existing health conditions</li><li>Robin: we should be doing this now. So is that part of a goal for climate adaptation? Clarification on what is meant and included here.</li></ul>
5	Provide education and outreach to ensure that residents are made aware of emergency resources the Town provides, including temporary shelters during large scale disasters and warming/cooling shelters during times of extreme temperatures
6	Identify buildings in greatest need of weatherization services and support households to access these services <ul style="list-style-type: none"><li>Robin: What buildings? Municipal? How do you encourage the private sector to take steps that help the entire community?</li></ul>
7	Encourage the use of energy efficiency/renewable energy/weatherization products and services by raising awareness of available financing/rebate options <ul style="list-style-type: none"><li>Barbara: Exclamation point! This should happen before putting solar panels on your house; what do the words renewable energy mean here? Might take it out; confuses the notion of weatherizing first; people need help accessing available resources</li><li>Kathy: Agree about separating weatherization.</li></ul>
8	Explore creative ways to encourage and promote affordable housing options (i.e., requiring that for new developments of a certain size, a percentage of the rental units must remain at the HUD rental rate, allowing multiple accessory dwelling units on a single lot in some zoning districts, etc.) <ul style="list-style-type: none"><li>Carden: We’ve been trying to wrestle with this for a long time and it’s extremely difficult with the students and it’s hard to keep them out of it. Is this climate adaptation related?</li><li>Theresa: Wording is a catchall for all other ills. To lump it in this section seems quirky.</li><li>Robin: Human migration and population growth needs to be considered in this section.</li></ul>

9	<ul style="list-style-type: none"> <li>This goal needs to be re-evaluated.</li> </ul> <p>Support legislative changes needed to amend flood disclosure laws to mandate that real estate transactions disclosure past and potential flooding vulnerabilities</p> <ul style="list-style-type: none"> <li>Deb: If the Town wanted to support these efforts, to partner with SELT, TNC, and Great Bay waterkeeper to build off their existing networks to get the word out to increase grass roots.</li> <li>Robin: Run by state reps makes sense because we need them to take action. Is this a reachable goal?</li> </ul>
<p>OTHER FEEDBACK</p> <ul style="list-style-type: none"> <li>Carden: 1 and 2—aren't really related to climate adaptation and it's something we should do NOW. Why are they thrown into a climate MP chapter if they are things we want to do now. It waters down the message.</li> <li>Cat: There seem to be strong connections between many of these subpoints and previous goals. You might consider which of these points fit best here or should be moved to other sections</li> <li>Deb: Great Bay Stewards have signs ("Tide Turner") for residents that cut back on lawn fertilizer, service septic, native plants, fish or bird monitor, scoop the poop, lend a hand. Durham could reuse this model to create community awareness. <a href="https://greatbaystewards.org/programs/tide-turners/">https://greatbaystewards.org/programs/tide-turners/</a></li> <li>Peter: Thinks it's wonderful. Approved projects for landscaping. But there is not good follow up with enforcement. Performance bond for a year after certificate of occupancy is issued. May need more time for trees to become more mature.</li> <li>Sally: Appreciated the level of detail and background information. Very impressed.</li> <li>John: Trees have a great capacity to absorb and treat stormwater. Reducing flooding. Storage capacity.</li> <li>Tom: Is there a <b>TDR</b>? Natural resources well written.</li> <li>John: Population diversity. Federal grants for refugee housing. Spread more widely. Food security needs more focus.</li> <li>Nathalie: If not already referenced, the recent Mitigation Saves Report provides compelling findings and potential savings for adopting the latest codes and designing above minimum standards (probably fits better under building resilience of built infrastructure)</li> <li>Kathy: Keep supporting and promoting the wonderful food programs through the Oyster River Schools.</li> <li>Kathy: Is there anything about reducing waste? Beyond recycling and composting, using less</li> </ul>	