

# Council Communication

## January 23, 2017, Study Session

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### Preview of the Climate and Energy Action Plan

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**FROM:**

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**SUMMARY**

The ad-hoc Climate and Energy Action Plan (CEAP) Committee has worked with City staff, the project consultant team and extensive participation and input from the community to develop a Climate and Energy Action Plan. Prior to final edits and formal committee motion to approve the final plan and associated implementing documents, the plan is being presented to Council to provide an early opportunity to walk through the document, ask questions and provide direction on several key policy issues that will be a part of the formal plan review and acceptance deliberation scheduled for the March 7, 2016, Council business meeting.

**BACKGROUND AND POLICY IMPLICATIONS:**

At the instigation of the Conservation Commission and with the support of Council, Mayor Stromberg created the CEAP in June of 2015 with a core group of members. Additional members have been added since that time, with a final member total of 13 (11 voting members).

The CEAP began meeting in September of 2015, assisting staff in the development and issuance of a request for proposals for consultant services for the project. With considerable involvement of the committee in the review and selection process, Cascadia Consulting Group was selected in February of 2016 to assist the committee and City staff in the development of the plan document as well as facilitate the public involvement process throughout the project.

**Background Technical Materials**

To provide a foundation and technical background for the development of the plan, two important data driven documents were developed and used by the committee and the project team throughout the planning process.

Ashland's first Greenhouse Gas Inventory was completed in February of 2016 and is the benchmark for measuring progress in carbon emission reductions over the life of the plan. The inventory provides both community wide and city operations emissions data across all emissions sectors and will continue to be a vital tool as the project moves into initial implementation and beyond.

A local Climate Trends Summary was developed by the Oregon Climate Change Research Institute to provide ranges of likely climate impacts to our local area between now and 2080. This provides the committee, City staff and the community with a clear understanding of what types and magnitude of adaptation solutions will be needed to mitigate the impacts of these likely future trends.



### Project Milestone Update

The CEAP presented the Council a progress report and presentation at the July 19, 2017 Council meeting. In addition to a general process update, the committee presented its initial overall plan goals and targets, as they form the foundation for the rest of the plan. The primary recommended goal of being a carbon neutral community by 2047 (using sector based methodology, i.e. not including consumption) has since been replaced by a more aggressive science based goal of reducing community carbon emissions by 8% per year on average.

### Public Involvement & Input

In addition to the nearly thirty total ad-hoc committee meetings that all contained valuable public input, the Committee and project team held three separate public open houses to inform the public and solicit input at three distinct phases of the plan development. Between the open houses and online survey opportunities, well over 300 individuals were a part of the public involvement efforts. Additionally, individual committee members and City staff met with many of the community leaders and partner entities to provide additional exposure and input opportunities to the process.

### Plan Document Summary

The plan is organized by overarching goals and targets, strategies for addressing and meeting those goals/targets and a series of implementing actions in five key focus areas. Also included in the plan are suggested indicators to track progress and success on an individual action basis and process recommendations for the continued review and updating of the document on three year cycles.

### Current Project Status

The current draft plan presented to Council is nearly a finished product. The committee and the project team will take the study session input received from Council, along with final committee and project team proposed adjustments and edits and prepare a final draft document for the formal plan review, deliberation and acceptance by Council currently scheduled for March 7, 2017.

### Key Policy Issues

In addition to the wide ranging and impactful strategies and actions contained within the plan document itself, there are several key policy issues that accompany the plan. They include:

- Recommendation to adopt the plan goals/targets by Ordinance
- Recommendation that the plan goals/targets ordinance be adopted concurrently to the adoption of the overall CEAP document.
- Recommendation to create a new City Advisory Commission dedicated to oversight of plan implementation and plan revisions/updates on the recommended three year schedule.
- Recommendation to include funding in the BN2017-19 budget for a full-time City staff position dedicated to implementation and updating of the CEAP.

Sample ordinances were provided to the Committee by interested members of the community and staff revised the documents with input from the Committee to better match City Municipal Code and to ensure consistency between the ordinances and the CEAP document, but have not yet gone through a formal review by the City Attorney. Each of these sample ordinances are included in this meeting packet for Council review and direction.



