

Summary: Task Force Feedback on the Draft Vulnerability Assessment Framework

Key

BLACK TEXT = Task Force member feedback

BLUE TEXT = Project Team's response

- I think the section on flooding and sea level rise is very thorough regarding coastal impacts, but it probably needs some wording to show that inland flooding is also a future concern, notably along riverways. Maybe just re-wording a bullet or two to notate that maps will also show projected flooding from properties and infrastructure along rivers and other inland bodies of water. For the assessment itself, the need to highlight vulnerability of structures along inland waterways really jumps out to me. The increased risk of erosion and landslides (like what happened in Westbrook's segment of the Presumpscot a couple years back) can potentially impact an entire region of communities, and I believe these assessments should reflect that.
- *The vulnerability assessment will include both coastal and inland flooding. There is limited geospatial data regarding the location of future inland flooding associated with sea level rise. We plan to use flood projections and geospatial data from FEMA and First Street Foundation Risk Factor to examine inland flooding. We will supplement that with information about precipitation and flooding trends and projections from state climate resources. While we might not be able to develop maps showing the location and severity of inland flooding, or inland areas at risk of erosion and landslides, associated with future climate change, we can present information about those hazards and impacts in narrative form.*
- In flooding and sea level rise, under economic impact, you list the Maine Dept. of Marine Resources and Bureau of Parks and Lands as information sources. It might be worthwhile to try using local chambers of commerce as information sources as well, for the communities that have one.
- *Knowledge and input from the Task Force and community members via public engagement will be incorporated in the vulnerability assessment so that we are better able to capture and address all three elements of vulnerability. Engaging local chambers is a great idea.*
- Some of the bullets in the framework mention the social and public impacts of certain climate hazards. I'm wondering if you're planning on having a chapter describing the socially vulnerable groups that will be disproportionately impacted (people of color, elderly, cost-burdened, etc.), or if you're planning on discussing social vulnerabilities within each chapter? If you do have a social vulnerability chapter, I want to suggest a chapter specifically on households burdened by housing costs, and how that affects a family's adaptive capacity to climate impacts. For example, roughly 43% of renters in Biddeford are considered cost-burdened, meaning at least 1/3 of their monthly income goes to housing costs.
- *As of now, we are envisioning that the overall plan's structure will be organized by sectors/'buckets' (e.g., buildings and energy; land use and transportation; health, safety, and wellbeing, etc.) and will address the topics of vulnerability, mitigation, and adaptation across each section. All of the sections*

are interrelated, and we will try to capture those connections in the plan content. Social vulnerability considerations will be touched upon in each section.

- I'm wondering if you were planning on discussing mental health impacts in the public health section? I believe One Climate Future's vulnerability assessment has a section discussing the toll of climate change on individuals' mental health, but it is a pretty small and unspecific part of their report.
- *This will be included in the section on health, safety and wellbeing and will be based on existing information that we can find and input gathered via community engagement efforts.*
- The introduction of the framework also says that qualitative information will be provided by each community's task force. Is SMPDC planning on hosting community vulnerability workshops for the towns in the cohort? If they are, what role will each town's task force have in that?
- *The current scope of work includes four workshops per community that will be structured around the sectors/buckets proposed for structuring the CAP. During the workshops, as well as Task Force meetings, there will be opportunities for the Task Force and community members to provide input on the vulnerability assessment (e.g. areas, populations, or infrastructure of concern regarding specific hazards and impacts, adaptive capacity information, etc.). The Task Force will assist the project team with the design and implementation of the workshops.*
- While some data about adaptive capacity and sensitivity better lends itself to qualitative assessment methods, I think there are also meaningful opportunities to utilize existing quantitative data and metrics to assess these aspects as well. Ideally a combination of qualitative and quantitative approaches will be used to achieve both breadth and depth in the vulnerability assessment. Combinations of quantitative data from the most recent census can be used as proxy data to create a composite index that can be overlaid with data about hazard exposure to spatially visualize where most vulnerable populations are concentrated.
 - For example, most sensitive populations might be identified through a combination of age and income data, with people living below the poverty level, young children (below age 5), and elderly adults (age 65 or older) living alone most likely to be affected by flood/extreme heat events.
 - For example, populations with least adaptive capacity might be identified through a combination of data about income level, proportion of persons of color, educational attainment, and level of linguistic isolation, with people living below the poverty level, with low educational level, low English reading/speaking skills likely to have the least adaptive capacity.
 - Other data that could be used in indices for sensitivity / adaptive capacity (as examples): Percent of occupied households with no vehicle ownership; Percent of population living with mental/physical disability; Percent of households with air conditioning; Public transit access; Access to internet; Asthma hospitalization rates; Proportion of housing units that are renter-occupied; Proportion of housing units that are mobile housing; Unemployment rate.

