



Final Recommendations of the Equity Subcommittee

March 2023

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Letter from the Co-Chairs

The effects of climate change will affect us all in profound ways, and will create significant hardships for people and communities in more vulnerable positions in society, such as low-income residents, older adults, indigenous people, people of color, and others, who are less able to respond. We are already seeing, for example, the significant impacts of more frequent storm events on residents, communities, and ecosystems.

Maine has an opportunity and a responsibility to help our future selves through our climate actions. We can help Maine people reduce energy costs by installing a heat pump and weatherizing our homes. We can help our communities recover from storms by investing in resilient infrastructure and climate planning. And we can help our neighbors get to school and work, healthcare and recreation, by making clean and reliable transportation more available. We must work together to ensure that strategies to reduce greenhouse gas emissions and prepare for the impacts of climate change benefit all people in Maine, especially those most vulnerable.

On December 1, 2020, the Maine Climate Council released *Maine Won't Wait* ([pdf](#)), the state's four-year Climate Action Plan. *Maine Won't Wait* establishes four goals: Reduce Maine's Greenhouse Gas Emissions; Avoid the Impacts and Costs of Inaction; Foster Economic Opportunity and Prosperity; and Advance Equity Through Maine's Climate Response. Following the release of *Maine Won't Wait*, the Maine Climate Council established the Equity Subcommittee to support ongoing planning and implementation of the state's climate strategies to ensure shared benefits reach diverse populations in Maine.

The Equity Subcommittee was tasked with setting equity outcomes for climate actions, monitoring progress and making recommendations to the Council to ensure programs and benefits reach diverse and isolated populations and communities. Over the course of our work, we have reviewed the strategies in *Maine Won't Wait* to identify opportunities to ensure that Maine's climate response reaches those most in need, worked with state agencies and the Climate Council's Working Groups to refine those recommendations and highlight actions already underway, and developed equity metrics to ensure that programs and benefits reach priority populations and communities.

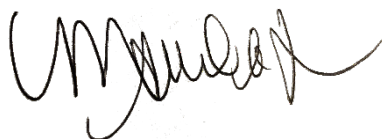
The equity recommendations in this report are organized to align with the strategies in *Maine Won't Wait*. They include actions to ensure that the benefits of Maine's climate actions reach those who most need it, and to support increased participation in state climate and energy processes. There are specific recommendations for the Maine Climate Council to consider to more firmly integrate equity into the state's climate action plan going forward.

The report is an important first step for Maine to ensure that as we confront climate change and its effects, we ensure that our efforts benefit all people in Maine.

We are grateful to the members of the Equity Subcommittee who have given generously of their time and knowledge, to the state agency staff and Maine Climate Council working group members for their collaboration, and to the many members of the public who shared their ideas and suggestions. We look forward to continuing this work together.



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Elmina B. Sewall Foundation



Ambassador Maulian Dana
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Co-Chairs, Maine Climate Council Equity Subcommittee

Acronyms used in this report

State of Maine Agencies or Quasi-State Agency Partners

BMV	Bureau of Motor Vehicles
BRILUP	Bureau of Resource Information and Land Use Planning
ME CDC	Maine Center for Disease Control and Prevention (we do not reference the US CDC in this document)
DACF	Department of Agriculture, Conservation, and Forestry
DECD	Department of Economic and Community Development
DEP	Department of Environmental Protection
DHHS	Department of Health and Human Services
DMR	Department of Marine Resources
DOE	Department of Education
DOL	Department of Labor
DVEM	Department of Veterans & Emergency Management
EMT	Efficiency Maine Trust
GEO	Governor's Energy Office
GOPIF	Governor's Office of Policy Innovation and the Future
IFW	Department of Inland Fisheries & Wildlife
MaineDOT	Department of Transportation
MaineHousing	Maine State Housing Authority
MEMA	Maine Emergency Management Agency
OPA	Office of the Public Advocate
OPHE	ME CDC's Office of Population Health Equity
PFR	Department of Professional & Financial Regulation
PUC	Maine Public Utilities Commission

Partner and Program Acronyms

CBA	Community Benefits Agreement
CCAP	Climate Change Adaptation Providers Network
CHIP	Central Heating Improvement Program
CMP	Central Maine Power
CRP	Community Resilience Partnership
ESC	Equity Subcommittee of the Maine Climate Council
EVs	Electric Vehicles
FEMA	Federal Emergency Management Agency
HEAP	Home Energy Assistance Program, Maine's affiliate of the federal Low Income Home Energy Assistance Program (LIHEAP)
HVAC	Heating, Ventilation, and Cooling
IECC	International Energy Conservation Code
IIJA	Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law (BIL)

IRA	Inflation Reduction Act
LIAP	Low Income Assistance Program
LMI	Low-to-Moderate Income
MCSIE	Maine Climate Science Information Exchange
MeCAP	Maine Community Action Partnership
MJRP	Maine Jobs and Recovery Plan
MNRCP	Maine Natural Resource Conservation Program
MUBEC	Maine Uniform Building and Energy Code
MUDs	Multi-Unit Dwellings
MWBE	Minority- or Women-owned Business Enterprises
<i>MWW</i>	<i>Maine Won't Wait</i>
NEVI	National Electric Vehicle Infrastructure Formula Program
OSHA	US Occupational Safety and Health Administration
OSW	Offshore Wind
PHEV	Plug-in Hybrid Electric Vehicles
PLA	Project Labor Agreement
QAP	Qualified Allocation Plan
SLR	Sea Level Rise
SVI	Maine Social Vulnerability Index
TCFD	Taskforce on Climate-Related Financial Disclosures
TNC	The Nature Conservancy
TPI	Third Party Inspectors
USEPA	United States Environmental Protection Agency
ZEV	Zero-Emission Vehicles

Introduction

In Maine and across the world, climate change poses the greatest threat to communities which are already marginalized. Low-income communities and communities of color, among others, are often already subject to both social and environmental harm—experiencing disparities in health outcomes, and inequitable access to healthy, efficient, and secure housing, potable drinking water, and reliable transportation. Due to these ongoing inequities, these communities often have a weakened capacity to respond to climate stressors and recover from climate shocks.

Equitable climate action requires the thoughtful distribution of climate benefits and mitigation of climate burdens, so that policies intended to fight climate change do not instead cause further harm. Essential to delivering these equitable outcomes is participation. To understand the needs of Maine’s impacted and frontline communities, these very same communities must have a role in creating the plans and policies that will affect their current and future well-being.

LD 1679,¹ which established the Maine Climate Council (MCC) and the Clean Energy Transition plan, set equity as a core objective, naming low-to-moderate income households, rural and economically distressed communities, workers, and businesses as priority populations:

- “Ensuring equity for all sectors and regions of the State and that the **broadest group of residents benefit** from the achievement of the greenhouse gas emissions reduction levels in section 576-A, with consideration of **economic, quality-of-life and public health benefits**” (Climate Council objective)
- “Pursuing actions that minimize deleterious effects, including those on **persons of low income and moderate income**, to public health and the environment and that support **economic sectors that face the biggest barriers** to emissions reductions...”
- “...and creating, when feasible, additional employment and economic growth in the State, especially in **rural and economically distressed regions** of the State;
- “Highlight strategies for the State's **rural communities, workers and businesses** as the State transitions to a low-carbon future that are designed to encourage good paying jobs and long-term employment” (Clean Energy Transition plan)

Accordingly, *Maine Won't Wait* (MWW), the state’s climate action plan, contains numerous directives to consider, serve and invest in vulnerable communities. Equity was considered — along with multiple other outcomes — during the climate planning process in 2019-2020. Reflecting the consideration of multiple objectives, the MCC established the Equity Subcommittee (ESC), to make recommendations to the MCC to “**ensure shared benefits across diverse populations**”, as well as propose tracking and monitoring to ensure “**programs and benefits reach the intended populations and communities.**”²

¹ Source: <http://www.mainelegislature.org/legis/bills/getPDF.asp?paper=SP0550&item=3&snum=129>

² See *Maine Won't Wait*, pages 37 and 107: https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MaineWontWait_December2020.pdf

Over the last 18 months, working with the MCC working groups, state agencies, along with input from other experts and members of the public, the ESC has developed equity recommendations specific to the programs and policies proposed in *MWW*, as well as proposed equity metrics.

This report is the final outcome of the ESC's deliberations and serves to transmit this work for consideration by the MCC. The ESC recommends that the MCC consider these recommendations and metrics for adoption. Following adoption, the ESC recommends that responsible state entities begin taking action and collecting data identified as necessary for baseline studies, monitoring metrics, and equity outcome metrics, so that equity outcome metrics can be reported annually as part of the state's annual climate reporting process.

About the Equity Subcommittee's Work

The ESC was formed by the MCC in February 2021. Over nearly 12 months, the ESC worked together to develop 57 draft equity recommendations, grounded in thorough review of *MWW* and building on the equity analysis conducted by the Senator George J. Mitchell Center for Sustainability Solutions at the University of Maine in 2020.³ These recommendations were presented to the MCC in an interim report in February 2022.⁴ In addition to its draft recommendations, the interim report identified common definitions related to equity, as well as a framework for consideration of equitable climate policy and programs.⁵

In the interim report, the ESC proposed further consultation with MCC working groups to refine and revise their recommendations. Starting in March 2022, ESC members selected to support these sector specific working groups. Each working group and the Science and Technical Subcommittee (STS) met two times between April and November 2022 to consider and comment on the interim recommendations: once to discuss actions, and once to discuss priority populations and metrics. At the same time, the ESC staff team at the Governor's Office of Policy Innovation and the Future (GOPIF) consulted with state agencies (listed below) to learn about equity actions already underway and to develop equity metrics. The collective input from these processes — and examples of actions underway — helped refine and restructure the original 57 interim equity recommendations and shape them into goals and recommended actions that align with *MWW*.

Members of the public and impacted agencies have played a critical role in helping finalize this body of work. As detailed in its interim report, the ESC conducted a robust and geographically diverse stakeholder process in 2021, gathering feedback on its interim recommendations. This process included creating a plain language version of the recommendations and taking them into conversations across diverse communities in Maine. In 2022, the ESC continued to gather feedback, focusing on each of the MCC's working groups. As mentioned above, each working group met twice: those meetings were public, and many included public comment. And the GOPIF equity staff team met with every state agency and quasi-state agency partner implicated in the recommended equity actions. These consultations helped identify examples of work underway — some of which substantively met the intent

³ See: https://climatecouncil.maine.gov/future/sites/maine.gov.future/files/inline-files/MCC_EquityAssessmentReport_201007.pdf

⁴ See: https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MCC_EquitySubcommitteeInterimReport_Feb2022.pdf

⁵ See definitions and framework in: https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MCC_EquitySubcommitteeInterimReport_Feb2022.pdf

of the interim equity recommendations — and helped identify revisions to the interim recommendations. Finally, draft final recommendations were made available for additional public comment for two weeks at the end of 2022 and beginning of 2023.

This final equity report is the product of these deliberations, consultations, and revisions. It contains 18 equity goals; 57 equity actions, which nest under each goal and which are most closely aligned with the content from the ESC’s interim report; 15 equity outcome metrics, which break down existing *MWW* indicators to assess **where** climate actions are happening and **who** is benefiting; and more than 20 proposed monitoring metrics, meant to serve as intermediate indicators indicating progress towards equity outcomes.

Table 1: Consulted State Agencies and Quasi State Agency Partners

BMV	Bureau of Motor Vehicles
ME CDC	Maine Center for Disease Control and Prevention
DACF	Department of Agriculture, Conservation, and Forestry
DECD	Department of Economic and Community Development
DEP	Department of Environmental Protection
DHHS	Department of Health and Human Services
DMR	Department of Marine Resources
DOE	Department of Education
DOL	Department of Labor
DPS	Department of Public Safety
EMT	Efficiency Maine Trust
GEO	Governor’s Energy Office
GOPIF	Governor’s Office of Policy Innovation and the Future
IFW	Department of Inland Fisheries & Wildlife
MaineDOT	Department of Transportation
MaineHousing	Maine State Housing Authority
MEMA	Maine Emergency Management Agency
OPA	Office of the Public Advocate
PFR	Department of Professional & Financial Regulation
PUC	Maine Public Utilities Commission

Layout of This Report

The report begins by identifying Priority Populations for climate action and a framework for equity metrics and summarizes the equity outcome metrics from the subsequent chapters.

The report then follows the chapter structure of *MWW*, with the intention that equity goals, actions, and indicators align directly with existing *MWW* strategies. In most instances, equity goals nest into *MWW* strategies: the goal statements, in many instances, restate existing *MWW* recommendations and identify a priority population or community for focused intervention. In far fewer instances, the goal statements establish a new recommendation. Similarly, equity outcome metrics nest under *MWW* progress indicators, breaking down the 11 statewide indicators further by location, or by demographic or economic characteristics of participating individuals or households.

In addition to the goals and recommended actions, each chapter contains more context about equity in each sector, including priority populations; lists and recognition of related work underway or completed by the state; and metrics.

The report concludes by considering cross-cutting goals and public engagement — referred to as procedural equity — focusing on recommendations for considering and involving people in planning and decision-making in state climate and energy processes. Finally, the ESC proposes both a model for continuing the ESC's work in the next climate planning process, as well as additional recommendations for equity in the MCC. Appendices to the report include potential benchmarks and data sources for state agencies to consider, as well as gaps that the next climate action planning process could consider.

This final report stayed within the bounds of what the ESC recommended through its initial year-long process in 2021. Entirely new ideas, including some of the ideas and recommendations that MCC working groups offered in their meetings, as well as ideas provided in public comment, are included in an appendix, in lieu of being incorporated directly into the report. Recommendations that were out of scope for the climate action plan have been removed; actions from the interim report that are already underway or completed have been removed and are reflected in the introduction to related goals.

Substantively, this final report builds on the ESC's interim recommendations, providing helpful revisions and identifying opportunities to better serve priority populations. It is structurally aligned with *MWW* and has undergone significant review by implementing partners.

Related Work

The ESC's work is occurring in parallel with other important, equity-driven work in the state and nationally. Chief amongst this is the federal Justice40 initiative, a whole-of-government effort to ensure that federal agencies deliver at least 40 percent of the overall benefits from federal investments in climate and clean energy to disadvantaged communities. This includes federal investments in clean energy and energy efficiency; clean transit; affordable and sustainable housing; training and workforce development; the remediation and reduction of legacy pollution; and the development of critical clean water infrastructure. Justice40 requires federal agencies to identify the benefits of covered programs, determine how covered programs distribute benefits to disadvantaged communities, and calculate and report on reaching the 40% goal.

In Maine, this work is complemented by a new law adopted in 2022 which seeks to promote equity by enhancing the state's ability to collect, analyze and apply data.⁶ It requires the state Economist to collect demographic data in addition to economic data and requires the state to establish a data governance program.

This work stands amongst numerous other programs, initiatives, and leadership across state government seeking to improve the lives and livelihoods of Maine people.

⁶ See: <http://www.mainelegislature.org/legis/bills/getPDF.asp?paper=HP1199&item=5&snum=130>

Priority Populations and Equity Metrics

Introduction

“Like other dislocations and disruptions to society, from recessions to pandemics, climate change creates the greatest hardships for marginalized communities, many of whom are most vulnerable to its effects.”

Maine Won’t Wait, Page 9

Maine Won’t Wait (MWW) emphasizes the need to advance equity through the state’s climate response. The plan highlights the disproportionate impact of climate change on lower-income communities and individuals, older adults and populations already experiencing health disparities, and the need to ensure under-resourced communities are prepared to respond, adapt, and thrive. The plan also highlights the potential benefits of Maine’s climate strategies, and the opportunity for climate-related job growth, in communities and among workers facing the greatest climate disruptions.

The Equity Subcommittee (ESC) of the Maine Climate Council (MCC) was established to support ongoing planning and implementation of Maine’s climate strategies, and to ensure shared benefits across diverse populations of Maine people. In its deliberations, the ESC considered the following people, workers, communities, or businesses as “priority populations” for climate action, either because of their vulnerability to climate change impacts, limited resources or capacity to respond and adapt, or because of intersections between these vulnerabilities:

- **Individuals and Households:** Households with low-income individuals, older adults (age 65+), people with asthma or other health vulnerabilities, people with disabilities, people with limited access to transportation, Black, Indigenous and People of Color (BIPOC), people with limited English proficiency, low-income residents of rental housing (especially multifamily), mobile home residents, low-income homeowners, unhoused individuals, and families. Individual worker characteristics include employment and work authorization status,⁷ students, people with limited English proficiency including New Mainers,⁸ gender,⁹ people transitioning from prison or in recovery, and/or migrant workers.
- **Geographic Areas and Communities:** Low-income communities, rural communities, small towns with limited staff capacity,¹⁰ disadvantaged communities (discussed below), climate-frontline communities,¹¹ and/or Tribal and Indigenous communities.

⁷ For example, job seekers interested in training and employment but ineligible for some opportunities pending work authorization (e.g., refugees, asylum seekers)

⁸ New Mainers can include immigrants, refugees, and — in the instance of workforce programs — other foreign trained individuals.

⁹ For example, women and nonbinary people in (a) clean energy and (b) natural resource industries

¹⁰ For example, limited staff capacity may be a challenge to municipalities’ ability to apply for funding for climate projects

¹¹ The ESC defines frontline communities as those “first and worst” impacted by climate change, and least able to respond. See page 11, ESC Interim Report (Feb 2022):

https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MCC_EquitySubcommitteeInterimReport_Feb2022.pdf

- **Businesses:** Businesses in the natural resource industries like agriculture, forestry, and fishing,¹² clean energy industry (including energy efficiency), small businesses, minority- or women-owned business enterprises (MWBs).

Not all individuals, households and workers in these groups and communities are equally disadvantaged or climate vulnerable. Climate and clean energy programs and resources should be prioritized for people and communities facing **multiple vulnerabilities**. For example, among renters, weatherization programs should include strategies to reach and serve renters with low incomes and/or with health vulnerabilities. Among rural communities, resilience planning assistance should consider those communities without local or regional planning staff; encouraging regional partnerships can help address the lack of bandwidth in those small, rural communities. Among unemployed or underemployed jobseekers, clean energy training or apprenticeship programs could seek to prioritize New Mainers or workers in industries more negatively impacted by climate change.

Many state agencies and programs already prioritize people and communities facing multiple vulnerabilities. The recommendations in this report seek to build on what these programs and agencies are already doing, and to institute monitoring to understand **who** is participating and benefiting from Maine’s climate and energy programs, **where** resources and benefits are being delivered, and **what** impact climate programs and investments are having on those communities in most need.

Identifying Priority Populations

Implementing and measuring climate action equity will require defining and identifying priority populations. However, the criteria to define priority populations may vary by sector and program depending on existing federal or state criteria or definitions, or community input. For example, “low income” may be defined by different thresholds depending on federal guidelines (such as <60% of **state** median income for the Low-Income Home Energy Assistance Program (LIHEAP);¹³ <80% of **area** median income for the US Department of Housing and Urban Development). Similarly, federal agencies have multiple definitions for “rural communities”, there are several lists of “disadvantaged communities” in use by federal programs,¹⁴ and specific criteria for climate “frontline communities” are not defined at the federal or state level.

The table below summarizes general criteria for the four types of communities prioritized by the ESC. In each case, there is no singular definition. Considering multiple and emerging federal and state definitions and guidelines, the ESC does not expect Maine to establish one overarching definition or list for each of these communities. Rather, each agency may develop or adopt criteria that align with guidance from their federal counterparts, and/or with sector-specific considerations. The most important outcome is that programs, communities, and service providers can easily access information about the risks, vulnerabilities and classification(s) of each community, and can maximize impact in support of those communities.

¹² Priority businesses/sectors will be described further in subsequent chapters.

¹³ This is the same program known as the Home Energy Assistance Program (HEAP) in Maine.

¹⁴ For example, the White House Climate and Economic Justice Screening Tool (CEJST) definitions of Disadvantaged Communities, US Department of Transportation’s interim definition of Transportation Disadvantaged Communities, US Department of Energy’s interim definition of Disadvantaged Communities; US Environmental Protection Agency’s definition(s) of Disadvantaged Communities for Clean Water State Revolving Fund.

Table 2: Potential Criteria for Priority Communities

Population	Potential Criteria
Low-Income Communities	<p>Percentage of households in town or census tract reporting incomes below threshold (e.g., at least 30% of households with <80% Area Median Income (AMI),¹⁵ or 20% of households below poverty level)</p> <p><i>Criteria and thresholds may vary by sector and program</i></p>
Rural Communities	<p>Non-urban areas with relatively low population density; typically identified by community population, density, distance from urban area</p> <p><i>There are several definitions and lists from US Census¹⁶ and US Department of Agriculture,¹⁷ amongst others.</i></p>
Disadvantaged Communities	<p>Areas with higher sociodemographic, health, economic, climate or environmental vulnerabilities, burdens or exposures as compared to other areas</p> <p><i>Maine has not adopted a statewide definition or list, though the federal government has adopted a consistent definition across all federal agencies in the areas of climate, environmental, and clean energy spending (CEJST)¹⁸</i></p>
Frontline Communities	<p>People and communities that experience the consequences of climate change first and to a greater degree than other people and communities, and who have limited resources to respond</p> <p><i>Maine has not developed or published a specific list of frontline communities, though several federal¹⁹ and state²⁰ screening tools exist.</i></p>

In many instances, state agencies administering climate-related programs can use existing program data such as (a) participant characteristics (e.g., income or enrollment in means-tested state programs)²¹ or

¹⁵ AMI is the household income for the median or 'middle' household in a given region.

¹⁶ See: <https://mtgis-portal.geo.census.gov/arcgis/apps/MapSeries/index.html?appid=49cd4bc9c8eb444ab51218c1d5001ef6>

¹⁷ See: <https://www.ers.usda.gov/topics/rural-economy-population/rural-classifications/what-is-rural/>

¹⁸ Federal agencies will use the Climate and Economic Justice Screening tool to track compliance with the White House Justice40 Initiative, which requires the distribution of spending and benefits from climate and clean energy programs to disadvantaged communities. See: <https://screeningtool.geoplatform.gov/en/#8/0/0>

¹⁹ Such as: <https://resilience.climate.gov/#assessment-tool>

²⁰ Such as: <https://maps.coastalresilience.org/maine/>

²¹ The ESC recognizes challenges in asking, collecting, or recording information about individual or community sociodemographic, health or employment characteristics. When it is necessary to ask for income or other characteristics, the ESC recommends following transparent data collection practices, such as describing how and why information will be used and finding confidential and non-intrusive ways to identify low-income individuals or households (e.g., those already enrolled in other means-tested programs).

(b) location²² to classify a project or spending as serving a priority population or a priority community.²³ This information can then be aggregated to estimate equity outcomes by priority populations — for example, total heat pumps in homes of low-income Mainers, or total spending on climate resilient infrastructure in rural communities. In this way, reporting equity outcomes will not require sharing any individual or personally identifiable data.

Reporting by Priority Population

Climate actions and investments must reach priority populations and communities, especially those most vulnerable to climate change impacts. To monitor equitable outcomes, agencies and programs need to know **where** actions are happening geographically, and **who** is benefiting. Across climate-related programs and investments, state agencies will need to track:

Where: Geographic distribution of participation,²⁴ projects or spending in priority communities to determine share among priority communities²⁵

Who: Participant characteristics (such as income level or demographic information), or workforce characteristics (such as employment status or gender), to determine share among priority populations

MWW identified multiple statewide progress indicators to determine if the state is on track to reach its overall climate goals.²⁶ **Equity outcome metrics** proposed in this report break down the *MWW* indicators to assess **where** climate actions are happening and **who** is benefiting. For example, equity outcome metrics might include the share of climate-resilient infrastructure spending in frontline communities (“where”) or the share of weatherization projects, heat pumps, etc. among low-income households (“who”). State agencies can aggregate results to calculate statewide spending, participation, or benefits among priority populations. Two examples are provided below.

The first example shows how reporting for individuals might work, and looks at weatherization projects, where low-income households are a priority. In fiscal years 2021-2022, 22% of weatherization projects — the combined impact of Efficiency Maine Trust’s (EMT) residential and low-income programs and Maine State Housing Authority’s (MaineHousing) programs — were in low-income households. This equity outcome metric could be compared with population benchmarks or baseline data to determine if outcomes are nearing equity. For example, how does the 22% of home weatherization projects in low-income homes compare to the 29%²⁷ of Maine households who report low incomes?

²² To categorize participation or spending by location, if granular location data is not available, reporting by county is a way to assess geographic distribution of spending. For example, workforce statistics such as natural resource or clean energy jobs are published by county.

²³ To categorize participation or spending by community type (e.g., percent among rural communities), agencies can match town and/or census tract with a federal or state list of priority communities (depending on guidelines) to classify outcomes within or outside of priority communities.

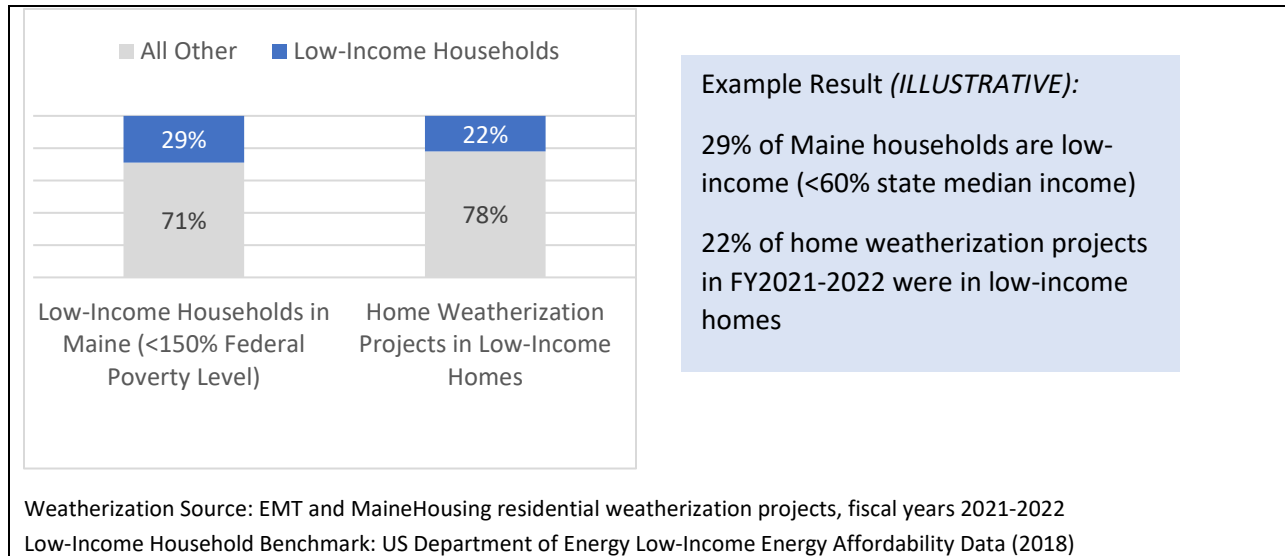
²⁴ “Participation” includes state program participation (e.g., energy bill assistance) as well as participants in climate-related processes (e.g., public hearings).

²⁵ Per above, priority communities could include low-income, rural, disadvantaged, or frontline communities.

