Amplifying Voices: Engaging Diverse Populations in the Maine Climate Plan Update

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A Report by the University of Maine

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Partners

A Climate to Thrive (ACTT)

Aroostook County Action Program (ACAP)

Center for an Ecology-Based Economy (CEBE)

Coastal Enterprises Inc. (CEI)

Community Organizing Alliance (COA)

Community Sustainable Energy Team[12]

Governor's Cabinet on Aging

Island Institute

Kennebec Valley Community Action Program (KVCAP)

Maine Climate Action NOW! (MCAN!)

Maine Conservation Alliance (MCA)

Maine Council on Aging (MCOA)

Maine Multicultural Center

Maine Environmental Education Association (MEEA)

Maine People's Alliance

PassivhausMAINE

Resilient Communities L3C

Sunrise County Economic Council (SCEC)

UMaine Center on Aging

WindowDressers

York Ready for Climate Action

[12] *A team coordinated by Dr. Klein and Dr. Noblet's research team, which meets monthly to make progress on joint research goals and actions related to sustainable energy. Includes representatives from Eastport, Millinocket, Lincoln, Patten, Trescott Township, and Van Buren*

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Executive Summary

Maine's second 4-year climate action plan, *Maine Won't Wait 2024*, aims to produce actionable strategies and goals that align with the needs of priority populations across the state. This report describes a series of engagements with priority populations[13] to understand their preferences and awareness related to multiple aspects of the in-progress climate plan update process (Fig. 1). "Tribal communities" were originally on the list of priority populations. However, in consultation with Wabanaki leaders and Wabanaki scholars, it was deemed inappropriate for them to be listed this way among other priority populations due to their distinct history and status. Wabanaki leaders expressed a strong preference for government-to-government dialogue that respects tribal sovereignty, which aligns with the recommendations of the 2024 Annual Report of the Permanent Commission on the Status of Racial, Indigenous and Tribal Populations. Therefore, this report intentionally does not contain information about the climate planning concerns and goals of Wabanaki Nations because our Wabanaki partners expressed a clear preference for direct communication between the State and Wabanaki tribal government leadership (Tribal Council members, Chiefs) about that topic.

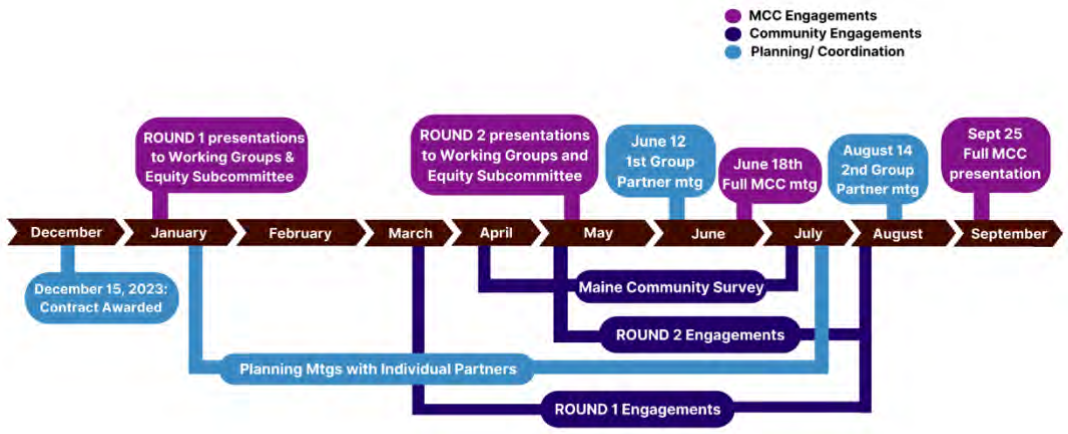

Figure 1. Project Timeline, December 2023 to September 2024

[13] *Priority populations as suggested by GOPIF in the request for proposals for this work: Low income households, including renters, home owners, and mobile home residents; Older adults and youth ; Black or POC communities; Low income communities; Disadvantaged communities; People with limited English proficiency, including New Mainers; Recipients of LIHEAP, LIAP, or other energy assistance benefits; People with mobility challenges; People without access to reliable transportation; Migrant farm workers and other outdoor workers; Businesses in the natural resource industries like agriculture, forestry, and fishing who are operating at the economic margin or suffer disproportionate climate risk; Un/underemployed people who are also representatives of a priority population or are transitioning from prison or recovery; Minority, women-owned or veteran owned business enterprises; Rural communities and small towns with limited staff or fiscal capacity; Climate-frontline communities*

Key Takeaways

The full report includes detailed information about the approach, timeline, and findings with multiple appendices of even more detailed information, much of which is organized by MCC Working Group-specific topics and recommendations to match the overall framing of the work. In brief, this project involved 69 community engagements in 23 communities led by the Mitchell Center team and its partners (pp. iii-iv), two group conversations with community partners, iterative discussions with Wabanaki partners, and a statewide Maine Community Alternative Energy Survey (568 respondents). The following **Key Takeaways** emerged as top priorities across multiple working group topic areas:

1. Procedural equity in state climate planning needs to be improved.

The MCC has made great strides towards equity in its planning, from forming the first Equity Subcommittee to issuing the request for proposals for this project and funding members of priority populations to serve as MCC working group members. These are first steps in an iterative long-term process of centering equity in Maine's climate planning. Procedural equity requires not only listening to priority populations but ensuring they have access and power in decision-making processes. Planning must allocate enough time and resources to build relationships with people from priority populations (see Key Takeaway #2 below), meet them where they are at, and learn how to support them in positions of decision-making power in this space. This means that the next *Maine Won't Wait* revision process must also begin earlier, to provide adequate time for relationship building and meaningful contributions from priority populations. In fact, multiple partners and participants agreed that **for these issues to truly be at the center of climate planning, the 2028 climate plan update process must begin now**.

2. Authentic engagement requires relationship-building and time.

Building on Key Takeaway #1, to achieve procedural equity, relationships and trust have to be built and maintained over time. Community partners are crucial to meeting priority populations where they are at. While the timeline for priority population engagement in this project may not have been ideal for providing as much meaningful influence on working group recommendations as many partners and participants would have liked, it has laid much groundwork for building and maintaining relationships going forward to help the next iteration of the climate plan include meaningful participation with decision-making power by

priority populations and Wabanaki Nations. There is also an opportunity for the *implementation* of this 2024 climate plan update to include actions that prioritize building and fostering relationships and trust over time that help prioritize procedural equity.

3. Poverty considerations must be a CENTRAL focus of climate planning, not a box to be checked or an add-on.

Poverty considerations need to be integrated into and at the forefront of each climate plan strategy, action, and process from the start. High energy costs and high upfront costs for energy-reducing options (e.g., renewable energy, energy efficient appliances, etc.) remain a major barrier for low-income households and many other priority populations. For many, basic needs (e.g., food, shelter, jobs) are not being met, and the connection between energy/climate solutions and meeting basic needs is not clear. As relationships with community organizations and priority populations are strengthened, iterative discussions between the State and these entities over time should focus on how to ensure poverty is centered in climate planning going forward - how to design the next update process and how to implement the current update in a way that centers poverty concerns.

4. Public transportation needs to be prioritized over electric passenger vehicles.

Priority population feedback consistently pointed to the need for more accessible and more convenient public transportation. Although the Transportation working group's "reduce vehicle miles traveled" recommendation includes public transportation, participants felt the topic was hidden and should be more of a central focus of the climate plan. Whereas most priority population participants identified public transportation and safer biking & walking as their primary transportation concerns, they felt the climate plan was putting more of an emphasis on advancing electric passenger vehicles than their priorities.

> "Offering financial incentives to purchase an electric vehicle is a challenging way to address the climate change challenge. Poor community members struggle to make ends meet, so taking out a loan for an electric car that costs several thousand dollars isn't the best option. Electronic public transportation is the most equitable way to combat climate change and lessen mental health issues in places as some people are already experiencing hardship. Giving away free electric automobiles is another option, but that is not likely to happen."
>
> *- BIPOC, youth respondent to the Community Organizing Alliance survey (7/25/24)*

5. More education about climate change is needed, particularly to make complex information more accessible and to train local leaders to understand the Maine Climate Council working group recommendations.

Education must be culturally sensitive, community driven, empowering, and meet people where they are (particularly in rural areas). Many communities have never talked about these issues in the context of climate change. Supporting this need for education, participants expressed a desire for clearer guidance on navigating the complexities of energy-related decisions. This sentiment points to the critical role that **energy navigators** could play in providing tailored, accessible information to community members, helping them understand the benefits and challenges of adopting renewable energy solutions.

> "Where do we go for information? Who do we talk to? Who can we count on for facts?"
> - *Sunrise County Economic Council Focus Group Participant (7/12/2024)*

6. A poverty-centered funding and capacity-building plan is needed to guarantee that the strategies and actions outlined in the Maine Climate Council working group recommendations benefit the most vulnerable.

Many members of priority populations expressed challenges with accessing funding assistance or understanding funding programs related to alternative heating options. Multiple participants noted that even with funding, many individuals and communities do not have the capacity to pay attention to the opportunities much less figure out where to start and how to proceed, underscoring again the need for **navigators** to help people and communities through the process from start to finish. In addition, communities need support to build long-term capacity in energy solutions and climate adaptation broadly but also in specific areas. For example, participants noted that there is a shortage of code enforcement officers, especially in rural areas and

> "Rebates and incentive programs are awesome! I'd love to have access to more information, like breakdowns of the difference between energy cost and consumption would be most impacted by transitioning to clean energy. I'm very interested in supplementing with solar panels, but it seems potentially difficult and cost prohibitive. Also, information about what solutions are available in my area."
> *- Aroostook County Action Program survey response (7/23/24)*

expressed interest in the state funding LD 1929, which created a licensing system for contractors, but does not include funding provisions.

Recommended Cross-Cutting Strategies

The following **Cross-Cutting Strategies** emerged as top priorities across multiple priority populations, working groups, and engagements (linked to Key Takeaways discussed in more detail above):

1. Elevate priority populations' needs within the Maine Climate Council (MCC) recommendation and action hierarchy (Key Takeaway #3: Centering Poverty)
2. Work directly with the leaders (Chiefs and Tribal Councils) of tribal governments in each of the four Wabanaki Nations to develop a process for each nation to engage in state climate planning in a way that is equitable, meaningful and salient for all parties (Key Takeaway #1: Procedural Equity)
3. Strengthen the language of "equitable" program and project goals to state that funding and benefits must prioritize low-income and disadvantaged populations (Key Takeaway #6: Funding and Capacity Building)
4. Strongly invest in long-lasting education, outreach and communication channels, including energy and climate navigators who are trained to assist communities and their individual members (Key Takeaway #5: Education).
5. Develop metrics to track funding and capacity needs to ensure that the strategies recommended by the Maine Climate Council are implemented equitably (Key Takeaway #6: Funding and Capacity Building).
6. Implement the Equity Subcommittee's recommendations on equity metrics, to ensure (1) processes and outcomes *do not* increase burdens on vulnerable groups and (2) proposed benefits *do* accrue to these priority populations (Key Takeaways #3: Centering Poverty)
7. Commit time and resources to including and engaging with diverse populations in the planning and implementation process from the start (years before the plan is needed). Prioritize methods for appropriate engagement and involvement that empower and do not overburden underserved populations (Key Takeaways #1: Procedural Equity and #6: Capacity Building).

8. Integrate planning of climate strategies with affordable housing, public transportation, and other ways of addressing root causes of vulnerability (Key Takeaways #3: Centering Poverty and #4: Public Transport)

Working Group-Specific Takeaways

In addition to these cross-cutting takeaways, engagements revealed multiple themes that specifically relate to the recommendations of the 6 MCC working groups (click on each working group name for a link to the recommendations they submitted to the MCC in June 2024):

Buildings, Infrastructure & Housing and Energy

Many participants expressed concerns about affordable housing and cost of living impacting quality of life - most places do not have enough housing and space for new people coming to Maine. They also expressed concerns about inadequate infrastructure and services, including lack of staffing for code enforcement and planning boards, which are barriers to sustainable growth. Priority populations have limited interest in new construction, compared to high interest in renovating existing buildings.

> "More funding is needed for weatherization, heat pumps, and home repair for people to assist people who need these programs"
>
> *- Older adult participant in a Maine Council on Aging listening session (8/6/24)*

Participants expressed much concern about existing and future high energy costs, which forces difficult choices that impact quality of life. There is a perception that solutions to reduce energy costs are inaccessible due to high installation and operation costs and lack of landlord accountability. There is strong interest in energy efficient solutions like heat pumps, weatherization, and solar for their buildings, coupled with cost concerns, and lack of understanding of how the options work. Participants expressed concern about the safety and practicality of rooftop solar panels in rental housing, underscoring the need for tailored energy solutions, education, and more efficient energy use. They also expressed a strong desire to expand financial assistance and implement community-led energy navigator programs to help residents understand and effectively use energy efficient technologies, especially for older adults.

There is a need for more education about decarbonization and efficient technologies, although these topics are rarely at the forefront of problems experienced by priority populations. There is also a need to prioritize housing

access and hold landlords accountable for achieving energy efficiency targets in rental buildings across the state. There is strong interest in community-based solutions such as community solar, especially those that allow for local ownership and community involvement in small-scale renewable energy projects, recognizing potential opposition including political barriers, particularly in rural towns. There is also strong interest in early and meaningful community involvement, combined with personalized support, to advance equitable access to clean energy across the state.

Transportation

Participants expressed very strong interest in more accessible public transportation (including electric buses and trains broadly, and ferries and barges for island communities), especially in rural areas and for aging populations. Many people expressed they did not feel the current Transportation Working Group recommendations put enough emphasis on improving public transportation compared to encouraging electric passenger vehicles. However, they did express some interest in increased education and funding related to EVs and vastly improved charging infrastructure. At the same time, feedback about EVs was often negative, especially around the cost, convenience, and environmental sustainability. Existing financial incentives were not seen as sufficient to make the switch, especially when people are facing multiple concerns related to basic needs, and people doubted the environmental benefits of EVs. Infrastructure needs to be addressed first; both for charging vehicles but also the electric grid. Alternatives (e.g., plug-in hybrid electric vehicles) may need to be considered as a way to address the lack of sufficient range in existing all-electric vehicles coupled with Maine's large rural areas with little charging infrastructure.

Multiple people expressed inaccuracies in their concerns about EVs, underscoring the need for education; for example: they are not good for the environment because the electricity comes from fossil fuels; they are not available in all-wheel drive; they don't work in the heat or cold; the fire department cannot contain EV fires. While participants identified many challenges associated with electrifying passenger vehicles, electrifying bus fleets was generally more accepted as long as it addresses increasing access to public transportation at the same time. Car culture is deeply ingrained in Maine, yet there is widespread interest in safer roads for biking and walking, improved broadband to support telehealth and remote work, and more integrated transit systems. Multiple respondents recommended looking to European and Scandinavian transportation systems for examples of how to move forward.

GoMaine does not appear to be on the radar for people from priority populations. For the few who have used the service, they appreciate its features like carpool matching, emergency ride home, ease of use, and availability of information. For the few who have thought about using it and didn't, their decisions were based on inconvenience, living outside the service area, and difficulty figuring out the system. Most people just had not heard of the service.

Community Resilience

There is a strong need to address the high cost of living for food, housing, healthcare, and childcare before community resilience to climate change can be achieved. There is strong interest in more economic development and job opportunities in renewable energy and natural resource management, as well as a strong demand for increased education and awareness to make climate-related information more accessible and actionable, alongside greater involvement of diverse individuals from priority populations in policy-planning and decision-making processes. Barriers to participation in policy-planning and decision-making processes were revealed: feelings of disenfranchisement, lack of access to clear and trustworthy information, lack of capacity to commit to this type of involvement. Opportunities to improve resilience include targeted funding initiatives, enhanced education and outreach, and more collaborative and inclusive planning efforts over the long term. More attention is needed on the mental health impacts of climate change, particularly climate anxiety (distress about climate change and its impacts). There is a need for a concerted effort to build trust, increase transparency, and develop new communication strategies that reach a broader audience, ensuring that all communities, especially the most vulnerable, are prepared to face the changing climate landscape.

Natural & Working Lands and Coastal & Marine

There is a need for land use policies that focus on green spaces and land conservation and expanded education and awareness about protected areas, with clear enforceable rules around how and when these areas can be accessed. There is an immediate need for under-resourced, rural communities and climate frontline communities to receive funding and technical assistance for adaptation projects and post-storm rebuilding, including developing reserve funds. Participants are interested in these communities benefiting directly from the state's conservation plan. Non-Wabanaki participants overwhelmingly support the recognition of Wabanaki sovereignty, which would ensure equitable access to traditional territories and means of sustenance.

Local food needs to be more accessible and affordable. Praise for existing programs that try to meet this need, such as Harvest Bucks, was shared. Participants expressed a desire to increase financial and organizational support for training programs and recruitment in natural resource jobs and more accessible outreach about job opportunities. Affordable workforce housing that accounts for the rising cost of home insurance in coastal regions is essential to plans for diversifying industries and the workforce, improving inclusion of underserved and younger families, and therefore building coastal community resilience. Coastal workers are already adapting, but aging populations need immediate assistance in both public and private adaptation efforts. New industry entrants who seek to diversify local industries have to respect the needs of the communities as they engage with existing working waterfront populations.

Materials Management Task Force

People need more education about materials management. Many people are unsure or have not thought about reducing emissions in their own lives; those that have considered this topic are aware of the need for composting and recycling, but do not know how to access those services in their communities or what the best practices would be for them to do these activities themselves. There is an opportunity for more partnerships with businesses and organizations to make waste reduction more accessible. There is a need for increased funding and training programs to address concerns throughout an entire lifecycle; developer, packagers, contractors and builders, businesses and organizations, consumers, transfer station employees. Questions about reduction and capture of methane emissions yielded few responses from priority populations; rather, carbon emissions reductions and recycling of physical waste were considered higher priorities.

The Maine Climate Council has the opportunity to amplify the voices of priority populations in the 2024 climate plan update by integrating this report's key takeaways and themes of interest directly into the updated Strategy language and by recommending the planning for the 2028 climate plan update begin in January of 2025.

1.0 Introduction and Purpose

In 2023, the Governor's Office of Policy Innovation and the Future (GOPIF) received funding from the U.S Environmental Protection Agency (EPA) for additional analysis to support the update of the state's climate action plan, Maine Won't Wait. EPA provided funding to states through the Climate Pollution Reduction Grant (CPRG) program, as part of the Inflation Reduction Act. EPA required states to conduct a low-income and disadvantaged communities benefits analysis, and to describe the approach to identifying low-income and disadvantaged communities, conducting meaningful engagement including communicating with low income and disadvantaged communities about emissions reductions in those areas, and identifying their priorities.
GOPIF selected the Senator George J. Mitchell Center for Sustainability Solutions at the University of Maine to conduct outreach in support of the climate action plan with low-income and disadvantaged communities through a competitive RFP process.

Talking about climate change can be both impactful and difficult. Research demonstrates that the technical language and uncertainty surrounding climate change present unique challenges when communicating about climate options and planning [3,4]. This uncertainty poses additional challenges for people with limited economic and other capacities required for climate mitigation and adaptation actions [5]. When climate change communication highlights information that is important to the audience (salience) and individuals are involved in the development of information to respond to these risks, they are more likely to take action [6,7]. Building from these insights, this work sought to engage people from populations that do not normally engage in climate planning and that are most vulnerable to the impacts of climate change (referred to as "priority populations" (Appendix A)).

This report is one component of a broader state-led equity engagement process aimed at ensuring diverse populations have the opportunity to influence State climate programs and policies by iteratively and intentionally engaging them in the Maine Climate Council process in ways that are meaningful for each population. These findings provide the Maine Climate Council with context regarding how the 2024 MCC working group recommendations are perceived by, and impact, "priority populations." The feedback voiced by priority populations and described in this document can advise the Maine Climate Council during the writing of *Maine Won't Wait* 2024 and beyond. The report can also be used by anyone to learn more about the perceptions, barriers, and decision drivers of priority populations in Maine regarding climate change-related topics.

Engagement Timeline

The Maine Climate Council (MCC) delivered its first 4-year climate action plan (*Maine Won't Wait*) to Governor Mills on December 1, 2020. In September 2020, the Senator George J. Mitchell Center for Sustainability Solutions at the University of Maine (the "Mitchell Center") released an analysis of potential equity outcomes related to the forthcoming plan, and recommended the creation of an Equity Subcommittee (ESC) of the MCC. After two years of deliberations, the ESC released a report with additional recommendations in March 2023. By law, the MCC must deliver an updated climate plan to Governor Mills every four years, and by December 1, 2024.

The 2024 climate planning process began in September 2023. In December 2023, the Governor's Office of Policy Innovation and the Future (GOPIF), which convenes the Maine Climate Council (MCC), contracted the Mitchell Center to engage low-income and disadvantaged communities in the development of the 2024 climate plan (Appendix A). This report communicates the results of that work, led by Dr. Sharon Klein and Dr. Caroline Noblet, Associate Professors in the School of Economics and Faculty Fellows of the Mitchell Center, in collaboration with the co-authors and partners listed at the start of the report.

The Mitchell Center met with each of the six MCC working groups (Buildings, Infrastructure and Housing; Coastal and Marine; Community Resilience; Energy; Natural and Working Lands; Transportation) in January 2024 to discuss equity topics of interest and an initial list of proposed partner organizations to support outreach and engagement (Appendix B). The team used the feedback from the working group members to revise the list of topics they planned to use to guide engagement with the list of "priority populations" included in the original request for proposals (Appendix A) [1] and to develop an engagement plan (Appendix C). The Mitchell Center team sought feedback from ESC leadership in February and incorporated their feedback into the plan.

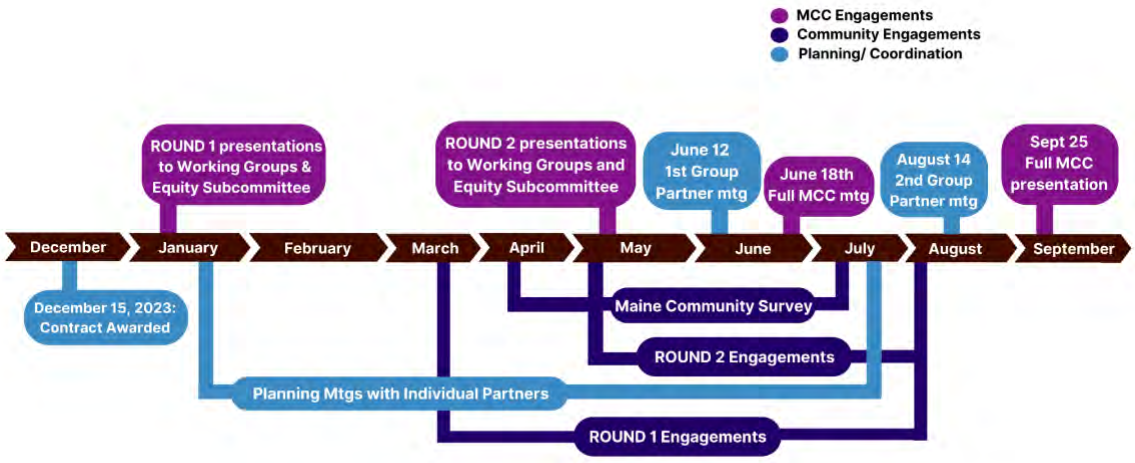

Figure 1.1. Project Timeline, December 2023 to September 2024

From January to May 2024, the Mitchell Center team identified partner organizations with whom to conduct outreach and engagement activities with "priority populations" about working group topics. Partners designed activities to be meaningful and salient to the communities they serve. The Mitchell Center team provided partners with a list of potential discussion questions (Appendix D) to adapt to their needs.

The Mitchell Center team presented the results of this first round of engagements to each MCC working group in April and May (Appendix E1). Partners continued to engage with their target audiences in June to August 2024 in a second round of engagements, which focused on discussions about the initial recommendations each MCC working group presented to the MCC on June 18, 2024. The Mitchell Center team met with their partners three times as a group - once after the first round of engagements (June 12, 2024) and again after the second round of engagements (August 14, 2024) to reflect on their experiences leading and implementing engagements with "priority populations" and to hear their feedback on the process and recommendations for future work like this. They met a third time with the partners and GOPIF staff to discuss next steps beyond this project timeline.

The Mitchell Center team, in collaboration with partners, also developed and launched the Maine Community Alternative Energy in April 2024 (Appendix F). Preliminary results from the survey were shared in April/May presentations to the MCC working groups; though the survey was kept open until July 31, 2024. Survey results are shared in this report. The Mitchell Center team also led 5 in-

person or Zoom engagements (e.g., Figure 1.2) and directly assisted partners with 5 engagements by providing notetakers or facilitators. On September 25, 2024, the Mitchell Center Team presented results to the MCC (Appendix E2). A week before that presentation, the MCC received the Executive Summary of this report.

Figure 1.2. Daylong session at the Maine Sustainability & Water Conference on March 28, 2024.

2.0 Engagement with Wabanaki Nations

The initial request for proposals that guided this work included “tribal communities” in a list of “priority populations” (Appendix A) [1]. Through consultations with Wabanaki partners, it became clear that multiple Wabanaki citizens were not comfortable with approaching Wabanaki citizens in a similar manner to other “priority populations” due to the unique history and status of Wabanaki Nations. Respecting these preferences, the Mitchell Center removed the term “tribal communities” from the list of 16 “priority populations” in its communications about this project and in the results included in this report.

The Mitchell Center team and Wabanaki partners began a series of discussions to identify potential pathways for Wabanaki engagement and whether the Mitchell Center could provide any support. The Mitchell Center team consulted with Wabanaki scholars (PhD student Jasmine Lamb, Dr. Darren Ranco, Dr. Natalie Michelle, and Dr. Anthony Sutton) through multiple meetings and other communications. They also consulted with (former) Penobscot Nation Ambassador Maulian Bryant, the co-chair of the MCC MCC Equity

Subcommittee. The Mitchell Center team, Wabanaki scholars, and Ambassador Bryant identified three key themes (Appendix G) in these iterative conversations:

- Recognize Wabanaki tribal sovereignty in Maine climate planning.
- Follow an appropriate Government-to-Government process.
- Demonstrate a meaningful commitment to listening and respecting traditional ecological knowledge, in compliance with appropriate data sovereignty guidelines.

These engagement preferences align with the ESC's original report [8] and recommendations in the 2024 Annual Report of the Permanent Commission on the Status of Racial, Indigenous and Tribal Populations [9]. A State-Tribal Collaboration between the State of Maine and all five Wabanaki governments is articulated in the Maine Climate Action Plan (pg. 37).

3.0 Data Collection and Analysis

The Mitchell Center team and their community partners collected data through two main approaches: 1) the Maine Community Alternative Energy Survey and 2) 73 direct in-person or Zoom engagements (e.g., Figure 3.1) that followed a variety of approaches: discussion groups, focus groups, listening sessions, workshops, interviews, informal discussions at festivals, shows, and other pre-existing gatherings, teach-ins, and webinars (Appendix C).

Figure 3.1. Photograph of a discussion on the topic of climate change and food justice in Lewiston/Auburn, led by Community Organizing Alliance, May 19, 2024

The Mitchell Center team worked with the Community Sustainable Energy Team (representatives from selected Maine communities) from November 2023 to March 2024 to develop the Maine Community Alternative Energy Survey as part of a related research project (Appendix F). To capture a wide range of data, the survey used a mix of question types; multiple-choice questions and Likert scale questions (i.e. agreement with statements on a scale of 1 to 5) helped gauge respondents' attitudes and perceptions, while open-ended questions provided space for detailed feedback and personal experiences. The diversity in question types ensured that the survey could collect both quantitative and qualitative data, offering a more complete picture of respondents' views and experiences. The survey was distributed statewide, with a particular emphasis on reaching “priority populations” with the help of community partners. To incentivize participation, respondents were offered a 40% chance of winning a $5 gift card for coffee. Co-designing and testing the survey with people from disadvantaged and vulnerable communities and disseminating the survey with the help of diverse partners (p.1) helped ensure cultural appropriateness and relevance of the survey and its dissemination. While the state-wide survey reached Mainers from all walks of life, the Mitchell Center team identified responses from the data set that met “priority population” criteria (Table 3.1) and removed those that did not meet at least one of these criteria from the results presented in this report.

Table 3.2.1. Priority Populations and definitions for Maine Community Alternative Energy Survey analysis

Priority Population	Definition used for this report	Data collected
Low-income households (renters, home owners, and mobile home residents)	Income listed as “low income” on FY2024 Section 8 Income Limits in comparison to census median family income [10]	Survey questions asking income, if rent or own home, and number of people in the household
Youth	Ages 18-25 years [11]	Survey question asking age; survey required a minimum age of 18 to participate
Older adults	Age 60 years or older [12]	Survey question asking age
Disadvantaged communities	Identified as Disadvantaged by CEJST [13]	Zip Code provided by respondents, matched to CEJST Census tract
Climate Frontline Communities	Identified as “High” on Maine’s Social Vulnerability Index [14]	Zip Code provided by respondents, matched to town/city names
Black or other Person of Color (POC)	A person self-identifying as a race or ethnicity other than Caucasian	Open-ended survey question asking to self describe race and/or ethnicity
Disabled	A person possessing mental health, cognitive, sensory or physical disability [15]	Survey question asking self-identification from list of potential disabilities with write-in option
Recipients of LIAP/HEAP or other	A person receiving assistance from the Low Income Home Energy Assistance Program [16]	Survey question self-identifying receipt of LIAP/HEAP
Rural	Self-identification of living in rural area	Survey question asking location of home
People without reliable access to transportation	Self-identification of travel habits	Survey questions about travel habits in Transportation question block
Women-owned businesses	Businesses owned by someone self-identifying as a woman [17]	Survey question: What type of businesses do you own? Combined with gender self-

Priority Population	Definition used for this report	Data collected
		identification
BIPOC-owned businesses	Businesses owned by a person self-identifying with a race/ethnicity other than solely Caucasian [18]	Survey questions: What type of businesses do you own? Combined with race self-identification
Natural resource businesses	A business involved in forest products, life sciences, marine/aquaculture, food/agriculture or outdoor recreation industries [19]	Survey questions: What type of businesses do you own?
Unemployed AND of another priority	Any combination of being unemployed and matching the definition of inclusion for another priority population on this list [20]	Survey question: Please select your employment status (selected unemployed)

Analysis included statistical analysis (see Appendix H for additional details) and thematic analysis of open-ended questions. Specific areas of focus for the survey analysis included awareness and understanding of climate recommendations, perceived barriers to implementing recommendations, opportunities for enhancing community resilience, community-specific needs and priorities, and suggestions for improving communication and engagement.

Direct engagements occurred in two “rounds.” Round 1 focused on the engagement topics (Appendix I) the Mitchell Center team developed from the March 2023 ESC Report with MCC working group input from the January meetings (Section 1.0, Appendix B). Round 2 focused on Working Group recommendations to the MCC and/or working group topics. In addition to the list of potential discussion questions (Appendix D) the Mitchell Center team provided, they also provided a link and printable version of their Maine Community Alternative Energy Survey (Appendix F) for partners to use in their engagements when appropriate. The Mitchell Center team and partners were sensitive to the needs of the communities, adapting questions to fit particular event contexts and purposes. Data from partners was collected in a uniform way (Appendix J) to allow for synthesis. Further synthesis occurred during post-data meetings with partners, and is reflected in this report.

The nature and timing of this work required mixed quantitative and qualitative approaches and did not lend itself to statistically significant comparisons. The concept of saturation is particularly relevant to this work in considering questions of completeness and validity. In determining a practical

endpoint for qualitative data collection and to assess validity, one accepted metric is whether any new themes are emerging with continuing data collection and/or whether new themes emerge as multiple researchers assess the same question [21]. While there are unique strengths and challenges for each priority population, the team and partners have discovered strong commonalities on key themes. This approach suggests that the work has uncovered the primary, overarching issues relevant to the populations collectively, as well as key insights specific to individual populations. The recommendations outlined in the Executive Summary emerged from these common themes.

4.0 Findings

This section presents the findings from direct engagements and the Maine Community Alternative Energy Survey. After a brief description of the participants reached by the engagements and survey, the section organizes the findings by the Maine Climate Council working groups and then, within, by working group recommendation, as presented to the MCC on June 18, 2024.

4.1 Participants

Maine Community Alternative Energy Survey.

The Maine Community Alternative Energy Survey received 619 responses across a wide range of zip codes (Figure 4.1.1), with 568 responses from people who identified as being a member of one or more “priority populations” and were included in further analysis (Figures 4.1.2 and 4.1.3). Most (382, 67%) respondents entered a zip code corresponding to a disadvantaged community. Two other widely represented other “priority populations” in the survey results include older adults (271, 48%) and residents of rural communities (264, 46%).

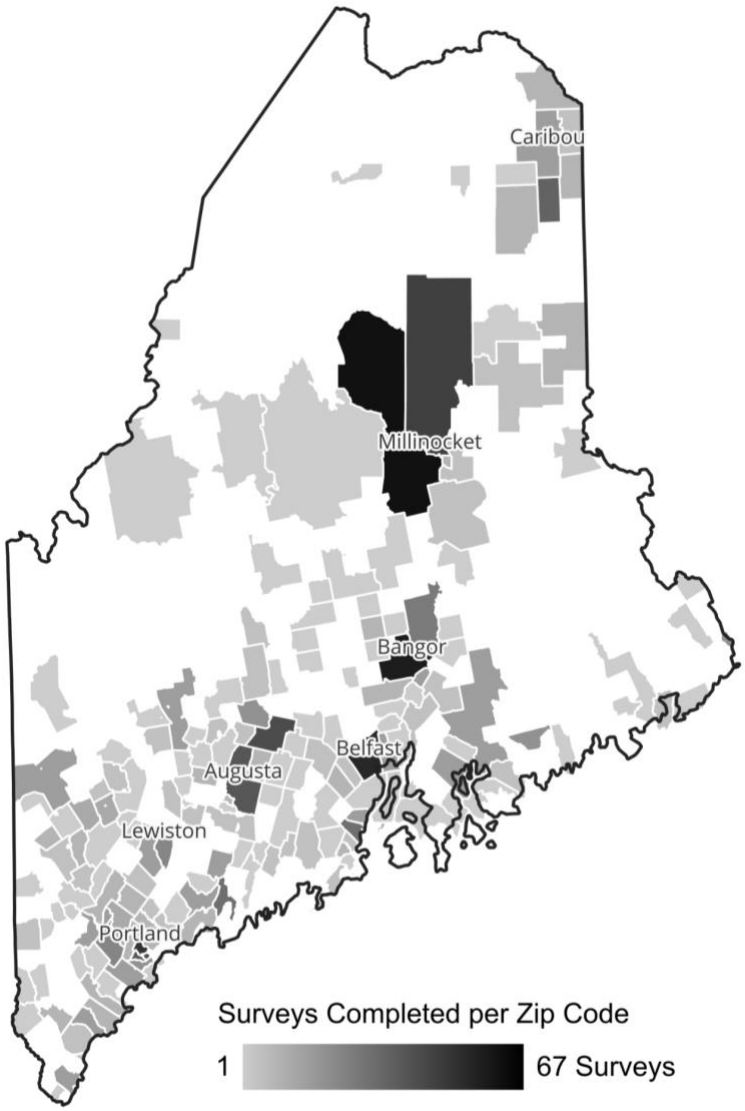

Figure 4.1.1. Total number of Maine Community Alternative Energy Surveys completed per Zip Code (565 out of 619 responses reported Zip Codes)

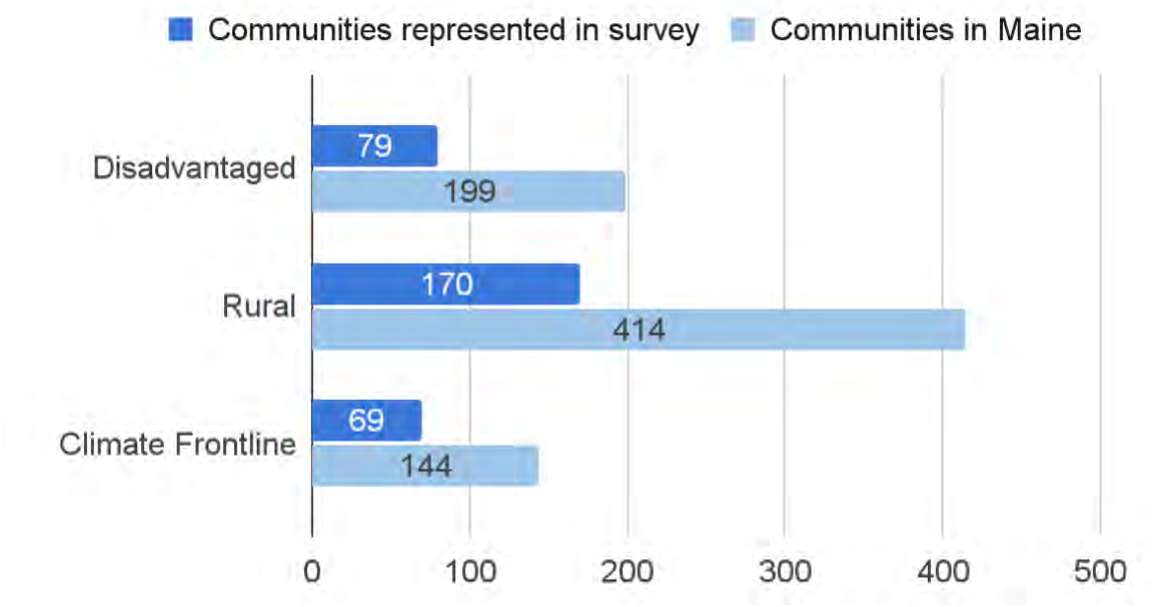

Figure 4.1.2. Communities represented by Maine Community Alternative Energy Survey respondents by “priority population” community type (568 total responses; some respondents may belong to more than one priority population), compared with the total number of communities in Maine for each type. The survey respondent communities represent 40% of all disadvantaged communities, 41% of all rural communities, and 48% of all climate frontline communities. See Appendix K for data sources.

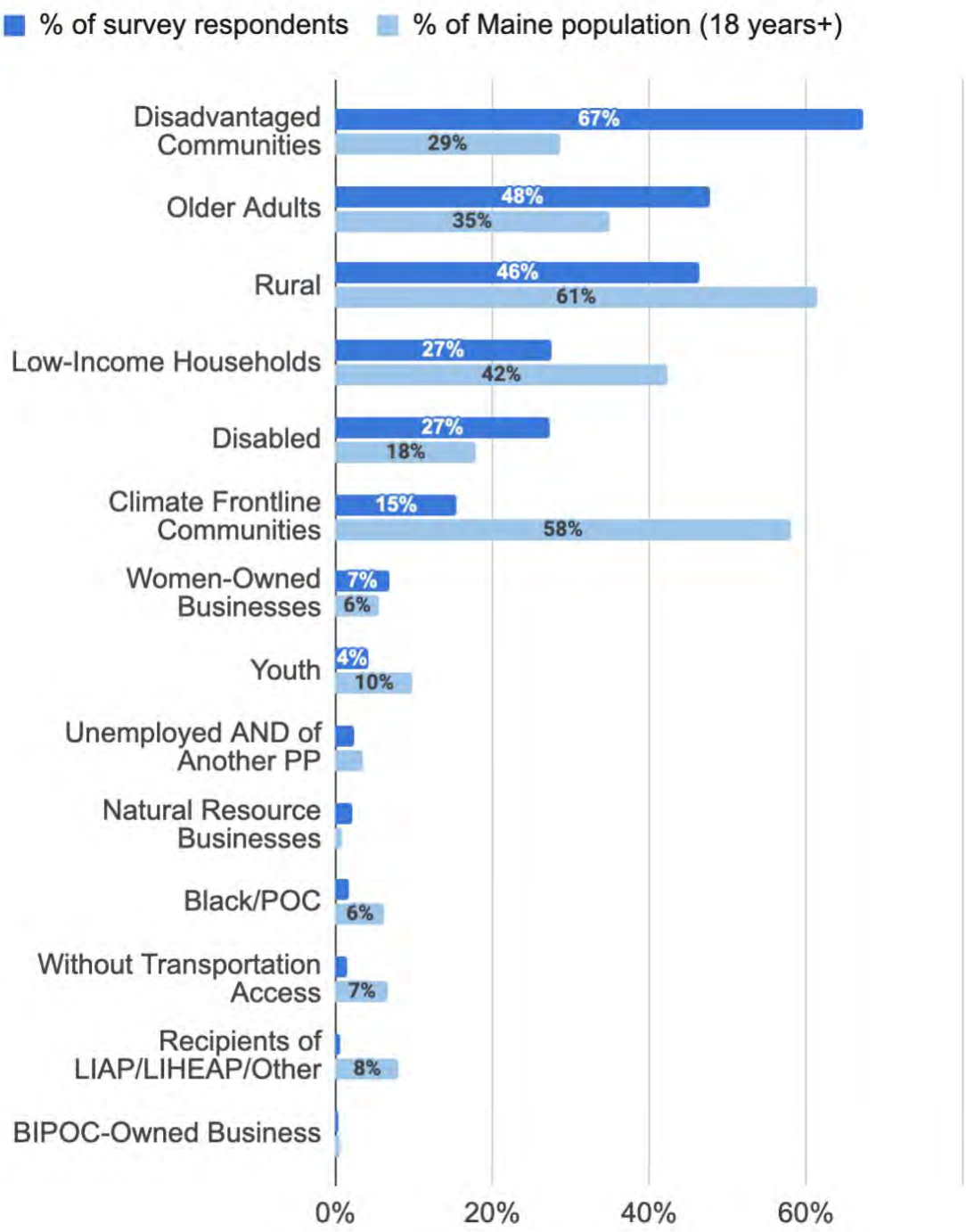

Figure 4.1.3. Distribution of Maine Community Alternative Energy Survey respondents across “priority populations” (568 total responses; some respondents may belong to more than one priority population). The percentage of each “priority population” within the total Maine population is shown in comparison to the percentage of survey respondents for each type. See Appendix K for data sources.

The average age of respondents was 58 years; with respondents ages ranging from 19 to 90 years old, with 34 respondents (13% of the older adults) identifying their age as 80 years or older. Among the 518 participants who answered the gender question, 327 (63%) identified as female; 176 (34%) male and 15 (3%) identified with other gender categories or preferred not to indicate their gender. Twenty-seven percent of respondents identified an income and household size that qualified as low income. The largest group of participants (116) fall within the $30,000 to $60,000 income range, and 71 respondents have an average income above $150,000 (Figure 4.1.4).

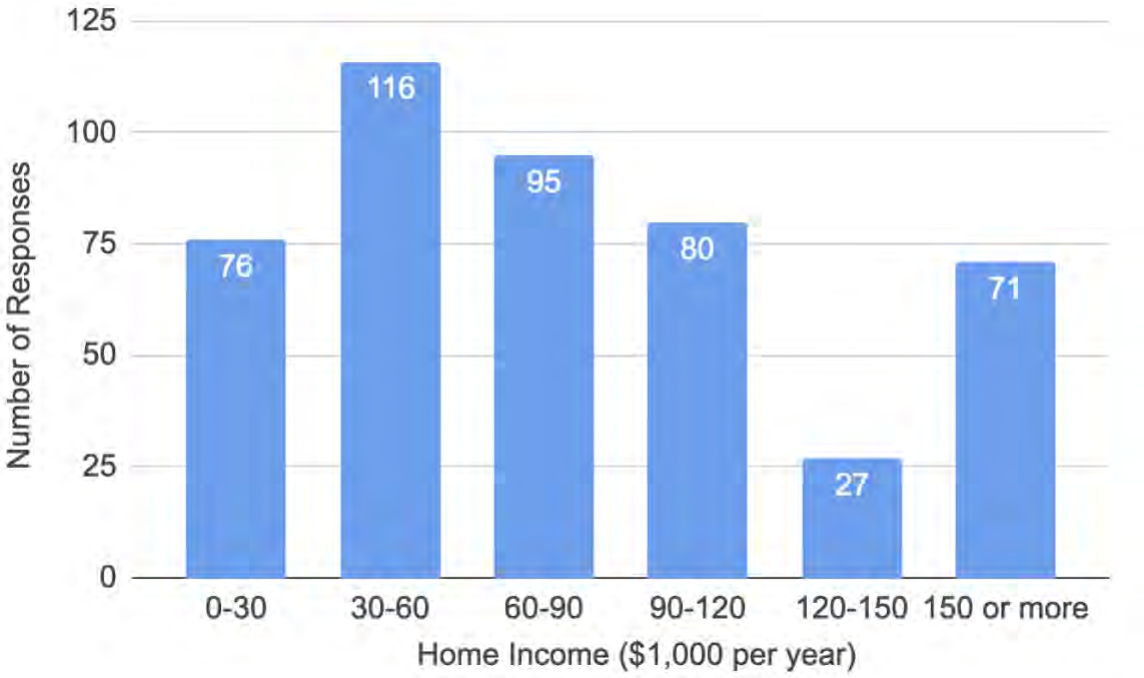

Figure 4.1.4. Income ranges of “priority population” respondents to the Maine Community Alternative Energy Survey (465 total responses)

The Maine Climate Council portion of the Maine Community Alternative Energy Survey survey consisted of one general section presented to all participants and 5 randomly rotated blocks of working group-specific questions (“MCC Buildings, Infrastructure & Housing”; “MCC Energy”; “MCC Transportation”; “MCC Coastal & Marine & NWL”; “MCC Community Resilience”), such that a single respondent would only see one of these rotating blocks. Of “priority population” respondents, 113 responded to the MCC Transportation questions, 108 answered MCC Energy, 107 people responded to questions in the MCC Buildings, Infrastructure & Housing block, while MCC Coastal & Marine & NWL had 101 respondents, and MCC Community Resilience had 95 respondents (Figure 4.1.5). In addition to the rotating blocks, all

respondents also saw questions in the general section about energy, transportation, and buildings, in addition to questions generated specifically for the MCC in relevant rotating blocks (Appendix F).

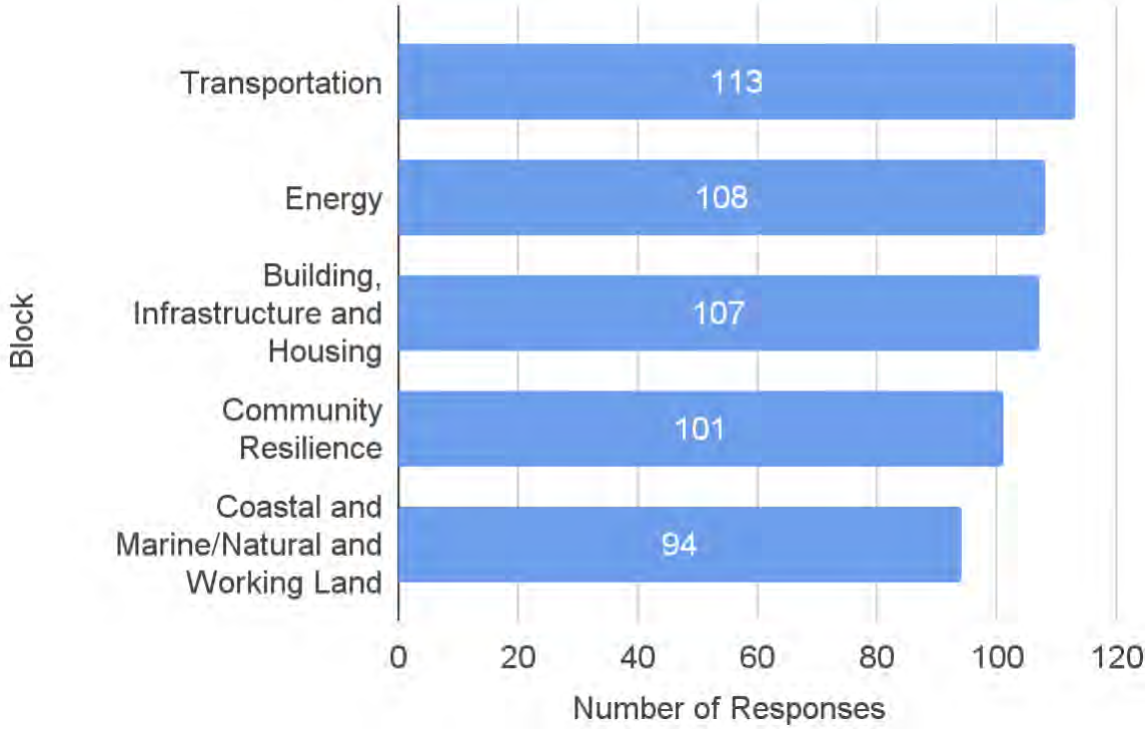

Figure 4.1.5. Number of respondents who answered at least one question in each of the rotating Maine Climate Council question blocks within the Maine Community Alternative Energy Survey (523 total responses across all 5 blocks). All respondents saw additional questions related to energy, transportation, and buildings in the main survey section.

Direct Engagements.

Direct engagements led by the Mitchell Center team and their partners reached Mainers across the state (Figure 4.1.6) in Round 1 and 2 efforts. Round 1 involved 29 engagements that reached over 750 members of “priority populations”, while round 2 included 44 engagements, reaching over 1,530 members of “priority populations”.