The creation and funding for a new full-time staff position has been well discussed at the committee level and staff has had initial internal discussion with the City's Human Resource Dept to develop a formal job description and identify the appropriate location within the City's classification and compensation structure and will be developing a proposed "add package" in the upcoming budget process.

There has been consistent public support and committee discussion of the importance of placing this proposed new staffing resource at a location and level within the City's organizational chart that ensures effective cross departmental collaboration, focus and commitment on successful implementation of the identified actions.

**COUNCIL GOALS SUPPORTED:**

- 22. Prepare for the impact of climate change on the community.
  - 22.1 Develop and implement a community climate change and energy plan

**FISCAL IMPLICATIONS:**

In addition to the staffing "add package" noted above, staff will be developing an overall CEAP implementation budget that identifies funding sources and recommendations for specific actions in various Department budgets. Many of the actions require prioritization of staff time in specific Departments, others involve suggested re-prioritization of already planned appropriations and some are proposals for incremental increases in appropriation for existing programs to increase their effectiveness and success.

**STAFF RECOMMENDATION AND REQUESTED ACTION:**

The intent of this presentation and discussion is to provide a general understanding of the content and layout of the CEAP document and its associated implementing documents. Additionally, both the committee and the project team is interested in feedback and suggested direction on the key policy issues noted as well as questions and feedback on the overall document and process to date.

**SUGGESTED MOTION:**

N/A

**ATTACHMENTS:**

[Draft Climate and Energy Action Plan – January 2017](#)  
[Plan Milestone & Update - July 19, 2016 Council Meeting](#)

DRAFT ordinance setting goals and targets

DRAFT ordinance establishing a new Commission

**ADDITIONAL LINKS:**

Project Background Materials – [www.ashland.or.us/climateplan](http://www.ashland.or.us/climateplan)

- GHG Inventory
- Climate Trends Summary
- Open House – Public Input Summaries
- CEAP Ad-hoc Committee agendas/minutes/packets



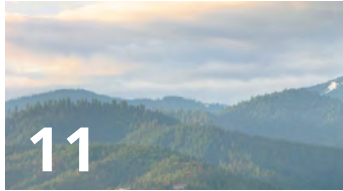
# Ashland

## Climate & Energy Action Plan



JANUARY 2017

# Roadmap



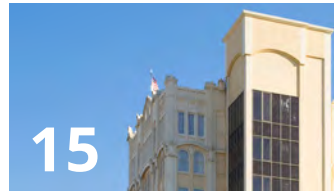
### INTRODUCTION

What is a climate and energy action plan, anyway? And why does Ashland need one?



### PLAN ORGANIZATION

Get the lay of the land. This section introduces the plan's six focus areas and how they are structured.



### CLIMATE CHANGE & ASHLAND

Learn about Ashland's greenhouse gas emissions footprint, anticipated climate change impacts, and the city's collaborative and inclusive approach to climate action.



### VISION FOR THE FUTURE

A glimpse of Ashland in 2050—a sustainable, healthy, happy, and resilient community—and the initiatives that will shape how to get there.



### BUILDINGS & ENERGY



### URBAN FORM, LAND USE & TRANSPORTATION



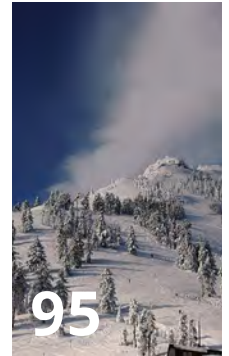
### CONSUMPTION & MATERIALS MANAGEMENT



### NATURAL SYSTEMS



### PUBLIC HEALTH, SAFETY & WELL-BEING



### CROSS-CUTTING STRATEGIES

## STRATEGIES & ACTIONS BY FOCUS AREA

This plan is divided into six focus areas, listed above. Each focus area section includes an introduction to its impact and importance, progress to-date, goals and benchmarks, and the strategies and actions that will get us there. Each broad strategy (e.g., “support cleaner energy sources”) is driven forward by specific priority actions that focus on mitigation, adaptation, or both (e.g., “enhance production of on-site solar energy from City facilities”).

