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FREEPORT CLIMATE ACTION PLAN

April 2024

Town of Freeport Sustainability Advisory Board

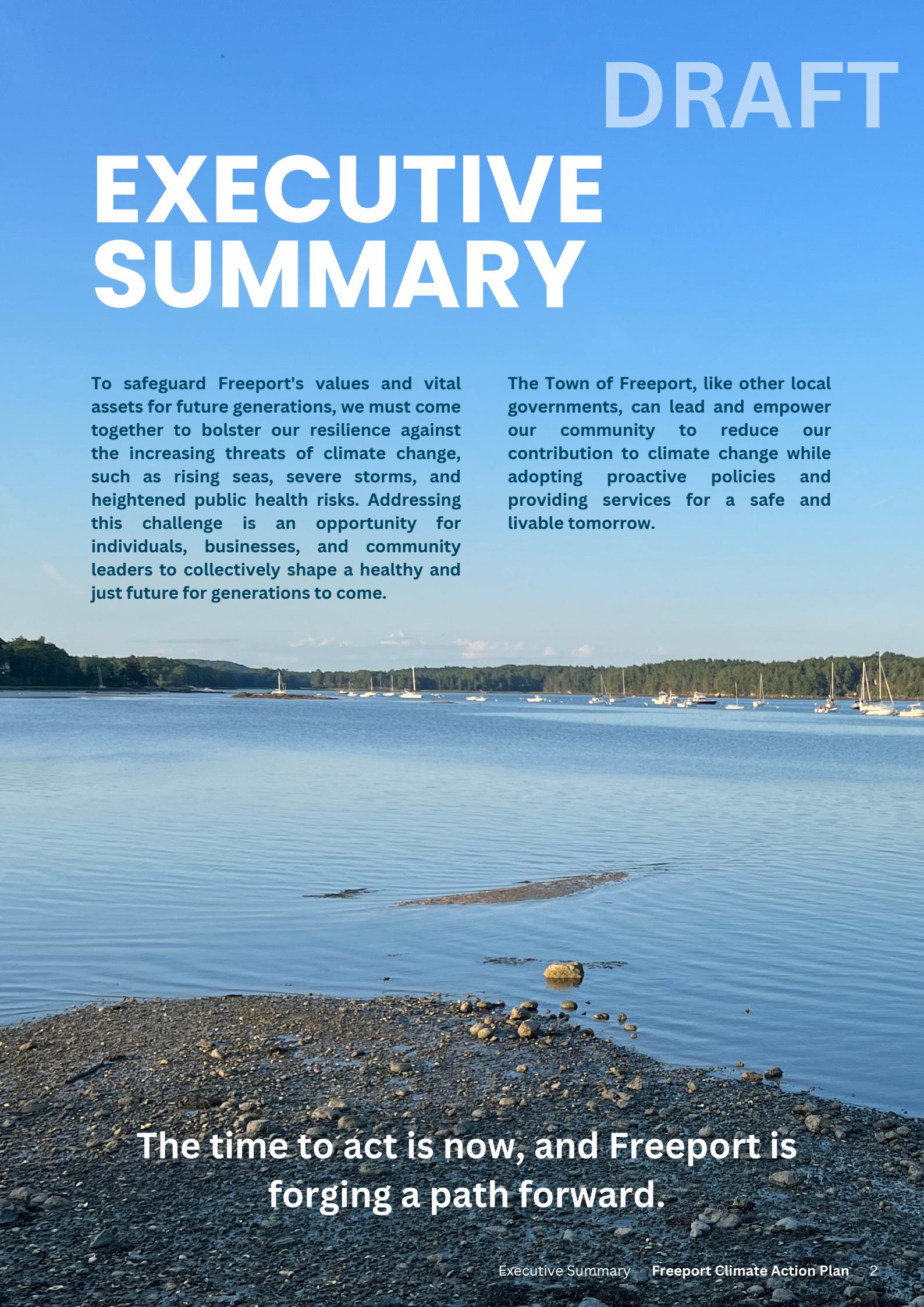
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EXECUTIVE

SUMMARY

To safeguard Freeport's values and vital assets for future generations, we must come together to bolster our resilience against the increasing threats of climate change, such as rising seas, severe storms, and heightened public health risks. Addressing this challenge is an opportunity for individuals, businesses, and community leaders to collectively shape a healthy and just future for generations to come.