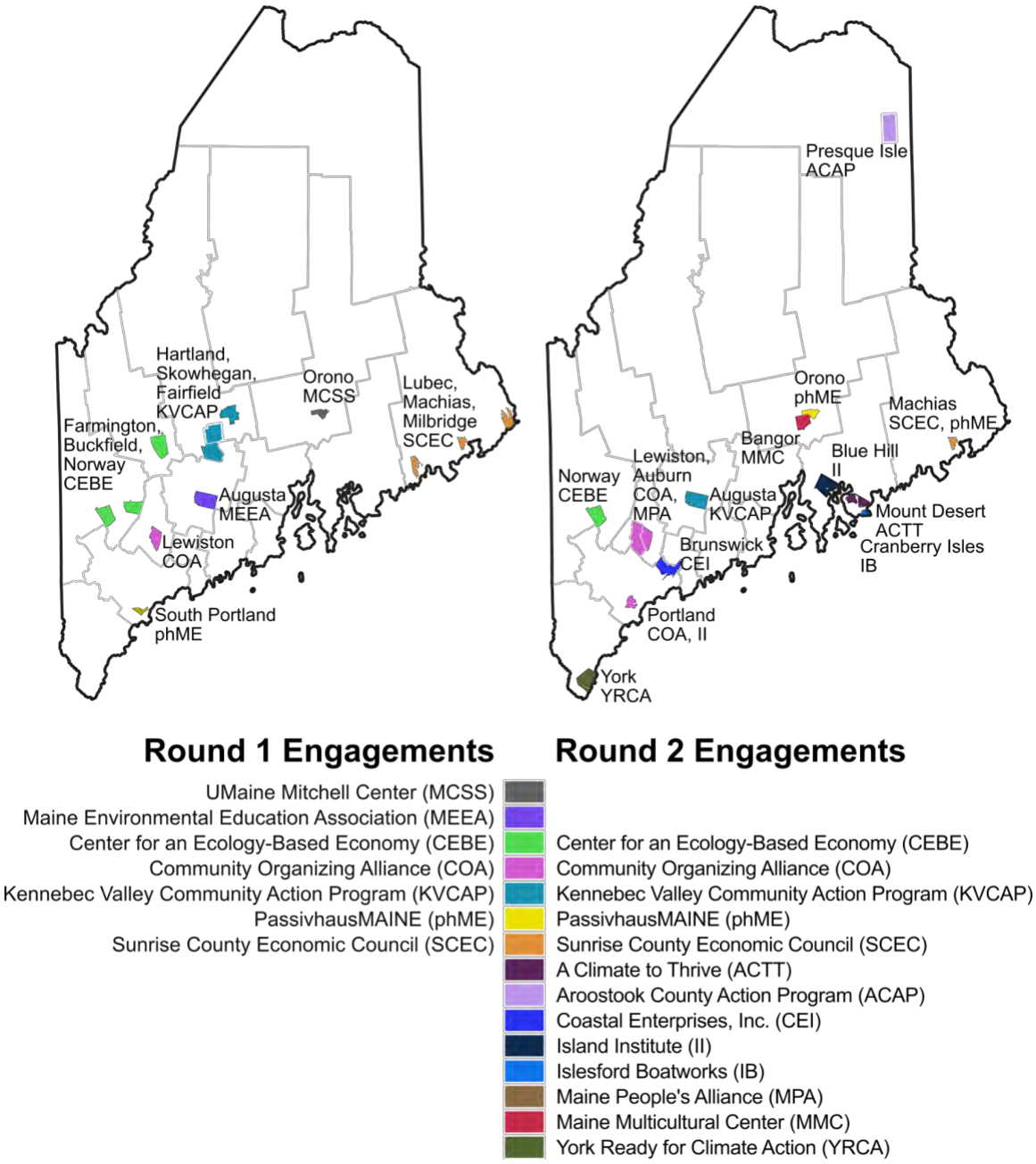

Figure 4.1.6. Geographical distribution of direct engagements for Rounds 1 and 2. Additional engagements were held virtually (e.g., Zoom).

The importance of meeting people where they are by including outreach at events already planned was echoed frequently. This strategy helped reach more community members, and also reduced the burden on already at-capacity community partners. For example, Sunrise County Economic Council (SCEC) built upon existing connections with municipalities and incorporated outreach into training activities that were already well attended. They also brought their survey

to food pantries, recovery houses, and activities led by the organization Mano en Mano. One challenge reported by several partnering organizations was that they ran into issues with the term “climate change” - to address this, they adapted their language to talk about changing or increasingly severe weather and more day-to-day issues instead. The Community Organizing Alliance (COA) successfully led workshops around issues important to their community, and partnered with businesses and other organizations to expand their outreach. Their workshop on “Clean Energy Pathways,” (3/22/24) with ReVision Energy, E2Tech, and Intowork, talked about apprenticeships and job opportunities (expected only 20, but had 45 attendees) with many participants helping to translate English into multiple languages. Scott Pasco, Director of Community Services Block Grant funding at the Kennebec Valley Community Action Program, was able to reach older, disabled and low-income residents by scheduling discussions in the common rooms of housing facilities that they manage. He found that these residents are not frequently active in community advocacy, but they became more involved in other initiatives after participating.

4.2 Cross-Cutting Insights

Are people aware of and interested in the Maine Climate Council?

When asked in the Maine Community Alternative Energy Survey, “Prior to this survey, were you aware of the Maine Climate Council?” respondents revealed that they were generally aware. Sixty percent of 549 participants had heard of the MCC. When asked, “Would you like to be involved in the Maine Climate Council's update to the climate plan that is occurring this year?” 67% of 542 participants responded that they do or may want to be involved in this update. However, despite this general awareness and interest in participating in MCC activities, the majority (74% of 335 respondents) indicated they had not been involved to date (Figure 4.2.1) - this was the case across all age groups.

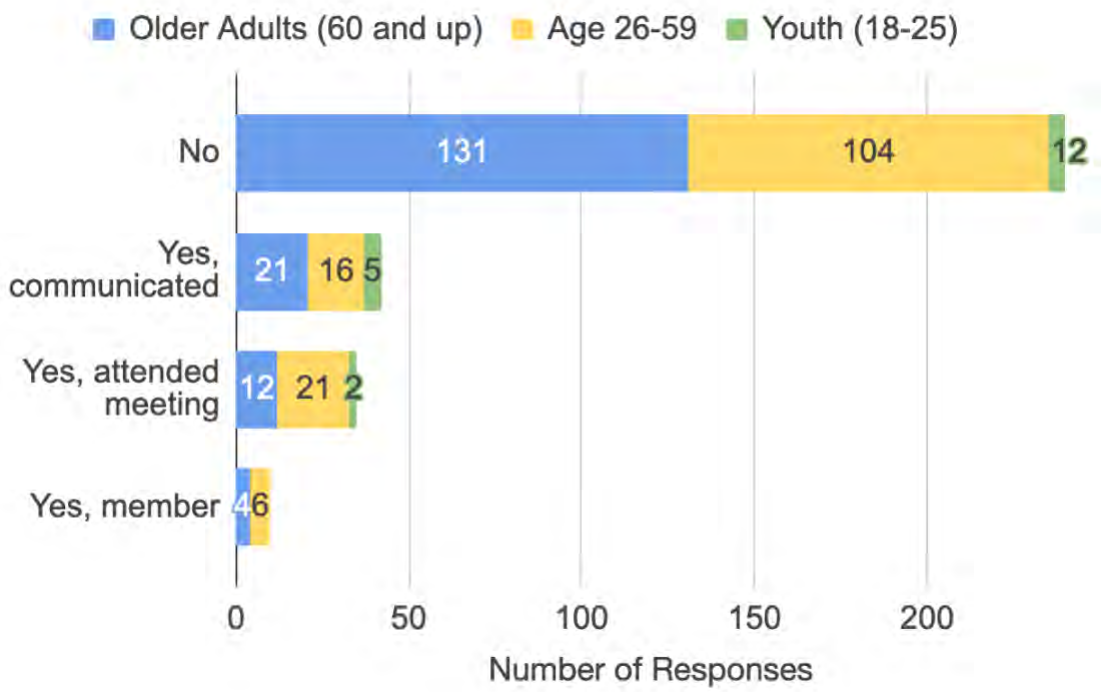

Figure 4.2.1. Maine Community Alternative Energy Survey responses to the question: Have you ever been involved in Maine Climate Council Activities? (335 total responses; some respondents selected more than one answer)

When respondents to the Survey were asked what type of support they would need to be more involved in MCC activities (Figure 4.2.2), the most common responses were “Additional information” (57% of 354 responses) and “Some way to accommodate my limited time/schedule” (47% of 354 responses). Some (23% of responses) answered that they were not in need of support at all, but others (16% of responses) were in need of some kind of financial support.

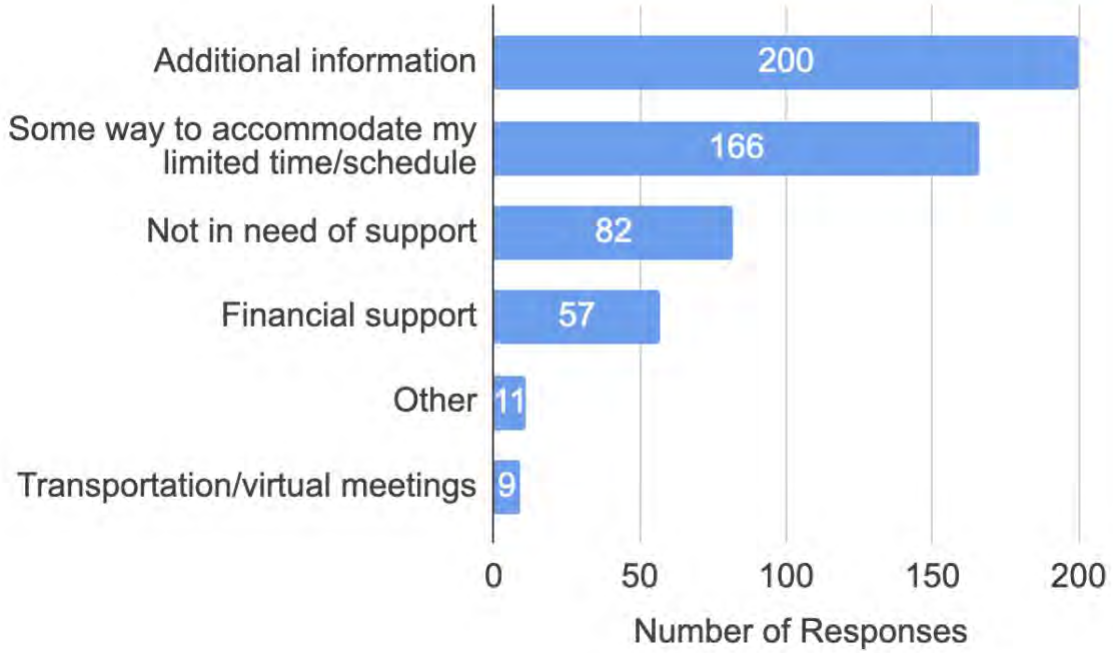

Figure 4.2.2. Maine Community Alternative Energy Survey responses to the question: What type of support would you need to be involved in the Maine Climate Council's update to the climate plan? (354 total responses; some respondents selected more than one answer)

What types of information do people trust?

As a desire for additional information emerged, it is important to also understand what information or education sources are most trusted. Trust in state-communicated information was revealed in the Maine Community Alternative Energy Survey question: "When you make decisions about your life or your household, where do you look for trustworthy information?" (Figure 4.2.3). Sixty-eight percent of 542 respondents reported trusting the State government or an affiliate. Family and friends came in a close second (63%) and the federal government third (50%).

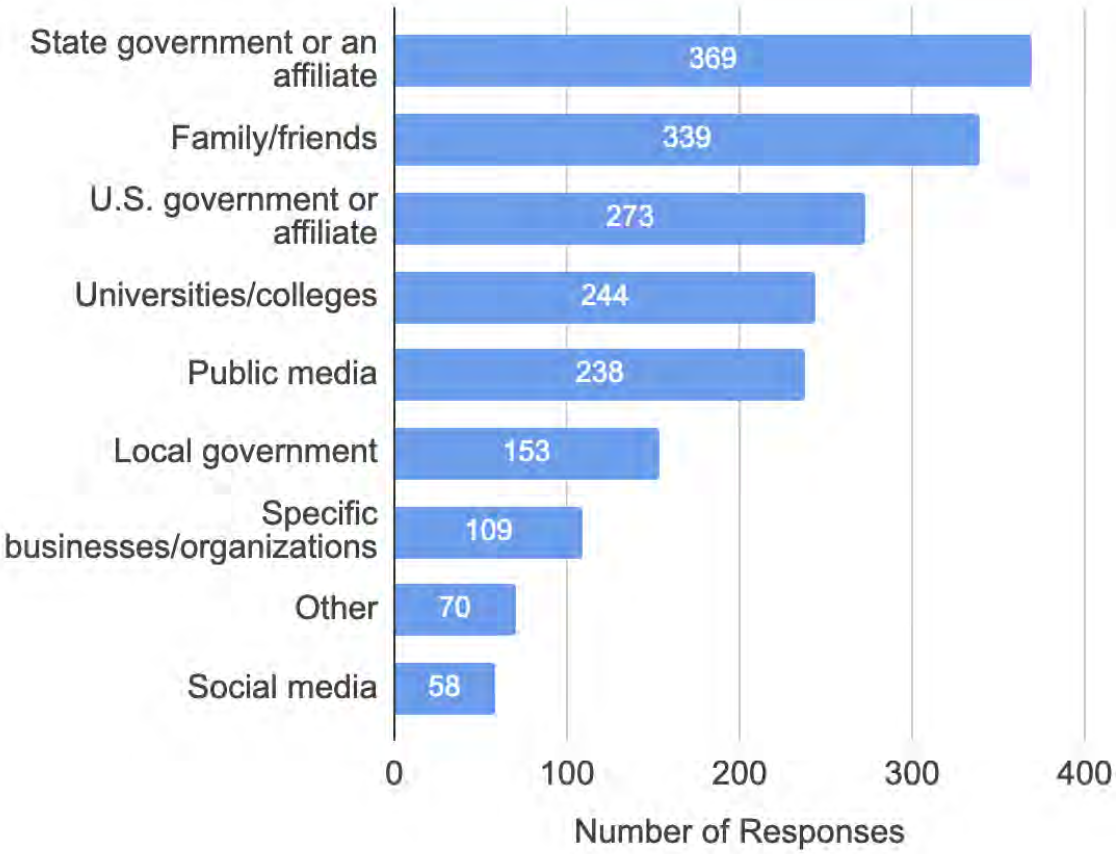

Figure 4.2.3. Maine Community Alternative Energy Survey responses to the question: When you make decisions about your life or your household, where do you look for trustworthy information? (542 responses; some respondents selected more than one answer)

Seventy respondents selected the 'Other' option, with many writing in their own thoughts. Six main themes emerged in these responses (Figure 4.2.4): emphasis on independent research (35 responses), trust in multiple and varied sources (20 responses), and community and social networks (10 responses) such as “I know a lot of people that have changed how they use energy in their homes. When I am considering options for my own home I will sometimes consult those I know who may have done so before me so I can learn what to expect.” (female business owner with low income). Ten respondents highlighted the value of specialized and expert opinions: “Independent building science professionals (not people who are selling materials for home improvements). Building science engineers and service professionals” (Person with a disability).

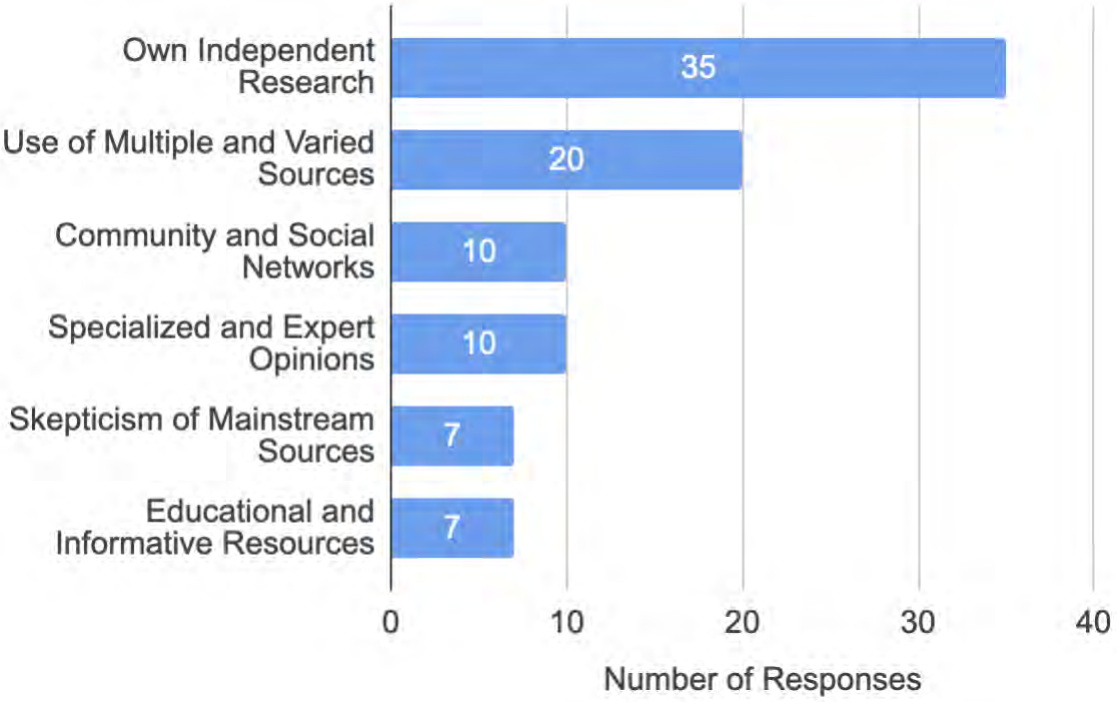

Figure 4.2.4. Maine Community Alternative Energy Survey responses to the open-ended question: When you make decisions about your life or your household, where do you look for trustworthy information? (68 total open-ended responses coded for themes; some respondents wrote in responses that fit within multiple themes)

When respondents to the Survey were asked, “How/where do you prefer to receive climate change communication?” 55% (of 97) respondents answered “Researching on my own” (Figure 4.2.5); 45% reported “Documentaries/films”; 42% answered “State government website”; and 37% answered “Email”.

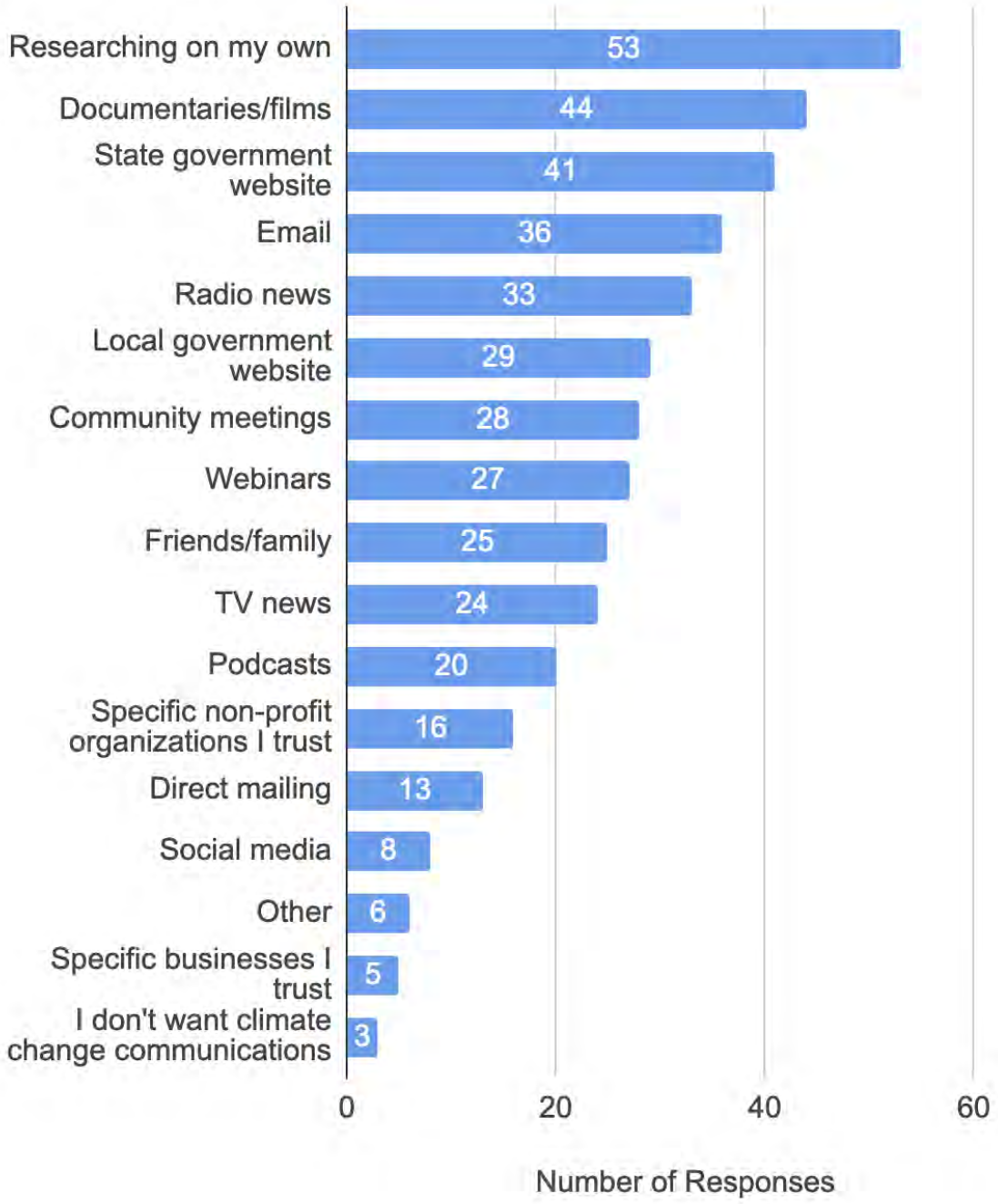

Figure 4.2.5. Maine Community Alternative Energy Survey responses to the question: How/where do you prefer to receive climate change communication? Select all that apply. (97 responses; some respondents selected more than one answer)

Participants in a community discussion of Maine's changing climate hosted by the Center for an Ecology-Based Economy (4/30/24) brought up the importance of community engagement in environmental decision making. One

participant stated, “We need to put resources into public engagement on a totally different level, social media engagement, a marketing campaign to really highlight civic engagement as valuable and actually crucial to our lives.” This discussion included residents of rural/disadvantaged communities, youth, older adults, and a town official from rural community/small town with limited staff or fiscal capacity.

Most (78%) of 99 respondents to the Maine Community Alternative Energy Survey question, “Do you trust climate change information communicated to you by the state?” said “yes” or “most of the time” . Respondents who did not select “yes” saw an additional question asking “Why/when don't you trust climate change information communicated to you by the state?” and wrote in responses that fit within 5 broad themes: political influence/bias (20 responses, 47%; general trust issues (14 responses); lack of transparency/hidden agendas (11 responses); conflicting interests (9 responses), skepticism towards climate change information (6 responses), lack of detail/clarity (4 responses); and special interests (3 responses).

In response to the Survey’s open-ended question, “What challenges do you face in understanding climate change information?”, one participant with low-income emphasized the need to contextualize climate change within broader economic and social issues: “I see climate change as deeply related to other large problems in how our economy is structured for the benefit of the few at the expense of the many. I think information about climate change needs to always be connected with a strategy for how to address poverty and oppression.” Participants in the Casco Bay Islands Bluff Erosion Symposium, led by Island Institute (7/23/24) also mentioned linking climate planning to people’s immediate needs and community-specific situations, asking questions such as, “how does a state climate action plan benefit individuals on islands and in coastal communities, including helping people to live and stay in their communities?” Participants at a webinar hosted by the Natural Resources Council of Maine and Maine Community Action (5/20/24) also supported incorporating community-specific needs and identified a need for on-the-ground information sharing and connection with case managers, including accessibility of tools on municipal websites.

What are the biggest concerns people are facing?

Maine Community Alternative Energy Survey respondents provided valuable input regarding the biggest concerns and needs for them individually, and for their communities. Participants highlighted **affordable**

housing/homelessness as the most pressing issue (107) (Figure 4.2.6). Direct engagements reinforced housing as a priority. Attendees at a Center for an Ecology-Based Economy event agreed that their towns do not have enough housing to support people moving to the area, specifically in Norway or Bethel. When thinking about affordable housing and multi-unit buildings, residents believe it is important to consider multi-layered issues that might prevent construction of affordable housing, including parking ordinances and limitations on state-owned roads (CEBE, 8/6/24). The connection between climate migration (i.e., people moving to Maine because of climate change effects) and its potential compounding effect on the ability to find affordable housing was also raised.

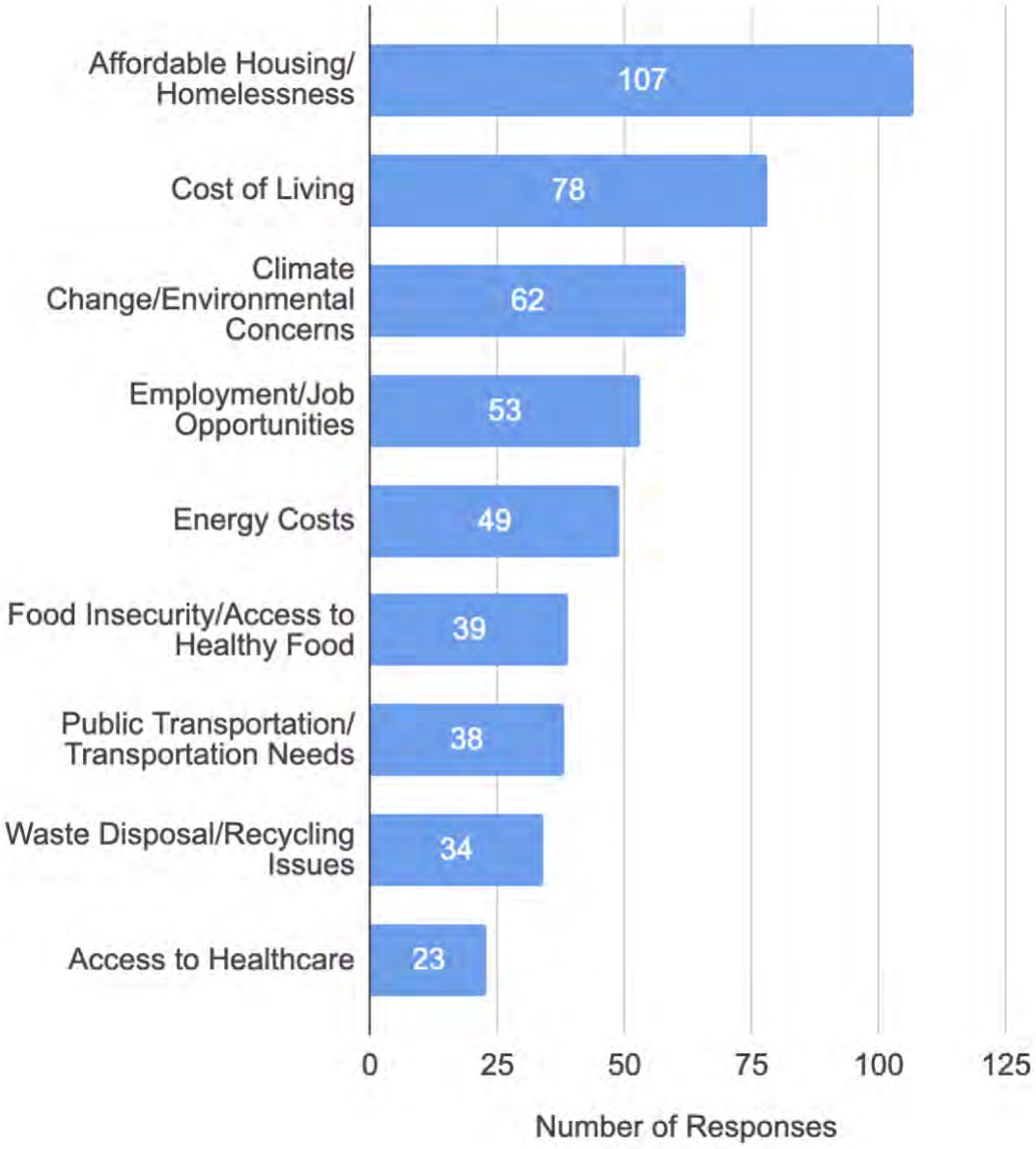

Figure 4.2.6. Maine Community Alternative Energy Survey responses to the open-ended question: What are your biggest concerns/needs right now for you and/or your community? (475 total open-ended responses coded for themes; some respondents wrote in responses that fit within multiple themes)

Additionally, survey responses indicated that **cost of living** (78) and **climate change and environmental concerns** are key issues (62). One respondent from a rural disadvantaged community (Rockwood) stated: “My biggest concern is that our governments—federal, state, and local—do not prioritize ecology and taking care of our earth. If we don't address and reverse climate change before it becomes catastrophic, all of these other concerns will

become irrelevant." **Lack of employment** was mentioned 53 times by survey respondents, with low wages forcing people to adjust their budgets. As one respondent mentioned, "Lack of well-paying job opportunities, cost of heating my home, reducing my food budget or eating differently than I would prefer. A box of macaroni going for 97 cents can give you a lot of meals" (Woman and business owner). **Energy costs** are also a significant concern, cited 49 times by respondents. One respondent shared:

> *"I will probably need to give up my own home where I have lived most of my life. I am 74 and disabled. Because I can not afford the high cost of electricity and the high cost of heating oil. Over 2 years now on a waiting list for senior housing. Would like to age in place in my own home but that is not realistic. Would like to sell my house to a local family that can give my beloved family home the TLC it deserves, but need to wait until I have someplace else to live. Right now, I fear the high cost of electricity will add me to the homelessness population in Maine"*
>
> - Older person with disability

Food insecurity (39) was an additional concern. One respondent who works in a natural resources business said, "Access to healthy food is a big one. Organic food, great for the environment and great for our health, is very expensive. Cheap, highly processed foods with lots of sugar and corn derivatives are not healthy". Another theme was **transportation needs** (38), with one respondent highlighting that "access to equitable and low-cost transportation and quality childcare limit people's opportunity for education and employment opportunities that could reduce poverty and dependence on public systems. If adequately funded, renewable energy could increase employment opportunities" (Older adult).

Waste disposal and recycling issues were mentioned 34 times, as highlighted in one respondent's quote: "Waste disposal…very few people are interested in recycling. Also need better recycling programs. People not turning their car engines off when not necessary…to read their emails, run into stores, visit with friends…ridiculous. Towns could pass ordinances to change this bad habit" (Person with low income). Additionally, **access to healthcare** was another concern among 23 respondents. One respondent expressed this concern, saying, "Deaths of despair: addiction, poor health, youth in crisis, aging and isolated elders in aging and unsafe homes. We need economic development and improved healthcare/ elder care and mental healthcare. People need hope" (Person with disability).

A survey of **municipal officials** in underserved communities, led by the SCEC in August 2024, asked “What are the biggest concerns or needs for your community right now?” (Figure 4.2.7). Nine out of 13 (69%) respondents identified a climate resilience issue**,** such as wildfire or energy costs and sources**.** Other answers included citizen engagement, particularly of young people, economic diversity, and employment.

Figure 4.2.7. SCEC Municipal Workers Survey responses the question: What are the biggest concerns or needs for your community right now? Please provide the top three. (13 total respondents).

The responses by residents of rural communities (89 respondents) to the same question in another SCEC survey (August 2024) focused on the cost of living, cost of utilities, health/medical care, and reliable internet: “We need businesses and job opportunities in order to attract more people to the region. We also need affordable housing and childcare. As a community we're doing well with community gardens and community supported food pantries, but food costs are too high.” (respondent with a disability). One respondent to a survey distributed by York Ready for Climate Action (7/26/24) also explained many of the risks their community is facing: “In a coastal community there are many roadways that are vulnerable to sea level rise. Power outages are frequent and long lasting. As we transition to cleaner electricity for domestic power needs this is a major issue. Substantial rebates for insulating older homes is a must to incentivize this adaptation/mitigation strategy.”

Participants in an event hosted by the Maine Council on Aging (MCOA) and the Governor's Cabinet on Aging (8/6/24) noted that people experiencing physical and financial insecurity on a daily basis are concerned with accessing basic needs of living and may be unsure of the links to climate change. Participants in a KVCAP-led focus group discussion (8/5/24) at the LINC Wellness Center in Augusta were unhoused people, people with mental illness and substance misuse issues, and individuals with low income. All participants commented that transportation was a huge barrier in their lives. Another individual shared their main concerns:

> *"Housing, definitely. It's hard to find and hard to navigate the system. If you have a felony or violent background it makes it even harder. Housing increases your safety. I was homeless for 9 months—it took a big strain on my health. Trying to survive makes you focus only on survival and nothing else. When you give someone a safe place to stay their health will improve and they're more likely to deal with other services and needs."*

Participants reported additional challenges faced by the unhoused including that people without identification and/or addresses are unable to receive services, including SNAP, WIC, or transportation. Many people only have PO boxes, and those cannot be used to sign up or register for services from the state. People do not always have a communication device, and it was explained that "if your phone is stolen or lost or broken you can't access services, and in order to get a free phone you need to have an address. Phones have limited minutes and you use lots when waiting on hold at a state office." Additionally, focus group members indicated a need for "year-round low barrier shelters"; these are homeless shelters with few requirements for entry. Participants noted that addressing the basic needs of our communities and individuals is the first step towards community resilience.

What are participants' thoughts and experiences regarding climate change education?

Most (51%) of the 90 respondents to the Maine Community Alternative Energy Survey question, "What challenges do you face in understanding climate change information?" selected the option that they had no problems understanding this information. Other responses included "I don't have time to read/watch/look at the communications" (17 respondents); "The information assumes you already know a lot about the topic" (12); "I don't know where to find the information" (6); and "I don't want to look at climate change information" (5).

Seventeen people wrote in additional responses, related to information being too complex, too much information and not trusting information when it comes in pieces; for example: “siloed information leads to suspicion of data”; “Prioritizing information to access - among the sources and with respect to other matters of importance”; “Endlessly complex, communications never tell the whole story.”; “I'm overwhelmed by climate change and information about it - sometimes I want to turn off the information firehose!” A separate survey conducted by CEI (July 31; August 7, 2024) indicated that, while 95% of respondents reported understanding “some” climate change information, 40% felt that the information available assumes a high level of prior knowledge, and 30% were unsure where to find reliable climate information.

Some participants at a focus group in Portland hosted by the Community Organizing Alliance (8/3/24) expressed support for education and awareness within youth populations. “I think we should focus on educating the people as a whole and more importantly prioritize educating children,” one participant stated, “It’s important to educate the next generation about how climate change may affect them. It is their future and education will only help to raise awareness and guide the next generation.” Another participant expressed that education will lead to greater action: “This would help increase awareness of climate change in our community. When there are efforts and plans for climate change being made there would be a bigger push amongst individuals.” Many participants expressed a desire to be informed by government leaders: “Our leaders should be knowledgeable and know what they’re talking about. I think any increase in skills is beneficial”; “Our leaders and policy makers/decision makers sometimes have more power than us, so we need them to have the knowledge needed to make such impactful decisions”; and “I think this is very important because people look to their public officials as examples. It is public officials who bring and establish policies. If they are more educated they can make better informed decisions.” However, another participant expressed that action is more important than education, “I believe education is important, but action needs to be taken as soon as possible. Climate change has been an issue since 2008.” Respondents in a survey developed and distributed by COA in the greater Lewiston, Auburn, Portland areas (7/25/24) reiterated that education for government leaders is a “Good” or “Great” recommendation (31/36 respondents).

Resources for education are vital to allow for greater climate change information in schools. A point was made at the Norway Arts and Music Festival (8/14/24) that SAD17 feels like a leader in the state when it comes to outdoor education; they recently received funding through the new Climate Ed PD

funding opportunity to weave climate education into the work they are already doing. A CEBE employee mentioned, “as a rural, more conservative district, this is huge! As recently as a few years ago, teachers were leaving the district because of backlash around their individual choices to teach climate, and now the district is not just sanctioning but supporting the teaching of climate. Such a game changer!” Another participant shared how students respond more positively to outdoor activities connected to learning: “They so much want the things that they're learning about to be useful and practical, they want to see how they can use it. So anything we've done related to the outdoors—I mostly do things related to reading and writing but anytime we can connect it to the outdoors—it does become more meaningful to students and they definitely have a lot to think about.”

4.3 Buildings, Infrastructure & Housing (BIH)

Buildings, Infrastructure & Housing Working Group Recommendations to the MCC prioritize energy efficient heating systems and weatherization in homes, businesses, and industry; climate-friendly building codes, standards, and products; building-scale distributed energy resources (e.g., solar and storage) and other support measures that both reduce carbon and improve resilience; education and outreach about embodied carbon (greenhouse gas emissions produced in the extraction, production, transport, and manufacturing stages of a product’s life) [22], distributed energy resources and building resiliency in the face of a changing climate; and leading by example in public buildings to reduce Maine’s carbon footprint.

Participants are concerned with **high energy costs and energy losses**, which are exacerbated by difficulty accessing incentives for efficient technology. Renters are especially vulnerable to high costs and a lack of landlord accountability. Many participants are open to solutions like heat pumps and community solar arrays, but are concerned with cost. Participants often focused their responses on existing homes and structures rather than new construction. They also emphasized the importance of community-based energy solutions, such as community solar. Data from partner engagements suggest a **need for greater education** surrounding decarbonization and efficiency technologies, although these are rarely at the forefront of problems experienced by “priority populations.” Participants who are concerned with new construction are struggling to find trained labor to install and maintain appropriate systems. Participants in direct engagements also identified a lack of enforcement for codes

and standards in rural areas, as well as funding needs and legislation to require contractor licensing, so that information about code changes can be shared effectively. **Centering the needs of "priority populations" in buildings means focusing the climate plan's recommendations on improving housing access and improving energy efficiency for renters in particular.**

Nineteen percent (108 respondents) of the total 568 survey respondents answered at least one BIH question in the Maine Community Alternative Energy Survey. In addition, multiple questions in the survey that are relevant to BIH, Energy, and Transportation were seen by all or most survey respondents.

4.3.1 BIH Recommendation 1: Continue the progress on making homes and businesses more energy efficient by investing in weatherization and heating systems.

What problems do people experience in their homes and businesses?

Respondents to the Maine Community Alternative Energy Survey identified the high price of electricity and/or heating fuel, drafty windows, poor insulation, and frequent power outages as the most common problems they experienced in their homes (Figure 4.3.1). A separate survey created by SCEC supported these statewide survey results: 65% of 89 respondents reported that air leaks from doors and windows were a problem they experienced in their home; 61% of 89 respondents reported high electricity prices; 53% reported high heating fuel prices; and 41% reported poor insulation (SCEC, 8/12/24). Other common problems included poor temperature control, homes in need of structural repairs, leaky or damaged roofs, mold, and poor ventilation or air quality.

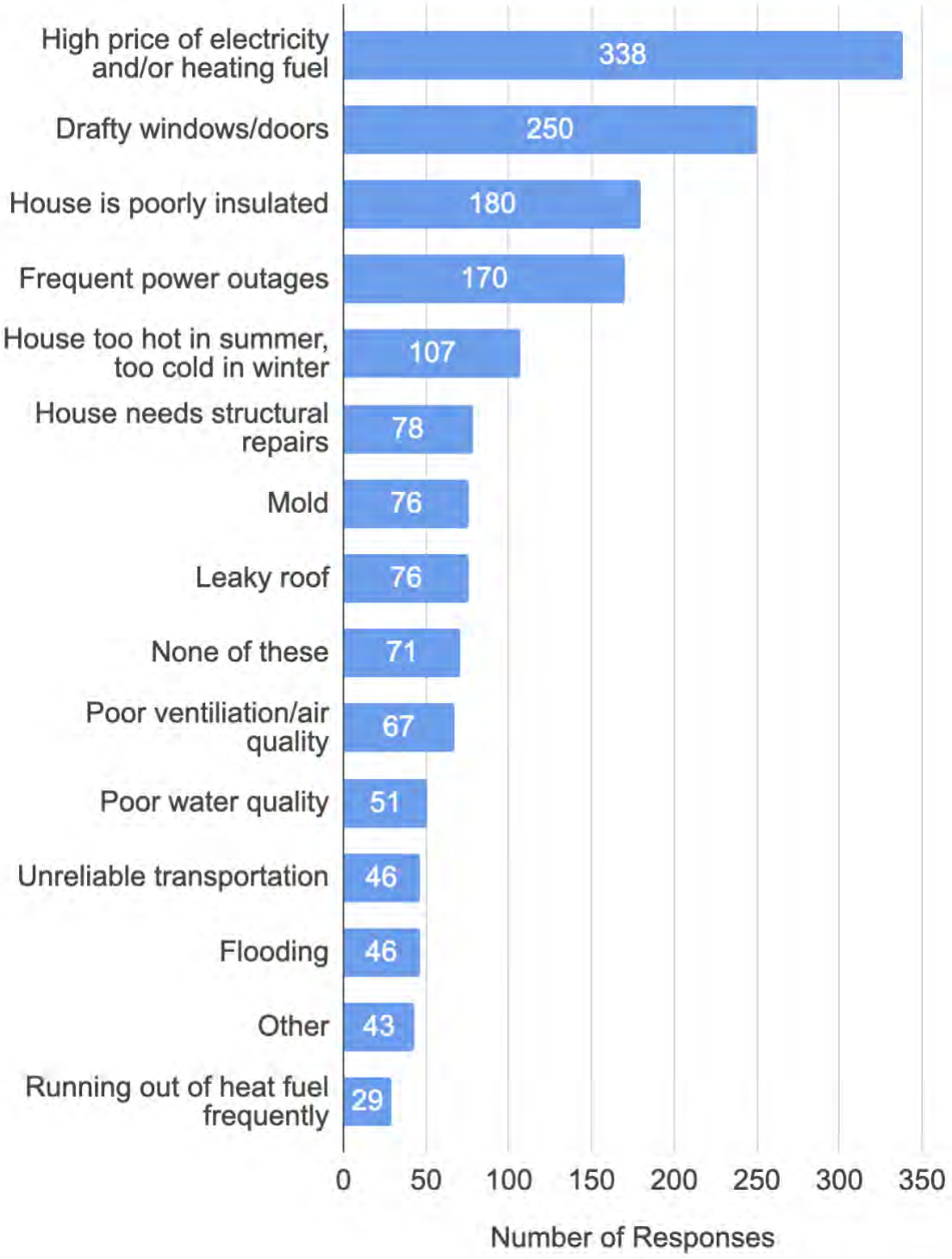

Figure 4.3.1. Maine Community Alternative Energy Survey responses to the question: Which, if any, problems do you experience in your home? (550 total responses; some respondents selected more than one answer)

Multiple contractors at the Green Home + Energy Show in South Portland (4/6/24) mentioned that they cannot find a trade partner to consider indoor air quality or install an appropriate system, and training more people to complete this work is needed. One independent energy auditor at the Green Home + Energy Show (4/6/24) remarked that as a contractor, they “don’t make any money off of what [they] tell people, it’s just advice,” adding that there are other private contractors who are incentivized to make recommendations for work to be completed based on the results of their audits to promote a specific company. In this situation, the cost to properly do a retrofit becomes unattainable, particularly for homeowners with low income or homes that are 70 or more years old.

Eight percent of survey respondents (43 individuals) selected “Other” and provided additional details about the issues they face, which can be grouped into five main themes (Figure 4.3.2). The most common issues include **difficulties in home maintenance and repair**, particularly among low-income households and older adults, highlighting a major barrier in keeping homes safe and livable. Respondents highlighted this barrier in relation to maintaining and retrofitting older homes, particularly those built before the 1900s, which is challenging due to the high costs associated with such work. One respondent from a rural community (Millinocket) noted, “Many houses in the area are in **disrepair to the point of being unlivable**. Fixing these houses up could provide more housing in the area and possibly affect housing prices,” underscoring the widespread need for upkeep that many cannot afford. Participants in a series of SCEC focus groups (7/8, 7/9, and 7/22/24), highlighted **another level of housing need** as one participant from a rural community stated, “[I know] a few people with uninsulated trailers that are not hooked up to septic or water, or anything. I know one person living in a retrofitted chicken barn that was built out of cinder blocks, and that's his living space.”

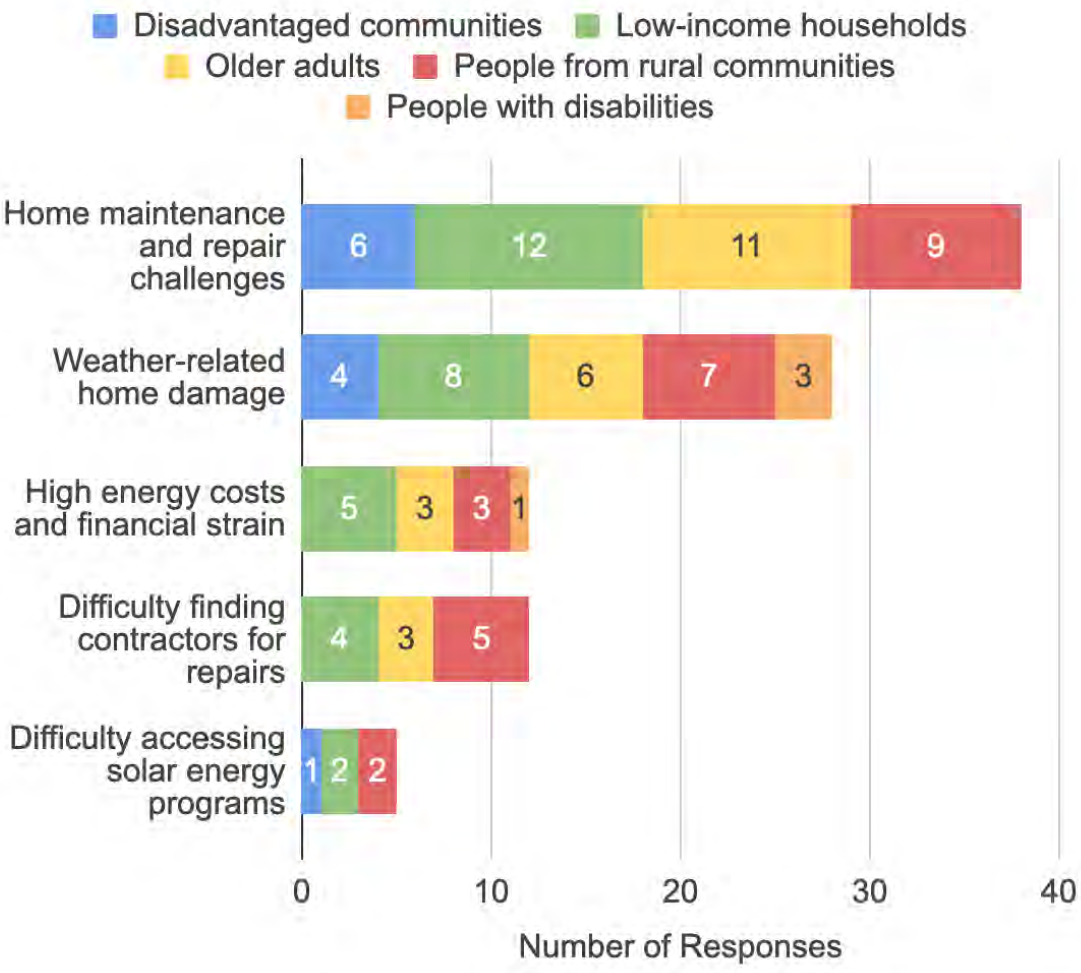

Figure 4.3.2. Maine Community Alternative Energy Survey responses to the open-ended "Other" option presented as part of the question: Which, if any, problems do you experience in your home? (43 total open-ended responses coded for themes; some respondents selected or wrote in responses that fit within multiple themes)

Multiple direct engagements demonstrated the need to address challenges related to the availability and quality of **affordable housing and the services available**. At a focus group discussion led by KVCAP in Augusta, participants discussed landlords raising rents, pricing people out. For these participants, the "cooling center is too far away, we need transportation" and "there is a risk of dehydration." Other participants live in senior housing, "and the upper floors are way too hot." Participants talked about how housing and heating concerns are "extra hard on the elderly." In addition, at a Natural Resources Council of Maine (NRCM) and Maine Community Action (MCA) webinar (5/20/24) and discussion targeting BIPOC communities, youth, and people with limited

English proficiency, including New Mainers, participants in a discussion group about MCC Transportation and Housing recommendations noted a need for work on affordable housing and data collection and visualization to understand community needs.

Severe weather events have caused considerable damage, especially in rural areas, highlighting the need for increased resilience and support in these communities. As one respondent to the Maine Community Alternative Energy Survey with a disability described, “Expensive drainage issues to fix. Water table high; threat of mold. Failure of water pump due to cold winter temps with power failure,” illustrating the impact of climate-related events on housing. In an interview conducted by Coastal Enterprises, Inc., the interviewee (a person of color and a veteran in a natural resource industry) stated: “I had several storms this winter which knocked the lights out. Then there was a chimney fire back in February. The windows and doors are drafty. It's an old farmhouse. It’s quite a challenge being in Maine with the weather, and being on a mountain it is like a wind tunnel, knocking fences down, animal shelters, things like that.”

High energy costs, **scarcity of contractors**, and financial strain associated with housing emerged as substantial concerns in the Maine Community Alternative Energy Survey, particularly for low-income households and those relying on assistance programs. A survey respondent with disability highlighted the scarcity issue: “Very hard to find people who can do upkeep repairs”, while a participant in the Maine People’s Alliance immigrant leaders meeting (8/9/24) supported these survey results, stating “Building weatherization is a problem. I live in Lewiston and the buildings are very old and need more investment to move to electrification of buildings.”

The concerns experienced by residents were echoed by BIPOC and women-owned businesses across 37 short form interviews and 2 focus groups conducted by Coastal Enterprises, Inc. (7/31/24 and 8/7/24): 43% of respondents reported experiencing high electricity costs at their business, and 44% reported that high upfront costs prevent them from implementing alternative energy options at their business. In addition, twenty-seven (58%) rural business owners surveyed by SCEC (8/12/24) responded that the high price of electricity was a problem they experienced with their facilities, boats, vehicles and machinery, and 26 (56%) faced the challenge of high heating fuel prices. Others mentioned problems like drafty windows and doors, poor temperature control, and frequent power outages.

