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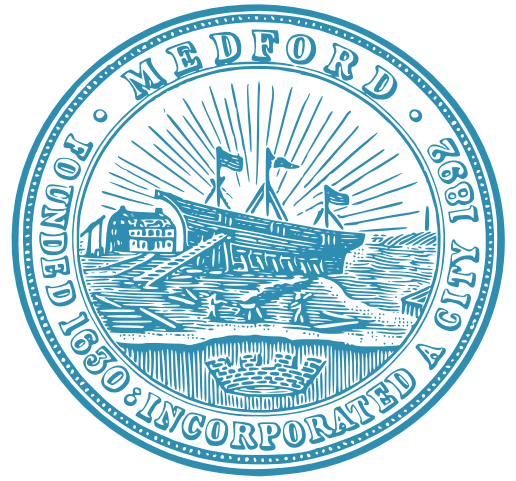
Medford

Climate

Action and

Adaptation

Plan



EXECUTIVE SUMMARY  
DRAFT - SEPT 2021





# Executive Summary

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The Climate Action and Adaptation Plan (CAAP) is Medford's plan to address climate change, and for investing in a healthy, livable future for all residents today and for future generations.

This plan addresses the **direct causes** of climate change, the **effects** of climate change, and many of the **root challenges** and underlying patterns that have fueled the climate crisis and that work against our ability to be a thriving, healthy, and inclusive city.

**The CAAP identifies the actions Medford will take to ...**

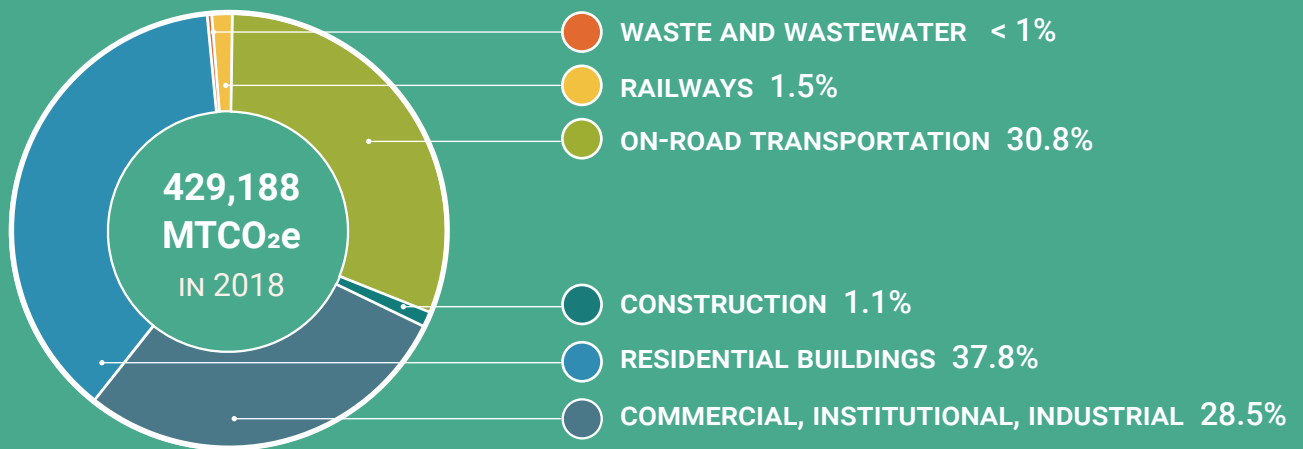
..... **drastically and rapidly reduce  
Medford's greenhouse gas emissions,  
putting Medford on pace to achieve  
net zero emissions by 2050.**

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Greenhouse gases have increasingly built up in the atmosphere over the last century, due to human activities such as burning fossil fuels (like oil and gas) to heat our homes, drive vehicles, and power industries. Greenhouse gases trap heat and have been causing the average temperature on earth to rise faster than ever before. Without a drastic reduction in emissions globally in the next couple decades, we are guaranteed to see temperatures rise to levels that can significantly harm communities, ecosystems, and local economies.

