

# DRAFT

## **FREEPORT CLIMATE ACTION PLAN**

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March 2024





# ACKNOWLEDGMENTS

Residents, businesses, organizations, and Town staff have taken meaningful steps through the years to care for the environment, reduce greenhouse gas emissions, and enhance the health, safety, and wellbeing of our community. These efforts have fostered a shared vision of a sustainable future for our town.

We express our thanks to the dedicated Town staff and community volunteers for their commitment, collaboration, and knowledge in this important endeavor. We also extend our gratitude to community members and stakeholders who actively participated in the process, providing valuable input that ensured this plan aligns with the priorities and values of our community.

## **Freeport Sustainability Advisory Board (FSAB)**

Mandy MacPherson, Co-Chair  
Valy Steverlynck, Co-Chair  
Kristen Dorsey  
Susana Hancock  
Josh Olins, Ex Officio  
Jim Reinertsen  
Megan Shore  
Bob Stevens

## **Town Staff**

Meddy Smith, Sustainability Coordinator  
Cecilia Smith, Assistant Planner  
Adam Bliss, Town Engineer  
Caroline Pelletier, Planning Director  
Paul Conley, Chief of Fire/Rescue Department  
Sophia Wilson, Town Manager

## **Consultant Team**

Sara Mills-Knapp, GPCOG Director of Sustainability  
Kelly Rehberg, GPCOG Sustainability  
Program Manager  
Anna Paddock, Sustainability Associate  
Jonathan Gagne, Sustainability Program Coordinator



*Photos were provided by Town Staff unless otherwise noted.*

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# FREEPORT CLIMATE ACTION PLAN

Freeport is a unique community. We enjoy a picturesque coastline and strong connection to our natural environment, a vibrant culture and economy, and an engaging community - making this town special not only to those who live here year round but also those who come to visit for a day. 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.

## PLANNING OUR FUTURE

This Plan fits into an evolving landscape of thoughtful efforts that guide the Town forward. Just before this Climate Action Plan process began, the Town completed the Freeport Downtown Vision Plan and in 2023 the Town embarked on a process to update the Comprehensive Plan. These plans, among others, strive to guide growth, adapt to change, and maintain a high quality of life in the town. The Climate Action Plan, working together with other planning efforts, will shape actions across our community, ensuring a robust and resilient economy, protecting our natural environment, and supporting a safe and healthy Freeport for future generations.

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

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# Navigating the Plan



## **SEE THE HIGHLIGHTS**

Read the executive summary to get an overall view of the plan. Alternatively, a summary of key facts and concepts can be found at the start of each chapter.



## **LEARN HOW TO BECOME PART OF THE SOLUTION**

Each chapter contains concrete suggestions and further resources for readers who wish to take action.



## **DIVE INTO ONE TOPIC**

Within this document, you can skip ahead to whichever topic is of most interest to you. Each chapter contains information about the relevant impacts of climate change and proposed actions.



## **DISCOVER HOW THE PLAN WAS CREATED**

Read the Developing the Plan section to learn about the people and processes involved in creating this document.



## **DIVE INTO THE DETAILS**

Data which helped shape our baseline knowledge can be found in the appendices. There is also an Implementation Table, which lays out all the proposed actions.

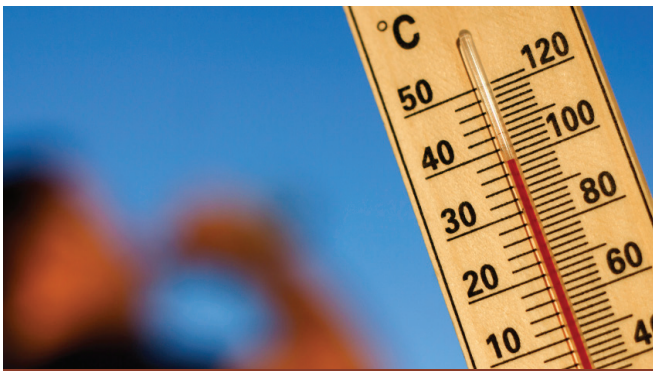


## THE CONTEXT

# 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 burning fossil fuels such as coal, oil, and gas—have drastically increased the concentration of GHGs in the atmosphere. 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.<sup>1</sup> Warmer temperatures are bringing more risk of respiratory illness and mosquito-borne diseases (like Lyme).

**By 2050, Freeport an expect up to 30 more days over 90°F each year.<sup>2</sup>**

#### Risks to Freeport

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



### SEA LEVEL RISE

The water levels in Casco Bay have risen by 7.5 inches since 1912.<sup>3</sup>

**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.<sup>4</sup>**

#### Risks to Freeport

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.<sup>5</sup>

**By 2050 we could see a 50% decrease in snowpack and more heavy and damaging rainstorms.<sup>6</sup>**

### 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.



## 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.<sup>7</sup>

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

### Risks to Freeport

Shifting species and degrading Casco Bay habitat will impact the livelihoods of residents that depend on our marine economy, including shellfish and tourism industries.



**In 2100, Maine's climate could feel like present day Rhode Island.<sup>8</sup>**

## 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.”

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# WE ARE EXPERIENCING THE IMPACTS

Freeport is already experiencing the negative impacts of climate change such as flooding, higher temperatures, and changing ocean conditions, and they will intensify in the coming years. Freeport has an elevated coastline and relatively low social vulnerability<sup>9</sup>, which supports our overall ability to respond to climate impacts. However, the burden of climate change will not be felt equally across our community. People with existing social vulnerabilities, such as senior citizens, families managing disabilities, or cost-burdened households, will be disproportionately impacted by climate hazards and climate-related health risks. As we take steps to protect our community from climate impacts, we have an opportunity to address existing inequities and pursue a more just future benefiting everyone.

## There are several priority strategies Freeport can pursue to prepare for climate hazards:



Ensure key travel roads and critical infrastructure such as bridges and culverts are prepared to withstand increased precipitation and sea level rise so emergency management and the community have access to neighborhoods and services during storms



Protect inland and coastal waters to ensure safe water quality and preserve the coastal-dependent economy



Make sure the community has the information and resources they need to be healthy and safe, especially during times of extreme heat



Conserve land, protect natural systems, and expand green infrastructure to support clean air and water, recreation, and carbon sequestration

## A healthy tomorrow begins with action today.

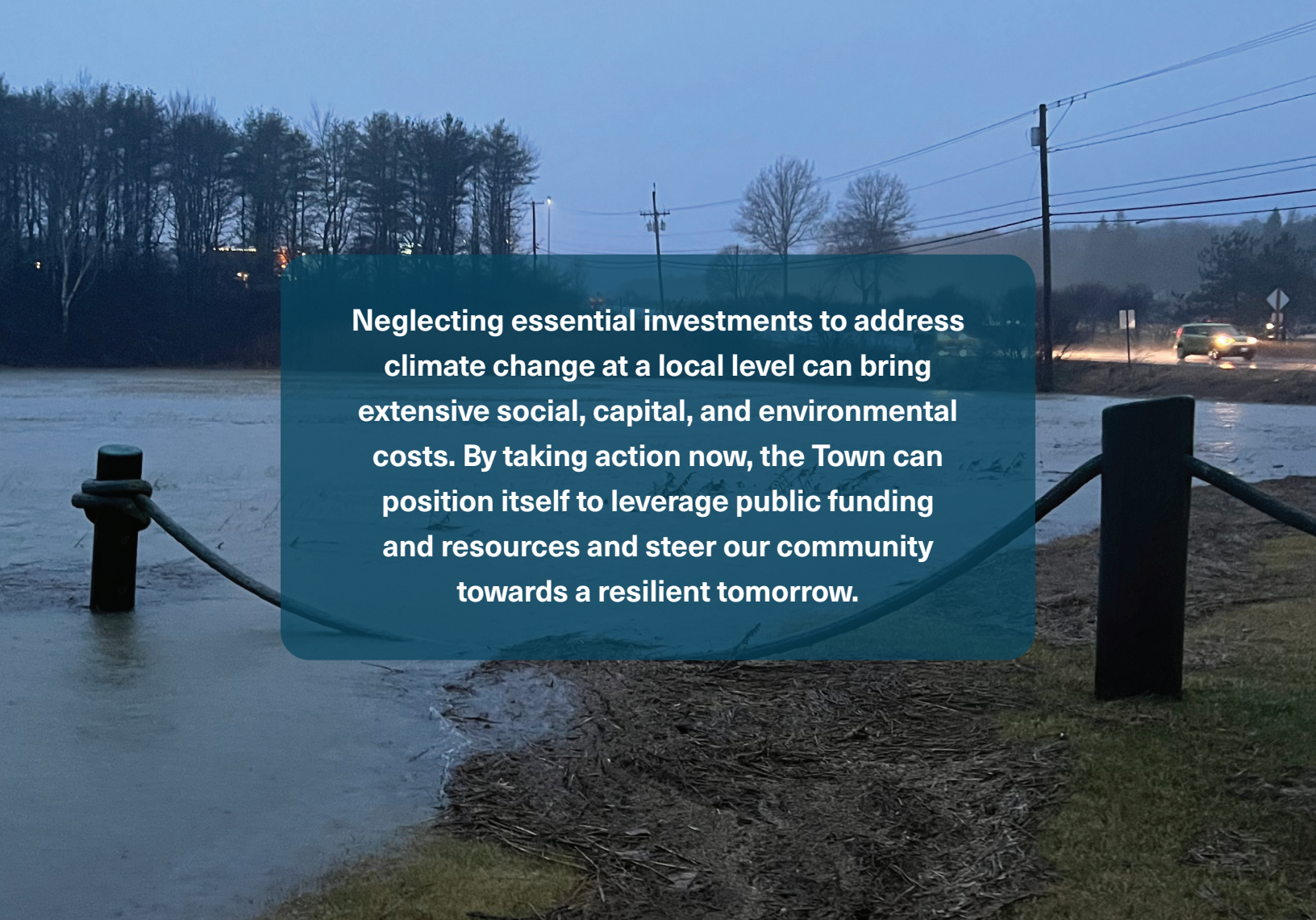
The efforts we take today to lower emissions that cause climate change and to prepare for impacts and challenges to come will help ensure Freeport is healthy, vibrant, and safe for generations to come. We need to take steps to protect our future now, because, according to the top 2,000 climate scientists in the world, our window for action is closing.<sup>10</sup>

### WHAT WE HEARD Quotes from the Community Survey

“Climate changes will affect populations with less resources at a higher scale. We should prioritize having resources readily available for everyone.”