The Town of Freeport, like other local governments, can lead and empower our community to reduce our contribution to climate change while adopting proactive policies and providing services for a safe and livable tomorrow.



The time to act is now, and Freeport is forging a path forward.

CLIMATE CHANGE IN FREEPORT

Greenhouse gases (GHGs) play a crucial role in supporting life on Earth by trapping heat in the atmosphere and acting as a thick 'blanket' to regulate the planet's temperature.

Unfortunately, human activities - mainly deforestation and extracting, processing, and burning fossil fuels such as coal, oil, and gas - have drastically increased the concentration of GHGs in the atmosphere at alarming rates. This excess of GHGs trap even more heat which disrupts climate patterns around the world. The result is more extreme heat, intense storms, rising sea levels, and changing ocean conditions that Freeport is already experiencing.



HEAT WAVES

Temperatures along coastal Maine have risen 3.2° F since 1895 and every year since 1997 has been above the yearly average. Warmer temperatures are bringing more risk of respiratory illness and mosquito-borne diseases (like Lyme).

By 2050, Freeport can expect up to 30 more days over 90°F each year.

High temperatures intensify the need for emergency services (like cooling centers), increase the health risks for vulnerable residents, jeopardize water supplies, and increase energy usage which stresses the electricity grid.



SEA LEVEL RISE

The water levels in Casco Bay have risen by 7.5 inches since 1912. Higher sea levels -combined with high tides and storm surge- have caused flooding damage along the coast in recent years.

The State urges communities to commit to manage 1.5 feet of sea level rise by 2050 and 3.9 feet of sea level rise by 2100.

Rising sea levels will impact Freeport's coast and tidal rivers, causing erosion, groundwater contamination, loss of dry beach area, destruction to habitat, and damage to coastal property and marine infrastructure.



INTENSE STORMS

Total annual precipitation (rain and snow) in Maine has increased 15% (~6 inches) since 1985, but snowfall has decreased by 20% - meaning we are experiencing more frequent extreme precipitation events but less snow.

By 2050 we could see a 50% decrease in snowpack and more heavy and damaging rainstorms.



CHANGING OCEAN CONDITIONS

The Gulf of Maine has warmed faster than 99% of the global oceans, and Casco Bay water temperature has increased 2.5°F (1.4°C) in the last decade. Species are moving northward and invasive species are increasing.

Warming and acidifying ocean conditions will continue to effect marine ecosystems and only accelerate as the climate changes.

Risks to Freeport

Intense storms bring high winds and flooding which disrupt access to essential public services, cause power outages, and create costly damage to Freeport homes, businesses, and critical infrastructure such as roads and bridges.

Shifting species and degrading Casco Bay habitat will impact the livelihoods of residents that depend on our marine economy, including shellfish and tourism industries, as well as our access to fresh local seafood.

 "Our state must prepare for the harmful impacts from climate change now, while striving to reduce our greenhouse gas emissions to avoid potential worst-case scenarios that may otherwise lie ahead." Maine Won't Wait, 2020

WHAT WE HEARD

Quotes from the Community Survey

"There has seemed to be less snow and when we do get snow, the warmer temperature means rain is often mixed in."

"More ticks makes it more difficult to enjoy the Maine outdoors, even more so when I take my dogs."

"[I have] more concern about our traditional industries like fishing and lobstering."



Neglecting essential investments to address climate change at a local level can bring extensive social, capital, and environmental costs. By taking action now, the Town can position itself to leverage public funding and resources and steer our community towards a resilient tomorrow.