Are people aware of and using existing solutions and financial incentives that may help address common building-related challenges?

The Maine Community Alternative Energy Survey presented information about existing federal, state, and local financial incentives and programs (Figure 4.3.3) and asked for respondent reactions (Figure 4.3.4). Many respondents (48%) indicated they already used these programs or plan to use them in the near future. On the other hand, a participant at the Maine People's Alliance immigrant leaders meeting (8/9/24) stated, "We need **more education for the immigrant communities around the HEAP and LIAP benefits**. This is the first time I hear it, so why is there not outreach regarding these programs?" Thirty Maine Community Alternative Energy Survey respondents (28%) (Figure 4.3.4) also indicated they think they do not qualify for incentives due to their income being too high and are unable to afford the upfront cost of an energy efficiency upgrade. Twenty-six respondents (24%) selected they cannot pay for something upfront and wait for a rebate. A few responses (8) indicated a distrust of energy efficiency or renewable energy technology, and seven responses indicated the incentives were too complicated to understand. Eight people who selected "other" wrote in responses related to cost and trust concerns.

There are many programs that offer financial help for installing renewable energy on your home and making your home more energy efficient. The following questions ask about these incentives:

U.S. government
Federal tax credit of **30%** of system and installation costs for **renewable energy**: qualified solar electric, solar water heating, small wind energy, geothermal heat pump, battery storage technology (3 kWh or more), fuel cell property

Federal tax credit of **30%** of system and installation costs for **energy efficiency** improvements (up to a $max): heat pumps & heat pump water heaters ($2,000); insulation materials ($1,200); home electric vehicle charger ($1,000); energy efficient windows, air conditioners, heating equipment, water heaters & electric upgrades ($600); home energy audit ($150)

Maine Housing:
FREE Heat Pumps and Weatherization to a limited number of eligible households *(homeowners that are eligible for HEAP - see below)*.

The Home Energy Assistance Program (HEAP) helps qualified homeowners and renters pay heating fuel costs and heating-related repairs. The application involves a form and an interview. The benefit amount depends on household size, income and other factors

The Low Income Assistance Plan (LIAP) helps low-income homeowners and renters pay for electricity costs by providing a credit on their electric bills. The application is usually completed as part of the HEAP application (see above).

Figure 4.3.3 (Part 1 of 2) Maine Community Alternative Energy Survey information on existing federal, state, and local incentives for renewable energy and energy efficiency.

WindowDressers:
FREE insulating window inserts for people with LOW income (income eligibility determined through community-led program)

Efficiency Maine:
Up to **$6,000** rebate for biomass boilers and furnaces

Up to **$3,000** rebate for geothermal systems

Up to **$4,000-$8,000** rebate for whole-home heat pump installation, depending on income

Up to **$4,000** rebate for partial-home heat pump installation for people with **LOW income***

FREE heat pump water heaters for people with **LOW income***

Up to **$850** savings on heat pump water heaters for people of any income

Up to **$4,000 to $8,000** rebate on insulation and/or air sealing, depending on income

Home energy loans of **$1,000 to $7,500** at 5.99% APR fixed for homeowners with **LOW income***

***To prove eligibility for Efficiency Maine income-based options**: upload a copy of most recent tax return and fill out online form OR give permission for a qualifying program to verify your eligibility to Efficiency Maine directly *(HEAP, Supplemental Nutrition Assistance Program, Temporary Assistance for Needy Families, or MaineCare)*.

Figure 4.3.3 (Part 2 of 2) Maine Community Alternative Energy Survey information on existing federal, state, and local incentives for renewable energy and energy efficiency.

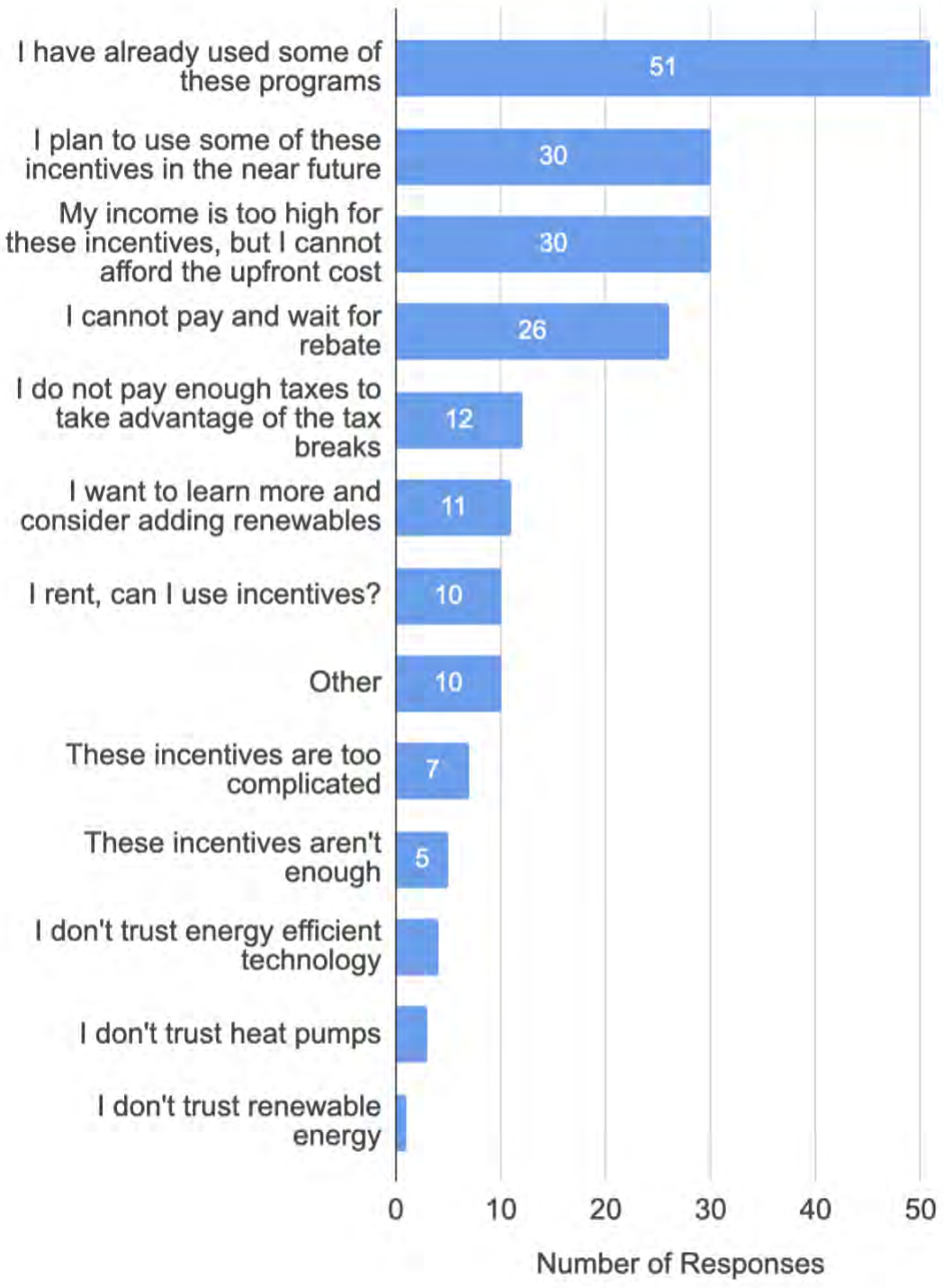

Figure 4.3.4. Maine Community Alternative Energy Survey responses to the question: Please select all that apply related to these programs [listed in Figure 4.3.3]. (107 total responses; some respondents selected more than one answer)

The survey prompted respondents who selected that they already use or have used some of these incentives with an open-ended question about which incentives they used and how their experience has been. The 47 responses to this open-ended prompt can be categorized into 6 main themes (Figure 4.3.5). **Heat pumps and heat pump water heaters** were the most frequently reported (29 respondents).

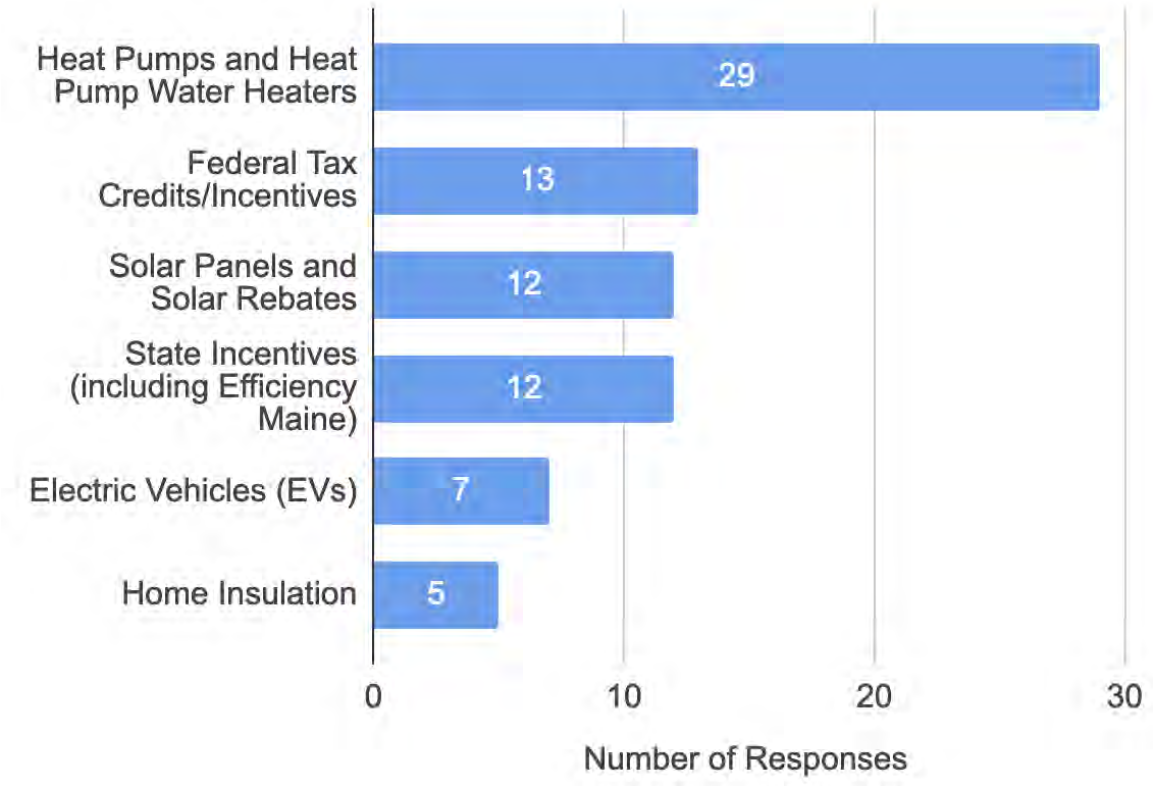

Figure 4.3.5. Maine Community Alternative Energy Survey responses to the question: What energy efficiency incentives have you used? (47 total open-ended responses coded for themes; some respondents selected more than one answer)

The theme of **federal tax credits/incentives** appeared 13 times in the responses, with participants referencing multiple energy-efficient technologies alongside this theme, including solar panels, and electric vehicles. State incentives, such as **Efficiency Maine rebates,** were mentioned by 12 respondents as a valuable resource for adopting energy-efficient technologies such as heat pumps, water heaters, and insulation. The Town Manager of a rural Maine community expressed in a one-on-one meeting with A Climate To Thrive (5/14/24) that his community was getting good information about incentives,

acknowledging that for members of the community with low income there is still a funding gap that could be prohibitive.

Solar panels and solar rebates were another popular option, mentioned by 12 respondents. Overall, participants were pleased with the financial incentives available for solar energy, particularly through federal tax credits. The combination of solar panels with other energy-efficient technologies, such as heat pumps, was a common approach among 6 respondents. Nonetheless, one individual pointed out that the tax credits were not as helpful for lower-income households. Eight survey respondents noted they had used incentives for **electric vehicles (EVs)**, with 4 noting positive experiences and 1 noting difficulties because of misinformation from a car dealership.

Direct engagements support the importance of incentives and the need for more of them. Interviews (37) and focus groups (2) conducted by Coastal Enterprises, Inc. (7/31/24 and 8/7/24) revealed an opportunity for more businesses to access these incentives, with 23% of their sample reporting not having accessed any weatherization or efficiency improvements, and 13% reporting accessing incentives for LED lights.

In an online survey created and hosted by York Ready for Climate Action (ending 8/6/24), about half of the respondents felt that **more incentives** are needed for green home retrofits. York Ready for Climate Action also handed out paper surveys at food banks and senior centers, and the majority of respondents at these locations felt that rebates and incentives are very important in allowing them to access home energy efficiency upgrades. Only 1 survey respondent of 17 had received support (rebates, tax breaks, etc) to make energy efficiency upgrades to their homes.

Older adults who attended a Maine Council on Aging Zoom meeting (4/26/24) expressed a desire for **more clarity** regarding **incentives**:

- “[There’s] so much information out there, it was so confusing after reading everything to see what I could qualify for. After reviewing everything, I didn’t even know what I was eligible for!”
- “[I] need a step-by-step process on what to do first.”
- “Paperwork is a huge barrier and hav[ing] categorical programs [only available to certain individuals]… creates a lot of barrier[s] to entry.”

Participants in other direct engagements indicated that **HEAP & LIAP benefits** can also be difficult to understand/access:

- One member of a UMaine focus group (4/3/24) for the Maine Community Alternative Energy Survey who helped install heat pump water over the past few years noted that in their experience, since the rules recently changed to be income-dependent, installs of heat pump water heaters in Aroostook County have gone from 300-350 down to 40.
- Many people do not qualify for assistance but still have a hard time affording weatherization services (Maine Council on Aging zoom meeting, 4/26/24)
- There is fear that new projects will present technological challenges, making them more difficult to use, especially for older adults (Maine Council on Aging zoom meeting, 4/26/24)
- Many people do not understand or are not aware of the available assistance, especially older adults (Maine Council on Aging zoom meeting, 4/26/24)
- Even when older adults are aware of available incentives, there is a concern with not wanting to “accept a handout”; “don’t want to take from someone else”; “other people need more than I” and feeling uncomfortable about the way they are treated in the process (Maine Council on Aging zoom meeting, 4/26/24)
- Drafty and poorly weatherized homes and heating security are commonly cited problems in Washington County (Sunrise County Economic Council Survey, 4/17/24)

One youth participant in the monthly membership meeting of Maine People’s Alliance stated: “I wonder how many people in Maine are renting versus owning their home. What would a tax incentive [to getting solar] mean for renters? How would renters benefit? Solar panels are usually confined to upper class communities, would tax rebates appeal to renters and low-income folks?” Another youth participant wondered about **renters vs. homeowners** and what kind of funding is available to whom. Participants also emphasized that more public chargers for electric cars will make them more accessible to renters, if they can't put in chargers in their home.

In addition, twelve respondents (20%) to ACAP’s open-ended survey question “How do you currently manage energy costs and what challenges do you face?” identified solutions other than incentives that they implement in their day-to-day lives: turning off the lights when they weren't needed, unplugging electric devices, lowering the heat during the day, and leaving the furnace off in warmer months.

Do people want and understand heat pumps and weatherization?

Most (81% of 542) Maine Community Alternative Energy Survey respondents **WANT heat pumps and weatherization** (Figure 4.3.6). Surveys and direct engagements created and implemented by community partners echo this desire. The Aroostook County Action Program developed and implemented their own survey of rural communities, low-income households, and climate frontline communities in Aroostook County (ending 7/23/24). When asked, “What types of weatherization and heating systems do you find most interesting and accessible?” 40% of the 64 respondents answered “heat pumps.” Respondents to the York Ready for Climate Action survey handed out at a food pantry were interested in solar panels (6 respondents), heat pumps (5), induction cooktops (3), home energy audits (2) and heat pump water heaters (1). Thirty-five percent of 47 rural business owners surveyed by SCEC (8/12/24) are interested in energy efficiency for their buildings (insulation, air sealing, window inserts, etc.).

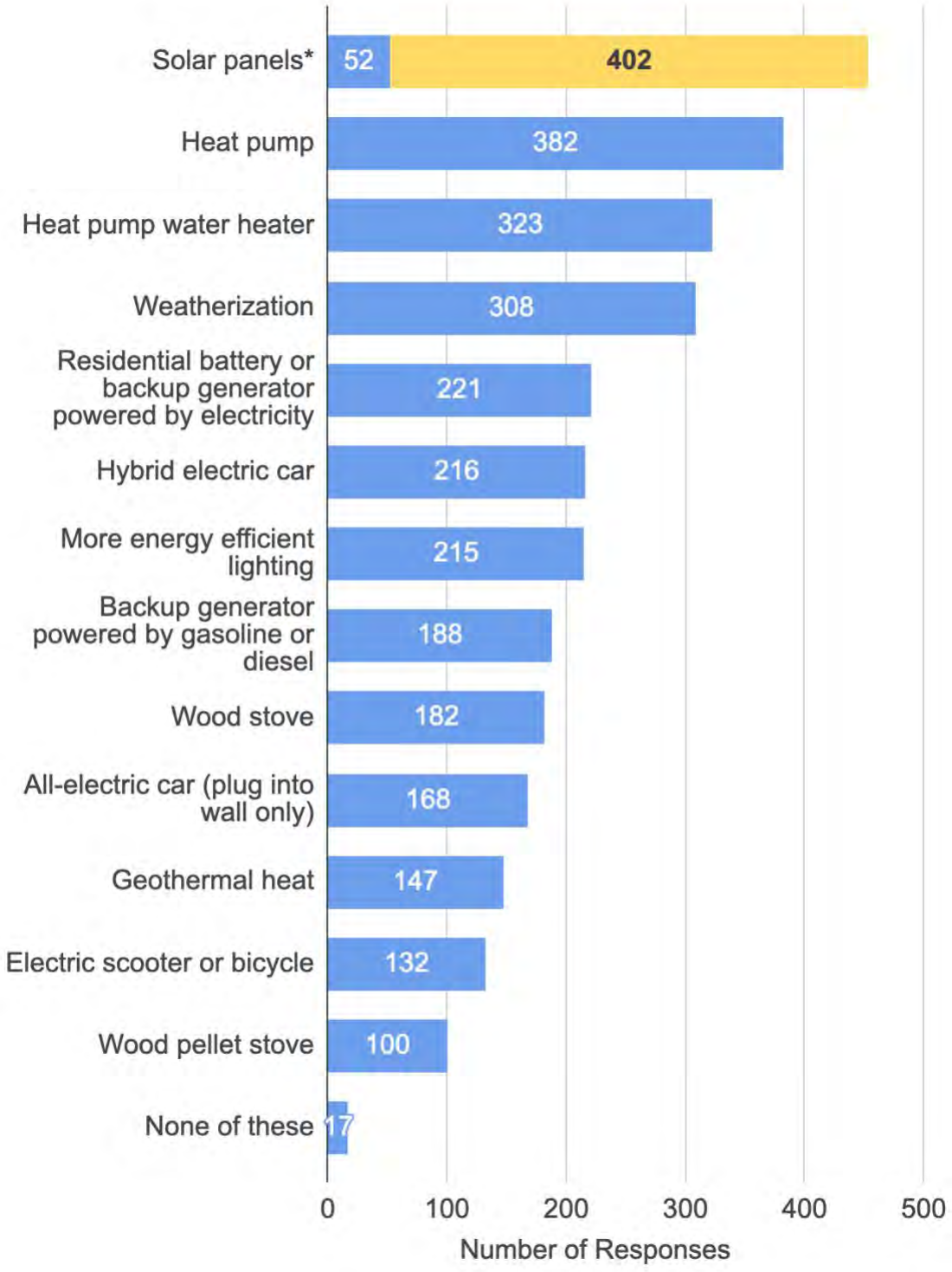

Figure 4.3.6. Maine Community Alternative Energy Survey responses to the question: Which of the following alternative energy options are you interested in for your own life? (542 total responses; some respondents selected more than one answer) ***NOTE:** The survey team did not realize that “Solar panels” was not

included as an option for this question when the survey was first released. They realized, and added it, on May 20. However, since many responses had already been collected by then, the value of 52 responses is incomplete. Therefore, the yellow bar on this graph includes the 402 “rooftop solar” responses to the question “Which renewable energy options would you like to see your community pursue?” received before May 20, plus the 52 responses to the primary question received after May 20.

The need for **heat pumps to improve basic heating and cooling needs** was underscored in the SCEC focus groups (7/8, 7/9, and 7/22/24), as many are living in makeshift housing and using unsafe methods to stay warm. One person shared that their 90-year old grandfather heats his home exclusively with a woodstove in his basement, and they think a heat pump would be a better home heating option for him. Another participant showed a tarp hanging around their woodstove, saying, “We just basically made a plastic tent. It’s maybe 8 by 10, and that's where we live in the winter, because to heat the whole space would be almost impossible.” Other focus group participants echoed that they would like to have heat pumps in their homes after hearing positive feedback from friends and family who have had them installed.

People of color and immigrants in a Community Organizing Alliance focus group in Portland (8/3/24) (Figure 4.3.7) agreed with this broad interest in energy efficiency improvements, stating that “energy efficient homes/business buildings are very helpful in the long term because I feel like it would slow climate change down in some ways,” and “having efficient homes matters, but we need education around this. The systems in our homes are old and unreliable, sometimes it can be scary”. Homes were discussed as the most important place to start efficiency work: “Individuals can now collectively tackle this issue from the ground up. Households are our base society. If people work together to create more energy efficient homes and businesses, costs should go down, benefiting both the climate and households.” Another participant noted that “This is good because that’s where people spend the most time (within their homes/businesses). By tackling those issues first I think it will have a big impact on your carbon footprint.”

Figure 4.3.7. Discussion of Working Group recommendations in Portland, led by Community Organizing Alliance, 8/3/24

On the other hand, when asked “Do you feel that there are sufficient rebates and incentives to support installation and maintenance?” 46% of the respondents to the Aroostook County Survey that answered “heat pumps” to the first question did not feel there were sufficient rebates or incentives available for installation and maintenance.

In 2022, the town of Otisfield received $40,480 to install heat pumps in the town office, update the “Protecting Otisfield's Watersheds” booklet, and hold a public awareness event. An Otisfield resident at a Center for an Ecology-Based Economy discussion (8/6/24) raised concerns in conversation about education regarding Otisfield's heat pumps: “If people don’t know what a heat pump is and how it works, they probably aren’t using it correctly.” The participant believes that

there are few education opportunities available to her community on how to use the heat pumps. She also believes that if the person in charge of making the heat pump work abandons the project, no one else might know how to make the heat pump work.

Multiple participants in the SCEC focus groups (7/8, 7/9, and 7/22/24) shared that they are **not** interested in heat pumps, because they would raise their electric bill. A Maine Community Alternative Energy Survey respondent (older adult) shared this concern saying, “I have heard horror stories about high electric bills when using heat pumps.” Many other SCEC focus group participants shared that they **struggled to afford housing at all**, citing rising prices as houses are bought up by higher-income newcomers to the state. During Center for Active Living discussions hosted by York Ready for Climate Action (7/26/24), participants expressed concern about the **cost of home retrofits** when considering the vulnerability due to storm damage and power outages.

High upfront cost was the most common barrier to improving energy efficiency or switching to renewable energy selected by respondents to the Survey (Figure 4.3.8)**.** Other popular responses included **lack of education** about the options available, **maintenance costs**, and too many other priorities.

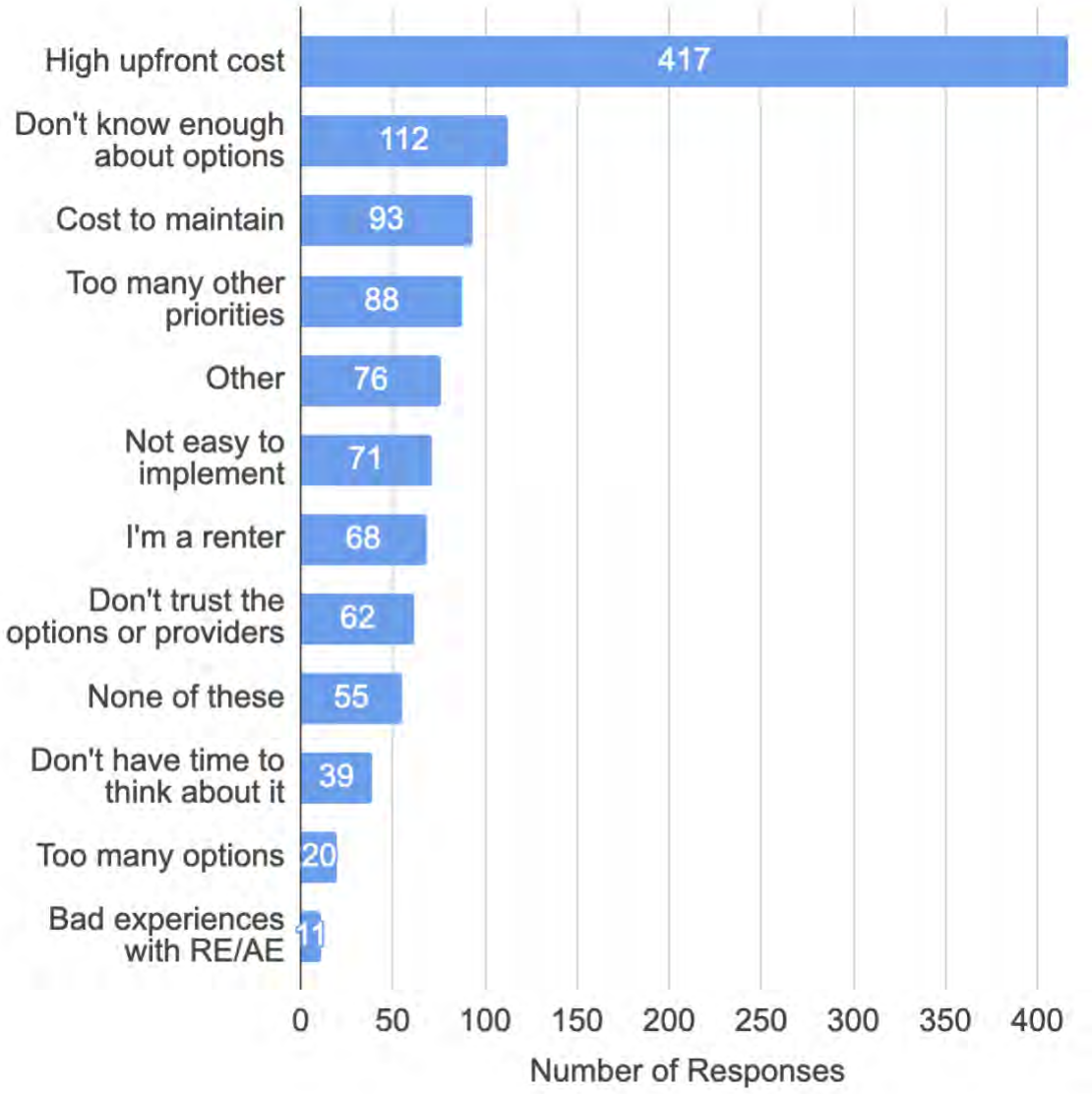

Figure 4.3.8. Maine Community Alternative Energy Survey responses to the question: What makes it difficult for you to implement alternative energy options in your own life? (543 total responses; some respondents selected more than one answer)

When respondents selected the “Other” option, they were given the opportunity to express their thoughts and concerns in their own words. From those responses (72), 6 major themes emerged:

1. High costs or financial barriers (11 responses): “Labor cost for a heat pump is way too high.” (respondent with a disability)
2. Lack of skilled professionals or contractors (9): “Not enough contractors for the existing jobs. Can’t get anything done.” (respondent from a disadvantaged community section of Bangor)

3. Solar energy feasibility (7)**:** “Our house is not well suited for solar, mostly due to the large number of large trees shading our roof. NOT interested in heat pumps.” (older adult); “Lack of skilled professionals to install. Heard there is no room on grid if invest[ing] in own solar and want[ing] to offload excess.” (respondent from a rural community - Windham)
4. Home ownership issues (5), particularly for those renting or in temporary housing situations: “As a condo owner, my options are limited.” (older adult)
5. Age and time constraints (5): “Old age makes payback not feasible.” (older adult)
6. Technology concerns (5): “Concern about reliability of relying on electricity only when we have a lot of issues with power outages, electricity infrastructure in my neighborhood.” (Person from a disadvantaged community section of Bangor)

Participants in that same session also stated that they found the Efficiency Maine website confusing and not as clear as it could be on how people qualify and how things work on the financing/loan side. Several people suggested that **navigators** for all of this information would be welcome to help people through the process, including prioritizing where to start and how to proceed. Participants said it would be helpful to have **people who have been through the process** and already have heat pumps to **share their stories** to communicate some of the positive health impacts from heat pumps (including non-energy benefits like respiratory benefits). Respondents to the York Ready for Climate Action survey were also looking for “consultations” and “community support” alongside rebates and tax breaks (7/25/24).

A Climate to Thrive held a special meeting of Local Leads the Way (7/8/24) that discussed the need for energy navigator programs in small rural towns. One participant said, “Weatherization costs are overwhelming even for **middle-income** homeowners, and so even with robust ‘navigator’ support, you will still hit a wall without more robust rebates. People tend to go with WindowDressers and hope for the best, then they get confused about whether they can get a heat pump, for example, when there’s mixed messages. Navigation is important but we need stronger rebates to make it possible for low and MIDDLE income folks.” Another participant agreed, adding: “People need more support with prioritization, as well, to understand what to sequence first. Additionally, how to take advantage of rebates.”

A participant at the Maine People's Alliance immigrant leaders meeting (8/9/24), which targeted new Mainers, said "Energy efficiency is an issue for my family and the communities I work with, particularly in Portland. Since the rent is going up, we need to see solutions to **reduce the cost** and keep them energy efficient at the same time. Investing in clean energy is an unavoidable obstacle in the years to come." At a 4/26/24 discussion hosted by Maine Council on Aging, a Community Action Partnership agency representative brought up similar challenges providing help to those who need it: "We are getting the word out, but then funding is cut. [It's] hard to not be able to help everyone who needs it. We do significant outreach into the community, and [we] get into the buildings where older people live in congregate settings. There are a lot of funding issues. **We need assistance in outreach**, [it] could be a full-time job in itself."

Older adult participants in the Maine Council on Aging listening session (8/6/24) noted there are efficiency issues not addressed by heat pumps/heat pump programs. There may also be other costs, such as requiring that electric panels be upgraded. People agreed that attention is needed on homes that do not qualify for efficiency upgrades because of **home repair needs**.

The importance of **community-empowered education** related to these building-related solutions was brought up in multiple direct engagements. At the monthly membership meeting of Maine People's Alliance (8/9/24), a community member with a disability and low income, who lives in rural Western Maine, shared:

> *"We need more education, whether inviting folks to listen to Zoom calls or people who are knowledgeable about things like solar panels. There's a lot of misinformation about a lot of the different types of energy. People are scared of solar panels - they heard that it's not reliable because of the weather in Maine. There is an electric vehicle plug at a public hiking place, and there was a lot of pushback from the public in installing that due to misinformation."*

Other participants echoed that people need to understand that these systems are reliable and will work for them, and in order for that to happen they need to be educated on them.

At the Casco Bay Islands Bluff Erosion Symposium led by Island Institute (7/23/24), hosted by the Island Institute, participants noted multiple **island-**

specific challenges limiting their ability to make energy efficiency improvements:

- expense of bringing equipment and people out to islands to install heat pumps
- interconnection challenges with limited room on the grid to house new solar
- lack of affordable housing
- higher ferry prices and skyrocketing barge costs making it difficult for contractors to bring trucks, workers, and equipment to unbridged islands

Across 37 interviews and 2 focus groups with business owners in the Maine Black Chamber of Commerce, held by Coastal Enterprises, Inc. (7/31 and 8/7/24), 32% of 37 respondents noted that **environmental protection** is the biggest motivation for their alternative energy preferences. When asked which potential solutions Chamber members, as business owners or the owner of the building, had already implemented, 23% of 30 responded “None of the above.”; 13% had installed LED lighting; and 13% responded “Energy thermostat.” Only one respondent answered “Alternative heating sources,” and one answered “Energy star appliances.” None of the business owners responded that they had implemented alternative energy sources. When asked, “What makes it difficult for you to implement alternative energy options at your business?” 44% of 27 respondents answered “High upfront cost.**”** Additionally, 43% of 23 respondents to the question, “Which, if any, problems do you experience in your building?” answered “High price of electricity.” Seventeen percent of respondents answered, “House temperature not well controlled.”

How do renters feel about these options?

Multiple people addressed the benefits and challenges of efficient home heating systems in rental homes. A participant at the Maine People’s Alliance immigrant leaders meeting (8/9/24), said “I am a renter and the building I live in has installed a heat pump which is cleaner for the environment and better for the community's health.” York Ready for Climate Action hosted a focus group (8/6/24) for renters at the Baldwin Center, York Housing's largest campus. Participants were quick to point out that they rent, and therefore do not have options about how their homes are heated. These older adults were familiar with HEAP and described struggling with heating bills.

Underscoring this sentiment, during a discussion with immigrants at the Maine Multicultural Center (8/17/24), a person who immigrated in the past year

and is now living in Bangor stated: “My landlord has not adopted any of these [energy efficiency] practices. When I have asked for more energy efficient measures (LED, window inserts) I was given a vague response and not contacted again about it.” Renters at the focus group discussion led by KVCAP at the LINC Wellness Center in Augusta (8/5/24) shared similar struggles with landlords: “We can’t use window AC units, but we need vents to install floor units and the landlord won’t!” Furthermore, a youth participant in the Maine Sustainability & Water Conference (3/28/24) shared that even though they pay for all their utilities, their landlord does very little to change the infrastructure. They think the place would be “a perfect place for a heat pump system but there’s no incentive for the landlord to change anything.” Attendees at a Maine People’s Alliance monthly meeting (8/8/24) discussed that renters should be included in conversation around tax incentives/benefits that exist for them when so many improvements are focused on homeowners. Similarly, the question of who benefits from incentives, “renters vs. homeowners,” arose (Maine People’s Alliance, 8/8/24).

Participants in a 5/20/24 Natural Resources Council of Maine and Maine Community Action webinar and discussion, which focused on BIPOC communities, youth, and people with limited English proficiency, including New Mainers discussed additional challenges tenants and landlords face. They highlighted the poor conditions of many rental properties and the **lack of tenant rights awareness**. Participants also discussed the need for better landlord-tenant communication, more accessible housing, and the better implementation of tax credits and rebates to improve housing conditions. Participants emphasized that these programs should be in the **languages of their communities**. They discussed issues with lead, mold, and foreclosed properties; a resident of downtown Lewiston discussed facing issues with mold, rats, and cockroaches.

4.3.2 BIH Recommendation 2: Establish strong systems to support rapid adoption and compliance with climate-friendly building codes and standards.

Neither direct engagements nor the Maine Community Alternative Energy Survey collected feedback about this recommendation directly. However, one partner organization, PassivhausMAINE, was able to provide some insights based on their work.

PassivhausMAINE reported that enforcement and understanding of climate friendly building codes and standards in rural areas is lacking and that key challenges include stigmas about cost & expense of making these changes and the do-it-yourself (DIY) mentality, especially when people are doing whatever they have to do in the cheapest way possible, leading to potentially dangerous situations. They also shared that they felt a lack of regulation enforcement in many rural areas was leading to builders not adapting practices to updated codes. According to PassivhausMAINE, one solution to the need for more code officers could be to centralize an officer for multiple towns or a region; currently, code enforcement is up to the municipality. PassivhausMAINE also suggested standardizing codes, creating a position in a municipal organization, and training code officers.

A participant from a rural and low-income community in one of A Climate to Thrive's Local Leads the Way meetings (7/8/24), shared that they felt "Building codes have a long way to go in Maine, and the 'how' is fairly light-touch. What might help here?" they asked. Participants also brought up the example of Freeport, which "persuaded the council to adopt the most aggressive [building codes]... by getting people to sign up for it, tabling, community organizing, [so] the town council felt as if they had the support of the people." Undertaking similar community outreach actions could assist other communities in adopting more climate friendly building codes and standards.

4.3.3 BIH Recommendation 3: Promote the manufacture and use of climate-friendly building products.

At a discussion hosted by a member of the UMaine research team at Islesford Boatworks (8/8/24), a resident of the Cranberry Isles, an un-bridged island community, stated "[I support] growing more materials - growing wood for construction. Laminated beams are a great carbon sink. Regenerative agriculture gets stuck in food, but there's so much more - agroforestry is really important as well, and growing fibers for clothing, etc." Half of the participants in 37 focus groups conducted by Coastal Enterprises, Inc. (7/31/24 and 8/7/24) stated they are aware of the environmental benefits of using sustainable materials. However, participants also noted a need for **funding** to support climate friendly building products.

4.3.4 BIH Recommendation 4: Support measures that both reduce carbon and improve resilience.

The results of the Maine Community Alternative Energy Survey showed **strong support for building-scale distributed energy resources** (Section 4.3.1), including 454 responses (84%) in favor of rooftop solar and 221 (41%) in favor of a residential battery or backup generator powered by electricity for their property (Figure 4.3.6). Responses from York Ready for Climate Action's survey (7/24/24) echo this support with 31 people indicating they would like to have solar in the future.

On the other hand, survey respondents also identified **high upfront costs** (417 responses (77%)) and **lack of understanding** (112 responses (21%)) (Figure 4.3.8) as two major challenges to adopting alternative energy options. The results of multiple direct engagements support these challenges (Section 4.3.1), including multiple barriers for renters and landlords in particular. In addition, one landlord (older adult) survey respondent made a comment specifically related to distributed energy resources: "Costs are changing over time, but the cost to sell excess as well as future cost for electricity from the grid [is a barrier], so it is difficult to calculate the economic cost or benefit." Another landlord respondent (with a disability) stated, "I've investigated alternative energy but can't afford the upfront costs. I was told you get all kinds of money back but then find out it's in the form of a tax rebate and to get the maximum, you have to spend several thousand dollars."

4.3.5 BIH Recommendation 5: Accelerate decarbonization in industrial processes.

One immigrant shared their perspective on industrial decarbonization at a Maine People's Alliance discussion group (8/9/24): "I would love to see more of decarbonization in industrial process. I have traveled across the world and have seen the climate change impact on people lives and people displaced. I would recommend building in the weatherization system in all affordable new housing projects." Another participant agreed, adding, "More education is needed, and I don't think it's about being immigrant or not it's a general population lack of education around this issues which is the biggest barrier."

4.3.6 BIH Recommendation 6: Continue to lead by example in publicly-funded buildings.

The Maine Community Alternative Energy Survey asked, “What renewable energy successes have you seen within your community that you would like to see more of?” One respondent, a natural resource business owner, mentioned “Community Resilience Partnership Community Action Grants deploying renewable energy on municipal buildings—the visual effect of having solar panels on the town hall or fire hall helps normalize these technologies.” A participant in the Maine Sustainability and Water Conference (3/28/24), expressed the belief that it makes sense to install heat pumps in big municipal buildings.

4.4 Energy (EWG)

Energy Working Group Recommendations focus on energy planning to enable the adoption of renewable energy technologies while addressing financial barriers and equity concerns. They prioritize a comprehensive understanding of residential energy burdens across all energy expenditures, including electrification of buildings and transportation; reducing financial barriers for low- and moderate-income households through expanded financing options and ownership models; launching an energy navigator program to assist residents in accessing energy cost assistance and funding opportunities; and increasing funding for core energy assistance programs to ensure sustainable support for eligible households. Additionally, the recommendations emphasize the importance of implementing demand management strategies to enhance load flexibility, improve energy reliability, and facilitate equitable access to clean energy technologies, all while aiming to meet Maine’s greenhouse gas emissions reduction targets.

Participants face significant challenges with high energy costs, often forcing difficult choices that impact their quality of life. While there is strong interest in renewable energy options like solar panels, high upfront costs remain a significant barrier, particularly for low-income households. To address these issues, recommendations include expanding financial assistance and implementing energy coaching services to help residents understand and effectively use new energy technologies. Overall, there is a strong need for early and meaningful community involvement, combined with personalized support, to advance equitable access to clean energy across the state.

Eighteen percent (105 respondents) of the total 568 survey respondents answered at least one question in the rotating Energy block of the Maine Community Alternative Energy Survey. All survey respondents saw a subset of questions related to Energy working group topics because the focus of the base survey was on sustainable energy. In addition to the results presented below from the survey and direct engagements, **results presented in Section 4.3 are also relevant to the Energy working group recommendations** and should be considered in updates to the Maine climate plan related to energy.

This section does not include EWG Recommendation 3 (Manage the impact of buildings, vehicles and industry on the grid with load flexibility and innovation) as a subsection. However, subsections 4.3.1 and 4.4.2 include relevant information about the demand-side management aspects of this recommendation.

What do the terms "alternative" and "renewable" energy mean to people?

The Maine Community Alternative Energy Survey asked an open-ended question about what the terms "alternative" and "renewable" energy meant to the respondents. Most written responses indicated an emphasis on **non-fossil fuel energy sources** (Figure 4.4.1), with solar (212) and wind (191) being the most frequently mentioned.

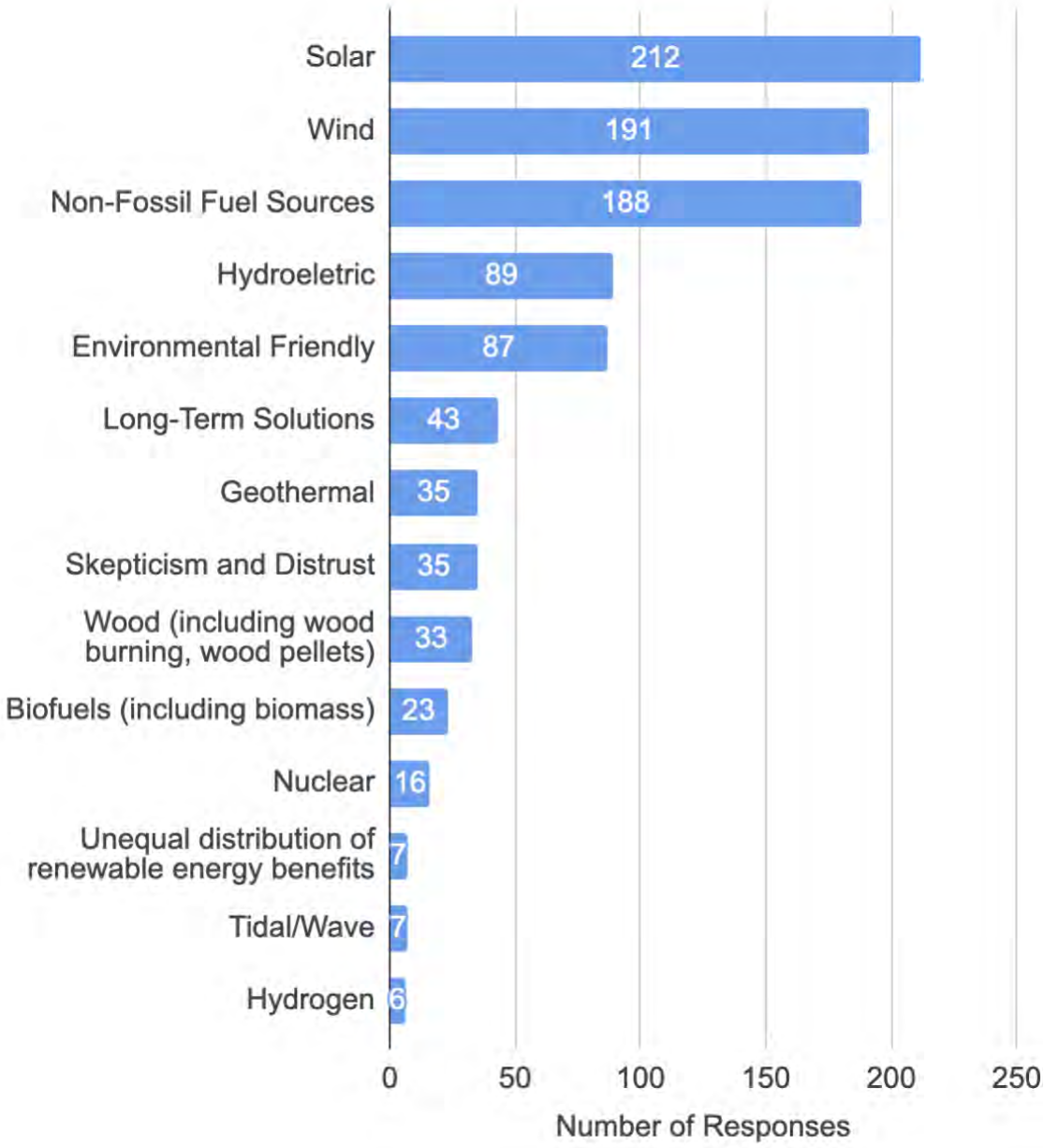

Figure 4.4.1. Maine Community Alternative Energy Survey responses to the open-ended question: What do the terms “alternative” and “renewable energy” mean to you? (550 total open-ended responses coded for themes; some respondents wrote in responses that fit within multiple themes)

4.4.1 EWG Recommendation 1: Decrease energy burdens while transitioning to clean energy.

What energy burdens and barriers to adopting renewable energies are people experiencing?

Section 4.3.1 includes some discussion related to energy burdens faced by participants in their homes and businesses. In addition, the twelve participants (many with low or fixed incomes) in SCEC's focus groups (7/8, 7/9, and 7/22), discussed the difficulty of heating their homes, keeping a car on the road, even affording food, especially as they age and can no longer garden or manage wood heating.

The Aroostook County Action Program also conducted a survey (7/23/24, 62 respondents) to evaluate how rural residents with low incomes describe energy burdens. In response to the question, "How do you currently manage energy costs and what challenges do you face?" multiple survey participants said they are challenged by rising electricity costs in particular (8 out of 24 who responded with challenges), the high costs of energy in general (8), and problems paying heating oil costs (2). Thirty-nine of the six-two participants described energy cost management strategies. Some focused on financial strategies, such as HEAP (2) and budgeting and making sure to pay bills on time (6). One respondent answered, "Pick between food and heat" and another, "Deal with month to month. Too expensive".

For specific ways to manage costs, participants mainly described energy conservation actions that might cause additional types of burdens in daily life: turning off lights (8), lowering or limiting heating (4), and plastic sheeting (2). One participant attempts to manage costs by "turning most of my breakers [off] when they are not needed." Two mentioned heat pumps as a cost saving strategy, but one stated a need for "caution with running heat pumps and charging the car - reduced electric rates would help". These responses support the results of recent published energy equity research that indicates that the "traditional income-based measure of energy poverty fails to identify some vulnerable households who underconsume" [23, p.1]. When people conserve energy to the point that they are not using the level of energy services they need, there can be a **hidden energy burden** that is not apparent in their energy bills.

Participants in an Island Institute event (8/8/24) highlighted the barriers of "interconnection challenges," "not enough capacity on the grid," and experiences

related to electricity price increases for non-adopting island residents due to solar installations on the island. Participants also expressed a preference for community driven power options. New Mainers reinforce that cost of alternative energy options are often prohibitive, where a participant at a Maine Multicultural Center event (8/17/24) with immigrant communities noted “I just don’t think the average person could [shift toward renewable energy] because of how expensive these upgrades are.” Further, many participants were concerned about the efficiency of these alternatives in comparison to the gas/oil they currently use in their appliance and heating.

Are people using assistance programs to help reduce energy burdens? What have their experiences been?

Of the 89 respondents to SCEC's survey (8/12/24), 17 had applied for HEAP, and all had received it; 8 had applied for LIAP, and 4 had received it. However, many discussed either insufficient help from benefits or **having to keep incomes low** to avoid losing benefits**.** For example, a participant in an SCEC focus group (7/22/24) said:

> *“In the winter, HEAP helps, and then I wear a lot of clothes. A couple of years ago, it got to where I hardly got anything, like $38, from HEAP, and that was after I retired and was living on $800 a month. It's crazy. So the way they explained it was they took the subsidized part of my rent as income. So, to them, I was doing well because I had this subsidy. On the other hand, people whose subsidy included heat, didn't [have it deducted]. They pay a little more in rent, but they pay nothing on their utilities. They got the full amount. Wow! That made me crazy.”*

Regarding other types of assistance, at a discussion hosted by a member of the UMaine research team at Islesford Boatworks (8/8/24), an older adult resident of the Cranberry Isles community asked:

> *“What is the emphasis on reaching poor and low-income communities? Investment reduction act provides some money for solar panels and heat pumps - rebate is not the same as free though. It doesn’t seem like there is enough funding. Poor people need more help with climate change, especially in heat and cold.”*

When Aroostook County survey (7/23/24) respondents were asked, “What support or resources would help you reduce energy costs while transitioning to clean energy?” 33% of respondents answered that some kind of financial

assistance, such as a rebate or energy assistance program, would help them the most. One Aroostook county respondent shared, “Rebates and incentive programs are awesome! I'd love to have access to more information, like breakdowns of the difference between energy cost and consumption would be most impacted by transitioning to clean energy. I'm very interested in supplementing with solar panels, but it seems potentially difficult and cost prohibitive. Also, information about what solutions are available in my area.”

Owners of businesses in the Maine Black Chamber of Commerce participating in a meeting hosted by CEI (6/5/24) also expressed difficulty accessing information about benefits of and acquisition/installation of energy systems.

4.4.2 EWG Recommendation 2: Plan and build the infrastructure needed to achieve 100% clean electricity by 2040.

What renewable energy successes have people seen in their communities?