²⁶ See *Maine Won’t Wait*, page 106-107: https://www.maine.gov/future/sites/maine.gov/future/files/inline-files/MaineWontWait_December2020.pdf

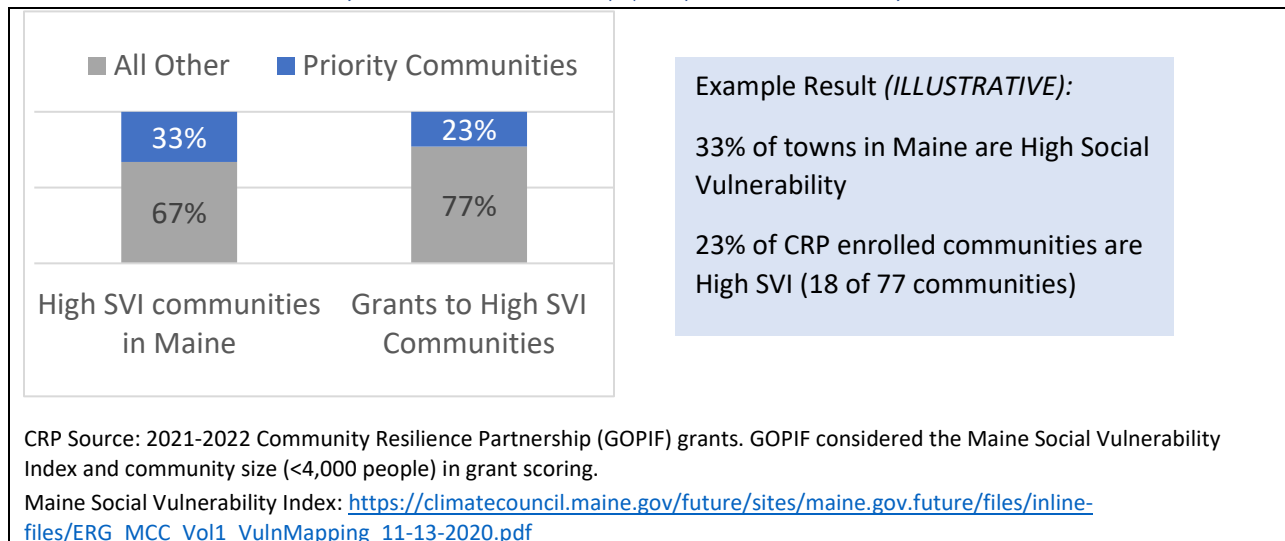
²⁷ Source: Department of Energy Low-Income Energy Affordability Data (LEAD) Tool. <https://www.energy.gov/eere/slsc/maps/lead-tool>

Figure 1: Example of Reporting among Low-Income Households:
Home Weatherization Projects among Low-Income Households (FY2021-2022)



The second example shows how reporting for priority communities might work. This example focuses on a single program — the Community Resilience Partnership (CRP) — though some equity outcome metrics may aggregate results across programs. The equity outcome metric shows the percentage of CRP communities that are High Social Vulnerability, and the benchmark metric is the percentage of Maine communities considered High Social Vulnerability. The CRP used the Maine Social Vulnerability Index (SVI) and community size (<4,000 people) to prioritize communities, though other agencies or programs may use different criteria to identify priority communities.

Figure 2: Example of Reporting by Community Type:
Community Resilience Partnership (CRP) awards to Priority Communities



The ESC did not establish specific numeric targets for programs serving priority populations, though some climate and clean energy programs already have their own targets.²⁸ Instead, the ESC recommends that the state identify benchmark population or community proportions -- such as the percentage of low-income homes, disadvantaged communities, or frontline communities -- to gauge progress. Appendix 1 provides potential data sources for benchmarks.

Summary: Establishing Equity Metrics

The ESC was ultimately charged with recommending metrics to the MCC that allow the Council to monitor progress towards equitable implementation of *MWW*. Each chapter of this report lists recommended equity goals, actions, and metrics. Equity metrics include:

- **Actions Tracking:** Yes/No indicators on whether and when recommended equity actions are implemented;
- **Monitoring Metrics:** Intermediate indicators including progress towards equity outcomes, or the results of research or analysis; and
- **Equity Outcome Metrics:** Quantify **where** actions/programs/ investments occurred, and **who** participated or benefited.

Equity outcome metrics are aligned with *MWW*'s goals and indicators,²⁹ and assess **share (distribution) of participation, projects, and funding** among priority people, businesses, and communities. Equity outcome metrics are only established for outcomes with an existing corresponding *MWW* goal or indicator; for recommendations without a corresponding measure, monitoring metrics are established to identify and track progress towards equitable outcomes.

Table 3 summarizes equity outcome metrics associated with *MWW* indicators and proposed by this report. These metrics are intended to track and aggregate the percentage of participation, and funding for climate, energy and resilience that goes to priority populations and communities, across the entire economy as captured in *MWW*. They complement Yes/No Actions tracking and reporting detailed in each chapter.

The ESC recognizes that simply targeting a proportional number of priority populations or communities is not sufficient to achieve equitable climate outcomes; rather, equity outcomes should seek to over-serve or represent vulnerable populations. The equity outcome metrics in Table 3 provide a necessary starting point for determining appropriate equity goals and targets; the ESC recommends setting such targets as an activity for the next statewide climate planning process.

Each of the metrics in Table 3 are described in subsequent chapters; this table serves as a reference.

²⁸ For example, see EMT's 5th Triennial Plan, Long Term Targets, which states: For the period beginning January 1, 2020, and ending January 1, 2030, weatherizing 35,000 homes and businesses, with at least 10,000 of such weatherization projects completed in low-income households through the combined efforts of the Trust and the Maine State Housing Authority. Source: https://www.efficiencymaine.com/docs/Triennial-Plan-V_FY2023-2025.pdf

²⁹ See *Maine Won't Wait*, page 106-107: https://www.maine.gov/future/sites/maine.gov/future/files/inline-files/MaineWontWait_December2020.pdf

Table 3: Equity Outcome Metrics for Maine Won't Wait Indicators

Statewide Indicator	Equity Outcome Metrics
Existing MWW Indicators	
Progress toward 80% renewable energy by 2030 and 100% by 2050	N/A
Energy saved via ongoing efficiency measures	<p>Energy cost burden³⁰ among low-income households and energy bill assistance recipients</p> <p># and % weatherization and energy efficiency projects in low-income homes, and among energy bill assistance recipients</p> <p># and % of affordable housing units built or renovated with clean or efficient energy technologies</p>
Clean-energy jobs created	<p>Geographic distribution³¹ of clean energy jobs</p> <p># and % of clean energy jobs held by priority populations³²</p>
Electric Vehicles (EV) on the road, Plug-in EVs, total	<p>% of EVs owned or leased by Low-and Moderate-Income households (proxy: rebates to Low- and Moderate-Income households)</p> <p>Distribution of clean transit projects and spending by priority population and geography</p>
Heat-pump installations total	# and % of heat pumps in low-income homes
Total percentage of Mainers with access to high-speed broadband ³³	<p>High-speed broadband access in rural and priority communities³⁴</p> <p>% of low-income households with high-speed internet</p>
Percentage of state lands conserved	Geographic distribution of publicly accessible natural and working lands ³⁵

³⁰ Energy Cost Burden is a cross-sector equity outcome metric that reflects the combined impact of many interventions, investments, and policies. It is calculated as the percentage of a household's income spent on home energy expenses.

³¹ Geographic distribution could include counts, percentages, or per capita results in and among priority communities. Where tracking to a town or census tract is not possible, agencies can report by county (e.g., workforce statistics).

³² The term "priority populations" in this table refers to individual, household or workforce characteristics, such as income level and other characteristics described above. Specific criteria may vary depending on federal or state program criteria.

³³ The ESC considered broadband as an enabling technology for reducing transportation emissions, accessing and participating in state decision making processes, and otherwise engaging in Maine's climate planning processes. Recognizing the multiple ongoing equity efforts led by the Maine Connectivity Authority, the ESC did not propose additional broadband interventions in this report. However, it does recommend these equity outcome metrics, related to existing statewide metrics contained in *MWW*.

³⁴ Priority communities for these metrics could include low-income, rural, disadvantaged, or frontline communities, depending on federal or state funding or program criteria.

³⁵ Recognizing that state agencies may play a role in access to or conservation of privately-owned natural and working lands, the equity outcome metric expands the *MWW* indicator beyond state lands to include privately held natural and working lands and waterfronts which are accessible to the public.

Number of towns or regions with resilient community plans	# and % of priority communities with Resilient Community Plans
Significant critical adaption infrastructure projects completed	Distribution of climate-ready infrastructure projects by priority community and geography ³⁶
Climate infrastructure and investment funding and leveraged	Distribution of climate-ready infrastructure funding by priority population and geography ³⁷ Distribution of natural resource grant funding by priority population and geography ³⁸
Federal and private dollars leveraged per state dollar	N/A (federal funding covered by metrics above)

³⁶ Funding metrics can include allocated or awarded funds from federal or state programs (from formula, competitive, grant or other processes) by priority community.

³⁷ Ibid.

³⁸ Ibid

Strategy A: Transportation

In Maine, transportation accounts for 49% of carbon dioxide emissions from fossil fuel combustion, and reducing emissions from the transportation sector is a key strategy in Maine's climate plan. Reducing transportation emissions should be done in a way that equitably distributes the benefits of cleaner transportation, including to rural and low-income residents. Clean transportation options may save people money through reduced vehicle operation and maintenance costs and can contribute to better public health outcomes by reducing air pollution.

All people in Maine should have access to affordable and clean transportation systems, whether personal, shared, or public transportation. *MWW* emphasizes the importance of public transportation for people who lack access to other transportation options or who would benefit from alternatives to driving, like older Mainers.³⁹ In addition, it recommends increasing the number of electric vehicles (EVs) on the road, including for low- and moderate-income (LMI) drivers. It includes strategies to reduce vehicle miles traveled, through investments in public and shared transportation and the deployment of broadband to facilitate teleworking and remote access to other online services in Maine homes. It also supports the development of village, city, and rural centers in ways which allow safe active transportation, including walking and biking.

The ESC recommended several actions designed to support *MWW* and increase access to affordable, efficient, clean transportation for all Maine people. State agencies and partners are already implementing many of those recommendations:

- In 2022, EMT expanded eligibility for low-income EV purchase incentives to include individuals participating in an expansive array of means tested programs. EMT also expanded its EV rebate amount for low-income customers, including for used vehicles sold in dealerships, and established a rebate tier for moderate-income customers. Historically, very few low-income customers have taken advantage of EMT's rebates, due to a combination of factors, including the price of vehicles still being too high, a disruption in the vehicle supply chain caused by the COVID-19 pandemic, lack of information about their use or usability and limited access to charging. EMT will be monitoring the outcome of their recent rebate enhancements.
- The DOE's new Clean School Bus Program⁴⁰ provides support directly to schools to apply for generous federal clean school bus funding, including the purchase of electric school buses. Through its first round of funding, the US Environmental Protection Agency (EPA) awarded more than \$13 million to 13 Maine school districts to purchase up to 34 electric school buses.⁴¹ All 13 districts were designated as priority⁴² by the EPA, reflecting high needs, rural, or tribal school designations. Maine received the 4th most funding per capita in the nation.
- DHHS recently completed a study on opportunities to improve access to shared transportation services for individuals receiving social services.

³⁹ Source: <https://www.maine.gov/dhhs/sites/maine.gov.dhhs/files/inline-files/FINAL-Age-Friendly-Update.pdf>

⁴⁰ Source: <https://www.maine.gov/doe/transportation/cleanbus>

⁴¹ Source: <https://www.epa.gov/newsreleases/biden-harris-administration-announces-more-13-million-epas-clean-school-bus-program-13>

⁴² Source: <https://www.epa.gov/system/files/documents/2022-05/2022-csb-rebates-prioritized-school-districts-2022-05.pdf>

- The opportunity to work remotely can lower transportation expenses and emissions and can provide flexibility for workers with children and other responsibilities. Multiple state agencies have collaborated to help increase access to remote working for underserved Maine people and communities. The Maine Connectivity Authority is implementing a Digital Equity Plan for Maine, helping increase access to broadband and internet-connected devices for priority populations and communities. The Department of Economic and Community Development (DECD) is developing an online resource for remote workers and employers looking to incorporate remote or hybrid employees into their existing workforce, providing access to resources and training. DECD is also working with communities to identify remote/coworking spaces, including libraries, where workers can find some of the shared office service support that remote workers may lack. And the state, through funding provided by the Governor’s Maine Jobs and Recovery Plan (MJRP), has made significant investments in affordable childcare and affordable housing, critical needs for all workers in Maine.

In addition, the ESC recommends the transportation and equity goals below for the state’s climate action plan. These goals are meant to achieve more equitable outcomes for priority populations and communities by addressing barriers to participation in, and access to, clean transportation opportunities and funding. For individuals and households, these barriers might include but are not limited to income, housing type (particularly for renters whose landlords may not have an incentive to install EV charging), people with limited physical mobility or without access to reliable transportation, and people who rely on limited public transportation. For communities, these barriers might include geographic isolation and sparsely populated rural areas, which make current public transportation options unsustainable, limited, or inconvenient, low-income communities with limited resources for investment in transportation infrastructure, and areas with higher exposure to transportation emissions (e.g., near urban centers, highways or trucking depots) or emissions from other sources, where vehicle electrification could contribute to reduction of overall burden.

The ESC recognizes that not all individuals in these groups face equal risks or vulnerabilities, and encourages state agencies, partners, and stakeholders to further assess opportunities to serve priority populations.

Goal #1: Increase EV ownership among low-to-moderate income (LMI) households, renters, and multifamily renters, and LMI households in rural areas.

Rural and low-income populations in Maine are often unable to access affordable and convenient public transportation, and affordable personal vehicles. Vehicles in rural areas tend to be older, less efficient, less reliable, and more expensive to operate than vehicles in urban areas.⁴³ Increasing ownership of high efficiency vehicles has the potential to reduce emissions and reduce a household’s spending on transportation, particularly given the recent volatility in, and increasingly high, fuel prices. However, the upfront costs of high efficiency vehicles can be cost-prohibitive for Maine drivers with low or moderate incomes. Programs that incentivize clean transportation should prioritize LMI people, especially those in rural areas.

⁴³ Source: https://digitalcommons.library.umaine.edu/mcspc_transport/3/

Actions underway include:

- EMT offers point-of-sale, instantaneous rebates for the purchase or lease of qualifying EVs. This includes enhanced rebates for LMI customers, as well as EV rebates for non-profit organizations providing services to low-income individuals and rebates for tribal governments.
- EMT also maintains a website to help Maine people learn about a wide variety of EV issues. The website provides educational videos and written guidebooks on topics such as buying used EVs in Maine,⁴⁴ how to charge an EV at home or on the road, where to find public EV chargers, how to compare the costs of owning an EV to a traditional car, available federal tax incentives, how to get enhanced rebates for LMI Maine people, and more.⁴⁵

Proposed next steps include:

- **Expand EV rebate opportunities and locations**, including (a) increasing the used vehicle EV rebate and (b) increasing the number of dealerships offering rebates in rural areas.
- **Engage with low-income drivers** to understand barriers to accessing existing vehicle rebate programs and navigation of forthcoming federal tax incentives.⁴⁶
- **Enhance financing options and decrease purchase costs for LMI drivers**, including through the assessment of (a) a loan-loss reserve⁴⁷ program for qualified, low-income customers buying high efficiency vehicles, zero-emission vehicles (ZEV), or plug-in hybrid EVs (PHEVs); (b) the feasibility of providing tax incentives for new and used electric and plug-in vehicles for qualified low-income vehicle customers. Consider future federal funding opportunities⁴⁸ to capitalize loan or other financing opportunities for LMI drivers.
- **Establish baseline data on EV vehicle availability, ability to purchase, and access to financing**, including (a) numbers of new and used electric vehicles purchased by LMI drivers; (b) the number of EV rebates accessed by LMI drivers by geography; (c) the distribution of dealerships offering EV rebates; (d) barriers to accessing rebate programs; (e) the number of LMI drivers with insufficient credit to access market-rate financing for new or used vehicle purchases; and (f) the relative cost impact of taxes levied on electric vehicle purchases by LMI customers.

Agencies and Partners: EMT, MaineDOT, GEO, GOPIF, BMV, Department of Tax

⁴⁴ Source: <https://www.efficiencymaine.com/docs/Used-EV-Shopping-Tips.pdf>

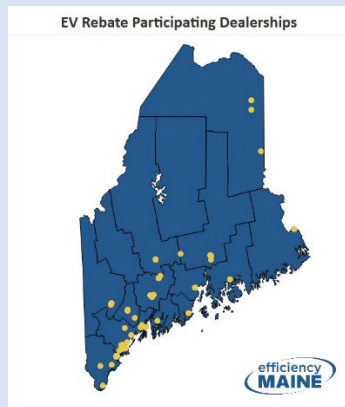
⁴⁵ Source: <https://www.efficiencymaine.com/electric-vehicle-resources/>

⁴⁶ The Inflation Reduction Act makes significant investments in electric vehicles, including through a federal tax rebate. See for more information: <https://pluginamerica.org/inflation-reduction-act-ira-ev-incentives-explained>

⁴⁷ The Maine Climate Council's Transportation Working Group recommended the development of a loan loss reserve (LLR) program in its initial recommendations to the climate council. In addition, University of Maine Professor Jonathan Rubin recently co-authored a peer-reviewed paper exploring credit enhancing mechanisms including loan-loss reserve. See: https://digitalcommons.library.umaine.edu/mcspc_transport/8/

⁴⁸ Including the Greenhouse Gas Reduction Fund, amongst others. See for more information: <https://www.epa.gov/inflation-reduction-act/greenhouse-gas-reduction-fund>

Figure 3: Map of Dealerships Participating in EMT's EV rebate program as of December 2022



Goal #2: Increase EV charging availability among LMI and rural drivers, renters, and multifamily residents

Access to reliable, convenient, and affordable charging is critical to EV usage. An estimated 80% of charging occurs at home,⁴⁹ and tenants of rental housing often lack access to charging infrastructure due to a lack of dedicated off-street parking, cost, or interest of landlords to install chargers.

Actions Underway include:

- The state's EV charging investment plan, which includes funds from the federal National Electric Vehicle Infrastructure Formula Program (NEVI) as well as other state and EMT funding, includes a focus on tenant occupied spaces, as well as charging locations in rural communities and at affordable housing locations. EMT's Fifth Triennial Plan⁵⁰ also includes this focus.
- In 2022, EMT ran a competitive solicitation for EV charging at multi-unit dwellings (MUDs). Through this solicitation, EMT provided grant funding for 24 plugs to five affordable housing developments in Portland and Biddeford to install EV chargers. Additionally, EMT offered generous incentives for the expansion of Level 2 (L2) EV charging in rural communities and forecasts adding 140 new L2 charging plugs through this initiative by the end of 2023.
- MaineHousing requires EV Readiness for new affordable housing construction.
- The PUC concluded a proceeding which adopted a range of new optional electric rates to support beneficial electrification, including bill savings for homes with high electric use, including those that have adopted electric vehicles — without shifting costs on to other ratepayers. The proceeding also provides new rates which enable electrification for transit agencies, supporting access to clean public transportation for Maine people who are unable, or choose not to, drive.

⁴⁹ Source: <https://www.energy.gov/energysaver/articles/ev-charging-home>

⁵⁰ Source: https://www.efficiencymaine.com/docs/Triennial-Plan-V_FY2023-2025.pdf

Proposed next steps include:

- **Expand EV charging network and locations**, including enhanced program strategies, rebates, or other funding opportunities for chargers in rental and multifamily properties, particularly for housing serving LMI residents. This may require additional engagement with landlords, to determine incentive and program structures that would encourage them to participate.
- **Establish baseline data** on the availability of, and public funding spent on, EV charging by housing type and geography, as well as the overall availability of funding for EV charging by housing type and geography, including a focus on rural communities.

Agencies and Partners: EMT, MaineDOT, GEO, GOPIF, MaineHousing

Goal #3: Expand access to affordable, efficient, and safe active, shared, and public transportation for LMI people, non-drivers, and other disadvantaged populations, particularly in rural areas (MWW Strategy A.3)

Shared and active transportation can help support increased public health and better mobility. Since the COVID-19 pandemic began, cities across the country have seen a decrease in use of shared transportation and increase in single occupant vehicle transportation.⁵¹

Actions Underway include:

- MaineDOT has taken several steps to increase access to shared and active transportation for Maine people and workers, including:
 - Relaunching GOMaine, a statewide travel resource program which matches up carpoolers, helps form vanpools, and rewards members for doing any sort of green commute, like carpooling, vanpooling, walking, biking, taking the bus, or teleworking. GOMaine has been expanded to provide connections to all modes of transportation throughout the state, providing a critical service for Mainers who do not drive.
 - Launching a workforce transportation pilot funding opportunity, seeking to expand access to reliable transportation, especially in rural Maine, to connect workers to employment opportunities. The first award made through this pilot was for a project offering free transportation for workers from nearby towns to Sunday River ski resort and other local businesses, supporting existing employees and reducing barriers to work for new employees. Additional awards are forthcoming.
 - Partnering with the Maine Department of Labor (DOL) and the Bicycling Coalition of Maine to launch an e-bike pilot to support people in recovery in Bangor with access to employment, appointments, and other daily needs. Participants in the program will be provided with a bike at no cost, and with training on the use and maintenance of the vehicle. Training will be provided in partnership with members of the local social service agency and individually with the participants through DOL.
 - Supporting an e-bike bikeshare program in Portland since late summer 2022, and, in partnership with Bicycle Coalition of Maine, developing a statewide library e-bike loan program pilot.
- MaineDOT is actively supporting the expansion, and electrification, of transit, including:

⁵¹ Solomonow, J. S.-K., Seth. (2020, June 14). Fear of Public Transit Got Ahead of the Evidence. The Atlantic. Source: <https://www.theatlantic.com/ideas/archive/2020/06/fear-transit-bad-cities/612979/>

- Funding a study on transit electrification for the eight major transit operators statewide and supporting the purchase of six electric buses in Greater Portland area and Biddeford/Saco and Old Orchard Beach.
- Purchasing one hybrid electric ferry, applying for federal funding to support a second, and committing to looking at hybrid and electric options for all future ferry replacements.
- Supporting several Greater Portland Council of Governments initiatives intend to improve coordination, effectiveness, and accessibility of the region's public transportation system. These include Transit Tomorrow, a 30-year strategic plan to enhance public transportation in the region; Transit Together, a study to identify opportunities for increased coordination among the region's seven transit providers; ongoing and planned vehicle and equipment purchases, including hybrid and electric vehicles; and planning and land acquisition for a new facility for Greater Portland METRO.
- MaineDOT is currently updating its Long-Range Transportation Plan, which ties together its strategic transit and active transportation plans to help achieve an equitable and multimodal transportation system serving the needs of all Maine people. As part of this work, MaineDOT will:
 - Establish cost estimates to maintain and expand the transit system, including high level estimates for passenger rail and ferries.
 - Establish costs estimates for improved active transportation infrastructure. This includes several policy recommendations to improve safety and accessibility, and incentives in project selection to ensure equity considerations and investments directly support disadvantaged populations.
 - Optimize active transportation and transit opportunities to consider first/last mile travel.
 - Inventory curb ramps on Maine's highway and bridge system, to provide improved data on accessibility.
 - Identify ways to improve the efficiency and effectiveness of Maine's public transportation system, with a particular focus on rural areas. This will include different approaches in different areas based on circumstances (e.g., fixed route service may be appropriate in denser, more urban areas, and on-demand service may be more appropriate in more rural areas), and the use of technology to improve access to, and efficiency of, public transportation.
 - Collect information on the types of trips Maine people currently take using transit and additional types of trips and locations they would like to be able to utilize, and baseline data on riders using shared rides and transit by geography.
- MaineDOT has taken several steps to improve infrastructure for shared and active transportation across Maine, including:
 - A new Village Partnership Initiative, working with more than 50 communities to visualize, plan, design, fund, and build transformative improvements to their villages and downtowns, and exploring ways to make investments in Maine's quintessential community centers.

- A new partnership program to help communities hire a licensed professional engineer and share in the cost of planning and design to assist communities in developing robust and successful applications for federal transportation funding.
- Revising the state's Complete Streets Policy, to incorporate results from the statewide Active Transportation Plan and focus on safety for all highway users, especially bicyclers and pedestrians. As part of this process, MaineDOT hosted community meetings with 23 communities with a history of pedestrian fatalities, to understand how best to fund safety projects. Proposed changes to the policy will result in considering more locations for pedestrian and bicycle improvements increasing safety and access.
- Training communities on crosswalk safety, helping ensure that crossings are safe and American Disability Act compliant and accessible. As part of this training, MaineDOT has provided rapid flashing beacons to each town.

Proposed next steps include:

- **Pilot innovative clean transit programs in disadvantaged communities.** Options may include expanding access to programs like GOMaine or developing first-mile/last-mile connections, rides-to-wellness, and recovery and job access rides pilot programs.
- **Develop and launch public educational campaigns** which communicate the benefits of, and address hesitancy to use, shared, public, and active transportation modes, including the health impacts of transportation choices, particularly for non-drivers.
- **Publish transit and active transportation baseline data** generated by the planning efforts above in a single accessible location for communities.

Agencies and Partners: MaineDOT

Tracking Progress toward Cleaner Transportation

MWW established the following indicators related to clean transportation: ⁵²

- Electric Vehicles on the road, Plug-in EVs, total

The ESC was tasked with recommending clear equity outcomes for proposed actions in *MWW*, monitoring progress, and making recommendations to ensure that programs and benefits reach the intended populations and communities. The following indicators and metrics build on the climate action plan's overall transportation metrics and can serve as progress indicators towards equitable access to, and distribution of, clean transportation benefits. The table below establishes:

- **Actions:** Summary of recommended actions. Please refer to text above for details on proposed actions.
- **Monitoring Metrics:** Designed to track progress over time, helping ensure that actions and programmatic recommendations reach the intended populations and communities.
- **Equity Outcome Metrics:** Assess equity in achievement of statewide climate goals. To be reported as outcomes of the state's climate plan.

⁵² See page 106-107: https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MaineWontWait_December2020.pdf

Table 4: Transportation Goals, Progress Indicators and Metrics

Goal #1: Increase EV ownership among low-to-moderate income households, renters, and multifamily residents		
Actions <ul style="list-style-type: none"> - Increase used EV rebates - Expand dealer network offering rebates - Engage with low-income drivers - Assess feasibility of loan-loss reserve program 	Monitoring Metrics <ul style="list-style-type: none"> - Geographic distribution⁵³ of EV rebates and ownership, by priority communities - Geographic distribution of dealers participating in rebate program 	Equity Outcome Metric(s) <ul style="list-style-type: none"> - Total # and % of EVs owned or leased by LMI households (proxy: rebates to LMI households)
Goal #2: Increase EV charging availability among LMI and renter households, rural drivers and multifamily		
Actions <ul style="list-style-type: none"> - Enhanced program or funding opportunities for rental housing, especially multi-unit and affordable housing - Enhanced program or funding opportunities for rural EV charging 	Monitoring Metrics <ul style="list-style-type: none"> - Geographic distribution⁵⁴ of MUD, non-residential and public charging stations, and funding (including proximity to affordable housing) 	Equity Outcome Metric(s) <ul style="list-style-type: none"> - Same as above
Goal #3: Expand access to affordable, efficient, and safe active, shared, and public transportation for disadvantaged populations, and for non-drivers.		
Actions <ul style="list-style-type: none"> - Innovative Clean Transit Pilots - Public education on shared rides and health - Provide access to transit and active transportation baseline data 	Monitoring Metrics <ul style="list-style-type: none"> - Use of shared, transit or active transportation, by location and rider characteristics 	Equity Outcome Metric(s) <ul style="list-style-type: none"> - Distribution of clean transit projects and spending by priority population and geography⁵⁵

Baseline Studies Needed

To inform agency and partner strategies, establish goals and a baseline for measuring progress, the ESC recommends the following baseline studies:

1. **Barriers to Clean Vehicle Purchase Baseline Study:** Distribution of EV rebates across incomes; of new/used vehicles purchased, by income level; credit score data and study for low-income customers seeking financing to determine if current financing mechanisms are sufficient; relative cost study on impact of taxes on vehicle purchase; further understanding of barriers to rebate access and EV purchase by low-income customers.

⁵³ Geographic distribution metrics could include counts, percentages, or per capita results in/among priority communities, or by county.

⁵⁴ Ibid.

⁵⁵ Ibid.

2. **Multifamily and Landlord EV charging baseline and barriers study:** Availability of, and funding spent on, EV charging by housing type and geography.