## IMPLEMENTATION PLAN

The body of the plan lays out the “what” and the “why”; this appendix addresses the “how” and the “when,” including the structure and timeframe of priority actions, which City departments are responsible for accomplishing them, and how progress will be tracked.



### **CLIMATE TRENDS SUMMARY**

This summary provides more information on projected climate change impacts and trends in Ashland, including changes in temperature, precipitation, and natural hazard risk.

### **PUBLIC ENGAGEMENT PROCESS OVERVIEW**

The public provided valuable input that helped shape the plan. See when and how the public was consulted, and how public input was used in the plan.

### **EMISSIONS MODELING AND TARGET-SETTING METHODOLOGY**

Take a behind-the-scenes look at the process used to model Ashland's greenhouse gas footprint and set emissions-reduction targets.

### **ASHLAND GREENHOUSE GAS INVENTORY**

This document summarizes the city's emissions by sector and activity type from 2011 through 2015, and set the emissions baseline used to identify goals and prioritize strategies and actions throughout this plan.





# EXECUTIVE SUMMARY



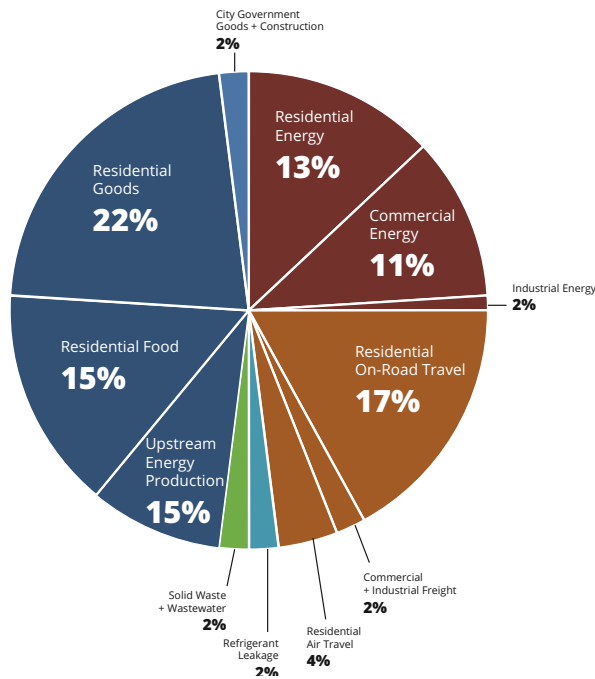
# Executive Summary

## WHY A CLIMATE AND ENERGY PLAN?

Climate change is already affecting Ashland and the surrounding region, and its impacts are projected to become much more severe in the coming decades. To minimize harmful impacts and play its part in curbing global carbon pollution, Ashland will need to take bold steps to reduce greenhouse gas emissions and build resiliency. This plan lays out a foundation for the City of Ashland to reduce its emissions and improve its resilience to future impacts of climate change on its environment, infrastructure, and people.

## Greenhouse Gas Emissions

According to the City's 2015 greenhouse gas inventory, The vast majority (83%) of Ashland's emissions stem from five main sources: : production of residential goods and food, residential travel, residential and commercial energy use, and upstream energy production. In 2015, Ashland's greenhouse gas (GHG) emissions footprint was approximately 300,000 metric tons of carbon dioxide equivalent (MT CO<sub>2</sub>e), representing 0.5% of Oregon's total emissions.



## Climate Impacts

The impacts of climate change will have tangible effects on public health and quality of life for Ashland's residents and visitors. In addition to the direct dangers of wildfires, flooding, and extreme weather events made worse by climate change, secondary effects of more extreme temperatures, snowpack declines, and wildfire smoke include health and livelihood impacts to sensitive and exposed populations, heightened threats to species and habitats, and consequences for local natural resources and economies such as agriculture, outdoor recreation, and tourism.

BY THE 2080S,  
ASHLAND WILL  
LIKELY SEE...