Responses to the open ended question in the Maine Community Alternative Energy Survey “What renewable energy successes have you seen within your community that you would like to see more of?” mentioned **solar energy** (including **community solar**) 203 times (Figure 4.4.2). Respondents highlighted widespread interest in the installation and use of solar panels on rooftops, in solar farms, and through community solar initiatives. This theme also covered municipal solar projects and growing acceptance of solar energy. As one youth respondent put it, “We’ve seen great success utilizing disturbed land like sand pits, landfills, and large rooftops to increase the amount of distributed solar, as well as many homeowners adopting it for themselves.” A participant in the Maine Sustainability & Water Conference (3/28/24) also described the success of a solar farm recently installed in Norway on top of a capped landfill, noting that “It was an easy sell, on unusable space anyways, and not unsightly because it’s out of the way. It was sold as reducing the tax burden and reducing municipal energy. Whenever there was a hiccup people were quick to point it out. It was an interesting experience to balance people’s expectations. Now that it’s up and running no one talks about it.”

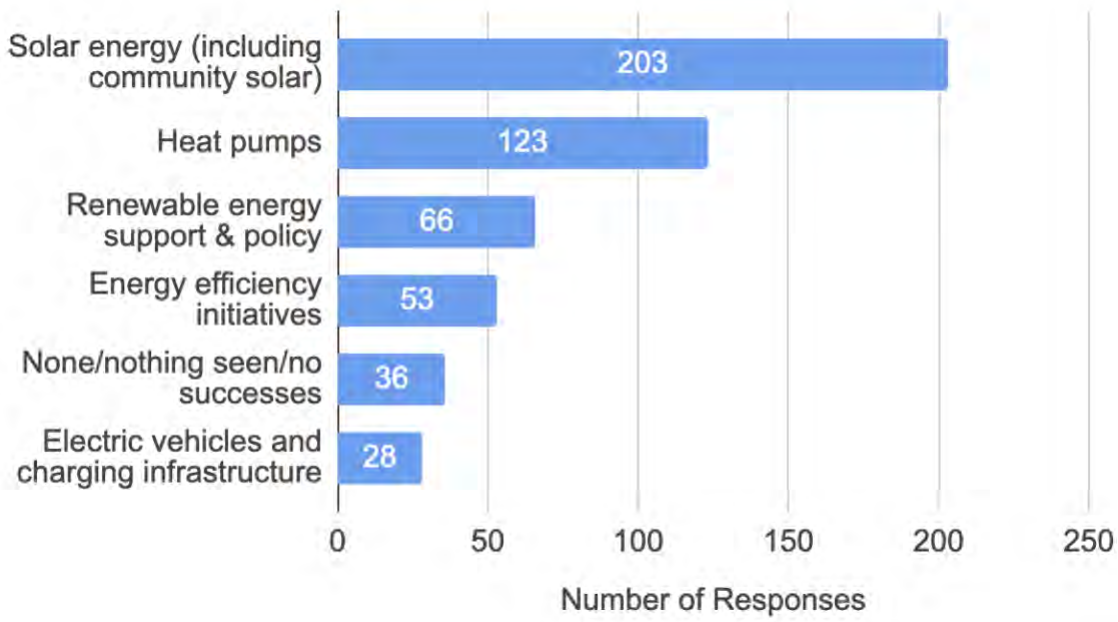

Figure 4.4.2. Maine Community Alternative Energy Survey responses to the open-ended question: What renewable energy successes have you seen within your community that you would like to see more of? (483 total open-ended responses coded for themes)

Heat pumps emerged as the second most common theme in the Maine Community Alternative Energy Survey results (Figure 4.4.2), with 123 mentions, focusing on increasing adoption for heating and cooling in both residential and public buildings. Respondents emphasized the benefits of rebates, incentives, and energy efficiency: “Heat pumps are gaining momentum despite the high upfront costs; I would like to see low or zero interest loans to support their adoption” (respondent from a disadvantaged community section of Portland). Another respondent with disability expressed the need for infrastructure improvements, saying, “Lots of heat pumps. Community solar. Improvements and expansion of the electrical grid. We need more consistent electrical service for electric heat pumps and EVs to be a viable alternative for our community.” Section 4.3.1 includes much more detail about participants’ preferences and experiences with heat pumps.

Renewable energy support and policy was another common theme, appearing 66 times and reflecting general support for renewable energy initiatives like wind and hydropower, as well as the importance of state funding and programs such as Efficiency Maine. One survey respondent, who is a recipient of LIAP/HEAP or other services, specifically praised Efficiency Maine’s efforts: “Efficiency Maine has done a good job distributing LED light bulbs and

water-saving shower & faucet fittings. It's a small start, although so much more is needed, and quickly." The success in specific regions was also highlighted by a youth respondent: "Originally I am from Mount Desert Island and I have seen much success especially with solar on the high school, a climate plan for the town of Bar Harbor and other community projects including heat pumps and better insulation for homes.".

Energy Efficiency Improvements were mentioned in the Maine Community Alternative Energy Survey 53 times, with respondents advocating for better insulation, weatherization, LED lighting, and Window Dressers: "I love the Window Dressers initiative, which provides a nice mix of community engagement/involvement, lower-income family support, and immediate impact" (Woman and business owner). The theme of **Electric Vehicles and Charging Infrastructure** appeared 28 times, highlighting the growing use of electric vehicles (EVs) and the need for more charging stations to support broader adoption. Additional detail about participants' perspective on EVs can be found in Section 4.5.1.

Some (36) survey respondents also indicated that they have not seen any renewable energy success in their community. As one respondent with low income stated " I think if solar panels are a priority, they should be installed on rooftops and not take up land that could be used for [housing]. Plus they're such an eyesore ".

Which renewable energy options would people like to see in their communities?

When presented with multiple options, most Maine Community Alternative Energy Survey respondents, including homeowners and renters, would like to see their communities pursue solar panels on rooftops (including homes, public buildings, etc.), air-source or geothermal heat pumps for homes, "batteries that save renewable energy for later use and may reduce the need for buying power from the electric utility," and anything that helps the environment (Figure 4.4.3). Results from direct engagements echo these preferences: 40% of 47 rural business owners surveyed by Sunrise County Economic Council (8/12/24) are interested in implementing alternative electricity, such as solar, wind, etc. for their businesses. Similarly, 25% of respondents surveyed by Aroostook County Action Program (ACAP) answered that they'd be interested in solar, 11% answered heat pumps, and 6% answered electric vehicles (ACAP, 7/23/24). KVCAP found that, though solar is one of the most popular options, hydropower was a more favorable choice for older adult groups in Hartland and Skowhegan, which lie

directly on the Kennebec River (KVCAP focus group discussions, 4/22/24 and 4/23/24).

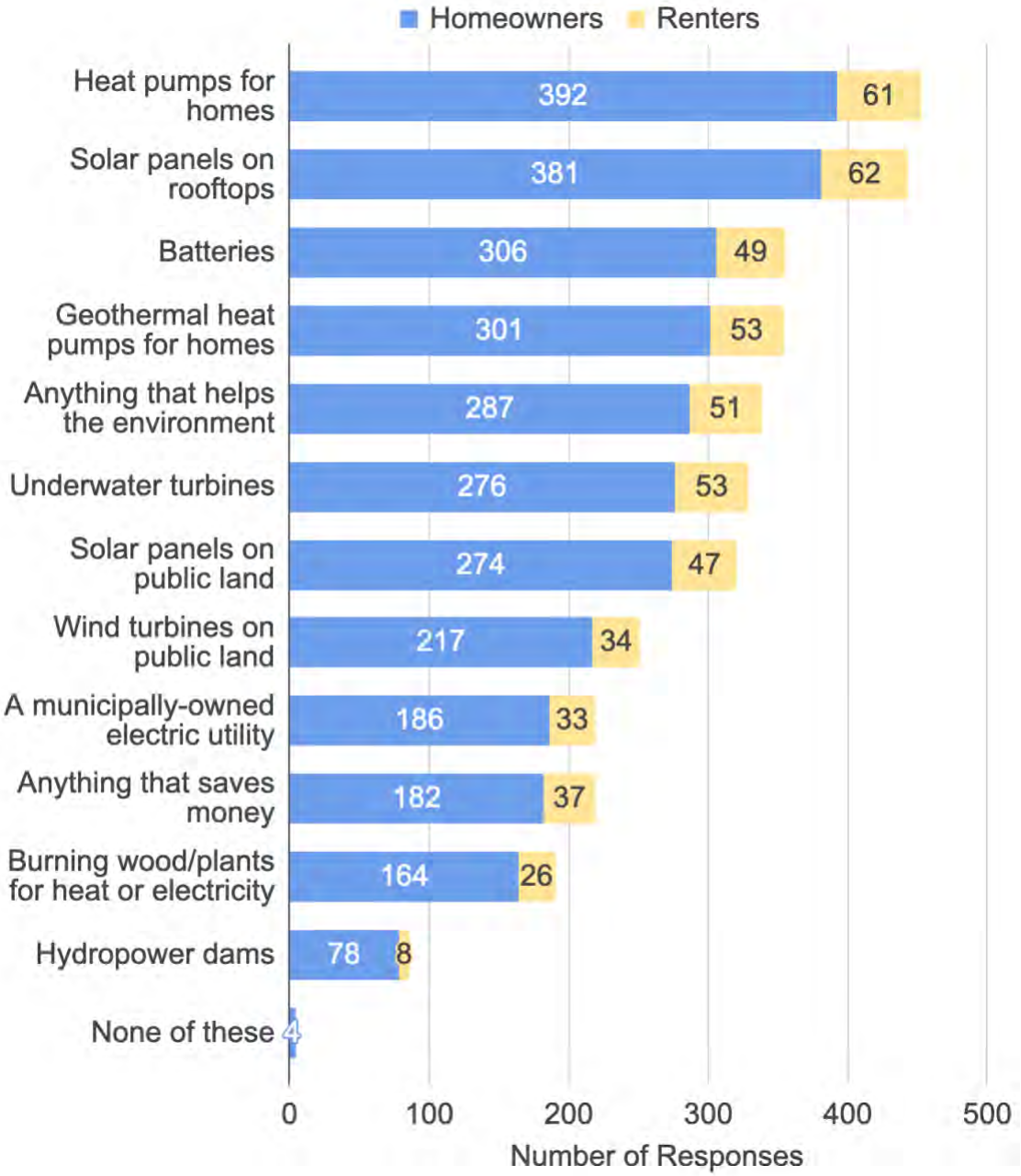

Figure 4.4.3. Maine Community Alternative Energy Survey responses to the question: Which renewable energy options would you like to see your community pursue? (565 responses, with 477 homeowners and 80 renters; some respondents selected more than one answer)

Many (266) Survey respondents wrote in additional information about these options in a follow-up prompt: “Enter any comments you have about these options in the space provided, including but not limited to: options you would prioritize over others, questions you have about the options, additional options you didn't see on the list, etc.” (Figure 4.4.4). The results underscore the strong support for **renewable energy** discussed previously. The next most common theme was concerns about the **environment** (139 respondents; e.g., the impact of energy production on habitats, land use, and sustainability). For example, “While I am not opposed to siting solar on public lands I'd like to be cautious that we are not destroying natural spaces to do so. I'd prioritize siting solar on buildings first or on land that was already disturbed somehow” (youth from a disadvantaged community-Brewer), and “I do not want energy sources that harm animals or the environment. And I do not want alternative or renewable energy sources to be controlled by for profit entities” (respondent with low income and a disability, living in a disadvantaged community section of Portland).

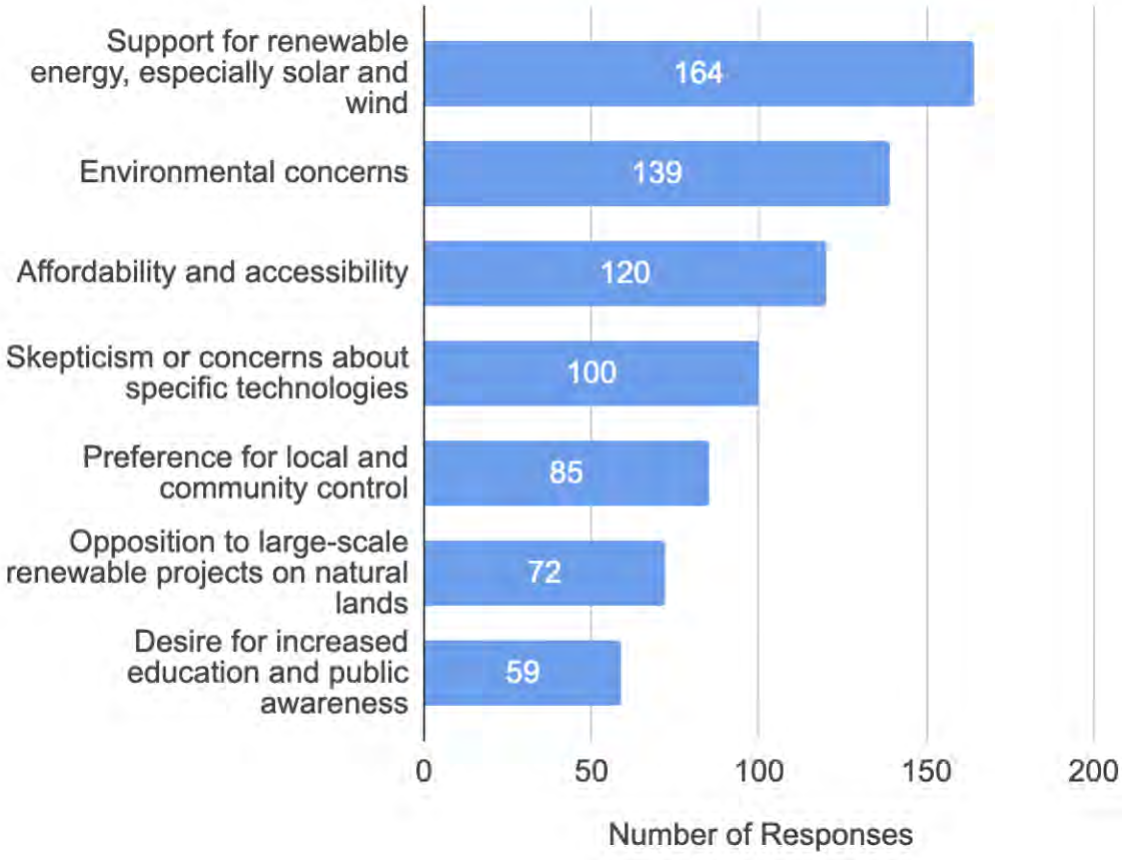

Figure 4.4.4. Maine Community Alternative Energy Survey responses to the open-ended question: Enter any comments you have about these [energy] options in the space provided, including but not limited to: options you would prioritize over others, questions you have about the options, additional options you didn't see on the list, etc. (266 total open-ended responses coded for themes; some respondents wrote in responses that fit within multiple themes)

Many respondents wrote in ideas related to **affordability and accessibility** (120 respondents): “There should be programs to help homeowners with the upfront costs to install these very expensive systems” (person with a disability). One hundred respondents indicated **skepticism** or concerns regarding the environmental and economic sustainability and long-term feasibility of **specific technologies**, including but not limited to battery storage: “Batteries are great and energy storage will be necessary for our transition away from fossil fuels, but I don't believe our current battery technology & approach to using battery backed systems is very sustainable” (resident from a disadvantaged community section of Portland). Eighty-five respondents indicated a strong **preference for local and community control** over energy production as a way to ensure fair pricing and local benefits:

> *“A municipally owned utility would be fantastic. Where I grew up, in southern Maine, we had a town owned power company. It is still operating, and the bills are still way lower than Versant’s. Also, the times when they lose power are far fewer than any area covered by Versant/CMP, and the downtimes generally last way shorter. This would also provide jobs locally, I would see it as a win all around!”* (person with low income)

Seventy-two respondents expressed **opposition to large-scale renewable projects on natural or farming lands**, preferring renewable energy to be deployed on already disturbed or developed land: “Wind turbines should be well away from any habitation or public gathering” (recipient of LIAP/HEAP or other energy assistance). There were also concerns about renewable energy projects taking up space that could otherwise be used for other needs (e.g. housing) and perceptions that these projects drive up electricity prices.

There is also a desire for **increased education and public awareness** about renewable energy options (59 responses): “There seems to be a need in communities to have more educational opportunities related to the sources of energy sequestration, especially the truth about the pros and cons of each option

[and] more encouragement by municipalities to get people to embrace these newer technologies" (older adult). One respondent from a disadvantaged community (Bath) highlighted the need to use all options available to us: "We need to reduce usage and simplify how we generate, transport and use energy. Right now we're unsustainable, but we need to more or less use all of our options to help address our environmental problems. We also need substantial support to help all people be able to make the transition and simplification."

Feedback from A Climate to Thrive engagements with leaders of small, rural towns (5/14/24) highlights the importance of local ownership and community involvement in community-scale renewable energy projects, particularly in rural towns, while participants at Maine Council on Aging engagements (8/6/24) emphasize the need for targeted support for older adults.

What challenges do people see local governments facing in supporting renewable energy, and how can these be addressed?

In their written responses to the open-ended question "What might make it difficult for your local government to support or adopt renewable energy options?" respondents to the Maine Community Alternative Energy Survey, revealed **6 key barriers** (Figure 4.4.5):

1. **Cost and financial constraints** (220 responses):

   "Cost is by far the biggest barrier in my community…Capacity hinders long-term investments; grant funds are available to implement various options but not for project management. In my community, volunteers are writing grants, but relying on the same volunteers to manage projects during and after implementation is not sustainable." (recipient of LIAP/HEAP or other energy assistance)

   "Start-up costs! Maine is a poor state. I also think people are fearful of the unknown and worry about costs being foisted on consumers" (person from a rural community - Gray)

2. **Political resistance and polarization** (101 responses): "A strong political connection to 'climate.' Once it became a party issue and not a human issue, it becomes political to talk about." (youth)

3. **Lack of understanding and education** (71 responses): “Lack of understanding and knowledge of the importance of these issues” (respondent with a disability)

4. **Local opposition** (54 responses):

   “People in the town are dismissive of climate change and alternative energy sources like solar. The town voted down a solar farm on unused farmland because they didn’t want to look at it” (person with low income)

   “Disinformation intended to cause doubt and confusion about climate change and its impacts. Political ideologies among local elected officials that oppose government intervention/incentives. Regarding the latter, it's not that they think renewable energy is bad. It's that they see it as the government telling people what to do.” (person from a disadvantaged community - Patten)

5. **Infrastructure limitations and technological barriers** (36 responses): “The state of our grid—deteriorated T&D [transmission & distribution] and utility policies that lack transparency and consistency coupled with high interconnection costs (or the lack of ability to interconnect at all)—pose huge barriers to projects at any scale beyond the home or business (and sometimes even on those small scales!).” (recipient of LIAP/HEAP or other energy assistance)

6. **Lobbyists and corporate interests** (26 responses): “I believe the fossil fuel industry has spent so many decades and dollars lobbying and influencing the public through disinformation and misinformation campaigns that most people feel confused and unsure who to trust. I believe this historical political power has made the barrier of progress much more difficult.” (youth)

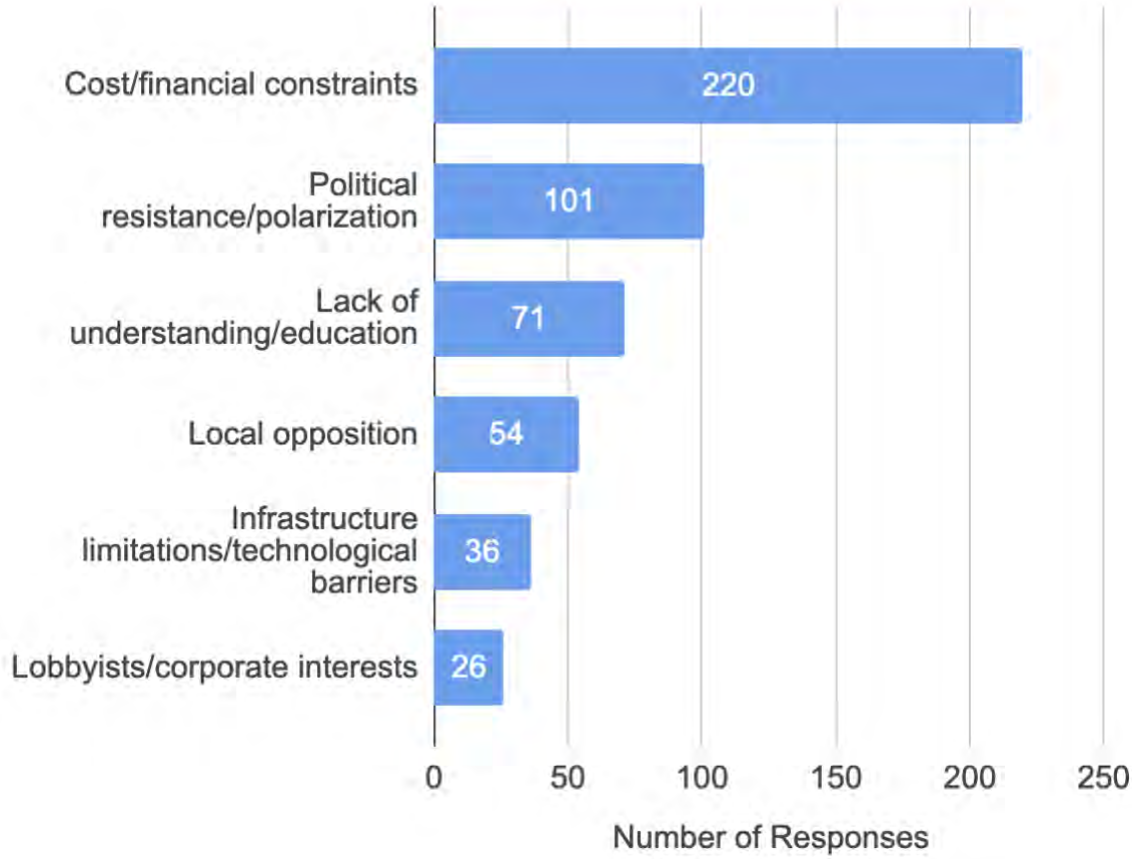

Figure 4.4.5. Maine Community Alternative Energy Survey responses to the open-ended question: What might make it difficult for your local government to support or adopt renewable energy options? (508 total open-ended responses coded for themes)

Expanding on the energy education theme, during a discussion hosted by the Community Organizing Alliance on July 11, 2024, in Lewiston-Auburn, participants shared various perspectives on energy use and climate education. One participant expressed frustration about not understanding their energy bills, “So why does that electricity company (CMP) charge my family so much, does it have something to do with our homes not having energy?” Another participant stated that improving climate knowledge is an opportunity: “It’s going to help more people in the Lewiston community that have no idea what is going on about climate.” Another participant said that “We need the education since we don’t even learn this stuff about climate change.” One participant stated that “I learned today that we need to tell all our families and friends to take out all the cords when we are done using so we can be more energy efficient.” Others stated, “okay since I know this now, I will turn off the stove, I will turn off everything.” Participants at a focus group in Portland, hosted by the Community Organizing

Alliance (8/3/24), discussed their understanding of energy use. One participant stated, “The world uses a lot of energy which leads to a lot of pollution even just from light. Using less energy in places we are [in]...everyday can definitely help the climate.”

How are people thinking about community solar?

Since participants expressed so much interest in solar throughout this study, it is helpful to understand, in the broad context of renewable energy projects, how they engage with and perceive “community solar.” The survey presented information about two broad approaches to community solar (Figure 4.4.6) and then asked a series of follow-up questions about their awareness, engagement, and preferences associated with community solar.

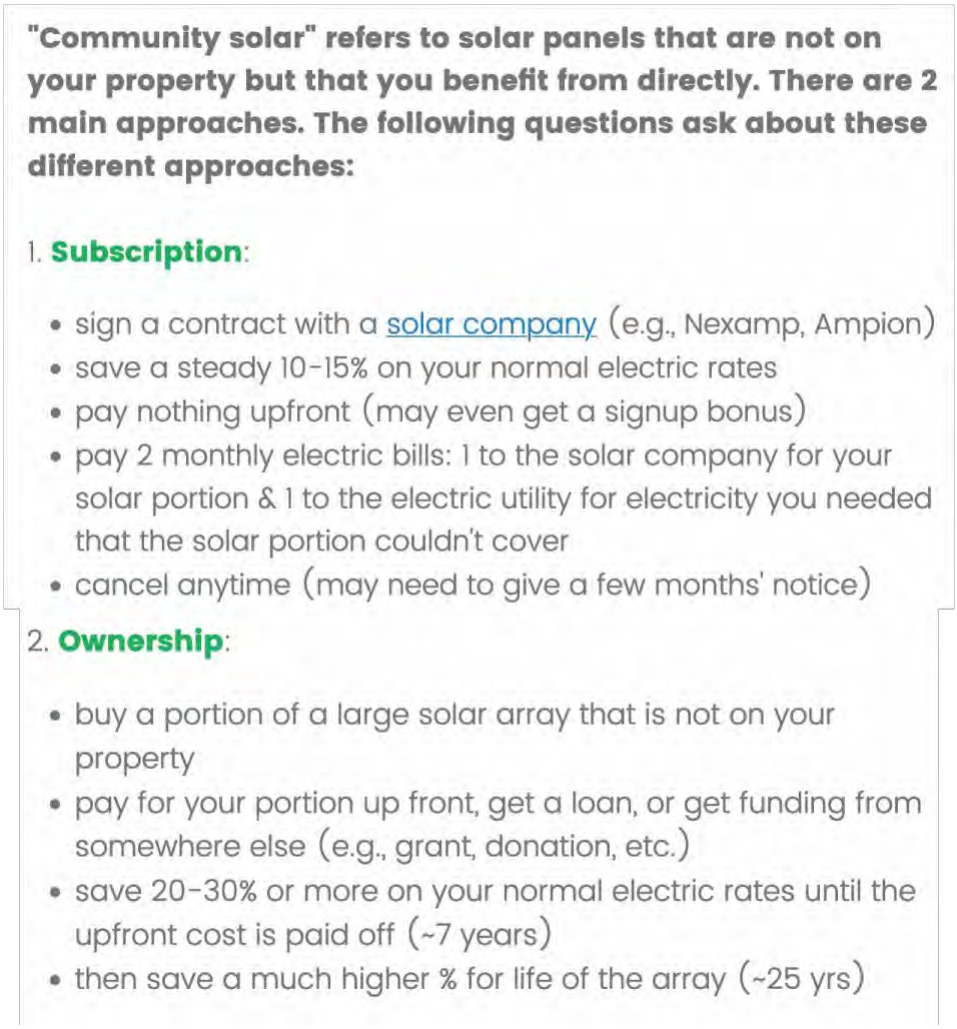

Figure 4.4.6. Maine Community Alternative Energy Survey information presented to respondents prior to seeing multiple questions about community solar.

Thirty-three (32%) of 102 respondents to a question asking them to identify their experiences related to community solar (Figure 4.4.7) selected, “I have seen community solar subscriptions advertised in my community”, with greater familiarity overall with subscription-based solar than community-owned: 25% selected “I have been approached by a company asking me to subscribe to a community solar project,” but only 7% selected a similar response for community-owned solar. Nineteen percent selected, “This is the first time I am hearing of these options.” A respondent who selected “other,” wrote in, “I would consider joining if recommended by someone I **trust** & really know what they are talking about” (older adult with a disability and low income).

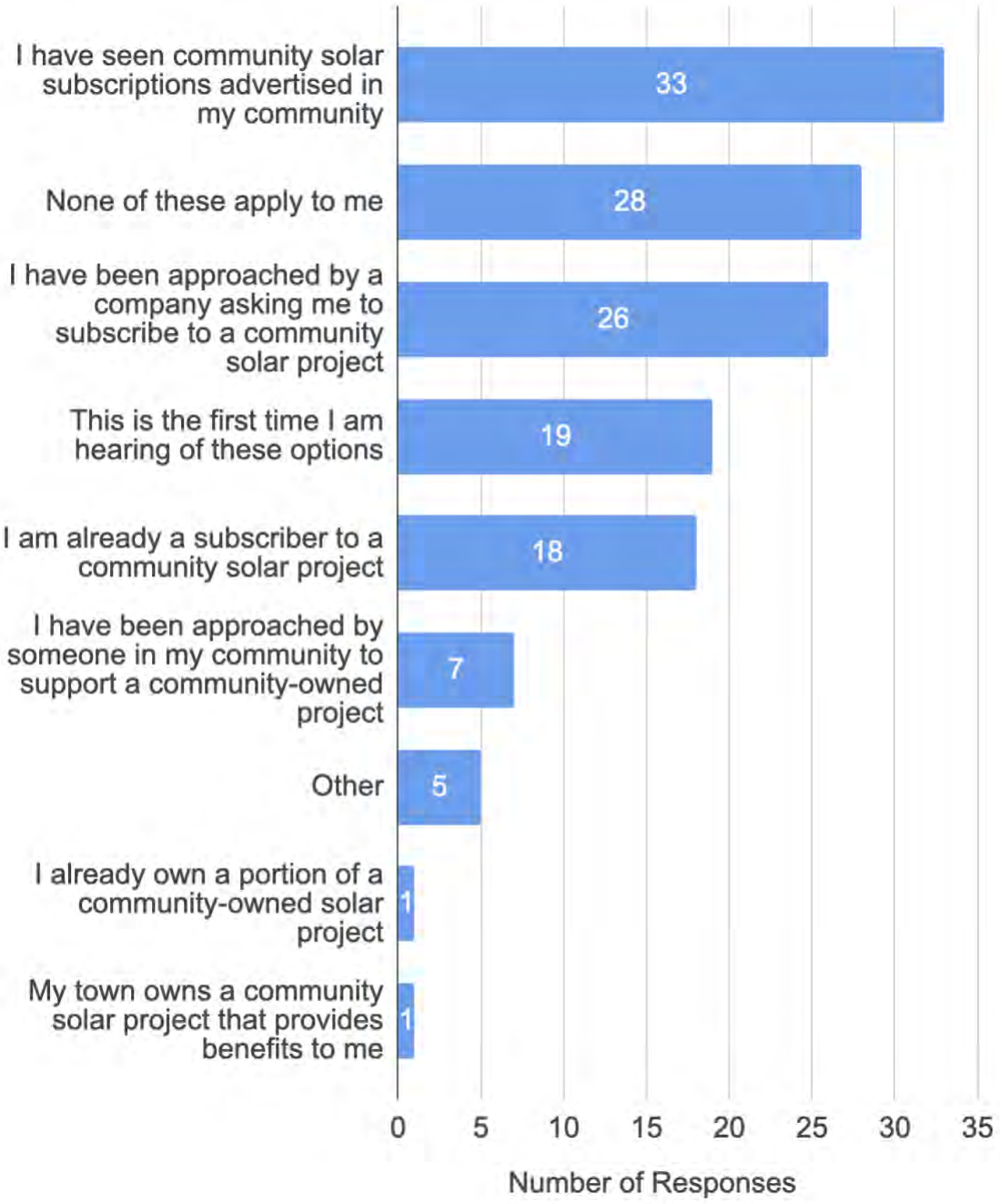

Figure 4.4.7. Maine Community Alternative Energy Survey responses to the question: Which of the following applies to you [related to community solar]? Select all that apply. (102 total responses; some respondents selected more than one answer)

The 17 respondents who already subscribe to a community solar project specified their project developers: Nexamp (6), Ampion (3), Arcadia (2), Powermarket (2), Nautilus (2), and Solar Gardens by Syncarpha (1). Fifteen of

the 17 respondents identified the % annual electricity bill savings they receive from their community solar provider, ranging between less than 10% and 20%. Twenty-nine percent of 73 respondents who are not already signed up for a community solar project indicated they would need only 5-15% annual savings to sign up for a community solar project (Figure 4.4.8). On the other hand, while only 4% of respondents selected the option “There is no percent savings that would encourage me to sign up for a community solar project,” 67% of survey respondents require savings greater than most typical developer-led projects. For these respondents, community-led projects offering ownership might be more appropriate, because they might have the potential to offer greater savings for longer time horizons than subscription projects.

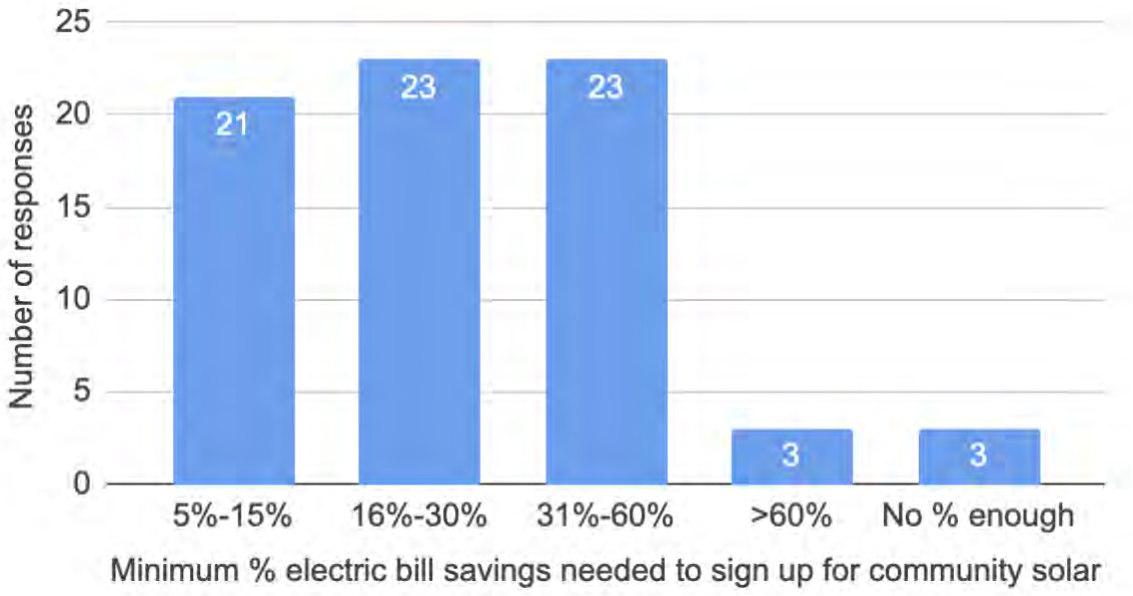

Figure 4.4.8. Maine Community Alternative Energy Survey responses to the question: What is the minimum annual savings on your electric bill you would need to sign up for a community solar project (subscription or community-owned)? (73 total responses)

Of the 48 respondents who are interested in learning more about community solar, most (38) are interested in learning about both subscriptions and community-owned solar and some are only interested in community-owned solar (6) or subscription (4) (Figure 4.4.9). Twenty-four respondents were interested enough to enter their contact information to learn more about community solar.

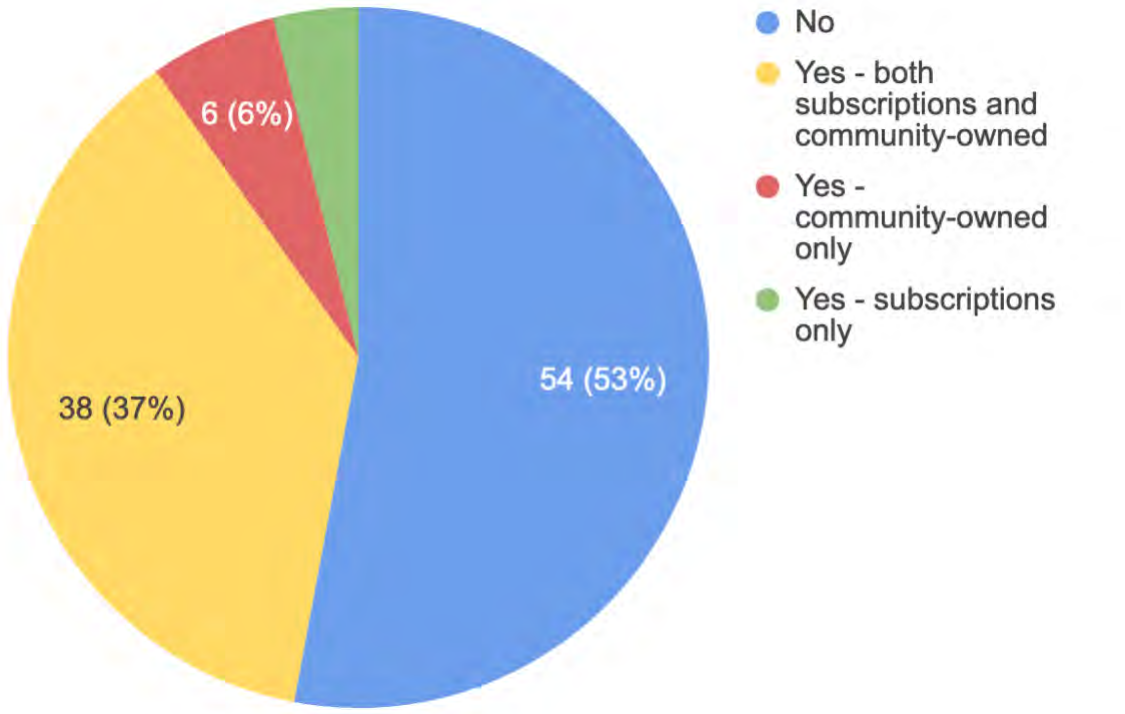

Figure 4.4.9. Maine Community Alternative Energy Survey responses to the question: Are you interested in learning more about community solar? (102 total responses)

Are people aware of and engaged in large-scale renewable energy projects in their communities?

As the State proceeds with clean electricity procurements, it is important to understand how "priority populations" understand and perceive existing large-scale renewable energy projects in their communities. In response to the Maine Community Alternative Energy Survey question, "What type of large scale (1 Megawatt or greater) renewable energy projects have been proposed and/or constructed in your community?" most respondents (51) selected that they were not aware of any large scale renewable energy projects in their communities, though the second most popular response was knowledge of solar projects (46) (Figure 4.4.10).

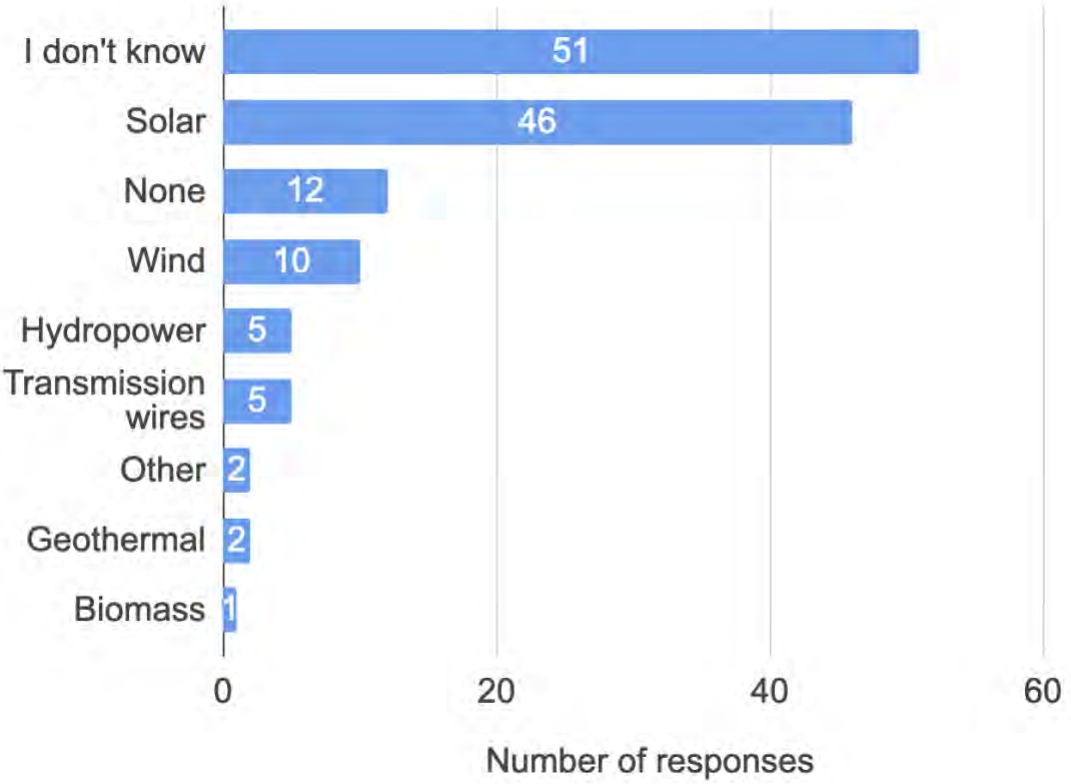

Figure 4.4.10. Maine Community Alternative Energy Survey responses to the question: What type of large scale (1 Megawatt or greater) renewable energy projects have been proposed and/or constructed in your community? (108 total responses; some respondents selected more than one answer)

Most respondents (22; 68%) to the open-ended Maine Community Alternative Energy Survey question, “How was the community involved in the [large-scale renewable energy project] project?” (Figure 4.4.11) were uncertain or unaware of how, or if, the community was involved, highlighting a **lack of communication and engagement**: “I’m not aware of any community participation” (older adult with low income from a rural community - Belfast). Another respondent from a rural community noted the minimal role of community engagement in these projects, saying, “They were not very involved at all, no permitting when the first one came to town.” A few (3) responses discussed strong community opposition (e.g. “battle”, “moratorium”) to solar and/or wind projects that were perceived to damage the environment and raise energy prices.

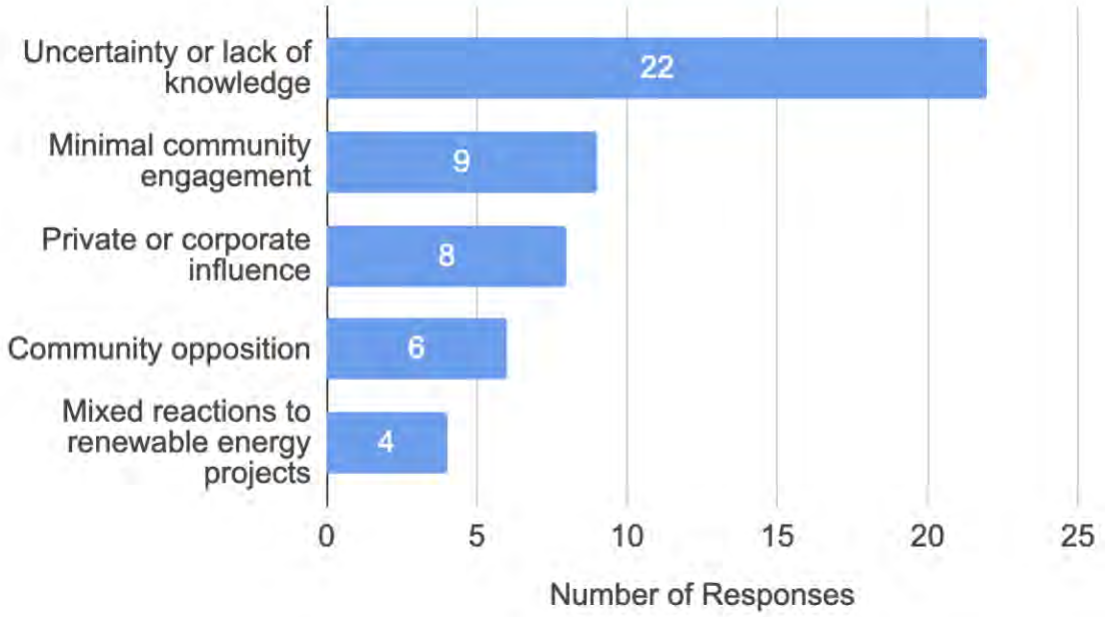

Figure 4.4.11. Maine Community Alternative Energy Survey responses to the open-ended question: How was the community involved in the project? (32 total open-ended responses coded for themes; some respondents wrote in responses that fit within multiple themes). Survey participants did not see this question if they selected ”none,” “I don’t know” or did not answer the question “What type of large scale (1 Megawatt or greater) renewable energy projects have been proposed and/or constructed in your community?”

What concerns do people have about large-scale renewable energy projects in their communities?

Despite much interest in renewable energy broadly (especially solar), most respondents to the Survey question “What concerns do you have about large scale renewable energy projects in your community?” (Figure 4.4.12) expressed a concern for **environmental harm** (51%; 54 out of 105). Many respondents also expressed concerns about cost (46), the removal of trees or creation of roads through forests (43), and undesirable location (41).

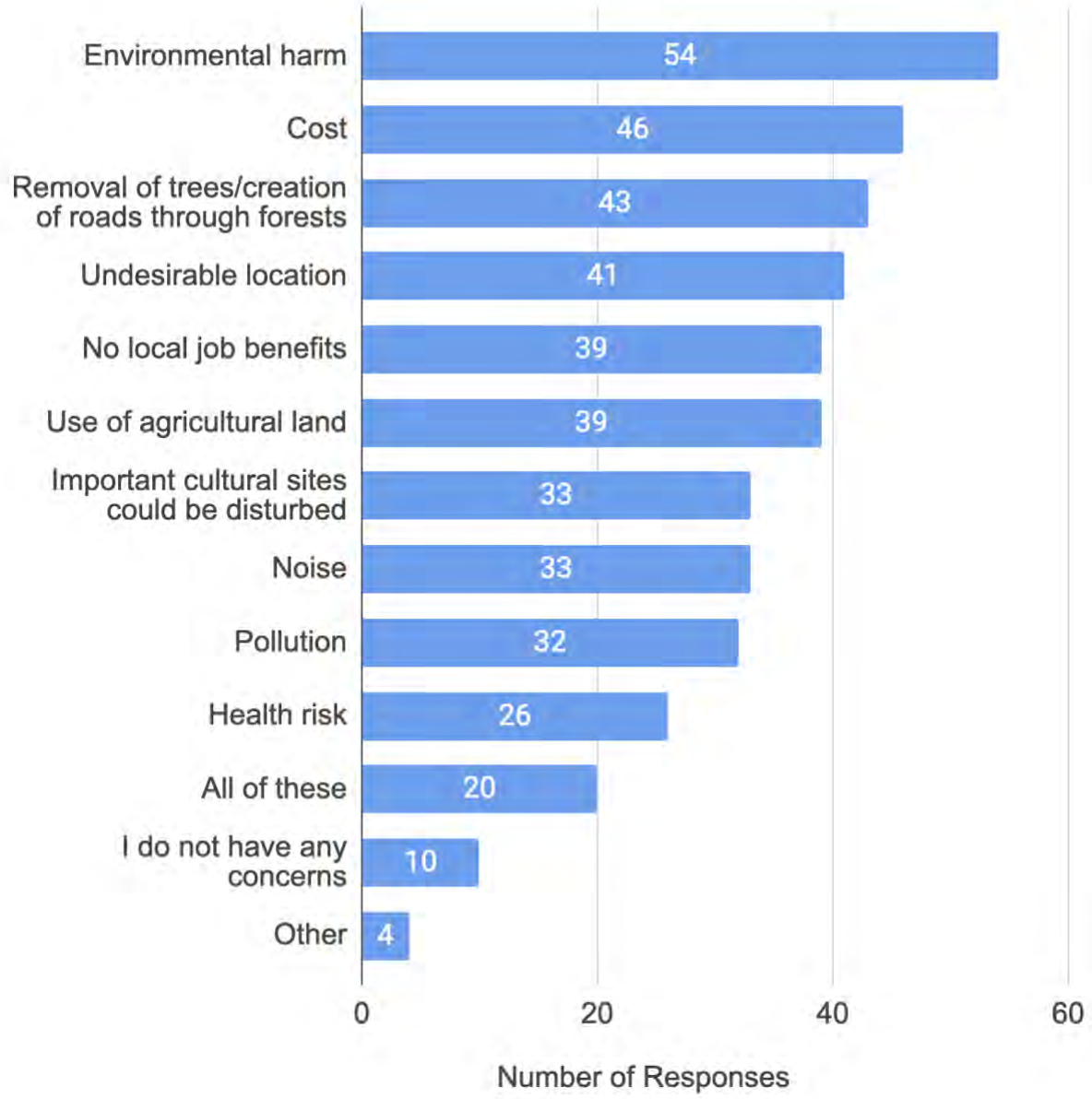

Figure 4.4.12. Maine Community Alternative Energy Survey responses to the question: What concerns do you have about large scale renewable energy projects in your community? (105 total responses; some respondents selected more than one answer)

During focus group discussions at a senior living facility in Fairfield led by Kennebec Valley Community Action Partnership (4/25/24), many participants expressed a distrust of solar and wind. Residents feel that solar panels and wind towers are ugly and take up too much room. They also thought they were difficult to repair and that the parts couldn't be recycled. There were concerns about out-

of-state community solar companies causing environmental damage due to poor siting from participants at a Center for an Ecology-Based Economy community discussion with residents of rural and disadvantaged communities (5/2/24). There were both concerns and interest in community solar farms serving as an alternative path for farmers who can no longer afford to farm. One person saw it as predatory; another saw it as a lifeline.

During an ACTT Local Leads the Way meeting (5/14/24), the Town Manager of a rural Maine community reflected that awareness in their community is widespread but that the town would not be moving forward without ACTT's leadership, particularly around ownership benefits. They went on to say that siting is a delicate process and the local community does not have an appetite for any type of deforestation for solar. The Town is turning to smaller arrays, such as rooftop, distributed arrays, and parking canopies to both ensure easier interconnection and to avoid clearcutting. The Town Manager also reflected that these **communities should be involved very early in the process.** This theme appeared again in KVCAP focus group discussions with older and low-income adults (4/22/24 and 4/23/24), where participants noted that renewable energy resources are beneficial when there is local ownership and smaller projects. A resident of a coastal community and representative of A Climate to Thrive, while participating in the Maine Sustainability and Water Conference (3/28/24) added "The more community members engage with the project the more they understand the changing system we're working on and **helps them understand mitigation/adaptation**"

How would people like to be involved in renewable energy projects in their communities?