Community-wide, Medford emitted 429,188 metric tons of carbon dioxide

## Medford's Emissions



equivalents (MTCO<sub>2</sub>e) in 2018, 67% of which came from the buildings in our city and 32% from transportation. As part of the Metro Mayors Coalition, Medford has committed to achieving net zero emissions by 2050. “Net zero” means that Medford will nearly eliminate all greenhouse gas emissions from human activities, and any remaining emissions will be balanced by drawing carbon dioxide out of the atmosphere using natural systems (such as forests and wetlands).

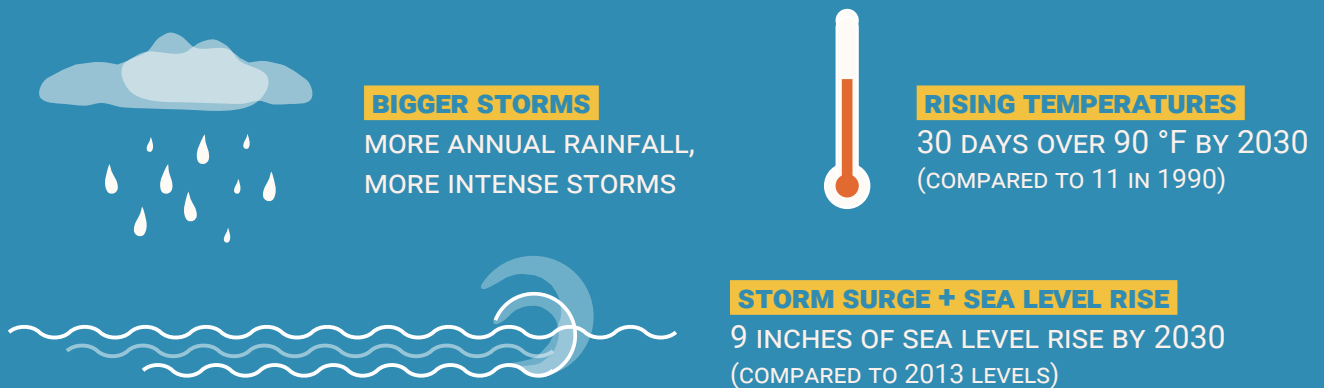
Medford must draw down carbon emissions in ways that are equitable and just, whereby residents who will experience the first and worst effects

of climate change most greatly benefit from climate investments. Achieving net zero emissions will require an expansion of renewable energy, and a transition to more efficient and electric systems to power our homes, businesses, offices, and vehicles. It will require strengthening public transit systems and investing in communities that are more walkable, bikeable, and transit-oriented. And it will call on Medford and the region to shift to a more circular economy, and to protect and grow the capacity of soils, forests, and wetlands to store and draw down carbon.

..... **build the capacity of our communities, economy, infrastructure, and ecosystems to respond, adapt, and thrive in the face of new stresses and climate hazards.**

Medford is already feeling the effects of climate change—including hotter summers, more intense storms, rising sea levels, more frequent flooding, and worsening air and water quality. Medford could see up to 16 days over 100°F each year by 2070, in addition to more heat waves and unseasonably hot days. Heavier storms continue to increase the risk of flooding both inland and along the rivers, and rising sea levels combined with large storms could cause significant flooding in Medford as early as 2050.

These changes bring new sources of vulnerability, including threats to



our health and safety, strain on our economy, stress on our food systems and ecosystems, and higher risk of infrastructure failure. One's job, financial savings, social connections, neighborhood, transportation options, and housing situation are all factors that can help to buffer climate impacts by making it easier to cope or adapt, or they can magnify the impact, particularly for communities that have been subjected to structural racism and other inequities. As a result, the effects of climate change will be felt unequally, creating greater risks particularly for Medford's low-income residents, residents with disabilities, residents of color, and immigrant communities.

Being a resilient city will therefore require Medford to reduce the city's direct exposure to climate hazards through adapting infrastructure, neighborhoods, and natural systems to reduce flooding, withstand storms, and help keep temperatures cooler—starting with meeting the needs of residents that will feel the effects first and worst. It also will require that we equitably invest in housing, neighborhood resources, public transportation, and access to nutritious food, such that all Medford residents have the resources to respond, adapt, and thrive day-to-day and in the context of new and changing hazards.