“Taking action now to anticipate further flooding, fires, drought, and coastal erosion to keep ahead of the impacts will save time and money in the long run.”





**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.

**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 the ‘low carbon’ economy evolves, we can be ready to leverage opportunities as they come.

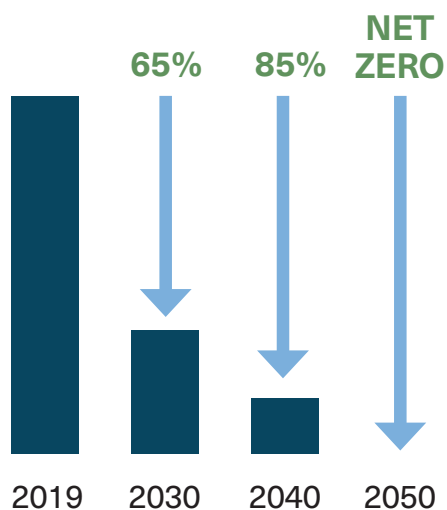
**“While mitigating the causes of climate change and better preparing Maine for its impacts will require significant public and private investment, **inaction will cost Maine substantially more, and those costs will accelerate over time.**”**

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# REDUCING OUR CONTRIBUTION

Greenhouse gas (GHG) emissions are pollutants that are created by burning fossil fuels, like oil and gas. They stay in our atmosphere where they trap the sun's heat and disrupt climate patterns, such as temperature and precipitation. These changing climate conditions are causing hazards that we experience such as extreme heat, drought, flooding, and other negative impacts to our public health, safety, economy, natural ecosystems, and quality of life for future generations.

To address these hazards, the global scientific community has reached consensus that we must tackle the source of climate change by urgently and dramatically reducing GHG emissions. 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.



Freeport Community-wide  
GHG Reduction Targets

**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.

*Net Zero is when the greenhouse gases going into the atmosphere are balanced by reduction and removal from the atmosphere.*

### MEASURING LOCAL EMISSIONS

The Town conducted a GHG Inventory<sup>11</sup> using a 2019 baseline year that:

- pinpoints the major sources of emissions in Freeport,
- identifies our biggest opportunities to reduce emissions, and
- acts as a baseline for measuring progress on our targets.

The inventory also served as the foundation for the many high-impact strategies and actions outlined in this Plan.

### HOW DO YOU MEASURE GHGS?

**We can't manage what we don't measure.** To understand how a given entity produces GHG emissions, current best practice relies on developing an inventory model (i.e., estimate) of the emissions that are created from various activities using available data. GHG Inventories take into account the activities that occur within a boundary and use standard assumptions to model what emissions are produced at a snapshot in time. Inventories are not a way to track individual carbon footprints, but are rather a tool to understand the relative amount of energy for different sectors and activities, such as energy used to heat homes and operate businesses, and fuel used for different types of vehicles. The modeling takes the energy used and converts it to a common unit of emissions, MTCO<sub>2</sub>e (defined below).

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# REDUCING OUR CONTRIBUTION

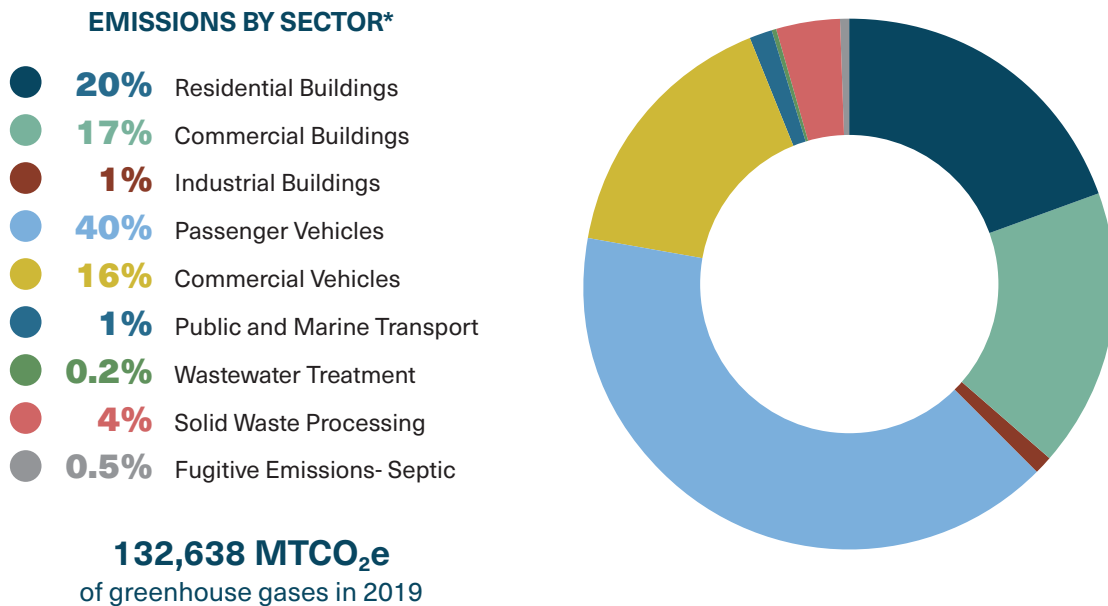
Climate-disrupting greenhouse gases (GHGs) come from many sources, but in large part from burning polluting fossil fuels to power our homes, businesses, and vehicles. The sooner and more aggressively we take action to reduce our emissions, the better chance we have of slowing down climate change to a manageable pace.

*GHG emissions are measured in **metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>e)**. The tonnage of other greenhouse gases (e.g. methane, nitrous oxide) is adjusted to the equivalent tonnage of carbon dioxide necessary to produce the same warming effect so everything is reported in the same units.*

## Emissions by Sector<sup>12</sup>

In Freeport, the majority of emissions (58%) come from transportation. Fossil fuel use in residential, industrial, and commercial buildings accounts for the second-largest source of emissions (38%).

Figure 1. Emissions by Sector, 2019



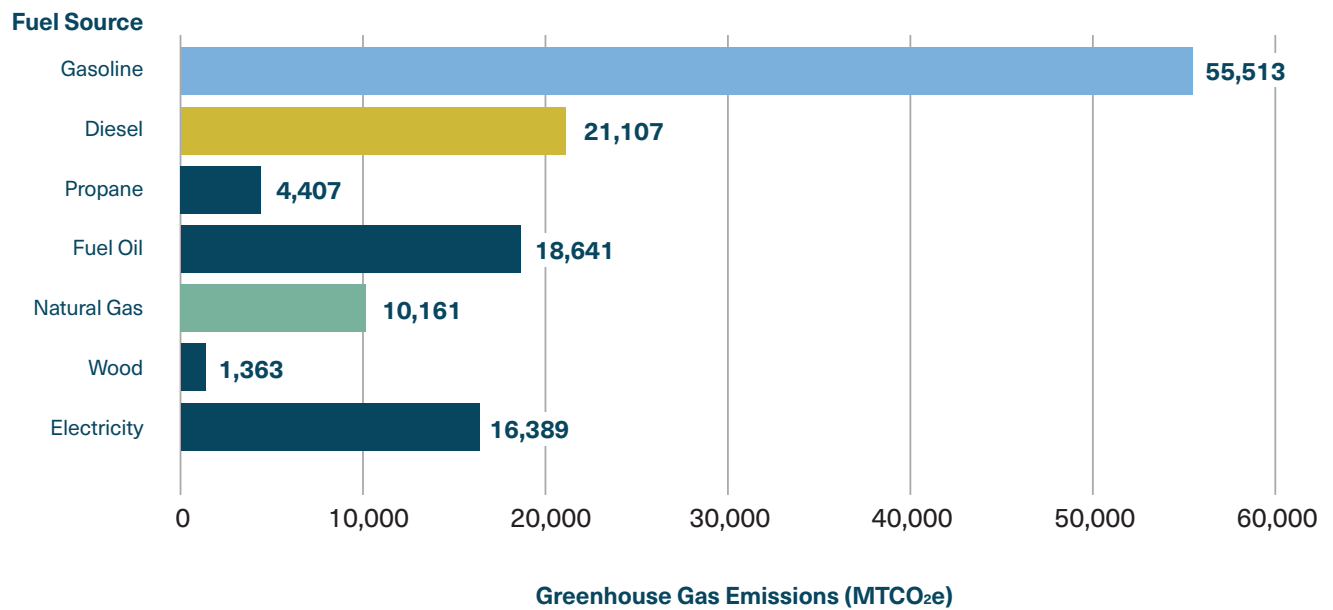
Emissions from Town operations contribute 1% of the community-wide total. Most of municipal emissions come from fossil fuels used for vehicles in the Town fleet.