When asked to select options in response to the question, "How do you think your community should be involved in large scale renewable energy projects when they are being considered in your community?" (Figure 4.4.13), most respondents wanted a document detailing how the project will address community concerns (84 out of 102) and wanted the community to receive benefits from the project (81). There was also substantial support for a process overseeing the implementation of plans addressing community concerns (76) and holding multiple public meetings before project approval (76). For example, a participant in the Maine Sustainability & Water Conference (3/28/24) explained how viewing a computer-generated rendering of proposed windmills in their town alleviated community concerns. They felt renderings could be a good strategy to

engage the community regarding **aesthetic concerns** related to renewable energy.

In an interview conducted by A Climate To Thrive (5/14/24), a rural Town Manager emphasized the importance of involving these communities very early in the process of renewable energy initiatives. The manager noted that renewable energy resources tend to be more beneficial when there is local ownership, which is more likely to occur with smaller projects.

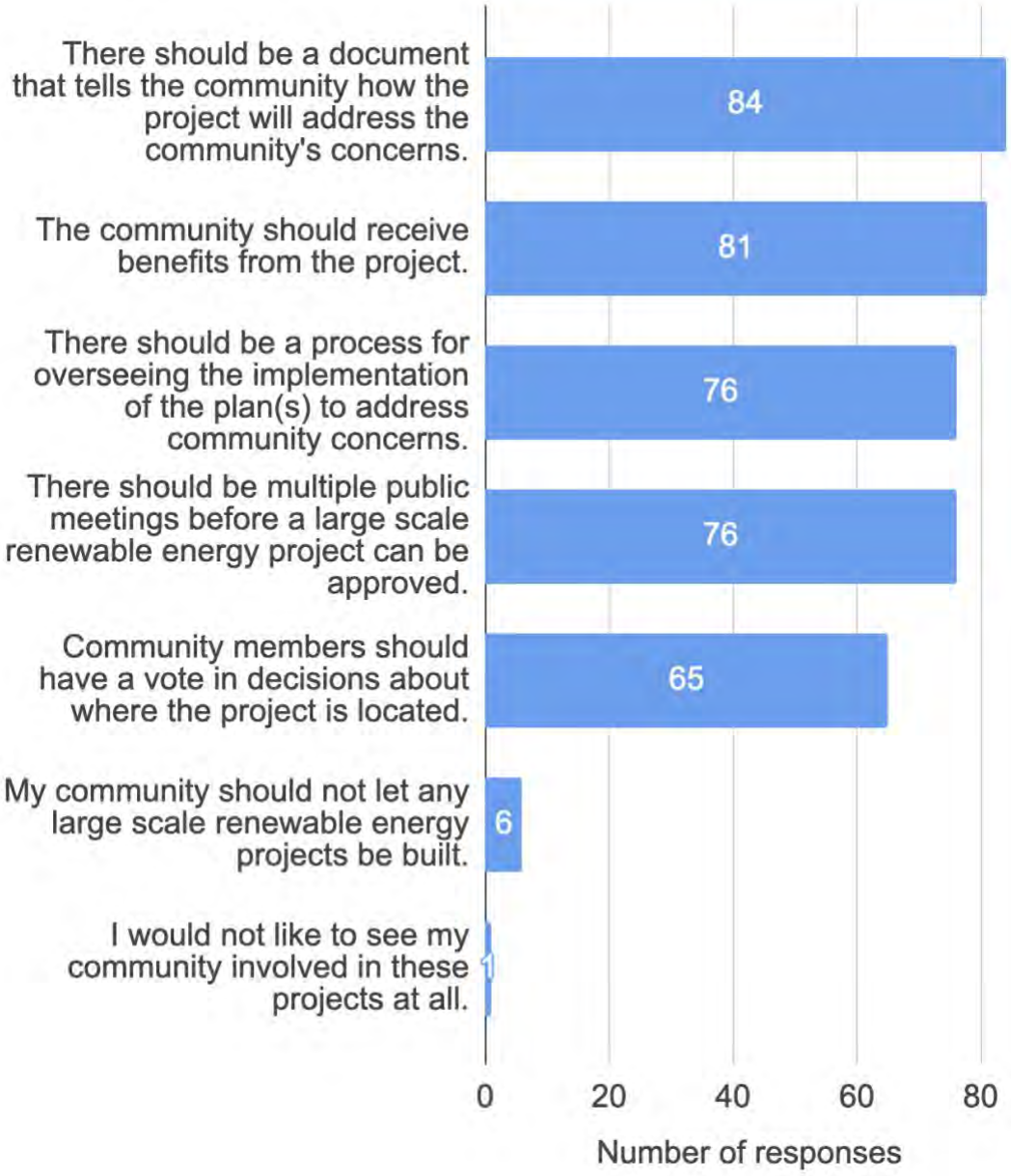

Figure 4.4.13. Maine Community Alternative Energy Survey responses to the question: How do you think your community should be involved in large scale

renewable energy projects when they are being considered in your community? (102 total responses; some respondents selected more than one answer)

When asked whether they would attend public meetings about a renewable energy project in their community, 64% of 76 respondents to the Survey said yes; 32% said maybe; and 4% said no. Most people indicated they preferred meetings be held on the weekend or evening with food and compensation for their time, and four asked for virtual meetings. A majority (65 out of 102) also selected the option ‘community members should have a vote in decisions about the project's location’. Only 7 respondents indicated they would not like to see any projects or any community involvement at all. One older adult from Norway, a disadvantaged community, wrote, “[There need to be] Efforts made to recruit people to the committee, i.e. not just the usual suspects.”

What benefits do people want to see from a large scale renewable energy project in their community?

Respondents to the Maine Community Alternative Energy Survey selected “**savings on individual community members’ energy bills**” (73%; 61 out of 84) as the **most important benefit** they would like to see come out of large-scale renewable energy projects in their communities (Figure 4.4.14), followed closely by “local jobs” (70%), “a tangible improvement to the community (e.g., new sidewalks, school renovations, etc.)” (65%), and “lower taxes for community members” (63%). Most respondents also expressed interest in cost-savings measures directed to the town as additional tax revenue (55%) and savings on town office energy bills (55%). Regular checks to the town or community members were less popular options. Thirty-two percent of respondents were in favor of all of the options presented.

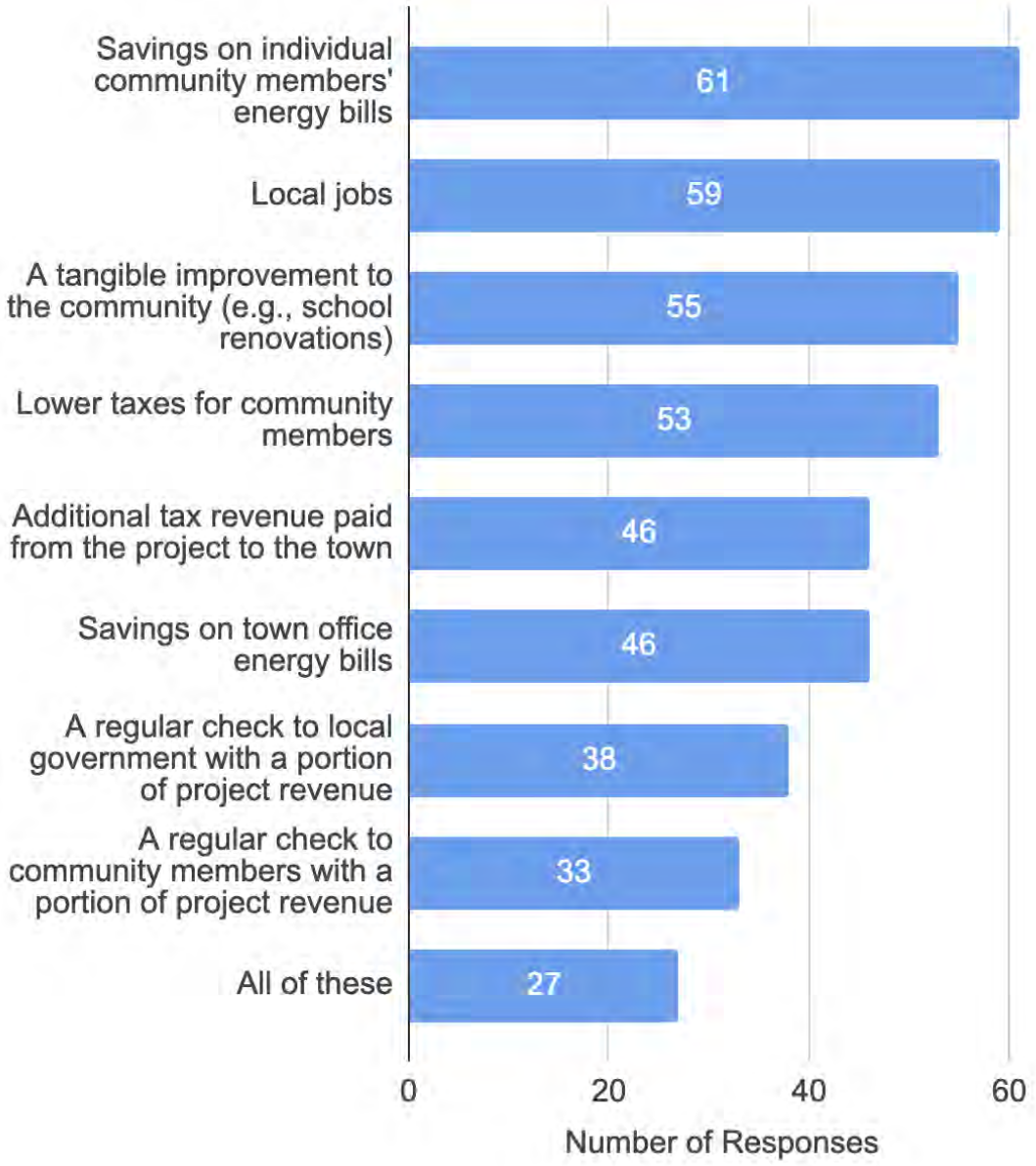

Figure 4.4.14. Maine Community Alternative Energy Survey responses to the question: What benefits would you want to see from a large-scale renewable energy project in your community? (84 total responses; some respondents selected more than one answer)

In addition, attendees at a discussion group held by the Maine People's Alliances noted that "renters should be included in conversation around tax incentives/benefits that exist for them when so many improvements are focused on homeowners" (Maine People's Alliance, 8/8/24).

4.4.3 EWG Recommendation 4: Grow Maine's clean energy economy with a goal to support 30,000 clean energy jobs by 2030.

In Section 4.4.2, participants identified new jobs as one benefit they would like to see renewable energy projects bring to their communities. Eleven of 98 respondents to the Maine Community Alternative Energy Survey question "What natural resource industry jobs are you interested in?" selected "clean energy" (Figure 4.8.1 in Section 4.8). Eight of these participants selected responses to the question, "What prevents you from pursuing a career in natural resources?": "Lack of job opportunities" (3); "Don't know how to start" (3); "Lack of education" (2); and "Lack of time required to do the training" (1). These responses suggest a potential need for more education about clean energy job opportunities and about how to begin a career in the clean energy industry.

Participants in a Natural Resource Council of Maine and the Maine Conservation Alliance webinar (5/20/24), including staff of the Community Organizing Alliance, noted the importance of creating jobs that are accessible and using more languages to accommodate diverse populations: "Lewiston has a diverse and young population needing better workforce positions." Attendants of this webinar came from BIPOC communities, including youth and New Mainers, and some had limited English proficiency. Similarly, a discussion group of older adults in rural communities at an Island Institute engagement (8/8/24) placed an "emphasis on increasing the size of the workforce available to get these tasks done." They also noted it is important to "ensure that a one-size fits-all solution isn't forced on the state." Participants in a discussion on pathways to *clean energy jobs*, which was led by the Community Organizing Alliance in the Lewiston-Auburn area (3/22/24) agreed that "For immigrants and BIPOC individuals new to the country, language and cultural shock create significant hurdles. Moreover, lack of transportation, limited access to community information, and unfamiliarity with state resources compound these challenges." This conversation included low-income, BIPOC individuals ages 15-45 years old, from marginalized communities in the Lewiston-Auburn area.

4.5 Transportation (TWG)

As in 2020, Transportation Working Group Recommendations continue to prioritize a focus on electric vehicles (EVs). They recommend funding to support the electrification of passenger cars and light-duty trucks by expanding rebate

programs and educational campaigns to promote EVs, seen as the most effective way to reduce emissions in Maine. They also propose increasing the number of charging stations, particularly in underserved and disadvantaged communities.

The second strategy is to reduce vehicle miles traveled through multiple actions: improving and expanding transit systems throughout the state; supporting education and awareness efforts about public transit options; and promoting transit-oriented development. This recommendation also includes funding for improving roads and trails for active transportation and developing programs to support safe biking and walking. The working group recommends research over the next four years to understand the effectiveness of these strategies for reducing emissions and setting goals to increase transit use and active transportation. Additionally, there is support to expand GoMaine, the state's ride-sharing program. Finally, the working group recommends the state invest in electric bus fleets and ferries, supporting pilot programs and technical assistance.

The Maine Community Alternative Energy Survey results aligned with feedback from listening sessions and focus group discussions led by our partners; all repeatedly emphasized the need for more accessible public transportation, especially in rural areas and for aging populations. Centering the needs of "priority populations" means **centering public transportation** accessibility and improvements as the focus of transportation-related climate goals.

Twenty percent (113 respondents) of the total 568 survey respondents answered at least one question in the rotating Transportation block of the Survey. All survey respondents saw a subset of questions related to Transportation Working Group topics because the focus of the base survey was on sustainable energy, including in transportation. Many of the results presented in this section are also relevant to the Energy working group recommendations and should be considered in climate planning and implementation related to energy.

How are participants currently meeting their transportation needs?

The Transportation survey block began with questions about current travel, with 80% of respondents indicating they travel 20 miles or less round trip on a typical day (Figure 4.5.1), and 90% indicating they regularly drive their own car to get around (Figure 4.5.2).

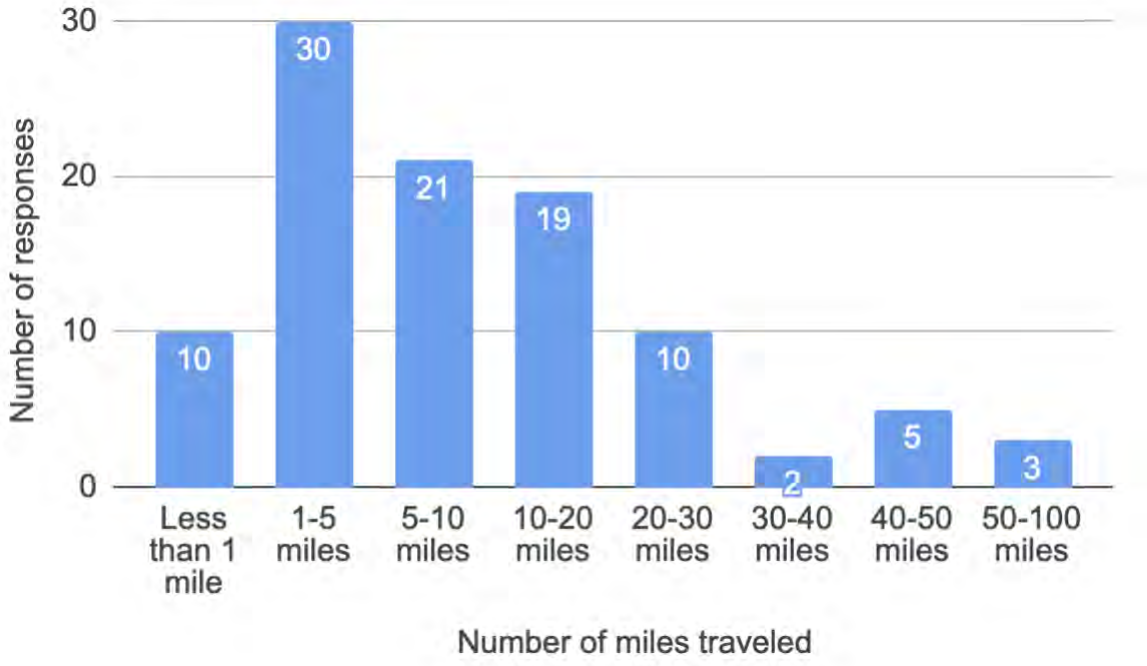

Figure 4.5.1. Maine Community Alternative Energy Survey responses to the question: How far do you travel on a typical day (total, roundtrip)? (100 total responses)

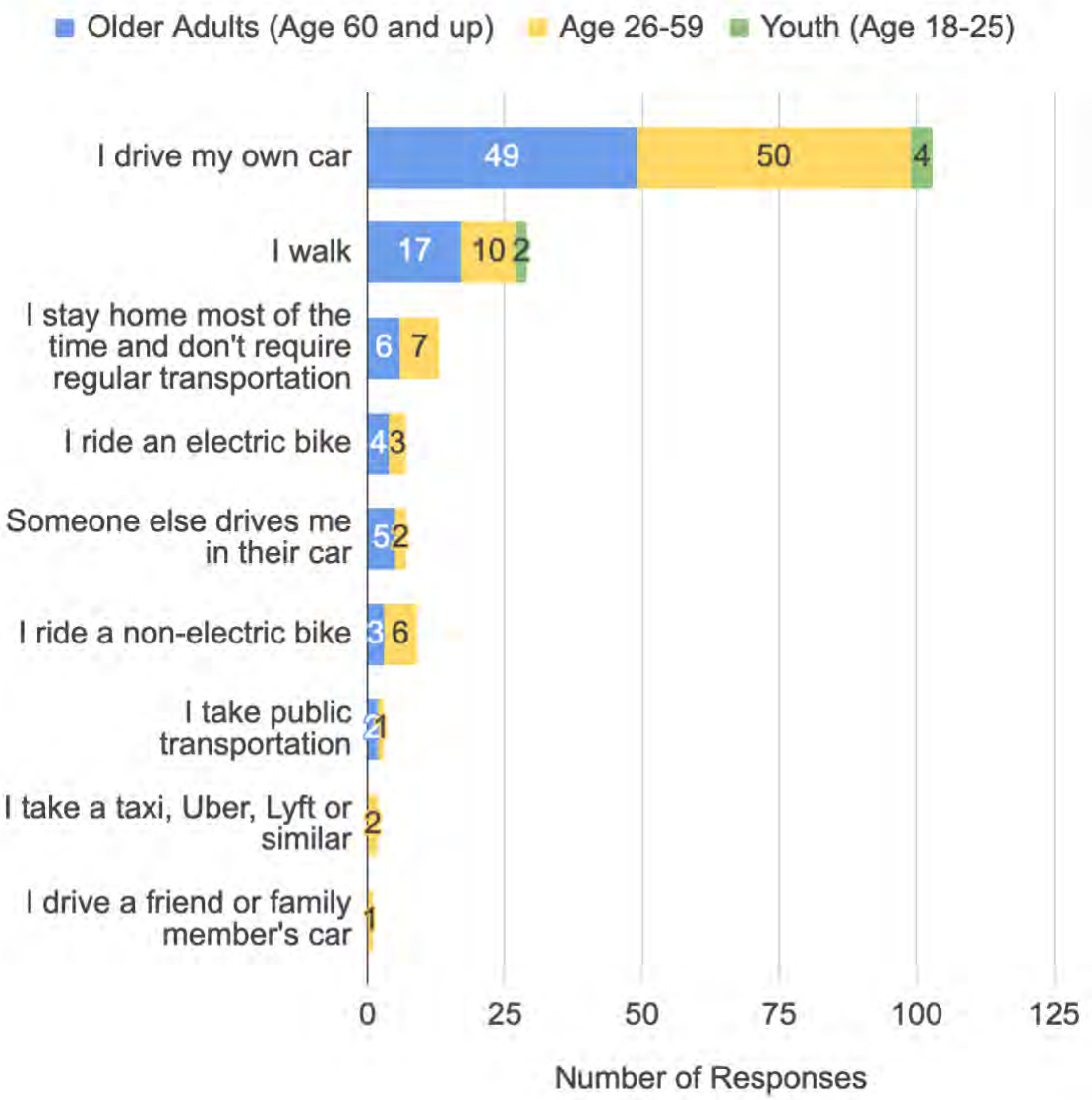

Figure 4.5.2. Maine Community Alternative Energy Survey responses to the question: How do you regularly get around? (114 total responses; some respondents selected more than one answer)

4.5.1 TWG Recommendation 1: Accelerate Maine's transition to light-duty electric vehicles including plug-in hybrid vehicles.

What do participants think about electric vehicles and existing incentives?

Seventeen percent of the 103 Maine Community Alternative Energy Survey respondents who answered the question, "Please select all that apply

related to the car you drive on a regular basis," indicated they drive an all-electric or plug-in hybrid electric vehicle. Over half (58%) of respondents to the question, "How would you like to see transportation improved?," selected "Public charging stations for electric vehicles" (Figure 4.5.3). However, three options were more popular than public charging stations, for respondents with low income and those with higher income alike: 1) "Improvements to streets and roads to support safer walking and biking" (86% of 557 respondents); 2) "More public transportation options" (77%); 3) "Improve broadband/internet access (increase working from home/telehealth)" (77%).

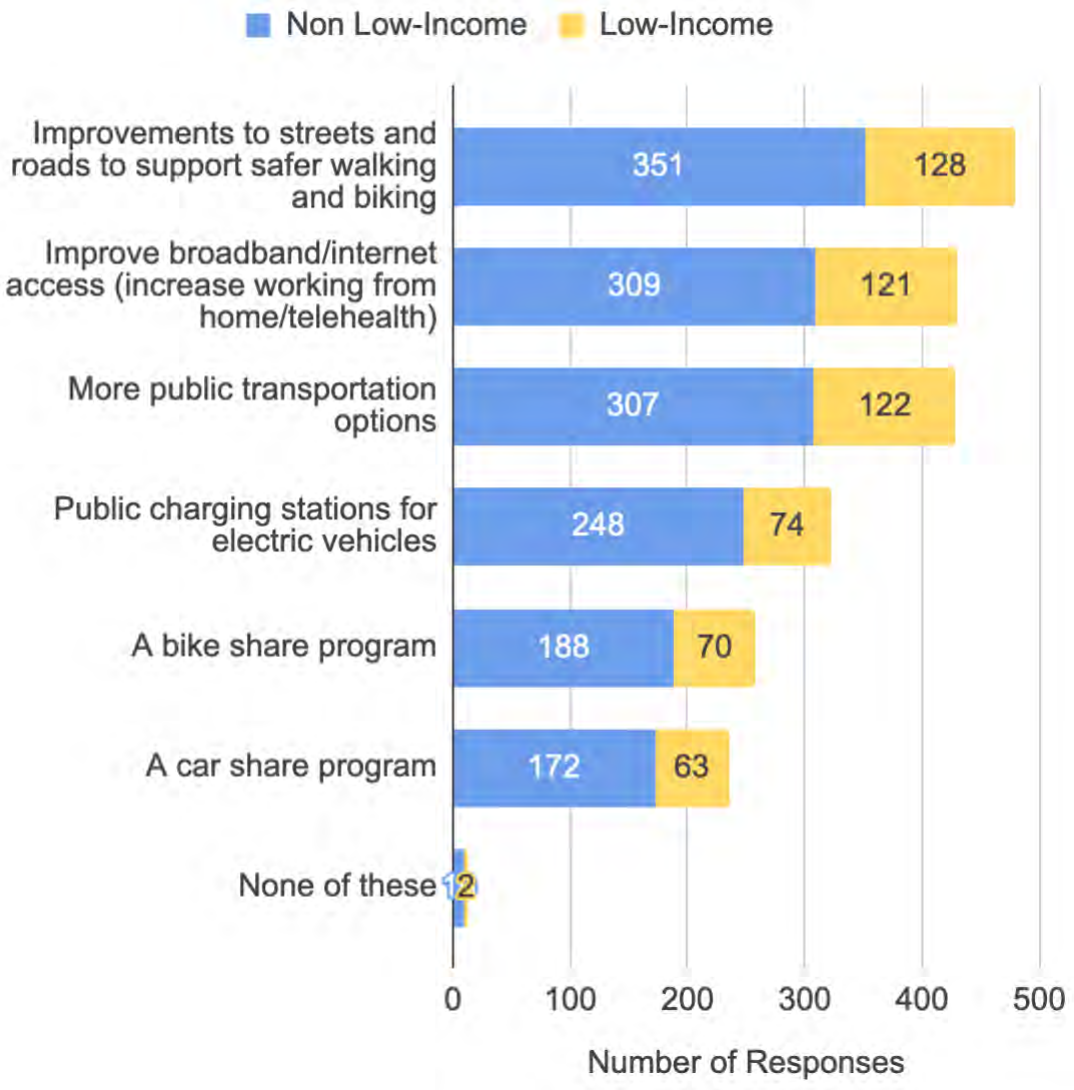

Figure 4.5.3. Maine Community Alternative Energy Survey responses to the question: How would you like to see transportation improved? Select all that apply. (557 total responses: 156 low-income, 401 non low-income; some respondents selected more than one answer).

When Survey respondents were asked for comments regarding the options presented in Figure 4.5.3, they continued to show interest in improving public transportation options: 37% of 270 respondents wrote in a comment supporting improved public transportation (Figure 4.5.4). In addition, 19% of respondents wrote in a comment relating to issues specific to rural Maine: “This is a small rural community (population about 1,100) with limited municipal funding for improvements like these” (resident of Georgetown with low income). Participants expressed both support (13%) and opposition (6%) to additional investments in EV.

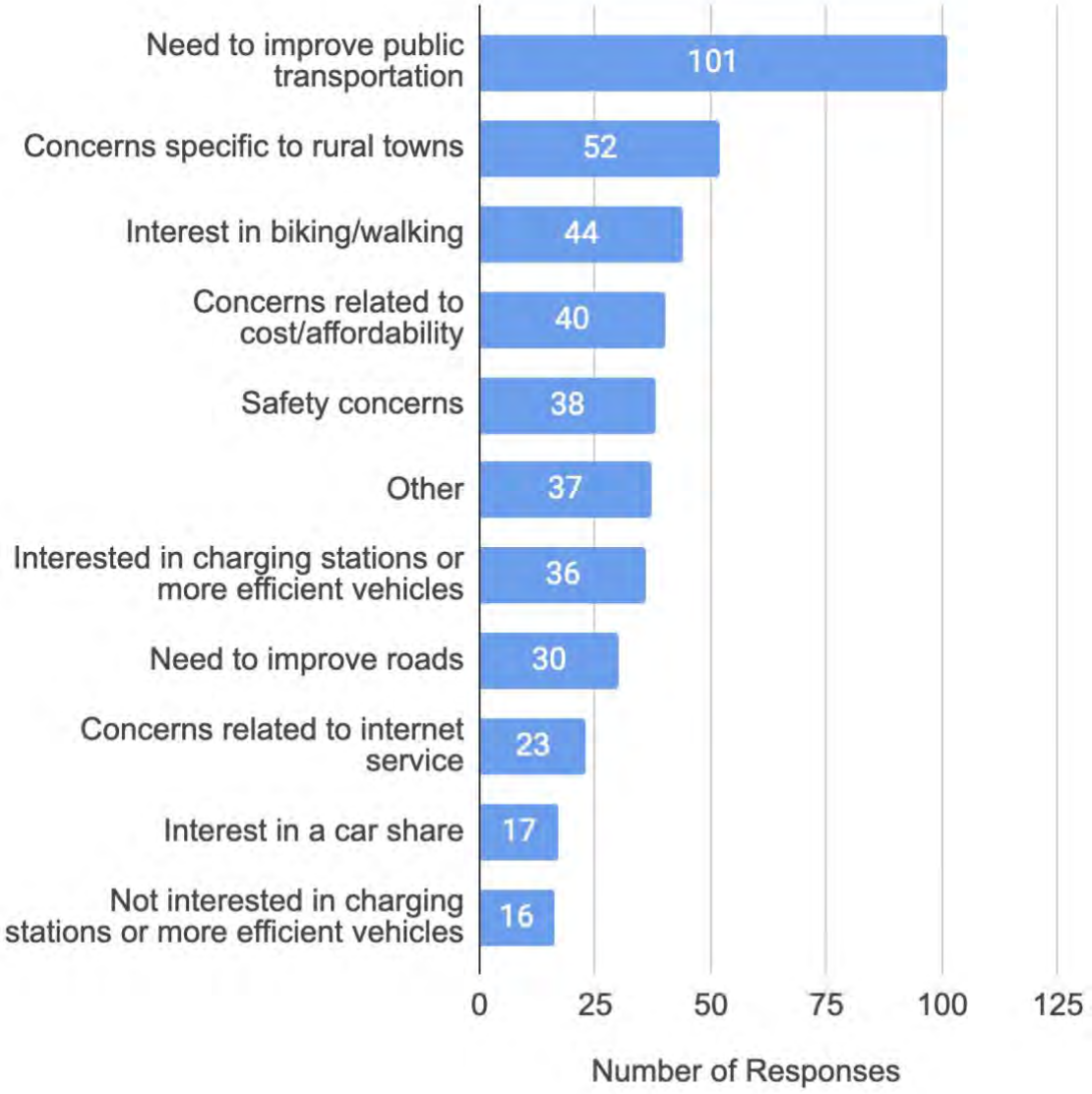

Figure 4.5.4. Maine Community Alternative Energy Survey responses to the question: Enter any comments you have about [the options identified in Figure 4.5.3] in the space provided, including but not limited to: options you would

prioritize over others, questions you have about the options, etc. (270 total open-ended responses coded for themes; some respondents wrote in responses that fit within multiple themes)

As Maine considers how to encourage EV adoption, it is important to consider how “priority populations” currently view existing incentives. The Survey presented information about these incentives (Figure 4.5.5) and then asked for respondents’ reactions (Figure 4.5.6): 28% of the 108 respondents selected “I am not going to be able to afford to get a new or used car for at least 5-10 years, if ever.”; 20% selected “I don’t trust electric vehicles no matter how much money they offer me, I will stick with gas/diesel powered vehicles.”; and 17% selected “These incentives aren’t nearly enough to get me to buy an electric vehicle”. When asked what makes the 20% of respondents not trust EVs, most respondents (83%; 19 out of 23) indicated their belief that the battery would not hold up in winter weather, and they were concerned about being stranded in a storm. Respondents also expressed concerns related to battery longevity and the ability to travel long enough distances (65%), general distrust of such new technology (39%), and safety concerns (30%). Nine respondents wrote in additional trust-related concerns, including additional expenses associated with installing a home charger, grid readiness, reliance on electricity as fuel, additional utility price gouging, lithium mining, battery disposal, charging time, and distrust of the government.

There are multiple financial incentives available for buying an electric vehicle. The following questions ask about these incentives:

U.S. government:
Up to $7,500 tax credit on **NEW** electric vehicle purchase by people with annual income up to $300,000

Efficiency Maine:
$3,000 to $7,500 discount or rebate on **NEW** electric vehicle purchase by people of **LOW income***

$2,500 discount or rebate on **USED** electric vehicle purchase by people of **LOW income***

$2,000 to $3,500 discount or rebate on **NEW** electric vehicle purchase by people of **MODERATE income** ($70,000-$100,000 annual income)

$1,000 to $2,000 discount or rebate on **NEW** electric vehicle purchase by people of **ANY income**.

***To prove eligibility for income-based options**: upload a copy of most recent tax return and fill out online form OR give permission for a qualifying program to verify your eligibility to Efficiency Maine directly (*Home Energy Assistance Program, Supplemental Nutrition Assistance Program, Temporary Assistance for Needy Families, or MaineCare*).

The low end of each range is for **plug-in hybrid electric vehicles** (gas & electric). The high end of each range is for **fully electric vehicles** (only electric).

You get a direct **discount** if you buy a vehicle from one the Participating Dealers on the map below (also listed on Efficiency Maine's website). You get a **rebate** if you buy or lease directly from the manufacturer. Cars can't cost more than $50,000. Trucks can't cost more than $80,000.

Map of Participating Dealers

Figure 4.5.5. Maine Community Alternative Energy Survey information on existing incentives for electric vehicles.

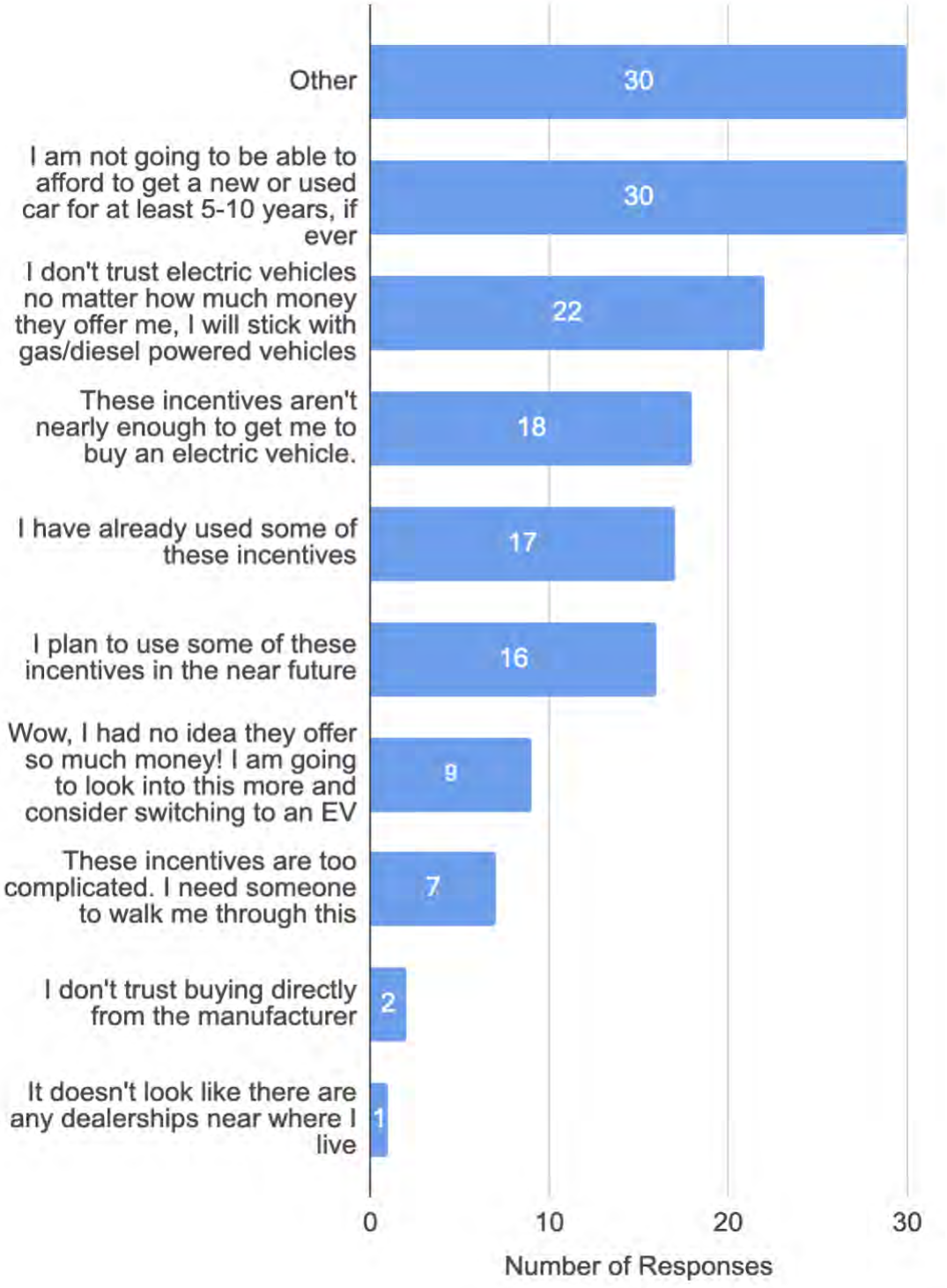

Figure 4.5.6. Maine Community Alternative Energy Survey responses to the question: Please select all that apply to related EV incentives. (108 total responses; some respondents selected more than one answer)

Thirty respondents (28%) selected “Other” in relation to the original question (Figure 4.5.6) and wrote in responses that reflect the following themes:

1. **Financial barriers** (i.e., not qualifying for enough money in rebates or incentives): “I am low income, but not on SNAP or HEAP, so I don't qualify,” (respondent from Buckfield, a rural community)
2. **Environmental concerns**: “The end cost is still too expensive, and we're better off (financially and environmentally) using our existing vehicle” (resident of Bath, a disadvantaged community) and “Replacing a vehicle that is efficient and in good running order doesn't make sense from an environmental point of view” (older adult).
3. **Frustration with dealerships inflating prices following government incentives**: “The dealership had increased the price by about $12K to $15K over the MSRP,” (a female business owner)
4. **Lack of charging infrastructure**: “there are still not enough charging stations and there are inconveniences still.” (respondent from Mount Vernon, a rural community)

One respondent to a survey implemented by the Community Organizing Alliance (7/25/24) highlighted the challenge of accessing EV's for BIPOC communities and youth in the greater Portland/Lewiston area:

> *“Offering financial incentives to purchase an electric vehicle is a challenging way to address the climate change challenge. Poor community members struggle to make ends meet, so taking out a loan for an electric car that costs several thousand dollars [sic] isn't the best option. Electronic public transportation is the most equitable way to combat climate change and lessen mental health issues in places as some people are already experiencing hardship. Giving away free electric automobiles is another option, but that is not likely to happen.”*

A variety of perceived barriers were voiced at a direct engagement on Little Cranberry Island, at a discussion hosted by a member of the UMaine research team at Islesford Boatworks (8/8/24). One person owns a Chevy Bolt but does not feel they can use it the way they need to; they can’t charge it outside the home because, in their experience, public charging stations (when available) are often broken or in use. This person stated that they need more charging stations for EVs to be usable: “I feel so guilty but I had to borrow a gas car to get 2 hours away, because I was nervous to take our EV.” Another participant shared concern about everything becoming electric, including what happens to lithium battery waste and what happens when the power goes out.

Another participant brought up a concern about the availability of mechanics able to do work on EVs in a rural area. Another asked “What’s the point of EVs if our electricity is being produced by fossil fuels?” One other participant explained that we need to redesign for walking, biking, and trains; that there are other options to replacing the cars with EVs.” One respondent to the Maine Community Alternative Energy Survey, a low-income female business owner from Patten, a rural and disadvantaged community, shared her concern about EVs in rural northern areas.

In York Ready for Climate Action surveys handed out at a food pantry (7/25/24), an older adult with low income shared their distrust for EVs: “Show me that refueling is more accessible and that the cars are dependable in the cold.” At a discussion led by York Ready for Climate Action during a luncheon for residents of the Baldwin Center (8/6/24), participants shared opinions including, “they don't work in the cold,” “they don't work in the heat,” and “if they catch on fire, the fire department cannot put the fire out.” Several respondents pointed to a need for EV education and increased infrastructure for EV's. People also expressed a desire to wait until the technology improves to adopt EVs, citing a Tesla recall as an example. In a survey put out by York Ready for Climate Action through their newsletter (7/31/24), one respondent recommended:

> *“[we need to] work to improve charging infrastructure (both availability and reliability) for both EVs and PHEVs. Currently, single family homeowners are favored. Modify building requirements so that ALL new multifamily construction provides access to charging options, 1 per unit. All new public buildings or substantially renovated public buildings should have Level 2 and 3 charging options.”*

At a Sunrise County Economic Council focus group (7/24), frequent power outages were often cited as a reason that people were not adopting heat pumps or electric vehicles, even with subsidies. This group also echoed many of the other perceived barriers discussed above, including vehicle cost, electric grid capacity, whether they work in cold weather. In addition, one participant questioned whether EVs only come in two-wheel drive.

Few (6%) Maine Community Alternative Energy Survey respondents indicated they found existing EV incentives too complicated (Figure 4.5.6). Moreover, 39% indicated they have already used one or more financial incentives listed in Figure 4.5.5, plan to use them going forward, or were just hearing about these incentives for the first time and were going to look into them

more. Of the 12 respondents that shared which incentives they received, half received incentive amounts for “any income,” while half received incentive amounts designed for low- and moderate-income Mainers. In addition, two respondents had used the Federal tax credit for a new electric vehicle.

Of the 16 respondents who have a plan to use the incentives in the future, 14 shared which they planned to use, with most respondents interested in multiple State incentives: $1,000 to $2,000 for a NEW electric vehicle, any income (11 respondents); $2,000 to $3,500 for a NEW electric vehicle, moderate income (3); $2,500 for a USED electric vehicle, low income (1). Eight respondents planned to use the federal tax credit up to $7,500.

Awareness of charging stations near home and work is an important first step to EV adoption; 68% of 111 respondents (including 18 EV owners) indicated they are aware of EV charging stations near them (Figure 4.5.7). However, in response to a different question posed only to EV owners, only two out of 14 respondents selected that they agree with the statement “There are plenty of charging stations available when I need them.”, and only 5 out of 14 agreed with the statement “The charging stations are located in convenient places”. All 18 EV respondents indicated that most of the time, they charge their vehicle at home, work, and/or a free public charging station. Most EV owner respondents (11 out of 13) agreed that they pay less money at charging stations than they would pay

for an equivalent amount of gasoline.

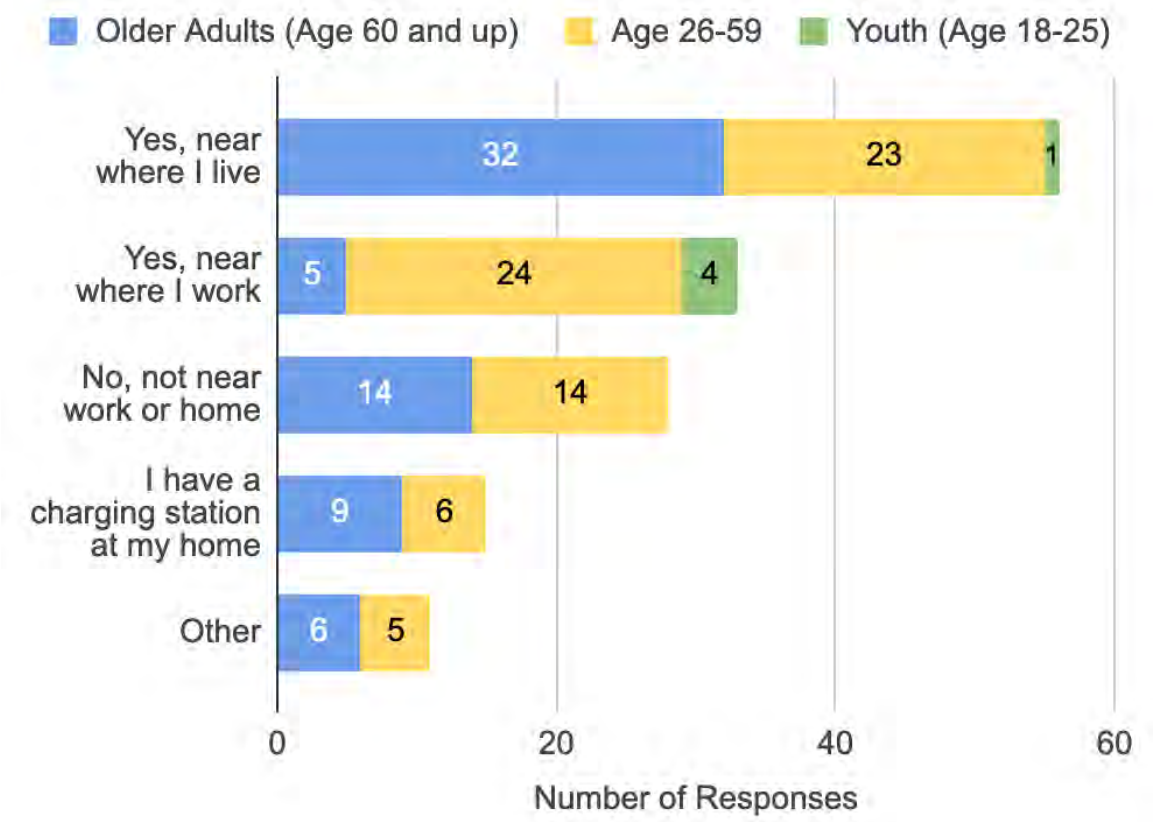

Figure 4.5.7. Maine Community Alternative Energy Survey responses to the question: Are you aware of any electric vehicle charging stations near where you live and/or work? (111 total responses)

How can barriers to EV adoption be overcome?

The Maine Community Alternative Survey responses (476) to the open-ended question "What might make it difficult for your local government to support or implement the transportation improvements [identified in Figure 4.5.3]?" show six main themes (Figure 4.5.8). The most common theme (264 or 55%) is **financial constraints**:

> *"Cost is a huge impediment, especially given the current budget climate with covid supplemental funding ending at the same time that school and county budgets, to which we contribute municipal funds, are increasing. Converting a municipal fleet to EVs, sidewalk improvements, etc. all require substantial funds when there are many competing needs. Also existing infrastructure -- how does a city add bike lanes to narrow roads*

lined with 1800's buildings?"

- Older adult

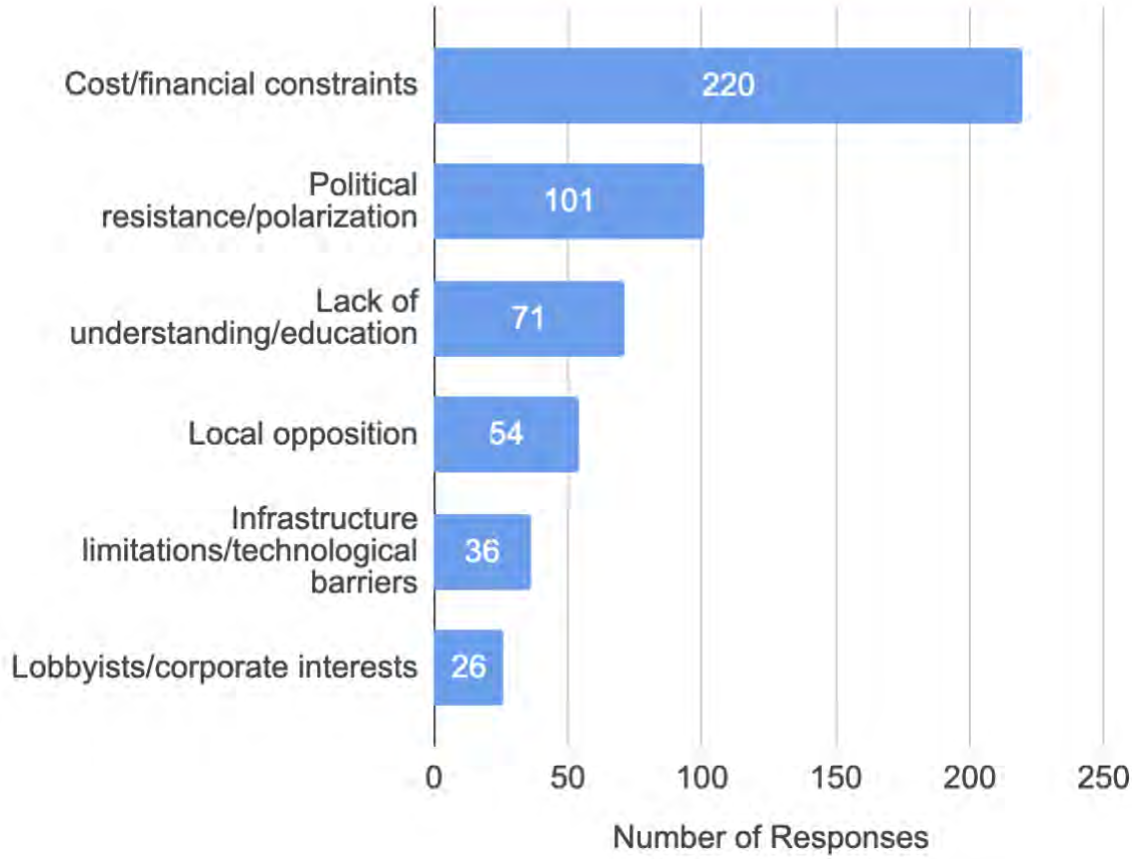

Figure 4.5.8. Maine Community Alternative Energy Survey responses to the open ended question: What might make it difficult for your local government to support or implement these transportation improvements? (476 total open-ended responses coded for themes; some respondents wrote responses that fit within multiple themes)

Political resistance/polarization was mentioned 101 times (21% of responses); for example, a respondent from a rural, disadvantaged community (Rockwood) explained, "the extent to which climate change has been politicized keeps many people from supporting things like EVs/PHEVs and charging stations that could ultimately benefit them." Other common perceived barriers included lack of understanding/education (71) and local opposition (54).

Survey respondents who reported owning an electric vehicle and/or using one or more of the incentives listed in Figure 4.5.5 responded to the question “Please describe any challenges you faced in the process of learning about and/or accessing incentives for your electric vehicle”. An older adult with low income from Waterville stated: “Maine incentive was handled by the dealer. It came right off the selling price. However, the federal incentive was a tax credit but was small because we didn’t owe much and the car we bought had a lower tax incentive based on the make (Chevy bolt) and number of cars already sold.” An older adult in the rural community of Vienna simply stated, “Very few dealers.”

A participant in a discussion group held by the Maine People’s Alliance (8/8/24), shared a story about lowering cost barriers to EV purchase. They used the Efficiency Maine incentives to purchase an EV but felt that these incentives could be expanded. They appreciated how they were tiered by income level but emphasized that there needs to be higher dollar amounts to attract people with low income to purchase EVs. Comments from these EV owners/incentive users underscore the need for large incentives and expanded availability of EV purchase options near where people live.