The cost of inaction

We usually focus on the immediate costs of taking action. Yet not taking action on climate change comes with its own price. The consequences of inaction are already visible—more damaging floods and storms, exacerbated health issues taking physical, mental, and financial tolls on families, and people losing their livelihoods because of warmer seas and changing industries.

“While mitigating the causes of climate change and better preparing Maine for its impacts will require significant public and private investment, inaction will cost Maine substantially more, and those costs will accelerate over time.”

- Maine Won’t Wait, State Climate Action Plan 2020

We can save money in the long run by reducing our dependence on fossil fuels, strategically planning our transition to efficient, renewably-powered buildings and vehicles, and shifting to a less wasteful circular economy. As the technology, funding, and affordability of ‘low carbon’ solutions evolve, we can be ready to leverage opportunities as they come.

This Plan addresses local interventions to reduce our role in the warming of the earth and mitigate its impacts. However, for what we do locally to be meaningful, the nation – and the world – must transition away from the use of fossil fuels. Our aspiration is that this Plan will catalyze local action and contribute to collective efforts beyond our borders to achieve this transition, avoid the worst consequences, and make smart investments to protect our future.

REDUCING OUR CONTRIBUTION

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To address these climate hazards, the global scientific community has reached consensus that we must tackle the source of climate change by urgently and dramatically reducing GHG emissions that result from our dependence on unsustainable fossil fuel resources such as oil, natural gas, propane, gasoline, and coal. Action at the local, regional, and national level by governments, individuals, and businesses to reduce GHG emissions can help avoid the worst effects of climate change. As a first step to reducing emissions, communities are committing to targets that will guide how much, and how fast, they want to reduce emissions.



This Climate Action Plan lays out the first steps toward reaching Freeport's targets.

SETTING OUR TARGETS

Leading up to the launch of the Climate Action Plan, the Freeport Town Council endorsed a set of targets to reduce community-wide and municipal GHG emissions to net zero, by 2050 and 2040 respectively. These targets will help guide the Town's efforts to minimize its contribution to climate change, serving as benchmarks to measure progress and establish long-term commitments for a sustainable future.

OUR EMISSIONS

In Freeport, the majority of emissions (57.8%) come from transportation. Fossil fuel use in residential, industrial, and commercial buildings accounts for the second-largest source of emissions (37.6%). Waste and wastewater management make up the rest (4.7%).



- **20%** Residential Buildings
- **17%** Commercial Buildings
- **1%** Industrial Buildings
- **40%** Passenger Vehicles
- **16%** Commercial Vehicles
- **1%** Buses
- **>1%** Marine Vessels
- **5%** Waste

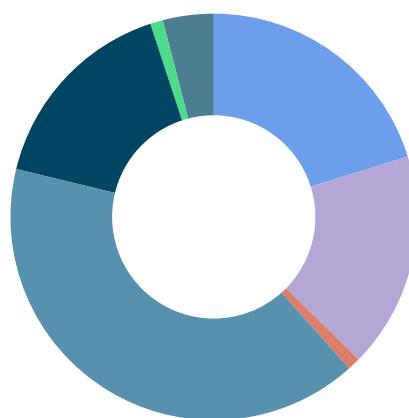


Figure 1. Emissions by Sector, 2019



Emissions from Town operations contribute 1% of the community-wide total. Most of municipal emissions come from fossil fuels used for vehicles in the Town fleet.

132,638 MTCO₂e
Of greenhouse gases in 2019

All source citations and more information and data can be found in the Full Climate Action Plan and appendices.



CONNECTED MOBILITY & LAND USE

Transportation contributes almost two thirds of our total GHG emissions. The way we design the connections between neighborhoods, businesses, and amenities plays a crucial role in determining how we get around, our emissions, and community character.

By transitioning to zero-emission transportation and promoting land use practices that are not reliant on cars, we can simultaneously decrease emissions and cultivate a vibrant, well-connected community.