## Emissions by Source

Analyzing energy sources and amounts of emissions helps pinpoint the activities that are driving emissions. Gasoline used for vehicles is the largest portion of emissions compared to other energy sources, and nearly all of this gasoline is for light-duty vehicles (i.e., passenger cars). Diesel for heavier-duty vehicles is the second largest source of emissions, and building heating fuels, especially oil and gas, make up a significant portion.

Electricity also contributes emissions because it is still generated using fossil fuels. Emissions from electricity will decrease as our electricity grid is powered by more renewable sources, like wind and solar.

**Figure 2.** Emissions by Fuel Source, 2019



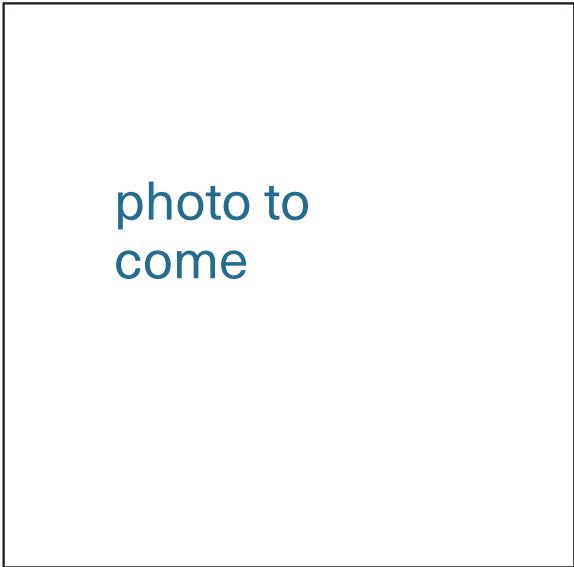
Burning fossil fuels to power vehicles is by far the biggest source of emissions in Freeport. Gasoline for vehicles alone accounts for 42% of all emissions in Freeport.

## VEHICLE TRIPS

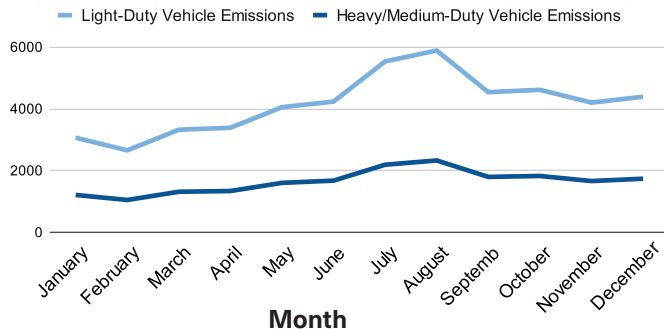
Since a large portion of our community-wide emissions come from fuel used for transportation, looking more closely at how and when vehicle travel occurs helps us understand traffic patterns and opportunities for reducing emissions.

As in many destinations across Maine, significantly more trips are taken around Freeport in the summer months and winter holidays, reflecting the busier season for recreation, tourism, visiting stores and restaurants, seasonal employment, and other factors (figure 4).

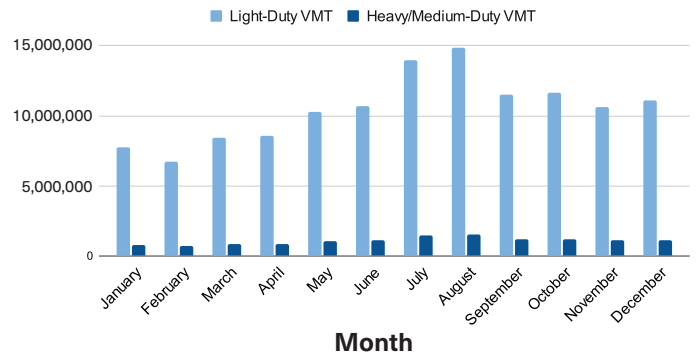
Light-duty vehicles (including passenger cars) account for about 90% of all vehicle miles traveled (VMT) throughout 2019 within Freeport. Although medium- and heavy-duty vehicles make up roughly 10% of trips, they account for 28% of transportation emissions, largely because they are less efficient and use more polluting fuels, such as diesel.<sup>13</sup>



**Figure 3.** Emissions by Vehicle Class, 2019



**Figure 4.** Vehicle Miles Traveled by Vehicle Class, 2019



**Light-duty** vehicle category includes most vehicles manufactured primarily for the purpose of carrying passengers, including motorcycles and all two-axle vehicles.

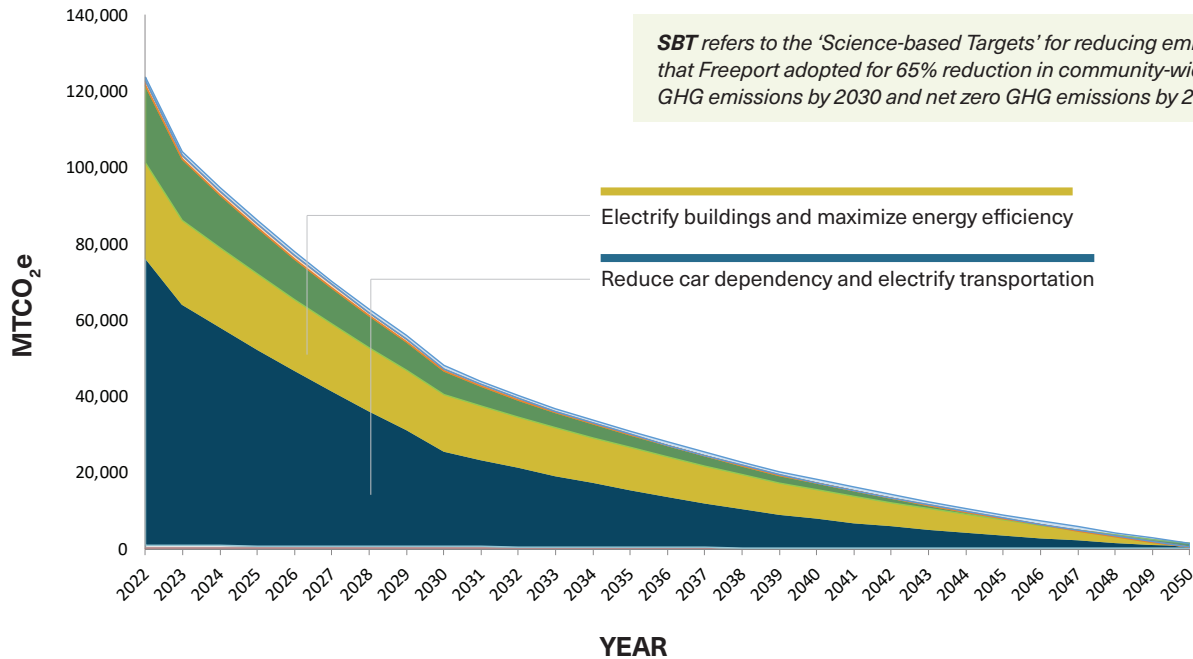
**Heavy- and medium-duty** vehicle category includes single-unit trucks (single frame with two to four axles), and combination trucks with five or more axles.

See more data on transportation in the Appendix.

# PATHWAY TO ZERO

Reducing our reliance on fossil fuels across all sectors will be critical to lower emissions and meet our targets. The graph below models one potential pathway for how we could reduce community-wide emissions to net zero by implementing essential strategies between now and 2050.

**FIGURE 5.** Emission Reduction Pathway Model



Reducing emissions to net zero in line with our targets will require our community to move quickly to adopt solutions that maximize energy efficiency, transition transportation and heating to run on renewable energy, and reduce our reliance on car travel. Implementing these essential strategies can also align with—and complement—other community priorities such as sustainable economic development, affordable and healthy housing, safer streets for walking and biking, equity, and quality of life.

Efforts in these areas are already underway in Freeport, such as the Electrify Everything! program and Complete Streets initiatives. As we continue to work together to implement these essential strategies, we will also be relying on another overarching effort—transitioning our electricity to 100% renewable energy such as solar or wind—which is supported by State efforts to 'green the grid'.<sup>14</sup>

**If Freeport successfully implements all objectives in this Climate Action Plan, we will move forward on our pathway to reach our net zero emissions target.**

# FREEPORT'S COMMITMENT TO CLIMATE ACTION

Addressing sustainability and climate change has been a focus in Freeport in recent years—both in the local government and wider community. Alongside consistent efforts among the community to steward our environment, save energy, and support resilience, municipal staff, volunteer boards, and Town leadership have achieved notable progress in recent years. This plan builds off past and ongoing efforts from the Town, local organizations, and individuals striving for a sustainable, just, safe, and healthy future for Freeport.

## 2020

Adopted Complete Streets Policy and established Tree Task Force

Purchased hybrid vehicles for Fire and Police Chiefs



## 2022

Enrolled in Community Resilience Partnership (CRP)

Won CRP grant award with Yarmouth to hire a shared Sustainability Coordinator

## 2021

Established standards for solar installations

Allocated funding for biking and walking infrastructure on major highway bridges



**Accomplishments before 2020, such as the successful SolarizeFreeport campaign in 2015, helped lay the foundation for recent progress.**

## 2023

Adopted emissions reduction targets and began development of the Climate Action Plan

Launched Electrify Everything! Town rebate program to empower low- and moderate-income residents to invest in electric and efficient services and equipment. Initiated by citizen group FreeportCAN.