Participants at a Sunrise County Economic Council event (7/31/24) shared ideas that would make people more likely to purchase EVs: “More and better-disseminated data regarding the superior efficiency of such vehicles; huge rebates and trade-in incentives; more and better-publicized charging stations.” This need for financial incentives and improved infrastructure to overcome EV adoption barriers was also noted by survey respondents (Figure 4.5.9): 45% of which would need more money to adopt an EV, and 37% of which would need more accessible charging stations. Most of the 27 respondents (29%) who selected “Other” wrote in more detail about this need, with affordability and cost, including incentives and tax credits, appearing in 7 responses and range concerns, availability of charging infrastructure, and practicality for long-distance travel appearing in 5 responses. Five of the “other” survey responses reflected a preference for alternatives over all-electric vehicles, particularly by those who feel more secure with a backup fuel source: "As an older woman on her own, I think I may need a hybrid because I no longer have a husband to call if I were to run out of battery energy in a completely electric vehicle. We'll see when the time comes." This statement underscores the need to emphasize plug-in hybrid electric vehicles as a potential way to address range anxiety and other barriers to transition to all-electric vehicles.

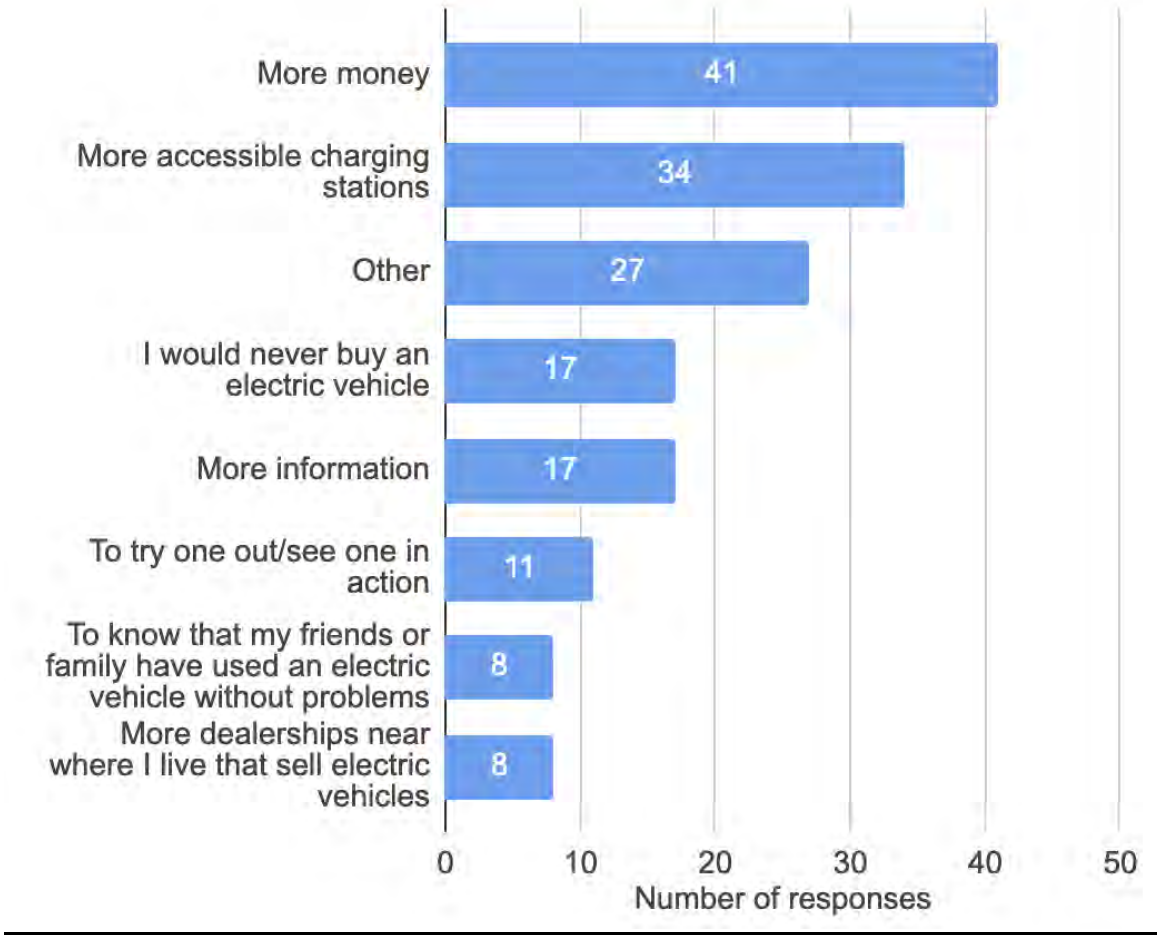

Figure 4.5.9. Maine Community Alternative Energy Survey responses to the question: What would you need to buy an electric vehicle? (92 total responses; some respondents selected more than one answer)

4.5.2 TWG Recommendation 2: Reduce vehicle miles traveled.

Participants revealed multiple themes that underscore the challenges and opportunities in addressing transportation needs across the state to allow for reduction of vehicle miles traveled. Participants consistently pointed to the need for better public transport and demonstrated support for safer roads for biking, walking and driving. GoMaine, the state's carpooling program, appears to have had little impact for respondents in underserved and rural communities.

What current travel behaviors, challenges, and successes are participants experiencing?

Although most Maine Community Sustainable Energy survey respondents travel 20 miles or less round trip on a typical day, only 3 out of 114 said they regularly use public transportation (Figure 4.5.2). This trend is supported by a separate survey of underserved communities conducted by the Sunrise County Economic Council in which 84% of 89 respondents reported driving their own car as their primary form of transportation; no respondents reported taking public transportation. According to Maine Community Alternative Energy Survey respondents (69%; 51 out of 74), regardless of age, people are not within walking distance of public transportation from their work, home, or both. Respondents also indicated they are not using public transportation because of lack of availability, time schedule, and location (Figure 4.5.10).

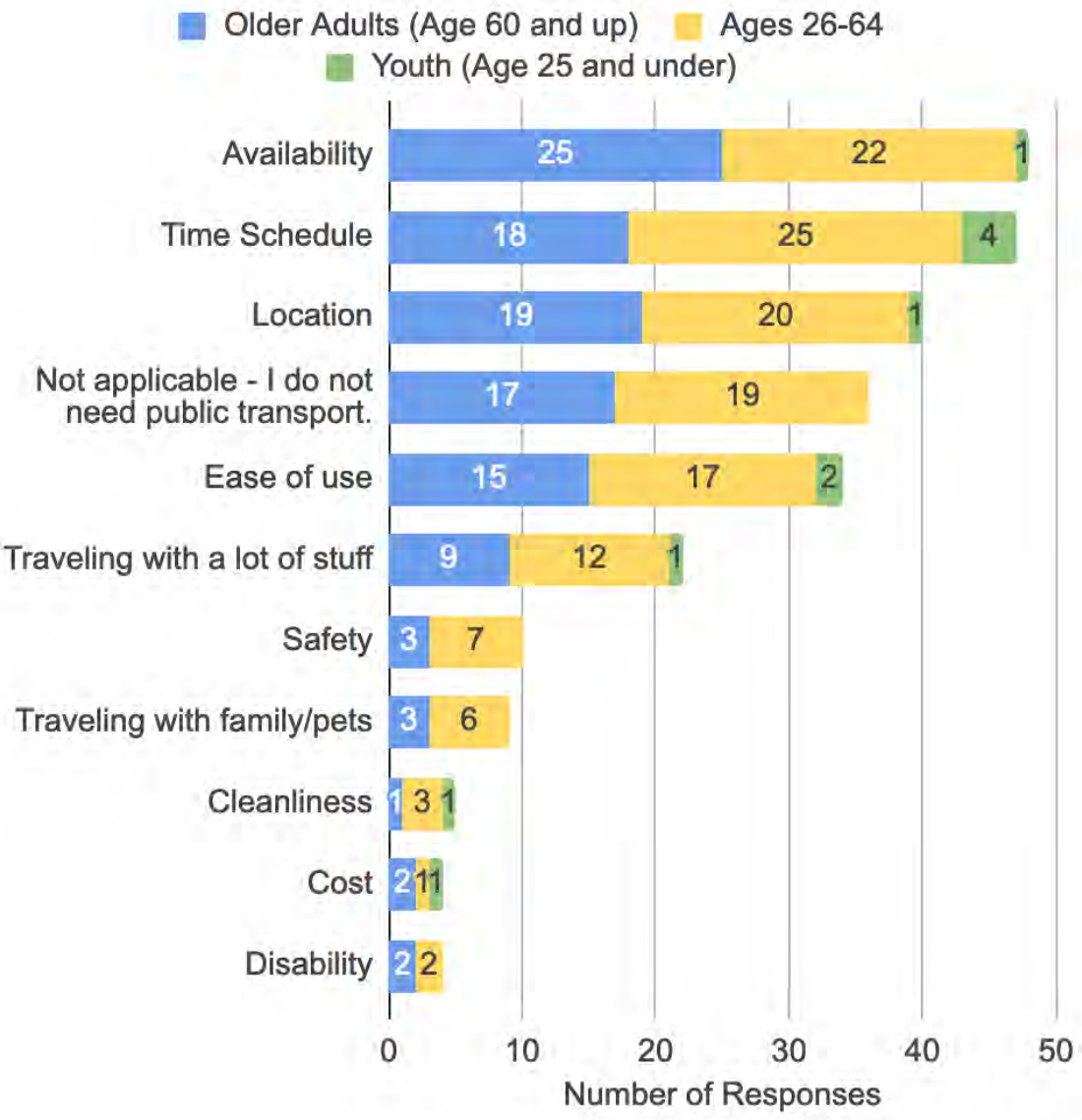

Figure 4.5.10. Maine Community Alternative Energy Survey responses to the question: What makes it difficult for you to use public transportation? (110 total responses; some respondents selected more than one answer)

In a one-on-one interview with A Climate to Thrive (5/14/24), the Town Manager of a rural community reflected that transportation seems to be the most difficult issue to address. He expressed challenges to providing public transportation to a community that is widespread and rural. Participants at a webinar led by NRCM/MCA (5/20/24) discussed working group recommendations and shared their transportation experiences. One participant drives everywhere due to the lack of public transit in rural areas. Another individual uses biking and public transit available in Portland but drives

otherwise. Two participants pointed out the challenges of the current bus system, which include limited routes and schedules.

In focus group discussions led by Sunrise County Economic Council (7/8/24, 7/9/24, 7/22/24), members of low-income, disadvantaged, and rural communities talked about being isolated because public transportation was not an option, especially for older adults:

> *“It is so bad, not being able to get around without a car, that I consider moving away because of the thought of being trapped. You know it's very nice that you can call somebody and make an appointment for two weeks from now to go to the doctor or something, but I come from a part of the world where you just walk to the corner, and there's a bus or subway. I don't know how elderly people can stay here if they don't have immediate family to get them around. I think it's a serious problem. My neighbors, I never see them, or they'll come out once a month when the bus comes to take them. So you know, I'm sure it's a problem for my neighbors, and every day I go out and thank my car for running.”*

Older adults at both a listening session of the Maine Council on Aging (8/8/24) and at a focus group discussion with York Ready for Climate Action (8/8/24), suggested that the state should look at European and Scandinavian transport models for inspiration including subsidized options through business sponsorship for buses, mobile shops, library vans, and mobile health vans..

Respondents to the question, “Please use this space for any additional thoughts you have about transportation” at the end of the Transportation question block of the Community Alternative Energy Survey, underscored lack of public transportation as a high priority topic (Figure 4.5.11): 38% of 32 respondents wrote in a comment related to the lack of public transportation investment and accessibility; and 28% wrote about challenges in rural areas.

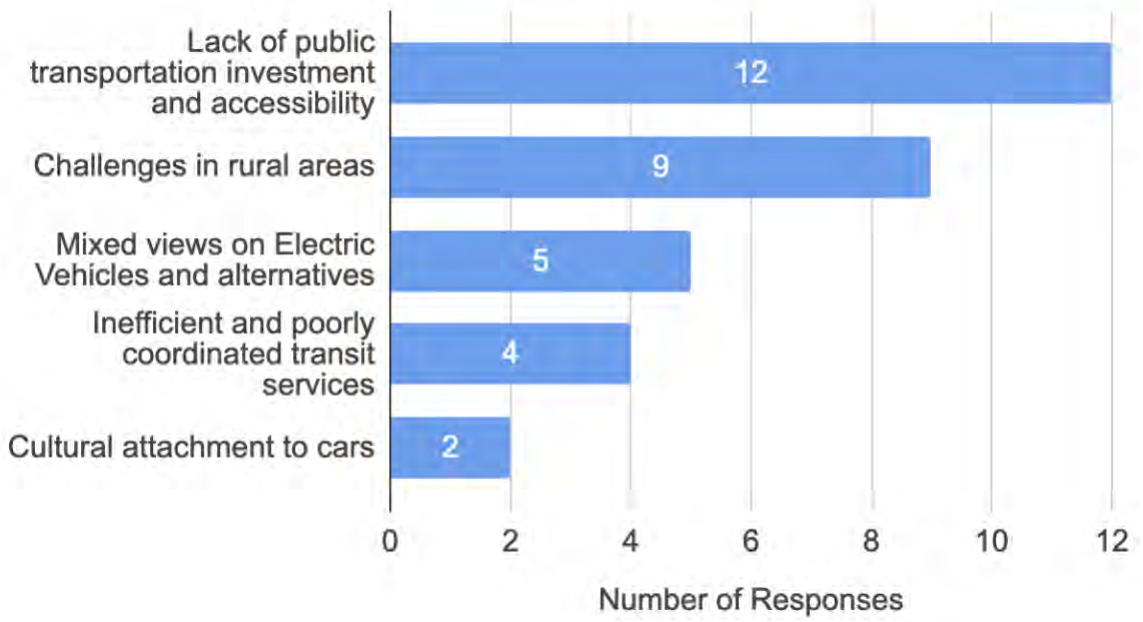

Figure 4.5.11. Maine Community Alternative Energy Survey responses to the open-ended question: Please use this space for any additional thoughts you have about transportation [at the end of the Transportation survey block]. (32 total open-ended responses coded for themes)

Although one older adult wrote in an “additional comment” space at the end of this block: “Mainers are so attached to our cars I don't see how any type of community transportation would be accepted.”, 12 of the other 32 comments included ideas on how to increase access and expand public transportation. For example:

> *“Let's fund public transit WAY more. Unfair how much money ends up in the highway fund and how little is available for public transit.”*
>
> - Farmer from a rural community (Buckfield)

> *“The lack of public transportation in my area is very disappointing.”*
>
> - Person from a disadvantaged community (Augusta)

> *“Need access to transportation for those who cannot drive themselves who live in rural communities for essential needs like groceries and medical appointments, including wheelchair accessible options, an island bus that picks up at home for example.”*
>
> - Older adult from a rural, disadvantaged community (Bath)

“The state of Maine needs to invest in itself by funding public transit options across the state - everyone should have access to safe and reliable transportation!”

- Person from a rural, disadvantaged community (Fairfield)

“We have a bunch of empty small buses running occasionally that have no posted schedule. We have a large transportation system that is a block from my home but is just too hard to access or use. And not friendly.”

- Older adult with a low income and disability, without reliable access to transportation, from a disadvantaged community (Belfast)

“Investing in public transportation is an essential part of the puzzle for climate action in the State of Maine.”

- Youth with a low income from a rural community (Newcastle)

The responses (416) to the open-ended question “What transportation successes have you seen in your community?” reveal ten main themes (Figure 4.5.12). The most common theme is the **no transportation successes** (176 responses, 42%): "Both public transportation and broadband access have been cut. No successes here.” (respondent with low income). **Volunteer and/or community ride programs** emerged as the second most common theme (50 responses). Programs like “Neighbors Driving Neighbors” were highlighted as crucial for providing transportation assistance in rural areas. One respondent from a rural community shared, “Our Age-Friendly Georgetown volunteer network offers ride sharing to get people to medical appointments, etc. The community is about 12 miles from the nearest town with stores and services.” Specific mentions of Penquis transportation services appeared 22 times, especially in the context of providing rides for elders and medical appointments: "Penquis does a great job, but it is limited with driver availability." **(**Respondent with a disability).

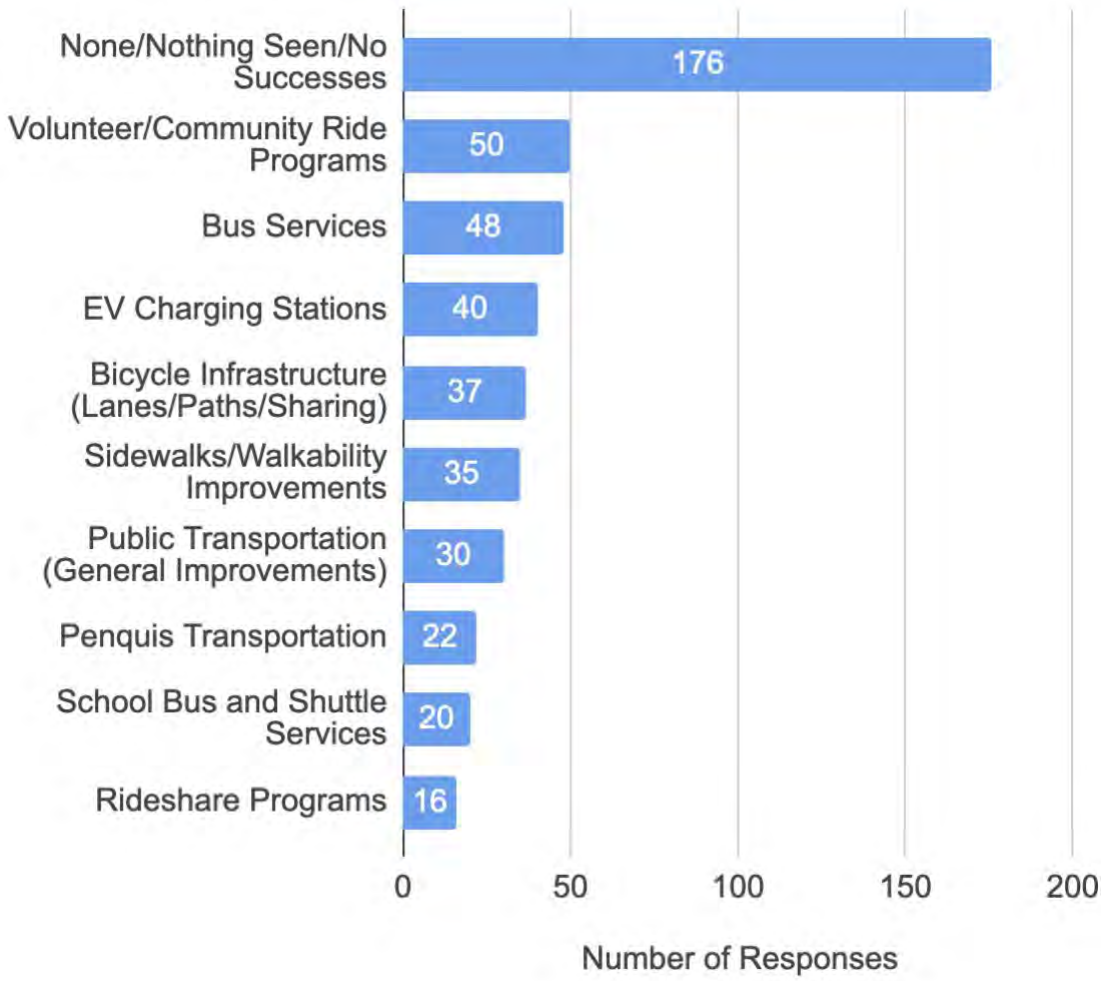

Figure 4.5.12. Maine Community Alternative Energy Survey responses to the open ended question: What transportation successes have you seen within your community that you would like to see more of? (416 total open-ended responses coded for themes; some respondents wrote responses that fit within multiple themes)

Bus services were another prominent theme (48 responses), with participants noting the presence of local buses, though many also expressed concerns about their limitations. One individual from a rural community (Orono) explained:

> *"The Community Connector has awesome bus routes. Unfortunately, the frequency for each route needs to be about once per 20 minutes rather than once per hour. Also, hours need to be expanded significantly. Currently, the bus is not viable for most professionals but with augmentation it would be sufficient. I sketched it out once and came up*

with something like a quadrupling or quintupling of the current service in order for anyone in Orono, including time-strapped professionals, to be able to effectively ditch the car. That requires new revenue and just thinking about mobilizing enough citizens in my community to push that in front of our Town Council makes me quite tired. I am time-limited myself, unfortunately."

Forty respondents recognized the installation of **EV charging stations** as a success in their communities: "We have a public EV charging station, yay! We improved the signage and cross walks for a bike path, but even maintaining annual pavement painting is difficult given city capacity. Some residents are switching to plug-in hybrids or EVs, but the cost is out of reach for many." (Recipient of LIAP or other assistance). **Bicycle** infrastructure, including bike lanes and paths, appeared in 37 responses. Participants appreciated the addition of bike-friendly routes, with one female business owner stating, "More bike lanes around key Portland commuting roads." Sidewalk and **walkability** improvements were highlighted 35 times, with respondents praising safer pedestrian options: "The Town of Falmouth has added more sidewalks to make the town more walkable, but we need more."

General public transportation improvements, without specifying a particular service, were mentioned 30 times: "Transportation is a crisis in our community, and there is almost nothing the municipality is able to do about it. We need countywide public transportation options, and we need MDOT to take the Downeast transportation infrastructure seriously to upgrade and maintain it. They have made improvements over the last several years but it is not nearly enough." (Older adult). **Rideshare programs** were mentioned 16 times, with participants expressing the need for more options. One person from a rural community (Union) noted, "There are no Ubers/ Lyft here only one taxi company. Our older community would benefit from buses."

Are participants using GoMaine?

The majority of Maine Community Sustainable Energy Survey respondents have never heard of GoMaine (70%; 78 out of 111 respondents). Only 3 respondents stated they had used GoMaine a few times. Although 7% responded with a positive view towards GoMaine, another 9% had thought about using the service but could not, due to inconvenience, living outside the service area, and difficulty figuring out the system. Seven respondents stated that they appreciate the service, particularly for its features like carpool matching,

emergency ride home, ease of use, and availability of information. However, GoMaine appears to have limitations in rural areas, particularly in places like Deer Isle (Hancock County), where residents rely more on volunteer driver networks like Friends in Action and Downeast Community Partners.

Survey respondents to the question “What do you think could be improved about GoMaine?” focused on the need for **broader adoption and improved coordination**, indicating that GoMaine may need to work on better integrating its services with existing transportation networks, especially in rural areas. At focus group discussions for residents at a low-income residential facility in Skowhegan, facilitators reported back that “No [focus group] participants were aware of GOMaine and were grateful to receive information on it.” There is curiosity around the program; at a listening session with the Maine Council on Aging, a participant said that “[GOMaine] would be good for things like going to the grocery store or medical appointment.” Participants felt that GoMaine could benefit from increased promotion and clearer communication to ensure that potential users understand the services available to them.

What are the transportation priorities for participants?

As discussed above, expanding **public transportation** options emerged as a key priority for climate action planning: “Need access to transportation for those who cannot drive themselves who live in rural communities for essential needs like groceries and medical appointments, including wheelchair accessible options, an island bus that picks up at home for example,” (Maine Community Sustainable Energy Survey respondent, older adult from a rural community - Bath). Another significant concern was the inefficiency and poor coordination of existing transit services: “It was really depressing realizing how poorly the various transit providers coordinate. I spent 4 hours trying to get from the airport to Saco one day and finally gave up and was horrified to hear from the BSOOB [Biddeford Saco Old Orchard Beach Transit] people that Portland and Sopo [South Portland] don't let them put signage in those towns” (person without access to reliable transportation). Youth at a discussion hosted by a member of the UMaine research team at Islesford Boatworks (8/8/24) remarked, “there needs to be more of a public transport focus—it’s very hard to do that in Maine but it would be nice to see an improvement in pedestrian and biking infrastructure. What about expanding Amtrak to Bangor?”

Some participants had additional questions about the lack of emphasis they felt the TWG recommendations put on public transportation. At a special

meeting of Local Lead the Way (7/8/24), focused on the MCC and small rural towns, multiple participants asked about how options they felt were key could be included in the plan: “Public transportation? Bike corridors for commuting and recreation?” Organizers clarified that the reduced vehicle miles traveled (VMT) recommendation is where public transit comes in, but participants felt these non-vehicle options should be more clear in the recommendations. An older disabled adult at a discussion hosted by a member of the UMaine research team at Islesford Boatworks (8/8/24) talked about how transportation seems to be really lacking in Maine; everything is so far apart. They said increasing public transportation should be more of a priority, and that one of the biggest calls nationwide is more public transportation, asking, “why are [Transportation WG recommendations] not putting more emphasis on public transportation?” In addition, a young person from Norway, a rural and disadvantaged community, stated that limited public transit leaves them feeling “stranded, without access to essential services like healthcare, affordable housing, or even the ability to escape in a climate emergency.”

Community members who attended the Casco Bay Islands Bluff Erosion Symposium led by Island Institute (7/23/24) noted that the TWG recommendations did not include ferries and barges, transportation and delivery that island communities rely upon. The team member running this engagement noted that this may have been in the detailed PDF of the recommendations.

In a survey given out at the Center for Active Living by York Ready for Climate Action, 83% of respondents (16) indicated they support increasing public transportation to reduce vehicle miles traveled (7/26/24). The lack of public transit in many parts of Maine, including York, was a repeated concern identified by participants in a focus group led by York Ready for Climate Action, where the participants were mainly older adults with low incomes (8/6/24). Participants would like to see public transit in town, including buses and passenger vans. One York Ready for Climate Action survey respondent (older adult) remarked, “a system of electric buses (maybe mini-buses) might reduce use of cars. Don't know if it would be commercially viable, but there are many aging residents.” Another respondent (older adult) advocated for “public transport where feasible, light rail”. An older adult with low income, who received the survey at a local food pantry, stated, “This is a vacation community. We used to have trolley support at reasonable cost, but now it’s gone” (7/25/24).

In a survey developed by Community Organizing Alliance about MCC recommendations for the greater Lewiston-Auburn-Portland area, 32 of 36

survey participants listed more public transportation as a “Good” or “Great” fit: “In addition to more public transport, more creative uses, offering and promoting public transportation for events in Maine (i.e. neighborhood pick up/drop off for Sea Dogs games, Portland festivals)” (7/25/24). A participant in a New Mainers Public Health Initiative presentation on climate change (4/3/24) emphasized the importance of building transportation infrastructure and encouraging dense housing in walkable communities ahead of the increased population that will come with climate change and climate refugees.

Participants also supported alternative forms of transportation such as investments in **bike/walk lanes and rail**. A leader of a small, rural town (interview with A Climate to Thrive, 5/14/24) said that bikeability is a really important priority to the local community and one that could be given more work. During the transportation section of a discussion group hosted by the Maine People’s Alliance (8/8/24), attendees discussed the importance of bike lanes and safe walking paths. There was also a desire to create more light rail options in the state so people do not need to rely on driving cars as much; people could instead travel to a hub and take public transit (buses, trains, etc.) to their final destination. Participants at this monthly member meeting were low income youth and older adults, coming from disadvantaged communities. They highlighted that even with more cars becoming electric, there needs to be more priority on making it safer for people to drive/walk/etc., and we should be moving towards having less cars on the road in general. One member stated that anytime a road is redone in the state, a bike lane should always be added.

However, not all participants concur with the addition of bike/walk lanes. At a discussion hosted by a member of the UMaine research team at Islesford Boatworks (8/8/24), the topic of Complete Streets was discussed; multiple participants expressed a view that people using alternate transportation such as bicycles need to respect the need for cars, and recognized that older business owners see the need for more parking for customers as part of street designs. Additional suggestions to reduce vehicle miles traveled from a focus group discussion hosted by York Ready for Climate Action (8/6/24) included exploring subsidized options through business sponsorship for buses, mobile shops, library vans, and mobile health vans.

4.5.3 TWG Recommendation 3: Accelerate Maine’s adoption of zero-emission medium-and heavy-duty vehicles.

Limited feedback from priority populations was received on this

recommendation; of feedback received, most focused on electrification of municipal vehicles. In a one-on-one meeting with A Climate to Thrive (5/14/24), the town manager of a rural Maine municipality said that the interest exists to electrify town fleets that may include a variety of medium- and heavy-duty vehicles such as public works vehicles, public transportation and emergency vehicles. “There is increasing interest from residents to purchase electric vehicles, but prices can still be an issue and are particularly an issue for electrifying town fleets”, and, “Additionally, providing robust enough charging infrastructure to support widespread vehicle electrification is still an issue.” Support for electrifying bus fleets can be seen in the feedback regarding EVs (Section 4.5.1) and the strong support for public transit (Section 4.5.2) above. Participants noted that strategies for expanding public transportation include electrifying buses and building up charging infrastructure across the state. In addition, 35% of 47 rural business owners surveyed by Sunrise County Economic Council (8/12/24) are interested in implementing high-efficiency vehicles, equipment or boats.

4.6 Community Resilience (CR)

The Community Resilience Working Group’s Recommendations to the MCC prioritize the establishment of a comprehensive framework for measuring adaptation and resilience metrics across Maine, ensuring alignment with the state’s specific climate impacts; improving the application process for climate mitigation and adaptation funding to enhance accessibility for diverse applicants; strengthening community preparedness through enhanced risk assessments, training, and communication strategies; implementing data-driven approaches in county Hazard Mitigation Plans to support effective grant applications; assessing climate vulnerability and accelerating financing for resilient infrastructure; and developing a long-term funding strategy to support climate initiatives.

Surveys and direct engagements reveal both **challenges** and opportunities for enhancing community resilience to climate change among participants. Key needs include addressing the high cost of living - specifically in areas such as food, housing, healthcare, and childcare - and boosting economic development and job opportunities. There is a need for increased education and awareness to make climate-related information more accessible and actionable, alongside greater involvement of diverse community members in decision-making processes.

However, **barriers** such as disenfranchisement, limited access to clear and trustworthy information, and the capacity constraints faced by small towns and local governments hinder progress. Partners reflected that many of the populations they were working with had never talked about climate change before. Participants expressed the need for more time spent educating people in culturally sensitive ways about the issues surrounding climate change in Maine. The technical language of WG recommendations was difficult to understand even when discussed in plain language in in-person settings. Partner organizations want to work with the state to ensure that culturally sensitive educational outreach is expanded upon.

Despite these challenges, there are clear **opportunities** to improve resilience through targeted funding initiatives, enhanced education and outreach, and more collaborative and inclusive planning efforts. Because the Community Resilience recommendations are divided into three strategies (F, G, and H) that include 14 total recommendations, this section is divided by strategy rather than specific recommendation number. Feedback relevant to each strategy is included in each subsection.

4.6.1 CR Strategy F – Build Healthy and Resilient Communities.

Do people feel included in climate change decision-making?

Out of the total sample size of “priority population” respondents (568), 96 people answered at least one question in the rotating Community Resilience question block in the Maine Community Alternative Energy Survey. Overall, most respondents to Survey questions about interest and experience with state climate planning expressed that they do not feel included in state planning (54%), they are not participating, and they do not want to be involved. However, nearly half of respondents would like to be included in climate change planning efforts in their communities even though most are not currently participating. Nearly half of respondents do not want to be included in state or community level climate change planning. Nearly 80% of respondents trust climate change information communicated to them by the state.

Municipal officials in underserved communities expressed feeling included more compared to these survey results: 9 of 13 (69%) municipal officials in a survey led by Sunrise County Economic Council felt included sometimes or all the time in local, county, or state decisions about climate change that might affect them, and 4 did not feel included (8/12/24).

Out of 100 respondents to the Maine Community Alternative Energy Survey who answered the question, “Have you participated in state climate planning efforts?”, 77% indicated they have not participated in state climate planning efforts, 17% said they have, and 6% responded, “I don’t know.” When asked *why* they haven’t participated in state climate planning efforts, many respondents selected they weren’t aware of the opportunity (56%; 40 out of 72 respondents) or no one asked them to participate (43%). Others indicated that lack of time (24%) or knowledge (15%) prevented them from participating. Fewer people said it was because they would not be financially compensated or did not have transportation (2 respondents each).

Ten people selected “other” and wrote in a response, with two stating they did not want to participate in state climate planning efforts, one expressing distrust in government, and another disbelief in climate change. Another respondent from a rural community (Millinocket), who identified themselves as Native American, noted that “A lot does not involve rural Maine”. A respondent with a disability expressed frustration with accessibility: “No transportation options.” An older adult questioned the efficacy of the process, and a resident of a disadvantaged area in Portland expressed a sense of frustration: “no one would listen to me anyway”. An older adult with low income from a rural, disadvantaged community (Skowhegan) asked, “Why do you want to depend on a novice for such critical information?”

Only 19 out of the 96 respondents (less than 20%) to the question, “Would you like to be involved in climate change planning efforts in the future?” selected “Yes, at the state level”. When asked what would make it easier for them to participate in state climate planning efforts, 51% of 86 respondents selected “None of these” (30) and/or “Other” (16) instead of the options provided (Figure 4.6.1). For those that did select one or more options provided, financial compensation and scheduling meetings/events on a weekday were the most popular options. Scheduling meetings in the evenings was also popular. Multiple people mentioned that they do not have the time in an already overscheduled life. Sixteen people wrote in additional responses, including that a Zoom option would be helpful, events needed to be widely advertised, and they would need proof that their participation would make a difference in order to consider participating, as stated by an older adult with a disability: “Show me how effective they will be. Show me why I should participate.”

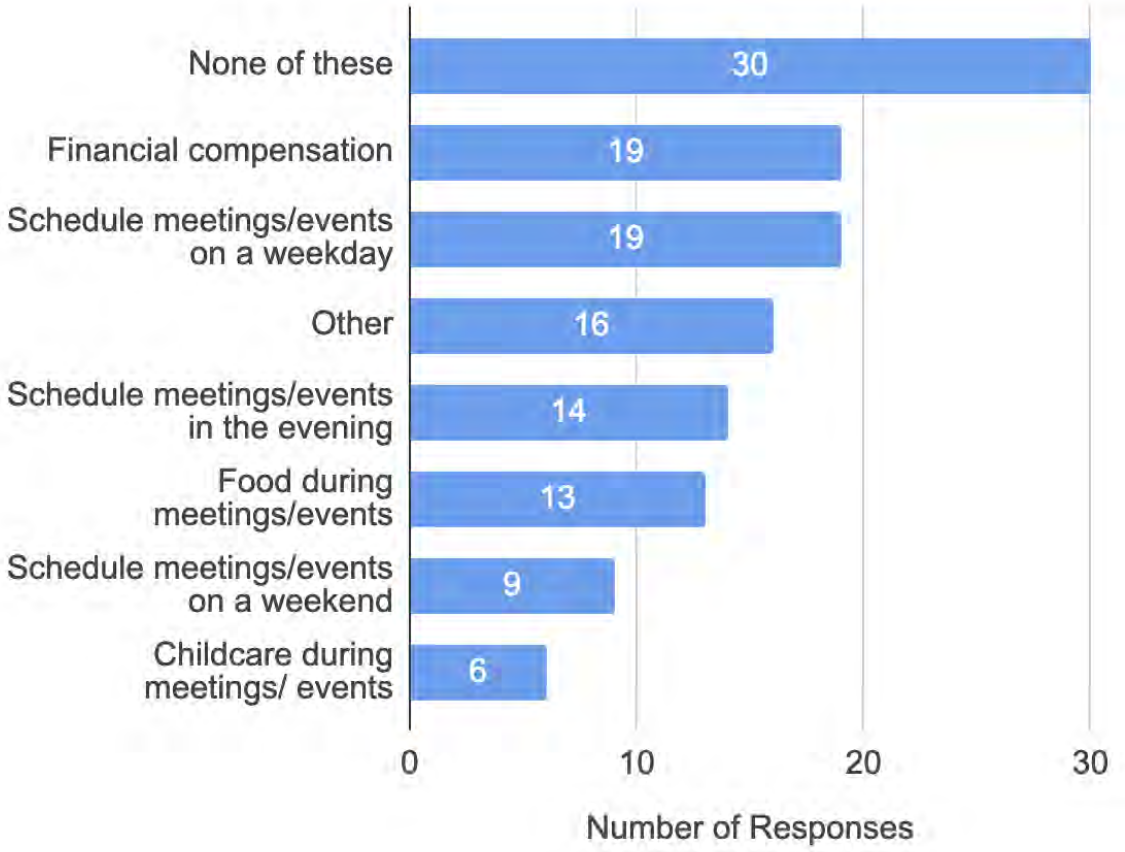

Figure 4.6.1. Maine Community Alternative Energy Survey responses to the question: What would make it easier for you to participate in state climate planning efforts? (86 total responses; some respondents selected more than one answer)

Thirty-seven of 93 respondents to the question, “How would you like to be involved in collecting climate change data that the state considers when making planning decisions?” preferred surveys (Figure 4.6.2). Thirty-six of 93 respondents selected that they do not want to be involved in climate data collection that the state considers when making planning decisions. Participation in Citizen Science projects, workshops, and group discussions were somewhat popular responses (21 responses, 19 responses, and 18 responses, respectively). One respondent wrote in, “I am already deeply involved” and another wrote in, “Approach our rural schools!!”

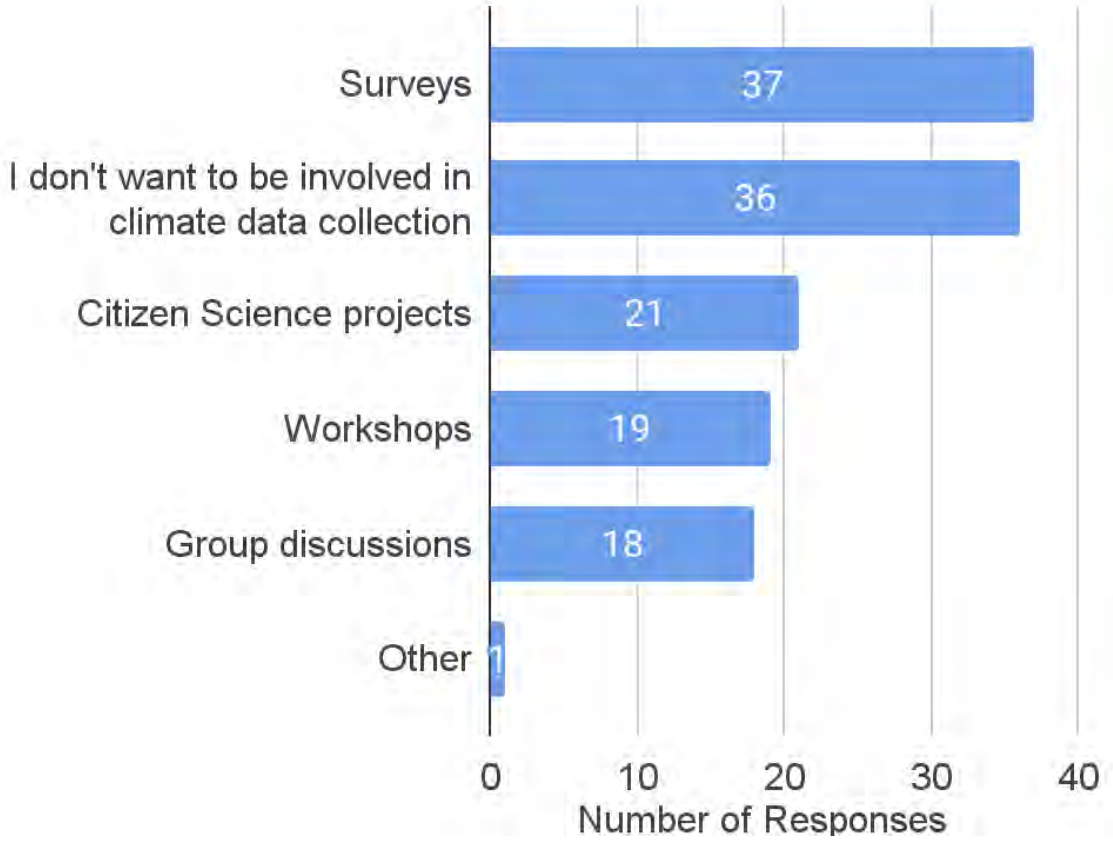

Figure 4.6.2. Maine Community Alternative Energy Survey responses to the question: How would you like to be involved in collecting climate change data that the state considers when making planning decisions? (93 total responses; some respondents selected more than one answer)

Interest in climate planning information may depend on whether people are able to participate in data collection for evaluating climate actions. However, a majority of Survey respondents (71%, or 46 out of 65) indicated they would not be more interested in climate change information if they were involved in collecting the data. At a CEBE meeting focused on MCC discussion questions, targeting older adults (8/6/24), capacity for climate data collection was discussed. A resident mentioned that: “It would be helpful to have someone come in and identify and assess which areas a town might have trouble with.” Having training available for residents to identify and assess these areas themselves was proposed as a solution.

When asked whether they were active in discussions and decisions about climate change in their own community, 57% of 97 respondents to the Maine Community Alternative Energy Survey indicated they are not active at all; 30% said they are somewhat active; and only 13% selected that they are very active.

Of the 42 respondents who indicated they have been involved in their community's climate change discussions/decisions, 57% selected that they have been involved in a discussion about how climate change will impact their community, and 36% selected helping make a plan for reducing carbon emissions (14 respondents), for emergency communications (8 respondents), and/or for evacuation in case of weather events (4 respondents):

> *"I'm on my town parks & rec committee and attend the comprehensive plan meetings, where our plans take climate change into consideration"*
> – person with a disability

> *"[I] facilitate a monthly climate meeting in [the] community, do Earth Day events, speak publicly, [and wrote a] local climate report [in] 2024"*
> – person from a rural community

> *"[I] helped to educate people about the climate action plan in my city"*
> – person from a disadvantaged community section of Portland

Ten respondents selected that they have used maps to identify flood risk areas. In addition, three respondents (who had not selected one of the other options), wrote in "Ash trees and emerald ash borer", "Coordinated the Town's comp plan update which was approved by the Town and found consistent and complete by the State of Maine", and "Worked with WindowDressers." Forty-five respondents (47%) said they want to be included in climate change planning efforts in their community.

What barriers are currently affecting local and regional community resilience efforts?

The 40 responses to the Maine Community Alternative Energy Survey open-ended question, "What are some barriers to making infrastructure more resilient to a changing climate in your community?" point to 7 major themes (Figure 4.6.3). **Financial cost and funding issues** emerged as the most frequently mentioned concern (18 responses; 45%): "Costs, technical challenges associated with locations and infrastructure, planning and engineering capacity."

(respondent from a disadvantaged community - Bath).

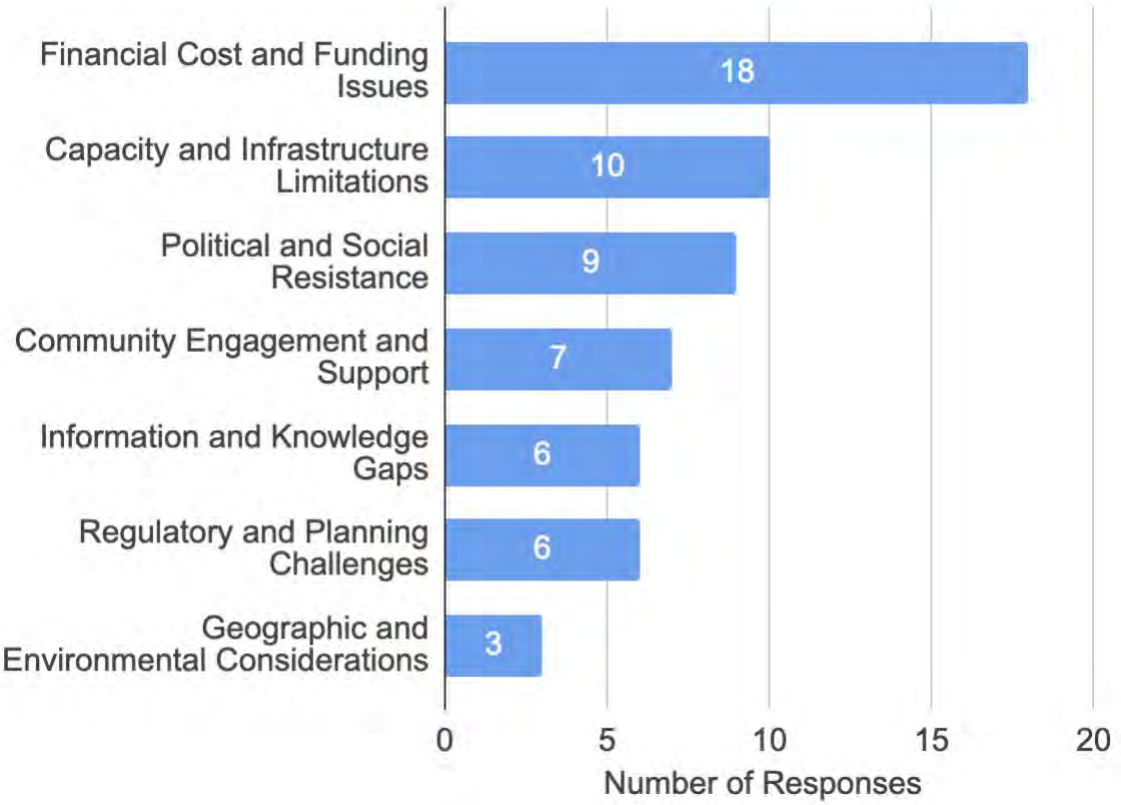

Figure 4.6.3. Maine Community Alternative Energy Survey responses to the question: What are some barriers to making infrastructure more resilient to a changing climate in your community? (40 total open-ended responses coded for themes; some respondents wrote in responses that fit within multiple themes).

Ten Survey respondents mentioned **capacity and infrastructure limitations** in their open-ended responses, expressing concerns about the limited availability of skilled contractors, municipal resources, and outdated infrastructure: "The town appears to be heavily reliant on volunteer input. I can't afford to volunteer the amount of time required to make a meaningful difference. If they could fund the position, the work would get done." (respondent with a disability). In one-on-one meetings with leadership of small, rural towns led by A Climate To Thrive (May 2024), a Town Manager of a small coastal town reflected on a seasonal capacity cycle that makes it difficult to maintain continual focus on climate resilience planning without external help given the need to address the needs of both their year round and seasonal populations. The Town Manager emphasized the importance of local organizations that the communities trust to help prioritize local needs and feels like his town has good support in this way through A Climate to Thrive and other organizations. He reflected that it is

important for smaller towns to narrow the focus from climate resilience planning broadly to the specific areas most applicable and relevant to each community.

At a discussion hosted by a member of the UMaine research team at Islesford Boatworks (8/8/24), a resident of the Cranberry Isles echoed the importance of increasing capacity in small towns, stating that they found "Investing in community leaders with trust-based grants so they can do what they see as most vital for climate resilience" necessary. Participants at an Island Institute engagement (8/8/24) noted that limited staff capacity often prevents community work from getting done. The need for funding and external partners was clear. Participants noted that there is volunteer fatigue; the same people volunteer for everything, they are getting older, and they are tired. In some communities, leaders and decision makers do not have enough time or public support, or it is not one of their priorities. Participants noted that within their communities they have heard opposition to participating in climate programs because people may perceive these programs as aligned with particular political beliefs.

Three members of Washington County select boards, representing 2 coastal towns and 1 inland community, echoed the climate resiliency capacity challenges that face town leaders in a focus group led by Sunrise County Economic Council (7/12/24). While they mentioned finding volunteers for boards and other functions and hiring people to work for municipalities as particularly challenging, they all indicated, in one way or another, that they are overwhelmed:

> *"What are we worried about? Everything."*

> *"I'm just realizing how low our capacity is. You know, everyone has day jobs, families, and it's all volunteer, and it feels like it's the same people showing up every time. Capacity isn't great, and I know we're not alone in that."*

Climate related costs and capacity-building may also hinder the ability of businesses to be resilient members of their communities. Interviews and focus groups with businesses in the Maine Black Chamber of Commerce led by Coastal Enterprises, Inc. (7/31 and 8/7/24) revealed that these businesses experience difficulty accessing expansion and maintenance capital, and recruiting and hiring staff: "They are mostly mom and pop businesses" (older adult identifying as BIPOC). In addition, 43% of participants reported high electricity prices as a main concern.

Members of the Maine Islands Coalition, Maine Ferry Advisory Board, and island municipal leaders participated in a discussion session on MCC recommendations led by Island Institute (8/8/24). They noted that a healthy community is one that can recover from climate events and build back better: "Not just recovering from big climate events but day to day changes that accumulate over time too", "encourage reserve funds in each community for these storms and disasters and certainly road work to add elevation to main roads" (anonymous responses). However, participants also noted challenges associated with aging populations: "[We need] better capacity in small towns… capacity to have affordable housing. Volunteers are getting older. Fatigued." Resilience looks like "young families moving to our island communities to live and work" (anonymous responses).

The theme of **political and social resistance** appeared 9 times in the Maine Community Alternative Energy results (Figure 4.6.3), highlighting the challenge of overcoming local opposition and denial of climate change: "Some folks still don't even believe in climate change. Also, we're relatively removed from infrastructure/climate challenges in comparison to places along the coast" (respondent with low income). An older adult stated, "Lack of interest from Town leaders who do not see climate change or resilience as a concern for the overall community"

In response to the Survey's open-ended question, "What challenges do you face in understanding climate change information?" one older adult wrote, "It is an extremely broad topic which requires a lot of knowledge to really grasp. 99% of us have to cherry pick things to 'know.'" (Older adult). Two respondents mentioned the challenge of prioritizing and engaging with the vast amount of information available. Participants in the Casco Bay Islands Bluff Erosion Symposium, led by Island Institute (7/23/24) noted that simpler language would be helpful as well as visual depictions of climate change impacts.

Participants in a focus group discussion led by Sunrise County Economic Council (7/12/24) expressed frustration with lack of participation in municipal government and subsequent challenges with policies being made by a handful of people without input from the masses: "A lot of people who don't like to get heavily involved would be the first ones to complain about things." All other participants nodded emphatically at this. Another participant added that "[Some] decisions are made for the whole town in terms of how we're branded and what

we will accept/what we won't based on 10% of registered voters, which is probably less than 7% of the entire population."