Strategy B: Modernize Maine's Buildings

In Maine, the heating, cooling, and lighting of buildings accounts for almost one-third of the state's greenhouse gas emissions. Nearly 60% of Maine's households use fuel oil as their primary energy source for home heating, a larger share than any other state and as compared to about four percent nationally.⁵⁶ And thousands of Maine residents rely on kerosene, a relatively niche fuel with a limited market, to heat their homes - with many in manufactured housing that is reliant on outdoor fuel tanks. In addition, Maine has some of the oldest housing stock in the country, with 23% of homes built before 1940.⁵⁷ With global, national, and regional factors driving high and volatile energy costs and limited fuel supplies — the price of kerosene alone reached historic highs, with some customers unable to find supply — paying for home heating will be a significant hardship for low-income households this winter. It has never been more urgent to help these households access energy efficient and affordable heating options, reduce energy costs, and address health problems stemming from unhealthy or inefficient housing — while reducing emissions.

To support energy efficient building practices and retrofits, *MWW* sets targets for heat pump installation, the pace of weatherization, and the adoption of energy-efficient building codes and increased building code training programs. It also recommends using lower carbon building materials, exploring options for a Renewable Heating Fuels Standard, and phasing out hydrofluorocarbons. The plan also calls for the state to promote clean energy strategies in publicly funded buildings, and improve grant and loan programs for efficiency and renewable energy programs in municipal, tribal, school, and public-housing projects and construction.

The ESC recommended actions to ensure that the benefits of building modernization and clean energy upgrades reach all Maine people, with an emphasis on renters.⁵⁸ State agencies are already implementing many of those recommendations:

- **Weatherization and Rebates for Low-Income Households:** Over the past year, funding opportunities have increased dramatically for low-income households. MaineHousing's heat pump program pays for the cost and installation of a heat pump for eligible Maine homeowners, including those eligible for the Home Energy Assistance Program (HEAP)⁵⁹ or Central Heating Improvement Program (CHIP) assistance payments. And, through EMT, LMI households are eligible to receive elevated rebates. For example, in 2022, low-income households could receive up to 90% of the project cost for insulation projects up to \$9,000. EMT has additionally expanded its eligibility for low-income incentives for efficiency contracting and heat pumps and offers a \$2,000 rebate for the first heat pump in an eligible low-income home. Since 2019, EMT

⁵⁶Source:

<https://www.eia.gov/state/print.php?sid=ME#:~:text=Three%2Dfifths%20of%20Maine's%20households,the%20largest%20share%20at%2027%25>

⁵⁷ Source: Winner, B., MacDonald, S., Smith, L., & Juillerat, J. 2018. See:

<https://link.springer.com/article/10.1007/s12053-019-09798-8>

⁵⁸ "The split incentive, in which the building owner pays for upgrades but the tenants pay the utility bills, thus reaping the rewards, is the most common commercial lease structure and has long stood in the way of deep energy retrofits in tenant-occupied commercial space." Source: <https://facilityexecutive.com/2021/02/the-time-is-now-to-finally-crack-the-split-incentive-barrier/>

⁵⁹ This is the same program known as the Low-Income Home Energy Assistance Program, or LIHEAP, at the federal level.

and MaineHousing have supported the installation of more than 80,000 heat pumps, of which more than 5,000 are in low-income households.

- **Energy Efficiency in Affordable Housing:** MaineHousing-financed larger-scale multifamily properties have long had energy efficiency standards that exceed statewide energy codes. MaineHousing will continue to lead by example and expects to introduce even stronger new standards for new construction, larger-scale, multifamily properties⁶⁰ In 2022, MaineHousing began requiring all new construction projects to install electrical service capacity and conduits for EV chargers and rooftop solar as well as mandating the use of electricity for heating, cooking, and domestic hot water in MaineHousing's smaller development programs, including the Rural Affordable Rental Housing Program,⁶¹ Affordable Housing Initiative for Maine Islands⁶² and Affordable Homeownership Program.⁶³

In addition, the ESC recommends the goals and actions below for inclusion in the state's climate action plan. These goals are meant to achieve more equitable outcomes for priority populations and communities by addressing barriers to accessing clean heating, sustainable and affordable housing, and energy bill assistance. Priority individuals and households include low-income households, for whom energy burden -- influenced by inefficient, fossil-based heating systems -- is disproportionately high; renters with low-incomes, who may not be able to choose cleaner heating technology due to living in a landlord-controlled property; residents of older mobile homes, for whom home safety improvement and weatherization assistance may not be available due to program restrictions; affordable housing residents, who stand to benefit among the most from cost saving efficiency retrofits; and recipients of HEAP, the Low Income Assistance Program (LIAP), and other energy benefit programs, for whom heat pump conversions and weatherization can decrease energy bills and, subsequently, reliance on state and federal energy subsidies. Priority communities include low income, rural, and disadvantaged communities, where there may be fewer weatherization contractors and/or code enforcement officials. Further, in this sector, workers in the weatherization and energy efficiency industries should be prioritized for training, particularly for federal weatherization program certification, due to the unique role they play in providing services to priority households and communities.

The ESC recognizes that not all individuals in these groups face equal risks or vulnerabilities, and encourages state agencies, partners, and stakeholders to further assess opportunities to serve priority populations.

Goal #1: Increase weatherization, home retrofits and heat pump installation for low-income households, renters, and in rural communities

Identifying people and communities in greatest need of adequate, safe, and healthy, and energy efficient housing and buildings across Maine is a starting point for equitable building improvements.

⁶⁰ Source: http://www.mainelegislature.org/legis/bills/display_ps.asp?id=1656&PID=1456&snum=130

⁶¹ Source: https://www.mainehousing.org/docs/default-source/development/program-guides/rural-affordable-rental-housing-program-guide.pdf?sfvrsn=32c08615_1

⁶² Source: https://www.mainehousing.org/docs/default-source/development/program-guides/2022-affordable-housing-initiative-for-maine-islands.pdf?sfvrsn=a0c18615_4

⁶³ Source: https://www.mainehousing.org/docs/default-source/development/program-guides/affordable-homeownership-program-guide.pdf?sfvrsn=66da8715_11

Individuals who live in unhealthy, inefficient housing are more likely to face health issues⁶⁴ and more likely to face income barriers to energy efficiency upgrades.⁶⁵ Older homes and mobile homes tend to be less energy efficient than newer homes;⁶⁶ across the United States, residents of mobile homes spent 70% more per square foot on energy than those living in site-built homes.⁶⁷ In addition, renters often lack the ability to upgrade the homes where they live. Finally, workforce shortages of federally certified contractors in Maine have resulted in challenges expending MaineHousing's annual weatherization budget, which delays much needed interventions in low-income homes.

Actions Underway Include:

- By mid-2023, MaineHousing, in partnership with DECD and the Governor's Office of Policy Innovation and the Future (GOPIF), will conduct an updated comprehensive housing assessment.⁶⁸ Last conducted in 2009, this information is essential as the state faces challenges with housing access, costs, and the age and maintenance of housing stock.⁶⁹ While current resources, such as MaineHousing's Affordability Indexes for Homeownership⁷⁰ and Rental properties⁷¹ and the Maine Development Foundation's *Measures of Growth* report,⁷² offer valuable insights into Maine's housing market and broader economic indicators, updated and localized information is necessary for expanding programs and services. The updated assessment will consider production goals, comparing Maine's current housing stock with the housing stock necessary to align with projections of economic and population growth and including both rental and homeownership markets, including for low- and moderate-income households, data on the frequency of use of short-term rentals as well as policy recommendations.

⁶⁴ "Elevated energy burdens have also been correlated with negative health outcomes, especially for children and the elderly, that may result from extreme temperatures in the home or dampness and mold." (Page 3) from Ross, L., Drehtobl, A., & Stickles, B. (2018). *The High Cost of Energy in Rural America: Household Energy Burdens and Opportunities for Energy Efficiency*. American Council for and Energy Efficient Economy.

<https://www.aceee.org/sites/default/files/publications/researchreports/u1806.pdf>

⁶⁵ "Rural communities have high concentrations of low-income households that experience high energy burdens and often cannot afford the upfront capital costs needed for energy efficiency improvements" (Page 4) Ross, L., Drehtobl, A., & Stickles, B. (2018). *The High Cost of Energy in Rural America: Household Energy Burdens and Opportunities for Energy Efficiency*. American Council for and Energy Efficient Economy.

<https://www.aceee.org/sites/default/files/publications/researchreports/u1806.pdf>

⁶⁶ NMR Group. (2015). *Maine Single-Family Residential Baseline Study*. Submitted to Efficiency Maine.

<https://www.efficiencymaine.com/docs/2015-Maine-Residential-Baseline-Study-Report-NMR.pdf>

⁶⁷ Ross, L., Drehtobl, A., & Stickles, B. (2018). *The High Cost of Energy in Rural America: Household Energy Burdens and Opportunities for Energy Efficiency*. American Council for and Energy Efficient Economy.

<https://www.aceee.org/sites/default/files/publications/researchreports/u1806.pdf>

⁶⁸ Source: https://www.mainehousing.org/docs/default-source/rfps/housing-production-goals-rfp---9.6.22.pdf?sfvrsn=8dc8315_1

⁶⁹ Source: <https://mainehousingcoalition.org/wp-content/uploads/2016/02/Housing-Affordability-in-Maine-Final.pdf>

⁷⁰ Dalton, M., Horrigan, H., & Nusser, S. (2009). *Housing Affordability in Maine: Taking Stock*. Housing Affordability Initiative at the MIT Center for Real Estate for the Maine Affordable Housing Coalition.

<https://mainehousingcoalition.org/wp-content/uploads/2016/02/Housing-Affordability-in-Maine-Final.pdf>

⁷¹ MaineHousing. 2020 Rental Housing Facts and Affordability Index for Maine [Rental Affordability Indexes].

<https://www.mainehousing.org/policy-research/housing-data/affordability-indexes>

⁷² Maine Development Foundation. (2021). 2021 Measures of Growth Report. <https://www.mdf.org/economic-policy-research/measures-of-growth-report/>

- MaineHousing is taking steps to increase and streamline access to weatherization services and health and safety retrofits to low-income households in Maine, including:
 - Existing criteria helps prioritize weatherization services to those with the highest needs first, based on household income, home energy costs, and household composition.
 - Adding two additional funding components to the Home Accessibility and Repair Program for Weatherization Readiness:
 - The Weatherization Readiness component will address structural and health and safety issues of homes that are in the queue to be weatherized. This funding will reduce the frequency of deferred homes that require other services, outside the scope of weatherization, before weatherization services can commence.
 - Households that receive services through this program and are eligible for MaineHousing's Weatherization Program will automatically receive an energy audit. If energy efficiencies are identified, the home will be required to be weatherized.
 - Providing funding for landlords who participate in the Housing Choice Voucher Program⁷³ to complete health and safety repairs that may be barriers to weatherization or retrofit.
 - Expanding current weatherization programs to support multifamily buildings containing 5 or more units, increasing weatherization access for more tenants.
- In its 5th Triennial Plan, EMT included several initiatives for affordable multi-unit dwellings.⁷⁴ These include:
 - Increased efforts to target landlords and affordable housing providers, who hold the authority to make key purchasing decisions that impact the energy use of tenants;
 - Time-limited enhanced incentives to affordable housing owners, including affordable housing authorities and private landlords, through its Commercial & Industrial Program; and
 - Funding to develop EV charging at multi-unit dwellings.
- Several municipalities are providing additional incentives for installation of heat pumps in low-income households. These incentives are designed to be used in conjunction with current rebates from EMT and the state. Some examples include:
 - Sustainable Auburn's Matching Rebate program,⁷⁵ which provides up to \$1000 in match for any EMT at-home rebate (excluding vehicles);
 - Residents of towns in Eastern Maine Electric Cooperative's service area can access an exclusive, limited-time heat pump rebate of \$250 from Eastern Maine Electric;⁷⁶
 - The City of Bangor Heat Pump & Weatherization Assistance Grants,⁷⁷ which provides funding of up to \$2,000 to single family homes for heat pump and weatherization projects through the City's Community Development Block grant program;

⁷³ Source: https://www.mainehousing.org/docs/default-source/rental/hcv-landlord-resources.pdf?sfvrsn=61418815_2

⁷⁴ Source: https://www.energymaine.com/docs/Triennial-Plan-V_FY2023-2025.pdf

⁷⁵ Source: <https://www.auburnmaine.gov/pages/neighborhood/matching-rebates>

⁷⁶ Source: <https://www.emec.com/rebate>

⁷⁷ Source: <https://bangormaine.gov/heatpump>

- Presque Isle’s new Landlord Loan Program, which will offer low-interest, four- to ten-year loans, to landlords for energy efficiency and safety upgrades;⁷⁸ and
- Portland and South Portland, in partnership with ReVision Energy, launched their Electrify Everything! Program, which provides incentives for electrification projects. These incentives stack with other existing state incentives.
 - In Portland, residents can receive incentives for solar installation, air source heat pumps, heat pump water heaters, and home EV chargers for a maximum of \$1,250 per address. Additional incentives are eligible for solar for income-eligible residents.
 - In South Portland, income qualified residents can receive incentive for air source heat pumps, heat pump water heaters, air sealing with an energy assessment, insulation, and EVs. Additionally, South Portland provides incentives for e-bikes and electric lawn maintenance equipment.
- MaineHousing will receive weatherization funding as part of the Bipartisan Infrastructure Law, which will provide \$31,200,000 over five years. The agency awaits final approval on a spending plan, but its proposal included plans to develop training opportunities and incentive programs for new workers entering the weatherization industry, and to assist existing weatherization contractors to achieve federally required certifications. In addition, it has proposed the creation of a new weatherization training center in Maine.

Proposed Next Steps Include:

- **Expand the comprehensive housing assessment to consider household and housing characteristics** including health and safety, energy sources and cost burdens, and occupant characteristics and vulnerabilities (e.g., health vulnerabilities, linguistic isolation, demographics etc.).
- **Continue to coordinate weatherization, heating system and building upgrade resources for the most vulnerable households**, including, if needed, pre-weatherization and structural repairs to enable weatherization or heating system upgrades. If weatherization is not possible, assess alternatives for occupants to access safe and efficient housing and energy options.
- **Assess and address remaining barriers to energy efficiency and clean energy improvements in rental housing, particularly in rural and low-income communities.** Work with service providers and partners to identify barriers, best practices, and lessons from current programs, including whether current programs are reaching target populations. Barriers could include but are not limited to costs and financing, structural or pre-weatherization barriers, contractors or workforce availability, and landlord awareness or interest in energy solutions, programs, and incentives. Actions could include working with multifamily lenders to identify energy efficiency or clean energy upgrade candidates at time of refinancing and provide financing options or programs for these upgrades.
- **Continue to prioritize HEAP-enrolled and HEAP-eligible households for weatherization and heating system conversions** including targeted outreach and education and assistance finding providers and services. This could include improved data security and database integration among social service, energy, and housing programs to allow energy programs to pinpoint eligible low-income renters for weatherization or heat pump conversion.

⁷⁸ Source: <https://www.bangordailynews.com/2022/08/31/news/aroostook/presque-isles-landlord-loan-program-joam40zk0w/>

Agencies and Partners: MaineHousing, EMT, DHHS, GEO, GOPIF

Goal #2: Increase enrollment in energy bill assistance among income-eligible households

Energy burden refers to the amount of household income spent on energy expenditures. In Maine, low-income households spend, on average, 24% of their income on energy, as compared to 4% in moderate- and high-income households.⁷⁹ While programs and incentives for weatherization, efficient heating and cooling, and building standards, and the clean energy transition, are designed to reduce energy burden and benefit low-income households in the long-term, multiple barriers and intersecting vulnerabilities may delay uptake of these programs, preventing households with low-incomes from realizing reductions in energy costs from Maine's building and energy improvements immediately.

Because of this, energy bill assistance, including HEAP and LIAP, is essential for many families to maintain heat and electricity through variable and rising energy costs. However, historically only an estimated 40% of eligible households applied and received funding for these programs. With rising energy costs statewide, driven by global fossil fuel markets, an equitable transition of Maine's buildings and energy sources requires *both* improving access to weatherization services and enrollment in assistance programs.

Actions Underway Include:

- In 2022, the Public Utilities Commission expanded the Low-Income Assistance Program (LIAP), which adds credits to the electric bills of low-income customers, and customers who participate in a DHHS means-tested program who are at or below 75% of the Federal poverty line, doubling the number of customers eligible for the program and doubling funding for the program from \$7.8 to \$15 million. Approximately 62,500 customers are eligible for LIAP this year.
- Also in 2022, DHHS provided one-time assistance with heating costs for Mainers with low incomes, complementing Governor Mills' Emergency Winter Energy Relief Plan. Assistance was made available to approximately 13,000 households with adults over the age of 65 who had received Supplemental Nutrition Assistance Program (SNAP) benefits. This one-time assistance followed separate rounds of heating cost relief for families participating in other social benefit programs as well as for low-income families with children. These benefits are critical to families facing unusually high and volatile energy costs.
- Maine agencies are collaborating to streamline access to heating and energy assistance for Maine people with low incomes, including by:
 - Initiating online applications for heating assistance from MaineHousing;
 - Investigating opportunities to establish a single application across MaineHousing programs;
 - Adopting automatic eligibility for HEAP for households who already receive other social service benefits, including Temporary Assistance for Needy Families (TANF) and SNAP; and
 - Streamlining enrollment in HEAP by improving data sharing between DHHS and MaineHousing. This collaboration is ongoing and depends on both technology and budget capacity.

⁷⁹ Sources: <https://www.energy.gov/eere/slsc/maps/lead-tool> and <https://www.maine.gov/meopa/reports-and-testimony>

- EMT offers low- and no-cost energy upgrades and other enhanced rebates for eligible low- and moderate-income Mainers.⁸⁰ These rebates are higher than the standard incentives, with the highest amounts for those who are low-income. Qualified low-income households include those who currently receive service through HEAP, SNAP, TANF, or MaineCare, or who have a tax assessed valuation of land/buildings at or under average county values.

Proposed Next Steps Include:

- **Identify and address barriers to accessing energy bill assistance (e.g., HEAP and LIAP) among eligible households.** Quantify gaps between eligible and enrolled households, characteristics of eligible households who are not enrolled, and potential barriers (including but not limited to: program or administrative processes, number of qualified partners, information, linguistic isolation, literacy, socio-cultural hesitancy). Develop an outreach and implementation plan to increase enrollment in energy bill assistance for those low-income households with the highest energy burden, including automatic enrollment in LIAP and streamlined eligibility for HEAP for individuals qualifying for other social service programs.
- **Streamline process for HEAP recipients to transfer payments between fuel sources,** particularly following a heat pump conversion. This might include providing materials to heat pump installers to help educate customers about payment transfers or developing clear marketing materials to help assure customers that they won't lose their energy benefits.

Agencies and Partners: DHHS, EMT, PUC, OPA, and MaineHousing

Goal #3: Incorporate clean energy and energy efficient building practices and equipment in affordable housing and housing in rural and disadvantaged communities

While energy efficiency standards are part of statewide Maine building codes for new construction and renovation, these codes are not systematically applied or enforced, and enforcement is not required in smaller communities (<4,000 people).⁸¹ Further, applying new codes requires changes to decades-long design and building practices across Maine's home contractor community. It is important to extend access to training about new codes and standards to all building trades and professionals involved in design specifications, construction, and municipal code enforcement, to facilitate adoption of and compliance with increased energy efficiency standards across new construction.

Actions Underway Include:

- EMT is supporting the construction of two new affordable housing projects in FY22. These projects have agreed to modify their baseline construction standards and build to Passive House standards. EMT will gain a better understanding of actual energy use after the builds are complete.
- Over the past year, EMT provided a series of subsidized trainings on the new building energy code. Through their "Introduction to the IECC" workshop series and six subsequent workshops

⁸⁰ Eligible moderate-income households include those with an Adjusted Gross Income below \$70,000 for an individual filing as single, head of household or married filing separately, or \$100,000 if married filing jointly or individual filing as a qualifying widower. See: <https://www.efficiencymaine.com/income-based-eligibility-verification/>

⁸¹ See Chapter 1 of MUBEC rules and laws: <https://www.maine.gov/dps/fmo/building-codes/mubec-rules>

on best practices for the residential and commercial codes, EMT was able to train 765 code enforcement officers and contractors.

- In its first round of funding, the Clean Energy Partnership, which was established in 2022 to advance Maine's clean energy, economic development, and workforce goal, supported an expanded Code Builder Training for energy-efficient building techniques, which will implement trainings across the state to upskill current energy-efficiency workers and those entering the space from the traditional building trades.
- In December 2022, MaineHousing awarded a new contract to Genesis Fund to pilot several technical assistance initiatives that will help Maine cities and towns, regional planning groups, and new developers in their efforts to create more affordable rental housing.⁸²

Proposed next steps include:

- **Strengthen building code education in small and rural communities**, by providing additional resources and training for code education, particularly for components of the code related to energy efficiency and among code enforcement officers and building professionals in smaller and rural communities. Resources may include an increase in the format, schedule, and outreach about training opportunities and potentially offering stipends and/or travel assistance for participants from small and rural communities if virtual attendance is not an option. In addition, coordinating resources for interlocal or contractual agreements or Third-Party Inspectors⁸³ may be helpful for code enforcement in small and rural communities. This includes competing for new federal funds available for code engagement from the U.S. Department of Energy.
- **Expand project planning and financial assistance for clean energy in affordable housing**. To complement sustainable affordable housing requirements for publicly funded affordable housing, expand educational, project planning and financing options for clean energy and energy efficiency solutions (solar, heat pumps, EV charging, weatherization) among community leaders, housing advocates and residents as well as developers, builders, and code enforcement officials.

Agencies and Partners: MaineHousing, Office of the State Fire Marshal/MUBEC, EMT, GEO, GOPIF

Tracking Progress in Buildings and Energy Efficiency

MWW established the following indicators related to buildings and energy efficiency:⁸⁴

- Energy saved via ongoing efficiency measures
 - Newly weatherized households
- Heat-pump installations total
 - Number of households with retrofit heat pumps
 - Number of households with whole-house heat pumps

⁸² Source: <https://www.mainehousing.org/news/news-detail/2022/12/05/the-genesis-fund-wins-contract-to-expand-affordable-housing>

⁸³ Source: <https://legislature.maine.gov/statutes/25/title25sec2373.html>

⁸⁴ See page 106-107: https://www.maine.gov/future/sites/maine.gov/future/files/inline-files/MaineWontWait_December2020.pdf

The ESC was tasked with recommending clear equity outcomes for proposed actions in *MWW*, monitoring progress, and making recommendations to ensure that programs and benefits reach the intended populations and communities. The following indicators and metrics build on the climate action plan’s overall clean buildings metrics and can serve as progress indicators towards equitable access to, and distribution of, benefits associated with the modernization of Maine’s buildings. Table 5 establishes:

- **Actions:** Summary of recommended actions. Please refer to text above for details on proposed actions.
- **Monitoring Metrics:** Designed to track progress over time, helping ensure that actions and programmatic recommendations reach the intended populations and communities.
- **Equity Outcome Metrics:** Assess equity in achievement of statewide climate goals. To be reported as outcomes of the state’s climate plan.

Table 5: Buildings and Housing Goals, Progress Indicators and Metrics

Goal #1: Increase weatherization, home retrofits and heat pump installation low-income households, renters, and rural communities		
Actions	Monitoring Metrics	Equity Outcome Metric(s)
<ul style="list-style-type: none"> - Expand the housing assessment underway to further consider household and housing characteristics - Identify people and communities with pre-weatherization, weatherization and retrofit needs - Assess and address remaining barriers to energy efficiency and clean energy improvements in rental housing - Prioritize HEAP enrolled and HEAP-eligible households for weatherization and heating system conversions 	<ul style="list-style-type: none"> - Housing assessment study (ongoing) among low-income households, renters, multifamily homes, older and health-vulnerable people, and priority communities - Low-income energy efficiency spending vs. low-income population 	<ul style="list-style-type: none"> - Weatherization, energy efficiency projects, and heat pumps (# and %) in low-income households - # of % weatherization projects among energy bill assistance recipients
Goal #2: Increase enrollment in energy bill assistance among income-eligible households		
Actions	Monitoring Metrics	Equity Outcome Metric(s)
<ul style="list-style-type: none"> - Identify and address barriers to accessing energy bill assistance - Streamline ability to transfer HEAP between fuel sources 	<ul style="list-style-type: none"> - # and % of income-qualified households enrolled in energy bill assistance - Gap between eligibility and enrollment in energy assistance (# and characteristics of non-enrolled eligible households) 	<ul style="list-style-type: none"> - Energy cost burden (% of income) among households eligible for fuel assistance
Goal #3: Incorporate clean energy and energy efficient building practices and equipment in affordable housing and housing in rural and disadvantaged communities		

Actions	Monitoring Metrics	Equity Outcome Metric(s)
<ul style="list-style-type: none"> - Expand building codes outreach, training options and funding in small and rural communities - Expand project planning and financial education for developers, builders, community hosts and advocates of affordable housing 	<ul style="list-style-type: none"> - Number, location, and attendees in state Building Codes training (including county/region, town size, and job title) 	<ul style="list-style-type: none"> - # and % of affordable housing units built or renovated with clean or efficient energy technologies

Baseline Studies Needed

To inform agency and partner strategies, establish goals and identify a baseline for measuring progress, the ESC identified the need for the following baseline studies:

1. **Expanded Comprehensive Housing Assessment** including the following characteristics, with a statistically significant sample of rental units, affordable housing, mobile homes, and rural housing:

- a. **Building conditions and needs:** Structural and envelope conditions, health and safety risks related to building structure or envelope;
- b. **Energy sources and needs:** Heating and water heating fuels, system, age, and upgrade needs; health or safety risks related to heating systems;
- c. **Geography:** Collect and report findings by county, urban/rural location, low-income communities, disadvantaged communities, tribal/indigenous areas; and
- d. **Occupant and Owner characteristics:** Collect and report findings by own/rent status, building type (single-family, multi-family, mobile homes), affordable housing (market rate, subsidized), income level, demographics (age, household size), and (if possible) health vulnerabilities and language needs.

This baseline data may be partially collected by MaineHousing in their forthcoming Housing Supply Needs Assessment (which will assess housing stock including quality) and the Governor's Energy Office (comprehensive assessment of energy burden in Maine), but the above scope of work is broader and more comprehensive.

2. **Rental housing Barriers & Opportunities study** — Identify remaining barriers to rental housing efficiency and energy retrofits, including:
 - a. **Non-price barriers:** Awareness and interest of building or energy retrofit options, rebate awareness, contractor or workforce needs/shortages, time/capacity constraints, etc.;
 - b. **Cost or financial barriers:** Interest and availability in loans or financing, credit barriers;
 - c. **Rental housing characteristics:** Collect and report findings by housing type (single-family, multi-family, mobile/manufactured), affordability level (market rate, affordable market, affordable subsidized), landlord type (small/family vs. corporate or public); and
 - d. **Geography:** Differentiate findings for rural vs. urban areas, region of state.

Strategy C: Carbon Emissions in Clean Energy and Industrial Sectors

Maine has ambitious renewable energy requirements of 80% renewable energy by 2030, and a goal of 100% renewable electricity by 2050. The state's transition to clean energy must ensure affordability and reliability and ensure that renewable power is accessible for all Mainers.

MWW recommends setting targets for offshore wind, distributed generation, and energy storage, to ensure adequate affordable clean-energy supply to meet our 100% renewable energy goal. The plan notes that renewable energy sources can provide energy at a lower cost than or comparable to non-renewable sources. As renewable energy technology continues to advance, its cost is expected to further decrease, ensuring lower and more stable energy costs for Maine's families and businesses, and creating economic opportunity for the state and workers. To effectively manage the modernization of Maine's grid, including increased use of electricity to heat homes and power electric vehicles, *MWW* recommends a comprehensive stakeholder process to examine this power sector transition, and ensure the state can meet its greenhouse gas emission and other climate goals, and help ensure the state's competitiveness. The plan also recommends the creation of an Industrial Task Force to partner with industry to accelerate industrial emissions reductions and encourages the advancement of high-efficient combined heat and power facilities.