In response to a citizens petition drive conducted by FreeportCAN, the Town adopted the IECC 2021 'Stretch' code to enhance efficiency in new construction and renovations.

# 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.<sup>15</sup>

**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



### 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.

FEDERAL FUNDING



### 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.



### Maine Community Resilience Partnership

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

STATE FUNDING



### 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.

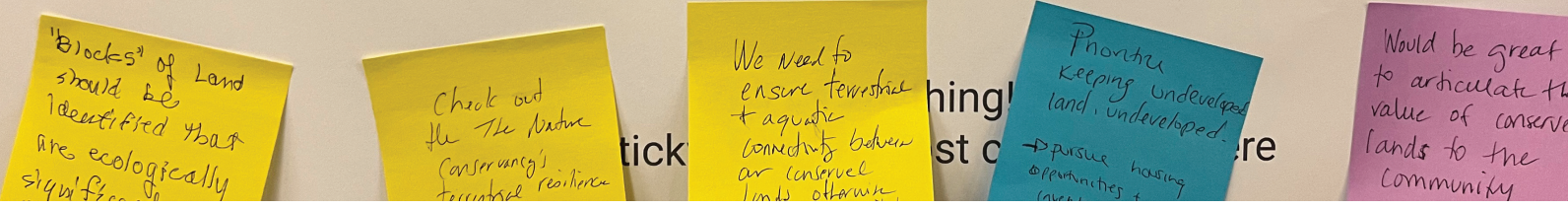


### Shore and Harbor Planning Grants

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

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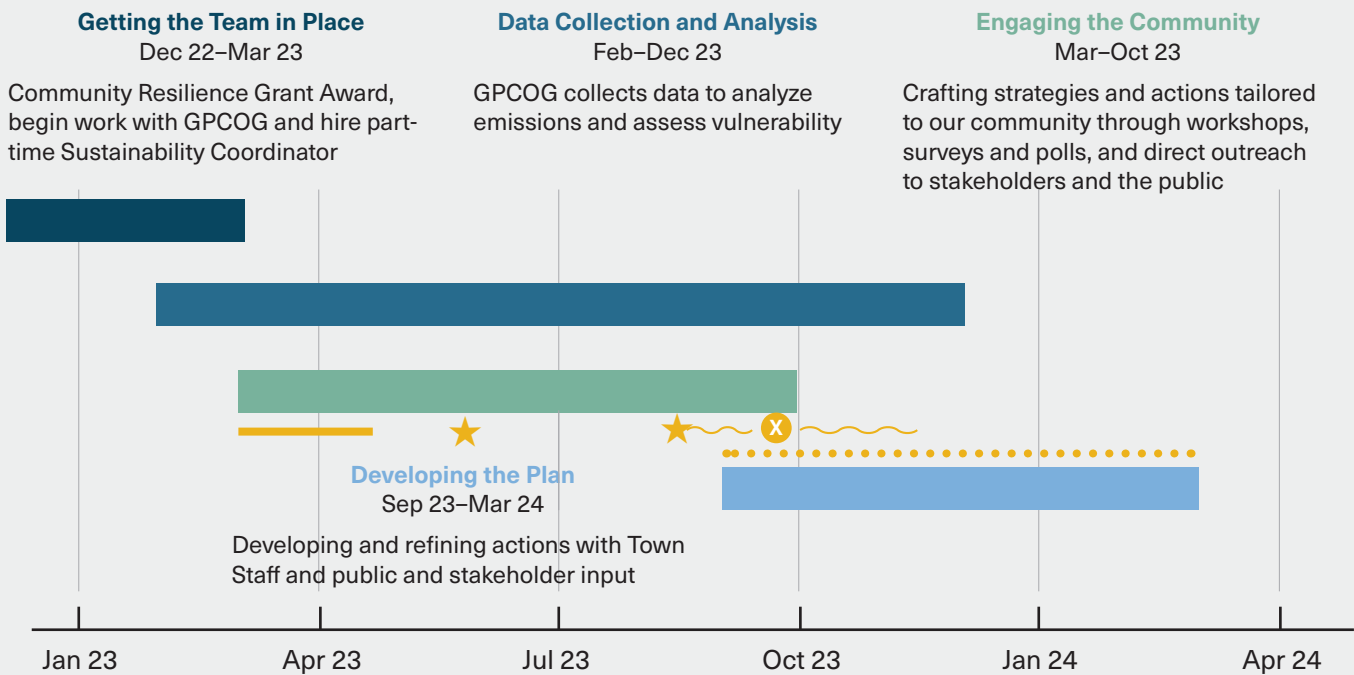
## THE PROCESS

# DEVELOPING THE PLAN

This Plan was developed with input from Town departments, resident committees, community stakeholders, and members of the public. Throughout the process, we strove to reach people with different experiences, backgrounds, and priorities to understand current needs and capture ideas and creative solutions.

**The Freeport Sustainability Advisory Board (FSAB)** is a Town volunteer resident board that advises the Freeport Town Council on sustainability and resiliency policy and practices, collaborates with town groups to advance climate solutions, and provides outreach and education. FSAB developed the recommendation for emission targets adopted by the Town Council and led the Climate Action Plan process.

## Our Timeline



- ★ Community Workshops
- Community Survey
- ~ Action Polls feedback
- ⓧ Town-wide mailer with link to Action Polls
- Direct outreach and conversations with stakeholders

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# COMMUNITY ENGAGEMENT

Residents, businesses, community organizations, and Town committees and staff all had opportunities to guide this plan. Through workshops, surveys, and conversations our community shared their priorities and ideas to help refine the actions recommended in this plan and shape our efforts to address climate change.

Staff and FSAB led direct individual and group conversations with

## 30+

stakeholders (Town committees, local organizations, businesses, State representatives, nonprofits etc.) across 8 months.

Town mailer with information went out to

## 4,359

addresses

Freeport High School Environmental Club Event and Middle School online poll

FSAB tabled on Election Day in 2022 and 2023



## 150+

respondents to surveys, polls, and online activities



## ~150

participants at 3 community workshops



Announcements shared via the Town's electronic sign, Town newsletter, and social media

The Plan was discussed at **30+** Municipal meetings, including Town Council and FSAB monthly meetings

## 700+

contacts reached through the FSAB newsletter list

Two yearlong permanent displays at the Freeport Community Library and displays at the Town Hall lobby

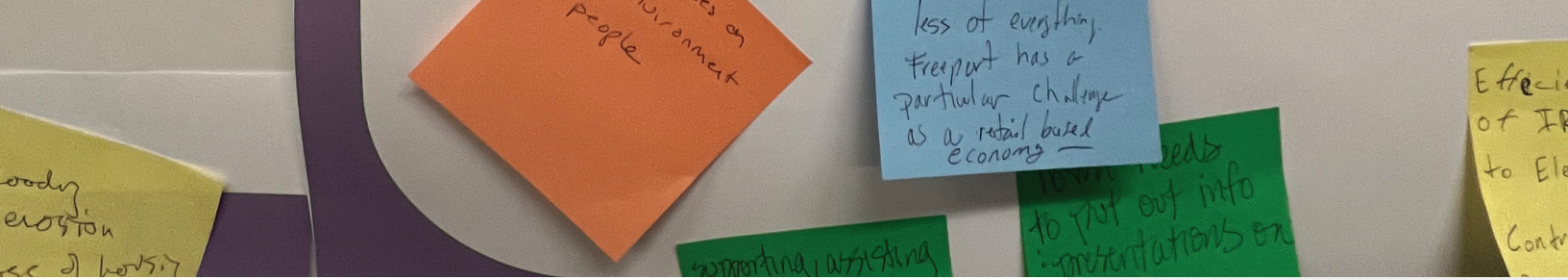
FSAB partnered with the **Chamber of Commerce** for a Lunch and Learn on climate incentives

### ONLINE PRESENCE

The project website has been a hub since early 2023 for sharing information, hosting surveys and polls, and displaying project updates. Information about the project was also shared on the Town's social media and through the Town bulletin and FSAB newsletter, for a combined total reach of over 3,000 contacts through those outlets alone.

### STAFF AND COMMITTEE INPUT

Throughout the process, Town staff shared their feedback to help co-create the plan. Staff have intimate knowledge of the resources required to accomplish actions and an understanding of the landscape of other Town projects, priorities, and policies. Staff and resident committees will ultimately be responsible for implementing actions in this plan and success depends on our ability to collaborate, share information, and align on projects to meet our shared goals.



## WHAT WE HEARD

More than 100 people responded to a community survey at the beginning of the planning process. This feedback was paired with what we heard at workshops, events, tabling, and in stakeholder and staff conversations to help shape the Plan.

### Top 4 Concerns

- Changing ocean conditions
- Extreme weather events
- Sea level rise
- Extreme heat

### Leading the Way

**66%** of respondents want the Town to have a more aggressive emissions target than the State

Respondents want the Town to be a leader in climate action.

