



**RESILIENT
SWAMPSCOTT**
CLIMATE ACTION FOR OUR COMMUNITY

Resilient Swampscott **Climate Action & Resilience Plan**

Prepared by Kim Lundgren Associates, Inc.

Resilient Swampscott

Swampscott is home to a beautiful coastline, flourishing parks and woodlands, and vibrant and connected neighborhoods. While climate change presents unique challenges for our community, we will continue to take bold and strategic steps to ensure our town remains a great place to live, play, work and visit. Our Climate Action Plan, *Resilient Swampscott*, is the framework to make our community stronger, healthier, and more resilient while reducing our contribution to climate change.

The goals, strategies, and actions in this plan are organized into **5 KEY FOCUS AREAS:**



Buildings & Energy

Driving the transition to resilient, net-zero buildings alongside the generation and delivery of clean energy.



Transportation

Prioritizing low-carbon mobility by developing a safe and accessible public transportation system and accelerating the transition to electric vehicles.



Resilience & Vulnerability

Preparing the community for climate-driven emergencies through critical infrastructure improvements and strengthened natural and social systems.



Natural Resources

Providing equitable access and protection to open spaces, tree canopy, habitats, and water resources through resilient infrastructure and land stewardship.



Solid Waste & Recycling

Creating a robust waste management system that reduces energy demand and emissions by reducing, reusing, diverting or recycling material.

The plan's **3 GUIDING PRINCIPLES** represent Swampscott's values and goals for implementation:



Community

Elevating community voices through meaningful engagement.



Equity

Ensuring equitable access to services and opportunities.



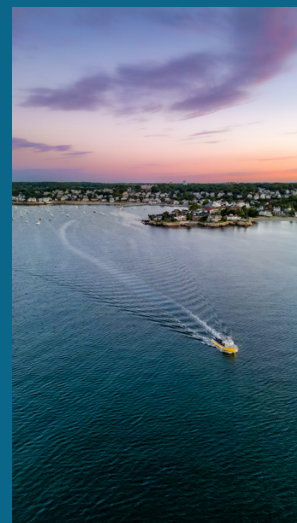
GHG Reduction

Reducing community-wide greenhouse gas emissions.

"Swampscott is leading the way to a more sustainable future! We all have a responsibility on a level to fight climate change and we need to take swift and deliberate steps to address climate change. Our collective health, well-being, and quality of life depends on it – not to mention the homes, businesses, beaches, and places that we love. Our climate action plan is **rooted in equity** to ensure that all residents have the resources they need to thrive and **grounded by data** and technical expertise that will guide our next steps. Successfully reducing our greenhouse gas emissions and preparing our community for the impacts of climate change will require an all-hands-on-deck approach. I hope that you will join us in supporting and implementing *Resilient Swampscott*, our roadmap to a better future for everyone in our community."

Sean Fitzgerald

Town Administrator



"Another winter storm with coastal flooding hit our community this past winter, and we hear and read about the dire consequences of climate change in the news. I'm excited that our town has a climate action plan tailored to our needs as we seek to join other Massachusetts communities that are leading on climate change and building a more sustainable future. **Let's step up the pace and work on this, together!**"

Martha Schmitt

Chair, Climate Action Plan Committee

How is Climate Change Impacting Swampscott?

There is no doubt that we are facing new challenges that accompany a changing climate. With more frequent storms eroding our beaches, floods inundating our main streets, and heat waves threatening our health and safety, it is becoming harder to safeguard assets like our homes, businesses, infrastructure, and quality of life. From transforming our energy and transportation systems to protecting human health and well-being, *Resilient Swampscott* aims to ensure that everyone in our community can be resilient in the face of these impacts.



Heat Waves

2 days

Average number of extreme heat days above 90 °F in Essex County between 2017-2021