The ESC recommended additional actions to ensure an equitable, affordable, and reliable clean energy future for Maine. State agencies are already implementing many of those recommendations:

- **Renewable energy decommissioning:** As part of project permitting, solar and onshore wind projects are required to file a decommissioning plan with the Maine Department of Environmental Protection (DEP). In addition, Maine and other states have laws regulating battery disposal and recycling; states are working collaboratively with the federal government to identify opportunities and standards for battery secondary markets and sustainable recycling. Chapter 400 of DEP standards requires consideration of environmental justice communities in the expansion of existing, or siting of new, waste facilities, providing additional access and recourse for disadvantaged communities concerned with waste disposal in Maine.
- **Planning and Technical Assistance for Communities:** The Community Resilience Partnership (CRP) provides opportunities for communities to access planning or technical support for the siting of community-owned or distributed renewable energy resources.
- **Setting Clean Energy Targets:** Since the publication of *MWW*, the state has established a target for energy storage,⁸⁵ set a goal for distributed generation development,⁸⁶ and established a stakeholder process to identify priorities for grid planning.⁸⁷ These actions support the state's ambitious transition to lower cost, clean energy solutions.

In addition, the ESC recommends the goals and actions below for inclusion in the state's climate action plan. These goals are meant to achieve more equitable outcomes for priority populations and communities by addressing barriers to participation in, and access to, affordable clean energy projects.

⁸⁵ see 35-A MRS section 3145: <https://www.mainelegislature.org/legis/statutes/35-A/title35-Asec3145.html>

⁸⁶ see 35-A MRS section 3209-A (7): <https://www.mainelegislature.org/legis/statutes/35-a/title35-Asec3209-A.html>

⁸⁷ See Public Law 2021, section 702: https://legislature.maine.gov/legis/bills/display_ps.asp?LD=1959&snum=130

They are also meant to provide meaningful opportunities for these populations and communities to participate in decision making about Maine’s clean energy future. Priority individuals and households include low-income households, renters (particularly those whose landlords may not have an incentive to pursue clean energy), and other individuals facing high energy burdens for whom less-expensive renewable energy projects might have the greatest benefit. Priority communities include low income, rural, disadvantaged, and frontline communities, for whom limited planning and financial resources, as well as disproportionate climate burden, are barriers to achieving equitable clean energy outcomes. Finally, natural resource industry and other small businesses are prioritized for access to clean energy opportunities, due to their unique exposure to climate risks and their lack of resources to access clean energy solutions.

The ESC recognizes that not all individuals in these groups face equal risks or vulnerabilities, and encourages state agencies, partners, and stakeholders to further assess opportunities to serve priority populations.

Goal 1: Increase access to clean energy projects or benefits which reduce energy burden for vulnerable households and communities, including LMI households, renters, and other disadvantaged communities

Energy burden refers to how much a household spends on energy as a percentage of income. In Maine, low-income households spend up to 24% of their income on energy, compared to 4-6% in moderate- and high-income households.⁸⁸ This results in less money for other essential needs, such as food, transportation, and healthcare. Many clean energy projects have the potential to reduce energy costs for all of Maine, including low-income households and disadvantaged communities, while improving reliability of service and reducing greenhouse gases (GHGs). However, disadvantaged communities and other priority populations may face barriers accessing clean energy projects or benefits, including lack of financial capital, awareness about project plans or programs, and ability to participate in decision making.

Actions underway include:

- The GEO convened a Distributed Generation stakeholder group, which produced a report that, among other items, considered best practices for incorporating equity into community solar and other community-owned distributed energy programs.
- The GEO facilitated the involvement of Central Maine Power and Versant Power in research conducted by Lawrence Berkeley National Laboratory (LBNL)⁸⁹ to explore sociodemographic characteristics of residential solar adopters in Maine, marking Maine's inclusion for the first time in the national research effort. Interim results are available,⁹⁰ with additional data expected in early 2023.
- The PUC is collaborating with LBNL to evaluate best practices in equitable energy decision making, including rate design, to implement equity and affordability into Maine’s rate design and energy decision-making process.

⁸⁸ Source: <https://www.maine.gov/meopa/sites/maine.gov.meopa/files/inline-files/Maine%20Low%20Income%20Energy%20Burden%20Study%20June%202019.pdf>

⁸⁹ Source: <https://emp.lbl.gov/solar-demographics-tool>

⁹⁰ Source: https://eta-publications.lbl.gov/sites/default/files/solar-adopter_income_trends_nov_2022.pdf

- EMT offers below-market interest rates on loans for home energy improvements.⁹¹
- EMT recently established a Property Assessed Clean Energy (PACE) program for commercial entities in Maine. PACE programs allow a property owner to finance the up-front cost of energy or other eligible improvements on a property and then pay the costs back over time through a voluntary assessment tied to the property, not the property or business owner. PACE enhances financing for a wide variety of commercial property owners, including landlords and small businesses.

Proposed Next Steps include:

- **Conduct a comprehensive assessment of energy burden in Maine** to assess energy burden for low-income households, rural and disadvantaged communities, and for occupants of affordable housing. The study should identify communities and individuals experiencing the highest energy burden, and interventions to reduce that burden, including the role of distributed generation.
- **Increase LMI household enrollment in affordable community solar⁹² projects.** Require or incentivize community solar developers to enroll and serve LMI and other disadvantaged households, such as renters. This could include a minimum requirement for LMI household enrollment or service, an incentive to serve greater shares of LMI households, or automatic enrollment (“opt-out”) in lower cost subscription-based renewable energy projects.
- **Develop a clean energy outreach and navigator program for households, businesses, and communities.** Provide technical assistance to small and disadvantaged communities, especially those with little/no clean or renewable energy assets, as well as LMI, renter, linguistically isolated, or other priority populations. Improve and coordinate outreach, education and enrollment processes in community and distributed energy, including solar, wind or battery storage.
- **Expand financing options for clean energy and energy efficiency projects serving low-income households and affordable rental properties, climate or economically vulnerable natural resource industries and small businesses.** This could include expanding outreach about, or access to, PACE, tariffed on-bill financing, or energy-as-a-service opportunities, where the customer pays for energy efficiency using utility bill savings, as well as developing new financing opportunities through Efficiency Maine Trust and other “green bank” financing entities.

Agencies and Partners: GEO, PUC, OPA, MaineHousing, EMT

Goal 2: Ensure fair costs and benefits to disadvantaged people, communities, and industries from large-scale renewable energy and energy infrastructure projects

Siting of large-scale land-based renewable energy projects can present opportunities and challenges for communities which host them.⁹³ Nationally, utility scale solar and wind projects tend to be sited in areas with relatively lower income levels, similar to fossil fuel plants; in the case of wind, project siting skews toward low-income levels even when controlling for other factors such as resource intensity and access to open land areas.⁹⁴ A study on the siting of wind turbines in Michigan found that “residents who

⁹¹ Source: <https://www.efficiencymaine.com/at-home/energy-loans/>

⁹² Community solar refers to local solar facilities shared by multiple community subscribers who receive credit on their electricity bills for their share of the power produced.

⁹³ See Appendix 2 for recommendation related to Offshore Wind.

⁹⁴ Source: <https://www.tandfonline.com/doi/abs/10.1080/1523908X.2022.2099365?src=&journalCode=cjoe20>

perceived a fair planning process tended to perceive greater benefits of wind turbines, job creation, and revenues for landowners specifically, while residents who perceived an unfair process perceived significantly greater negative impacts.”⁹⁵ When planned with attention to equity, large-scale renewable energy and infrastructure projects have the potential to benefit all Maine people, and to deliver meaningful local benefits to communities who host them.

Actions Underway Include:

- In recent large scale renewable energy procurements, the PUC has been directed to include consideration of project benefits to ratepayers (statewide) and local economic benefits. In northern Maine, Public Law 2021, Chapter 380 requires the commission to “promote energy equity with particular consideration given to the economic circumstances and opportunities in the state's socially vulnerable counties and communities.”⁹⁶
- A new law passed in 2022 directs the PUC to investigate opportunities to provide additional and advanced access to intervenor funding for environmental justice populations. Intervenor funding provides necessary financial support to organizations and communities to participate in PUC adjudicatory processes, including those related to large scale renewable procurement.⁹⁷
- State law requires the negotiation of project labor agreement associated with the development of a floating offshore wind research array.⁹⁸
- State law requires community benefits for wind energy projects greater than 100kW in size.⁹⁹
- The Agricultural Solar Stakeholder Group, convened by DACF and the GEO, released a report to help ensure responsible siting of solar energy on agricultural lands.¹⁰⁰ This report recommended the creation of a publicly-accessible database of key characteristics related to approved and constructed renewable energy projects, including solar projects; as well as the development of additional technical assistance capacity and financial support for municipalities, councils of governments, or other networks to help municipalities consider responsible solar siting. These two recommendations increase the ability of priority communities to participate fully in renewable energy siting decisions.
- As part of the permitting process at DEP, large scale renewable energy projects which occupy more than 20 acres trigger requirements for developers to conduct a public information meeting prior to submitting a siting permit application. The rule requires that the notice of the meeting be sent to property abutters of the proposed project, as well as published in the

⁹⁵ Mills, S. B., Bessette, D., & Smith, H. (2019). Exploring landowners’ post-construction changes in perceptions of wind energy in Michigan. *Land Use Policy*, 82, 754–762. <https://doi.org/10.1016/j.landusepol.2019.01.010>

⁹⁶ For the purposes of this paragraph, “socially vulnerable counties and communities” means those counties and communities in the State containing populations that are disproportionately burdened by existing social inequities or lack the capacity to withstand new or worsening burdens. See:

https://mainelegislature.org/legis/bills/display_ps.asp?PID=1456&snum=130&paper=&paperId=I&Id=1710

⁹⁷ Source: <http://www.mainelegislature.org/legis/bills/getPDF.asp?paper=HP1500&item=6&snum=130>

⁹⁸ Public Law 2021, chapter 327 See:

<https://legislature.maine.gov/doc/7177#:~:text=Public%20Law%202021%2C%20chapter%20327,related%20to%20the%20deployment%20of>

⁹⁹ 12MRSA §685-B, see: <https://www.mainelegislature.org/legis/statutes/12/title12sec685-B.html>

¹⁰⁰ Source: https://www.maine.gov/energy/sites/maine.gov.energy/files/inline-files/FINAL%20Report%20of%20the%20Agricultural%20Solar%20Stakeholder%20Group_Jan%202022%20with%20Appendices.pdf

newspaper. DEP is currently revisiting publication notification and frequency, to assess whether newspaper or other media sources are most effective.

- DEP is developing an online portal to allow community members to see all pending permits, decisions, opportunities for comment, and other documentation related to all projects that the DEP permits, including renewable energy projects.
- DEP is working with other states and the US Department of Energy to identify opportunities for regional battery and solar panel recycling facilities.

Proposed Next Steps Include:

- **Develop formal mechanisms to consider and involve disadvantaged communities in siting large-scale renewables and energy infrastructure improvements in their communities.** The state should consider the differential impacts and benefits of large-scale renewable energy siting and transmission and distribution projects on disadvantaged communities. This could include (a) adopting additional outreach requirements for developers (e.g., to linguistically isolated, historically disadvantaged or under-represented people and communities) and (b) developing guidance to require consideration of equity in project siting to ensure impacts and benefits (environmental, economic, transportation, cultural or otherwise) are equitably distributed.
- **Develop guidance to assist communities and municipalities in determining host community benefits.** Guidance should include community input to identify and deliver community-identified meaningful benefits from large-scale renewable projects (e.g., access to jobs, local tax revenue or payments, energy discounts or other benefits identified by community).

Agencies and Partners: PUC, DEP, GEO, OPA

Tracking Progress in Clean Energy and Industrial Sectors

MWW established the following indicators related to clean energy and industrial sectors:¹⁰¹

- Progress toward 80% renewable energy by 2030
- Energy saved via ongoing efficiency measures

The ESC was tasked with recommending clear equity outcomes for proposed actions in *MWW*, monitoring progress, and making recommendations to ensure that programs and benefits reach the intended populations and communities. The following indicators and metrics build on the climate action plan's overall clean energy metrics and can serve as progress indicators towards equitable access to, and distribution of, climate and clean energy benefits. Table 6 establishes:

- **Actions:** Summary of recommended actions. Please refer to text above for details on proposed actions.
- **Monitoring Metrics:** Designed to track progress over time, helping ensure that actions and programmatic recommendations reach the intended populations and communities.
- **Equity Outcome Metrics:** Assess equity in achievement of statewide climate goals. To be reported as outcomes of the state's climate plan.

¹⁰¹ See page 106-107: https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MaineWontWait_December2020.pdf

Table 6: Clean Energy Goals, Progress Indicators and Metrics

Goal #1: Increase access to clean energy projects or benefits which reduce energy burden for vulnerable households and communities		
Actions <ul style="list-style-type: none"> - Conduct a comprehensive assessment of energy burden in Maine - Increase LMI household access to community solar projects - Develop a clean energy navigator and outreach program - Expand financing options for clean energy and energy efficiency serving low-income households and affordable rental properties, climate or economically vulnerable natural resource industries and small businesses 	Monitoring Metrics <ul style="list-style-type: none"> - # and % of low-income, moderate-income households enrolled in community solar projects or benefitted by renewable energy projects - \$ and % spent by Clean Energy Accelerator and other state-sponsored clean energy and energy efficiency financing mechanisms, by priority population 	Equity Outcome Metric(s) <ul style="list-style-type: none"> - Energy cost burden¹⁰² (\$ as % of income) among low-income households (longer-term: among renters, and in priority communities)
Goal #2: Ensure fair costs and benefits to disadvantaged people, communities, and industries from large-scale renewable energy and energy infrastructure projects		
Actions <ul style="list-style-type: none"> - Develop mechanisms to consider disadvantaged communities in siting large-scale renewables and energy infrastructure improvements - Develop guidance to assist communities and municipalities in determining host community benefits 	Monitoring Metrics <ul style="list-style-type: none"> - # and % of state renewable energy, grid reliability or infrastructure decision processes that consider and involve disadvantaged communities 	Equity Outcome Metric(s) N/A

Baseline Studies Needed

To inform agency and partner strategies, establish goals and a baseline for measuring progress, the ESC and agencies identified the following baseline studies:

1. **Energy Baseline Study** covering fuel uses, costs, reliability and burdens in Maine's homes and businesses. This study could be conducted as part of, or alongside, the Comprehensive Housing Assessment recommended in Strategy B. Recommended topics to cover include:

¹⁰² Energy Cost Burden is a cross-sector equity outcome metric, included in this Strategy and in Strategy B: Modernizing Maine Buildings. Energy cost burden reflects the combined impact of state and utility renewable energy investments, utility rate design and policy, energy efficiency, housing construction and quality, and energy bill assistance.

- a. **Energy Sources and Uses**, including fuels (heating and water heating fuel; industrial/process uses), renewable energy (on-site or subscription models), and consideration of metrics like Energy Use Intensity
- b. **Energy Service and Costs**, including utility and fuel service providers, rates, seasonal electricity and heating costs, energy cost burden, and energy cost variability
- c. **Reliability**, including outages and shut offs, and proximity to climate or otherwise vulnerable infrastructure

Sample sizes should be sufficient to aggregate results by:

- a. Geography: county, for rural or remote areas, among low-income or disadvantaged communities, and tribal or indigenous communities
- b. Household and occupant characteristics: LMI, renters, older adults (or other vulnerable populations), home type (mobile home, multifamily, single-family)
- c. Business characteristics: Small and MWBE businesses; natural resource industries
- d. Municipal customers and buildings (cities/towns)

2. Renewable Energy Awareness, Access and Barriers study among Maine's towns, businesses, landlords and household. Recommended topics to cover include:

- a. Awareness of on-site distributed renewable energy, financing options, ownership, and subscription models (including leasing, community solar), power purchase agreements and energy storage.
- b. Awareness of rebate and financing options
- c. Barriers to planning, construction and financing, including non-price barriers (information, contractors, time/capacity) and financing (e.g., credit)

This study should focus on:

- a. Landlords, renters, and homeowners, including affordable housing rental units, multifamily landlords. rural housing, mobile/manufactured housing Renters
- b. Small businesses and natural resource industries
- c. Municipal customers

Strategy D: Grow Maine’s Clean Energy Economy and Protect Our Natural Resource Industries

Climate change presents both significant challenges and opportunities for Maine’s natural resource industries, including forestry, farming, fishing, and agriculture. To help these industries and workers adapt to a changing climate, participate in new market opportunities, and benefit from Maine’s transition to a clean energy economy, *MWW* recommends providing them with climate information and decision-support tools, including establishing the University of Maine as the coordinating hub for research on climate concerns related to forestry, agriculture, and natural lands and launching the Maine Seafood Business Council. The plan also recommends growing Maine’s forest-products industry through innovation and increasing the amount of local food consumed in Maine from in-state producers.

Maine’s transition to a clean energy economy and investments in energy efficiency also offer the state — and historically disadvantaged workers - new economic opportunities. A skilled workforce is key. *MWW* recommends launching a workforce initiative to coordinate among clean energy industry, educational, and training organizations, and establishing programs and partnerships for clean-tech innovation and climate solutions.

The ESC recommends additional actions to ensure equitable access to clean energy jobs and to growth in Maine’s natural resource industries. State agencies and partners are already implementing many of those recommendations:

Natural Resource Industries and Workforce:

- The University of Maine launched the Maine Climate Science and Information Exchange (MCSIE) to serve as a coordinating hub with state and non-state partners for climate change research and monitoring. Created in 2022 with federal and private funding support, MCSIE focuses on providing access to climate change research taking place in Maine and building connections among researchers and stakeholders so that Maine stakeholders can help to inform research priorities. MCSIE particularly targets the needs of the state’s marine, agriculture, and forestry sectors.
- The University of Maine and other Maine research institutions are researching and exploring new crops, farming, and aquaculture practices to respond to a changing climate, including climate-resilient potatoes, blueberry management, improving soil health, kelp farming and carbon sequestration, and more.

Clean Energy Economy and Workforce:

- Several recent studies by the GEO have assessed clean energy industry employment demand, skill requirements, and employer sentiment; as well as workforce characteristics, skills barriers to entry, and interest in clean energy jobs in Maine:
 - The 2021 Maine Clean Energy Industry report¹⁰³ details employment needs and characteristics (including demographics) across five key sectors of the clean energy economy: Energy Efficiency, Clean Energy Generation, Alternative Transportation, Clean Grid and Storage, and Clean Fuels. Data for the 2021 Report was collected in the fourth quarter of 2020 - an exceptional year throughout the world economy due to the COVID-19 pandemic, and Maine’s clean energy economy was not immune. An updated 2022

¹⁰³ Source: <https://www.maine.gov/energy/sites/maine.gov.energy/files/inline-files/2021%20ME%20Clean%20Energy%20Industry%20Report.pdf>

- Maine Clean Energy Industry Report will document the recovery in clean energy employment and may reveal growth from pre-pandemic levels in some subsectors.
- The 2022 Maine Offshore Wind (OSW) Talent Analysis¹⁰⁴ quantified the existing potential OSW workforce with direct or relevant experience and skills, as well as an analysis of the demographics of that workforce; examined existing talent pools and as well as potential gaps in workers needed; and examined wind-specific and relevant training programs around the state to better understand the capacity of existing pipelines. Through ongoing stakeholder coordination, the needs of clean energy workforce and employers will be quantified to a greater degree of detail.
 - The 2022 Maine Clean Energy Workforce Analysis report¹⁰⁵ details the results of primary and secondary research into the workforce and hiring landscape for Maine’s clean energy industry, and details employer sentiments on growth and hiring, availability of appropriately trained workers, the awareness and interest of sector employment among potential clean energy workers, and their barriers to entry into the sector.
 - Funded by the Maine Jobs and Recovery Plan (MJRP), the Clean Energy Partnership is an initiative of the GEO focused on preparing Maine people for jobs in the growing clean energy & energy efficiency fields, providing avenues for business support, advancing innovation in the clean energy sector, and achieving Governor Mills’ goal of reaching 30,000 clean energy jobs in Maine by 2030. The GEO was awarded \$6.5 million in funds from the MJRP to support this Partnership’s workforce and innovation focus, including \$2.9 million in funding for qualified individuals and entities to advance workforce development and training for the clean energy and energy efficiency fields. In its first round of funding, nine workforce development proposals were awarded, representing a broad range of entities, programs, and activities, including extensive investments in pathways to clean energy and efficiency related employment. Many of these projects are intentionally designed to recruit and attract underserved populations for training and job opportunities in clean energy and energy efficiency. These projects include:
 - **Comprehensive support for Maine’s weatherization and energy efficiency workforce:** Includes a statewide workforce needs assessment to identify worker, skill, and credential needs among contractors, paired with outreach and recruitment to connect learners and jobseekers with training and employment opportunities.
 - **New and expanded internship, Registered Apprenticeship, and on-the-job training models:** Funds new and expanded construction, weatherization, and solar pre-apprenticeship, Registered Apprenticeship, and on-the-job training program offerings. A new clean energy internship program will be implemented to place Maine-based college and university students in paid positions at clean energy companies, with outreach and recruitment intentionally focused on increasing diversity among the clean energy and energy efficiency workforce.
 - **Low-barrier training and credentialing for skilled trades professionals:** Creates new, flexible, and low-cost training programs to provide workers with industry-relevant training and credentialing in energy efficient building standards and techniques, and offshore wind safety and construction.
 - Southern Maine Community College launched the first electric vehicle program in Maine, which trains vehicle repair technicians to service electric and hybrid vehicles. The College received

¹⁰⁴ Source: <https://www.maine.gov/energy/sites/maine.gov.energy/files/inline-files/2022%20ME%20OSW%20Talent%20Analysis.pdf>

¹⁰⁵ Source: <https://www.maine.gov/energy/sites/maine.gov.energy/files/inline-files/2022%20Maine%20Clean%20Energy%20Workforce%20Report.pdf>

\$750,000 through Congressionally Directed Spending requests contained in the 2023 federal Omnibus Appropriations Package to expand the number of annual enrollees in the program.

- In 2020, the Department of Professional and Financial Regulation (PFR) completed a report¹⁰⁶ identifying barriers to credentialing and professional licensure for a) skilled individuals with foreign credentials; and b) out-of-state license-holders. PFR has made progress in addressing many of these barriers.

In addition to this ongoing work, the ESC recommends the goals and actions below for incorporation into the state's climate action plan. These goals are meant to achieve more equitable outcomes for priority populations and communities by addressing barriers to employment in clean energy and natural resource industries, as well as by providing additional employment resources for workers or industries facing disproportionate climate risks. Priority individuals include but are not limited to migrant workers in natural resource industries, particularly those with limited English proficiency or lack of awareness of or hesitancy to exercise workplace protections due to permit and visa concerns. In addition, they include young Mainers, New Mainers, underemployed and unemployed people, who may lack access to capital and land to enter the market or expand operations, who may have limited or non-transferrable experience or credentials, and who may, in the case of New Mainers and other BIPOC individuals, face cultural or other unique barriers to entry into this sector. Finally, they may include other Maine people who face barriers to accessing workforce training opportunities, such as lack of access to transportation, childcare, or inability to participate in unpaid training opportunities; or who are disproportionately underrepresented in these fields, such as women. Priority communities include areas with high proportions of the population employed in agriculture, fishing, or forestry, where local economies, livelihoods, and cultures depend on these industries.

The ESC recognizes that not all individuals in these groups face equal risks or vulnerabilities, and encourages state agencies, partners, and stakeholders to further assess opportunities to serve priority populations.

Goal #1: Attract, prepare, and position people and businesses in disadvantaged communities for jobs and economic growth in clean energy and energy efficiency industries

With more than 14,000 clean energy jobs throughout the state, Maine's clean energy economy accounts for a substantial and growing portion of the state's workforce.¹⁰⁷ Governor Mills has set the goal of reaching 30,000 clean energy jobs in Maine by 2030. These new clean energy jobs will provide career opportunities for Mainers from a wide range of backgrounds and a variety of skillsets.¹⁰⁸

The 2021 Maine Clean Energy Industry Report¹⁰⁹ found that clean energy workers are largely representative of the broader workforce along ethnic and racial lines, and clean energy boasts a greater proportion of veterans than the overall workforce. However, women only make up 26% clean energy

¹⁰⁶ Source: <https://www.maine.gov/pfr/sites/maine.gov.pfr/files/inline-files/Resolve%202019%20c.%2079%20%20030220.pdf>

¹⁰⁷ Source: <https://www.maine.gov/energy/sites/maine.gov.energy/files/inline-files/2022%20Maine%20Clean%20Energy%20Workforce%20Report.pdf>

¹⁰⁸ Source: <https://www.maine.gov/energy/sites/maine.gov.energy/files/inline-files/2021%20ME%20Clean%20Energy%20Industry%20Report.pdf>

¹⁰⁹ Sources: <https://www.maine.gov/energy/sites/maine.gov.energy/files/inline-files/2021%20ME%20Clean%20Energy%20Industry%20Report.pdf>

workforce, compared to 52% of the state’s overall workforce – a similar trend seen across the clean energy industry.

The clean energy transition will have a transformative economic impact in Maine. However, attracting and training the necessary workforce will take new models and locations of training, and attention to reducing barriers in order attract workers traditionally underrepresented in the energy sector and building trades.

A fair and equitable climate and economic transition requires the state to plan for and respond to climate change in a way that does not negatively impact — and, indeed, strengthens where possible — workers in industries already facing disproportionate climate impact. These industries may include those based on fossil fuels but also natural resource industries, which may face disproportionate economic and job loss driven by climate change. The rapidly growing clean energy economy can help keep workers and communities in these industries whole throughout this transition, an idea that some states refer to as a **just transition**. A fair and equitable climate transition should ensure that communities who have been left behind have access to high-quality clean energy and other climate friendly jobs. Investment in workers and communities can help revitalize and diversify local economies and address inequities while ensuring the retention and creation of—and accessible pathways into— high quality and good-paying jobs. Below, the ESC recommends further work to define Maine’s approach to a just transition.

Actions underway include:

- The ESC supports the recommendations of the 2022 Maine Clean Energy Workforce Analysis report by the GEO, related to the equitable distribution of benefits of a growing clean energy economy. These recommendations include:
 - **Expanding access to Registered Apprenticeships and other earn-and-learn models for under-engaged populations** as a pipeline into sustainable clean energy careers. Increased outreach to women, immigrants and refugees, migrant workers and their families, middle and high schoolers, underrepresented groups, individuals with disabilities, workers transitioning out of low wage jobs, and individuals re-entering the workforce for other reasons could build a significant talent pipeline for the clean energy sector. This effort should seek to support pre-apprenticeships and pathways to Registered Apprenticeships and embed pre-apprenticeship offerings in relevant educational and workforce development programming. Outreach efforts should be coupled with other employment support programs, such as wrap-around services, to ensure individuals are able to effectively participate in training programs.
 - **Developing a clean energy workforce clearinghouse**, featuring clean energy career information including internship and Registered Apprenticeship opportunities, training and educational programs, available job openings, and an outline of clean energy sector career pathways. The clearinghouse will seek to connect job seekers including those who are unemployed with relevant career information. In addition, the Clean Energy Partnership is supporting several projects to increase the visibility of clean energy careers through targeted stakeholder outreach, the development of tools to assist jobseekers and students in the identification of clean energy career pathways, the development and expansion of existing and new trainings and Registered Apprenticeship, and the creation of best practices which address barriers to participation for underrepresented populations. The MJRP awarded \$800,000 to the GEO to develop the clearinghouse.
 - **Providing pathways to career mobility and entrepreneurship in weatherization, particularly for people starting in lower-wage jobs.** Though most clean energy careers

offer career mobility and high job quality, there is opportunity for improvement in the weatherization sector. Subsidizing training costs for individuals to receive Building Performance Institute (BPI) certification, stipends to purchase tools and other equipment, business coaching, and other forms of entrepreneurial support could ensure more sustainable career outcomes for weatherization workers.