- 30% leader in the State
- 17% leader in the County
- 16% leader in New England
- 11% leader among neighboring towns
- 8% national leader
- 7% international leader



### I hope...

“More businesses leading the way, more and more local contractors understanding high efficiency best practices. More and more restaurants embracing local food.”  
Survey respondent

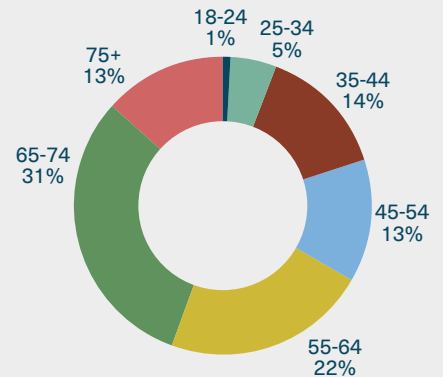
“That we move quickly away from fossil fuels and as rapidly as possible reduce our carbon footprint. Make sure all town buildings—including schools—are sustainable.”  
Survey respondent

“We look closely at the local things we can do and partner with neighboring towns for an exponentially greater impact.”  
Survey respondent

**46%**

of survey respondents have lived in Freeport more than 20 years

Age Distribution of Survey Respondents



### Residents are taking action.

- 47% of respondents have installed a heat pump
- 58% of respondents try not to buy things they don't need
- 82% of respondents switched to efficient lights (LEDs)
- 58% of respondents strive to reduce wasted food

And we heard so many other actions Freeporters take for a healthy future.



# GUIDING PRINCIPLES

FSAB selected four Guiding Principles to shape the planning process and set priorities for implementing the Freeport Climate Action Plan.



**Greenhouse Gas Emissions Reductions**  
Reducing the town of Freeport's contribution to climate change



**Equity and Inclusion**  
Ensuring that Town policies, projects, and programs are fair, inclusive of diverse voices and experiences, and reduce disparities in our community



**Social, Economic, and Environmental Resilience**  
Increasing the capacity of social, economic, and natural systems to thrive in the face of climate impacts



**Collaboration and Transparency**  
Communicating openly about plans and progress and fostering a culture of dialogue and partnership

## What This Plan Offers



### AN ACTIONABLE ROADMAP

This Plan is an actionable roadmap that will guide Freeport towards reaching our emission reduction targets and prepare our community for the intensifying impacts of a changing climate.



### A FRAMEWORK

Town leadership will use this plan as a framework for making decisions for policy, investment, and projects. Like any public decision-making process, there will continue to be community dialogue and stakeholder engagement. The Plan is intended to be flexible and will be revised at regular intervals as progress on actions and trends in data are assessed. As better data or tools become available or as new technologies and opportunities emerge, the Town will update the Plan to follow best practices.



### A TOOL FOR COMMUNITY ENGAGEMENT

The climate crisis requires bold and urgent action across our whole community. As the Town implements the Plan, there is an opportunity to bring in more voices, support residents and businesses to take action, and continue to foster a culture of collaboration, justice, and inclusivity in town.



## THE ROADMAP

# GOALS AND STRATEGIES

This Plan is organized into **five focus areas** that address our biggest opportunities for reducing emissions and preparing for climate impacts. FSAB selected the five focus areas based on the priorities that emerged from the GHG Inventory and assessment of our vulnerabilities. Topics in these areas overlap and taking action in one area can advance goals in other areas.

### Connected Mobility & Lands Use

#### KEY AREAS

- Infrastructure for walking & biking
- Electric vehicles
- Public transportation
- Land use policy

### Efficient Buildings & Clean Energy

#### KEY AREAS

- Energy efficiency
- Local renewable energy, energy supply & grid resilience
- Policies guiding new development

### Smart Waste Management & Circular Economy

#### KEY AREAS

- Reuse systems & reducing consumption/waste
- Recycling & composting
- Waste policies

### Healthy Natural Lands & Waters

#### KEY AREAS

- Land conservation
- Biodiversity & habitat protection
- Land stewardship practices

### Public Health & Resilient Community

#### KEY AREAS

- Emergency preparedness
- Health & wellness
- Neighborhood connections
- Critical infrastructure

## BENEFITS

Implementing actions in these areas bring various benefits to our community that overlap with our Guiding Principles. By implementing these actions, we can bring benefits such as equity, affordability and economic vitality, community resilience, healthy environment, and emissions reductions. Benefits of actions are mapped onto the Implementation Table.

# DRAFT



## 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.

Freeport's emissions are predominantly 'driven' by transportation, making up 58% of the total. Gasoline-powered light duty vehicles contribute the most emissions in this sector, followed by heavier duty vehicles, while buses, marine vessels, and the municipal and school fleets have a smaller impact.<sup>16</sup>

Significantly reducing transportation emissions requires electrifying every vehicle mile traveled (VMT) and reducing total VMT. We can do this by promoting walking, biking, and public transportation, along with transitioning to zero-emission vehicles. Thoughtful land use policies and development practices are crucial to accommodate our growing community while minimizing the long-term contribution of our transportation system to climate change.

In addition to changing how residents get around town, we will need to support commuting options that aren't dependent on single-occupancy vehicle travel as well as regional public transit initiatives to reach our goals. We will also need to work closely with the business community to find creative solutions to move visitors, tourists, and shoppers around town in a way that minimizes fossil fuel pollution.

**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.**



### 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)<sup>17</sup>

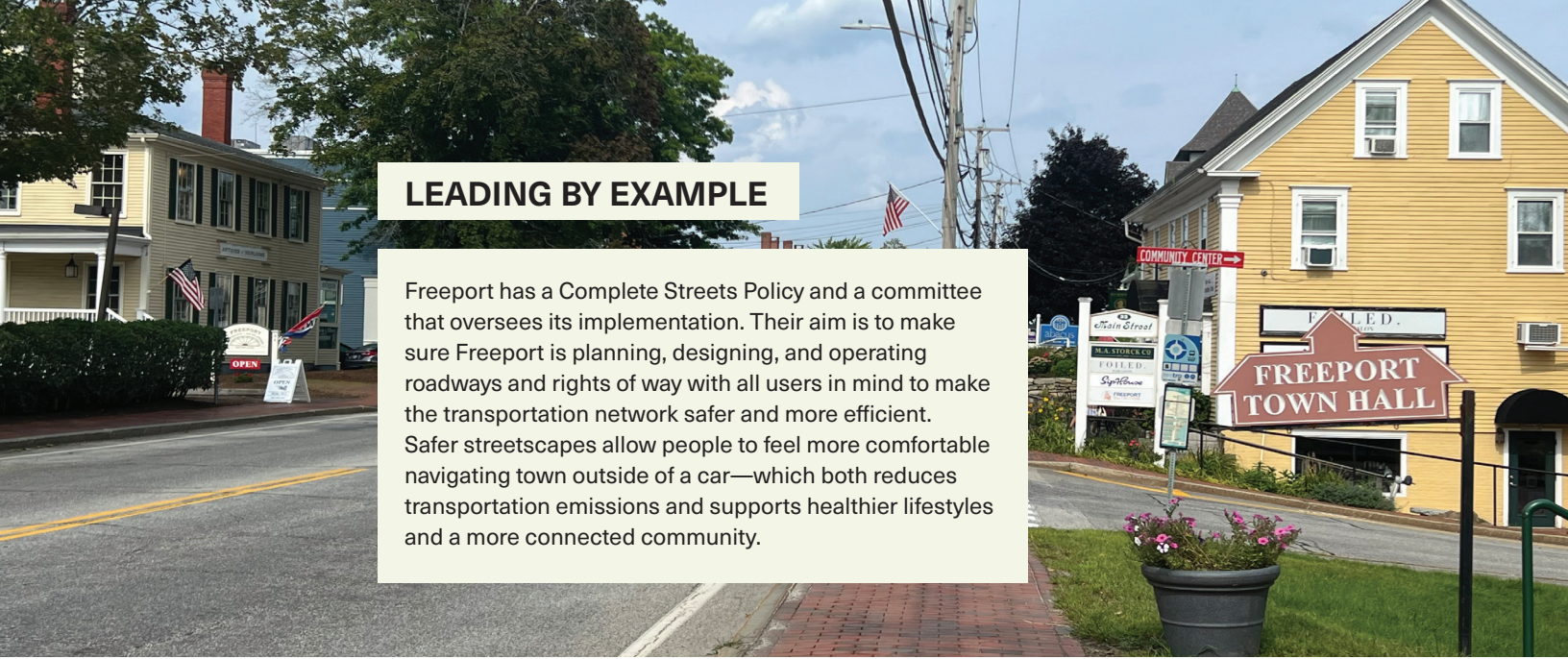
DRAFT

# Action Table

The Freeport Climate Action Plan establishes the following goals, strategies, and actions for Connected Mobility and Land Use.

<b>Goal 1: Freeport is an EV-ready and friendly community</b>	
Strategy 1.1: Accelerate EV adoption among Freeport residents, businesses, schools, and municipal departments	
1.1.1	Amend the Town's Zoning Ordinance to integrate EV charging and readiness requirements for new development and redevelopment.
1.1.2	Establish a comprehensive EV outreach and education campaign for residents and facilitate the expansion of public charging network with businesses.
1.1.3	Adopt a municipal vehicle procurement plan that phases out purchases of fossil-fuel based vehicles, starting with passenger vehicles and moving to medium- and heavy-duty vehicles as feasible across departments and strategically install chargers to accommodate an all-electric fleet.
<b>Goal 2: It is easy and safe for residents, workers, and visitors to get around without a car</b>	
Strategy 2.1: Expand infrastructure to support accessible and safe walking, biking and public transportation use	
2.1.1	Expand and prioritize non-motorized local and regional trails connecting residential, commercial, and school locations and dedicate funding to leverage State and Federal funding.
2.1.2	Explore opportunities to enhance public transit infrastructure, such as shelters, to increase transit use, and create connections between existing transit stops and employment or economic centers.
2.1.3	Collaborate with the business community to encourage active transportation and transit use for employees and customers, beginning by developing a Transportation Demand Management Program.
Strategy 2.2: Amend land use policies to reduce reliance on cars and support vibrant and resilient neighborhoods	
2.2.1	Update zoning and develop dedicated funding to enable high-density development and mixed use areas in line with Smart Growth principles and transit-oriented development (TOD).
2.2.2	Amend the Town's Zoning Ordinance to revisit minimum parking requirements, establish maximum parking standards, and integrate bicycle parking and trees in parking requirements.
2.2.3	Update the current anti-idling ordinance.