29 days

Average number of extreme heat days projected by 2050



Increased Flooding

8 inches

Level of sea rise in Boston between 1950-2016

Up to 20 inches

Level of sea rise projected in Boston by 2050



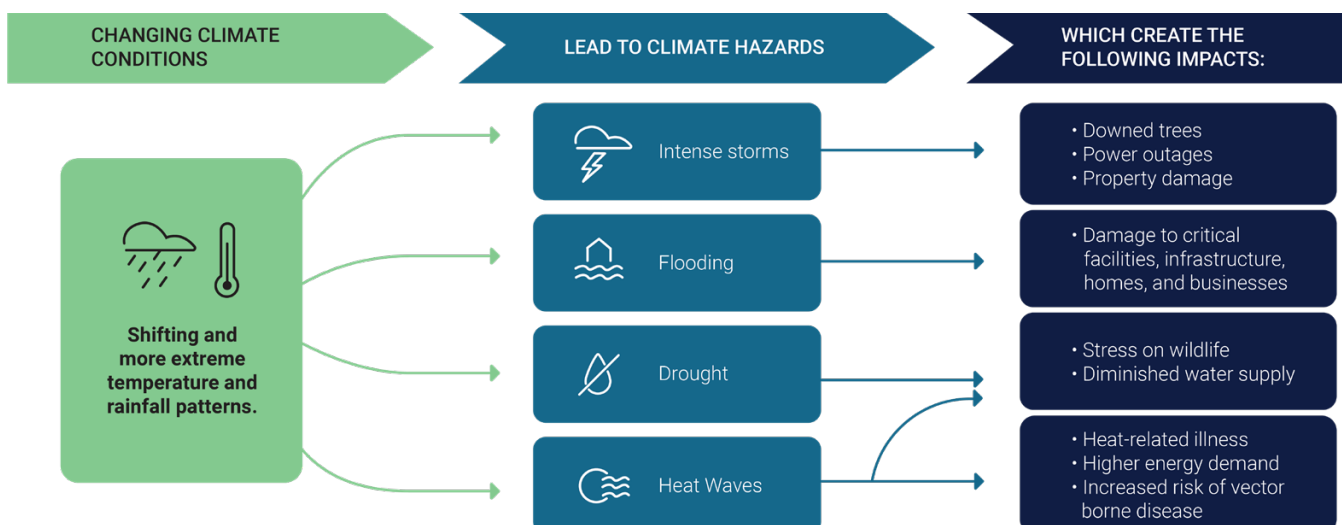
Intense Storms

9%

Increase in annual precipitation in Essex County between 1980 and 2020