- The DOL has a long history of supporting underserved or disadvantaged Maine people in accessing high quality jobs, including in the clean energy industries. For example, within the Bureau of Rehabilitation Services, vocational counselors promote equity and inclusion of people with disabilities of all ages within the workforce, offering a wide range of education, training and work-based learning opportunities, and providing numerous resources to employers as well. Recent work at DOL includes:
 - The launch of a peer workforce navigator pilot program, to engage with organizations working with underserved populations who have been disproportionately impacted by the pandemic to connect them to employment, skills development, and resources for needs such as childcare and transportation. Underserved populations may include immigrants, individuals with low literacy or limited English proficiency, unemployed and underemployed individuals, individuals without a credential of value, low-income individuals, unhoused individuals, and individuals with disabilities.
 - \$12.3 million from MJRP to more than double Registered Apprenticeships and pre-apprenticeships across Maine, including the creation of new apprenticeships across 50 new occupations, in fields which include construction, electricians, Heating, Ventilation, and Cooling (HVAC) technicians, maintenance mechanics, clean energy, and aquaculture — all critical for achieving climate goals. This funding is expected to support at least 500 new trainees in the clean energy sector over the next year.
 - DOL has committed to increasing the number of underrepresented workers completing Registered Apprenticeships, through developing partnerships with trusted community organizations representing priority communities to build clear on-ramps to pre-apprenticeship and Registered Apprenticeship programs, developing wraparound services to help support the basic needs of workers, and providing tools, training, and accountability mechanisms to support apprenticeship sponsors in fostering equitable and inclusive workplaces.
 - Receipt of a federal Quality Jobs, Equity, Strategy and Training (QUEST) grant,¹¹⁰ designed to support employment equity and individual, community, and industry resilience as the nation prioritizes economic and employment recovery from the COVID-19 pandemic. Project elements include partnership development, community outreach, business engagement (particularly in the three prioritized sectors of clean energy, infrastructure, and care economy), and comprehensive career and training services. Grant funding will focus on serving individuals whose employment has been negatively impacted by the pandemic, including individuals from historically marginalized and underserved populations who have been disproportionately impacted, including justice involved individuals and those in recovery.
- The Maine Community College Workforce Training Programs (funded by \$35 million in funding from the MJRP) will offer free training to 8,500 Mainers to improve their skills or career opportunities for clean energy, trades, manufacturing, and other critical industries. Funding will

¹¹⁰ Source: <https://ocgnews.com/u-s-dol-announces-140m-in-available-grants-to-create-high-quality-jobs-and-training-in-underserved-communities/>

support student tuition costs, the purchase of new equipment needed for training, and added staffing for project management, instruction, and learner navigation.

- PFR introduced legislation in the 129th Legislative session that would have allowed a licensed master or journeyman to supervise two helpers. A similar bill was introduced by a legislator in the 130th that would have expanded the number of permitted helpers to three. Thus far, these legislative efforts have been unsuccessful.

Proposed Next Steps include:

- **Explore opportunities to grow the number of licensed electricians.** There is a tremendous need for growing the workforce of licensed electricians and expanding opportunities for electrician apprenticeships and education in the state; electricians are the primary workforce bottleneck in achieving the state's beneficial electrification goals. One opportunity may be expanding the number of helper electricians a licensed electrician can supervise; the current limitation of 1 supervisee impacts the pool of individuals available to work on projects and limits exposure to the trade as an occupational path.
- **Ensure that the clean energy workforce clearinghouse is designed to support disadvantaged students and job seekers** to access resources about clean energy career pathways, training, and job opportunities. The clearinghouse should adopt best practices in procedural equity including but not limited to engaging people with limited English proficiency, creating opportunities for workers with limited literacy or educational attainment, addressing cultural barriers to entry into these sectors, and conducting proactive and targeted outreach through trusted partners to underrepresented people. The clearinghouse should include resources for employers to better engage and retain underrepresented populations, including wraparound services such as transportation and childcare, as well as creating pathways for employers to work with organizations such as those which provide adult education or refugee support.
- **Identify workers and industries disproportionately impacted by climate change and identify pathways into clean energy and climate friendly careers.** This analysis should include skill and credential mapping, seeking to leverage unique skills of existing workers within new fields. It should be informed by government, industry stakeholders, and impacted communities, and should prioritize workforce retraining initiatives, especially in these industries and communities most impacted by climate change, and among historically marginalized and underemployed workers.

Agencies and Partners: GEO, DOL, GOPIF, DECD, PFR

Goal #2: Help natural resource industries diversify and adapt to climate change through economic and workforce diversification and participation in the clean energy transition

MWW recognizes that helping Maine's natural resource industries and workforce adapt to climate change involves preparing for impacts as well as taking advantage of opportunities presented by new technologies and markets. Already struggling natural resource businesses may lack the time or resources to pursue money saving clean energy technologies. The state must focus on the most vulnerable industries and individuals and ensure that climate adaptation resources are equitably distributed.

The state should also ensure that the promise of a just transition reaches natural resource businesses, workers and communities who may be impacted by climate change. Amongst other impacts, this includes fishermen in areas where their income is impacted by climate driven migrations and species

changes, farmers experiencing extreme weather events and impacts on crops and infrastructure, and loggers facing harvesting challenges driven by unpredictable freeze and thaw cycles.

Actions underway include:

- The Agriculture, Food and Forest Products Infrastructure Investment Fund was established by the 130th Maine Legislature, to make capital investments and provide technical assistance to Maine’s agricultural, food and forest products industries. While not yet capitalized, the Fund was created to complement existing sources of capital and meaningfully address the state’s commitment to redress racial and other inequities within these sectors. As required by the legislation, an assessment was designed and conducted by DACF in collaboration with DECD; industry stakeholder groups, financial institutions, policymakers, business owners, and members of Maine’s diverse Black, Indigenous, and People of Color (BIPOC) communities were consulted directly through this assessment. The assessment included a landscape and gap analysis, to evaluate the ecosystem of currently available funding resources for agriculture, food, and forest products businesses and to identify gaps; a stakeholder assessment, to explore capital and technical assistance needs as well as current challenges associated with accessing both across diverse Maine people; and recommendations surrounding Fund structure and investment objectives. DACF will be exploring opportunities to capitalize the Fund in the 2023 legislative session.
- The Maine Department of Marine Resources (DMR), University of Maine, Maine Center for Coastal Fisheries, and Maine Lobstermen’s Association have been collaborating on social resilience work in the lobster fishery. While DMR has historically monitored biological information about the Maine lobster fishery, no one — until now — has attempted to monitor the social and economic status of the fishery. Through interviews with industry participants and local community leaders, this project seeks to establish a set of indicators to monitor how the lobster industry is doing in these rapidly changing times. Initial results are expected at the end of 2022, with final results developed in 2023.
- DACF acts as a partner, funder, and technical resource to several agricultural service providers throughout the state to amplify their efforts to support both new and socially disadvantaged farmers including Maine Farmland Trust, Cultivating Community, the Maine Farmer Resource Network, the Somali Bantu Community Association, Maine Organic Farmers and Gardeners Association and more.
- As part of the MJRP, DOL is providing “Industry Partnership” grants to six training and educational organizations to develop initiatives to recruit and retain skilled workers who can meet the needs of businesses across the state.¹¹¹ Grantees include The Maine Development Foundation, which will work to implement recommendations from the Forest Opportunity Roadmap,¹¹² by developing career and educational pathways for important forestry jobs in partnership with industry and educational partners.
- In 2022, 11 rural organizations throughout Maine received a combined total of more than \$28 million toward renewable energy projects through the US Department of Agriculture’s Rural Development’s Rural Energy for America Program Renewable Energy Systems & Energy

¹¹¹ Source: https://www.maine.gov/labor/news_events/article.shtml?id=9100699

¹¹² Source: <https://formaine.org/>

Proposed next steps include:

- **Develop a comprehensive natural resource industry report to establish baseline data on the characteristics of current natural resource industry businesses and workers and barriers to entering this industry.** This could include business and type, size, and ownership structure, licenses/certifications required and attained by workers, and minority, veteran or women-owned businesses; as well as worker demographics including age, education/training, geography, gender, and race/ethnicity. The state should seek to identify barriers to entry, opportunities, and drivers of change to increase diversity and access to natural resource industry careers for priority populations and disadvantaged communities. Barriers might include licensure requirements, access to education or training, access to capital or financing, and immigration/visa requirements that may limit opportunities of New Mainers.
- **Prioritize the development of new and value-added markets for climate vulnerable natural resource industries,** particularly for struggling business or individuals most threatened by climate change, and among historically marginalized and underemployed workers. This may include (a) expanding opportunities for diversification, such as aquaculture, to climate vulnerable participants in the fishing industry, (b) expanding opportunities for value added crop development, such as Certified Organic and implementation of other practices such as “healthy soils” practices, and processing, for small farmers and other economically and climate vulnerable businesses and (c) exploring options to support business management structures, such as Benefit Corporations and cooperatives, that reduce the capital burden of owning a natural resource business.
- **Provide workforce training opportunities for natural resource industry workers to help adapt to a changing climate.** Analyze existing skills, credentials, and opportunities for job retraining for climate-impacted industries. Develop training for diversification opportunities within industries and, where necessary and appropriate, training for new industries and livelihoods for workers existing climate-impacted jobs.
- **Develop a pilot program to support clean technology and clean fuels transitions in natural resource industries,** particularly for small businesses and self-employed individuals who may lack information or resources to transition to new technologies. Programs should seek to help stabilize operating costs, and to educate business owners about appropriate and available clean technology through peer-to-peer learning.

Agencies and Partners: DECD, DACF, DOL, GOPIF, GEO, IFW, DMR

Tracking Progress in Maine’s Clean Energy Economy and Natural Resource Industries

MWW established the following indicator related to the clean energy and natural resource industries:¹¹⁴

- Clean energy jobs created

¹¹³ Source: <https://www.rd.usda.gov/newsroom/news-release/usda-invests-more-283-million-11-organizations-across-rural-maine-renewable-energy-projects>

¹¹⁴ See page 106-107: https://www.maine.gov/future/sites/maine.gov/future/files/inline-files/MaineWontWait_December2020.pdf

And as part of the 2021 MJRP, Governor Mills established goals for 30,000 clean energy jobs in Maine by 2030.

The ESC was tasked with recommending clear equity outcomes for proposed actions in *MWW*, monitoring progress, and making recommendations to ensure that programs and benefits reach the intended populations and communities. The following indicators and metrics build on the climate action plan’s overall employment metrics and can serve as progress indicators towards equitable access to, and distribution of, family sustaining climate friendly jobs. Table 7 establishes:

- **Actions:** Summary of recommended actions. Please refer to text above for details on proposed actions.
- **Monitoring Metrics:** Designed to track progress over time, helping ensure that actions and programmatic recommendations reach the intended populations and communities.
- **Equity Outcome Metrics:** Assess equity in achievement of statewide climate goals. To be reported as outcomes of the state’s climate plan.

Table 7: Clean Energy and Natural Resource Economy Goals, Progress Indicators and Metrics

Goal #1: Attract, prepare, and position people and businesses in disadvantaged communities for jobs and economic growth in clean energy and energy efficiency industries		
Actions	Monitoring Metrics	Equity Outcome Metric(s)
<ul style="list-style-type: none"> - Explore opportunities to grow the number of licensed electricians - Ensure that the clean energy workforce clearinghouse is designed to support disadvantaged students and job seekers - Identify energy workers and industries disproportionately impacted by climate change and 	<ul style="list-style-type: none"> - # of licensed electricians - # of priority population trainees and participants in state-funded clean energy industry workforce development programs¹¹⁵ - Geographic distribution of spending on clean energy workforce development programs 	<ul style="list-style-type: none"> - # and % of clean energy jobs¹¹⁶ held by priority populations - Geographic distribution of clean energy jobs¹¹⁷

¹¹⁵ For example, the Clean Energy Partnership requires reporting by grant recipients on any two priority populations from this list: age, gender, race/ethnicity, education level, students, veteran status, unemployed people.

¹¹⁶ A clean energy job is defined as any worker that is directly involved with the research, development, production, manufacture, distribution, sales, implementation, installation, or repair of components, goods, or services related to the following sectors of Clean Energy Generation; Clean Grid and Storage; Energy Efficiency; Clean Fuels; and Alternative Transportation. These jobs also include supporting services such as consulting, finance, tax, and legal services related to energy. See [2021 Maine Clean Energy Industry report](#) for additional detail.

¹¹⁷ Geographic distribution could include counts, percentages, or per capita results in/among priority communities, or by county. If it is not possible to track location to a census tract or town (to categorize “priority” communities), we recommend reporting at the county level. For example, for labor statistics gathered through surveys, data is not granular enough by town or census tract to categorize as occurring in frontline or disadvantaged communities, while it is often reported by county. Geographic distribution could also be by location of the job site, employer, or employee; programs will need to determine which measure is most appropriate.

analyze pathways into clean energy careers		
Goal #2: Help natural resource industries diversify and adapt to climate change through economic and workforce diversification and participation in the clean energy transition		
Actions <ul style="list-style-type: none"> - Develop a comprehensive natural resource industry report to establish baseline data - Prioritize the development of new and value-added markets for climate vulnerable natural resource industries - Provide workforce training opportunities for natural resource industry workers to help adapt to a changing climate - Develop a pilot program to support clean technology and clean fuels transitions in natural resource industries 	Monitoring Metrics <ul style="list-style-type: none"> - # and % of Minority and Women Owned Business Enterprises (MWBE) in natural resource industries - Workforce characteristics in natural resource industries - Geographic distribution of training programs/initiatives for natural resource workers 	Equity Outcome Metric(s) <ul style="list-style-type: none"> - n/a

Baseline Studies Needed

To inform agency and partner strategies, establish goals and a baseline for measuring progress, the ESC and agencies identified the following baseline studies:

1. **Comprehensive Natural Resource Industry Report** to establish baseline data about makeup of firms and workers. Characteristics to baseline and track *for each industry* could include but are not limited to:
 - a. Demographics: Age, race and ethnicity, gender
 - b. Skills/licenses: Licenses, certifications, education, or training; skill level
 - c. Geography: County, town size, island/coastal or inland
 - d. Business and industry type: business size, ownership structure (e.g., self-employed), minority, veteran or women-owned businesses.

Strategy E: Protect Maine's Environment and Working Lands and Waters

Maine's natural and working lands and waters represent livelihoods, recreation, and identity for many Maine people. Climate change and development are harming these landscapes, which provide carbon sequestration and other environmental co-benefits and are key to the state's carbon neutrality goal. The state must continue to protect these areas, ensure access for all Maine people, promote natural climate solutions, support heritage industries, and explore opportunities for further collaboration with tribal nations.

MWW recommends increasing the total acreage of conserved lands, focusing conservation efforts on high biodiversity areas to maintain habitat connectivity and ecosystem health, incorporating climate into scoring criteria for state conservation funding, and minimizing the impact of energy projects on natural and working lands. *MWW* further recommends developing new incentives to increase carbon storage, expanding outreach on climate solutions to communities and those involved in natural resource industries, launching a platform for exchange about marine and coastal climate impacts, and enhancing monitoring and data for climate change research.

The ESC recommends additional actions related to equitable access to natural areas, further collaboration with tribal nations in the management of natural resources and protecting livelihoods of those who work with Maine's natural and working lands and waters. State agencies are already implementing many of those recommendations:

- Several state and federal funding opportunities seek to improve access to green spaces and natural and working lands and waters for Maine people, including:
 - The Land for Maine's Future (LMF) program, the state's primary funding vehicle for conserving land for its natural and recreational value. With \$40 million in new funding for the conservation of working forests, farms, and commercial waterfronts; public access to our woods and waters; the protection and management of wildlife; and a commitment to community conservation and recreation, LMF seeks to provide access to natural and working lands and waters for all Maine people.
 - DACF and MDIFW recently received a Maine Outdoor Heritage Fund grant to update statewide conservation priorities, including a focus on lands close to population centers. The Maine Outdoor Heritage Fund supports critical wildlife and conservation projects throughout Maine.
 - Project Canopy works to create and maintain healthy urban and community forests, helping keep Maine's communities green and livable. Through a grant program and technical assistance, the program promotes planting and maintaining of trees in Maine communities.
 - The Department of Inland Fisheries & Wildlife (IFW) has a goal of suitable hunting, fishing, and tracking locations within one hour of all state population hubs through the department's strategic conservation plan for land acquisition, to provide free and open access to Maine's fish and wildlife resources.
 - The federal Bipartisan Infrastructure Law (BIL), also known as the Infrastructure Investment and Jobs Act (IIJA), includes funding for climate resilience and natural resource projects, including to improve the natural capacity of watersheds and ecosystems. Programs include opportunities for non-profits, and regional, municipal,

and Tribal governments. GOPIF is helping to support applications for landscape or watershed scale climate resilience projects, including partnerships with local and regional entities, and developing channels of communication and connecting organizations with technical assistance capacity to groups with limited federal grant experience.

- The University of Maine launched the Maine Climate Science and Information Exchange (MCSIE) to serve as a coordinating hub with state and non-state partners for climate change research and monitoring. Created in 2022 with federal and private funding support, MCSIE focuses on providing access to climate change research relevant to the state’s marine, agriculture, and forestry sectors, and building connections among researchers and stakeholders so that Maine stakeholders can help to inform research priorities.
- The Maine State Legislature recently enacted the *Tribal-State Collaboration Act*,¹¹⁸ which requires all state agencies to designate a tribal liaison and adopt a collaboration policy to guide interactions with tribal communities. The goal of this law is to promote respectful, government-to-government dialogue, and improve communication between state agencies and the Houlton Band of Maliseet Indians, the Mi’kmaq Nation, the Passamaquoddy Tribe, and the Penobscot Nation.
 - DACF staff have participated in the First Light Learning Journey program, a year-long program for the Conservation Community in Maine, including NGOs and government agencies that own or manage lands and/or work with private landowners, funders, advocacy organizations. First Light’s goal is to expand Wabanaki access and stewardship of land for prosperity and to create a stronger conservation movement that includes and reflects Indigenous expertise and perspective.

In addition, the ESC recommends the following goals. These goals are meant to enhance access to natural and working lands as well as climate and natural resource data for priority populations and communities. For individuals and households, priority populations include but are not limited to low-income people, who may have difficulty paying for access to greenspace or may lack reliable transportation to get to greenspace; BIPOC individuals, who may face cultural or other unique barriers to accessing and using primarily white spaces; and people with physical or mobility challenges, for whom accessible greenspace may be limited. For communities, these goals seek to meet the needs of indigenous and tribal communities, who may have relevant data in the form of traditional ecological knowledge to add to the state’s climate discourse but who may face challenges from non-inclusive scientific research practices; disadvantaged communities, who may not trust the collection of personal data; and low income, rural, and disadvantaged communities, who may lack resources to apply for natural resource funding and may face challenges collecting or generating the data they need for use in climate and vulnerability assessments and grant applications.

The ESC recognizes that not all individuals in these groups face equal risks or vulnerabilities, and encourages state agencies, partners, and stakeholders to further assess opportunities to serve priority populations.

¹¹⁸Source: <http://www.mainelegislature.org/legis/bills/getPDF.asp?paper=HP0428&item=14&snum=130>

Goal #1: Ensure equitable access to natural resources to improve the lives and health of people in Maine, particularly for historically disadvantaged and low-income people

A recent study in New England found that communities with the largest proportions of lowest income residents, or people of color, experience significantly less access to protected open spaces.¹¹⁹ The 2022 Maine Land Acquisitions Priorities Advisory Committee draft report documents disparities in access to conserved lands statewide, and proposes additional conserved land acquisition near urban areas, especially Portland and Lewiston.

Access to greenspace and natural areas comes with many benefits — green space and blue space¹²⁰ have been shown to improve mental and physical wellbeing, enhance immunity, and improve social capital and community.¹²¹ These benefits can help lessen the health equity gap which exists between disadvantaged and well-resourced communities.¹²²

There are many state and federal funding sources which help conserve or expand greenspace, natural and working lands, increase access to and use of these spaces, and improve ecological health of natural areas. However, disadvantaged communities — including those with historically less access to greenspace than others — may have fewer resources to seek and apply for funds.

Actions Underway Include:

- Two DOE programs support outdoor learning for disadvantaged children. Reinventing Responsive Education Ventures (RREV), a \$16.9M federal grant which supports innovative approaches to education, has provided over \$4 million in funding for innovative pilots in outdoor and nature-based education, and prioritizes funding for economically disadvantaged districts. The Maine Outdoor Learning Initiative, which launched summer 2022, similarly prioritizes economically disadvantaged students from rural, inland communities with little or no access to coastal opportunities based on socioeconomic status and geographic location. The Maine Outdoor Learning Initiative has awarded nearly \$1 million in grants so far and plans to release a second round of funding in 2023.
- Several of Maine’s natural resource grant programs consider community socioeconomic characteristics and existing resources or needs and are beginning to incorporate further consideration of equity. These include:
 - The DEP’s Maine Natural Resource Conservation Program (MNRCP) is in the process of revising criteria to assess potential wetland mitigation projects. New criteria will include equity and environmental justice and award points to projects that are within or adjacent to land managed by Indigenous tribes, projects near socially vulnerable or underserved and disadvantaged communities, or projects that improve community

¹¹⁹ Source: https://iopscience.iop.org/article/10.1088/1748-9326/ac6313/pdf?_vbrk=MTAxNDAzOjU3NDI5MDc1Om5ld3NsZXROZSI=&_uax=MTAxNDAzOjU3NDI5MDc1

¹²⁰ Source: <https://www.nature.com/articles/s41598-021-87675-0>

¹²¹ James, P., Banay, R. F., Hart, J. E., & Laden, F. (2015). A Review of the Health Benefits of Greenness. *Current Epidemiology Reports*, 2(2), 131–142. <https://doi.org/10.1007/s40471-015-0043-7>

¹²² Kabisch, N., Korn, H., Stadler, J., & Bonn, A. (2017). Nature-Based Solutions to Climate Change Adaptation in Urban Areas—Linkages Between Science, Policy and Practice. In N. Kabisch, H. Korn, J. Stadler, & A. Bonn (Eds.), *Nature-Based Solutions to Climate Change Adaptation in Urban Areas* (pp. 1–11). Springer International Publishing. https://doi.org/10.1007/978-3-319-56091-5_1

climate change resiliency (e.g., reduced flooding). The proposed changes will take effect in the 2023 funding cycle.

- DMR's Maine Coastal Program¹²³ and DEP's Municipal Stream Crossing Upgrade Grant Program¹²⁴ both prioritize available funding for those communities at highest risk of climate change by considering previous flooding events, safety and community impact of failed infrastructure, and a Maine-specific analysis of community vulnerability to sea level rise.¹²⁵
- LMF recently updated its grant scoring criteria, adding consideration of applications that serve low income or otherwise disadvantaged communities to existing Community and Economic Benefits criteria.
- The Bureau of Public Lands (BPL) at DACF recently partnered with the Nature Based Education Consortium to donate parks passes to programs serving and engaging BIPOC Mainers. In addition, BPL is exploring opportunities to offer free Parks access to members of Maine's tribal nations.
- BPL is partnering with the University of Maine to investigate outdoor recreation participation, perspectives, and barriers. This study will assess racial diversity of users of outdoor recreational resources in Maine, as well as perspectives about outdoor recreation from persons of color, persons with a disability, and persons impacted by poverty. The results of this study will be available in 2023.
- Through her MJRP, Governor Mills made a historic \$50 million investment in state parks' infrastructure. Coming at a time of record numbers of visitors, these investments are addressing major safety and stewardship concerns, including increasing accessibility for visitors. Among other improvements, BPL is installing accessibility mats for those with disabilities at four beach state parks. These investments build on work at IFW, which focuses on improved water access near populations centers, including the goal of having at least one ADA accessible site within a 10-mile radius of each county seat.

Proposed Next Steps Include:

- **Establish baseline data on** the distribution of, access to, and use of green space, natural and working lands and waters across the state, especially for disadvantaged communities. This should include assessing visitor diversity at, and access to, working and recreational waterfronts. Identify barriers to access and affordability for low-income families and economically and climate vulnerable businesses. Identify interventions which improve access and reduce costs.
- **Expand access to natural resource grants for disadvantaged communities.** Establish equity criteria across all state natural resource grant making and establish baseline data on applications and funding for natural resource grants by community or applicant characteristics. Expand outreach about funding opportunities into historically underserved communities; identify and address barriers in application processes; offer technical assistance to lesser-resourced communities and other applicants; prioritize funding awards to historically underserved people, communities, or businesses; and consider lower match requirements in communities with fewer

¹²³ Source: <https://www.maine.gov/dmr/programs/maine-coastal-program>

¹²⁴ Source: <https://www.maine.gov/dep/land/grants/stream-crossing-upgrade.html>

¹²⁵ Source: <https://www.nature.org/en-us/about-us/where-we-work/united-states/maine/stories-in-maine/helping-communities-prepare-for-sea-level-rise/>

resources (including but not limited to economic, financial, staff capacity time or training, physical or technical resources).

- **Assess the impacts of climate risks on the food supply chain in Maine**, particularly in communities which experience food insecurity or rely on subsistence agriculture. Explore opportunities to ensure that Maine grown food can mitigate supply chain risks while improving access to food for all people.

Agencies and Partners: DACF, IFW, DEP, DMR

Goal #2: Improve climate change-related data collection, practices, and usability in partnership with frontline, disadvantaged and tribal communities

Accurate, disaggregated, and accessible data that protects privacy and cultural norms is critical to just climate action. Many kinds of data are required to inform Maine's climate response, including data about changing ecosystems, climate risks and hazards, the location of climate vulnerable infrastructure, and community social, demographic, economic, and health characteristics.

Working with community partners and establishing just principles for data collection and access can increase climate literacy, help communities plan and prioritize climate action, and carry forward new ways of understanding environmental change.

Actions underway include:

- The Biden administration has instructed all US agencies to require immediate access to federally funded research after it is published, starting in 2026, which will decrease barriers to accessing findings from federally funded climate research in Maine.
- The Maine Municipal Planning Assistance program at DACF assembles and distributes community specific data from multiple state agencies for communities to prepare a comprehensive plan.¹²⁶ While communities are not required to have a comprehensive plan, data packages can decrease the planning burden for less well-resourced communities, allowing them to access the multiple benefits¹²⁷ associated with creating a comprehensive plan consistent with Maine's Growth Management Act.
- A new law passed in 2022 requires the state to develop a data governance program to enable effective use of data and systems to support decision making and improve citizen access to government services.¹²⁸ This law has a specific focus on demographic and economic data and requires consultation with the Permanent Commission on the Status of Racial, Indigenous and Tribal Populations.

Proposed next steps include:

- **Scientific and technical assessments conducted for the state climate plan, including the Scientific Assessment of Climate Change and its effects in Maine, should include sociodemographic and economic impacts from climate change.** This includes expanded

¹²⁶ See here for recent community data packages:

https://www.maine.gov/dacf/municipalplanning/comp_plans/planning_data.shtml

¹²⁷ Source: [https://www.maine.gov/dacf/municipalplanning/docs/Comp%20Plan%20Incentives%20\(rev.%202016-01-04\).pdf](https://www.maine.gov/dacf/municipalplanning/docs/Comp%20Plan%20Incentives%20(rev.%202016-01-04).pdf)

¹²⁸ Source: http://www.mainelegislature.org/legis/bills/display_ps.asp?Id=1610&PID=1456&snum=130

membership of the Science and Technical Subcommittee of the MCC to include social scientists focused on the intersection of physical climate hazards and Maine communities, especially disadvantaged communities.

- **Provide state climate data in an accessible and useful format for communities.** Develop a platform to help communities understand climate vulnerability, and to view climate or environmental impacts (such as natural climate hazards, infrastructure, climate change risks), community resilience planning resources, and sociodemographic or economic characteristics (e.g., social vulnerability) in the same place. Work with communities to (a) understand what data they may need for use in climate and vulnerability assessments, grant applications and tracking, and (b) improve data layers, access and usability of online tools or maps to support community planning and applications. Increase transparency about the types and sources of data used in climate planning and funding decisions, and about the practices for sharing sensitive data (e.g., socioeconomic or demographic characteristics of a community; climate vulnerable properties, neighborhoods, or towns).
- **Consult with tribal communities on governance, collection, ownership, and application of climate data.** Value and honor the role of local and traditional ecological knowledge, especially from tribal nations and natural resource dependent communities, in state climate planning and assessments.
- **Prioritize participatory approaches** for climate data collection that ensure transparency and build trust, climate literacy, and support for community-driven climate action. Community participatory approaches should seek to engage, train, and empower historically disadvantaged individuals and communities.

