



MEMORANDUM

TO: Freeport Town Council
FROM: Meddy Smith, Sustainability Coordinator
DATE: August 24, 2023
SUBJECT: Greenhouse Gas Emissions Reductions Target Setting for the Climate Action Plan

This memorandum provides information for Town Council review related to the Freeport Sustainability Advisory Board (FSAB) recommendation for setting targets to reduce greenhouse gas emissions. As you are aware, the Town of Freeport is working to develop a Climate Action Plan with the support of the Greater Portland Council of Governments. Typical with these climate action planning processes, targets are set to reduce both community-wide and municipal greenhouse gas emissions.

Greenhouse gas emissions, generated from the burning of fossil fuels, are polluting gases that trap heat in the atmosphere and disrupt normal climate patterns. Changing climate conditions – like more extreme heat and storms - cause a range of impacts on our public health and safety, the resilience of our economy, and the health of our natural environment. Reducing greenhouse gas emissions (i.e., mitigation) is the primary solution to address climate change.

Developing emissions reductions targets is valuable for:

- Setting benchmarks for measuring progress towards reducing emissions contributed by Freeport – allowing future Emissions Inventories to reflect directional trends
- Creating tailored and measurable key indicators that demonstrate progress
- Defining an aspirational long-term commitment that town staff, leadership, and the community can pursue

Freeport currently does not have targets for reducing the contribution of greenhouse gas emissions from residents, businesses, or municipal operations – although many actions have already been taken by the community and municipality to promote a sustainable future. As reflected in the Comprehensive Plan (2011) and the Downtown Freeport Vision Plan (2022), efforts to prepare for and mitigate climate change impacts are a clear priority of the wider Freeport community. Effective mitigation requires reducing greenhouse gas emissions in all sectors and setting reduction targets can greatly facilitate these efforts. The Town is currently in the process of drafting a Climate Action Plan that will include targets to reduce emissions.

The Freeport Sustainability Advisory Board recommends that the Town Council approve the following emissions reductions targets:

- **Community-wide (residential, commercial, industrial sectors etc.)**
 - *65% reduction in emissions from a 2019 baseline by 2030*
 - *85% reduction in emissions from a 2019 baseline by 2040*
 - *Net zero emissions by 2050*
- **Municipal Facilities and Operations**
 - *Net zero emissions by 2040*

Relevant to the recommended targets above, Net Zero is defined as:

- Net Zero is when the greenhouse gases going into the atmosphere are balanced by reduction and removal from the atmosphere. Removal is pursued only after all reduction strategies are exhausted (as advised by the Freeport Sustainability Advisory Board).

The Freeport Sustainability Advisory Board has made these recommendations with consideration of the unique context of the Freeport community, municipal resource capacity, [the tailored analysis of GPCOG](#), and the emissions reductions endorsed by current scientific consensus. The above recommended targets have taken into account the International Climate Agreement targets that have been adopted by many communities around the world, including in Maine, in addition to the targets adopted by the State itself.

The Freeport Sustainability Advisory Board is recommending the Council approve the emissions reductions targets as presented above. Setting these targets is a critical step in the Climate Action Planning process and one that directs the remainder of this planning effort – both in plan content and process timeline.

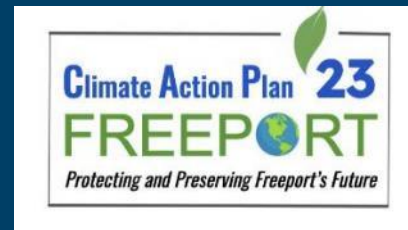
The Freeport Sustainability Advisory Board looks forward to presenting these recommendations to the Town Council.



Presentation to Council, Sept 5th 2023

Freeport Climate Action Plan

Setting Greenhouse Gas Emission Reduction Targets



Fulfilling Community Priorities

2011 Comprehensive Plan Vision

- Responsible stewards of the environment, using more renewable energy
- Reducing energy consumption through efficient land use and buildings use, efficient building design, non-car transportation opportunities, and clean waste management

Downtown Vision Plan

- Establish the Town of Freeport as a model community for sustainability by making a pledge or commitment ; create a Climate Action Plan; reduce downtown traffic; install EV chargers

Climate Action Plan

- **Strategies will overlap with existing plans; reinforce priorities**
- **Serve the same goals**

Our Progress A lot has already been done!