Regulatory and planning challenges were mentioned 6 times in Maine Community Alternative Energy Survey responses: "Currently our community is developing a Comprehensive Plan—the last attempt was in 1993 when it failed to pass Town approval." (respondent from a disadvantaged community - Sullivan). "We're coastal and for some reason, our town thinks it's fine to keep rebuilding what's been destroyed—waste of resources, source of coastal pollution—should be regulated at the state level—we have whole septic systems going into the ocean. We need more state regulation on this." (respondent from a rural community - Harpswell).

When asked about their preparedness for storms, 59% of 37 businesses in the Maine Black Chamber of Commerce interviewed by Coastal Enterprises (6/5/24) said that they do not have any **backup strategies** for when the power goes out. Business-owner respondents to the Maine Community Alternative Energy Survey (including 5 older adults, 4 women, 3 people with low income, 3 people with disabilities, 1 worker in natural resources - people fit multiple categories), who live in disadvantaged, climate frontline, and/or rural communities, indicated they fare better when the power goes out than some participants in the Coastal Enterprises engagements: 7 out of 10 respondents to the question, "When the power goes out, which of the following do you use for your business?), 4 had a backup power option: whole building gas or diesel generator); 2 had an emergency or small load gas or diesel generator ; 2 used an electric vehicle battery as a generator for emergency loads ; and 1 had access to a community charging station (1).

However, municipal governments in disadvantaged, rural communities did not report as much backup capacity: only 2 out of 8 reported using a whole building gas or diesel generator, and the rest said they did not have any of the options presented or were not sure. An attendee at the Maine People's Alliance monthly member meeting (8/8/24), who is a local city councilor, suggested that new infrastructure should be made resilient, explaining that for someone who lives in an area with a lot of trees around them that are impacted by storms throughout the year, falling and landing on power lines, it can be hard to stop reliance on gas generators.

What do people think could help them address these barriers?

In response to an open-ended question “What could help your community address these barriers [to making infrastructure more resilient to a changing climate]?” **funding and financial support** (15 out of 30 responses) was the most frequently mentioned, with respondents emphasizing the need for targeted grants, federal assistance, and other financial resources: “Federal assistance. We're a small community and could never fund issues properly.” (respondent from a rural community - Millinocket). Other common survey response themes included: Education and awareness (8); Community involvement and support (4); climate-aware policies and planning (4); and technical assistance and expertise (3).

The **Community Resilience Partnership** (CRP) was identified as one opportunity to address capacity challenges faced by communities. However, only 34% of 98 respondents had heard of CRP. Out of 27 respondents to the question, “Is your community enrolled in the Community Resilience Partnership?” 44% answered “Yes”, 48% answered “No”, and 7% answered “I don’t know”. Those who identified that their community was enrolled in the Community Resilience Partnership were then asked, “How has the Community Resilience Partnership benefitted you/your community?” Four out of 8 respondents to that question were unsure. One respondent wrote in, “We have received money and support for projects including for severe weather emergency planning, broadband.” Another wrote, “[G]rants, technical support through local and regional service providers.” Another respondent stated, “$50K for a vulnerability study of roadways the flood due to sea level rise.”

When discussing the capacity barriers that make it difficult to recruit underserved rural communities to the Community Resilience Partnership, one participant in a CEBE meeting (8/6/24) proposed the state could facilitate a **regional dialogue**: “even if it's just a few times a year”. Multiple participants expressed a desire to know what other communities are doing; they want to hear about other communities’ efforts to address climate change. Participants recommended updating the CRP website’s map, to share successes and challenges of the projects, who is in charge of them, and democratize this information: “What would be nice on a state level is for them to create pamphlets with a description of Community Resilience Partnership projects, and their successes and challenges, in order to work together as a region so we can learn from each other.” (Resident of Otisfield, a disadvantaged community). A resident of Norway, Maine (also a disadvantaged community) said she feels like she is “in

a bubble” because “other people don’t watch public TV and are not present in the select board meetings; therefore, they are not aware of what is happening in other towns.” She added: “We need to figure out better systems [locally] to communicate these projects with people”, including different styles of education and different ways of communicating with people, beyond just pamphlets - getting information in new places where people do not already look, so people from different social circles get involved. One of 3 members of Washington County Select Boards agreed with the need to get people with fresh perspectives involved: “We love [people from away] who come in and stay and say, ‘How can I help?’ And they're very active, that is wonderful. We need creativity. Our comprehensive plan has been talking about that over and over and over again.” (SCEC focus group, 7/12/24).

Participants in a group discussion held as a special meeting of ACTT’s Local Leads the Way focused on Maine Climate Council and small rural towns (7/8/24) also indicated a desire for **more coordination from the state** to share information, provide direction, and connect communities: “communities are talking about this, even if it’s not a managed effort from the state down. They’re chasing the cart with the horse.” One participant reflected on the aftermath of coastal flooding, describing the tragedy of “watching flooded establishments rebuilt in the exact same place” and emphasized the need to develop a framework to support facilitated community conversations, which would be “very helpful.” Participants highlighted the need for “training in the state on how to have effective conversations about planning and action in general.” The importance of collaborative learning was underscored, particularly in “bringing people together around finding common solutions.”

Participants suggested that those who have experienced relocation could play a valuable role in these discussions. To make these efforts most effective, participants recommended looking at examples of communities that have navigated post-hurricane recovery, learning from those who have done it well—and from those who have not. For example, a participant in a discussion hosted by a member of the UMaine research team at Islesford Boatworks (8/8/24), noted the resilience displayed by island and coastal communities as an example to others: “Island and coastal people are some of the most resilient people I’ve ever met. I think other communities can learn from us. ...No one came out to help us following the storms…we did it ourselves, that was it. For weeks, it was just us, cleaning up the beaches ourselves, and we didn’t expect help either.” A participant in the Maine Sustainability and Water Conference (3/28/24) added that “[There are] Lots of climate alliances and organizations, but [there is] a

disconnect between them and front-line communities and including them in the climate change conversations."

What risks do disaster preparedness plans need to address?

At the Maine People's Alliance monthly member meeting (8/8/24) participants noted that cities and towns need to have plans as we see more extreme weather and "all communities need to have places where residents can access heating or A/C, bathrooms, etc. They also need to make sure people have safe places to go to if they do not have power. Participants in focus group discussions led by Sunrise County Economic Council (7/8/24, 7/9/24, and 7/22/24) noted that there are few warming centers, and older participants worry about getting to them when the power goes out.

Participants in these SCEC focus group discussions stated:

> *"My old landlord said [about power outages], 'Go to a warming center,' and I said, 'It's icy. How am I supposed to get there? And where would the warming center be?'"*
>
> *"[My town] handled the last couple of storms pretty well. The emergency services, they kept stuff up and running, let people go take showers, whatever. And I think it's a great community to come together when stuff like that is happening? I mean, you don't have to be in the fire department to go cut trees out of the road. It's a community effort."*
>
> *"We need to take care of the problems ourselves and not wait around for someone else to come. If a tree falls on the road, or if somebody's basement is flooding, it's like who's got the extra pump to help fix the situation."*
>
> *"I definitely know a lot of people whose roofs were damaged and may still be leaking, and I don't really see any assistance for that sort of thing which kind of surprises me, but also, not really because it's expensive to fix a roof."*

A Jonesboro resident with a disability shared in an SCEC survey for rural residents (8/12/24), "We have had economic impacts, but our neighbors have had significant losses of food, including loss of all harvested game from the freezer, lost time from work, and unaffordable housing damage." Extreme

weather events have also been noted to impact people's livelihoods "Yeah, the clam diggers got shut down. They always do when there's that much rain. My uncles had to pull their [lobster] boats, their big boats out so they wouldn't be damaged, and that all costs money when you have to stop fishing, for three to five days, or even longer, because of the weather. You lose a lot of money." During a virtual statewide listening session hosted by the Maine Council on Aging (MCOA) and the Governor's Cabinet on Aging on August 6, 2024, participants voiced concerns about loss of food due to power outages and decreased food production due to weather impacts.

Older adults discussed additional risks that could be incorporated in disaster plans. At a luncheon for residents who are renting at the Baldwin Center, York Housing's largest campus, hosted by York Ready for Climate Action (8/6/24), older adults with low income noted both Wifi and phone connectivity to be large concerns during emergency events. One resident told a story of how his wife needed 911 but there was difficulty in communication between the first responders who arrived and the hospital due to poor cell phone service. "We need better Wifi/cell service for communication. If there is an emergency we don't have confidence that we can get help if cell phone service is poor. If the power is out, landlines don't work either." Other participants noted, "Someone will die, then they'll do something. Or maybe not"; "We shouldn't have to have a landline and a cell phone just to get a call out. Double bills"; and "Cabs are very expensive. We need public transit."

In a Maine Council on Aging (MCOA) and the Governor's Cabinet on Aging virtual statewide listening session (8/6/24), participants noted that some communities do not have a clear plan for addressing emergency planning for climate events. Participants expressed that it would be helpful to provide a **framework** to all communities to help them prioritize what and how they respond to emergencies. It would be helpful if there was a process by which communities across the State could **share best practices**. Participants acknowledged that every community is different and there are different levels of readiness and willingness to engage in inclusive planning. Older adults are not always considered as part of the planning process. Having an age friendly community initiative can be helpful to have a voice. Advocacy at the community level is needed. Developing a more formal and visible network of heating and cooling shelters and centers in the State is needed so that people are aware of what is available, not just in their community but in neighboring communities and regionally. Additionally, participants expressed a specific need for community level transportation options to help people in severe weather events, especially

for people who do not have transportation, have mobility or health issues. Leveraging the library network in Maine could be helpful in education and outreach programming for communities.

In a survey led by the University of Maine Center on Aging (6/17-8/7/24), Age-Friendly Community representatives were asked to “Describe in what way your disaster preparedness plan focuses on older adults.” One respondent answered, “An initiative was started to get the key players to the table. Town officials, EMA, fire departments of the five towns came together to discuss how to address the key questions...what worked, what didn’t, what do we need to put in place-with the big question, handling effective communication as to what is available.”

Disaster plans can be a place to identify climate-vulnerable areas. The Maine Community Alternative Energy Survey asked the 96 respondents to the Community Resilience question block, “How much do you know about how your town plans for and implements projects to make infrastructure more resilient to a changing climate?” While 44% of 95 respondents selected “Nothing”, the other 56% that answered “A lot” (7) or “Some” (46) saw the question, “Does your community have access to lists or maps of local climate-vulnerable areas or infrastructure?” Most (84% of 26) respondents indicated that their community has access to lists or maps of local climate-vulnerable areas or infrastructure, and 76% (13 out of 17) indicated that their communities (Hudson, Yarmouth, Portland, Orono, Millinocket, Kennebunkport, Gorham, Tenants Harbor, Dover Foxcroft, Sullivan, and Bath) incorporate data from these lists/maps into the planning processes. Eleven individuals indicated they have personally accessed or used these lists/maps to help make infrastructure in their community more resilient to a changing climate.

Public health remains a priority for participants. A survey conducted by the Community Organizing Alliance on July 25, 2024, in the Greater Lewiston-Auburn-Portland area revealed strong support for climate-related recommendations. Among 36 survey participants, 32 rated the recommendation to “Strengthen public health” as a “Good” or “Great” fit, with 20 participants listing it as the most important recommendation. In a virtual statewide listening session on August 6, 2024, organized by the Maine Council on Aging and the Governor's Cabinet on Aging, participants emphasized the importance of addressing behavioral health impacts of climate stressors. One older adult participant shared, “We are pretty good in Maine taking care of ourselves…but we are getting overwhelmed and reaching a tipping point…but Maine people can be

really good at joining together and trying to do things to solve things. I like what we are saying about involving older adults. …It would be a great use to train older adults [in the role of] navigators to help each other."

A focus group discussion led by SCEC in July 2024 highlighted the personal impact of climate change on participants' daily lives. One participant shared, "I actually got [an air conditioner]. Last year was so bad for me, I couldn't breathe all summer [due to asthma]. So I saved my pennies all winter, just every penny I could get, and I got an air conditioner. I haven't used it this year except those three days that were really bad. I don't tend to use it just at the drop of a hat because of the cost." Affordability and community support are the top priorities for community members looking to improve energy savings and understand climate information.

It may be helpful for disaster preparedness plans to recognize how people are currently learning about natural hazards. Most Maine Community Alternative Energy Survey respondents are learning about natural hazard emergencies through weather apps, phone alerts, TV, and radio (Figure 4.6.4). Out of 47 rural business owners surveyed by Sunrise County Economic Council, 76% also rely on weather apps to learn about weather emergencies that may affect their businesses; 48% rely on social media, and 48% rely on commercial or public radio (8/12/24). In a survey of residents of underserved communities by Sunrise County Economic Council, 64% of the 89 surveyed relied on social media to hear about weather emergencies that may affect them and 61% relied on weather apps (8/12/24).

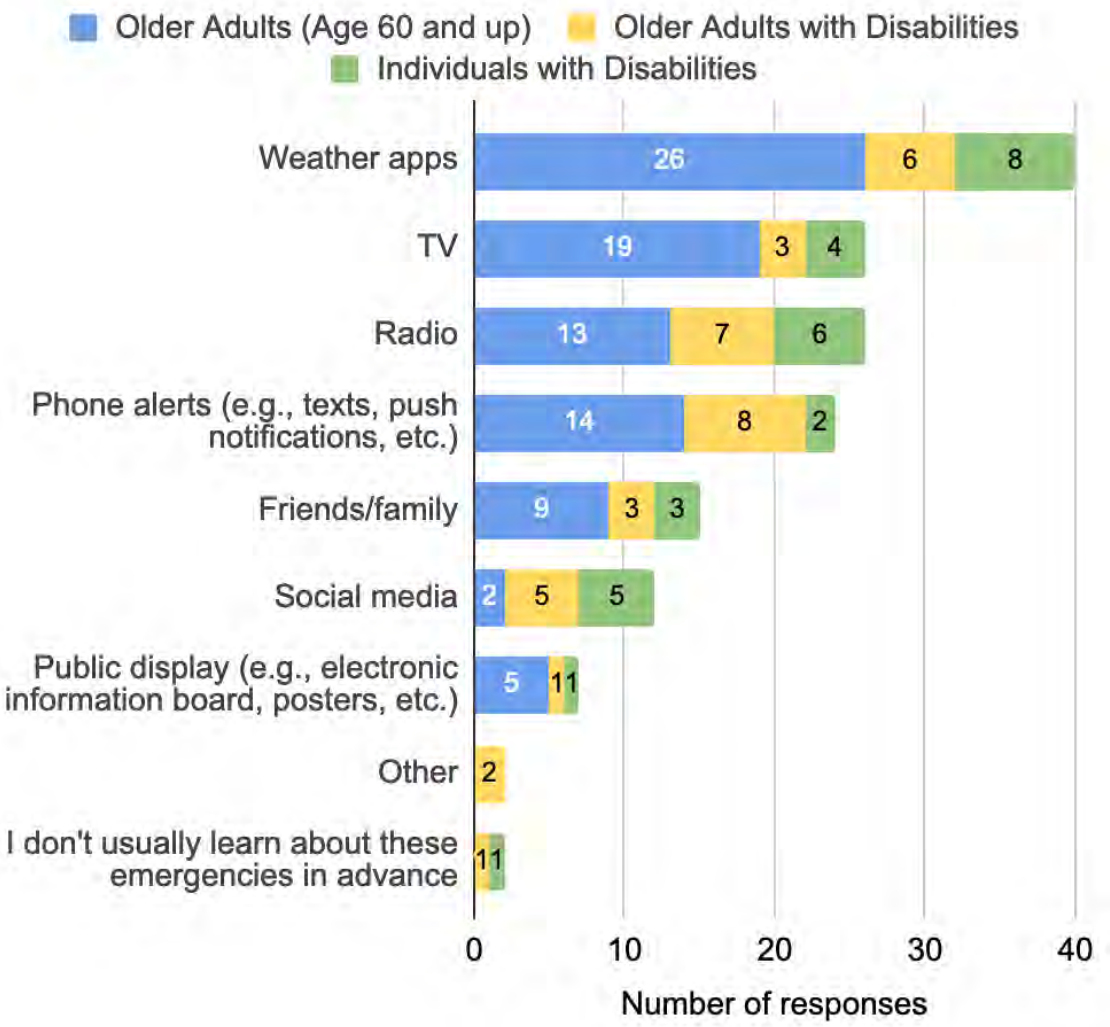

Figure 4.6.4. Maine Community Alternative Energy Survey responses to the question: How do you hear about natural hazard emergencies that may affect you, such as storm alerts or flood warnings? (58 total responses; some respondents selected more than one answer)

What challenges do communities face in responding to natural hazards and climate emergencies?

Participants in direct engagements noted that they and their communities may be ill prepared for a climate emergency; for example a resident of Stoneham noted: “A dam is a concern for washouts. There is this feeling we are gonna have a big washout. It’s gonna cost a lot of money if that happens. We are only in the beginning stages of becoming proactive instead of reactive. That’s my hope, that we can achieve that” (CEBE event, 8/6/24). Over half of respondents to a survey

handed out at a food pantry by the York Ready for Climate Action (7/25/24) were not sure if their community was prepared for a severe weather emergency; recognizing vulnerability in power lines, bridges and roads, and the sewer systems. In a survey led by the University of Maine Center on Aging (6/17-8/7/24), Age-Friendly Community representatives were asked to identify barriers to including the needs of older adults in disaster planning. One respondent stated "A major challenge is getting the word out when there is no means of communication...no power, telephone poles down, limited (if any) cell phone service or internet availability, some roads impassable. Contacting people during a power outage can be difficult if they do not have a cell phone or internet." Another representative replied, "We have advocated for years to have a Shelter in our City. The Community Center in our City has a generator, commercial kitchen and cots but staff have resisted creating a shelter there… [we are now] in the process of defining a shelter, but we are still in the process."

Maine Community Alternative Energy Survey respondents who saw the Community Resilience question block and indicated that they work for a municipal government were asked the question, "What makes it difficult for your town/community to respond to natural hazard emergencies?" The three respondents to this question selected lack of staff or funding; more emergencies are happening more frequently and causing more damage than we are used to; and difficulties in communicating emergency information to community members. A Sunrise County Economic Council survey (8/12/24) of municipal officials in underserved communities asked a similar question, "What makes it difficult for your community to respond to natural hazard emergencies such as storms, floods or forest fires?" and received more responses: 56% of 13 respondents answered lack of funding, 92% answered lack of staff and/or expertise. Other responses included "More emergencies are happening more frequently and causing more damage than we are used to" and "Difficulties in communicating emergency information to citizens".

Participants in a special meeting of Local Leads the Way focused on MCC and small rural towns (7/8/24), discussed language used in disaster preparedness. They discussed similarities and differences between terms such as "getting out of harm's way" and "managed retreat"; "climate change" and "climate crisis." Participants felt that "getting out of harm's way" sounds more temporary and that using that language ducked more severe issues associated with "managed retreat."

4.6.2 CR Strategy G – Invest in Climate-Ready Infrastructure.

How do participants want to see climate funds allocated?

Participants in the Maine Community Alternative Energy Survey's Community Resilience question block recognized that communities face different, but still substantial, risks from climate change, and they want to see funds allocated to those in greatest need (Figure 4.6.5), including those with a high risk of large consequences from climate change (62%); a high percentage of low income households (61%); unique health, economic, climate, or environmental vulnerabilities/burdens (58%); high household energy cost burden (56%); and lack of capacity/resources to respond to climate-related events (55%). Notably, 38% of respondents selected Wabanaki (indigenous/tribal communities). This is especially notable because none of these respondents identified as indigenous - only 2 identified as any race other than white or Caucasian ("Mixed race" and "Biracial"). One respondent, an older adult from a disadvantaged community (Houlton) who selected "Other" wrote in the response, "Regardless of race/ethnicity, a huge number of residents suffer from the costs of energy, and there are no programs that I am aware of that help to creat[e] energy efficiency in rural areas. The underserved poor who rent or are on assistance are likely left out due to not having agency or control/money to fix their homes to be energy efficient or better repaired."

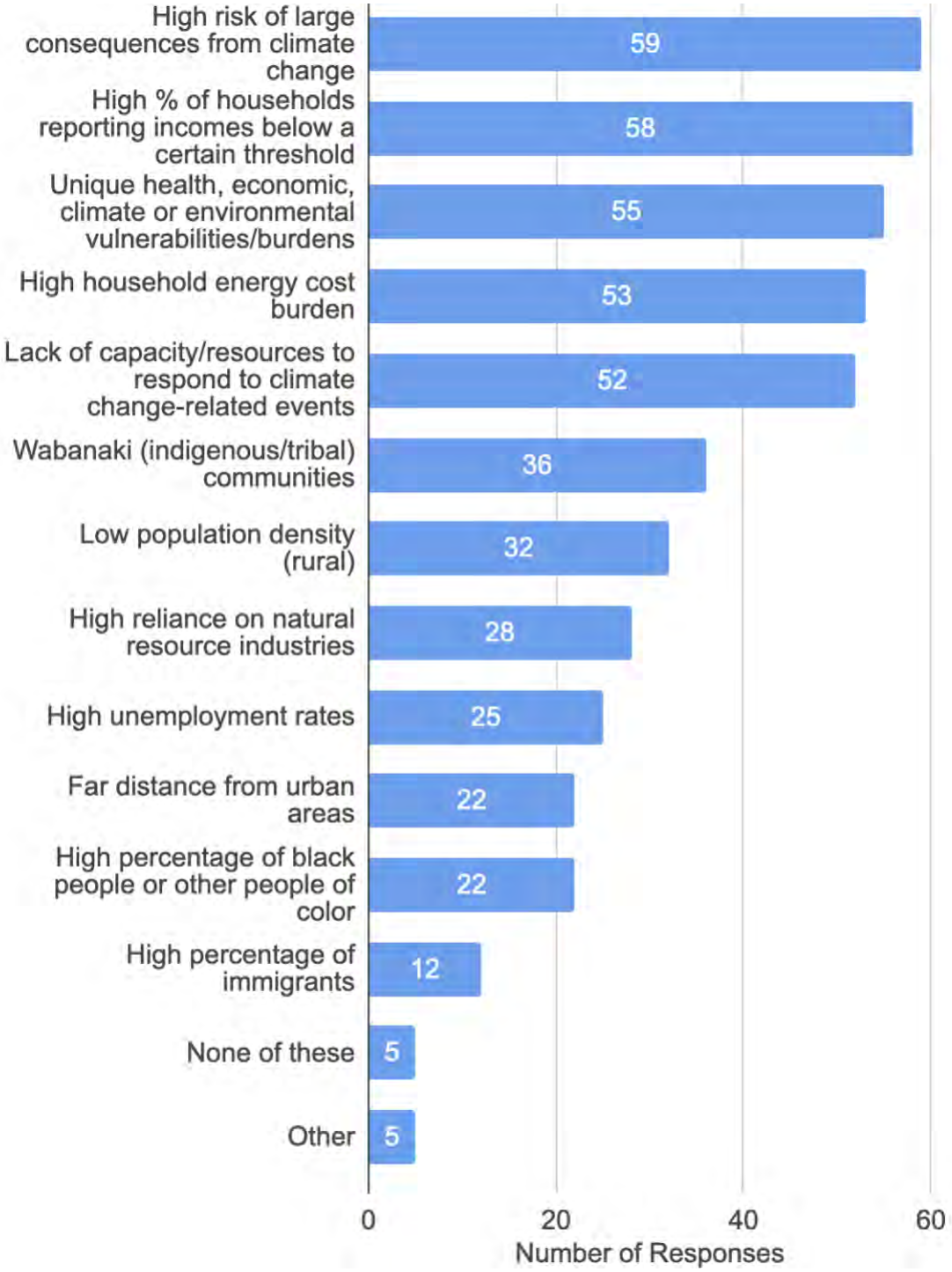

Figure 4.6.5. Maine Community Alternative Energy Survey responses to the question: Imagine the state is giving out funds to towns for projects to help them be more resilient to climate change. Which factors should be prioritized in these funding decisions to ensure decisions are equitable, especially to populations most vulnerable to climate change effects? (95 total responses; some respondents selected more than one answer)

Equitable distribution of state funds emerged as a key theme in other engagements. In a long-form interview conducted by Coastal Enterprises (CEI) (5/2024), the interviewee (a person of color and farmer from Turner) emphasized the need to prioritize the homeless and unhoused populations, particularly in rural areas where cold temperatures and lack of services are significant challenges. The interviewee stressed, “[The] homeless and unhoused population [should be prioritized]. Especially in rural areas, where it is colder and there aren't services. Those in rural places should have access directly available—rural northern Maine where it is especially cold.” This person also discussed the importance of equitable distribution of state funding and services, advocating for proactive outreach to ensure accessibility. They suggested:

> *“[The state] should have a policy to ensure that [distributing funding] is equitable and to go out and look for folks. [You] can’t expect them to come in [to you], they may be shy, not comfortable with coming into an office. Make the services and funds available. It should be part of the service to help the business or individual who is interested get ready to access needed funds, make the changes they need to become climate resilient.”*

A different person interviewed by CEI (6/5/24) reiterated the need for careful consideration of funding distribution, and highlighted the need to prioritize coastal communities, rural areas, farms, and urban businesses when allocating state funding. The participant noted the specific challenges faced by these areas:

> *“Areas with heavy flooding will need support with flood insurance and the buttressing of their physical buildings from flooding. Folks of color for sure, and women, because any disaster that hits them hits them harder. Rural areas, areas with farms, because of wind damage. Extreme cold/heat … make sure communities have affordable and available energies for heating/cooling. And farms to help keep livestock alive. Even in the cities, make sure that people and businesses are extreme heat and cold protected, subsidized, maintained, and provided energy.”*

What can be done to help communities maximize the effectiveness of climate funds?

Town leaders, and their citizens alike, repeatedly provided feedback that additional capacity is needed to help communities pursue and maximize the effectiveness of climate funds. During a one-on-one meeting by A Climate To

Thrive (5/14/24), a Town Manager of a rural Maine community reflected that his small town would not be involved in the CRP were it not for A Climate to Thrive, not just through enrollment, but also through grant applications, conducting the actual work within the grants, and handling reporting. More robust service providers for longer periods of time was a theme. Responses from an Island Institute direct engagement (8/8/2024) reiterated the desire for capacity building and technical assistance, including: service provider/human time, computer access and knowledge, staff and volunteer capacity to fill out grant applications. Additionally the importance of visuals, photos, and mapping was noted as well as opportunities for community data collection where homeowners and renters, businesses, and others can upload photos and observations of storm damage and climate.

A survey conducted by SCEC (8/12/24) revealed that 43% of 47 rural business owners had experienced damage to their facilities during the January storms. Despite this, only 10% of respondents expressed interest in applying for assistive funding but did not know how, 13% had applied for funding, and 65% had not applied and did not plan to. None of the respondents knew how to apply for funding. A tourism-related business in Milbridge shared their frustration: “We are deeply frustrated by applying energetically to local, regional, state, & federal disaster recovery resources since mid-February, testifying to and being in touch with the State legislature, and still having ZERO funding from any source to help us recover in time for (NOW!) tourist season.” In the same survey, a self-employed resident from Jonesport mentioned their community's openness to new ideas and efforts to secure grants, stating, “We are pursuing grants to build up the community and overall resident population appears to be open to new ideas.”

4.6.3 CR Strategy H – Engage with Maine people and communities about climate impacts and program opportunities.

How do people experience climate change?

Maine Community Alternative Energy Survey respondents indicate that they experience and notice climate change, with 82 people writing in a response to the open-ended question “What effects of climate change have you experienced in your own life?” (Figure 4.6.6). Many (37%) noticed changes in seasonal weather patterns: “It's obvious the changes of seasons. This winter alone with more flooding than snowstorms” (Person with low income). Some (29%) discussed increased frequency and intensity of storms, including stronger

winds, heavier rains, and more frequent extreme weather events: “more frequent and intense storms leading to power outages that last longer and internet outages. Having to get an air conditioner for my home for the first time in my life because summer temps are now too extreme for my dog to be safe in my home without one. mold and other issues as a result of changing climate causing severe health impacts for myself and those I live with.” (respondent from a disadvantaged community (Westbrook)). Additionally, 27% of respondents wrote about flooding and water-related issues: “Increased flooding of our basement and yard with bigger storms. Storm sewer system cannot accommodate as it did. Excess water in our yard contributed to many trees coming down. Also, more frequent power outages” (Person from a disadvantaged community - West Enfield). Participants also observed increases in invasive species, changes in local wildlife, and a loss of biodiversity: “Less monarchs, plants budding too early, chickens hatching too early, severe storms” (Person with low income). In addition, a few respondents expressed skepticism about the causes and severity of climate change.

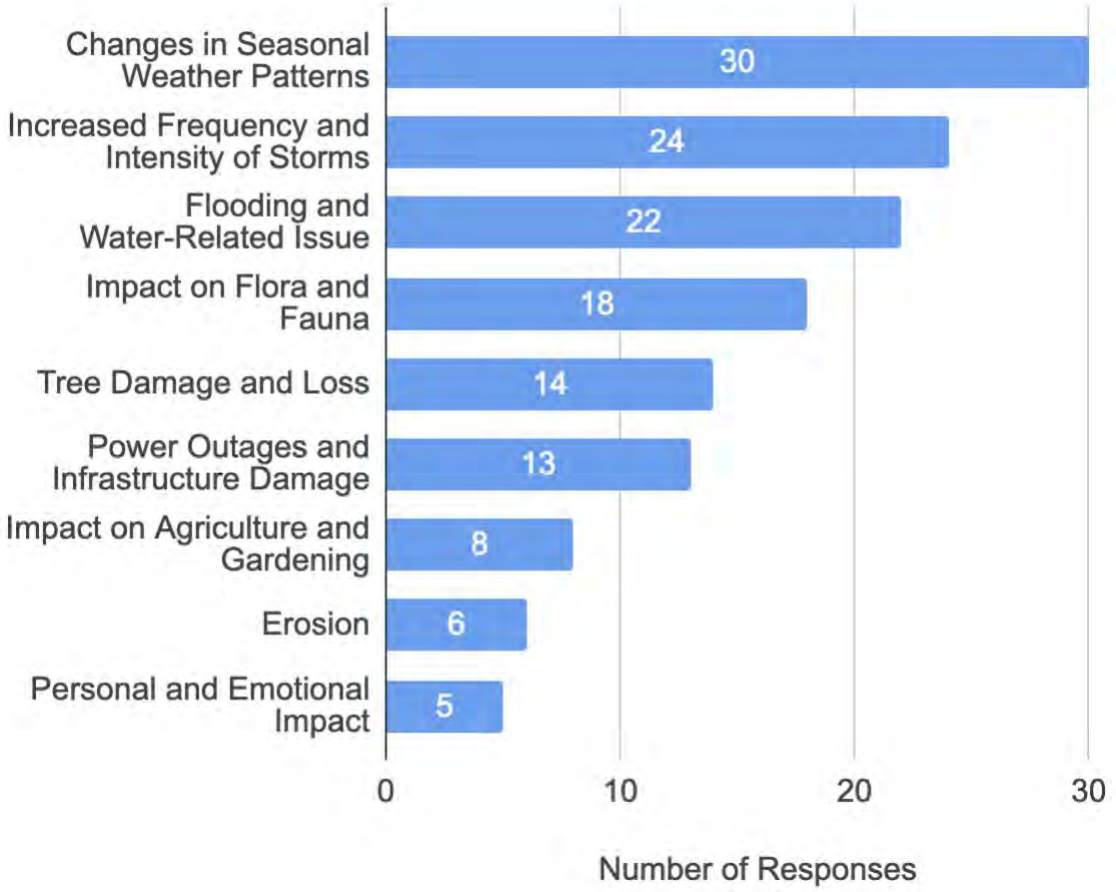

Figure 4.6.6. Maine Community Alternative Energy Survey responses to the open-ended question: What effects of climate change have you experienced in your own life? (82 total open-ended responses coded for themes; some respondents wrote in responses that fit within multiple themes)

How does climate change impact mental health?

Beyond the tangible effects on the environment and infrastructure, a few (5 out of 82) survey respondents wrote about the emotional and mental toll of climate change:

> *"**Sadness** watching people, mostly who did almost nothing to cause climate change, be harmed or die as a result of climate change."*
>
> -Youth respondent from a disadvantaged community of Portland

> *"**Fear** for my children's future."*

-Respondent from a disadvantaged community of Portland

“Erratic weather, more heavy precipitation events leading to flooding, warmer winters, agricultural systems experiencing difficulties because of these climate impacts. Also personally, ***stress, grief, and worry.****”*

-Respondent from a rural community (Morrill)

“need for a generator 14 years ago when it was clear that climate change was going to necessitate having one; ***fear*** *for younger people who would experience even more harsh events as the weather has significantly change for the worse..the ocean has experienced 4 harmful storms in one winter and there has been widespread damage and degradation as a result”*

-Older adult from a disadvantaged community (Bath)

“I ***miss*** *deep snow all winter from as early as October until May. While sunshine is pleasant and I do enjoy warm weather/summers in Maine, I recognize that the steady decline in snowfall year to year means that the climate is warming which melts ice-caps and raises ocean levels.. my 80 year old cousin lives on the ocean in MA and it has begun "sinking" into the sea.”*

-Respondent with low income in a rural community (Leeds)

The importance of assessing the mental health effects of climate change was also raised in a survey conducted by Community Organizing Alliance (7/25/2024) in the Greater Lewiston-Auburn-Portland area: 32 out of 36 participants rated increased awareness of mental health impacts of climate changes, as a “Good” or “Great” fit. In addition, a participant in the Norway Arts and Music Festival (8/14/24) shared their observations about the mental health impacts of climate change on youth in particular and the connection with outdoor activities:

“A lot of my students who are early teenagers have ***anxiety*** *about their future and what it looks like. Many of them feel strongly about nature, but they don't always know how to access it, though they care deeply that it's changing. It's such an interesting issue because it's a two-sided coin. They have anxiety about the changes in the climate, but at the same time, there's a significant positive mental health impact when they spend time outdoors. These things are so interconnected. When they go outside, they care more, and there's this mental health boost from being outside. But*

then they are also thinking, 'Wow, this might not be here when we're older, or for our kids.'"

4.7 Natural and Working Lands (NWL)

The Natural and Working Lands Working Group Recommendations focused on three areas identified in 2020's *Maine Won't Wait*: increasing the total acreage of conserved land to 30% by 2030, increasing the amount of local food consumed by Mainers to 30% by 2030, and developing new incentives to increase carbon storage in our state.

Ninety-four people (out of 523) responded to questions that were included in the combined NWL and Coastal & Marine block of the Maine Community Alternative Energy Survey. These responses, combined with the results of multiple direct engagements indicate a strong preference for NWL strategies that ensure all communities benefit from conservation efforts, and that protect under-resourced communities from being overburdened with property taxes. Participants are interested in expanded access to local food and to cultural foods and note high cost and limited availability as two main barriers that need to be addressed.

4.7.1 NWL Recommendation 1: Increase by 2030 the total acreage of conserved Natural and Working Lands in the state to 30%.

What conservation land is desired, and accessed?

The Maine Community Alternative Energy Survey collected data on the types of resources participants access most regularly (Figure 4.7.1). Survey respondents *regularly access* "Land for recreation" (82 responses) and "Water for recreation" (68 responses). Other frequently accessed resources include "Inland fishing areas" (26 responses) and "Boat launches for fishing" (20 responses).

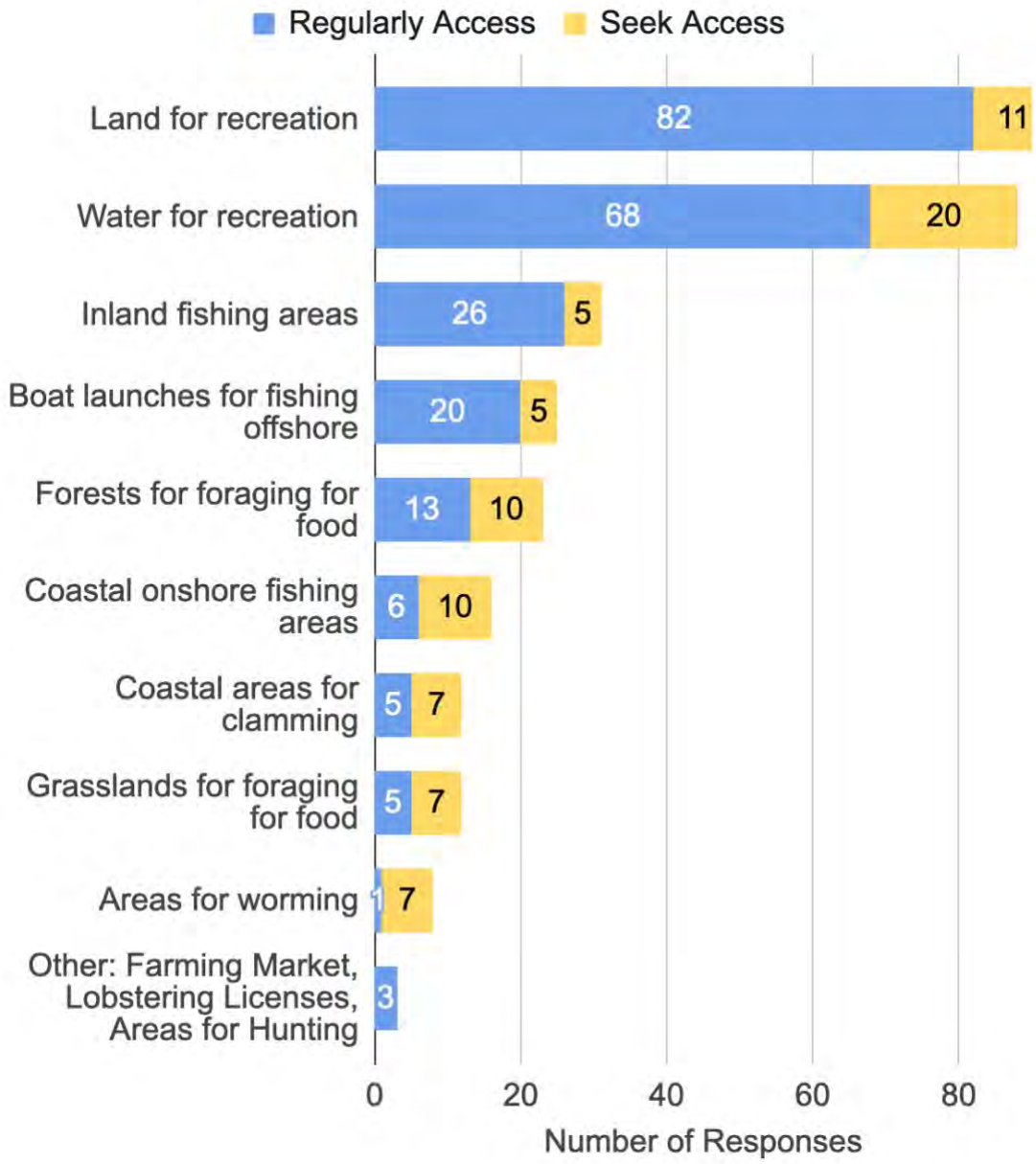

Figure 4.7.1. Maine Community Alternative Energy Survey responses to the question: What natural resources do you regularly access or seek access to? (92 total responses; some respondents selected more than one answer)

Respondents to a Sunrise County Economic Council survey (8/12/24) of 89 rural residents in Maine were asked about their activities in the natural environment: 100% of respondents report using natural and working lands and waters for food and recreation, and nearly all use multiple resources, such as forest gathering along with hunting or fishing. The most common answers included using hiking trails (98%), visiting parks and reserves (98%), lake/pond

recreation (swimming, boating, etc.) (97%), forest gathering (fiddleheads, berries, mushrooms, etc.) (97%), lake/pond fishing (97%), and using ATV/snowmobile trails (96%). One respondent shared this comment, “I'm a gardener, I would use the trails to forage/ explore/ hike with my 5 sons if I could get to them.” Taken collectively, the cross-survey findings underscore the importance of preserving and potentially expanding local access to natural resources.

What are the barriers to accessing and increasing conserved lands? How can they be removed?

Participants revealed potential **systematic inequalities** like access processes that include fees and communications with public administrators and private landowners that may prohibit use of conserved lands, especially when there are language barriers. Participants in the Maine Community Alternative Energy Survey were asked, “In what ways have you felt excluded from accessing these resources?” about the list of natural resources presented in Figure 4.7.1. One respondent to this question noted that they felt excluded from accessing natural resources due to the **complexities of land access rights:** “needing to have permission from private landowners (especially hard as a new [Mainer]) and lack of transparency, even hostility, about rights of way.” (New Mainer living in Gray, a rural community). This statement reflects the challenges that those new to the area face in understanding and navigating local customs and legal frameworks related to land use. These challenges suggest a need for **clearer communication** and **education** about land access rights in multiple languages to help newcomers feel more included.

Furthermore, 11 respondents to the Survey question, “In what ways have you felt excluded from accessing these resources?” (regarding the list of natural resources presented in Figure 4.7.1) highlighted two main barriers individuals face in accessing natural resources: **lack of information** about what’s available, and **costs** associated with parking and fees, which are often high due to tourism**.** A respondent identifying as having a physical disability, discussed a “Lack of information, reliance on word of mouth or just being in the know.” An individual from a disadvantaged community (Patten) shared that “transportation costs” were a factor that limits their access. Additionally, a respondent with disability noted “wealthy people buying up land, leaving less/little public access.”

The issue of unfair tax burdens on rural communities came up often in direct engagements, where participants do not see efforts to address this problem as currently being successful:

“We need conservation land in both rural and developed coastal areas or there won't be any undeveloped areas left in either. Perhaps establishing a more equitable property tax system with more state aid to under-resourced areas is a complementary issue.”

– Survey distributed through York Ready for Climate Action’s newsletter (7/31/24)

“My problem is, I don't mind conserved land, I like it. We’ve got a lot here. But the problem that you hear all the time is taxes, that basically they [conserved land] don't have to pay taxes. Some of the systems that buy it do pay the equivalent of taxes, but that is something that is a chronic complaint. In Lubec, getting more people with money in, and having them improve houses, it's going to change the taxes. But it's also probably going to increase expenses, too. So I don't know.”

– SCEC focus group discussion (7/12/24)

Maine Community Alternative Energy Survey participants were presented with a list of ways that access to natural resources could be improved (Figure 4.7.2). The most popular selected responses included increased signs to **educate people** about protecting areas, and **clearer information** about the area, including how and when it can be accessed. While only 4 survey responses noted that licensing rules need to be changed, this issue was brought up in a discussion with the Community Sustainable Energy Team, where one member cited problems around shore access for clamming (4/26/24).

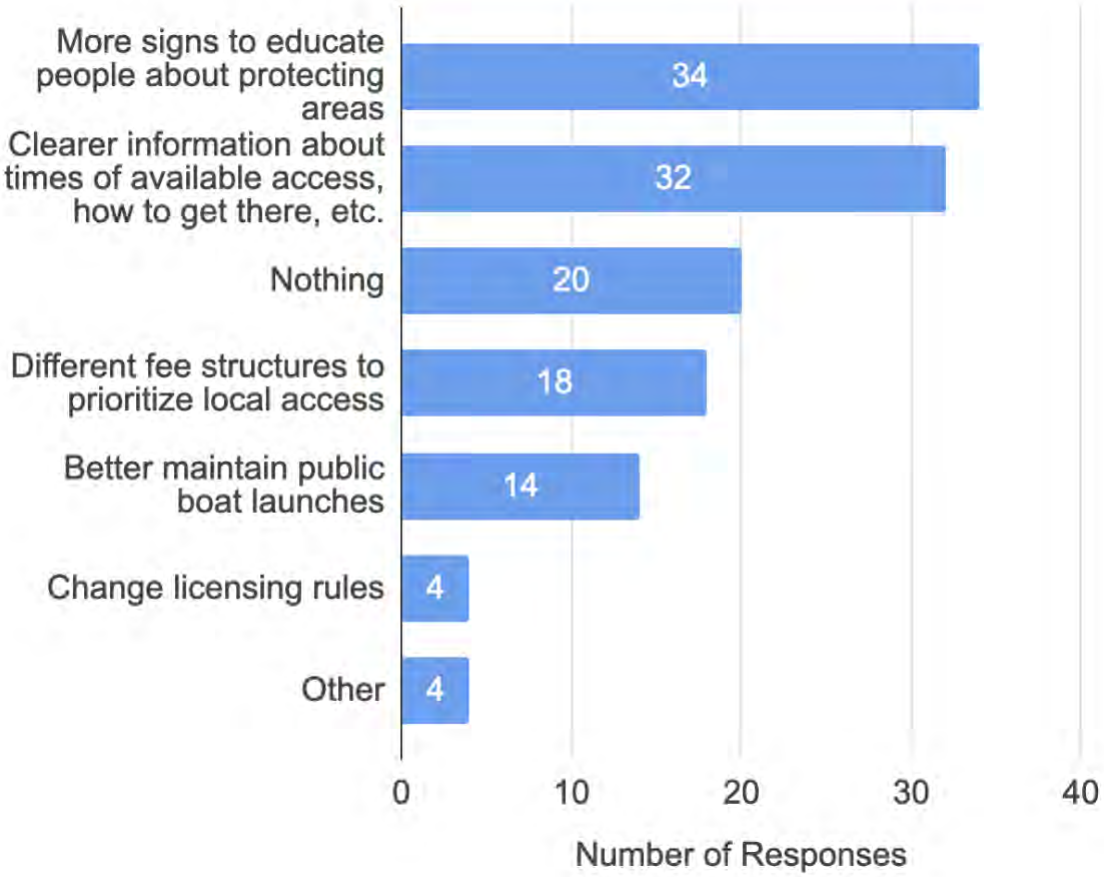

Figure 4.7.2. Maine Community Alternative Energy Survey responses to the question: What could be improved in terms of how you access these resources? (78 total responses; some respondents selected more than one answer)

Maine Community Sustainable Energy Survey respondents also shared how they think conservation efforts could be more successful (Figure 4.7.3), with the most popular choices being: clear, enforceable rules; more funding for education and staffing; and recognizing Wabanaki sovereignty and working towards rematriation.

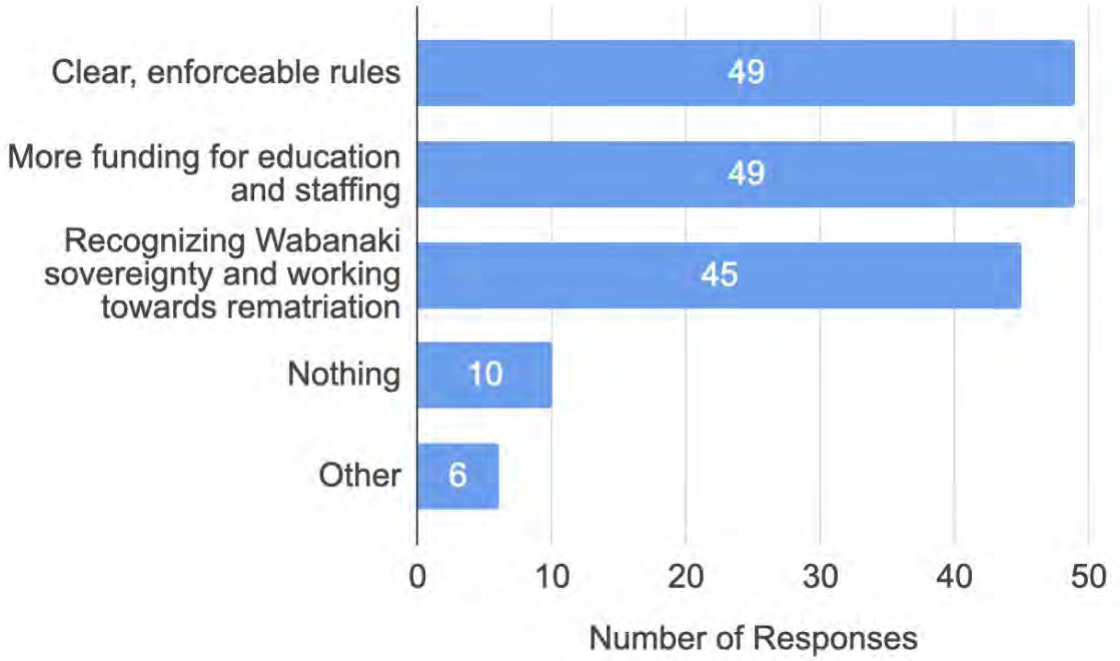

Figure 4.7.3. Maine Community Alternative Energy Survey responses to the question: What could be improved in terms of how these areas are protected? (83 total responses; some respondents selected more than one answer)

4.7.2 NWL Recommendation 2: Increase the amount of food consumed in Maine from state food producers to 30% by 2030.

Is there support for increasing consumption of Maine produced food?

Maine Community Alternative Energy Survey participants offered insights into current trends in consumption of Maine food (Figure 4.7.4): 36% consume less than 25% or between 26% and 40% of their food from Maine products.