Agencies and Partners: GOPIF, MEMA, DACF, IFW, DEP, DMR

Tracking Progress in Maine's Natural Resource Activities

MWW established the following indicators related to natural resource and working lands equity goals:¹²⁹

- Percentage of state lands conserved
- Climate infrastructure and investment funding and leveraged

Strategy E in *MWW* establishes a goal of increasing the “total acreage of conserved lands in the state to 30% through voluntary, focused purchases of land and working forest or farm conservation easements.” “Conserved land” can include natural and working land owned by the state, municipalities, land trusts or private parties.

The ESC was tasked with recommending clear equity outcomes for proposed actions in *MWW*, monitoring progress, and making recommendations to ensure that programs and benefits reach the intended populations and communities. The following indicators and metrics build on the climate action plan’s overall natural resource metrics and can serve as progress indicators towards equitable access to, and distribution of, natural and working lands and waters. Table 8 establishes:

- **Actions:** Summary of recommended actions. Please refer to text above for details on proposed actions.

¹²⁹ See page 106-107: https://www.maine.gov/future/sites/maine.gov/future/files/inline-files/MaineWontWait_December2020.pdf

- **Monitoring Metrics:** designed to track progress over time, helping ensure that actions and programmatic recommendations reach the intended populations and communities.
- **Equity Outcome Metrics:** assess equity in achievement of statewide climate goals. To be reported as outcomes of the state's climate plan.

Table 8: Protect Maine's Environment Goals, Progress Indicators and Metrics

Goal #1: Ensure equitable access to the bountiful natural resources and places in the state, improving the lives and health of people in Maine, particularly for historically disadvantaged and low-income people		
Actions <ul style="list-style-type: none"> - Identify barriers to access and affordability for low-income families at state owned and funded sites - Expand access to natural resource grants for priority communities - Assess the impacts of climate risks on the food supply chain in Maine 	Monitoring Metrics <ul style="list-style-type: none"> - Use of publicly accessible¹³⁰ natural and working lands by priority populations and communities - Visitor characteristics of state-owned park and recreational space (including income level and distance traveled) 	Equity Outcome Metric(s) <ul style="list-style-type: none"> - Geographic distribution¹³¹ of publicly accessible natural and working lands - Distribution of natural resource agency grant funding by priority population and geography
Goal #2: Improve climate change-related data collection, practices, and usability <u>in partnership with</u> priority and tribal communities		
Actions <ul style="list-style-type: none"> - Include socioeconomic analysis and impacts in scientific and technical analyses for the state climate action plan - Improve usability of climate data for communities (including sociodemographic layers) - Consult with tribal communities on climate data principles - Prioritize participatory approaches in climate data collection 	Monitoring Metrics <ul style="list-style-type: none"> - # of state agencies with guidance on climate data consultation with tribal communities - # of state climate research efforts that include community participatory approaches¹³² - Use of, or reference to, traditional ecological knowledge in state climate planning and assessments 	Equity Outcome Metric(s) <ul style="list-style-type: none"> - n/a

¹³⁰ Recognizing that state agencies may play a role in access or conservation of privately owned natural and working lands, the equity outcome metric expands the *MWW* indicator beyond state lands to include privately held natural and working lands accessible to the public.

¹³¹ Geographic distribution metrics could include acreage in and/or near priority communities (e.g., low-income, urban, disadvantaged or frontline), or by county.

¹³² Participatory practices including but not limited to: Engage community stakeholders in research design, data collection, analysis, or sharing findings.

Baseline Studies Needed

To inform agency and partner strategies, establish goals and a baseline for measuring progress, the ESC and agencies identified the following baseline studies:

1. **Access and Use of State-Owned Lands**, including distribution, access, and use of green space across the state, especially for historically disadvantaged communities. Green space should include but not be limited to state-owned lands, town/municipal lands, privately held public lands (e.g., land trusts), and access to working and recreational waterfronts. Gather information on visitor diversity (including income and demographics) and distance traveled at state-owned parks and other sites, and barriers to access or use. BPL is currently collaborating with the University of Maine to generate data that will address some of these metrics.
2. **Baseline study of grant distribution from natural resource agencies**, including current reach, scope, and expenditure of natural resource agency grants by community (e.g., rural, low income, disadvantaged, frontline, tribal) or applicant characteristics, as well as barriers to finding out about, accessing, and applying for natural resource grants.

Strategy F: Healthy and Resilient Communities

Climate change impacts the health and safety of all people in Maine, through exposure to extreme temperatures, drought, increased allergens, extreme precipitation, storms and flooding, and other threats. People may experience heat- or cold-related health impacts, poor air quality, food insecurity, flooding of homes and businesses, power outages, and transportation and work disruptions, among other impacts. These impacts disproportionately affect frontline communities, low-income or otherwise under-resourced communities or people, and those who may suffer from pre-existing health conditions, lack of access to resources to respond to climate impacts, and higher exposure to physical climate hazards. Comprehensive resilience planning is a key step toward mitigating potential health and safety impacts and bolstering the ability of communities to respond and adapt to climate change.

MWW recommends supporting local and regional community resilience efforts through funding and technical assistance; adopting official sea-level rise projections; developing and implementing updated land-use regulations and practices; and strengthening public health monitoring, education, and prevention.

The ESC recommended additional actions toward equitable outcomes of community resilience and public health investments. State agencies are already implementing many of those recommendations:

- Through the Community Resilience Partnership (CRP), towns and tribes can access capacity-building resources, technical assistance, and grant funding to pursue climate resilience, emissions reduction, and clean energy projects. The CRP offers capacity-building assistance through Service Provider Grants to help communities assess needs, hold community engagement sessions, identify priority projects, and apply for grant funding. The CRP's Community Action Grant has an extensive list of project options that do not require a local cost share, as well as a reduced cost share for communities with populations lower than 10,000 for other projects. Both grant programs employ scoring criteria that help smaller and more socially vulnerable communities compete effectively for funding. As of December 2022, 77 communities and tribes had enrolled in the Partnership, representing 35% of the state's population. Of these communities, 65 are small and medium sized communities with populations below 10,000, and 42 are classified as moderately or highly vulnerable according to the Maine SVI.
- The ME CDC's Maine Tracking Network tracks certain health effects, exposures, and environmental hazards that have known or suspected relationships. Individuals can explore data related to heart attacks, air quality, asthma, cold and heat related illness, tick borne diseases, and more, and can create customized tables, charts, trend charts, and maps.¹³³ By making health and environmental data available through the Maine Tracking Network, more people have access to data they need to think critically about health outcomes and their relationships to conditions in the environment.

In addition, the ESC recommends the goals below for inclusion in the state's climate action plan. These goals are meant to increase access to resilience planning resources, address climate-related health hazards, and improve information about climate-driven natural hazards for priority populations and communities. For individuals and households, priority populations include health-vulnerable individuals, people with limited mobility (including lack of access to transportation), and people with limited English

¹³³ Source: <https://data.mainepublichealth.gov/tracking/home>

proficiency. They also include outdoor workers, with an emphasis on migrant or other workers with limited English proficiency or who may experience limited access to employee protections. Priority communities include frontline, rural, low-income, and disadvantaged communities, particularly those with limited planning capacity.

The ESC recognizes that not all individuals in these groups face equal risks or vulnerabilities, and encourages state agencies, partners, and stakeholders to further assess opportunities to serve priority populations.

Goal #1: Increase participation in, and technical assistance and funding for, climate resilience planning and action in disadvantaged and frontline communities

Maine's small, rural, and low-income communities have variable experience and staff capacity to help access state climate-related funding. Through the CRP, less well-resourced communities and municipalities can access additional capacity, grant funding and other support to pursue climate mitigation, adaptation, and resiliency projects.

Actions underway include:

- Regional Service Providers are available at no cost to communities to help them apply for the CRP.
- The DEP, in partnership with The Nature Conservancy, University of Maine, Maine Sea Grant and others are finalizing a Community Resilience Workbook to help communities include resilience, climate adaptation, and assessment in their planning processes. The workbook takes into consideration equity and community engagement, adaptive capacity and climate vulnerability, socioeconomic and cultural impacts of climate change and adaptation, and many other factors that can inform equitable design and implementation of a community's resilience planning efforts. The Bureau of Resource Information and Land Use Planning (BRILUP) at DACF has hired a new Senior Planner, whose responsibilities include developing and distributing technical assistance and materials associated with the workbook.

Proposed Next Steps include:

- **The Community Resilience Partnership will continue to track geographic, socioeconomic, and climate-vulnerability of enrolled communities**, and work with partners to actively recruit smaller and more socially vulnerable communities, with the goal of achieving proportional or better representation of these communities in the program. In addition, the CRP will promote best practices to increase participation in regional and local climate resilience planning efforts by vulnerable and priority community members and their representatives.
- **Establish climate vulnerability and equity criteria across all resilience funding opportunities**, creating increased access to funding opportunities for disadvantaged communities and those most at risk from climate impacts.
- **Climate resilience and adaptation funding opportunities and programs should track participant characteristics** to monitor and ensure equitable distribution of climate funding and other benefits. Characteristics may include geographic distribution by community (e.g., rural, low income, disadvantaged, frontline, tribal) and applicant characteristics including income level and demographic characteristics.

Agencies and Partners: GOPIF, DMR, DACF, MEMA, DOT, DEP, ME CDC

Goal #2: Support planning, monitoring, and education for climate-related health hazards in disadvantaged and frontline communities

Climate-related public health concerns, including both indoor and outdoor air quality, extreme temperatures, and psychological resilience to climate change, have the potential to disproportionately impact priority populations and communities. And climate-driven exposure to more frequent natural hazard events can increase risks to critical healthcare infrastructure, both for traditional hospitals and for healthcare providers that provide local or mobile care to priority populations. The intersection of vulnerabilities related to health, climate and pollution exposure, income, and poor housing layer on top of one another to disproportionately impact disadvantaged communities.

Air pollution, including ozone and particulate matter, as well as increases in pollen, can increase risk for asthma and other respiratory illnesses — and can aggravate symptoms for those who already have respiratory health challenges. These air quality indicators are worsening due to climate change. Improving monitoring systems — as well as public understanding of how to use them — will improve public health.

Extreme temperatures are also increasing due to climate change, and disproportionately impact people with existing health disparities, as well as outdoor workers who may have limited ability to respond to unsafe environmental conditions. In 2021, the United States Department of Labor’s Occupational Safety and Health Administration (OSHA) announced enhanced and expanded measures to protect workers from hazards of extreme heat.¹³⁴

In addition to physical health risks, climate change can affect mental health directly — through the personal experience of living through a disaster, climate-driven unemployment, the loss of familiar and important outdoor spaces or cultural centers, and personal interpretations of climate facts — and indirectly, through experiences such as climate disaster storytelling and reporting. Building psychological resilience is part of the process of engaging people in creating resilient communities.¹³⁵

Actions underway include:

- DEP, in partnership with federal and tribal partners, operates a statewide network of more than 35 ambient air quality monitors, addressing national ambient air quality standards, hazardous air pollutants, and regional haze. In 2019, DEP initiated a comprehensive community-scale monitoring study focusing on hazardous air pollutants in South Portland and Portland.¹³⁶ However, air quality monitoring data are currently unavailable in Franklin, Lincoln,

¹³⁴ Source: Occupational Safety and Health Administration. (2021, September 20). US Department of Labor announces enhanced, expanded measures to protect workers from hazards of extreme heat, indoors and out. United States Department of Labor. <https://www.osha.gov/news/newsreleases/national/09202021>

¹³⁵ Ojala, M. (2012). How do children cope with global climate change? Coping strategies, engagement, and well-being. *Journal of Environmental Psychology*, 32(3), 225–233. <https://www.sciencedirect.com/science/article/abs/pii/S0272494412000138> ; and Van Zomeren, M., Spears, R., & Leach, C. W. (2010). Experimental evidence for a dual pathway model analysis of coping with the climate crisis. *Journal of Environmental Psychology*, 30(4), 339–346. <https://psycnet.apa.org/record/2010-06210-001>

¹³⁶ See for more information: <https://www.maine.gov/dep/air/monitoring/index.html>

Piscataquis, Sagadahoc, Somerset, and Waldo counties,¹³⁷ and these areas carry the most significant burdens of lung-related illness, and disparities in health care access in the state.¹³⁸

- DEP has taken several actions to help improve outdoor air quality and reduce exposure to air pollutants. These include:
 - Adopting statutory anti-idling requirements for motor vehicles.¹³⁹
 - Receiving federal funding for additional equipment to improve the statewide air quality monitoring network.
 - Providing free “Clean Air Zone” educational signs to school districts and municipalities which have adopted a no-idling policy, resulting in the distribution of more than 200 signs across Maine.
 - Installing no-idling signage at all Maine DOT ferry terminals.
- ME CDC is continuing to implement projects related to a 5-year grant to advance public health initiatives related to extreme temperatures and pollen exposure. This includes:
 - Partnering with DEP to develop and implement a pollen monitoring network across the state, including siting and operation of at least four pollen monitoring sites around the state, and the concurrent engagement of a pollen monitoring network advisory group to provide input on questions of monitor location, data management and dissemination, and potentially impacted populations.
 - Publishing near real-time data on the Maine Tracking Network describing daily and weekly counts of heat- and cold-related illnesses at the state and county levels and worked with the State Climatologist to display weather data matched to the same time and geographic units as the available health data.
 - Planning a comprehensive communication campaign to educate people in Maine, especially those most vulnerable or likely to be exposed to extreme temperatures, about how to identify, prevent, and improve resilience to heat- and cold-related illnesses. This campaign will be implemented in 2023.
- ME CDC is planning a pilot project with MidCoast Hospital to develop and present a series of lectures to healthcare providers and staff on the connections between climate change and patient health, and to present tools and resources that providers and staff can use to support patient health during extreme temperature events. ME CDC hopes to expand this effort to additional hospital and healthcare settings in future years.
- ME CDC and GOPIF are collaborating to improve and expand the Maine Climate Science Dashboard on **MaineWontWait.org** into a climate and health impacts compendium that addresses climate impacts to land temperatures, ocean temperatures, sea levels, and related human health challenges; updates will be released in 2023.
- ME CDC’s Office of Population Health Equity (OPHE) is launching a set of programs to work with Community Based Organizations to employ Community Health Workers to address social determinates of health in their communities, including but not limited to environmental factors.

¹³⁷ Source: Maine Climate Council Public Health Subgroup Strategies. (2020).
https://www.maine.gov/future/sites/maine.gov/future/files/inline-files/PublicHealthSubgroup_FinalStrategyRecommendations_June2020.pdf

¹³⁸ *ibid.*

¹³⁹ See: <https://legislature.maine.gov/statutes/38/title38sec585-L.html>

Proposed next steps include:

- **Improve access to information about indoor air quality improvements associated with climate action.** Conduct a review of the literature regarding indoor air quality and health outcomes. Provide accessible resources about improving indoor air quality due to fuel combustion inside the home, particularly in poorly or improperly weatherized homes,¹⁴⁰ and opportunities to increase healthy air through improved ventilation, weatherization, and beneficial electrification.
- **Assess air quality exposures and health outcomes in low income and rural communities.** Conduct community-scale air quality monitoring in high-risk communities as identified by existing air quality monitoring efforts and emissions risk assessment tools. Develop and distribute outreach and educational materials on the relationship between air pollutant exposure and health impacts.
- **Increase adoption of idling restrictions in municipalities,** through activities such as the development and distribution of (1) a model anti-idling ordinance for communities and (2) educational resources for communities to understand the impacts of idling.
- **Adopt United States Environmental Protection Agency (US EPA) guidance on evaluating multi-pollutant cumulative impacts** in disadvantaged communities. This guidance is currently under development and is expected to be available for adoption in 2023.
- **Consider incorporation of climate vulnerability into the Maine Shared Community Health Needs Assessment (MSCHNA).** The MSCHNA produces county and state health assessments every three years and provides valuable data on population health and community health priorities to help design community benefit programs and develop public health plans. The MSCHNA data committee will review opportunities to strengthen data around climate and health and will continue to provide robust community engagement opportunities for those priority populations facing the highest climate-worsened health vulnerabilities or disparities.
- **Incorporate climate vulnerability into community health readiness assessments.** Assessments currently help healthcare systems understand and plan to respond to physical and patient health hazards associated with emergencies, many of which will increase in both strength and frequency due to climate change.
- **Provide accessible education about OSHA recommendations related to extreme heat,** particularly for migrant and other outdoor workers. Include information about pathways for enforcement.
- **Explore opportunities to strengthen psychological resilience to climate change,** including (a) addressing climate-driven trauma and resilience in climate communications and (b) developing and providing free psychological climate resilience resources for community members, municipal officials, businesses, healthcare systems, schools, and other entities.

Agencies and Partners: DHHS, ME CDC, DEP, DOL

Goal #3: Increase access to information provided via state natural hazard emergency alert systems for disadvantaged individuals within Maine communities

Frontline communities are those who are at higher risk of exposure to, and impacts from, climate-driven natural hazards. Due to systemic and structural disadvantages, many have limited resources and

¹⁴⁰ Source: <https://www.efficiencymaine.com/weatherization-can-improve-your-homes-air-quality/>

capacity respond to these natural hazards.¹⁴¹ Some may also be further from emergency response personnel or facilities. Demographic factors — such as age, gender, race/ethnicity, and socioeconomic status — are associated with differences in perceived and actual risk of harm from natural disasters and help account for differences in how individuals obtain and react to information about natural disasters, extreme weather, and environmental conditions. Reaching and protecting vulnerable people and households in emergencies will require both community and interpersonal connections and targeted outreach and educational resources.

Actions underway include:

- ME CDC posts health advisories on its website,¹⁴² and sends messages related to high heat and air quality to healthcare providers on behalf of the DEP. The ME CDC is identifying and implementing opportunities to better reach populations in Maine who may have linguistic barriers to accessing current information about environmental health alerts available through the Health Alert Network.
- DEP posts daily air quality updates on its website and issues press releases for days with air quality health notices.¹⁴³ The public can sign up to receive daily air quality notifications through the EPA mobile app “AirNow” or subscribe to the EPA EnviroFlash service to receive alerts by email.¹⁴⁴ In addition, DEP maintains a toll-free “Air Quality Hotline” for those without internet access.¹⁴⁵
- DEP will expand access to its existing air quality notification systems to further reach people most vulnerable to poor air quality and extreme heat, including migrant workers. DEP will identify and establish relationships with community-based organizations who serve these priority populations, resulting in broader distribution of existing alerts.
- The Maine Emergency Management Agency (MEMA) partners with 211 Maine to share communication about emergencies that may require evacuations or relocation of residents. 211 Maine shares critical information with callers and visitors to their website including emergency shelter locations, basic safety precautions, locations for food distribution, and transportation evacuation routes. This partnership makes use of a trusted conduit of information for Maine people seeking help with health or human services to reach populations who may not otherwise have access to MEMA alerts.
- MEMA works closely with Maine Voluntary Organizations Active in Disasters (ME-VOAD) to promote response and recovery programs for vulnerable populations impacted by a natural or human-caused disaster. ME-VOAD organizations such as Catholic Charities, Salvation Army, and Good Shepherd Food Bank support response and recovery efforts to meet the needs of the diverse populations they serve, and to help address gaps in services not available at the local level.

¹⁴¹ In the Eye of the Storm: A People’s Guide to Transforming Crisis & Advancing Equity in the Disaster Continuum. (2021, May 20). The National Association for the Advancement of Colored People.

<https://naacp.org/resources/eye-storm-peoples-guide-transforming-crisis-advancing-equity-disaster-continuum>

¹⁴² Source: <https://www.maine.gov/dhhs/mecdc/>

¹⁴³ Source: <https://apps.web.maine.gov/cgi-bin/online/dep/air/aqforecast/index.pl>

¹⁴⁴ Subscribe here: <https://enviroflash.epa.gov/cdx-enviroflash2/otag/Subscriber.do?method=start>

¹⁴⁵ The Air Quality Hotline number is (800) 223-1196.

- Several communities, in partnership with state agencies, are working closely with emergency service providers to expand information, access, and response for vulnerable people during natural hazard emergencies including extreme heat and cold events. These projects include:
 - ME CDC is developing an Extreme Temperature Resilience Guidebook for use by community leaders and town and municipal officials. This Guidebook will provide information, guidance, and resources for those at the local level about determining when extreme temperature events become dangerous, identifying vulnerable community members, identifying and activating cooling and warming centers, and developing longer-term strategies to improve the resilience of local resources, facilities, and populations.
 - ME CDC is partnering with select County Emergency Management Agencies to update or develop Extreme Temperature Response Plans; these establish actions to be taken at the county and local levels to identify and respond to extreme temperature events, including guidance on recognizing dangerously hot or cold weather events, identifying community members most vulnerable to the effects of extreme temperatures, locating, establishing, and opening cooling or warming centers, and identifying alternative strategies for protecting residents not best served by cooling or warming centers.
 - The Midcoast Social Resilience Project¹⁴⁶ aims to strengthen connections between emergency management, conservation, social service, and municipal sectors to better prepare, respond, and recover from storms, and to better serve residents whose circumstances make them more vulnerable to storm impacts in midcoast Maine.

Proposed Next steps include:

- **Increase access to information provided via state natural hazard emergency notification systems**, through (a) assessing ability to respond to natural hazard emergencies and developing accessible avenues of response for at-risk individuals (b) expanding media and communication channels (e.g. SMS, TV, municipal websites, social media) to inform individuals about hazards (c) ensuring that notifications are available in languages other than English where appropriate, and (d) including climate hazard information in other relevant alert channels, such as the Maine Health Alert Network.

Agencies and Partners: DHHS, ME CDC, DEP, MEMA

Tracking Progress toward Healthy and Resilient Communities

MWW established the following indicators related to Healthy and Resilient Communities:¹⁴⁷

- Number of towns or regions with resilient community plans
- Climate infrastructure and investment funding and leveraged

The ESC was tasked with recommending clear equity outcomes for *MWW*, monitoring progress, and making recommendations to ensure that climate programs and benefits reach the intended populations and communities. The following indicators and metrics build on metrics in *MWW* and can serve as

¹⁴⁶ For more information, see: <https://nne.planning.org/sections/maine/front-page/new-cross-sector-collaboration-tackles-planning-climate-change-and-social-vulnerability-midcoast-maine/>

¹⁴⁷ See *Maine Won't Wait* page 106-107: https://www.maine.gov/future/sites/maine.gov/future/files/inline-files/MaineWontWait_December2020.pdf

progress indicators towards equitable access to, and distribution of, climate resilience, public health, and related benefits. Table 9 establishes:

- **Actions:** Summary of recommended actions. Please refer to text above for details on proposed actions.
- **Monitoring Metrics:** Designed to track progress over time, helping ensure that actions and programmatic recommendations reach the intended populations and communities.
- **Equity Outcome Metrics:** Assess equity in achievement of statewide climate goals. To be reported as outcomes of the state's climate plan.

Table 9: Healthy and Resilient Community Goals, Progress Indicators and Metrics

Goal #1: Increase participation in, and technical assistance and funding for, climate resilience planning and action in disadvantaged and frontline communities		
Actions <ul style="list-style-type: none"> - The Community Resilience Partnership will continue to track geographic, socioeconomic, and climate vulnerability of enrolled communities - Establish climate vulnerability and equity criteria for resilience funding - Track climate resilience and adaptation funding in disadvantaged communities 	Monitoring Metrics <ul style="list-style-type: none"> - # and % Community Resilience Partnership grants in priority communities¹⁴⁸ - \$ and % of community resilience planning funds for priority communities¹⁴⁹ 	Equity Outcome Metric(s) <ul style="list-style-type: none"> - # and % of priority communities with Resilient Community Plans
Goal #2: Support planning, monitoring, and education for climate-related health hazards in disadvantaged and frontline communities		
Actions <ul style="list-style-type: none"> - Improve access to information about indoor air quality improvements associated with climate action - Assess air quality exposures and health outcomes in low income and rural communities - Increase adoption of idling restrictions in municipalities - Consider incorporation of climate vulnerability into the Maine State Community Health Needs Assessment 	Monitoring Metrics <ul style="list-style-type: none"> - Geographic distribution¹⁵⁰ of air quality monitoring stations - # of hospital hazard vulnerability analyses that consider climate change - Heat- and cold-related illness and emergency department visits by location and priority population (if possible) 	Equity Outcome Metric(s) <ul style="list-style-type: none"> • n/a

¹⁴⁸ Priority communities could include low-income, rural, disadvantaged, or frontline communities, defined to align with federal or state program criteria.

¹⁴⁹ Ibid

¹⁵⁰ Geographic distribution metrics could include counts, percentages, or per capita results in/among priority communities, or by county.

<ul style="list-style-type: none"> - Incorporate climate vulnerability into community health readiness assessments - Adopt guidance on cumulative impact analysis - Provide accessible education about, and access to enforcement resources for, OSHA recommendations related to extreme heat - Explore opportunities to strengthen psychological resilience to climate change 		
Goal #3: Increase access to information provided via state natural hazard emergency notification systems for disadvantaged individuals within Maine communities		
Actions <ul style="list-style-type: none"> - Review and update, if needed, the reach and access of emergency response messaging (including channels and language) 	Monitoring Metrics <ul style="list-style-type: none"> • Reach of emergency and natural hazard notifications, including (a) channels, (b) languages, and (c) vulnerable populations reached 	Equity Outcome Metric(s) <ul style="list-style-type: none"> • n/a

Baseline Studies Needed

The following baseline studies are recommended to provide baseline data to measure progress.

1. **Baseline study of climate resilience and adaptation funding grant distribution**, including current reach, scope, and expenditure of grants by community (e.g., rural, low income, disadvantaged, frontline, tribal) or applicant characteristics, as well as barriers to finding out about, accessing, and applying for grants. See Strategy G: Invest in Climate-Ready Infrastructure for parallel recommendation for infrastructure funding.
2. **Reach of** natural hazard emergency alerts across priority populations and disadvantaged communities.

Strategy G: Invest in Climate-Ready Infrastructure

Functioning infrastructure is a basic requirement for public safety and health and supports state and local economies and the flow of people, goods, and information. Maine's state agencies, municipalities, tribal governments, and industries need a clear understanding of the risks to infrastructure assets posed by climate change, and opportunities to act.

Transportation infrastructure, water infrastructure, energy infrastructure, communications infrastructure, and community infrastructure¹⁵¹ are all vulnerable to climate-related natural hazards. The state and federal government must make equitable investments in climate-resilient infrastructure, providing increased resources in climate vulnerable communities with less human and financial capital.

State agencies are working closely with federal counterparts to secure additional infrastructure funding from revolving programs and the Infrastructure Investment and Jobs Act (IIJA) and are beginning to consider generous climate-funding opportunities contained in the recently passed Inflation Reduction Act (IRA). Many federal infrastructure funding programs require projects to consider and serve disadvantaged communities; therefore, complete and consistent data is needed on infrastructure condition and community characteristics to help disadvantaged and frontline communities compete successfully for these funds, and successfully implement their projects. To improve the climate readiness and resilience of infrastructure, and position Maine's communities for federal funding, *MWW* recommends a statewide infrastructure vulnerability assessment, including the development and implementation of design standards for resilience in infrastructure projects, and launching a State Infrastructure Adaptation Fund.

The ESC recommended additional actions for the equitable distribution of infrastructure adaptation funding. State agencies are already implementing many of those recommendations:

- The Maine Infrastructure Adaptation Fund, administered through MaineDOT, provided grants to municipalities and tribal governments to improve stormwater, wastewater, and drinking water infrastructure.¹⁵² To ensure funding was distributed across all geographical and social classes of Maine, projects were reviewed for location and social vulnerability, relating to the circumstances of a person or community that affect their capacity to anticipate, confront, repair, and recover from the effects of a disaster. The SVI was used to help identify vulnerable populations and what factors drive those vulnerabilities.¹⁵³ In its first round of funding, 13 communities in Maine received nearly \$20 million in grants for municipal investments to protect vital infrastructure from effects of climate change. Of these, eight of the thirteen projects are in locations of either high or medium social vulnerability, comprising approximately 75% of total award funds. The required local match funds are lower for applicants in high vulnerability areas.
- MaineDOT, in collaboration with several state agencies, is developing a Statewide Sea Level Rise (SLR) model that will be available to municipalities for use in climate resilience planning, as well as an inland vulnerability assessment to identify transportation assets that are at risk from

¹⁵¹ See page 93 of *MWW* for additional details regarding assets included in each class of infrastructure:

https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MaineWontWait_December2020.pdf

¹⁵² Source: <https://www.maine.gov/jobsplan/program/maine-infrastructure-adaptation-fund>

¹⁵³ Source: https://climatecouncil.maine.gov/future/sites/maine.gov.future/files/inline-files/ERG_MCC_Vol1_VulnMapping_11-13-2020.pdf

riverine and storm-related flooding. MaineDOT intends to use both tools to inform infrastructure funding, helping ensure that at risk communities aren't cut off by flooding, SLR or storm surge. Finally, MaineDOT has adopted a 4' SLR standard for road infrastructure projects, and updated culverts sizing to prepare for larger storm events.