An **86% decrease**  
in winter snowpack



**90 more days** of  
extreme heat annually  
A **7 to 12°F increase**  
in temperature on the  
hottest day of the year



**More than 1"** of  
additional rainfall  
during heavy storms



**More frequent and  
severe** droughts, heat  
waves, and wildfires

Source: Oregon State University, 2016

### HOW DID WE GET HERE?

The Ashland Climate and Energy Action Plan represents the culmination of a year-long process of engagement, input, and review. Many individuals and organizations played a role in shaping this plan. It incorporates input from:

- Over **250 community members** who attended a public open house.
- Over **125 individuals** who responded to an online survey.
- Representatives from over **15 local organizations, businesses, and institutions** who participated in interviews.
- Over **30 City staff members** who participated in facilitated workshops.
- **10 members** of the Mayor-appointed ad-hoc committee.

Formation of the plan was also informed by the following approaches:

- Leveraging and building on **progress to-date** and **existing plans and programs**.
- Emphasizing **equity** and **co-benefits**.
- Customizing strategies to fit **Ashland's unique context**.
- Prioritizing actions that help meet Ashland's **climate goals and vision**.



### What will these impacts mean for Ashland's future?

These climate changes will threaten Ashland's people, resources, and economy. Here are some examples of challenges Ashland could face:



#### PEOPLE

Sensitive and exposed populations like the very young, elderly, those with respiratory illness, and outdoor workers will be at risk from wildfire smoke and heat-related illnesses.



#### ENVIRONMENT

High elevation plants and wildlife will need to adapt to shifting or diminishing habitats.



#### RESOURCES & ECONOMY

Seasonal and climate-dependent industries such as agriculture, outdoor recreation, and tourism will be threatened under changing conditions.

# ASHLAND'S CLIMATE VISION FOR 2050 IS TO BE A RESILIENT COMMUNITY THAT HAS ZERO NET GREENHOUSE GAS EMISSIONS, EMBRACES EQUITY, PROTECTS HEALTHY ECOSYSTEMS, AND CREATES OPPORTUNITIES FOR FUTURE GENERATIONS.

## GOALS AND TARGETS

The plan's overarching goals and targets focus on addressing climate change risks by reducing Ashland's emissions of climate pollution ("climate mitigation") and preparing the city for unavoidable impacts ("climate adaptation"):

1

**Reduce Ashland's contribution to global carbon pollution by reducing greenhouse gas emissions associated with City, residential, commercial, and industrial activities.**

### For the Ashland community:

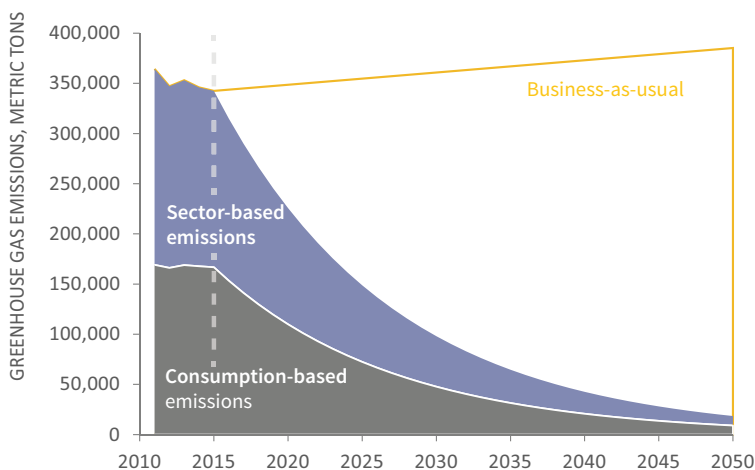
Reduce overall Ashland community greenhouse gas emissions by 8% on average every year to 2050.

### For City of Ashland operations:

Attain carbon neutrality in City operations by 2030, and reduce fossil fuel consumption by 50% by 2030 and 100% by 2050.

2

**Prepare the city's communities, systems, and resources to be more resilient to climate change impacts.**



## STRATEGIC INITIATIVES

The following **overarching strategic initiatives** were identified to guide the strategies and actions presented in this plan. While the strategies and actions in this plan are organized by focus areas such as Buildings and Energy, Transportation and Land Use, and Natural Systems, these initiatives cut across these focus areas to emphasize synergistic and integrated solutions for addressing climate in Ashland.