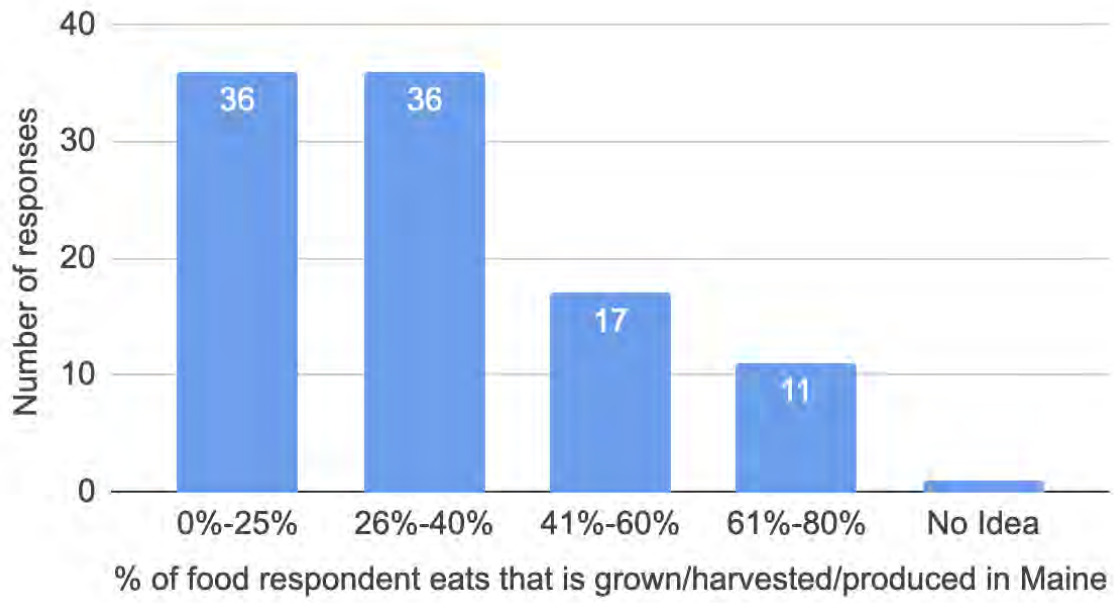

Figure 4.7.4. Maine Community Alternative Energy Survey responses to the question: About what percent of the food you eat is grown/harvested/produced in the state of Maine? (101 total responses)

A participant in a special meeting of Local Leads the Way, focused on the MCC and small rural towns, called the recommendation, “Increase the amount of food consumed in Maine from state food producers to 30% by 2030,” “ambitious but doable.” They went on to state that this recommendation is “Refreshing because there is typically not a lot of emphasis on food and climate.” At the same event, it was emphasized that “This can be a huge part of the solution for emissions and resilience” (ACTT, 7/8/24). At a discussion led by the Community Organizing Alliance (COA) in Lewiston, there was support for strengthening Maine's natural and working lands by increasing local foods, as it will benefit the environment, with one participant saying, “This is a 10 on 10. We need to strengthen the viability of Maine farms because then we will learn how to not put toxic waste into the environment, when we support [farms] we’re putting less toxic waste into the environment” (7/11/24).

Another COA focus group discussion in Portland (8/3/2024) had similar feedback: “Increase local foods is good for our economy, that means less imports, come on people!”; “Not only will it reduce processed foods but also give people in the community healthier options”; and “It would certainly benefit Mainers, it would create healthy foods, no processed, better prices, hopefully locally grown.” Participants talked about how accessible markets are important, “I

think it will have more of an impact on the community because we created the markets for them. Lower class people need more health options. It's like how COA [Community Organizing Alliance] is creating the space for us to talk about this, same for farmers, and citizens accessing local foods," and "Maine markets to me means benefiting Mainers, helping farmers and in return taking care of the public."

Participants in the Sunrise County Economic Council survey (8/12/24) reported the most common way they get their food is from grocery stores (96%), similar to findings from the Maine Community Alternative Energy Survey (Figure 4.7.5)

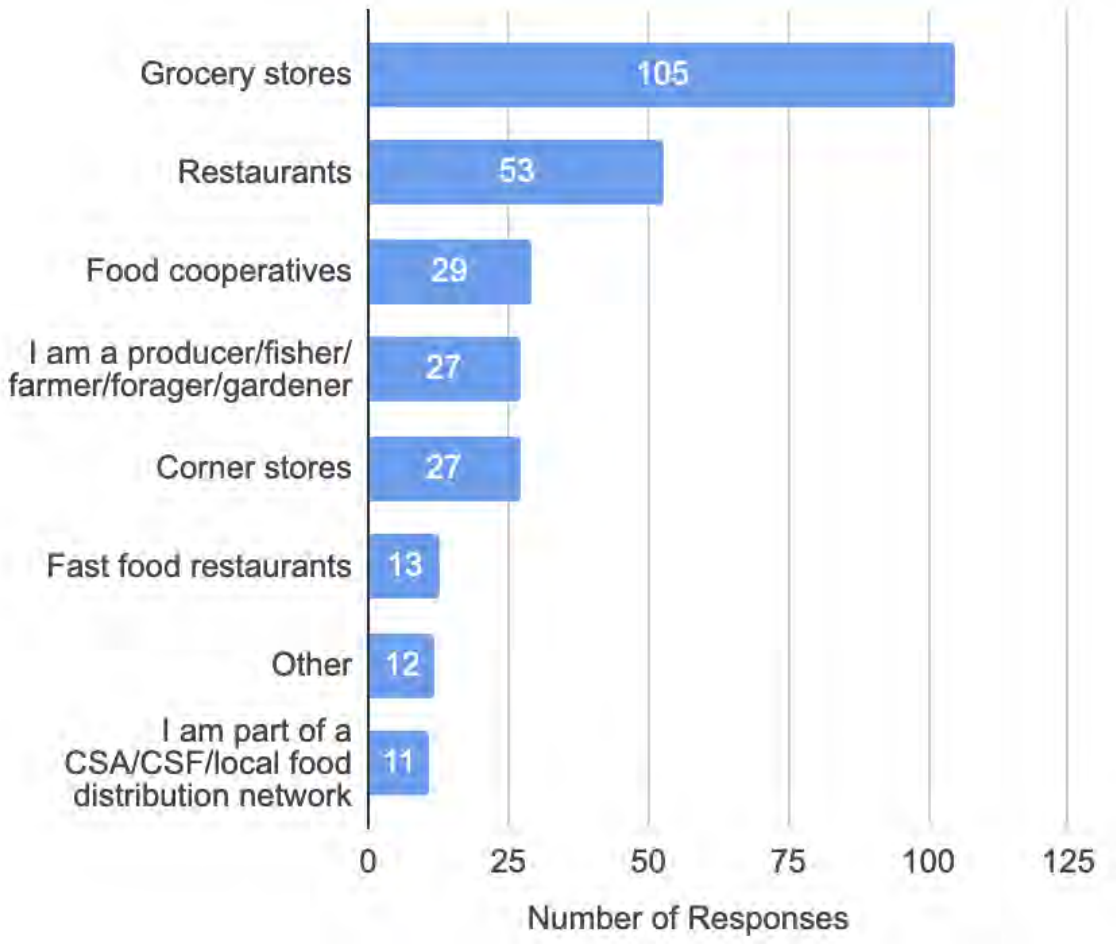

Figure 4.7.5. Maine Community Alternative Energy Survey responses to the question: What are the most common ways you access food? (108 total responses; some respondents selected more than one answer)

Many Survey respondents attempt to access local food, primarily through farmers' markets and shopping locally at the grocery store. Many respondents also garden to access local food (Figure 4.7.6).

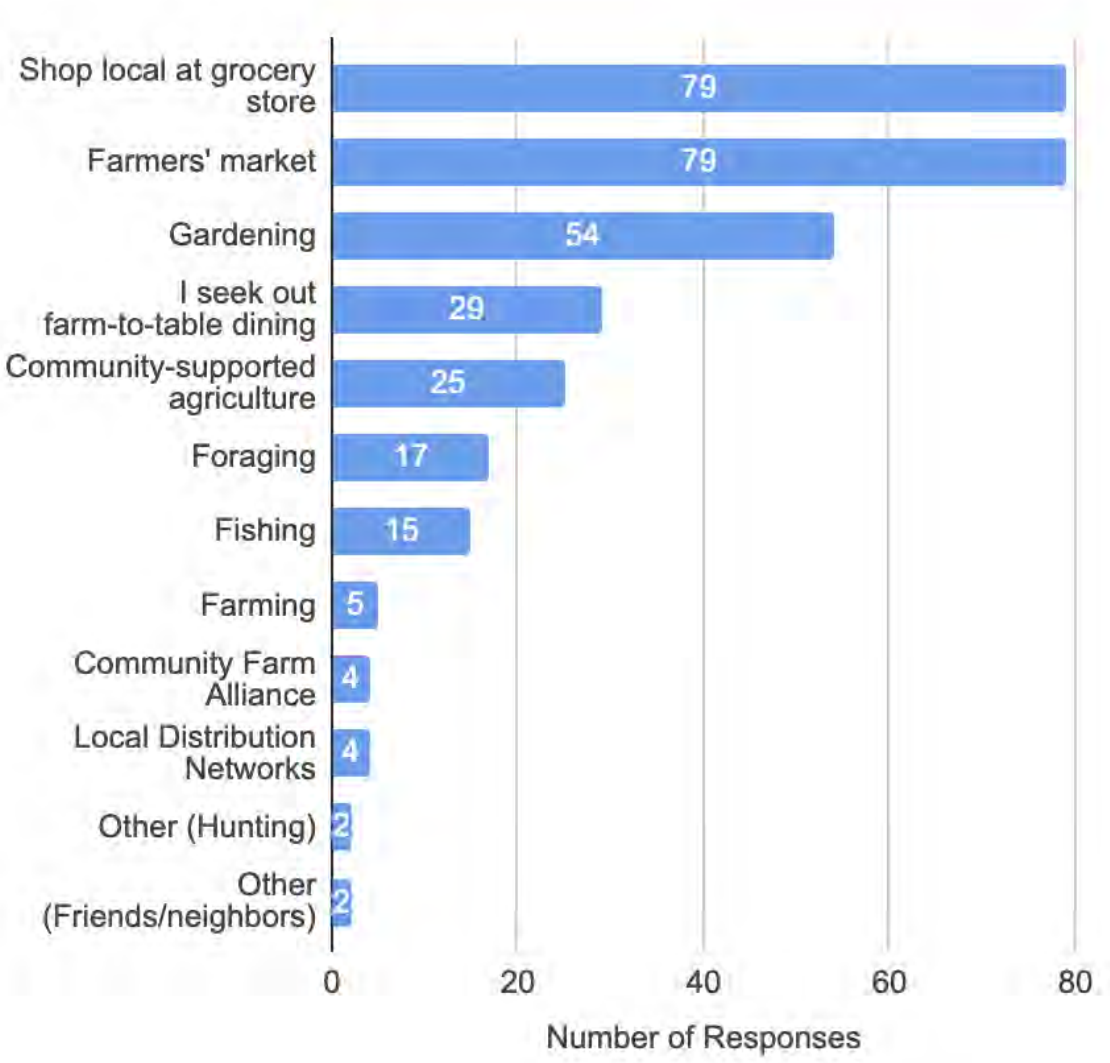

Figure 4.7.6. Maine Community Alternative Energy Survey responses to the question: In what ways do you access locally produced food? (106 total responses; some respondents selected more than one answer)

The majority of survey respondents (91%; 91 out of 100) have not used any assistance programs to help them access local food. The two most commonly used programs are Maine Harvest Bucks connected to SNAP benefits (3) and Senior Farmshare vouchers (4) at farmers' markets. One respondent noted WIC stamps.

What are the barriers to increasing consumption of Maine produced food?

Attendants at a Community Organizing Alliance focus group discussion in Portland (7/11/24) voiced support for local farmers' markets, stating that "We definitely need this. Having more local and public farms and farmers' markets so families can easily access more fresh food rather than processed food is needed" but another emphasized the need for "Making the good healthy food **cost** less; my mom always is unhappy with the prices for healthy vegetables." Efforts to decrease pricing through voucher programs have limited success and more resources are needed to make significant changes. Results from a survey of underserved communities by the Sunrise County Economic Council (8/12/24) found that, of the 89 survey respondents from rural Maine, 18 had applied for the Supplemental Nutrition Assistance Program (SNAP) and 20 had received it. Five had applied for Farmers' Market WIC stamps, and 6 had received it. Three had applied for Maine Harvest Bucks, and 4 had received it. Fifteen had applied for school lunch assistance programs, and 24 had received it. Eleven had applied for food pantries, and 20 had received benefits from food pantries. Expanding on the WIC Nutrition Program, special assistance programs for older adults, and programs connected to SNAP (such as Maine Harvest Bucks) will help connect more people to local farmers.

Participants in a focus group at the LINC Wellness Center in Augusta hosted by KVCAP (8/5/24) noted barriers to purchasing, bringing home and storing fresh foods:

> *"Healthy foods, when you're unhoused, there's no place to store perishables."*
>
> *"Transportation is always a problem."*
>
> *"Food is too heavy to carry without a car. The lack of sidewalks makes it dangerous to walk anywhere."*
>
> *"Food banks don't always have healthy food—sometimes produce is limited, meat is sometimes good and sometimes not great."*

Concern emerged that focusing on Maine produced food could decrease the variety or availability of different food types. Participants involved in a Community Organizing Alliance event (8/3/24) felt hesitant about the recommendation, "I think this is a good idea and that it'd be beneficial to support

local businesses but if it decrease the amount of other foods, I don't think most people would like that, at least I wouldn't." Maine Community Alternative Energy Survey respondents expressed similar concerns regarding limited availability and variety, particularly during the winter months (older, low-income respondents; respondent with disability). Accessibility and convenience were further obstacles (respondent with a disability), with some respondents highlighting the need to visit multiple locations to meet all their dietary needs or being constrained by specific times (low-income respondent), such as for farmers' markets or CSA (community-supported agriculture) pickups (unemployed respondent, rural respondent from disadvantage community-Unity). Increasing access in the form of public transportation would help ensure that no one in Maine is living in a "food desert" (respondent from a disadvantaged community - Old Town). The difficulty that some communities have finding **culturally preferred foods** could provide opportunities for Maine farmers. Participants in a discussion group with the Maine People's Alliance noted that they would appreciate having more access to gardening for families in the downtown area of Portland, by creating spaces where they can cultivate and share their experiences of gardening and eating locally (8/9/24).

Maine Community Alternative Energy Survey respondents to the open ended question "What makes it difficult for you to purchase locally produced food? - Other (please explain in the space provided)" also expressed difficulty in identifying which products are locally produced, especially in grocery stores where they felt clear labeling is often lacking (older respondents; one from disadvantaged section of Portland). Additionally, two respondents admitted to not giving enough attention to sourcing local foods.

As the MCC identifies strategies in the update to increase the amount of local food produced in Maine, it is important to remember that farmers and fishers are on the frontlines of climate change. One person interviewed by CEI (5/2024) (a person of color and farmer from Turner) noted that "Farmers always need help, the climate adds to the challenges. Those that work on the farm need help as well. When there is respect for the job, there is more willingness to accommodate with help" .

How can barriers to increasing consumption of Maine produced food be addressed?

When asked to indicate "what would make it easier for you to eat locally produced foods?" Maine Community Alternative Energy Survey respondents

indicate that **more local foods in grocery stores** are needed (Figure 4.7.7). Many also indicated a need for **lower prices** for local foods. Other common responses related to locationality, such as a farmers' market closer to me. In general there is a need for greater accessibility of local foods, whether that is lower prices, closer locations, or clearer messaging.

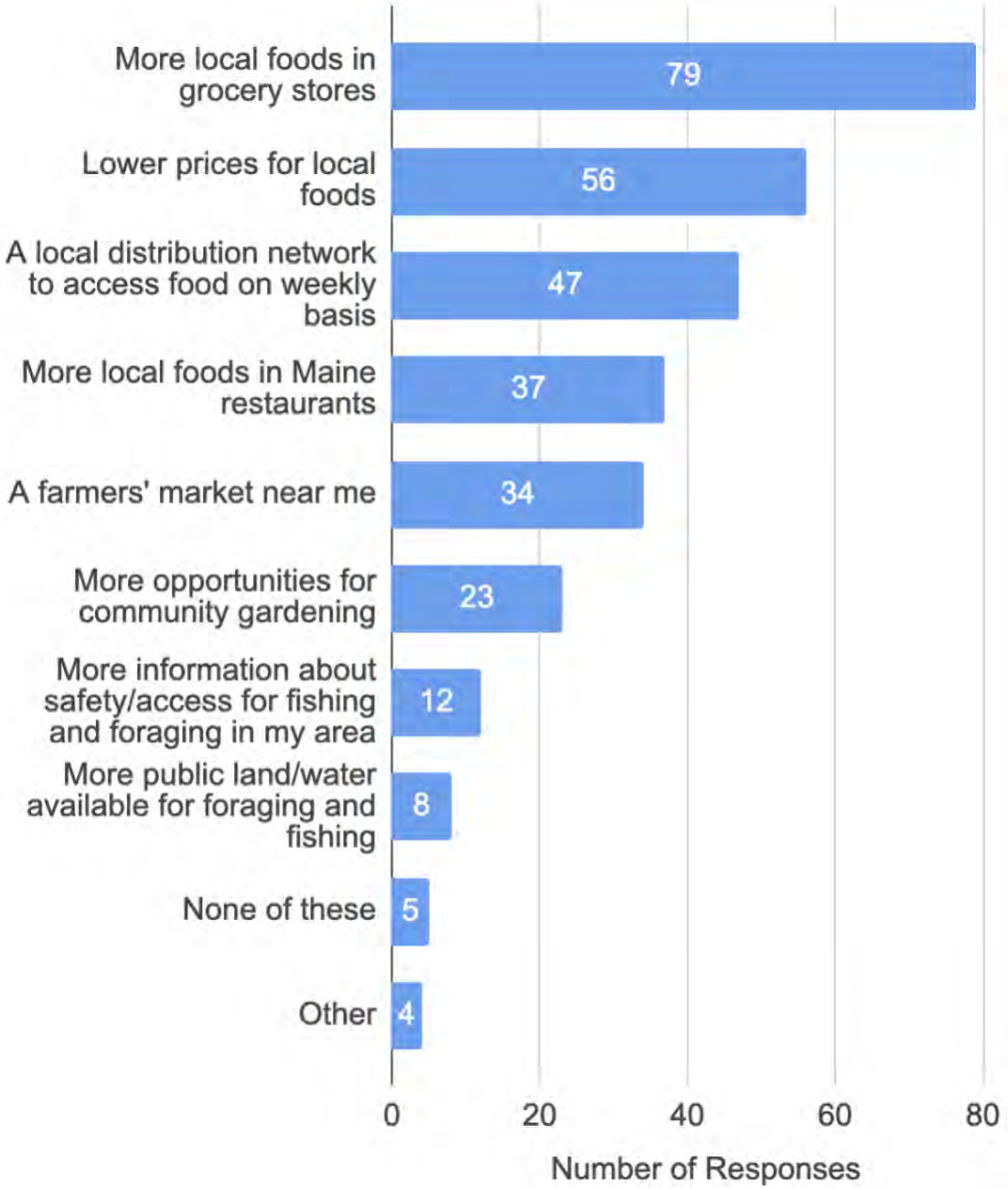

Figure 4.7.7. Maine Community Alternative Energy Survey responses to the question: What would make it easier for you to eat locally produced foods? (103 total responses; some respondents selected more than one answer)

Additionally, survey respondents indicated they would like to know more about locally produced foods in supermarkets, from local distribution networks and farmers' markets to address **information barriers** (Figure 4.7.8).

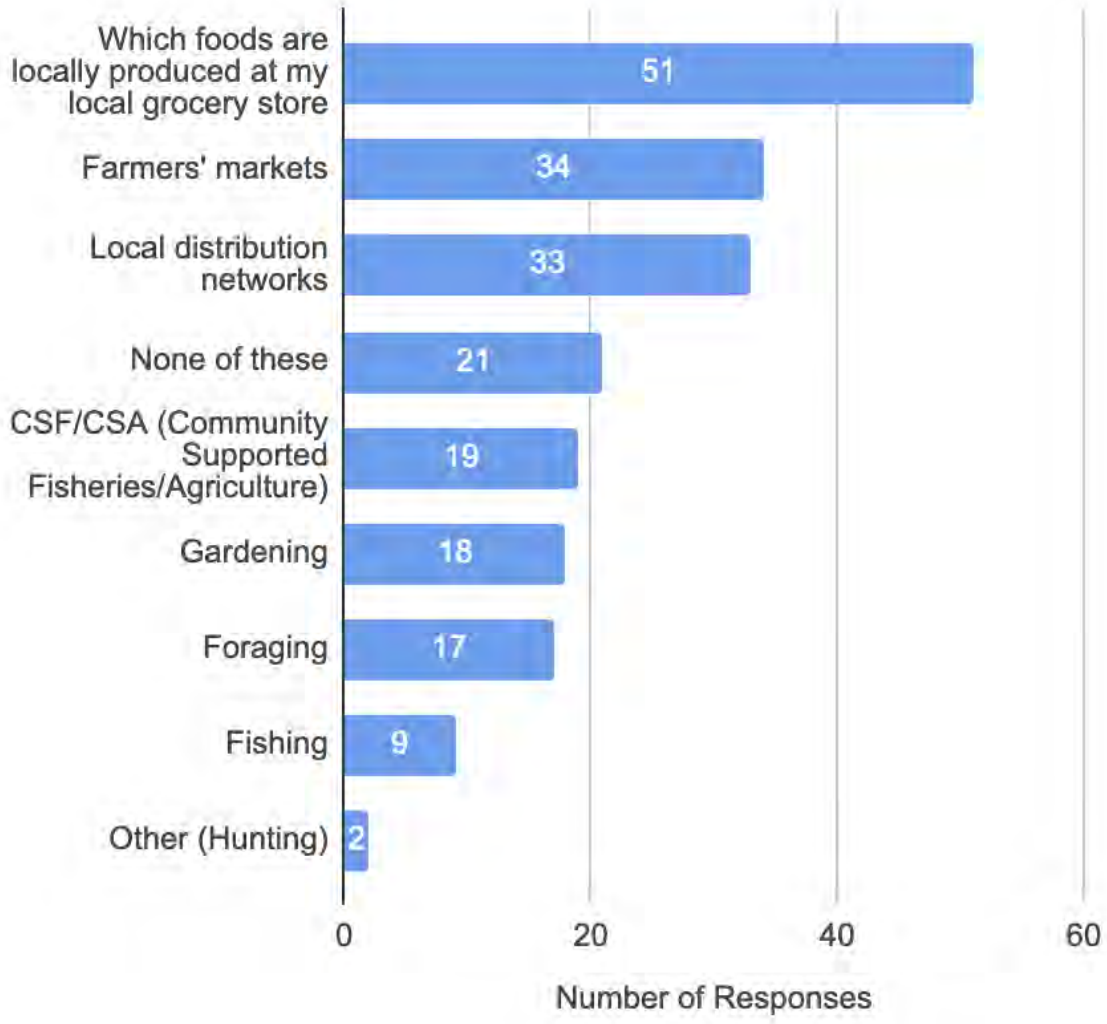

Figure 4.7.8. Maine Community Alternative Energy Survey responses to the question: "In order to eat more local foods, I would like to learn more about…" (93 total responses; some respondents selected more than one answer)

4.7.3 NWL Recommendation 3: Develop new incentives to increase carbon storage.

Do people support the concept of conserving natural areas for carbon storage?

This recommendation did not receive much feedback. One small town municipal official, participating in a focus group, saw this strategy potentially acting at cross-purposes: “Maine keeps leaning so, so heavily on the work its forests do to store carbon to meet their goals and targets, and I think there’s hazard in that, especially if we’re simultaneously encouraging the burning of those forests through biomass energy!” (ACTT, 7/8/24).

In contrast, multiple participants at a discussion hosted by a member of the UMaine research team at Islesford Boatworks on Little Cranberry island (8/8/24), said more resources should be devoted to carbon storage. One of these older adults shared this perspective: “Natural and Working lands could focus more on carbon sequestration - more there to focus on that could help everything else.” They also remarked that there was “Blue carbon storage potential - eelgrass, making sure fish stocks are healthy.” Another participant agreed the MCC recommendations should place more emphasis on carbon storage: “I’m not seeing a lot of how to actually draw down carbon from the atmosphere - mostly focusing on reducing and adapting” (8/8/24).

4.8 Coastal and Marine (C&M)

Coastal and Marine (C&M) Working Group Recommendations aim to build healthy and resilient coastal communities; protect critical place-based infrastructure in these communities; encourage increased interest in natural resource based careers and diversity in the workforce; support climate adaptation in fisheries, aquaculture, and seafood industries; and monitor, conserve, and increase resilience of coastal and marine ecosystems.

Ninety-four people (out of 523) responded to questions that were included in the combined NWL and C&M block of the Maine Community Alternative Energy Survey. Participants revealed gaps in access to coastal areas, as well as to information and funding for adaptation projects. Topics relevant to the Coastal and Marine Working Group are also addressed in other Working Group sections, particularly **Natural and Working Lands** and **Buildings, Infrastructure and Housing.**

4.8.1 C&M Recommendation 1: Build healthy and resilient coastal communities and protect critical place-based infrastructure.

How can coastal communities build capacity for resilience and plan for a changing waterfront?

Of the 92 respondents to the Maine Community Alternative Energy Survey question “What natural resources do you regularly access or seek access to?” 30% regularly use or seek to use coastal fishing access points (Figure 4.7.1). Among 28 respondents who already participate or want to fish along the coast, 36% expressed feeling priced out by tourism or other fees, 36% requested clearer information about available access points, and 36% wanted better maintenance of public boat launches.

Participants raised working waterfront concerns in engagements facilitated by York Ready for Climate Action, the Island Institute, SCEC in Washington County, and ACTT on Mount Desert Island. When asked how to sustain coastal communities and industries, one participant in a rural town began with the statement, “there’s a whole lot more to this.” They continued by explaining this recommendation intersects with conservation efforts and other MCC strategy areas (ACTT Local Leads the Way, 7/8/24). Affordable housing and new infrastructure was a key response to the question of what makes a healthy community in a discussion led by the Island Institute (8/8/24). Discussants also stressed the preservation of access to working waterfronts, “local ordinances that address hard armoring,” “a new power cable!” and reserving funding to address capacity limitations when rebuilding coastal infrastructure is needed “to ensure long term utility” (Island Institute, 8/8/24).

Participants in coastal communities expressed a need for **coordinated capacity** and **funding** support, for both public and private sectors, especially for **post-storm recovery.** Participants voiced concerns based on their recent experience with damaging storms. The Town Manager of a rural Maine municipality reflected that “communities near water—both fresh and salt—that have to make significant infrastructure replacements in the very near-term should be prioritized.” These communities, even those with more funding means, are “overwhelmed by the scope of projects that need immediate attention” (ACTT one-one-one meetings with rural town leadership, 5/14/24). To mitigate these capacity and funding challenges, participants in a rural area with an older

population proposed “reserve funds in each community for these storms and disasters” (Island Institute, 8/8/24).

Aging populations also require special consideration when seeking to build resilient coastal communities. Participants at a direct engagement indicated that towns frequently rely on older residents for volunteer labor that is only “getting older and fatigued.” In response, this older resident participant continued, programs and projects to improve capacity and resilience should also support “young families moving to our island communities to live and work” (Island Institute, 8/8/24). In the same conversation with older adults, the Island Institute related one instance of a maladaptive response to the January 2024 storms, when adequate support systems were not in place: “private fishermen were not able to get help rebuilding after the big storms, so we have seen some retiring early” (Island Institute discussion, 8/8/24).

Feedback also stressed that **affordable workforce housing** is an essential part of coastal community and industry resilience efforts—an underlying concern across MCC strategy areas. “Better capacity in small towns [is related to the] capacity to have affordable housing,” said a discussant in an Island Institute engagement with older, rural community members (8/8/24). Moreover, the declining availability of affordable home insurance, beyond the flood insurance noted in the WG recommendations, is a growing burden on coastal communities. One rural participant asked in a Local Leads the Way discussion, “Where does the availability of homeowners’ insurance fit in here? We have increasing problems with homes and communities not being insurable, and then who will step in? This may not fit in but should be in the discussion somewhere” (7/8/24). Even when communities develop their affordable housing supply, home insurance costs might now put designated affordable housing out of reach for residents with lower incomes.

Community group discussions stressed the immediate need for coastal zoning and development restrictions to keep pace with the reality and risks of costly waterfront reconstruction. After recent storms, frontline communities are already having difficult conversations about abandoning waterfront areas. “Building on the ocean should be prohibited,” one resident of York Housing stated, continuing: “Route 1A is going to be oceanfront. The January storms wrecked the Marginal Way. There is pollution in the water. Twelve to 15 inches of coastline is lost per year” (York Ready for Climate Action focus group discussion, 8/6/24). A Maine Community Alternative Energy Survey respondent from a rural, coastal community also voiced the concern that “for some reason, our town

thinks it's fine to keep rebuilding what's been destroyed—waste of resources, source of coastal pollution." A select board member in a rural, coastal Washington County community echoed the need to adapt **zoning rules** to changing waterfronts: "And when we look at shoreland zoning, your shoreland is going to be moving. It's shifting with every storm. So how are you going to keep up with that one?" (SCEC focus group, 7/12/24).

How can new entrants to Maine's natural resource workforce support resilient coastal communities?

To provide information consistent with the Coastal and Marine working groups recommendation to "provide workforce training opportunities for natural resource industry workers to diversify and help adapt to a changing climate" (pg. 4), the Maine Community Alternative Energy Survey collected data on "priority populations'" interest in natural resource and clean energy jobs that will be needed to support climate planning goals (Figure 4.8.1). Many respondents (42%) were not interested in careers in these areas; with less than 8% indicating they would consider a role in clean energy or research, and less than 6% of respondents expressed interest in conservation, teaching, or fisheries and aquaculture, showing a need for new approaches to recruitment within "priority populations."

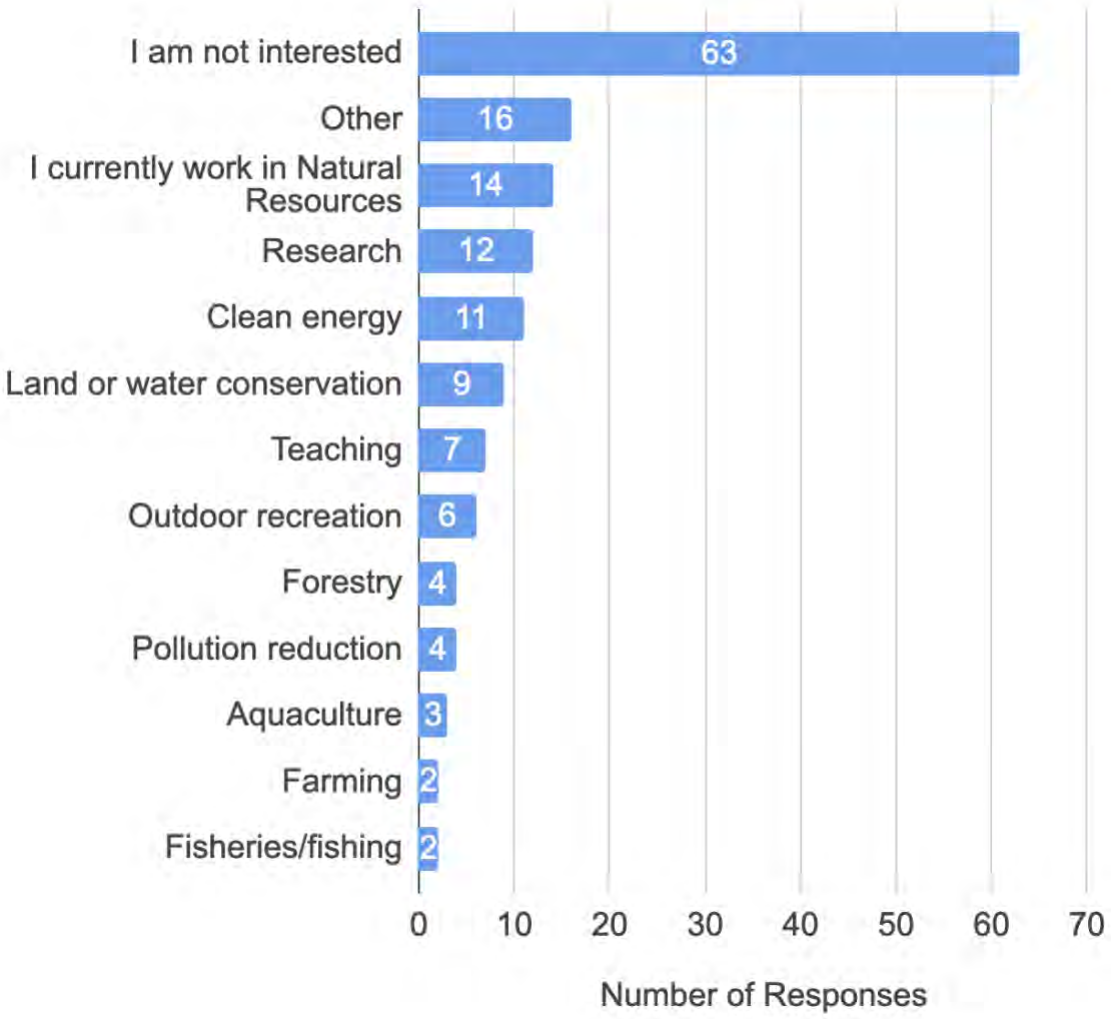

Figure 4.8.1. Maine Community Alternative Energy Survey responses to the question: Are you interested in a job in natural resources? If so, what type? (154 total responses; some respondents selected more than one answer)
*Given that 'other' is the second most popular response given to this question, we examined responses from these 16 survey respondents. A majority noted their age prohibits them from starting new careers.

Responses (29) to the Survey question about "what prevents people from pursuing work in natural resource jobs" highlight a few of the reasons why interest in these careers might be constrained. Many (11) respondents cited **retirement or age** as a limiting factor, with some mentioning that they are "retired" or "too old" to pursue a new career. Two others, in addition to those shown in Figure 4.8.1, indicated a **lack of interest** in natural resource jobs. Other responses pointed to more specific challenges, such as inadequate pay (1), lack of job security (1), and insufficient training or lack of education (6)

relevant to the field (disadvantaged community respondent; older adult respondent; mix of respondents including rural disadvantaged communities). Additionally, one individual mentioned personal limitations, such as transportation challenges, as reasons for not engaging in natural resource work (rural, low-income person with a disability).

Participants at a direct engagement held by the Community Organizing Alliance in Lewiston discussing Pathways to Clean Energy Jobs (3/22/24) noted that lack of awareness of opportunities may be particularly important for New Mainers, including language barriers and lack of transportation. Hiring people into natural resource positions who are representative of these communities can provide an opportunity to effectively relay information and opportunities. Further, providing job training programs in multiple languages was recommended by participants in this workshop.

When Maine Community Alternative Energy Survey respondents had the opportunity to offer suggestions on what would help increase the diversity of workers in natural resource jobs, five key themes emerged: economic and structural support (e.g., “affordable pay and housing” (respondent from a rural community; “year-round employment” (respondent with a disability)); access and visibility of opportunities (e.g., “no-cost training programs tied to job openings” in the natural resource sector (respondent from a rural community)); inclusive workplace culture (e.g., “building a welcoming culture” to support diverse workers (older adult)); outreach and recruitment strategies focused on the need for “vast advertising of natural resource jobs available” (respondent from a rural community) and recruiting from “outside of Maine” to attract a broader range of applicants (respondent with low income); and mentorship and role models to inspire future generations in these fields.

4.8.2 C&M Recommendation 2: Support climate adaptation of Maine’s fisheries, aquaculture and seafood industries.

What do fishing communities need to support industry diversification and adaptation?

Workers have already been adapting in response to coastal storm damage and marine climate change, to remain in their industry and communities. “Fishermen need to have a portfolio of fisheries under the belt in addition to lobster to withstand climate impacts,” and these same rural, coastal residents have been contending with “clamming restrictions from extreme rain” (Island

Institute discussion, 8/8/24). Rural town leadership remarked that their Washington County communities are contending with the uncertainty of fishing industries, “our extreme dependence on one fishery, and the volatility of the industry and just, you know, no control over price” (SCEC focus group, 7/12/24).

Plans to diversify beyond single industries are uncertain as well. In Washington County, a two-year process to approve a land-based aquaculture operation has met with “major resistance due to a third party, not based [in our town], inciting fear in our local fishing community” (SCEC focus group, 7/12/24). A Select Board member in this SCEC focus group, speaking on their personal views, said that “it would do great things for the tax base and add some diversity. There is, I don't want to say a point of contention…there's mixed feelings around aquaculture. …We're starting to explore that and have conversations around diversification.”

For “priority populations” to be willing to participate, industrial developers need to learn from resistance to past projects, and industrial adaptation cannot come at the expense of the community’s existing identity and basic needs. Youth participants raised such concerns in an unbridged island community: “There needs to be a balance with the economic side with adaptation—some recommendations are not applicable for fishing communities. We need to find ways to adapt without changing the fundamental needs of the community” (Islesford Boatworks discussion on Little Cranberry Island, 8/8/24). The Survey considered the question of the degree to which “priority populations” want to participate in fishing and aquaculture industries. Of the 101 respondents to this section of the survey, only 4 expressed interest in working in aquaculture or fisheries. One was already employed in research and teaching related to aquaculture. Two of the 4 respondents described barriers of lack of education and time, and two cited a lack of job opportunities and financial stability as barriers to entering these workforces.

4.8.3 C&M Recommendation 3: Monitor, conserve and increase resilience of coastal and marine ecosystems.

ACTT’s Local Leads the Way rural discussants emphasized the need for technical assistance and funding for erosion control and other climate-related impacts in at-risk communities: “What jumps out is the need to increase the capacity for local communities particularly to engage nature-based solutions. Lots of towns on tidal rivers that don’t have major working waterfronts have same major issues and very vulnerable populations that need the help” (7/8/24).

Participants' interest in and barriers to accessing natural resource funding are further described in Natural and Working Lands Recommendation (4.6) above.

4.9 Materials Management Task Force (MM)

The Materials Management Task Force Recommendations aim to ensure future state climate planning efforts consider emissions and waste associated with materials that flow through the economy. The recommendations prioritize growing Maine's circular economy to reduce emissions throughout product lifecycles; reducing food loss and waste; reducing consumption-based emissions and tracking and measuring emissions reductions; supporting and scaling effort to reuse, repair, and refill; fostering resilience in the built environment through materials collection and reuse; and reducing and capturing methane emissions. Participants indicated a need for more **education and capacity** in order to understand and participate in materials management. Reducing emissions in their own lives is not at the forefront of their needs; in order for materials management strategies to be equitable, the state and municipal governments need to focus on the systems level. At the community level, these recommendations will require education, meeting people where they are at, and empowering people to make changes in their own lives in ways that are easy, accessible, no-cost, and safe. Participants did not provide feedback on recommendation three. Recommendation four centered on the natural resource workforce, and feedback regarding this topic can be found in Section 4.8.1.

4.9.1 MM Recommendation 1: Advance Policies and Deploy Funding to Reduce Emissions Across Product Lifecycles by Growing Maine's Circular Economy

A question included in a survey focused on rural communities, low-income households, and climate frontline communities by the Aroostook County Action Program (ACAP) asked, "What does carbon reduction mean to you? Have you thought of reducing carbon in your own life, and if so, how?" Forty-two percent of respondents did not have an answer, were unsure, or had not thought about it before. Of the 37 respondents who had thought of reducing carbon in their own life, 54% answered reducing waste or fossil fuel use (ACAP, 7/23/24). The high percentage of people who have not previously considered carbon reduction in their own lives may indicate "priority populations" currently do not prioritize reducing their carbon footprints.

In a meeting in Norway, one participant asked about what the "Maine

circular economy" means, and another resident from the town of Stoneham provided an example of it (Center for an Ecology-Based Economy meeting, 8/6/24). This was the only engagement that yielded a response to the question of "What does the term "circular economy" mean to you? What are the barriers to circular economics in your household, your community, or in Maine, generally? What would make it easier?" likely indicating this term does not necessarily resonate with participants. Participants did, however, share a range of creative ways that their communities are already contributing to and would want to support diverting and reusing of materials, described in sections 4.9.2 and 4.9.3 below.

4.9.2 MM Recommendation 2: Prevent Food Loss and Waste to Reduce Food Waste by 50% by 2030.

A resident of Cranberry Isles, said at an A Climate to Thrive event, "We need a better way to process our food scraps. Backyard composting is part of the solution, but [the alternative of] ocean dumping is imperfect" (7/22/24). A renter at York Housing's Baldwin Center voiced concern about both food waste and loss: "Residents do not have access to recycling, except for paper recycling once per year. There is no composting facility in senior housing. The garden has no fence and deer get in" (York Ready for Climate Action, 8/6/24).

Participants at a Center for an Ecology-Based Economy event (8/6/24) agreed that they did not know about composting services in their area, and residents from Otisfield and Casco shared that there are none near them. In Stoneham, most residents do not compost because it attracts bears, so they do not have a town system for composting. A resident concluded: "You might have something in place for composting, but people might not know about it… It's important to **educate** citizens on how to do it so it's easy, accessible, and safe".

4.9.3 MM Recommendation 5: Regionalize and scale up access to waste prevention and diversion services.

What concerns do people have about waste management in their communities?

At York Housing's Baldwin Center, "residents do not have access to recycling, except for paper recycling once per year" (York Ready for Climate Action discussion, 8/6/24). At an Island Institute discussion (8/8/24) a coastal resident pointed out, "We have a trailer for recycling, but it gets so full that it is

dumped after a few days, and all of that ‘waste’ is then sent away by a paid-for recycling company. This costs us more than it should”. Residents of Oxford County echoed this concern about costs at a Center for an Ecology-Based Economy meeting (8/6/24). They asked who would help the towns deal with the **prices of recycling**, as they don’t think this is well reflected in the recommendations. A resident from Norway mentioned: “Recycling costs are astronomical and really hard to predict.” These participants believed that available incentives do not necessarily make recycling accessible to the Western Maine region. In addition, some towns in Western Maine don’t have anywhere to collect bottles and cans, so they end up in the landfill. These same participants also felt they were lacking accessible **education** about trash separation and recycling.

One coastal resident suggested an innovative idea, “It would be interesting to have a fishing gear recycling program that paid people to pick up debris on the shoreline” (Island Institute discussion, 8/8/24). The December 22 storms of last year left a lot of debris along the coast, reminding everyone of the challenges these communities face. Even though people worked hard to clean up, a coastal community resident noted, “Each year, a group of people pick up debris, but it ends up in landfill on the mainland” (Island Institute discussion, 8/8/24). This cycle of waste, cleanup, and disposal presents a challenge to Maine communities.

How do communities want to be part of equitable solutions to improve waste diversion?

During a recent Natural Resources Council of Maine and Maine Community Action webinar, Mainers discussed how small, everyday actions—like recycling and reducing waste—can make a big difference in fighting climate change. They stressed the importance of having recycling programs that help people manage their waste more effectively (5/20/24).

When asked what the state could do to help with waste management in their communities, residents at a Center for an Ecology-Based Economy meeting came up with a number of ideas. The first step was **education**: providing materials and educating residents about options for what they can do with trash. Next, they recognized the need for **training for transfer station employees**. To expand participation across the community, they called for increasing the opportunities for partnerships with other organizations and businesses, so that trash goes into energy and food waste is limited and diverted away from landfills

(CEBE discussion, 8/6/24).

4.9.4 MM Recommendation 6: Foster resilience in the built environment through materials collection and reuse.

At a discussion hosted by a member of the UMaine research team at Islesford Boatworks on Little Cranberry Island (8/8/24), participants stressed the need for better recycling efforts in their area. One person simply stated, “Improve recycling needs to be on there!” During that discussion, participants expressed interest in creating more engagement in local construction and the growth of building materials. For example, Little Cranberry residents highlighted growing wood to construct laminated beams. Regenerative agriculture, agroforestry, and growing fibers for clothing were also discussed as potential solutions for sequestering carbon while making materials more accessible (Islesford Boatworks discussion, 8/8/24). In another discussion facilitated by the Island Institute, one person shared, “Phippsburg puts Christmas trees on the dunes to retain sand. We use composting at our 31-bed community garden, as well as wood chips between the beds” (Island Institute, 8/8/24). Another participant suggested, “How about an island-wide ‘junking day’ where everyone puts out what they’ve found on the same day/week, then you can walk around and see what you can use that is still useful” (8/8/24). This idea of material collection and reuse connects directly to the discussion in the previous section on waste collection and diversion. People are eager for these initiatives to take off, but the perceived lack of program planning and resources are barriers to success.

4.9.5 MM Recommendation 7: Reduce and capture methane emissions from Maine’s waste sector.

Questions about this recommendation yielded minimal responses. One participant in a community discussion of Maine’s changing climate, hosted by the Center for an Ecology-Based Economy, specifically noted an interest in methane capture. However, most participants were more concerned with carbon emissions reduction and waste recycling, highlighted in the preceding sections (5/2/24).

4.10 Land Use Discussion Group (LU)

Land Use Discussion Group Recommendations focus on land use planning with an emphasis on environmental protection and the clean energy transition, while meeting Maine's housing and economic development needs. Additionally, the acknowledgement of differing community needs, including land use patterns, demographics, wildlife values, natural and working land assets, and suitability for housing, economic, and clean energy development is highlighted. Recommendations prioritize promoting smart growth through compact development; providing technical assistance to municipalities and communities to implement smart land growth; and using incentives, regulations, and funding to encourage smart growth land use policies, which provide measurable benefits to Maine communities, while meeting climate goals.

Participants highlighted the importance of, and concerns about, **affordable housing and the cost of living**. Responses to the Maine Community Alternative Energy Survey and information from direct engagements align in their perception that most communities do not have enough housing and space for new residents coming to Maine. Participants highlight the need for **better land use policies with an emphasis on green spaces and land conservation**. There are concerns about **inadequate infrastructure and services**, such as staffing for code enforcement and planning boards, which are recognized as barriers to sustainable growth. Many participants noted a need for greater education and technical assistance to continue to address these recommendations.

4.10.1 LU Recommendation 2: Provide technical assistance to implement smart growth land use policies. Help communities use proactive communication and encourage community engagement to support effective land use planning.

Limited feedback was provided about assistance to implement, and communication to support, land use planning. Sunrise County Economic Council focus group participants discussed the concern of limited municipal capacity: "There's a problem related to very high levels of the lake, which is related to the salmon listing and climate, a lot of other things. There was a lot of tree damage all around the lake, which is a fire hazard, and there's all kinds of concerns. And there's also development going on. And just staffing the planning board is a nightmare, so there you go." Another participant commented, "There's a

shoreline zone, you've got to leave the stumps in the ground, if possible. So, it's just an enforcement issue, you know. We don't have drones running around seeing all this stuff. So, you have a code enforcement officer, then, who's trying to deal with this. Well, our code enforcement officer passed away last year, and we've been looking for a new one, but we have not got one. So, anyway, we're operating with duct tape, which is normal" (SCEC discussion, 7/12/24).

4.10.3 LU Recommendation 3: Use incentives, regulations, and state funding to encourage local land use policies that align with smart growth principles.

Feedback acknowledged the importance of land use policies and focused on what they saw as land use priorities. However, specific suggestions regarding incentives to promote policies or how to measure benefits in land use were not revealed. Participants indicated support for carefully considered land use policies that address a variety of needs, including **prioritizing green space in planning**. A participant in a discussion group at a luncheon for residents at the Baldwin Center led by York Ready for Climate Action said, "There has been so much development and animals are displaced. Preserve existing forests and woods. Instead of building new buildings, fix up disused or abandoned buildings. Don't clear for new land. Don't keep building on the coast. Look at the entire state for conservation opportunities. Leave untouched land alone. What are other towns doing?" (8/6/24). This sentiment was echoed by the majority of participants in a focus led by Coastal Enterprises, Inc. who stated that they think that urban planning should prioritize green space (7/31/24 and 8/7/24). At a discussion hosted by a member of the UMaine research team at Islesford Boatworks (8/8/24), youth residents of the Cranberry Isles remarked that improved land use policies would be well received in the Maine, as sprawled and spread out communities are not ideal, largely due to gaps in infrastructure and services coverage, as well as the more remote nature of sprawling areas.

5.0 Discussion

This work confirms the critical importance of engaging diverse perspectives in Maine Climate Planning. Consistent with project objectives, this report provides information on the challenges that "priority populations" face that may impact or alter their priorities in climate planning. It also includes information on what may impede the ability of people and communities to be 'climate

resilient', including constraints associated with income, a changing economy, living and working in rural areas. Participants often cited a need for additional support for community-level priorities. This report provides important context as the Maine Climate Council considers their final recommendations.

MCC working groups have worked to incorporate the needs of diverse Maine people in their respective recommendations. A goal of this report is to provide information on gaps identified by participants and share their perspectives on highlighting considerations they feel need greater prominence in a climate plan that values the participation and livelihoods of "priority populations." As noted in Section 1.0, climate communication research reinforces that individuals and communities who have an opportunity to participate in climate planning, and ensure that plans include concerns of importance to them, are more likely to participate in actions to address climate change [4-7].

Results from this study reveal four (4) key opportunities to center the feedback from participants in the 2024 Maine Climate Plan Update: (1) Elevate strategies that intersect with basic needs, including funding and planning for public transportation as well as support for housing, home repair, heating, and local food access; (2) Prioritize person-to-person education & capacity-building through energy and/or climate navigators and support for community-based organizations; (3) Prioritize equity outcome & monitoring metrics from the March 2023 Equity Subcommittee (ESC) Report; and (4) integrate specific considerations for older adults and people with disabilities, including implementing an Older Adult Ambassador program and encouraging disaster plans to elevate considerations for older adults and people with disabilities.

The results of this report also reveal important forward looking strategies that help ensure diverse voices are included and amplified in future climate planning. Inclusive long-term planning requires a commitment to relationship building and fostering trust, all of which takes time. Thus, participants recommend beginning the 2028 update process immediately to provide sufficient time for this relationship building, including direct government-to-government engagement with each of the five Wabanaki governments. Participants also encourage future climate planning to implement a poverty-centered funding & capacity-building plan at the core.

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Appendices

Please see the full Appendices in this document: Appendices for Report on Maine Climate Council Engagement 2024