Preparation and Data Collection

GHG Emissions Inventory

Vulnerability Assessment

Climate Action Planning



- First public workshop held on May 15th with over 50 attendees; 136 responses to survey
- Interviewed municipal department heads

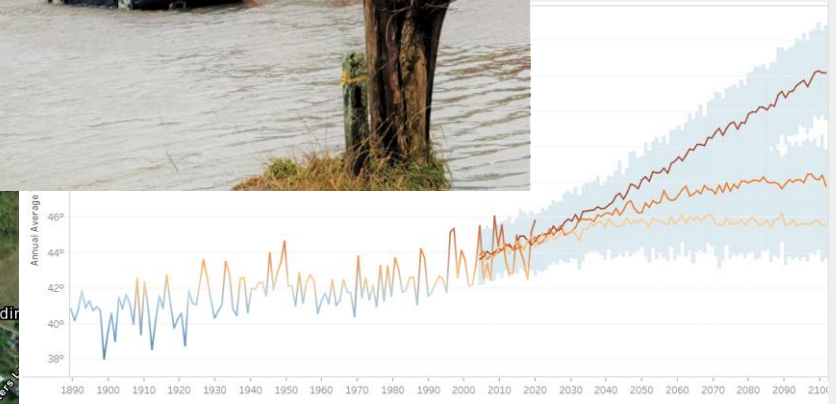
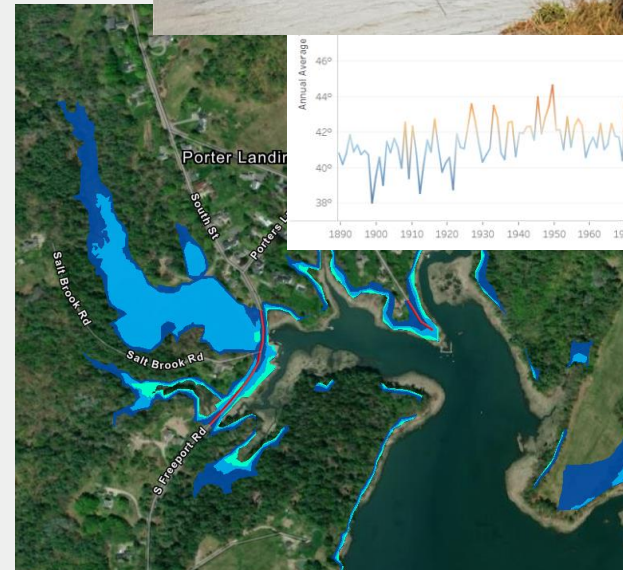
SETTING OUR TARGETS



Why set emission reduction targets?

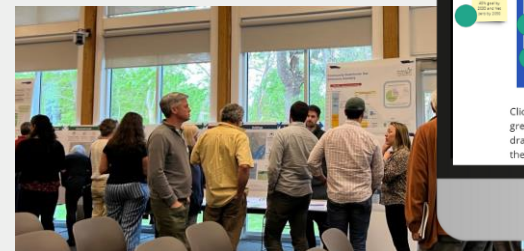
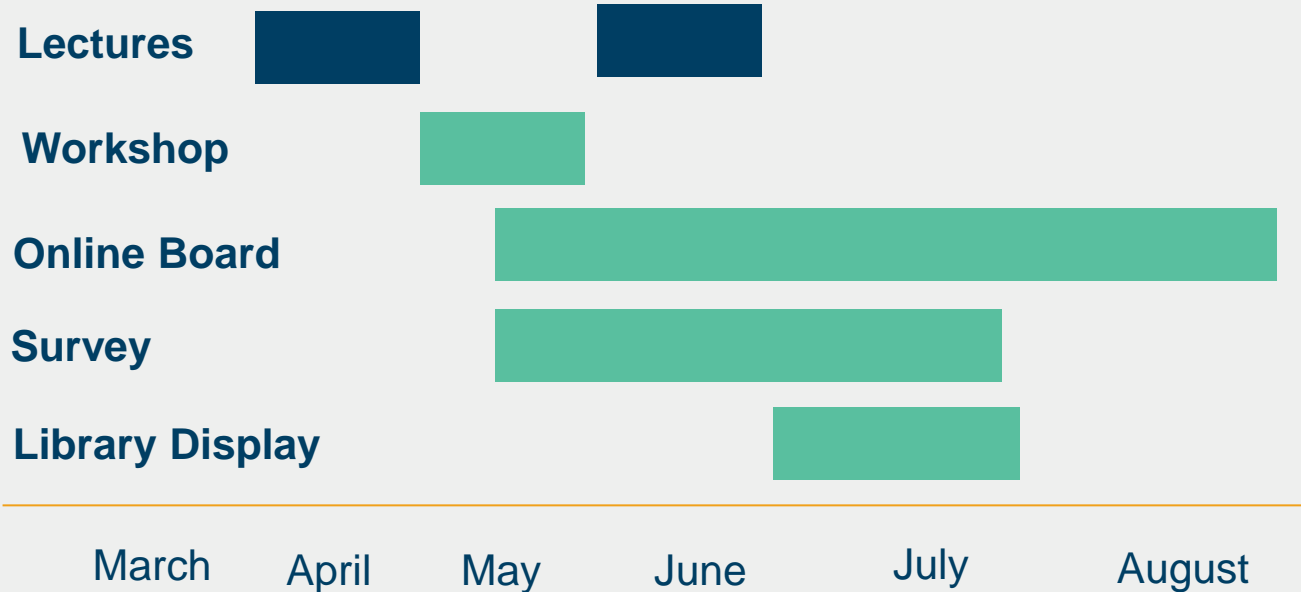
Reduce future impacts of climate change – protect safety, wellbeing, natural habitat and ecosystems, and livelihoods