9%

Additional increase in annual precipitation in Swampscott projected by 2050





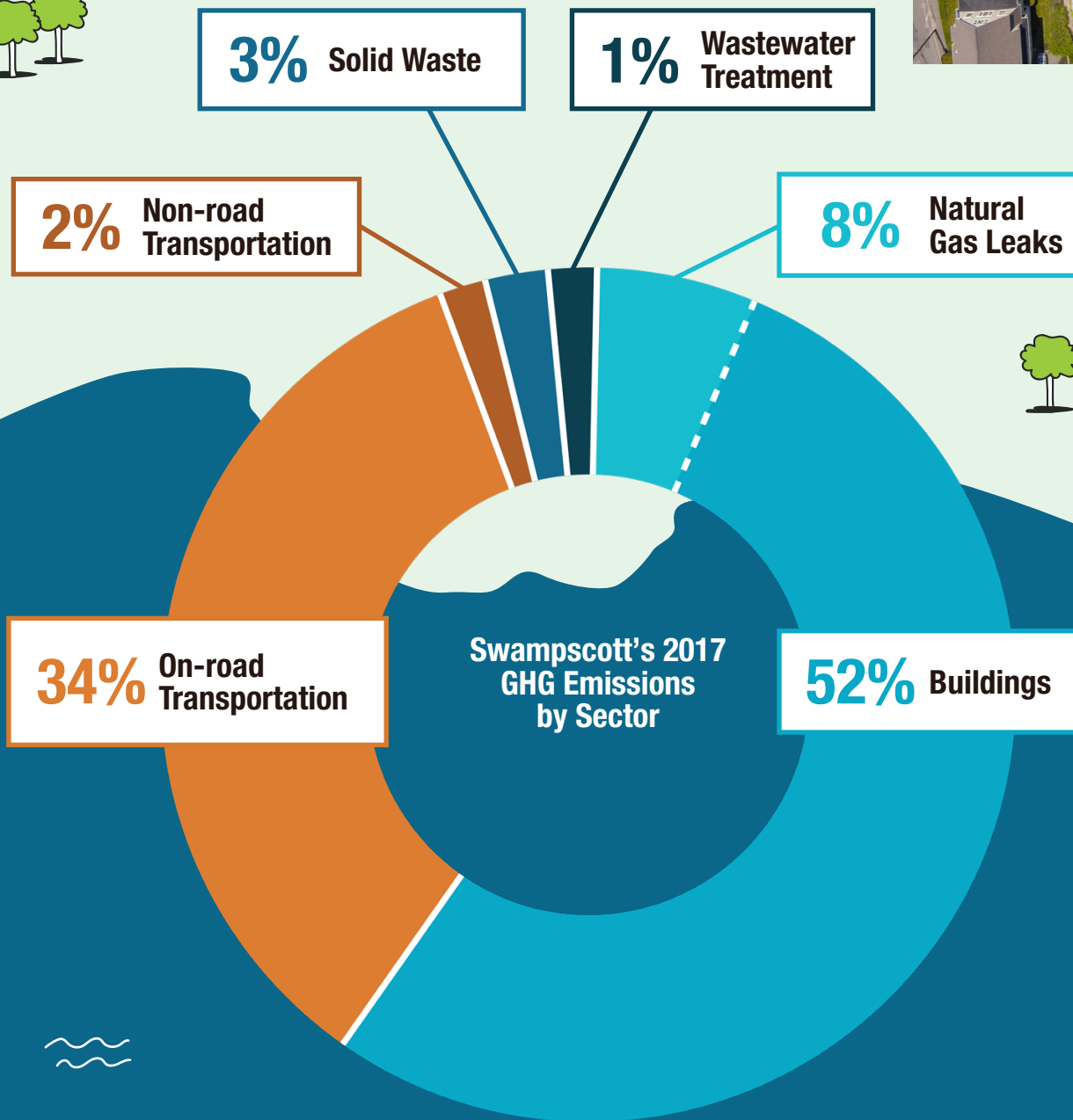
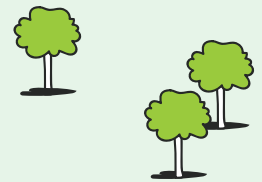
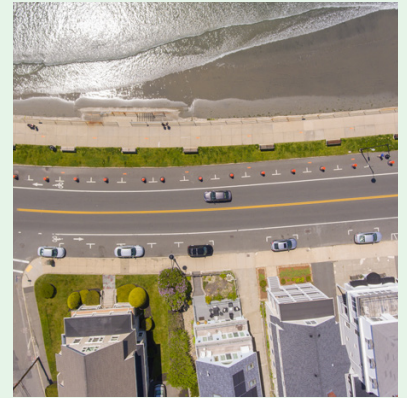
**There are two main ways to address
climate change in Swampscott**