..... **widely adopt ways of living that invest in the health of communities and the planet. This includes changing the bigger patterns that contributed to the climate crisis in the first place.**

Climate change is rooted in a system of economic growth that extracts value without accounting for the real environmental and social costs. These costs—air pollution, water contamination, resource depletion, ecosystem decline, and economic inequality, to name a few—continue to be borne disproportionately by communities with the least political and financial resources at their disposal.

Addressing the underlying patterns that have fueled the climate crisis points to an enormous opportunity to not only shift to an economy run on clean and renewable energy, but to transition towards a more regenerative economy—





and to make that transition in a just and equitable way. A regenerative economy is one where our work and livelihoods continuously restore and invest in (as opposed to exploit and diminish) the long-term health and wellbeing of our natural systems, people, and communities.

Shifting to a just regenerative economy requires that we transform the way that we make decisions: we must shift and share power, as well as build trust and respect, for everyone to have a political voice in decisions that shape our collective future. It requires that we create inclusive pathways for everyone to participate in, and equitably benefit

from, the growth of a clean energy economy. And it requires that we begin measuring success not by short-term financial gains, but by the generation of lasting shared wealth and health, the livability of our city for all residents, and the vitality of the planet for current and future generations.

Collectively, these actions work to achieve Medford's **climate vision**:

**Medford is a place where everyone can thrive, now and for generations to come, ensuring that our future is just and equitable, resilient, healthy, and carbon neutral.**

### **Just**

Just means to be fair, ethical, and unbiased. A just city is one that not only works to uphold these values today, but also actively acknowledges and works to correct past injustices (instances that have been unfair, unethical, or biased) that have negatively affected people, families, and communities.

### **Equitable**

Equitable is different than equal. While being equal emphasizes the same treatment for everyone, being equitable recognizes that individuals and communities face unequal challenges that deserve different levels of support. An equitable city meets people's unique needs so that everyone has an equal opportunity to succeed.

### **Resilient**

Resilient refers to the ability to recover quickly from a difficult situation. A resilient city is one that has the capacity to respond, recover, and bounce forward in response to stresses and new challenges, such as climate change.

### **Healthy**

Healthy means to be well—physically, mentally, and socially. A healthy city is one that supports thriving, vibrant, and active people, neighborhoods, and ecosystems, while minimizing toxins and circumstances that hurt our well-being, such as air and water pollution and climate change.

### **Carbon neutral**

When we burn fossil fuels and process waste, we release carbon emissions into the atmosphere, driving climate change and putting our health in jeopardy. A carbon neutral city is one that produces almost no carbon emissions, while also counterbalancing those emissions by drawing carbon out of the atmosphere through healthy wetlands, forests, soil, and other natural systems. With other communities in the Metro Mayors Coalition, Medford has committed to achieving carbon neutrality by 2050.



VETERAN'S MEMORIAL PARK, THE MYSTIC RIVER  
PHOTO BY CALEB DRESSER





# Summary of the Strategies

Medford's Climate Action and Adaptation Plan includes 32 strategies across four focus areas: **Buildings & Energy**, **Ecosystems & Natural Environment**, **Public Health**, and **Transportation**. Each strategy has 3 - 10 actions Medford plans to take within the next ten years—the majority within the next five years—to work towards our climate vision.

The plan also has three “overarching” actions related to the plan's next steps for implementation.

[See the following pages for more details.](#)

# Overarching

## OVERARCHING STRATEGY 1.1

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### Plan Implementation: Next Steps

Continue to advance the ongoing implementation of the plan in ways that are collaborative, equitable, and data-driven.

- A** Create a climate council.
- B** Use the Climate Equity Framework to guide implementation.
- C** Model greenhouse gas emissions to forecast and evaluate progress.

**Note:** See Public Health strategy **PH 2.1**, which focuses on strengthening Medford's community health, wellbeing, and resilience through equitable processes. These actions will apply across all areas of the plan's implementation, too.

**Note:** See Transportation strategy **T 1.1**, which involves advocating for better statewide transportation data which will support the greenhouse gas emissions modeling.

# BE



## Buildings & Energy

In the Buildings & Energy section, Medford will ensure that everyone has access to healthy homes and places to work that are affordable and meet their needs, that use very little energy and produce almost no climate pollution, that are powered by clean energy (like solar and wind power), and that keep residents safe during extreme weather.