- **Transition to clean energy.**
- **Maximize water and energy efficiency and reuse.**
- **Support climate-friendly land use and management.**
- **Reduce consumption of carbon-intensive goods and services.**
- **Inform and work with residents, organizations, and government.**
- **Lead by example.**

### STRATEGIES AND ACTIONS

The Climate and Energy Action Plan presents strategies, priority actions, and other potential actions to consider for six focus areas:



**Buildings & Energy**



**Urban Form, Land Use & Transportation**



**Consumption & Waste**



**Natural Systems**



**Public Health, Safety & Well-being**



**Cross-Cutting Strategies**

The plan lays out specific actions within the following strategies:

### BUILDINGS + ENERGY

- Strategy BE-1.** Support cleaner energy sources
- Strategy BE-2.** Encourage increased building energy efficiency and conservation.
- Strategy BE-3.** Maximize efficiency of City facilities, equipment & operations.
- Strategy BE-4.** Improve demand management.
- Strategy BE-5.** Prepare and adapt buildings for a changing climate.

### NATURAL SYSTEMS

- Strategy NS-1.** Promote ecosystem resilience.
- Strategy NS-2.** Manage and conserve community water resources.
- Strategy NS-3.** Conserve water use within City operations.

### URBAN FORM, LAND USE + TRANSPORTATION

- Strategy ULT-1.** Support better public transit and ridesharing.
- Strategy ULT-2.** Make Ashland more bike- and pedestrian-friendly.
- Strategy ULT-3.** Support more-efficient vehicles.
- Strategy ULT-4.** Support more climate-ready development and land use.
- Strategy ULT-5.** Increase the efficiency of City fleet vehicles and employee commuting.

### PUBLIC HEALTH, SAFETY + WELL-BEING

- Strategy PHSW-1.** Manage ecosystems and landscapes to minimize climate-related health impacts.
- Strategy PHSW-2.** Promote a sustainable local economy that minimizes emissions and vulnerability.
- Strategy PHSW-3.** Minimize public health impacts.
- Strategy PHSW-4.** Minimize public safety impacts.

### CONSUMPTION + MATERIALS MANAGEMENT

- Strategy CM-1.** Reduce consumption of carbon-intensive goods and services.
- Strategy CM-2.** Support sustainable and accessible local production and consumption.
- Strategy CM-3.** Expand community recycling and composting.
- Strategy CM-4.** Reduce food waste.
- Strategy CM-5.** Improve the sustainability of City operations and purchases.

### CROSS-CUTTING STRATEGIES

- Strategy CC-1.** Educate and empower the public.
- Strategy CC-2.** Educate and empower City staff.
- Strategy CC-3.** Mainstream and integrate climate considerations.
- Strategy CC-4.** Engage with other governments and organizations around climate policy and action.

### NEXT STEPS

This Climate and Energy Action Plan is only the beginning of an ongoing process. The Implementation Plan provides a framework for launching the implementation phase of the plan, This phase will require the City and community to take priority actions—outlining specific plans of action and resource needs among responsible parties—while monitoring and benchmarking progress along the way. As details are outlined during this implementation phase, more specific quantitative goals and milestones can be created, driving the pace of strategy implementation. This plan provides a proposed structure for ongoing plan implementation, monitoring, evaluation, and adaptive management, as well as a list of key actions to be taken in the initial phase of implementation.





# INTRODUCTION

ASHLAND CLIMATE & ENERGY ACTION PLAN

# INTRODUCTION

# Introduction

Home of the Oregon Shakespeare Festival, Southern Oregon University, and abundant natural beauty and recreation opportunities, the City of Ashland is a great place to live and visit. Climate change threatens the vitality, livelihood, and surrounding environment that make Ashland what it is, with anticipated increases in severe heat, water scarcity, wildfire risk, and storm events. By the 2080s, scientists project that Ashland will experience more than an 80% decrease in winter snowpack, 90 more days of extreme heat annually, and more than an inch of additional rainfall during heavy storms.