- Set clear, quantifiable goals to measure against
- Support and empower all residents
- Cost-savings for the municipality, businesses, and residents
- Align with state, federal, and international goals
- Join neighboring communities in this effort



Public Input & Education Opportunities

Participants presented with target options, neighboring town commitments, potential strategies, and asked to vote and comment.



Advertised through Town social media, bulletin, flyers, newsletters, Council announcements, PS e-sign.

GREENHOUSE GAS INVENTORY



Our Emissions

Total Emissions
132,392 MT CO₂e

How does Freeport compare in annual emissions per person? *

Maine	12.24
York	17.44
Freeport	15.13
Yarmouth	11.65
Falmouth	11.60



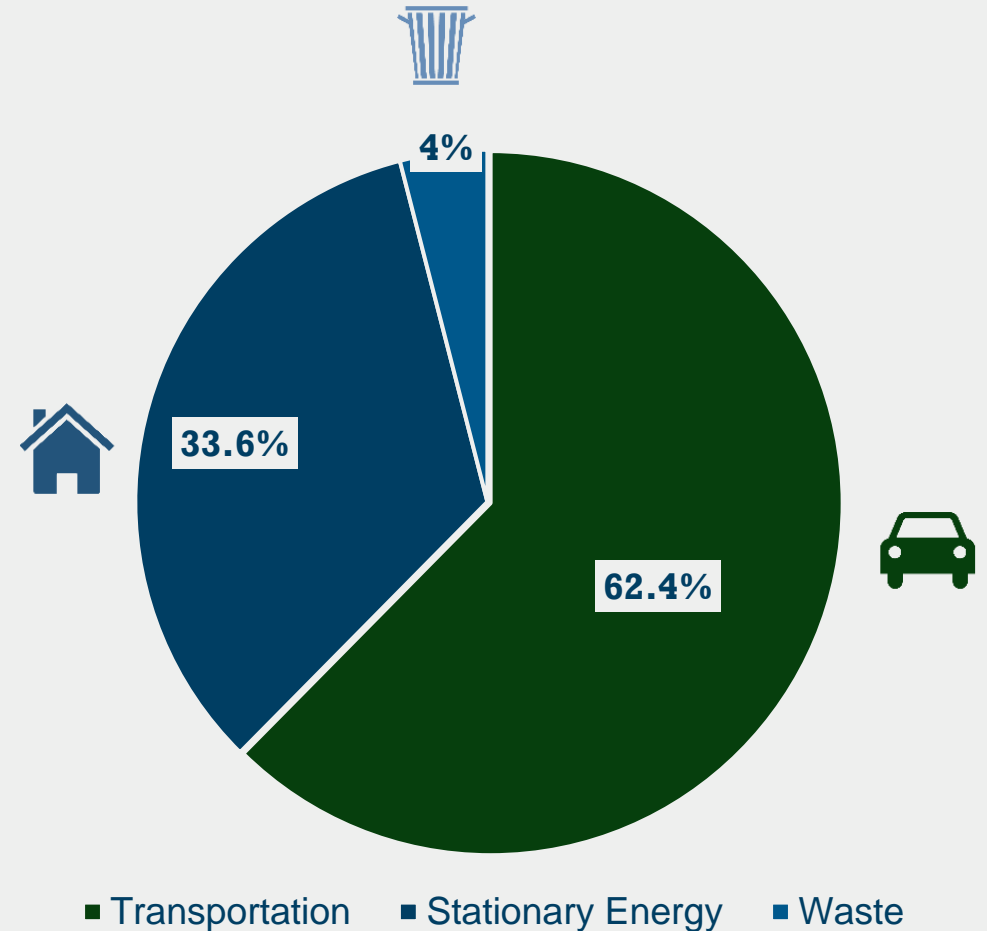
That is equivalent to the emissions from burning 730 railcars' worth of coal.