**Objective BE 2** SEE PAGE XX  
**Objective BE 3** SEE PAGE XX

# ..... **Objective BE 1:** Champion new buildings and redevelopment that make Medford a more affordable, resilient, and low-carbon city.

## STRATEGY BE 1.1

### **Diverse & Affordable Housing**

Expand diverse housing options in Medford to meet the needs of all ages, all family sizes, all (dis)abilities, and all income levels.

- A** Reduce zoning barriers to multifamily and mixed-use housing development.
- B** Enable smaller and more diverse housing options through zoning updates.
- C** Establish a Municipal Affordable Housing Trust (MAHT).
- D** Foster affordable infill development.
- E** Protect and continue to advance fair housing choice.
- F** Support community efforts to create a Community Land Trust.
- G** Conduct a displacement risk assessment.

## STRATEGY BE 1.2

### **High-Performance New Buildings**

Update Medford's zoning codes and the development review process to encourage highly energy efficient, resilient, and low-carbon new construction.

- A** Adopt environmental performance standards for large projects.
- B** Offer incentives for exceptional energy performance.
- C** Expand staff capacity to oversee building performance standards.

## Flood-Resilient New Buildings

Require flood resilient design for new development that could see high flood risk.

- A** Develop an online flood viewer to delineate areas with increasing flood risk.
- B** Update flood resilience building guidelines.
- C** Incentivize higher density in upland areas.

## Net Zero Stretch Energy Code

Continue to advocate for a Massachusetts Stretch Energy Code that will put cities and towns on pace to meet net zero emissions by 2050.

- A** Advocate for a net zero stretch code that aligns with 2050 carbon neutrality goals.
- B** Advocate for a regular update cycle.

## Net-Zero New Municipal Buildings

Lead by example by setting net-zero energy and resilience standards for the construction of new municipal buildings.

- A** Adopt performance-based procurement.
- B** Establish municipal building standards.



## ..... **Objective BE 2:** Retrofit existing buildings to be more efficient, resilient, and to have a smaller carbon footprint.

### STRATEGY BE 2.1

#### **Fuel Switching & Efficiency**

Provide tools and resources to support fuel switching and energy efficiency retrofits.

- A** Launch a campaign for energy efficient electric heating and cooling systems.
- B** Revive and expand building rehab programs for rental properties.
- C** Establish a data tracking protocol for fuel switching.
- D** Investigate additional financial incentives.

### STRATEGY BE 2.2

#### **Benchmarking & Energy Standards**

Adopt energy benchmarking, disclosure, and performance policies to encourage energy upgrades in existing buildings.

- A** Implement a benchmarking ordinance for large buildings.
- B** Adopt performance standards for benchmarked buildings.
- C** Advocate for statewide energy performance reporting requirements.
- D** Develop a rental licensing ordinance with energy efficiency standards.

## Resources for Resilience Retrofits

Provide tools and resources for property owners and tenants to improve building resilience and prepare for climate hazards.

- A** Create a platform for ongoing dialogue about flood risk in Medford.
- B** Develop an online building resilience toolkit.
- C** Integrate climate resilience into first-time homebuyer courses.
- D** Participate in the NFIP Community Rating System.
- E** Prepare for securing federal resilience funding.

## Municipal Building Retrofits

Lead by example by completing energy and resilience retrofits on all existing municipal buildings.

- A** Commission a strategic energy management plan.
- B** Conduct deep energy retrofits.
- C** Increase staff capacity for facility management.
- D** Assess municipal buildings for flood vulnerability.



# ..... **Objective BE 3:** Build out resilient and renewable energy systems.

## STRATEGY BE 3.1

### **Renewable Energy**

Expand local renewable energy sources.

- A** Launch a solar access campaign.
- B** Continue to procure on-site solar for municipal properties.
- C** Assess the opportunity for Medford Housing Authority community solar.
- D** Continue to support community-driven community solar projects.
- E** Authorize PACE financing.

## STRATEGY BE 3.2

### **Energy Resilience**

Increase Medford's energy resilience.

- A** Seek opportunities to replicate resilient power systems.
- B** Encourage district scale energy solutions.
- C** Continue to ensure maintenance on existing natural gas infrastructure.