The City of Ashland has a responsibility to address climate change risks by reducing emissions and preparing the city for unavoidable impacts. Cities around the world are leading in this endeavor, including more than 125 cities and counties in the United States that signed the Compact of Mayors agreement to cut greenhouse gas emissions and prepare for climate change. Governments in the Pacific Northwest have led the charge on climate action, including the State of Oregon, which established a statewide target to reduce emissions by 75% below 1990 levels by 2050. Other Oregon cities have set greenhouse gas action goals, including Corvallis, Eugene, and Portland.

The City of Ashland has already taken initial steps to address climate change. Achievements include the solar power incentive program, home energy efficiency incentive programs, participation in and support of community outreach and awareness events such as Climate Week in 2015, and integration of climate change impacts into the Water Master Plan and 2016 Ashland Forest Plan. However, more work is needed. According to scientific models, to prevent the worst impacts of climate change, Ashland, along with the rest of the world, will have to reduce its greenhouse gas emissions by 8% per year. Every year this reduction is not met will mean that more reduction will be needed in the future.

**Ashland's foundational Climate and Energy Action Plan (CEAP) provides a strategic framework and long-term vision for reducing greenhouse gas emissions and preparing for climate change in the city.** It represents the culmination of a year-long process of engagement, input, and review from the public, key community stakeholders, City staff, and a Mayor-appointed committee. Participants voiced their concerns and priorities through online surveys, three public open houses, interviews, and facilitated workshops with City staff and committee members. This plan builds on this input and community progress to date by presenting a coordinated set of goals and strategies to guide City and community action.

This plan provides a roadmap for Ashland to sustain economic, social, and environmental prosperity for current and future generations of residents and visitors. **It represents the beginning of an ongoing and evolving process.** Implementation of the actions and attainment of targets set forth in this plan will require a long-term, dedicated effort by the Ashland community and all City departments and staff. As detailed in the Implementation Plan, the Ashland Climate and Energy Action Plan will be updated every three years to ensure that the city's actions toward addressing climate change are up-to-date, sufficient for meeting the City's goals, and beneficial for all. As progress is made and actions are underway, this plan and its future updates will serve as a foundation for taking meaningful action toward reducing greenhouse gas emissions and building resiliency to climate impacts in and around Ashland.

## Plan Organization

The plan presents goals, targets, strategies, and potential actions for mitigating and adapting to climate change. It is organized into six focus areas:



**Buildings and Energy:** Energy used in residential, commercial, and industrial buildings, as well as opportunities to reduce energy use, expand renewable energy production, and prepare buildings for a changing climate.



**Urban Form, Land Use, and Transportation:** The form and function of land and transportation systems, including ways to reduce greenhouse gas emissions through urban planning, design, improved land use practices, and clean and efficient transportation systems.



**Consumption and Materials Management:** The lifecycle of goods and materials, including opportunities to reduce emissions associated with manufacturing, use, and disposal.



**Natural Systems:** Air, water, and ecosystem health, including opportunities to reduce emissions and prepare for climate change through improved resource conservation and ecosystem management.



**Public Health, Safety, and Well-being:** Health and assistance programs for disadvantaged populations, including preparing health, social, and emergency systems for climate change.



**Cross-Cutting Strategies:** Activities that address climate change more generally or across multiple sectors.

For each focus area, this document tells the story of Ashland’s climate goals, progress to date, and strategies and actions for achieving those goals. The strategies and actions are presented in order of priority as articulated by the public, City staff, **ad hoc** committee, and the practices and plans of other cities and communities.

They are organized in the following manner:

**Strategies** represent a thematic groupings of actions that all work toward a specific goal. Strategies within each focus area are ordered by priority.

**Priority Actions** are actions within a strategy that were prioritized, or shortlisted, from a broader set of potential actions. These priority actions underwent a more thorough assessment that evaluated cost, effectiveness, feasibility, and co-benefits. These actions are ordered from highest to lowest priority as identified through the evaluation process.

**Other Actions** are opportunities that were identified as potential actions but were not considered high-priority through the public and stakeholder engagement process.

Priority Actions are labeled by scope of impact, as follows:

### Breadth of Impact



affects **community**-wide operations and climate goals.



affects **municipal** operations and climate goals.

### Type of Impact



addresses **mitigation** goals (lowers GHG emissions).



addresses **adaptation** goals (builds resilience to climate impacts).



addresses **both mitigation and adaptation** goals.