Goals and Strategies

Goal 1: Freeport is an EV-ready and friendly community

Strategy 1.1: Accelerate EV adoption among Freeport residents, businesses, and municipal departments

Goal 2: It is easy and safe for residents, workers, and visitors to get around without a car

Strategy 2.1: Expand infrastructure to support accessible and safe walking, biking and public transportation use

Strategy 2.2: Amend land use policies to reduce reliance on cars and support vibrant and resilient neighborhoods



BY THE NUMBERS

58%

of total community-wide emissions from transportation

40%

of total community-wide emissions from light-duty vehicles, 16% from heavy/medium-duty vehicles, and 2% from buses and marine vessels

Approximately

50%

of workers in Freeport commute between 10-24 miles (and the same is true for Freeport residents commuting out of town)



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EFFICIENT BUILDINGS & CLEAN ENERGY

Our buildings use lots of energy. Heating systems, appliances such as washers, dryers, and cookstoves, and lights all use energy that mostly comes from fossil fuels. In Freeport, buildings account for 38% of total emissions.

To decrease emissions from buildings, we need to accelerate our efforts to maximize energy efficiency and ensure that homes and businesses in Freeport are able to rely on renewable energy for power, heating, and cooling. We will need to intentionally focus efforts to ensure renters, low-income residents, and seniors have access to resources and solutions.

Goals and Strategies

Goal 3: Buildings in Freeport are designed, built, and maintained to be energy efficient and transition off of fossil fuels

Strategy 3.1: Pursue deep energy efficiency through retrofits and electrification in existing buildings

Strategy 3.2: Require new development and significant renovations to minimize greenhouse gas emissions.

Goal 4: Freeport is powered by local, resilient, renewable energy

Strategy 4.1: Maximize renewable energy generated locally and explore opportunities to enhance grid resilience



“I installed solar, mini-splits, dense pack insulation, double stud walls when framing, as much local pine and sourcing as I could, now connected my electric car to my solar - paving the way for low monthly expenses for my future self and retirement.” - Kristi Marsh, Freeport resident

BY THE NUMBERS

20%

Of total community-wide emissions come from homes and 18% come from non-residential commercial buildings, including industrial facilities and schools. Most of these emissions are from fossil fuels used for heat.

50%

Of homes use fuel oil or kerosene for heat, 23% use propane, and 7% use natural gas

40%

of homes were built before 1970, making them strong candidates for retrofits, weatherization, and electrification.



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SMART WASTE MANAGEMENT & CIRCULAR ECONOMY

The waste we produce in Freeport accounts for 5% of total emissions - but this figure only accounts for the collection and processing of waste, not the emissions generated from producing, storing, and transporting materials and products we consume and throw away.

There is an opportunity to realize the full value of our resources and stimulate innovation and circularity in our local economy by reducing our consumption, buying still-functional used items, reusing goods and materials as many times as possible, and diverting remaining waste to recycling and composting.

Goals and Strategies

Goal 5: Freeport residents and businesses prioritize using resources efficiently

Strategy 5.1: Minimize waste and foster a resource sharing economy

Circular economy is a system where the natural environment is regenerated by ensuring that human-made materials never become waste by keeping materials and products in circulation through processes like reuse, refurbishment, maintenance, remanufacture, and composting.

BY THE NUMBERS

34%

of waste was diverted from incineration through recycling in 2019

1,950 MT CO₂e

was avoided by our recycling in 2019, the equivalent of 1% of our total annual greenhouse gas emissions

50%

of glass produced, 10% of wood harvested, 20% of aluminum mined, 40% of plastic (created from petroleum) goes primarily to make single-use packaging



HEALTHY NATURAL LANDS & WATERS

Freeport's natural environment has shaped our history, economic interests, and plays a vital role in our community identity. The impacts from a changing climate, such as rising seas and extreme storms, threaten the health of our treasured lands and waters.