Community-Wide Greenhouse Gas Inventory

Largest Emissions Sources:

1. Passenger vehicles (36%)
2. Commercial vehicles (24%)
3. Home energy use (18%)
4. Business energy use (15%)

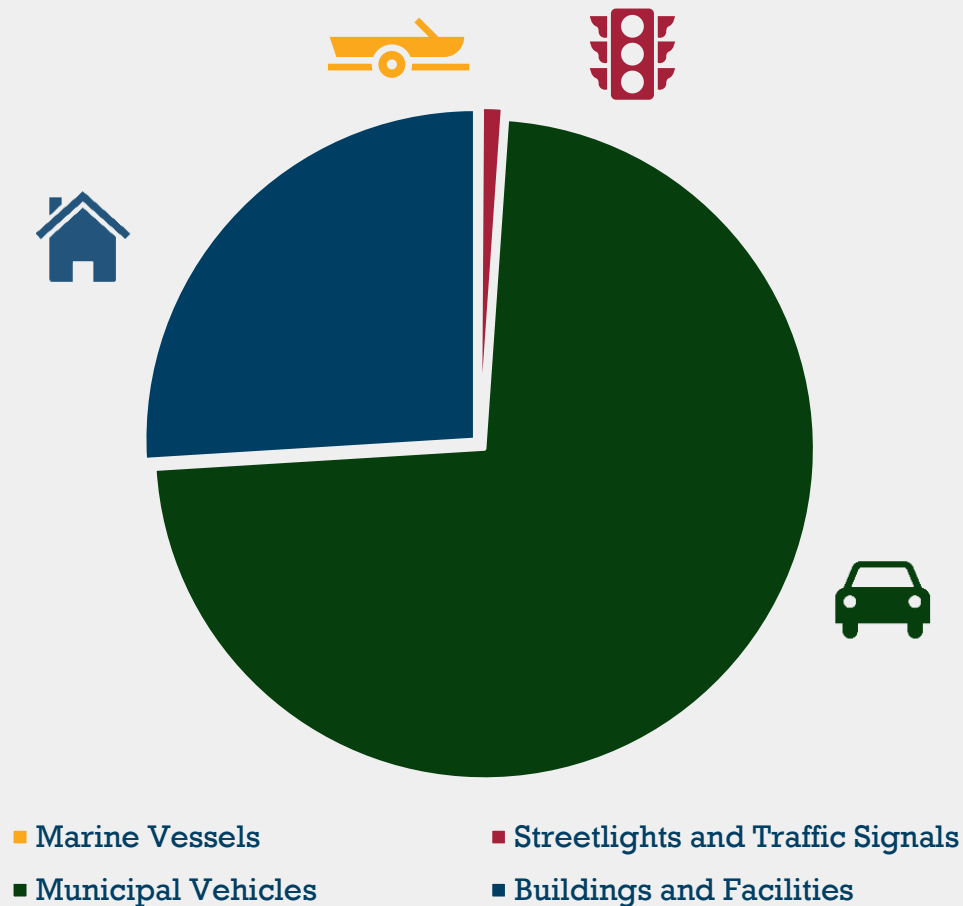
Municipal emissions
accounted for **1% of overall
community emissions.**



Sectors as percent (%) of total *community* emissions.

Municipal Emissions

Municipal emissions accounted for 1% of overall community emissions.