# Ecosystems & Natural Environment

In the Ecosystems & Natural Environment section, Medford will ensure that our city has healthy and thriving ecosystems that are able to grow and adapt even with climate change, that help prevent flooding and keep temperatures cool on very hot days, and that support the health and wellbeing of all Medford residents.

# Objective EN 1: Protect, restore, and grow Medford's natural systems for a more resilient city.

## STRATEGY EN 1.1

### Tree Canopy

Protect and grow the tree canopy in alignment with community goals and priorities.

- A** Continue to build out Medford's tree inventory.
- B** Develop an urban forest master plan with community-defined tree planting goals.
- C** Proactively adopt anti-displacement policies to protect affordability.
- D** Create an urban forest technical manual.
- E** Develop tree succession plans for park trees.
- F** Introduce a tree protection ordinance.
- G** Create a tree fund.
- H** Expand staff capacity for tree efforts.
- I** Launch a tree ambassadors program.
- J** Build platforms for urban forestry conversation and collaboration.

## STRATEGY EN 1.2

### Ecological Performance Standards

Adopt ecological performance standards for new development.

- A** Adopt new landscape performance standards for heat mitigation.
- B** Adopt new landscape performance standards for stormwater infiltration.
- C** Adopt new landscape performance standards for soil health.

## Ecological Resilience

Enhance the resilience of land and water ecosystems to contend with new climate stresses.

- A

Continue ecological restoration of parks and open spaces.
- B

Develop an invasive species mitigation plan.
- C

Regrade and revegetate river banks to prevent erosion.
- D

Establish a soils management program for parks and open spaces.
- E

Launch an educational campaign to support healthy soil.
- F

Evaluate adoption of pesticide and fertilizer use ordinances.
- G

Plant and raise awareness on native pollinator gardens.

## Objective EN 2: Mitigate flooding using nature-based solutions when possible.

## Rainscaping

“Rainscape” Medford to better infiltrate stormwater.

- A

Update the city’s stormwater regulations.
- B

Develop a green infrastructure design toolkit.
- C

Encourage rain-scaping on private property.
- D

Reduce impervious surfaces on city-owned property.
- E

Evaluate open space acquisitions and protections based on climate resilience.
- F

Continue to collaborate regionally to infiltrate stormwater.

## Stormwater Infrastructure

Continue to invest in maintenance and upgrades to the stormwater and sewer systems, accounting for climate change projections.

- |  |   |
|--|---|
| <p><b>A</b> Roll out Utility Asset Management Plan.</p> <hr/> <p><b>B</b> Continue to reduce inflow and infiltration (I&amp;I).</p> <hr/> <p><b>C</b> Identify priority infrastructure upgrades based on climate risk and climate justice.</p> <hr/> <p><b>D</b> Expand the capacity of the stormwater system through green, blue, gray solutions.</p> | <p><b>E</b> Identify cost-sharing opportunities for stormwater projects.</p> <hr/> <p><b>F</b> Launch and expand an “adopt a catch basin” program.</p> <hr/> <p><b>G</b> Continue to coordinate regionally on timing of reservoir releases.</p> <hr/> <p><b>H</b> Explore the potential for a stormwater utility enterprise fund.</p> |
|--|---|

## Riverine flood buffers

Reduce flood risk from the Mystic and Malden rivers caused by storms and sea level rise.

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|---|--|
| <p><b>A</b> Consider a riparian buffer overlay to prioritize living shorelines.</p> <hr/> <p><b>B</b> Work with DCR to “make room for the river.”</p> <hr/> <p><b>C</b> Continue to collaborate regionally on the resilience of the Amelia Earhart Dam.</p> | <p><b>D</b> Continue to collaborate regionally through the Mystic River Collaborative.</p> |
|---|--|

# PH

## Public Health

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In the Public Health section, Medford will ensure that everyone has access to healthy neighborhoods, infrastructure, and resources that reduce health risks from climate change, pollution, and waste; that combat racism and other systems of oppression; and that expand resources for everyone to live healthy lives.