We can strive to ensure that the natural environment around us is healthy and resilient for future generations to enjoy. We can balance the needs of our growing community with being responsible stewards of our water, trees, parks, and open spaces. We can focus conservation efforts to create vibrant, connected habitats while adopting sustainable practices to manage our lands and waters.

Goals and Strategies

Goal 6: Freeport employs stewardship practices that ensure the ongoing health and vitality of our shores and waters

Strategy 6.1: Prioritize green infrastructure

Goal 7: Forests, wetlands, and coastal habitats are protected

Strategy 7.1: Permanently conserve land with a focus on biodiversity and connectivity



"We have let a large percentage of our meadows go un-mowed with native plants providing food for pollinators and herbs for us, [we] garden using no-till methods, [and] have terraced permaculture plantings." Lyra and Peter Engel, Freeport residents

BY THE NUMBERS

Approximately

16%

of total land in Freeport is conserved. The State's climate plan, Maine Won't Wait, recommends communities conserve 30% of land by 2030.

93%

of the 45 stream crossings listed in Freeport are listed as a "Barrier" to habitat connectivity (20) or a "Potential Barrier." (22)

Nearly

1,800

acres of land are conserved and stewarded by the Freeport Conservation Trust. Several large parcels of recreational land and open space in town are not permanently protected from development.



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PUBLIC HEALTH & COMMUNITY RESILIENCE

Hazards from a changing climate - such as sea level rise and more frequent and intense storms - will bring challenges across our community. We have an opportunity to protect the people and places of Freeport while fostering a connected, empowered, and just community for all.

To keep our community safe and healthy, we need to protect the important services, infrastructure, and resources we rely on and prepare for increasing needs. In doing this, we aim to make sure that everyone has access to emergency services and that our community is strong and able to handle both short-term interruptions and longer-term disruptions.

Goals and Strategies

Goal 8: People, services, and infrastructure in Freeport are prepared and resilient to climate change

Strategy 8.1: Prepare town services and resources for public health and safety risks exacerbated by climate change

Strategy 8.2: Protect groundwater resources, food networks, and natural working lands

Strategy 8.3: Ensure public and private infrastructure is resilient to sea level rise and flooding

Goal 9: The Town advocates for broader efforts critical to a healthy and resilient future

Strategy 8.1: Demonstrate Town support for State and International initiatives to transition away from fossil fuels

BY THE NUMBERS

Over

20%

of Freeport adults who are older than 65 live alone.

23%

of total households are cost burdened - 16% of homeowners and 46% of renters.

Freeport can expect up to

30

more days each year of high heat (over 90 degrees) by 2050.

Supporting State and Federal Commitments

Freeport is not alone in addressing climate change. Tackling climate change requires decisive action across federal, state, regional, and local governments. In 2020, Maine's Climate Council released the State's first Climate Action Plan - Maine Won't Wait. The State committed to reducing GHG emissions by at least 80% by 2050 from 1990 base levels and reaching net zero by 2045. In 2021, the federal government pledged to reduce GHG emissions 50% by 2030 from 2005 levels and to reach net zero emissions by 2050 at the latest.¹⁰

By achieving the goals set in Freeport's Climate Action Plan we will support state and federal climate commitments.

At the same time, state and federal government action can enable Freeport to make progress by creating funding opportunities, fostering regional partnerships, and developing emerging technologies. By having a Plan, Freeport is well positioned to take advantage of opportunities as they become available by leveraging associated grants and technical support.

Funding Opportunities

Federal



Bipartisan Infrastructure Law (BIL)

Provides grants to help municipalities establish programs to reduce emissions from transportation and buildings as well as technical assistance to help communities become more resilient to climate hazards. Also requires other funded entities (states, non-profits, and companies) to consult with relevant communities and develop Community Benefit Plans (CBP). This Climate Action Plan positions Freeport to leverage additional resources through CBPs.



Inflation Reduction Act (IRA)

Provides tax credits and direct payments to tax-exempt entities to reduce the costs of investing in electric vehicles (EVs) and clean energy. Like the BIL, the IRA also requires CBPs.