1 **REDUCE OUR
GREENHOUSE GAS
(GHG) EMISSIONS**
the primary pollutants
disrupting our climate.

2 **ADAPT TO THE
IMPACTS OF
CLIMATE CHANGE**
that we are already
seeing and feeling
and will continue to
experience in the future.

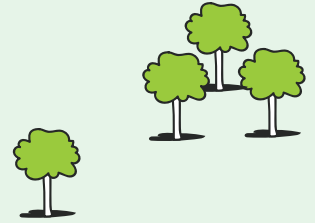
Swampscott's Contribution to Climate Change

Greenhouse gas (GHG) emissions are produced when we use fossil fuels to heat our buildings, power our vehicles, and incinerate our waste. Understanding where Swampscott's GHG emissions are coming from will allow our community to take bold action to minimize our community's contribution to climate change.

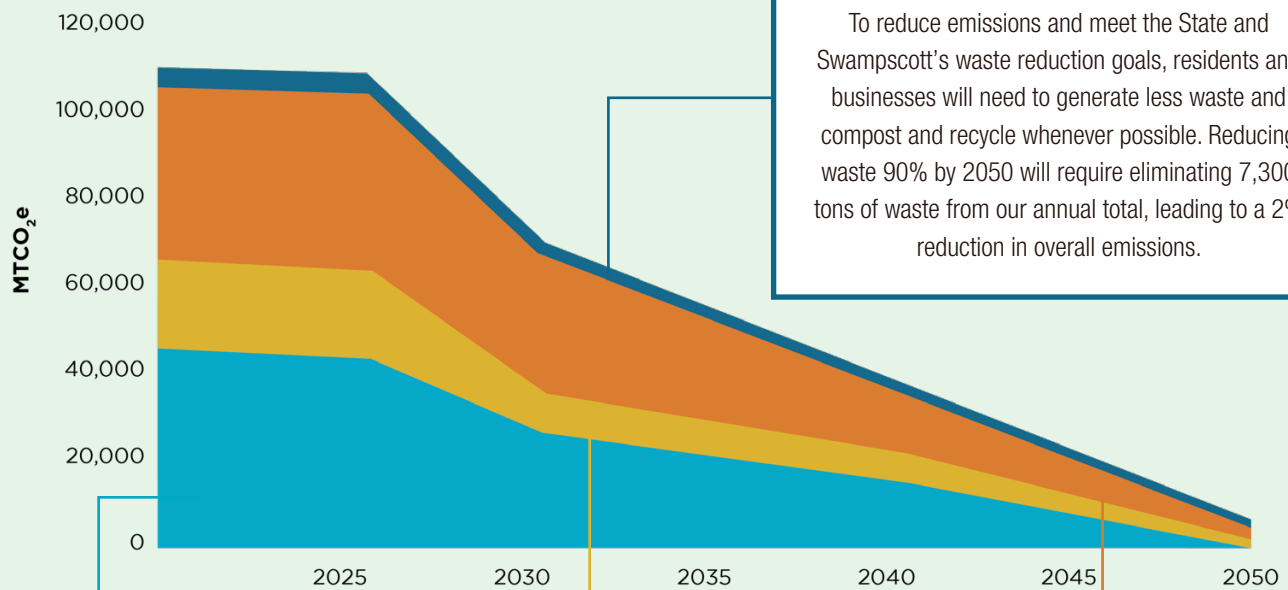


What Could the Future Look Like?

The strategies outlined in this plan are designed to help us reach our goals quickly and efficiently. In 2022, the Town of Swampscott passed a resolution to not only develop a comprehensive climate action plan, but also to achieve net zero emissions by 2050. The graph below models potential strategies that are most likely to reduce our community's GHG emissions to near zero* by mid-century.



Pathways to Zero



*The remaining emissions reductions that will be needed to reach net zero are expected to come from electrification of commercial medium- and heavy-duty trucks.



WASTE

To reduce emissions and meet the State and Swampscott's waste reduction goals, residents and businesses will need to generate less waste and compost and recycle whenever possible. Reducing waste 90% by 2050 will require eliminating 7,300 tons of waste from our annual total, leading to a 2% reduction in overall emissions.



BUILDINGS

Pursuing retrofits and electrification of existing buildings will provide meaningful GHG reductions. If Swampscott electrifies 100% of buildings by 2050, it will lead to a 45% reduction in GHG emissions.



RENEWABLE ENERGY

Reaching 100% renewable energy supply will require increasing participation in Swampscott Community Power and maximizing local solar generation and installing 3,400 new systems by 2050. These strategies will reduce overall GHG emissions by 14%.



TRANSPORTATION

Transportation strategies will lead to a 34% reduction in GHG emissions by 2050. Vehicle electrification will need to be accompanied by expanding EV charging infrastructure and increasing transit use and alternative modes of transportation.

Action Plan Summary

The planning process identified goals, strategies, and actions under each focus area that will reduce greenhouse gas (GHG) emissions and strengthen community and environmental resilience to climate change.



Buildings & Energy

Goal 1: Swampscott's energy infrastructure is emissions-free and supplied by 100% renewable energy.

1.1 Achieve 100% renewable energy for local electricity supply and reduce methane emissions in the gas distribution system.

- 1.1.A Increase enrollment in Swampscott Community Power 100% New England Green through ongoing promotion and education.
- 1.1.B Work with National Grid to prioritize repair of leaking gas pipes in town in accordance with the Massachusetts Gas System Enhancement Plan, ensure scheduling is coordinated with planned road paving, and report progress on a quarterly basis.

1.2 Maximize local renewable energy production and battery storage within Swampscott.

- 1.2.A Promote existing incentives to increase adoption of small-scale solar electricity, prioritizing low-income residents and landlords.
- 1.2.B Consider mechanisms such as a bulk purchasing program to encourage purchase of solar panels and battery storage among residents, businesses, and municipal departments.

Goal 2: Buildings in Swampscott are designed, constructed, and maintained to be resilient and produce net-zero emissions.

2.1 Pursue deep energy retrofits and electrification of existing buildings through a phased approach.

- 2.1.A Develop a targeted, multilingual campaign for weatherization and energy efficiency, prioritizing low-income residents, renters, and landlords.
- 2.1.B Establish and promote incentives, such as reducing or waiving permit fees, for projects that go beyond what is required by code, such as installing all-electric systems or utilizing energy from renewable or non-emitting energy sources.