**Objective PH 2** SEE PAGE XX



# Objective PH 1: Create neighborhoods and infrastructure systems that support health.

## STRATEGY PH 1.1

### Healthy Neighborhoods

Adapt the city's zoning codes and development incentives to create healthier neighborhoods.

- A** Update zoning codes to support health outcomes.
- B** Assess neighborhood-specific opportunities.
- C** Create a "healthy Medford" development framework and checklist.

## STRATEGY PH 1.2

### High Heat Mitigation

Improve Medford's capacity to stay cool in periods of high heat.

- A** Expand access to community cooling sites.
- B** Launch a "Cool Medford" outreach campaign.
- C** Adopt design and material standards for cooler surfaces.
- D** Update and implement the Mystic Avenue Corridor Green Infrastructure Plan.
- E** Reintegrate drinking fountains in parks and public spaces.
- F** Update emergency management plans to contend with high heat.
- G** Advocate review of policies that affect access to water, heating, and cooling.

## Food System Resilience

Increase local food system resilience.

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| <p><b>A</b> Establish a Food Policy Council.</p> <hr/> <p><b>B</b> Create neighborhood food access action plans.</p> <hr/> <p><b>C</b> Develop a community food hub.</p> <hr/> <p><b>D</b> Create a platform for grocery business continuity planning.</p> <hr/> <p><b>E</b> Grow the city's community gardens and urban agriculture.</p> | <p><b>F</b> Expand systems for food recovery.</p> <hr/> <p><b>G</b> Increase the number of providers accepting food assistance.</p> <hr/> <p><b>H</b> Expand city staff and resources dedicated to food resilience.</p> |
|---|---|

## Waste Reduction

Make it easier to reduce, reuse, and recycle materials to restore or renew value, eliminate waste, and decrease pollution.

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|---|--|
| <p><b>A</b> Commit to zero waste.</p> <hr/> <p><b>B</b> Evaluate current recycling and waste policies to advance equitable service.</p> <hr/> <p><b>C</b> Update private hauler regulations and recycling requirements.</p> <hr/> <p><b>D</b> Roll out, promote, and develop curbside composting.</p> | <p><b>F</b> Partner with students to advance Zero Waste Medford Public Schools.</p> <hr/> <p><b>G</b> Launch targeted waste reduction initiatives with local businesses.</p> <hr/> <p><b>H</b> Expand recycling education.</p> <hr/> <p><b>I</b> Evaluate the local potential for construction material reuse.</p> |
|---|--|

..... **Objective PH 2:** Invest in Medford’s people and businesses for strong and thriving communities.

STRATEGY PH 2.1

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**Centering Equity**

Design processes for partnering with and listening to community members based on procedural and structural equity.

- |  |  |
|--|--|
| <b>A</b> Expand staff and resources dedicated to creating an inclusive and anti-racist city. | <b>D</b> Provide equitable compensation for participation on boards and committees.          |
| <b>B</b> Grow the cultural consciousness of Medford’s city staff and leadership.             | <b>E</b> Create more opportunities for neighborhood or ward representation.                  |
| <b>C</b> Build capacity for safe, accessible, and inclusive city meetings.                   | <b>F</b> Continue to see that Medford’s diversity is reflected in city leadership and staff. |

## Sustainable Career Opportunities

Support workforce development and training programs that can support the transition to a low-carbon, just, and resilient future.

- A** Partner to develop and promote facilities management training.
- B** Develop a city-sponsored youth employment program.
- C** Inventory and expand targeted career training in sustainable industries.

## Building Community

Expand neighborhood resources and opportunities for building community.

- A** Create a community resilience hub.
- B** Create platforms for coordination across Medford service providers.
- C** Collaborate to host and promote cultural events and festivals.
- D** Facilitate neighborhood block parties.
- E** Build multilingual support services for new residents.
- F** Continue to expand Medford's volunteer response systems.
- G** Evaluate the potential for a community resilience small grants program.



MEDFORD FAMILY NETWORK CONCERT  
PHOTO BY CITY OF MEDFORD





T

# Transportation

In the Transportation section, Medford will ensure that it is easy for Medford residents to get where they need to go by convenient and affordable public transportation, by safe and accessible sidewalks and paths, and by buses, cars, and trucks that use clean fuels and create no air pollution.