- Maine Geological Survey, the DHHS ME CDC Drinking Water Program, and MEMA are cooperating on a groundwater well monitoring network project, as well as creating maps of groundwater and wells to determine potential exposure to increased rates of salinization (due to SLR or coastal storms) or potential susceptibility of wells to increased levels of arsenic (due to more frequent drought) in disadvantaged communities.
- In 2022, Governor Mills' Executive Order 2 established the Infrastructure Implementation Committee, as well as a Resilience Working Group, to coordinate the activities of state agencies to maximize the benefit of the federal IIA for Maine's people and communities. The Committee is developing strategies to leverage the funding allocated to Maine in line with the current MaineDOT Work Plan, Maine's Climate Action Plan, and the Maine Economic Development Strategy. In addition, the Committee has established an informal working group to consider Justice 40, the federal requirement that 40% of program investments in environmental, climate, hazard mitigation, and clean energy programs flow to disadvantaged communities.

In addition, the ESC recommends the goals and actions below for inclusion in the state's climate action plan. These goals are meant to increase access to infrastructure adaptation funding for priority communities. These communities include frontline, low-income, and otherwise disadvantaged communities with climate vulnerable infrastructure, and communities with limited planning capacity.

The ESC recognizes that not all individuals in these groups face equal risks or vulnerabilities, and encourages state agencies, partners, and stakeholders to further assess opportunities to serve priority populations.

Goal #1: Identify and Invest in climate resilient infrastructure in frontline and disadvantaged communities

Disadvantaged communities often lack financial capital and other resources to improve infrastructure,¹⁵⁴ leading to negative outcomes after natural disasters and compounding the effects of systemic disinvestment.¹⁵⁵ Financial assistance programs, outreach, and preemptive support are particularly impactful and meaningful for these communities to respond, adapt and prepare for climate change. The state can help communities and regions identify vulnerable infrastructure, support municipalities in acquiring and implementing funding for planning and engineering, and help citizens better understand climate risks and hazards.

Maine currently has a significant backlog of infrastructure adaptation projects, located across the state.¹⁵⁶ In both funding and pre-development assistance, attention should be directed toward

¹⁵⁴ Vajjhala, J. K. and S. (2020, December 17). Prioritize people, not projects: Addressing the harms of legacy infrastructure in the COVID-19 recovery. Brookings. <https://www.brookings.edu/research/prioritize-people-not-projects-addressing-the-harms-of-legacy-infrastructure-in-the-covid-19-recovery/>

¹⁵⁵ Ryder, S. (2017). A Bridge to Challenging Environmental Inequality: Intersectionality, Environmental Justice, and Disaster Vulnerability. Social Thought and Research. <https://doi.org/10.17161/1808.25571>

¹⁵⁶ See Page 95: https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MaineWontWait_December2020.pdf

communities where high social and climate vulnerability overlap with low capacity to develop and plan for infrastructure projects and limited access to funding.

Actions underway include:

- MEMA is assisting the Town of Tremont with Direct Technical Assistance under the federal Emergency Management Agency's (FEMA) Building Resilient Infrastructure and Communities grant program. The program provides federal support to communities that may not have adequate resources to begin climate resilience planning and project solution design. Through direct technical assistance spanning 36 months, this funding can help enhance a community's capacity to design holistic, equitable climate adaptation solutions that advance numerous community-driven objectives. FEMA currently aids fewer than 30 communities across the United States and its territories through this program.
- MEMA is implementing new FEMA guidance to consider equity in the Hazard Mitigation planning processes. This involves collaborating with agencies and organizations that work directly with socially vulnerable and disadvantaged communities in Maine to identify the heightened risk of these communities from natural hazards, and how risk could change in the future. This includes:
 - Meeting with state agencies to understand demographic trends in disadvantaged communities across Maine, current capabilities supporting resilience, and strategies for improving resilience in the next 5 years.
 - Developing the Maine Risk Assessment App to improve ease of access to, and use of, risk assessment data related to natural hazards, community and state assets, demographics and equity, municipal jurisdictions, and the status of hazard mitigation projects.¹⁵⁷ In 2023, MEMA will develop technical assistance, training, and social media campaigns to support widespread community use of the app, while continuing to work with disadvantaged communities to ensure this information is accessible, useful, and applicable to decision-making processes.
 - Developing a statewide list of resources that support mitigation and resilience activities in communities.
- DEP, in partnership with several organizations, is finalizing a Community Resilience Workbook to help communities include resilience, climate adaptation, and assessment in their planning processes. The workbook includes a list of resources and service providers who provide infrastructure planning, design, and construction services. DACE, DEP, and The Nature Conservancy are collaborating to develop an online version of the workbook that will allow communities to easily and quickly access the information that is pertinent to them. This will offer communities of various levels of understanding and sophistication a user-focused way to navigate to the resources available in the workbook. Additional details are available in Strategy F: Healthy and Resilient Communities.
- Several state agencies consider equity in infrastructure adaptation funding. These include:
 - DEP provides proportionally greater assistance to communities that have fewer financial resources by considering income and unemployment data, population trends, poverty,

¹⁵⁷ Source:

<https://maine.maps.arcgis.com/apps/mapviewer/index.html?webmap=eb8ec0935ce544dbaa80aec18c8db785>

and the cost of sewer services as a percentage of median household income in the scoring of grant applications for wastewater treatment facilities.

- Maine's Drinking Water State Revolving Fund defines disadvantaged communities served by public water systems and provides additional funding in the form of principal forgiveness on existing loans for drinking water infrastructure.¹⁵⁸
- MaineDOT ensures geographic diversity of their funding through allocations across all five regions of the state. They are seeking funding to expand their transportation infrastructure funding programs to provide additional assistance to smaller communities, including for lower priority and town-owned bridges, which often can't access existing state funding and are also the only way in or out of a town. This new program will help smaller towns with less expertise or fewer financial resources to rebuild larger bridges.
- DACF, in partnership with DMR, administers the Coastal Community Grant program, a program funded by the National Oceanic and Atmospheric Association. In 2022, funding prioritized the preparation of plans related to *MWW*, and awarded bonus points for proposals that served communities identified by the SVI.
- PFR participates in several partnerships related to climate risk and infrastructure. These include:
 - Maine's Bureau of Insurance is one of 15 members of the National Association of Insurance Commissioners Climate and Resiliency Task Force of the National Association of Insurance Commissioners. As a member, Maine requires an annual climate risk disclosure survey for insurance companies who collect premium amounts of more than \$100 million dollars nationwide; Maine's first survey was completed in 2021. The new standard aligns with the Task Force on Climate-Related Financial Disclosures (TCFD), an international best practice benchmark for disclosure.
 - The Maine Bureau of Financial Institutions, along with other northeastern state banking departments, participates in monthly climate change calls hosted by the New York State Department of Banking. Together with these states, NY is developing a Climate Guidance document to be issued to state-chartered financial institutions. Maine will have the option of sharing this document with Maine-based institutions upon its completion.
 - The Maine Office of Securities assists investors with making wise, safe, and informed decisions, including about climate change. To that end, the Office is collating resources from several national and federal sources about Environmental, Social, and Governance (ESG) funds — which often include climate disclosure requirements — for investors. These resources will be available on the Office's website in 2023.

Proposed next steps include:

- **Help disadvantaged communities identify climate vulnerable infrastructure** by maintaining a list and map of infrastructure projects identified through prior and ongoing planning processes. This may include centralizing or consolidating existing maps or resources. Work with communities, regional planning organizations, or service providers to improve access and usability of these resources.

¹⁵⁸ Source: <https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/imt/documents/2021DWSRFIUP.pdf>

- **Increase technical assistance for infrastructure adaptation projects in disadvantaged communities.** Assistance should help communities and regional planning organizations (a) plan and prioritize climate vulnerable infrastructure projects, (b) identify and apply for end-to-end state and federal grant funding to complete projects, and (c) implement projects.
- **Establish climate vulnerability and equity criteria across all infrastructure funding opportunities,** creating increased access to funding for disadvantaged communities with infrastructure most at risk from climate impacts.
- **State and federal infrastructure adaptation funding opportunities and programs should track participant and project characteristics** to monitor and ensure equitable distribution of funding and other benefits. Characteristics may include geographic distribution by community (e.g., rural, low income, disadvantaged, frontline, tribal) and applicant characteristics including income level and demographic characteristics.
- **Promote climate risk literacy and resources for real estate professionals and lenders.** This could include developing SLR, flooding and other climate risk disclosure resources and requirements for residential or commercial building transactions.

Agencies and Partners: GOPIF, MEMA, DOT, PFR, DEP, DHHS, DACF

Tracking Progress toward Climate Ready Infrastructure

MWW established the following indicators related to Climate Ready Infrastructure:¹⁵⁹

- Significant critical adaptation infrastructure projects completed
- Climate infrastructure and investment funding
- Federal and private dollars leveraged per state dollar

The ESC was tasked with recommending clear equity outcomes for proposed actions in *MWW*, monitoring progress, and making recommendations to ensure that programs and benefits reach the intended populations and communities. The following indicators and metrics build on metrics in *MWW* and can serve as progress indicators towards equitable access to, and distribution of, climate resilient infrastructure funding. Table 10 establishes:

- **Actions:** Summary of recommended actions. Please refer to text above for details on proposed actions.
- **Monitoring Metrics:** Designed to track progress over time, helping ensure that actions and programmatic recommendations reach the intended populations and communities.
- **Equity Outcome Metrics:** Assess equity in achievement of statewide climate goals. To be reported as outcomes of the state's climate plan.

¹⁵⁹ See *Maine Won't Wait* page 106-107: https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MaineWontWait_December2020.pdf

Table 10: Infrastructure Goals, Progress Indicators and Metrics

Goal #1: Identify and Invest in climate resilient infrastructure in disadvantaged communities		
Actions	Monitoring Metrics	Equity outcome metrics
<ul style="list-style-type: none"> - Maintain a list and map of climate vulnerable infrastructure projects - Increase technical assistance for planning, design, and construction of infrastructure adaptation projects in priority communities - Establish climate vulnerability and equity criteria across all infrastructure funding opportunities - State and federal infrastructure adaptation funding opportunities and programs should track participant and project characteristics - Promote climate risk literacy and resources for real estate professionals and lenders 	<ul style="list-style-type: none"> - # and % of applications for climate resilient infrastructure funding^{160, 161} among priority communities¹⁶² 	<ul style="list-style-type: none"> - Distribution of climate-ready infrastructure projects and funding by priority population and geography¹⁶³

Baseline Studies Needed

The following baseline studies are recommended to provide baseline data to measure progress.

1. **Baseline study of state and federal infrastructure adaptation funding grant distribution,** including current reach, scope, and expenditure of grants by community (e.g., rural, low income, disadvantaged, frontline, tribal) or applicant characteristics, as well as barriers to finding out about, accessing, and applying for grants. See Strategy F: Healthy and Resilience Communities for parallel recommendations for resilience and adaptation planning and project funding.

¹⁶⁰ Among climate-resilient infrastructure funding or programs that can be geographically targeted. For federal programs, this could include Justice40 Eligible Programs. For state programs without federal guidelines, agencies may need to identify eligible programs.

¹⁶¹ Including allocated or awarded funds from federal or state programs (from formula, competitive, grant or other processes), for planning, design, and construction.

¹⁶² Priority communities could include Low-Income, Rural, Disadvantaged or Frontline Communities, with criteria to be defined by implementing agency or federal guidelines as available.

¹⁶³ Geographic distribution could include dollars, percentages, or per capita spending among priority communities, or by county.

Strategy H: Engage with Maine People and Communities

Achieving Maine’s climate goals will require effective communication about climate impacts and opportunities to act. Vulnerable populations are most at risk from climate impacts, and many of the strategies in *Maine Won’t Wait* offer important co-benefits, such as reduced household heating costs from transitioning to heat pumps. Focused communication efforts will help ensure that diverse populations of Maine people can participate in Maine’s climate strategies.

MWW recommends an ongoing communications effort to raise public awareness and understanding about climate change in Maine, the state’s climate response, and climate related programs and opportunities. It also recommends increasing public education offerings related to climate and energy, organizing a “Maine Climate Corps” for climate-related workforce development, and launching the Governor’s Climate Leadership Council to recognize leadership by Maine businesses and the private sector.

The ESC recommended several additional actions to engage Maine people and communities in climate action. Several of those actions are reflected in the chapter on Procedural Equity, and state agencies are already implementing many of those recommendations:

- The MCC launched a comprehensive communications campaign about *MWW* and opportunities for climate action. This included hosting the Communities Leading on Climate Conference in 2022, featuring stories and resources to support community climate action, which was attended by more than 500 people both in-person and virtually;¹⁶⁴ offering regular presentations and an email newsletter with updates on community action, funding, and other opportunities; and sharing success stories about climate action around the state.
- The MCC launched the Climate Science Dashboard,¹⁶⁵ to enable Maine people to explore historical observations and future scenarios for three key climate change indicators: land temperatures, ocean surface temperatures, and sea level rise. The dashboard will be updated in early 2023 to add climate change-related health data as the result of a partnership with the ME CDC.
- DOE has taken several steps to help increase access to climate education for schoolchildren, including:
 - Developing a pilot grant program for climate education.¹⁶⁶
 - Launching interdisciplinary, project-based PreK-12 climate science modules in on the Maine Online Opportunities for Sustained Education (MOOSE) platform.¹⁶⁷ They include Data Literacy: Collecting, understanding, and using data related to climate; Systems & Connections: The interconnected influences of all elements and individuals on climate and climate on those elements and individuals; and Communication: Combining data literacy with systems and connections to effectively convey and interpret ideas about climate.
- Volunteer Maine launched the Maine Climate Corps, which has taken significant steps to incorporate equity into its programming, such as:

¹⁶⁴ Source: <https://www.maine.gov/climateplan/conferences/community>

¹⁶⁵ Source: <https://www.maine.gov/climateplan/climate-impacts/climate-data>

¹⁶⁶ Source: http://www.mainelegislature.org/legis/bills/display_ps.asp?id=1902&PID=1456&snum=130

¹⁶⁷ Source: <https://learnwithmoose.maine.gov/>

- Incorporating questions about community and Indigenous collaboration, non-discrimination and accessibility, recruitment and demographics of members, and demographics of service areas and beneficiaries in the Request for Applications.
- Including youth members and broad geographic representation on the Climate Corps Task Force.
- Engaging in conversations with the Partnership for the Civilian Climate Corps to envision an expanded federal Civilian Climate Corps that would increase living allowance for members, giving more people the opportunity for service.¹⁶⁸
- Prioritizing climate corps assistance to disproportionately affected communities.
- Ensuring equity between rural and more urbanized regions of Maine.
- Planning to collect the following monitoring metrics: geography of service area, demographics of Corps members, youth participation, recruitment strategies, advisory councils and community collaborations, and member experience.

The ESC recommends the following goals for inclusion in the state’s climate action plan. These goals are meant to increase access to climate information amongst priority populations by using diverse channels and building diverse partnerships to translate, interpret, and communicate climate opportunities. Priority populations include people who currently lack awareness of climate action opportunities and face barriers including but not limited to income, use of diverse communication and information networks, language or literacy barriers, or who lack access to internet or computers.

In addition to the below goals, the ESC recommends that the MCC consider goals, actions, and metrics contained within the chapter on Procedural Equity; and that those recommendations become part of the effort to further engage Maine’s communities and people in the next climate planning process.

Goal #1: Increase awareness and participation in climate education and engagement among priority populations and disadvantaged communities

Many Maine communities have already taken steps to respond to climate change and improve climate resilience. However, participation in climate planning processes may be more limited in disadvantaged communities, as explored in prior chapters. Trusted partner organizations can act as a ‘bridge’ to facilitate discussions and information about climate change to these frontline communities.¹⁶⁹ Using places and buildings that are familiar and easily reachable for climate engagement and educational events can improve accessibility and receptiveness.¹⁷⁰ Research has shown that sharing scientific

¹⁶⁸ Source:

[https://www.serviceyearalliance.org/the_pccc_statement_on_the_inflation_reduction_act_of_2022#:~:text=The%20Partnership%20for%20the%20Civilian%20Climate%20Corps%20\(CCC\)%20is%20optimistic,Inflation%20Reduction%20Act%20of%202022.](https://www.serviceyearalliance.org/the_pccc_statement_on_the_inflation_reduction_act_of_2022#:~:text=The%20Partnership%20for%20the%20Civilian%20Climate%20Corps%20(CCC)%20is%20optimistic,Inflation%20Reduction%20Act%20of%202022.)

¹⁶⁹ Fighting Redlining & Climate Change with Transformative Climate Communities. (2021). The Greenlining Institute. <https://greenlining.org/wp-content/uploads/2021/10/Fighting-Climate-Change-and-Redlining-with-Transformative-Climate-Communities-Final-Report.pdf>

¹⁷⁰ Humm, C., & Schrögel, P. (2020). Science for All? Practical Recommendations on Reaching Underserved Audiences. *Frontiers in Communication*, 5, 42. <https://doi.org/10.3389/fcomm.2020.00042>

information in the native language of a target audience yields greater participation, motivation, and optimism, and leads to stronger connections to concepts in the native culture.¹⁷¹

Actions underway include:

- The Communities Leading on Climate Conference offered several avenues for participation by priority populations, including
 - A lower registration or waived fee for individuals experiencing financial hardship.
 - A low-cost or free virtual option for participation for individuals lacking access to transportation or childcare.
 - An event-specific carpool site to help defray travel costs for in-person attendees.
 - Access to information from, and recordings of, the event.
- MaineWontWait.org, launched by the GOPIF in December 2021, provides plain-language stories, articles, climate data, and videos about climate action for the public.

Proposed next steps include:

- **Adopt equity plans for climate communications and outreach.** Identify practices, partners, and channels to reach and engage rural and low-income Maine people, as well as Maine people with limited English proficiency or low literacy. Communication plans should identify opportunities to incorporate diverse and culturally appropriate understandings of climate action and impacts.
- **Identify and fund climate education and engagement partners and service providers to reach priority populations.** This could include partnerships with (a) social service providers or non-governmental organizations who can reach targeted priority populations with climate messaging and opportunities and (b) organizations who can help translate climate engagement materials.

Agencies and partners: GOPIF, in partnership with state agencies and community partners

Tracking Progress toward Engaging Maine People

MWW did not establish indicators related to Engaging Maine Communities.

The ESC was tasked with recommending clear equity outcomes for proposed actions in *MWW*, monitoring progress, and making recommendations to ensure that programs and benefits reach the intended populations and communities. The following indicators and metrics build on the climate action plan's overall metrics, can serve as progress indicators towards equitable access to, and distribution of, climate and energy program benefits. Table 11 establishes:

- **Actions:** Summary of recommended actions. Please refer to text above for details on proposed actions.
- **Monitoring Metrics:** designed to track progress over time, helping ensure that actions and programmatic recommendations reach the intended populations and communities.
- **Equity Outcome Metrics:** assess equity in achievement of statewide climate goals. To be reported as outcomes of the state's climate plan.

¹⁷¹ Márquez, M. C., & Porras, A. M. (2020). Science Communication in Multiple Languages Is Critical to Its Effectiveness. *Frontiers in Communication*, 5, 31. <https://doi.org/10.3389/fcomm.2020.00031>

Table 11: Engagement Goals, Progress Indicators, and Metrics

Goal #1: Increase awareness and participation in climate education and engagement among priority populations and disadvantaged communities		
Actions	Monitoring Metrics	Equity Outcome Metric(s)
<ul style="list-style-type: none"> - Adopt equity guidelines for climate communications and outreach to reach and engage rural, low-income, limited English proficiency and low literacy Maine people - Identify climate education and engagement partners and service providers to reach priority populations 	<ul style="list-style-type: none"> - Number of partner organizations conducting climate outreach to disadvantaged communities, by geography 	<ul style="list-style-type: none"> - N/A

Baseline Studies Needed

The following baseline studies are recommended to provide baseline data to measure progress.

1. **Awareness of** (a) climate marketing education & outreach, (b) local climate risks, and (c) potential actions/programs among priority populations

Procedural Equity

Throughout this report, the ESC recognizes several different ways to understand equity:

Distributive equity is how benefits and burdens are distributed; **procedural** equity includes input and participation in decision-making processes; **contextual or historical** equity recognizes historical or systemic injustices that lead to inequity; and **corrective** equity recognizes the “uneven playing field” and seeks greater than proportional participation or investment.

Many of the recommended goals and actions in this report are about **distributive equity** – ensuring that programs related to Maine’s climate action plan reach and serve all Maine people. The path to achieving those goals requires **contextual equity**– understanding different vulnerabilities and barriers across Maine communities and implementing processes for priority populations that work for them.

In addition, the ESC recommends several cross-cutting goals and strategies for **procedural equity**. These are intended to enable meaningful participation in climate-related policy development, planning, and implementation, and to help ensure that priority populations and communities are aware of, and can access, state programs and funding opportunities for climate action.

Maine state agencies are already beginning to work on procedural equity:

- State agencies, including the Maine Department of Transportation (MaineDOT)¹⁷² and the Maine Department of Education (DOE),¹⁷³ are adopting equity statements to guide their engagement with, and work in, priority populations and communities.
- The Maine Secretary of State’s Office, as well as other state agencies, have adopted training requirements related to diversity, equity, inclusion, and justice for all employees.
- The Permanent Commission on the Status of Racial, Indigenous & Tribal Populations is working to establish trusted relationships with disadvantaged communities across Maine, to provide avenues for engagement with these communities for all Maine government processes.
- The Maine Bureau of Human Resources is developing digital accessibility and diversity, equity, inclusion, and belonging trainings for State of Maine employees.

Building on these existing efforts, the ESC recommends the following procedural equity goals for inclusion in the state’s climate action plan. These goals are meant to achieve more equitable outcomes for priority populations and communities across all climate programs and opportunities by addressing barriers to participating in planning, decision-making, programs, and funding. For individuals and households, these barriers might include but are not limited to lack of awareness about opportunities, use of diverse communication and information networks, lack of time or financial resources to access opportunities, language access challenges, lack of technical education or training, and lack of access to transportation to in-person meetings. For communities, these barriers might also include lack of staff or capacity to apply for funding opportunities.

¹⁷² Source: <https://www1.maine.gov/mdot/publications/docs/2022/MaineDOTEquityStatement6-5-22.pdf>

¹⁷³ Source: <https://www.maine.gov/doe/learning/content/socialstudies/resources/DEI>

Moving forward, the ESC sees this work as integral to achieving the outcomes related to Engaging Maine People in *MWW* and recommends that these recommendations be integrated into that workstream during the MCC's future work.

Goal #1: Increase participation by priority populations and communities in climate-related planning, program design, decision-making processes, and funding opportunities

Members of disadvantaged, low income, rural, and frontline communities face challenges to participating in climate planning, decision making, funding, and programs. Some of these challenges may require state agencies to update their policies and practices to better enable participation by priority populations. For example, mechanisms that offer low-income people logistical support or reimbursement for transportation, childcare or missed work are strategies to help reduce barriers to participation in climate and clean energy policy making.

The ways in which climate information is shared is also important. Equitable and inclusive communication requires engagement strategies that recognize the voices and experiences of priority communities.¹⁷⁴ Culturally relevant expressions, metaphors,¹⁷⁵ experiences,¹⁷⁶ and storytelling approaches¹⁷⁷ can all be employed to engage communities in conversations about science-based climate action. Outreach materials presented in the native language of the target audience are also critical to effective communication.¹⁷⁸ Further, working with community-based partners who community members trust can expand awareness about, and interest in, state decision-making.

Priority populations and communities should be invited and supported to engage with state and local entities to design climate policies, programs, and projects. In many instances, state and federal agencies already offer, and are expanding, resources and opportunities for disadvantaged people and communities to engage in climate-related programs, decisions, or funding opportunities. As the previous chapters detail, many state agencies are working to incorporate equity considerations into program outreach, eligibility, or funding scoring criteria.

However, the *availability* of these resources does not guarantee that the most vulnerable or in-need people, communities and businesses will learn about them, and have time or capacity to apply. To ensure that priority populations and communities access and use climate-related programs and funds,

¹⁷⁴ Canfield, K. N., Menezes, S., Matsuda, S. B., Moore, A., Mosley Austin, A. N., Dewsbury, B. M., Feliú-Mójer, M. I., McDuffie, K. W. B., Moore, K., Reich, C. A., Smith, H. M., & Taylor, C. (2020). Science Communication Demands a Critical Approach That Centers Inclusion, Equity, and Intersectionality. *Frontiers in Communication*, 5, 2. <https://doi.org/10.3389/fcomm.2020.00002>

¹⁷⁵ Taylor, C., & Dewsbury, B. M. (2018). On the Problem and Promise of Metaphor Use in Science and Science Communication. *Journal of Microbiology & Biology Education*, 19(1). <https://doi.org/10.1128/jmbe.v19i1.1538>

¹⁷⁶ Djonko-Moore, C. M., Leonard, J., Holifield, Q., Bailey, E. B., & Almughyirah, S. M. (2018). Using Culturally Relevant Experiential Education to Enhance Urban Children's Knowledge and Engagement in Science. *Journal of Experiential Education*, 41(2), 137–153. <https://doi.org/10.1177/1053825917742164>

¹⁷⁷ Dahlstrom, M. F. (2014). Using narratives and storytelling to communicate science with nonexpert audiences. *Proceedings of the National Academy of Sciences*, 111(Supplement_4), 13614–13620. <https://doi.org/10.1073/pnas.1320645111>; Hunter-Doniger, T., Howard, C., Harris, R., & Hall, C. (2018). STEAM Through Culturally Relevant Teaching and Storytelling. *Art Education*, 71(1), 46–51. <https://doi.org/10.1080/00043125.2018.1389593>

¹⁷⁸ Márquez, M. C., & Porras, A. M. (2020). Science Communication in Multiple Languages Is Critical to Its Effectiveness. *Frontiers in Communication*, 5, 31. <https://doi.org/10.3389/fcomm.2020.00031>

Maine must ensure procedural equity from end-to-end, starting with awareness and trust, through navigating program or project options and applications, and applying and receiving rebates or funds.

Actions underway include:

- The Maine Department of Labor (DOL), the Office of the Secretary of State,¹⁷⁹ and the Department of Health and Human Services (DHHS)¹⁸⁰ each have accessible language access policies.¹⁸¹ In addition, the Maine Judicial Branch has a language access plan¹⁸² which provides a comprehensive framework for engaging in the continuous improvement of access to justice in the Maine state courts for individuals with limited English proficiency. The State of Maine Bureau of Human Resources is exploring opportunities for training for state employees to access translation and interpretation services when interacting with Maine people who speak languages other than English or who have hearing disabilities.
- The Maine Center for Disease Control and Prevention's (CDC) Office of Population Health Equity (OPHE) is supporting projects based in the Office of MaineCare Services and the Office of Family Independence aimed at improving culturally and linguistically appropriate messaging across DHHS.
- The Maine Public Utilities Commission (PUC) and the Office of the Public Advocate (OPA) work together to make energy decision making processes accessible to all Maine people. Specific actions include:
 - A new law¹⁸³ directs the PUC to investigate opportunities to increase access to, and use of, intervenor funding for environmental justice and other disadvantaged community members. Intervenor funding provides necessary financial support to organizations and communities to participate in PUC adjudicatory processes, including those related to large scale renewable procurement.
 - The PUC will hold in-person public hearings in the area impacted by a particular decision, as well as schedule hearings for evening hours, upon request.
 - The PUC has sign language interpreters at all public witness hearings.
 - The OPA offers plain language how-to guides and templates¹⁸⁴ to help interested parties participate in energy decision making.
 - As proposed in its 2024-25 biennial budget, the PUC is committed to hiring new community engagement staff to enhance public engagement with Maine communities, non-profits, small utilities, and other stakeholders who need assistance. This position will conduct educational outreach on regulatory processes and assist these groups with participating in PUC cases.