2.2 Ensure that new development prioritizes the reduction of greenhouse gas emissions.

- 2.2.A Adopt the Municipal Opt-in Specialized Energy Code.
- 2.2.B Adopt the state's Commercial Property Assessed Clean Energy (C-PACE) program to support local financing of commercial clean energy projects.



Transportation

Goal 1: Swampscott's transportation system is safe, accessible, and minimizes emissions.

1.1 Reduce single-occupancy vehicle trips and enhance low-carbon mobility options.

- 1.1.A Expand existing bike path and the bike sharing network to connect to public transportation, schools, and businesses.
- 1.1.B Implement ridesharing/carpooling programs and investigate income-based transportation fee reduction programs.
- 1.1.C Implement shuttle service connecting major transit (e.g., commuter rail, Blue Line) to retail hubs and beaches.

1.2 Ensure that Swampscott's transportation infrastructure is safe and accessible to all.

- 1.2.A Improve access and safety for pedestrians and bicycles through enhanced streetscape features with a focus on high traffic areas.

Goal 2: Swampscott reduces transportation-related emissions through the electrification of cars, trucks, and buses.

2.1 Accelerate adoption among Swampscott residents, businesses, and municipal departments.

- 2.1.A Create a public awareness campaign for EV adoption and available charging stations.
- 2.1.B Enhance existing Efficiency and Procurement Policy for Town Vehicles to require purchase or lease of EVs for light-duty vehicle replacements and pilot or evaluation for medium- and heavy-duty vehicles.

2.2 Expand infrastructure and capacity needed for rapid electrification of vehicles in Swampscott.

- 2.2.A Increase EV charging stations at public parking facilities (e.g., Philip's Park, Fisherman's Beach, Police Station, new elementary school) and on-street locations.
- 2.2.B Expand existing training for relevant municipal staff to include EV maintenance and operations.



Resilience & Vulnerability

Goal 1: Swampscott's infrastructure and services are resilient to climate impacts.

- 1.1 Enhance critical infrastructure to be resilient to extreme weather and coastal flooding.
 - 1.1.A Protect existing municipal assets from climate change through measures including, but not limited to, elevation of critical equipment and floodproofing.
 - 1.1.B Assess impacts to critical infrastructure from severe weather conditions and develop a phased plan for upgrades.
- 1.2 Prepare Swampscott's assets for anticipated sea level rise and increasing extreme weather events.
 - 1.2.A Expand the Coastal Flood Area Overlay District by adopting a locally regulated floodplain that includes areas outside of the FEMA-mapped 100-year floodplain boundary based upon local data.
 - 1.2.B Update the Town's Hazard Mitigation Plan using the latest climate projections and analysis, including the Coastal Climate Change Study Final Report.

Goal 2: Community members have resources and information to be better prepared for climate change and its accompanying health impacts.

- 2.1 Expand reach and effectiveness of climate preparedness and response resources.
 - 2.1.A Launch an inclusive, multilingual climate preparedness educational campaign targeting residents and businesses.
 - 2.1.B Enhance climate change emergency preparedness and response training for Town staff, first responders, and residents.
 - 2.1.C Establish a neighbor-to-neighbor network to enhance community connectivity and health.



Natural Resources

Goal 1: Swampscott's natural resources enhance community resilience.

- 1.1 Enhance, protect, and maintain natural resources and public green spaces.
 - 1.1.A Establish a connected network of green spaces to reduce heat and minimize flood impacts, prioritizing neighborhoods near residents most vulnerable to climate impacts including, but not limited to, heat islands.
 - 1.1.B Adopt landscape practices that support native biodiversity and improve water retention.
 - 1.1.C Institute a requirement that trees that are removed or lost due to age, storms, or diseases must be replaced with native, climate-resilient species.

Goal 2: Infrastructure and open spaces support a healthy and diverse local ecosystem.

- 2.1 Prioritize sustainable land development and management practices.
 - 2.1.A Secure funding to install green infrastructure on public properties throughout town.
 - 2.1.B Place Conservation Restrictions on large Town-owned open space parcels.
 - 2.1.C Launch an education campaign to promote regenerative landscape practices among residents, businesses, and municipal staff.



Solid Waste & Recycling

Goal 1: All possible solid waste is minimized by reducing consumption and diverting material from the waste stream by recycling or composting.