FEMA BRIC and Hazard Mitigation Grants

Building Resilient Infrastructure and Communities (BRIC) grants to support communities undertake hazard mitigation projects to reduce the risks from disasters and natural hazards.

State



Maine Community Resilience Partnership

Provides grants for municipalities to upgrade facilities, invest in resilient public infrastructure, encourage community climate action, and more.



Maine Infrastructure Adaptation Fund

Funding for municipalities to adapt critical infrastructure to reduce vulnerability to climate change resulting from extreme weather, sea level rise, inland and coastal flooding, and severe heat.



Coastal Community Grants

Provides grants for municipalities to improve water quality, increase adaptation to erosion and flooding, restore coastal habitat, promote sustainable development, and enhance the coastal-dependent economy.

Shore and Harbor Planning Grants

Grants for shoreline access planning, waterfront and harbor planning, and efforts for resilient waterfront infrastructure.

¹⁰ Pathways to Net-zero Greenhouse Gas Emissions by 2050, White House, 2021

MOVING FORWARD

ESTABLISH RESOURCES AND ROLES FOR IMPLEMENTATION

Dedicate staff and resources to oversee climate programs, implement comprehensive public outreach on climate-related topics, integrate within regional partnerships, pursue grant funding, and be a point of contact for community members and stakeholders.

TRACK AND SHARE PROGRESS

Track progress annually on key metrics, presented to Town Council in time to inform the following year's budget cycle. Conduct a deeper review of the plan every three years in order to increase attention to areas that are falling short.

MAXIMIZE COLLABORATION

The roles for accomplishing actions in this Plan span across Town departments, resident volunteer committees, and external organizations. Consistent and proactive collaboration among internal and external stakeholders will be necessary for success.

BUILD CAPACITY WITH RESOURCES AND EDUCATION

Empower our community with the necessary education and resources to take action, including consistent, accessible, and solution-focused outreach.

ENSURE A FINANCIALLY RESPONSIBLE APPROACH

Employ a strategic approach to implement actions along a timeline that is both technologically and economically feasible and maximizes external funding.

ALIGN WITH STATE AND REGIONAL EFFORTS

The Town should continue integrating projects and policies to support regional and state priorities and rely on updated data, assessment, and analysis by the state.

Center Equity and Inclusion in Implementation



As core values of the Town and this Plan, Equity and Inclusion will be prioritized throughout implementation to strive for just transitions. This means action implementation will employ inclusive processes to identify ways in which community members may be impacted and that promote solutions that provide multiple benefits, with a focus on reducing inequities.





Be Part of the Solution

There are steps **YOU** can take for a sustainable future. Below are some example actions that can save your household money, shrink your carbon footprint, and support a vibrant community.

Click the **blue** text to navigate to the resource!

Getting Around



Swap one local driving trip each week to walking or biking



Commute by [public transportation](#) or [carpool](#)



Switch your next car to electric—see [rebates and resources](#)

Greening your Home



See rebates and resources for investing in efficient [home](#), [business](#), and [apartment](#) upgrades



[Learn if it makes sense](#) to install solar on your home and check out [rebates](#)



See the [Home Action Guide](#) and [Mainer's Guide to Climate Incentives](#)

Becoming Resilient



Find health, financial, and education services via phone, text, or by searching the online directory of [211 Maine](#).



[Learn more](#) about how climate change impacts health and wellbeing



Learn more and sign up for the [Reassurance Program](#).

Restoring our Land



Consider enrolling your natural or working lands in [Maine's current use tax program](#) and/or [establishing a conservation easement](#)



Learn about sustainable landscaping with MOFGA, [Maine Audubon](#) or [Wild Seed Project](#)



Experiment with ideas for [rewilding](#) your lawn, in favor of biodiversity and native plants

Reducing Waste



[Learn more](#) about what a Circular Economy looks like



Read [Reuse 101](#) from Upstream



Check out ecomaine's [Recyclopedia](#) to search for recycling solutions.