¹⁷⁹ Source: <https://www.maine.gov/sos/language/index.html>

¹⁸⁰ Source: <https://www.maine.gov/dhhs/ada/ada-civil-rights-compliance/effective-communication-language-access>

¹⁸¹ Under Title VI of the Civil Rights Act, any state agency receiving government funding is required to provide access to language services; the state has a standing vendor list that state agencies can use to respond to requests from constituents for these services. The examples herein describe those agencies that make information about those services easier to access. See <https://www.dol.gov/agencies/oasam/regulatory/statutes/title-vi-civil-rights-act-of-1964>

¹⁸² Source: <https://www.courts.maine.gov/programs/lep/mjb-language-access-plan.pdf>

¹⁸³ Source: https://legislature.maine.gov/legis/bills/display_ps.asp?LD=2018&snum=130

¹⁸⁴ Source: <https://www.maine.gov/meopa/puc-information>

- The Maine Secretary of State’s office is taking the following steps to improve access to services:
 - Hiring specialists from the American Association of Retired Persons (AARP) and disability rights organizations to test screen readers at Bureau of Motor Vehicles locations to identify language and use challenges.
 - Conducting comprehensive outreach to New Mainer communities to examine barriers to access associated with language.
 - Working with DHHS to lower cost barriers to accessing driver education for low-income individuals.
- Various state agencies and partners have explored creative mechanisms to compensate disadvantaged individuals and communities for participation in state processes. Examples include:
 - In 2020, the Maine Department of Agriculture, Conservation and Forestry (DACF) worked with the non-profit organization Resources for Organizing and Social Change to recruit individuals experiencing poverty, hunger, and food insecurity to review the *Interim Report on Ending Hunger in Maine by 2030*. Through this external partnership, DACF was able to ensure compensation of disadvantaged people impacted by this report for providing their expert knowledge.
 - In 2022, the Children’s Cabinet included compensation for disadvantaged individuals participating in decision making processes as part of their Early Childhood Comprehensive Systems Grant.
- State agencies can access GOMaine,¹⁸⁵ the statewide travel resource program, to establish optional carpools and other shared transportation options for any meeting, conference, or other in-person gathering inviting members of the public. Use of this platform may provide opportunities for people with limited access to transportation to participate in state processes.

Proposed next steps include:

- **Develop and adopt guidance for conducting outreach in, and increasing participation by, priority populations and disadvantaged communities in climate programs.**¹⁸⁶ Guidance should identify barriers to participation among priority populations and address the following areas recommended by the ESC, where possible:
 - **Ensure end-to-end language accessibility** for written and online materials, assistance, and advisory services (e.g., help lines) and meetings. Develop plain language guidance, and a language access policy for both translation and interpretation services. Ensure access to translation services, and to interpretation services for people with hearing loss,¹⁸⁷ for any interaction with the public. This recommendation is included in sector-specific recommendations in Strategy F: Healthy and Resilient Communities.
 - **Offer a variety of meeting times, agendas, and avenues to participation to align with work and childcare schedules.** There is no “perfect” meeting time when all people can

¹⁸⁵ <https://gomaine.org/>

¹⁸⁶ This recommendation is included in several sector-specific recommendations related to Strategies A, C, F, and H.

¹⁸⁷ According to the 2020 census, in Maine, 6% of people speak a language other than English at home; 1.4% of people speak English less than very well. In addition, 15.9% of people experience a disability, including hearing-related disabilities. Source: <https://www.census.gov/programs-surveys/decennial-census/decade/2020/2020-census-main.html>

participate, and this is true for disadvantaged and low-income individuals. Often, daytime and evening meetings are necessary to accommodate schedules; even then, people may not have time to sit through a meeting for an opportunity to speak. In addition to holding in-person meetings in a variety of community locations, state agencies should provide opportunities to engage virtually, including phone-only participation for those individuals without access to broadband or with limited technical acumen. Provide accessible summary materials (e.g., transcripts, slides, recordings) and feedback channels for those who cannot attend in person and consider extending input timelines to allow for asynchronous participation where appropriate.

- **Develop a mechanism for disadvantaged individuals to access stipends or reimbursement for participating in climate and clean energy committees or work groups.** This mechanism should seek to reduce barriers for disadvantaged people to provide their expert knowledge and perspectives to the state. At minimum, disadvantaged people should have access to reimbursement for costs of transportation, childcare, or lost work hours.
- **In-person meetings should seek to provide shared transportation options** where possible, to facilitate participation by non-drivers or those with limited access to transportation.
- **Work with communities and community-based organizations to align outreach with people’s existing and trusted social and community networks and channels.** Considering the diversity of information and community networks of all Maine people, and different levels of interest and trust in government processes, determine where partnerships could help encourage participation among priority populations and communities. Identify partners who have existing relationships with these populations, and work with them to (a) identify information channels used by the populations they serve and (b) develop messaging and easy to share materials to reach their communities. Identify mechanisms to compensate partner or contributing organizations who help with outreach and review. This recommendation is included in several sector-specific recommendations related to Strategy F: Healthy and Resilient Communities and Strategy H: Engage with Maine People.
- **Identify and include disadvantaged people or representatives in program design.** At the outset of a program design process (including grant or funding criteria), identify disadvantaged people or communities impacted by a particular program, and opportunities for co-design or input. Work with trusted organizations to invite identified individuals to participate. As above, ensure appropriate compensation for their expertise. This recommendation is included in several sector-specific recommendations related to Strategy A: Clean Transportation and Strategy C: Carbon Emissions in Clean Energy and Industrial Sectors.
- **Consider community capacity in application, scoring and award processes.** For programs or funding targeting small, rural, or disadvantaged communities, consider the responsibilities, available time, and resources of existing staff to find, plan and apply for funding. Identify ways to ease application burden, including state-driven processes to identify and recruit eligible communities, automatic enrollment or eligibility, direct outreach to provide technical, planning or grant-writing assistance, or non-competitive awards. For competitive awards, consider

community size and capacity in application requirements or scoring. This recommendation is included in several sector-specific recommendations related to Strategy C: Carbon Emissions in Clean Energy and Industrial Sectors, Strategy E: Protect Maine’s Environment and Working Lands and Waters, and Strategy G: Invest in Climate-Ready Infrastructure.

- **Fund and staff person-to-person advisory and assistance services** to (a) connect people with climate-related state programs and planning processes, and (b) guide priority populations and communities through application processes. Even with improved and plain-language communications, people with less familiarity with program applications or rebates for example, or less trust in government programs or processes, may require assistance. This recommendation is included in several sector-specific recommendations related to Strategy B: Modernize Maine’s Buildings (Chapter B), Strategy C: Carbon Emissions in Clean Energy and Industrial Sectors, Strategy E: Protect Maine’s Environment and Working Lands and Waters, and Strategy G: Invest in Climate-Ready Infrastructure.

Agencies and partners: all

Tracking Progress toward Procedural Equity

The ESC was tasked with recommending clear equity outcomes for proposed actions in *MWW*, monitoring progress, and making recommendations to ensure that programs and benefits reach the intended populations and communities. The following indicators and tracking metrics can be applied overall (across sectors and projects) or by sector (e.g., among transportation, housing, or energy investments). Table 12 establishes:

- **Actions:** Summary of recommended actions. Please refer to text above for details on proposed actions.
- **Monitoring Metrics:** Designed to track progress over time, helping ensure that actions and programmatic recommendations reach the intended populations and communities.
- **Equity Outcome Metrics:** Assess equity in achievement of statewide climate goals. To be reported as outcomes of the state’s climate plan.

Table 12: Procedural Equity Actions, Monitoring Metrics and Equity Outcome Metrics

Goal #1: Increase participation of vulnerable, impacted, historically underserved, disadvantaged, and low-income people, businesses and communities in state planning and decision-making around climate actions, projects, and decisions

Actions	Monitoring Metrics	Equity Outcome Metric(s)
<ul style="list-style-type: none"> - Language accessibility and resources including plain language materials and/or translated materials - Accessible meeting policies/procedures - Consider stipends or reimbursement for participation in climate and clean energy committees and work groups - Partnership-based outreach using existing social, 	<ul style="list-style-type: none"> - # of agencies and programs with policies and procedures for procedural equity - # and % of people from priority populations or communities who participate in state-led climate, energy, and resilience planning or decision-making processes - # and % of priority populations, businesses or 	<ul style="list-style-type: none"> - NA

community or communication networks - Identify and include disadvantaged people or representatives in program design - Consider community capacity in application, scoring and award processes - Fund and staff person-to-person advisory services to connect priority populations and communities to state programs and resources	communities who seek or apply for programs or funding -	
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The ESC recognizes that data about individuals who participate in state decision making processes will have to be provided on a voluntary basis, such as at registration for a particular event; this will require new procedures to be implemented across programs and processes. The ESC suggests that the MCC lead by example and track participation metrics throughout the next climate planning process.

Conclusion and Recommended Next Steps

The Maine Climate Council established the Equity Subcommittee to make recommendations to the Climate Council to **“ensure shared benefits across diverse populations”**, as well as propose monitoring and evaluation metrics to ensure **“programs and benefits reach the intended populations and communities”** (*MWW* page 37).

Over the last 18 months, working with the MCC working groups, state agencies, and with input from other experts and members of the public, the ESC has developed equity recommendations specific to the programs and policies proposed *MWW*, as well as proposed equity metrics.

This report is the final outcome of the ESC’s deliberations and serves to transmit this work for consideration by the MCC.

The ESC recommends that the MCC consider these recommendations and metrics for adoption. Following adoption, the ESC recommends that responsible state entities begin acting and collecting data identified as necessary for baseline studies, monitoring metrics, and equity outcome metrics, so that equity outcome metrics can be reported annually as part of the state’s annual climate reporting process. As information is collected, additional barriers identified, and baselines established, the ESC recommends the MCC and its working groups consider adjusting these goals, actions, and metrics.

The ESC recognizes that the implementation of these recommendations requires additional resources across state agencies and programs. To accomplish the goals set out herein and in *MWW* requires an ongoing commitment across state government and the staff, knowledge, and funding necessary to help Maine’s communities respond, adapt, and thrive. The ESC recommends that the MCC work in close partnership with agencies, the legislature, and external funders to appropriately resource this work.

This report establishes a strong equity foundation for the ongoing work of the Climate Council and its working groups. To facilitate this, the ESC recommends (1) updating the structure and role of the Equity Subcommittee, to better integrate its process with the work of the Council and its working groups; and (2) the adoption of procedural equity guidelines for the next statewide climate planning process.

Recommended Structure of the Equity Subcommittee

During the Maine Climate Council’s climate planning process, the Council and its working groups considered equity as they developed recommendations; *Maine Won’t Wait* includes specific recommendations to consider, serve and invest in vulnerable communities. At the same time, recognizing the importance of equity in Maine’s climate response, *Maine Won’t Wait* also established the Equity Subcommittee, to continue this work. The ESC worked together over the course of 2021 and 2022 to develop equity recommendations for climate plan implementation.

The ESC’s work is grounded in the strategies contained in *Maine Won’t Wait*. In many ways, their work was developed in response to the *existing* climate action plan; this report proposes recommendations to be incorporated into a body of work that is already underway.

The ESC proposes a more integrated structure moving forward, recognizing both their unique expertise in meaningful involvement and the critical role of sector-specific expertise within each Working Group. They recommend the Equity Subcommittee be comprised of:

- At least two sector-specific equity experts appointed to each working group, to serve as full members of each working group and additionally as members of the ESC.
- At least two social scientists appointed to the Science and Technical Subcommittee, as referenced in Strategy E: Protect Maine’s Environment and Working Lands and Waters, and also as members of the ESC.
- 5 members appointed at-large to advise the Climate Council on equitable and meaningful involvement of priority populations in the state’s climate planning process. These should include members of the Maine Climate Council, and ESC chairs will be selected from this group.

The ESC, comprised of the 19 members (minimum) above, will convene twice annually to discuss progress across working groups and across the state’s climate action plan. The at-large members will meet more frequently with Council and working group leadership to advise on procedural equity. ESC members will be appointed to terms co-terminus with working group and Council membership.

Recommended Procedural Equity Guidelines for the Maine Climate Council

In this report, the ESC recommends several cross-cutting goals and strategies for procedural equity. These are intended to allow for meaningful participation in climate-related policy development, planning, and implementation, and to help ensure that disadvantaged communities are aware of, and can access, state programs and funding opportunities for climate action.

Maine Won’t Wait was developed with the input of hundreds of Maine people, ensuring a plan that reflects both the best science available to respond to climate change as well as the priorities of communities around the state. In the Procedural Equity chapter, the Equity Subcommittee recommends several actions to **increase** participation by priority populations, recognizing that members of disadvantaged, low income, rural, and frontline communities may face challenges to participating in climate planning, decision making, funding, and programs; and recommends that Maine Climate Council **lead by example** and track participation metrics — including the number and percent of people from priority populations who participate — throughout the next climate planning process.

In addition to incorporating recommendations from the Procedural Equity chapter, the Equity Subcommittee recommends the following procedural equity guidelines for the Maine Climate Council and its working groups:

- Incorporate equity training into orientation for all MCC and Working Group members in advance of the next climate planning process. The ESC recommends that this training cover topics related to diversity, equity, inclusion, justice, and implicit bias.
- Identify additional opportunities to hear from priority populations and communities, including storytelling, listening sessions, and increased opportunities for statewide, virtual and in-person, participation. The ESC will solicit ideas and make recommendations to the MCC to increase participation by impacted people and communities.
- Establish a mechanism for collaboration with the Permanent Commission on the Status of Racial, Indigenous and Tribal Populations. Collaboration will be supported by the at-large members of the ESC. Such collaboration will inform the ESC’s recommendations to the MCC about meaningful involvement.

- Develop tools and guidance to formalize the process by which working groups consider and respond to equity concerns throughout the next climate planning process, including guidance on the establishment of equity goals or targets.
- Seek to achieve greater than proportional representation by BIPOC persons and other priority populations on the Council and its working groups.
- Explore opportunities to offer reimbursement of expenses for impacted members of working groups, as is currently allowed for Council members.

As the state takes on the enormous task of confronting climate change and its effects in Maine, the Equity Subcommittee is committed to continuing to work with the Climate Council and its working groups to help ensure an equitable and just path towards a future with reduced emissions, increased carbon sequestration, and improved resilience across the state. Together, we will create a safe and thriving future for all Maine people.

Appendix 1: Assessing Equity using Benchmark and Baseline Data

This final report to the MCC does not include numeric targets or goals for serving priority populations or communities, though the ESC recommends that the MCC develop such goals in the future. Recognizing the overarching goal of achieving equity in climate program participation, spending and benefits among Maine people and businesses, the ESC recommends comparing equity outcomes to population or community benchmarks or baselines:

(1) **Compare share among priority population to a Benchmark:**

Use population proportions of priority populations or communities to understand whether projects, actions or investments are reaching a fair share of Maine's people.

Example: About 22% of FY2021-22 weatherization projects were in low-income homes (**equity metric**) compared to 29% of Maine households reporting less than 60% of state median income (**benchmark**).

(2) **Assessing progress over time against a Baseline:**

Use current or historical data about a cost, burden, experience etc. as a starting point to assess change over time among priority populations.

Example: Average energy burden among low-income households is ##% in 2023 (**equity metric**), compared with 19% in 2015 (**baseline**).¹⁸⁸ The statewide average across all income levels is about 6% (**baseline**).

The ESC considers these benchmarks and baselines to be minimum thresholds. State climate actions and spending should at a minimum reach, serve and benefit priority populations proportionally, though the ESC urges the state to reach, serve and benefit priority populations quickly, and to a greater degree, than less-vulnerable people or communities.

As a starting point for benchmarking, tables 13, 14, and 15 contain potential benchmarks and sources.

Recognizing that priority populations may vary by sector and program, including federal guidelines and criteria, state agencies and partners should identify benchmarks to align with their priority populations and program criteria across climate, clean energy, and community resilience programs.

¹⁸⁸ Source: Synapse Energy Economics. Maine Low-Income Home Energy Burden Study. Prepared for the Office of the Public Advocate, June 2019. Data is from the DOE LEAD tool, using 2015 Census microdata.

Table 13. Potential Benchmarks and Sources for Individual and Household Characteristics

Potential Benchmarks	Sources
Income Level	
31% of households below 200% of Federal Poverty Line (FPL)	Maine State Economist: Maine State Data Center
29% of households below 60% of state median income ¹⁸⁹	US Census American Community Survey, 5-year estimates (available through Data Explorer)
28% of households were eligible for LIHEAP in 2020 ¹⁹⁰	US Census QuickFacts
Also: Proxy benchmarks may include eligibility for SNAP, TANF, LIAP	US DOE Low-Income Energy and Affordability Data (LEAD) Tool National Energy & Utility & Affordability Coalition
Housing and Energy	
23% of housing units are rented	Same as above, plus: US DOT Transportation-Disadvantaged Census Tracts Synapse Energy Economics. Maine Low-Income Home Energy Burden Study (2019) EIA State Energy Indicators (2021)
21% are multifamily homes (2+ units)	
9% are mobile homes	
73% of homes use fuel oil, propane, or other bottled/tank fuels for heat (highest in country)	
6% average energy cost burden (19% among low-income households)	
Transportation and Communications	
16% of households do not have a broadband internet subscription	Same as above
7% of households do not have a private vehicle	
Race, Ethnicity and Language	
9% of Mainers identify as Black, Indigenous or Persons-of-Color (including Hispanic/Latino)	Same as above
8% of households report limited English proficiency	
Age and Health	
22% of Mainers are age 65 or older	Same as above, plus: ME CDC Environmental Public Health Tracking Network
12% of Mainers under age 65 report living with a disability	
% receive disability benefits or SSI	
ED or hospital visits from Asthma, COPD, myocardial infarction, heat-related or cold-related illness	

Table 14: Potential Benchmarks and Sources for Community Characteristics

Potential Benchmarks	Sources
Low-Income and Disadvantaged Communities	
35% of census tracts are considered “disadvantaged” based on federal screening criteria (29% of Maine’s population)	United States Climate and Economic Justice Screening Tool (CEJST)
34% of communities are low-income (per CEJST and NMTC) ¹⁹¹	New Market Tax Credit Eligible Census Tracts US CDC Social Vulnerability Index
Rural Communities	

¹⁸⁹ Source: US DOE Low-Income Energy and Affordability Data ([LEAD](#)) Tool

¹⁹⁰ Source: NATIONAL ENERGY & UTILITY AFFORDABILITY COALITION. <https://neuac.org/wp-content/uploads/2021/02/Maine-State-Sheet-2022.pdf>

¹⁹¹ These census tracts qualify for NMTC investments because they have a poverty rate of at least 20% and/or a median family income that is at or below 80% of the applicable area median family income.

24% of census tracts and 19% of the population are considered Rural using USDA criteria	USDA Rural-Urban Commuting Area Codes (RUCA)
83% of minor civil divisions (towns, plantations, etc.) have <4,000 people	Maine Climate Council Municipal Vulnerability Assessment (2020)
35% of minor civil divisions have no in-house planning staff and minimal to no support for resilience planning	
Environmental Exposures	
Cumulative environmental burdens in community	US EPA Environmental Justice Screening and Mapping Tool (EJScreen)
Public and private water quality	ME CDC Environmental Public Health Tracking Network
Air quality and/or traffic density	Maine DEP Maps and Data
Climate Risk and Vulnerability	
Flood risk and vulnerability (inland and coastal)	Maine Climate Council Municipal Vulnerability Assessment (2020)
Sea level rise projections	Maine DEP Climate Trends and Data sources
Vulnerability to extreme weather (considering weather projections, populations, and health)	First Street Foundation Climate Risk Public Data
Drought risk	Maine DACF Floodplain Mapping Resources
Natural and Working Lands	
% working lands (farmland, timber land)	Maine DACF (including Bureau of Parks and Lands, and Department of Inland Fishing and Wildlife)
% conserved land by town (including public and private ownership) (22% of the state is conserved)	Maine Coast Heritage Trust

Table 15: Potential Benchmarks and Sources for Workforce and Industry Characteristics

Potential Benchmarks	Sources
Workforce	
% of workforce works directly in natural resource industries (agriculture, fishing, forestry)	Maine Department of Labor: Center for Workforce Research and Information . For example, Quarterly and Annual Industry Employment and Wages and Demographics of Employment
3% of workforce in energy sector ¹⁹²	US Department of Energy: Maine State Report
10-11% of labor force is self-employed	
49% of labor force is female	
9% of labor force is over age 65	
% labor force is under age 25	
Businesses	
Minority-, Women- or Veteran-Owned Businesses	US Census Annual Business Survey
Natural Resource businesses	Maine Department of Marine Resources
% community with commercial fishing/harvester license	

¹⁹² Source: US DOE State Report, 2022. Includes electric power generation, fuels, transmission distribution & storage, and energy efficiency; excludes motor vehicle sector.

Appendix 2: Opportunities for Further Consideration of Equity

This report seeks to identify clear equity outcomes for the programs and policies proposed within *MWW*. There are instances where the ESC discussed issues beyond the original scope of *MWW*, which are yet still related to climate action. In addition, there are instances where members of the MCC's working groups and the interested public suggested opportunities for further consideration of equitable climate action, while outside of the scope of the ESC's original discussions, they remain related to climate action.

The following topics were identified through these discussions and may be considered by the MCC and its associated working groups during the next statewide climate planning process.

Strategy A: Transportation

- **Assessing “make-ready” costs in multifamily, rental, and low-income households.** Given the age of Maine's housing stock, and the likely need for electrical upgrades in support of beneficial electrification, the ESC recommends further assessment of the expected costs and mechanisms to make multifamily, rental, and low-income households “ready” for EV charger (and other electrical uses, like heat pump) installation.
- **Assess EV Charger reliability.** The ESC recommends that the state consider the reliability of EV chargers installed with support from public monies, especially those serving low-income communities and households, to ensure they are meeting contractual reliability agreements in support of further vehicle electrification.

Strategy B: Modernize Maine's Buildings

- **Gentrification and Displacement:** The ESC recommends further consideration of the various drivers of gentrification and displacement across Maine's housing stock, and whether and how climate-related investments may influence housing cost and availability.
- **Energy upgrades and retrofits for small businesses:** The ESC focused on climate impacts and benefits flowing to individuals, households, and communities, as well as workers in climate-impacted industries. They recommend further consideration of barriers to accessing energy and efficiency programs for small and family-owned businesses, which may include capacity, access to financing, and awareness, as well as the expansion of navigator or other technical assistance resources for businesses.
- **Lead by Example in Public Buildings.** The ESC recommends further consideration of equity in Maine's Lead by Example initiatives.
- **Consultation with Joint Select Committee on Housing.** The ESC recommends that the appropriate MCC working group consider engagement with the new Joint Select Committee on Housing, established by Senate President Jackson and Speaker of the House Talbot Ross.

Strategy C: Clean Energy and Industrial Sectors

- **Renewable energy technical assistance for small businesses and municipalities:** *MWW* recommends that Maine's public sector “lead by example” in adopting renewable energy. The ESC recommends further consideration of benefits to small businesses and other priority organizations, such as schools and hospitals, associated with procuring or owning clean energy; and the development of technical assistance resources to help them assess and access projects.

- **Community benefits:** The ESC recommends that the MCC Energy Working Group consider the value of monitoring community benefits from renewable energy projects in priority communities, by project.

Strategy D, Grow Maine’s Clean Energy Economy and Protect Our Natural Resource Industries

- **Contracting and procurement:** The ESC recommends consideration of procurement mechanisms across climate and clean energy programs that advance and protect family sustaining jobs. Mechanisms might include project labor agreements, or other similar tools.
- **Quality of Clean Energy Jobs:** The ESC recommends that, in addition to measuring the number of clean energy jobs held by members of priority populations, the MCC consider information about the quality of those jobs.
- **Natural Resource Industry transitions:** The ESC recommends that the MCC consider the number of transitions into, and out of, natural resource industry jobs in priority populations. They recommend considering those transitions driven by climate impacts or climate-informed decision making.
- **Offshore wind:** The ESC recommends that the MCC continue to explore opportunities for close coordination with Maine’s fisheries industry and other stakeholders impacted by offshore wind, and work to identify, avoid, and minimize impacts to the industry, harvesters, and communities. When planning and developing offshore wind, such collaboration is necessary to avoid negative impacts and create opportunities for shared successes to support the industry’s sustainability.

Strategy F: Healthy and Resilient Communities

- **Assess air quality exposures and health outcomes in communities located near emissions sources, as well as communities with pre-existing health vulnerabilities.** In addition to its recommendation about air quality monitoring in high-risk communities — including low income and rural communities — the ESC recommends further consideration of air quality in communities which are co-located with, or near, an emitter; as well as in areas with people experiencing high pre-existing health vulnerabilities, such as near hospitals. The ESC recognizes that increasingly local air quality monitoring requires extensive resources, and that there may be approaches to screening communities for poor air quality that can be deployed at lower cost to identify those at potential risk.
- **Consider using the US EPA Human Exposure Model (HEM) to assess cumulative impact.** As an interim approach to its recommendation to adopt the US EPA’s under-development approach to multi-pollutant cumulative impacts, the ESC recommends that the state consider use of the HEM.¹⁹³

¹⁹³ See: [https://www.epa.gov/fera/risk-assessment-and-modeling-human-exposure-model-hem#:~:text=The%20Human%20Exposure%20Model%20\(HEM,air%20toxics%20to%20ambient%20air](https://www.epa.gov/fera/risk-assessment-and-modeling-human-exposure-model-hem#:~:text=The%20Human%20Exposure%20Model%20(HEM,air%20toxics%20to%20ambient%20air)

Appendix 3: Members of the Maine Climate Council Equity Subcommittee

Co-chairs of the Subcommittee are Ambassador Maulian Dana of the Penobscot Nation and Gabriela Alcalde, Executive Director of the Elmina B. Sewall Foundation. Members of the Equity Subcommittee represent a variety of communities, industries, and interests. The full member list is below:

Maine Legislators

- Senator Craig Hickman, D-Winthrop
- Senator Jeffrey Timberlake, R-Androscoggin*
- Representative Tom Martin, R-Greene*
- Representative Rachel Talbot Ross, D-Portland

Co-Chairs

- Ambassador Maulian Dana, Penobscot Nation
- Gabriela Alcalde, Executive Director of the Elmina B. Sewall Foundation

Additional Members

- Becca Boulos, Maine Public Health Association; Maine Climate Council Community Resilience Planning, Public Health, and Emergency Management Working Group
- Curt Brown, Ready Seafood
- Shanna Cox, Lewiston Auburn Chamber of Commerce*
- Lesley Fernow, Central Hall Commons
- Steve Golieb, Maine Climate Council; Town Councilor for the Town of Millinocket
- Corey Hinton, Drummond Woodsum
- Amara Ifeji, Maine Environmental Education Association
- Melissa Law, Maine Climate Council; Owner of Bumbleroot Organic Farm*
- Nick Battista, Island Institute*
- Matt Marks, Maine Climate Council; Principal at Cornerstone Government Affairs
- Gabe McPhail, Town of Vinalhaven
- Fortunat Mueller, Revision Energy
- Jason Parent, Aroostook County Action Program
- Ambureen Rana, Maine Equal Justice
- Darren Ranco, University of Maine
- Isaiah Reid, University of Maine at Farmington Student; Permanent Commission on the Status of Racial, Indigenous and Maine Tribal Populations
- Jonathan Rubin, University of Maine
- Matt Schlobohm, Maine Climate Council; Executive Director of the Maine AFL-CIO
- Adelaide Taylor, Revision Energy
- Claudette Townsend, Dead River
- Ania Wright, Maine Climate Council Representative of Maine Youth; Sierra Club Maine

* Former members of the Subcommittee

** Replaced Suzanne MacDonald, formerly of the Island Institute

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