- 1.1 Establish programs to foster educated and responsible consumers.
 - 1.1.A Create a REUSE program that taps multiple channels (e.g., dedicated space for community free exchange/thrift programs, enhancement of existing Library of Things, support for free repair events for seniors and lower income households).
 - 1.1.B Establish a phased zero-waste-target education program within Town offices, buildings, and schools.
- 1.2 Increase recycling and composting in Swampscott.
 - 1.2.A Implement a mandatory recycling and composting policy for schools and municipal buildings.
 - 1.2.B Launch a town-wide outreach campaign to expand resident and business participation with available composting services.
 - 1.2.C Engage with the local business community to improve their waste diversion profile, including guidance for diversion friendly packaging and containers.



Buildings & Energy

Driving the transition to smart and carbon neutral buildings alongside the generation and delivery of clean energy.

WHAT'S INCLUDED

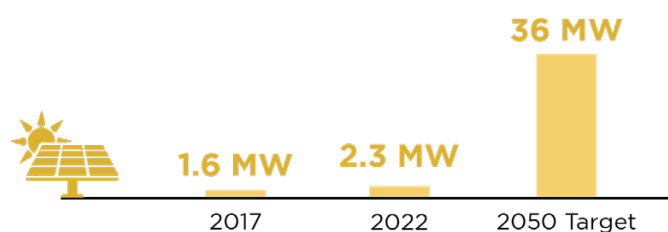
- ✓ Achieving 100% renewable energy
- ✓ Improving efficiency and reducing emissions from existing buildings and new construction

BY THE NUMBERS



Residential Energy Use by Source¹

Buildings represent the largest source of emissions (52%) in Swampscott, the majority of which come from residential use of electricity, natural gas, and oil.



Total Solar PV Capacity²

Ensuring a sustainable, resilient future requires shifting our electricity supply to renewable sources. Swampscott increased solar PV capacity by 36% between 2017 and 2022.

MEASURING SUCCESS

The following metrics will help Swampscott monitor progress toward our goals for Buildings & Energy.

Metric (unit)	Baseline Data	Baseline Year	2030 Target	2050 Target
Households electrified (# and % of households) ³	214 households, 4%	2022	1,902 households, 38%	5,282 households, 100%
Installed solar capacity (MW)	2.3 MW	2022	17.8 MW (25% of potential reached) ⁴	35.7 MW (100% of potential reached)
Enrollment in New England Green options through Swampscott Community Power (% of households) ⁵	0.3%	2022	80%	100%
Open gas leaks(#) ⁶	Grade G3SEI: 6 Grade 3: 85 Grade 2: 13	2021	Address all G3SEI and 3 grades	Reduce grade 2 by 50%



BE PART OF THE SOLUTION

Improve the energy efficiency of your home and take advantage of rebates and incentives offered by Mass Save to homeowners, renters, and landlords.

[LEARN MORE](#)

¹ Mass Save (2019). Electricity and Natural Gas Consumption Data.

² Massachusetts Clean Energy Center (2022). Production Tracking System.

³ KLA Analysis (2022). Assessors Database.

⁴ Total solar potential is based upon the amount of usable sunlight and viable roof space sourced from Google Project Sunroof.

⁵ Swampscott Community Power (2022). Activity Through April 2022.

⁶ HEET (2021). Annual Leaks Map.



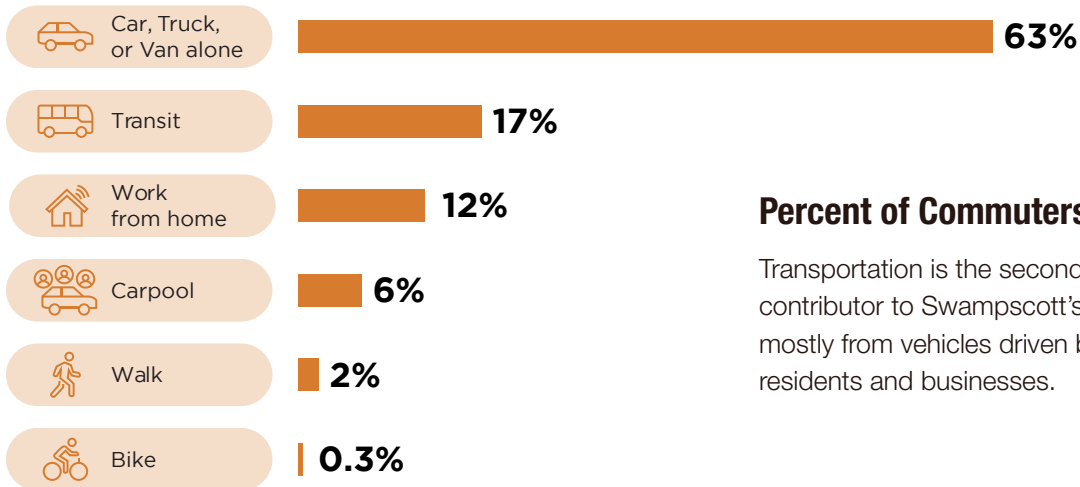
Transportation

Prioritizing low-carbon mobility by developing a safe and accessible public transportation system and accelerating the transition to electric vehicles.