**Objective T 2** SEE PAGE XX  
**Objective T 3** SEE PAGE XX



# Objective T 1: Make it safer and easier to walk, bike, and take public transportation.



## STRATEGY T 1.1

### Transportation Advocacy

Advocate for transportation investments at the state level that are essential for enabling Medford to reach its climate goals.

- A** Advocate for retaining and expanding MBTA service.
- B** Advocate for ongoing commitment to MBTA decarbonization.
- C** Advocate for infrastructure to support zero-carbon commuting.
- D** Advocate for the investigation of zero-fare transit.
- E** Advocate for improved statewide transportation data.

## STRATEGY T 1.2

### Public Transportation Investments

Invest in more equitable, accessible, and efficient public transportation systems.

- A** Conduct an equity-centered community process for identifying transit priorities.
- B** Implement “bus transit priority” projects.
- C** Implement bus stop accessibility upgrades.
- D** Evaluate Medford Public School bus service to achieve equitable access.
- E** Explore additional mobility options to fill transit gaps.
- F** Hire a transportation planner to advance grant-funded transportation projects.

## Safe Streets for All

Create safer, more accessible, and connected ways for walking, biking, scootering, pushing a stroller, rolling a wheelchair, or other modes.

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|---|--|
| <b>A</b> Adopt Vision Zero.   | <b>G</b> Launch a bike share program and evaluate opportunities for its expansion. |
| <b>B</b> Conduct a participatory mapping mobility study.                        |  |
| <b>C</b> Set goals for an “all ages and abilities network.”                     | <b>H</b> Improve snow clearing to protect sidewalk and bike lane accessibility.    |
| <b>D</b> Strengthen complete streets policy through zoning and local ordinance. | <b>I</b> Support and enforce driver awareness.                                     |
| <b>E</b> Implement complete streets upgrades.                                   | <b>J</b> Increase communication on roadway changes.                                |
| <b>F</b> Close gaps to create a seamless regional network of multi-use paths.   | <b>K</b> Continue to work with state and regional partners to achieve mode shift.  |

## Accessible Neighborhoods

Update city codes and zoning ordinances so that new development contributes to neighborhoods accessible to all.

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|---|---|
| <b>A</b> Encourage mixed-use development.                     | <b>E</b> Update bicycle parking requirements.                 |
| <b>B</b> Design for active streetscapes.                      | <b>F</b> Update motor vehicle parking requirements.           |
| <b>C</b> Integrate multimodal connections in new development. | <b>G</b> Adopt transportation demand management (TDM) policy. |
| <b>D</b> Acquire land rights to construct bus shelters.       |   |



## Objective T 2: Accelerate the transition to zero emission vehicles.

### STRATEGY T 2.1

#### Electric Vehicle Charging

Expand access to electric vehicle charging stations.

- A** Expand charging stations in city-owned lots.
- B** Adopt electric vehicle charging requirements for new development.
- C** Pilot on-street EV charging, to be scaled city-wide.
- D** Encourage EV charger installations in private lots.
- E** Expand staff capacity for sustainable transportation efforts.

### STRATEGY T 2.2

#### Electric Vehicle Access

Expand access to electric vehicles.

- A** Pilot an income-tiered EV car-share program.
- B** Advocate for income-tiered EV incentives and financial incentives for e-bikes.
- C** Incentivize transportation network companies to use only EVs by 2030.



BIKE LANE ON FELLSWAY  
PHOTO BY CITY OF MEDFORD

## Electric Municipal Fleets

Transition municipal fleets to electric and alternative fuel vehicles.

- A Develop municipal fleet capital transition plan.
- B Use performance-based procurement for contracted fleets.

..... **Objective T 3:** Increase the resilience of transportation infrastructure to climate hazards.

## Resilient Transportation Systems

Adapt transportation infrastructure to new risks from sea level rise, higher-intensity precipitation events, and changing temperatures.

- A Integrate climate risk into transportation asset management.
- B Work with state agencies to assess risks to state infrastructure within Medford.
- C Coordinate with the MBTA to protect key MBTA facilities.





**Stay tuned for the release of  
the full Climate Action and  
Adaptation Plan**

[medfordenergy.org/gogreen](https://medfordenergy.org/gogreen)