## LEADING BY EXAMPLE

Freeport has a Complete Streets Policy and a committee that oversees its implementation. Their aim is to make sure Freeport is planning, designing, and operating roadways and rights of way with all users in mind to make the transportation network safer and more efficient. Safer streetscapes allow people to feel more comfortable navigating town outside of a car—which both reduces transportation emissions and supports healthier lifestyles and a more connected community.

## Be Part of the Solution



Swap one local driving trip each week for walking or biking



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



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

## Funding Opportunity Examples

There is federal, state, and local funding available to finance climate action projects that can help Freeport implement this Plan. Below are examples of funding opportunities.

- Maine received another \$15 million to channel into rebates and grants for EV charging networks.
- Maine Jobs and Recovery Plan allocates \$8 million to expand municipal and public charging stations
- Maine Jobs and Recovery Plan has set aside \$5 million to fund innovative public transportation options.



# 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.**

In anticipation of climate change impacts, Freeport’s buildings and power systems must also be resilient to intensifying storms, potential flooding, and higher temperatures.

The State’s initiative to transition the electricity grid to renewable sources by 2050 will help ensure our electricity needs are met with clean energy.<sup>18</sup> Ensuring that our regional grid is reliable is crucial. The Town can contribute to reliable and resilient electrical infrastructure by exploring opportunities for local renewable energy, battery storage and micro-grids ( closed-loop energy systems), and supporting relevant state policies that advance energy affordability and 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

## 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<sup>19</sup>

# 40%

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

# DRAFT

# Action Table

The Freeport Climate Action Plan establishes the following goals, strategies, and actions for Efficient Buildings and Clean Energy.

Goal 3: Buildings in Freeport are designed, built, and maintained to be energy efficient and minimize greenhouse gas emissions	
Strategy 3.1: Pursue deep energy efficiency through retrofits and electrification in existing buildings	
3.1.1	Continue and expand Electrify Everything! as a comprehensive community outreach, education, and incentive program to aggressively encourage energy efficiency and renewable energy.
3.1.2	Adopt Commercial <a href="#">PACE</a> ordinances and develop supporting outreach to drive participation.
3.1.3	Pilot a benchmarking program with businesses that could phase into an <a href="#">Energy Benchmarking Ordinance</a> for larger commercial, residential, and municipal facilities.
3.1.4	Prioritize retrofits for municipal facility upgrades and develop a plan to transition facilities to net zero over time.
Strategy 3.2: Require new development and significant renovations to minimize greenhouse gas emissions.	
3.2.1	Develop phased-in requirements paired with incentives for on-site renewable energy generation and storage, EV-ready, renewable-powered heating in new construction and major renovations.
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	
4.1.1	Implement policies and practices necessary to achieve SolSmart Gold level certification, or equivalent, for the Town.
4.1.2	Amend the existing Municipal Power Purchase Agreement for 100% clean energy for current demand and forecasted need with electrification of facilities and fleet.
4.1.3	Require all new large developments (commercial, residential, or municipal) to evaluate feasibility of district energy or microgrids powered by renewable energy.
4.1.4	Evaluate feasibility for large-scale community solar projects.
4.1.5	Develop and implement a Resilient Power Plan to ensure critical facilities have power during emergencies, such as winter storms.

## LEADING BY EXAMPLE

With advocacy and support from a local grassroots organization, Freeport Climate Action Now (FreeportCAN), the Town launched a pilot rebate program in 2023, Electrify Everything!, to support low- and moderate-income residents to invest in efficient electric home systems, and electric cars, bikes, and lawncare equipment. These incentives, when paired with State rebates and Federal tax credits, can lower the upfront costs of these investments and make low-emission systems and equipment within reach.

## Be Part of the Solution



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



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



Learn if it makes sense to [install solar on your home—Energy.gov](#)

## Funding Opportunity Examples

There is federal, state, and local funding available to finance climate action projects that can help Freeport implement this Plan. Below are examples of funding opportunities.

- Efficiency Maine is the primary distributor of energy efficiency, weatherization, and building electrification rebates and grants.
- Energy Efficiency Revolving Loan Fund Capitalization Grant provides money to the state to support residential and commercial energy efficiency projects.
- Maine biennial budget has funds to support power sector transformation, grid modernization and offshore wind.
- Energy Efficiency and Conservation Block Grant Program (EECBG) provides grants to communities for clean energy programs and projects.
- Maine Jobs and Recovery Plan has set aside \$50 million to match funds for municipal efficiency projects.
- The Federal Department of Energy offers an Energy Storage Demonstration and Pilot Grant Program.

DRAFT



# 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.

Our current take-make-waste linear economy model is largely based on using finite resources and then ultimately disposing of the products made from these resources—often after only a single use. From furniture and packaging to school supplies, clothes, and food, the materials and items we use each day have a footprint of emissions—largely hidden from us—before they end up as waste.

**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.**



## BY THE NUMBERS

# 34%

of waste was diverted from incineration through recycling in 2019

# 1950

MTCO<sub>2</sub>e 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<sup>21</sup>

# Action Table

The Freeport Climate Action Plan establishes the following goals, strategies, and actions for Smart Waste Management and Circular Economy.

Goal 5: Freeport residents and businesses prioritize using resources efficiently	
Strategy 5.1: Minimize waste and foster a resource sharing economy	
5.1.1	Phase out single use materials in commercial spaces by expanding single use item bans and promoting reuse systems.
5.1.2	Launch a recognition and outreach program to support businesses to reduce waste
5.1.3	Assess opportunities to reduce waste from town operations and facilities by tracking waste and developing a zero waste plan and sustainable purchasing policy
5.1.4	Develop an ordinance for all multi-family residences, commercial establishments, and schools that phases in mandatory recycling and composting
5.1.5	Adopt a construction and demolition waste ordinance
5.1.6	Develop a library of things that serves as a space to foster opportunities for residents to reuse, repair, and create items and materials
5.1.7	Develop a network of recycling bins throughout downtown with wayfinding and unique brand.



### LEADING BY EXAMPLE

The Freeport Recycling Center has a Swap Shop where residents can drop off gently-used small household items to go to a new home. This keeps materials from being thrown away and can displace the financial and environmental costs of buying brand-new goods.

## Be Part of the Solution



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



[Reuse 101 from Upstream](#)



[Check out ecomaine's Recyclopedia](#)

## Funding Opportunity Examples

There is federal, state, and local funding available to finance climate action projects that can help Freeport implement this Plan. Below are examples of funding opportunities.

- Maine DEP offers a grant for Solid Waste Diversion.
- USDA Compost and Food Waste Reduction (CFWR) pilot projects support food waste diversion.
- EPA Recycling Education and Outreach Grant Program encourages recycling through education.
- EPA Solid Waste Infrastructure for Recycling Grants for Communities supports building a circular economy.



# 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.

The spaces and features of our natural environment are not only an essential piece of our town's identity, but they also provide many benefits to our community. Natural areas clean our air and water, reduce flooding during storms, keep us cool in the summer, and provide critical habitat for native species. Changing rainfall and temperature patterns pose risks to the health of our natural 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.**



"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

## BY THE NUMBERS

The State's climate plan, Maine Won't Wait, recommends communities conserve

# 30%

of and 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)<sup>20</sup>

Nearly

# 1800

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.

# DRAFT



# Action Table

The Freeport Climate Action Plan establishes the following goals, strategies, and actions for Healthy Natural Lands and Waters.

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

**Strategy 6.1: Prioritize green infrastructure**

6.1.1	Launch a public education and outreach campaign on sustainable landscaping, green infrastructure, and resilient land management practices.
6.1.2	Implement Low Impact Development (LID) best practices into the land use ordinances and Capital Improvement Plan (CIP).

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

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

7.1.1	Update the Freeport Open Space and Public Access Plan (1999).
7.1.2	Develop and implement an appropriate tree protection ordinance applying to public and private land that maintains tree cover and values resilience benefits of trees.
7.1.3	Pursue local, state, and federal funding to achieve the goal of conserving at least 30% of community land by 2030, with an emphasis on collaborating with regional partners to connect preserved land and protect vulnerable ecosystems.



## LEADING BY EXAMPLE

The Cousins River Fields and Marsh Preserve is an 82-acre property that was recently acquired by Maine Coast Heritage Trust in partnership with the Freeport Conservation Trust and the Royal River Conservation Trust. Building on past conservation work, this addition created a 220-acre conserved marsh system that will be critical to buffering sea level rise and mitigating other effects of climate change.

## Be Part of the Solution



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



Attend a local workshop to learn more about sustainable landscaping



Experiment with ideas for making your lawn more wild, in favor of biodiversity and native plants.

## Funding Opportunity Examples

There is federal, state, and local funding available to finance climate action projects that can help Freeport implement this Plan. Below are examples of funding opportunities.