WHAT'S INCLUDED

- ✓ Reducing car trips by ensuring that alternative modes of transportation, like walking, biking, and transit, are safe, accessible, and efficient
- ✓ Accelerating the transition to electric vehicles through widespread adoption and expanded charging infrastructure

BY THE NUMBERS



Percent of Commuters¹

Transportation is the second largest contributor to Swampscott's emissions, mostly from vehicles driven by Swampscott residents and businesses.

MEASURING SUCCESS

The following metrics will help Swampscott monitor progress toward our goals for Transportation.

Metric (unit)	Baseline Data	Baseline Year	2030 Target	2050 Target
EVs registered in Swampscott (% of registered vehicles) ²	1%	2022	19%	100%
Commuter mode (%) ¹	Drove alone: 63% Carpool: 6% Transit: 17% (~2,000 riders) Walking/biking: 23% Telecommuting: 12%	2020	20% increase in transit riders (~2,400 riders)	100% increase in transit riders (~4,000 riders)



BE PART OF THE SOLUTION

Walk or ride your bike to local destinations by utilizing Swampscott's trails and walking routes.

[LEARN MORE](#)

¹ U.S. Census Bureau (2021). American Community Survey 5-Year Estimates.

² MAPC Vehicle Census.



Resilience & Vulnerability

Preparing the community for climate-driven emergencies through critical infrastructure improvements and strengthened natural and social systems.

WHAT'S INCLUDED

- ✓ Designing and maintaining infrastructure that is resilient to climate impacts, including coastal flooding and extreme heat
- ✓ Improving community preparedness to climate impacts through effective emergency response and communications

BY THE NUMBERS



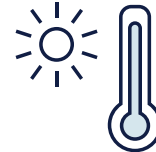
1,071

out of 4,121 homes
face moderate flood risk



7

out of 15 social facilities*
face major flood risk



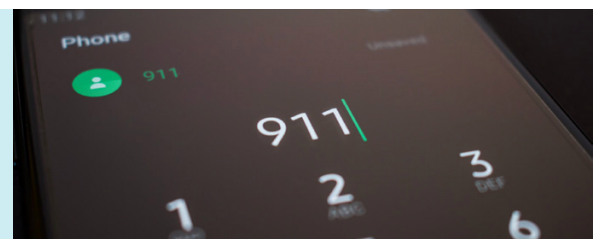
128.6%

increase in the number of days over
96°F projected over the next 30 years¹

MEASURING SUCCESS

The following metrics will help Swampscott monitor progress toward our goals for Resilience & Vulnerability.

Metric (unit)	Baseline Data	Baseline Year	2030 Target	2050 Target
Residential properties at moderate risk of flooding (%) ²	26%	2022	Monitor & reduce	
Social facilities (e.g., schools, government buildings) at major risk of flooding (%) ²	47%	2022	Monitor & reduce	
Heat-related emergency room visits ³	2*	2017	Reduce to 0	



BE PART OF THE SOLUTION

Sign up for emergency alerts through Connect-CTY to be prepared for any type of emergency.

[LEARN MORE](#)

¹ Risk Factor (2023). Heat Factor for Swampscott, MA.

² Risk Factor (2023). Flood Factor for Swampscott, MA.

³ U.S. Census Bureau (2021). American Community Survey 5-year Estimates.

* Down-scaled to Swampscott community from county-level estimate using population data.