- *These are great suggestions and this type of geospatial, demographic data, as well as information from the Maine Social Vulnerability Index (SVI), will be used in combination with geospatial data about climate hazards to better understand the impacts of those hazards in relation to social information. The Vulnerability Assessment Framework has been updated to specifically note some of the demographic data and indicators that will be used by the project team to represent social vulnerability and get at aspects of adaptive capacity. The Maine SVI is a percentile ranking of vulnerability based on 17 socioeconomic and demographic factors (household income, educational attainment, race, ethnicity, age, no vehicle, employment status, etc.), calculated by census block group. The SVI relies on 2010 census data, so it is not necessarily reflective of current conditions. The project team proposes to use 2020 census data in combination with the SVI to generate maps and other information about where the most vulnerable populations are located, as well as community-wide considerations of social vulnerability. It is important to note that the smallest unit of geography of the SVI and census data is the block group level, which is not necessarily at the resolution or scale necessary for assessing or understanding local (e.g., neighborhood) level vulnerabilities. Local knowledge and input from the Task Force and community members will help to provide finer resolution and more detailed information regarding social vulnerabilities to climate change.*

- While I know that the project doesn't have unlimited funds with which to conduct additional data gathering, I wonder if it might be possible/desirable to include at least a limited number of targeted questions within the quantitative surveys that will be distributed in our communities to gather additional proxy data/indicators related to exposure, sensitivity, and adaptive capacity that were not otherwise available in existing datasets. The questions to be included could potentially be iteratively generated after conducting other qualitative public engagement activities (e.g. workshops, vision boards, etc.) to determine what aspects of climate change people in our communities are most concerned about. As an example: a question about access to air conditioning within homes, access to air conditioned spaces, proximity to cooling centers, etc. could provide valuable insight about vulnerability to extreme heat.

- *Yes, we can definitely talk about including survey questions that are designed to fill gaps and/or supplement more general data regarding adaptive capacity, exposure, and sensitivity.*

- Within the community workshops and other outreach activities in each community, it would be important for qualitative data gathered to address some additional areas, such as: data to identify and prioritize critical assets and community resources and services at risk due to climate impacts (e.g. childcare, healthcare, senior housing/care, etc.) – this could potentially utilize some sort of participatory mapping exercises; identification of and description of hazards and impacts important to the community that may not have been included in the list of hazards already included in the assessment; constraints and barriers to adaptation at the household or individual level; resources most needed to enable adaptation at the household or individual level.

- *We are beginning the process of planning the content and structure of the community workshops. Incorporating participatory mapping is a great approach to gather the 'supplemental' qualitative data that we'll need in order to more fully understand, assess, and think through each dimension of vulnerability in each community. During upcoming task force meetings and separate correspondence, we can talk more about how we structure the participatory mapping and what specific questions/information we want people to weigh in on. There also could be opportunities to do some less formal participatory mapping outside of the community workshops (e.g. a map of hazards/impacts posted in a public place like the library with sticky notes and markers for people to share their thoughts and concerns). We can talk more about those, if of interest to the Task Force.*

- Has SMPDC considered using the EPA's EJScreen, which is an environmental justices screening and mapping tool, as supplementary information to be included in the vulnerability assessment? This might be important to help address issues of equity within vulnerability assessment and climate action planning. Similarly, the EPA's Vulnerability Self Assessment Tool might be useful for assessing risk to drinking and wastewater systems: <https://vsat.epa.gov/vsat/>.
- *Yes, we considered using several national level climate vulnerability tools, including EPA EJScreen, CDC Social Vulnerability Index, and the Council on Environmental Quality Climate and Economic Justice Screening Tool. The challenge with those tools is that they are national in scope, can be difficult to interpret, and present information at the census block or tract level. Additionally, in some cases, only the Census Designated Place (CDP) area of a community is included in the tool's assessment, rather than the entire community. We will likely pull some information from those tools and supplement that with some more local information, like the Maine Social Vulnerability Index, 2020 census data, and local knowledge.*
- Will data on air quality be included within the hazards to be assessed – for example, particulate matter, ozone, pollen – for example using metrics such as average number of days exceeding air quality standards for ozone and particulate matter?
- *Yes, we will use publicly available data to summarize historical data and trends. We can certainly look at metrics like what you've suggested.*
- Will a map of combined multi-hazard exposure be produced?
- *Yes! The content of the map will be based on what geospatial data is accessible for hazards.*
- Will data about loss of sand beaches be included/evaluated to help determine economic impacts?
- *Yes, SMPDC recently completed a study for portions of coastal York County that addressed this topic. We will draw from that study and also from state resources, including the Maine Climate Council assessment regarding economic impacts of loss of sandy beaches and the Maine Geological Survey's shoreline change data.*