Largest Emissions Sources:

- Municipal Fleet (73%) - largely from diesel use
- Buildings (26%) - largely from natural gas use

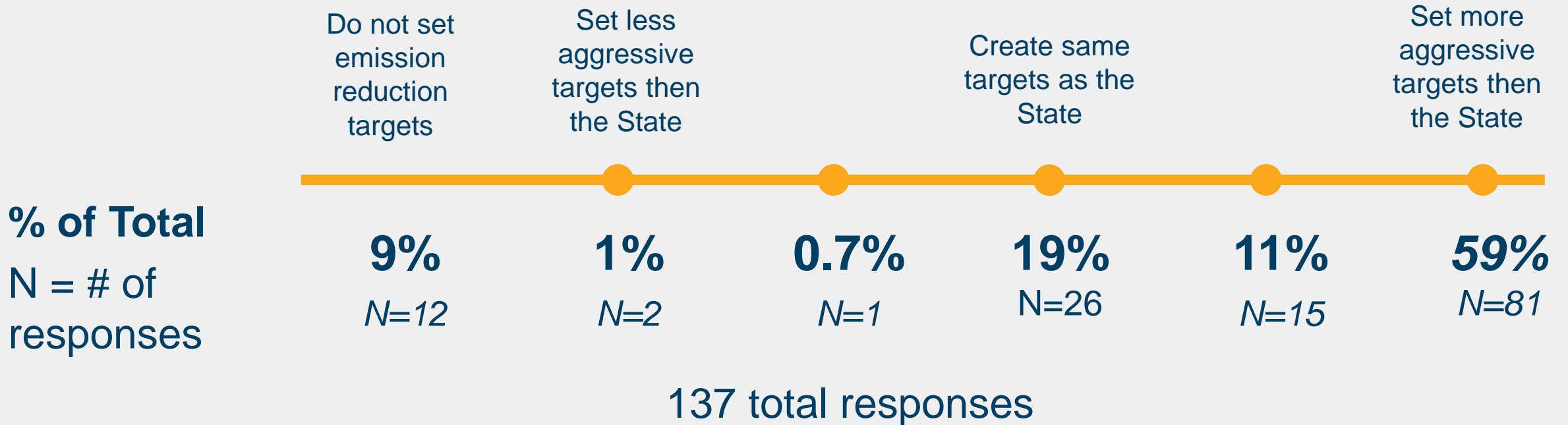
Sectors as percent (%) of total *municipal* emissions.

Public Input Summary

In relation to the state, which target do you want the Town to adopt?

Sources:

Survey, workshop, library, online board



Emission Reduction Target Comparison

	2020	2023	2015	2022
Emission Reduction Timelines	Maine Won't Wait	Freeport Targets Recommended by FSAB	International climate agreement*	Yarmouth Climate Declaration
By 2030	45% reduction from 1990 baseline levels	65% reduction from 2019 baseline	65% reduction from 2016-2019 baseline	80% reduction (GPCOG recommends from 2019 baseline levels)
By 2040	65% reduction from 1990 baseline levels	85% reduction from 2019 baseline	85% reduction from 2016-2019 baseline	Not specified
By 2050	80% reduction from 1990 baseline levels	Net Zero	Net Zero	Net Zero
Municipal Emissions	Net Zero by 2040	Net Zero by 2040	Net Zero by 2030	Net Zero by 2030

*Target adopted by Falmouth with 2019 baseline

Measuring Progress toward Targets



Greenhouse Gas Emissions Inventories

Every few years, the Town can conduct an Inventory Update to measure actual progress in emissions reductions.



Key Indicators for the Strategy Areas

The Town can measure Key Performance Indicator (KPI) target and metrics annually that will show trends towards meeting emissions reductions targets.

Example KPI Outputs: # of EV registrations, miles of multi-use paths, % tree cover, # of heat pumps installed, # trees planted on town property

Example of What Achieving Targets Looks Like



6.5%

Reduction in total miles traveled in Freeport (VMT) by 2030, 10% by 2050



23%

of passenger cars electrified by 2030, 90% by 2050

- Leveraging market transformation
- Supporting in-progress regional projects
- Surpassing State targets – by small margins

Example of What Achieving Targets Looks Like

KPI Metric: Heat Pumps Installed

Strategy Area	Recommended Target
Heat pumps (installation)	
2023-2030	1,757 226 per year
2031-2050	1,360 43 per year
Total	3,112
Annual Emission Savings (MT CO ₂ e)	644

****161 installed in 2021!**

- Track KPI Metrics annually
- Show progress and help prioritize efforts
- Report transparently and celebrate progress

KPI Metric

Setting Targets

The Problem

Impacts from a changing climate are, and will, affect the health, well-being, and safety of people and places of Freeport.

The Solution

Setting targets and measuring significant reductions in Freeport's emissions will contribute to the solution of minimizing climate impacts at the source.

The Benefits

Leverage existing and upcoming State and Federal **funding** for implementing diverse projects

NEXT STEPS

- What does the Council want to see next to continue with this decision-making process? Specific questions we can answer?

Learn more and see the data at freeportclimateaction.org