- National Coastal Resilience Fund awards funding to improve environmental resilience and protect coastal wildlife habitats.
- State biennial budget has funds to upgrade municipal culverts at stream crossings.
- The USDA offers a Community Forest and Open Space Conservation Program



## PUBLIC HEALTH & RESILIENT COMMUNITY

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.

A certain degree of impacts from climate change are unavoidable due to the amount of pollutants already in the atmosphere. As we reduce emissions to avoid the most dire consequences, we will need to take action to ensure our community is prepared to thrive with the impacts we're projected to experience.

As temperatures and precipitation patterns change, there will be more direct health risks of tick-borne illness, poor air quality, extreme heat, and more indirect impacts to livelihoods, financial security, and wellbeing. Not everyone in the community will experience these impacts the same way—people who are already facing challenges, like seniors living alone or low-income families, might have a harder time dealing with issues caused by climate change, such as economic disruptions, storm damage to their home, or rising energy costs from AC needed to stay cool during hotter summers.

**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 can get the help they need during emergencies and that our community is strong and able to handle both short-term interruptions and longer-term disruptions.**



### BY THE NUMBERS

Over

**20%**

of Freeport adults who are older than 65 live alone.

**23%**

of total households are cost-burdened (spend more than 30% of income on housing)—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.

# Action Table

The Freeport Climate Action Plan establishes the following goals, strategies, and actions for Public Health and Community Resilience.

<b>Goal 8: People, services, and infrastructure in Freeport are prepared and resilient to climate change</b>	
<b>Strategy 8.1: Prepare town services and resources for public health and safety risks exacerbated by climate change</b>	
8.1.1	Develop a heat wave management plan to prioritize strategies to reduce community vulnerability during heat waves
8.1.2	Integrate climate hazards and state projections for climate change into the updated Freeport Emergency Management Plan, the zoning code, new capital improvement projects, and development of the annual budget
8.1.3	Create or expand a community atlas or resource library for residents including resilience resources, adaptation tools, and public safety and health/emergency management information
8.1.4	Develop neighborhood emergency networks or 'resilience hubs' to distribute information and organize resources during emergencies
<b>Strategy 8.2: Enhance local food networks and protect groundwater resources</b>	
8.2.1	Adopt policies that help preserve existing agriculture and aquaculture operations and promote programs that facilitate new production and fill gaps in distribution to residents in need.
8.2.2	Expand fertilizer and pesticide ordinances to reduce runoff pollution
8.2.3	Enhance the protection of groundwater in zoning
<b>Strategy 8.3: Ensure public and private infrastructure is resilient to sea level rise and flooding</b>	
8.3.1	Use the Vulnerability Assessment to prioritize investments for at-risk public works infrastructure and incorporate climate projections into planning
8.3.2	Establish and implement flood prevention measures that exceed the Town's current standards to be eligible for the FEMA Community Rating System program
8.3.3	Assess the needs of the working waterfront, coastal commercial establishments, and public coastal infrastructure and implement strategies that address climate change mitigation or adaptation



## LEADING BY EXAMPLE

The Freeport Police Department offers a Good Morning /Reassurance program that provides a daily phone check in for elderly, disabled, or isolated residents in Freeport. If an officer does not hear from participating individuals, calls are made to personal contacts or the police visit to ensure the participant is up and about. This service helps provide comfort to residents and can help public safety officers be proactive in responding to emergencies.

## Be Part of the Solution



[211 Maine](#) helps connect you to the resources you need. Find health, financial, and education services via phone, text, or by searching the online directory.



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



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

## Funding Opportunity Examples

There is federal, state, and local funding available to finance climate action projects that can help Freeport implement this Plan. Below are examples of funding opportunities.

- FEMA BRIC and Hazard Mitigation Grants for projects that reduce risks from disasters.
- Shore and Harbor Planning Grants available for resilient waterfront infrastructure.
- Coastal Community Grants available for coastal resilience and marine economy.
- Maine Infrastructure Adaptation Fund available to adapt critical infrastructure to reduce vulnerability to climate change.

# MOVING FORWARD

**This Climate Action Plan will be a dynamic, living document that will evolve with Freeport.**

To successfully accomplish strategies and actions outlined in this Plan, Town staff, stakeholders, and the wider community will need to actively champion its implementation. This Plan is not meant to sit on a shelf, but will be integrated into annual work plans, capital budgets, decision-making processes, and regional collaborations.

This Climate Action Plan is a framework for the Town to implement, refine, and update over the years. As technology, funding opportunities, and community priorities evolve, this plan should be revisited and adjusted to meet the needs of the community and the capacity of municipal resources.



## **ESTABLISH RESOURCES AND ROLES FOR IMPLEMENTATION**

Dedicate staff and resources to oversee existing and future climate programs, implement a 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.

Amend FSAB's charter to include an ongoing responsibility of collaborating to implement the Climate Action Plan and leading future updates to the Plan.



## **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. Strategies and actions will be revised where context or technology has changed in order to strengthen the plan's ability to guide the Town Council toward meeting the 2030, 2040, and 2050 targets.



## **Build on Freeport's Brand as a Sustainable Community**

Lean into a strong sustainability 'brand' for Freeport, in partnership with the business community, as a sustainable town and destination. Consistent, comprehensive, and accessible messaging and campaigns integrated across municipal and private spaces will build public trust and civic engagement, attract green business and tourism activity, and support community action to achieve our goals.



### 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.

### ENSURE A FINANCIALLY RESPONSIBLE APPROACH

The Town is mindful of the fact that implementing this Plan will require funding. To meet our 2030 target and longer-term goals, we will need to make consistent progress, be adaptable to new solutions as they arise, and maximize external funding sources. Dedicating a resource or position to pursue grant opportunities can facilitate success. To ensure that the Town continues to be a responsible steward of taxpayer dollars, the Town will:

- Employ a strategic approach to implement actions along a timeline that is both technologically and economically feasible;

- Leverage maintenance as an opportunity to enhance efficiency, resilience, and sustainability of municipal buildings, vehicles, and infrastructure;

- Explore available funding opportunities at state and federal levels to do this work.

### BUILD CAPACITY WITH RESOURCES AND EDUCATION

The full implementation of this Plan is contingent upon the support of Freeport residents and businesses. Certain actions will necessitate that our community adopts new behaviors and adjusts to new policies, which may impact their daily lives. The Town recognizes the challenges that these transitions may present and is dedicated to empowering our community with the necessary education and resources to make this process smoother. Outreach should be comprehensive, consistent, and accessible. It should highlight local successes and the benefits from taking action, prioritize the connection across topics, and point to valuable resources and funding opportunities.



### 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, including work of the Maine Climate Council (MCC).

In 2024, the MCC is beginning work to update *Maine Won't Wait - Maine's Climate Action Plan*.

Freeport will continue to track updates in the State's plan to evaluate how they interact with this Plan.

### Center Equity and Inclusion Throughout Implementation



As core values of the Town and this Plan, equity and inclusion will be prioritized throughout implementation to strive for a just transition. This means action implementation will be guided by an equity assessment, and 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.

# Metrics to Track Progress

Ensuring we reach our goals requires consistently measuring our progress over time. The following metrics represent some of the data we will track in the coming years to measure progress.

Metric	Baseline Data (Year)	2030 Target	2040 Target	2050 Target	Anticipated Data Source
MTCO <sub>2</sub> e from on-road vehicles by class	53,580 MTCO <sub>2</sub> e Passenger (light-duty) 21,146 MTCO <sub>2</sub> e Commercial (medium/heavy-duty) (2019)	~25,000 MTCO <sub>2</sub> e (combined)	~7,600 MTCO <sub>2</sub> e (combined)	~500 MTCO <sub>2</sub> e (combined)	GHG Inventory Update
Vehicle miles traveled (VMT) by fuel type	123,194,163 VMT gasoline 13,940,686 VMT diesel ~0 VMT electric (2019)	60 million VMT gasoline 12 million VMT diesel 67 million VMT electric	29 million VMT gasoline 10 million VMT diesel 103 million VMT electric	~0 VMT gasoline 8 million VMT diesel 139 million VMT electric	GHG Inventory Update
Vehicle Miles Traveled (VMT) per person	16,250 VMT/Person (2019)	Achieve and maintain 10% reduction in VMT per person			GHG Inventory Update
# of public EV charging ports	8 Level 2 ports, 0 DC Fast, 8 Tesla Superchargers (2022)	Maintain increasing trend with focus on distribution and access for renters and low-income residents			Plugshare, or other public database
% of vehicles registered in Freeport that are electric (plug in)	2.4% <sup>N</sup> =108 BEVs and 101 PHEVs registered (2022)	30%	80%	90%	Annual Electric Vehicle Data, Vehicle Populations by Town, Maine DEP
% of municipal fleet that is electric	0% (2023)	Continue EV replacement as fleet vehicles are retired (as market allows).			Town Manager
% of total housing stock located within 1/4 mile of transit	New Metric	50%	80%	100%	GIS (Town or GPCOG)
Miles of bicycle lanes/paths	New Metric	Increasing trend, milestones to be established			Planning Department
Emissions (MTCO <sub>2</sub> e) from residential and commercial buildings	25,695 MTCO <sub>2</sub> e residential 21,612 MTCO <sub>2</sub> e commercial (2019)	14,854 MTCO <sub>2</sub> e residential 5,984 MTCO <sub>2</sub> e commercial	7,121 MTCO <sub>2</sub> e residential 1,721 MTCO <sub>2</sub> e commercial	~500 MTCO <sub>2</sub> e residential ~0 MTCO <sub>2</sub> e commercial	GHG Inventory Update
Heat pump permits issued per year for installation in residential and commercial buildings	New Metric	1,757 new residential installs (226 per year between 2024-2030) 1,200 new commercial installs (171 per year between 2034-2030)	1,360 new residential installs (43 per year between 2031 and 2050) 225 new commercial installs (11 per year between 2031 and 2050)	3,112 total new residential installs by 2050 1,425 total new commercial installs by 2050	Codes Department permitting information
% of municipal buildings that are heated with renewable energy <sup>15</sup>	0% (2023)	Target to be determined.	80% <sup>16</sup>	100%	Department of Public Works
% of municipal electricity from renewable energy sources	_ (2023)	100%	100%	100%	

<sup>15</sup> As electrification technology evolves, it may be more accurate to track the percentage of homes using electricity for heating. In 2019, 11.8% of Freeport homes were heated with electricity (or solar) as reported by the US Census American Community Survey.