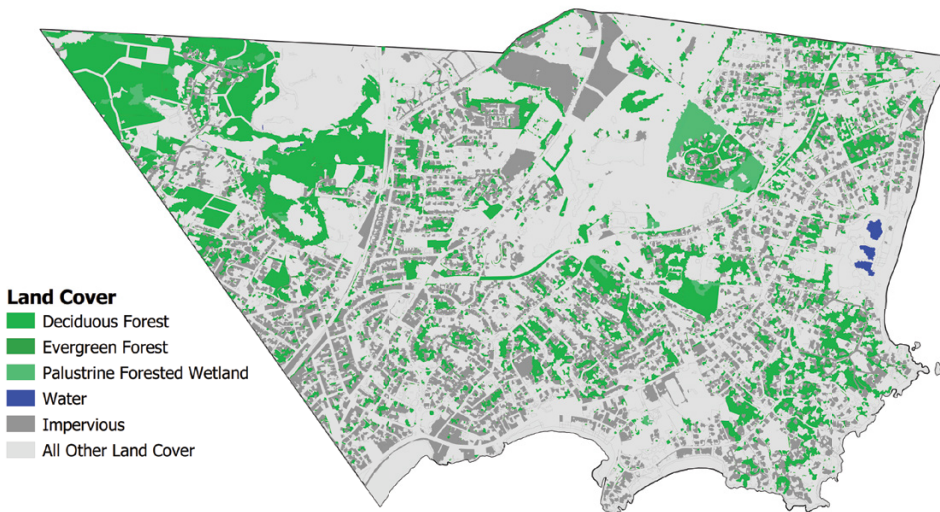


Natural Resources

Providing equitable access and protection to open spaces, tree canopy, habitats, and water resources through resilient infrastructure and land stewardship.

WHAT'S INCLUDED

- ✓ Enhancing public green spaces and ensuring equitable access for all residents
- ✓ Protecting and expanding natural resources to promote biodiversity and carbon sequestration
- ✓ Prioritizing resilient stormwater infrastructure that incorporates nature-based solutions



BY THE NUMBERS

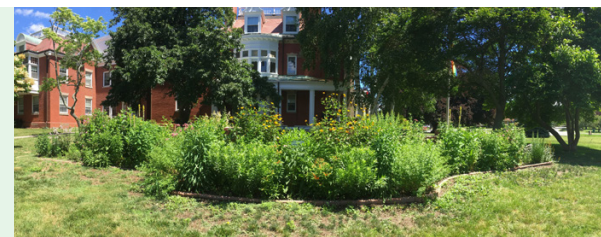
8.2%

reduction in tree canopy coverage from 2010, as 110 acres of tree canopy were lost to development

MEASURING SUCCESS

The following metrics will help Swampscott monitor progress toward our goals for Natural Resources.

Metric (unit)	Baseline Data	Baseline Year	2030 Target	2050 Target
Tree canopy cover (%) ¹	55%	2016	Monitor & increase	
Impervious surfaces (%) ²	17%	2016	Less than 17% ³	



BE PART OF THE SOLUTION

Transition to native plantings that utilize less water, sequester more carbon, and absorb stormwater.

[LEARN MORE](#)

¹ Salem State University (2022). Swampscott Tree Canopy Analysis.

² Town of Swampscott (2021). Open Space & Recreation Plan Update.

³ Trust for Public Land (2023). ParkScore.



Solid Waste & Recycling

Creating a robust waste management system that reduces energy demand and emissions by reducing, reusing, diverting or recycling material.

WHAT'S INCLUDED

- ✓ Reducing waste and improving resource recovery within Town operations and facilities
- ✓ Increasing recycling and composting in Swampscott
- ✓ Establishing programs to promote education around waste reduction

BY THE NUMBERS

As of 2022, we have reduced the amount of waste disposed through incineration or landfill by 13% from our 2018 baseline. If we continue to divert more waste to recycling and composting, and reduce the amount of waste we produce in the first place, we can also reduce emissions from transporting waste - sometimes across state lines due to limited landfill capacity in the Commonwealth.¹



**Waste diverted in
Swampscott**

**Trash remaining that is sent to
incineration or landfill (3,468 tons)**

MEASURING SUCCESS

The following metrics will help Swampscott monitor progress toward our goals for Solid Waste & Recycling.

Metric (unit)	Baseline Data	Baseline Year	2030 Target	2050 Target
Total Residential Waste Disposed ²	4,015 tons	2018	2,811 tons	402 tons
Household Generation Rate (lbs/household/year) ²	1,612 lbs	2018	1,128 lbs	161 lbs



BE PART OF THE SOLUTION

Divert food waste and reduce GHG emissions by composting at home or participating in the community composting program.

[LEARN MORE](#)

¹ Town of Swampscott (2023). Internal Reports.

² MassDEP (2018). Municipal Solid Waste & Recycling Survey Responses.



Town of Swampscott
swampscottma.gov

Climate Action Plan Committee

swampscottma.gov/climate-action-plan-committee