<sup>16</sup> Aligns with [Federal Sustainability Plan](#) to achieve net zero emissions federal buildings by 2045



# Metrics to Track Progress

Ensuring we reach our goals requires consistently measuring our progress over time. The following metrics represent some of the data we will track in the coming years to measure progress.

Metric	Baseline Data (Year)	2030 Target	2040 Target	2050 Target	Anticipated Data Source
Emissions (MTCO <sub>2</sub> e) from municipal solid waste (MSW) incineration	5,248 MTCO <sub>2</sub> e (2019)	Stable or decreasing trend			GHG Inventory Update
% diversion rate	33.7% (2019)	40%	50%	70%	Town Engineer/Recycling Center
% of permanently protected land	14% of land is conserved	30%	Maintain 30% or adjust based on State targets		Maine Conserved Land GIS Map
Tree canopy coverage	--				
% of residents within 10-minute walk of a park	New Metric				GIS (Town or GPCOG)
% of critical infrastructure at high risk	New Metric	Decreasing trend, as close to 0% as possible			Department of Public Works/ Town Engineer
% of designated critical facilities with backup power	New Metric	50%	100%	100%	Police and Fire and Rescue Departments

## Improved Tracking

Progress on some actions in this plan cannot be monitored by metrics currently being tracked. Developing processes for tracking and monitoring additional metrics will improve the Town's understanding of progress.

- Number of participants in Community Solar programs
- Total kW of distributed solar capacity
- Permits for EV chargers installed by building use type (multifamily, business, residential, affordable housing)
- Residents Commuting in Single Occupancy Vehicles (SOVs)
- # of trips taken on public transit per year
- Tons of waste generated by sector
- Number of fully electric buildings
- Reported Building Energy Use Intensity (EUI)

<sup>17</sup> The State of Maine aims to achieve a 50% diversion rate of MSW and decrease waste per capita.

# Glossary

A **micro-grid** is a self-contained electrical network that allows you to generate electricity on-site and use it when you need it most, like when the grid goes down or prices peak.

**Adaptation** is the process of adjusting to or preparing for changing conditions to reduce the vulnerability of impacted assets.

**Carbon sequestration** is a natural or artificial process by which carbon dioxide is removed from the atmosphere and held in solid or liquid form, which serves to help slow the pace of global warming.

**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.

**Climate-related hazards** are a physical process or event, exacerbated by climate change, that can bring harm to people, communities, or ecosystems.

**Climate-related impacts** refer to the potential effect a climate hazard can have on human or natural assets and systems.

**Climate-related risk** refers to the potential for negative consequences where something of value is at stake. In the context of the assessment of climate impacts, risk can be assessed by multiplying the probability of a hazard by the magnitude of the negative consequence or loss.

**Climate-related shock** refers to acute events occurring over a specific period of time, such as heatwaves or dangerous weather events, made more severe or frequent by climate change.

**Climate-related stressors** refer to a chronic condition or trend related to climate change that can exacerbate pre-existing hazards.

**Cost burdened** refers to spending more than 30% of income on housing.

**Electrification** is the process of powering by electricity and, in many contexts, the introduction of such power by changing over from an earlier power source.

**Equity** is impartiality, fairness, and justice for all people in social policy. Social equity takes into account systemic inequalities to ensure everyone in a community has access to the same opportunities and outcomes. Equity of all kinds acknowledges that inequalities exist and works to eliminate them.

**Fossil fuels** are energy resources formed from the remains of ancient plants and animals, such as coal, oil, and natural gas, which are extracted for human use. When combusted to create energy, they emit greenhouse gas emissions.

**Green infrastructure** refers to interventions that rely on natural solutions (trees, ponds, etc.) to absorb stormwater and reduce the impacts of flooding.

**Just transition** is a concept that refers to meeting climate goals by ensuring the whole of society—all communities, all workers, all social groups – are brought along in the pivot to a net-zero future.

**Land conservation** refers to setting aside parcels of land for permanent protection through fee acquisition or a conservation easement, a binding legal agreement with accompanying tax benefits that protects natural resources.

**Linear economy** refers to our current economic model in which finite resources are extracted to make products that are used and then thrown away.

**Marsh migration** refers to the process of marshes gradually shifting inland to formerly dry land due to rising sea levels. Sea level rise threatens to drown tidal marshes, and adjacent development can inhibit natural migration.

**Metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>e)** is the standard measurement for greenhouse gas emissions (GHGs). The tonnage of other GHGs (e.g., methane, nitrous oxide) is adjusted to the equivalent tonnage of carbon dioxide necessary to produce the same warming effect, so everything is reported in the same units.

**Mobility** refers to the ability to move easily from one place to another, typically describing the degree of freedom in movement around places. Active mobility refers to any form of transportation that involves physical activity, such as walking or biking.

**Net Zero** is when the greenhouse gases going into the atmosphere are balanced by reduction and removal from the atmosphere.

**Renewable energy** is energy from a source that is not depleted when used, such as wind or solar power.

**Resilience** refers to the capacity of communities or natural environments to adapt and/or recover quickly from impacts.

**Retrofit** refers to adding a component or accessory to something that did not have it when manufactured. For example, putting in additional insulation to improve the energy efficiency of a house.

**Snowpack** is the seasonal accumulation of snow in mountainous areas, supporting winter recreation and providing a crucial water source as it melts.

**Social vulnerability** refers to factors that may weaken a community or individual's ability to adapt to or recover from a disaster. Factors like age, financial stability, social networks, and access to resources could make it more difficult to be resilient.

**Stewardship** focuses on preserving the health of our ecosystem through measures such as protecting wildlife corridors, removing invasive species, and preventing water and soil contamination.

**Vehicle Miles Traveled (VMT)** is the total distance covered by all vehicles in a specific area over a set time. This measurement helps assess our reliance on vehicles to get around.

**Vulnerability** is the measure of risk to a threat, incorporating the likelihood of the threat occurring and the severity of the impact if it occurs.

**Weatherization** projects reduce the amount of heat lost from a building by updating the building's infrastructure, such as adding insulation or updating windows. Retaining heat for longer can save money and energy.

# Endnotes

- 1 Maine Won't Wait [Dashboard](#)
- 2 Maine Public Radio, [Maine Winters are Shortening](#), 2022
- 3 [Maine's Climate Future 2020 Update](#)
- 4 [Maine Won't Wait Climate Action Plan](#), Maine Climate Council, 2020
- 5 [Maine's Climate Future 2020 Update](#)
- 6 [Maine's Climate Future 2020 Update](#)
- 7 [Annual Warming Update](#), Gulf of Maine Research Institute, 2022
- 8 [Maine Wont Wait](#), Maine Climate Council, 2020
- 9 Freeport Vulnerability Assessment, GPCOG, 2024
- 10 IPCC, [Sixth Assessment Report, Climate Change 2022: Mitigation of Climate Change](#), 2022.10
- 11 Emissions modeling methodology and limitations are detailed in the Greenhouse Gas Inventory Report in the Appendix.
- 12 \*Emissions modeling methodology and limitations are detailed in the Greenhouse Gas Inventory Report in the Appendix A.
- 13 Freeport Streetlight Transportation Analysis, GPCOG, 2024
- 14 \*Maine electric suppliers are required to provide an increasing amount of new renewable energy to Maine consumers, reaching 80% total renewable energy provided by 2030. Maine is on track to meet the standard as required by statute and reached 51% in 2023. Local efforts to increase clean energy support this goal. ([Maine Won't Wait Progress Report](#), 2023)
- 15 [Pathways to Net-zero Greenhouse Gas Emissions by 2050](#), White House, 2021
- 16 Freeport Greenhouse Gas Inventory, GPCOG, 2024
- 17 Freeport Streetlight Transportation Analysis, GPCOG, 2024
- 18 [Renewable Portfolio Standard](#), Governor's Energy Office
- 19 Freeport Vulnerability Assessment, GPCOG, 2024
- 20 [Maine Stream Habitat Viewer](#), Maine Inland Fisheries and Wildlife
- 21 [The New Reuse Economy](#), Upstream
- 22 As electrification technology evolves, it may be more accurate to track the percentage of homes using electricity for heating. In 2019, 11.8% of Freeport homes were heated with electricity (or solar) as reported by the US Census American Community Survey.
- 23 Aligns with [Federal Sustainability Plan](#) to achieve net zero emissions federal buildings by 2045
- 24 The State of Maine aims to [achieve a 50% diversion rate](#) of MSW and decrease waste per capita.