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# CLIMATE CHANGE & ASHLAND

# Climate Change & Ashland

According to the International Panel on Climate Change (IPCC), to have a likely chance of averting the most dangerous of climate change impacts, the world must reduce emissions enough to keep global temperatures from rising more than 2 degrees Celsius. This amount of emissions is called the world's "carbon budget" and the world is already on track to spend the remainder of this budget in just three decades. The risks of climate change, including sea level rise, forest fires, and water shortages, exponentially increases with every degree of warming above 2 degrees. The following sections detail how Ashland may experience and contribute to climate change in the coming years.

## HOW WILL CLIMATE IMPACT ASHLAND?

Regional projections indicate that by the 2080s, Ashland could experience the following climate-driven environmental changes:<sup>1</sup>



### Heavy rainfall and drought risk

**+0.8-1.3 in rainfall increase**  
during the heaviest rain days  
**+4-6 day increase** in the longest dry spells<sup>\*</sup>  
**More winter precipitation**



### Temperature increase and extreme heat

**+7-12° F increase** in the hottest day of the year  
**+39-90 more days** a year of warm spells



### Wildfire risk

**+30% increase** in probability of large wildfires<sup>\*\*</sup>  
**-40 year decrease** in average time between fires<sup>\*\*\*</sup>  
**Increased burn acreage**



### Changes to snowpack and water availability

**-71 to -86% decline** in April 1 snowpack in the Middle Rogue subbasin  
**More precipitation** as rain instead of snow  
**Earlier spring** snowmelt  
**Higher winter** streamflow  
**Lower summer** streamflow

<sup>1</sup> Oregon State University, 2016

<sup>\*</sup> Some models show decreases

<sup>\*\*</sup> Stavros, Abatzoglou, Larkin, McKenzie, & Steel, 2014

<sup>\*\*\*</sup> Sheehan, Bachelet, & Ferschweiler, 2015

## Climate Impacts

Every community will experience climate change differently. The geography, ecosystems, economy, demographic makeup, and social networks of a community all influence how climate change will affect a community and its ability to cope and adapt. In Ashland, more volatile rainfall patterns will increase the frequency and severity of droughts and flooding. More frequent extreme heat events will pose a danger to vulnerable residents. Snowpack will decrease, putting the City's water resources at risk. Plant and animal species will also be affected – some positively and negatively. Increases in temperature, combined with less consistent precipitation, will increase the frequency and severity of wildfires.

The impacts of climate change will have tangible effects on public health and quality of life for Ashland's residents and visitors. In addition to the direct dangers of wildfires, flooding, and extreme weather events made worse by climate change—including injury, death, and the destruction of property and livelihoods—there will be a variety of lesser-known impacts on Ashland's population. Wildfire smoke, for example, can cause serious health complications, especially for those with asthma or other respiratory conditions. Similarly, more frequent and severe heat waves can be deadly, especially for young children and the elderly, and exposed persons such as outdoor workers. Other changes, such as decreased summer stream flow and reduced snowpack, could have significant quality-of-life impacts on Ashland's residents, many of whom enjoy outdoor recreation and rely on the water supplied by the local watershed for their livelihoods. Ashland could even experience an influx of "climate refugees" who are displaced from their homes due to climate change impacts elsewhere.

Unfortunately, many of these climate risks will disproportionately affect certain groups. In the United States, communities of color, non-English speaking households, and low-income populations have historically been underserved by public programs and investments, resulting in limitations such as fewer transportation options, less resilient housing, and less reliable healthcare options. These inequities may limit the ability of these populations to respond to the impacts of climate change and benefit from new investments and actions taken to address climate pollution.

## What will these impacts mean for Ashland's future?

These climate changes will threaten Ashland's people, resources, and economy. Here are some examples of challenges Ashland could face:



### PEOPLE

**Sensitive and exposed populations like the very young, elderly, those with respiratory illness, and outdoor workers will be at risk from wildfire smoke and heat-related illnesses.**



### ENVIRONMENT

**High elevation plants and wildlife will need to adapt to shifting or diminishing habitats.**



### RESOURCES & ECONOMY

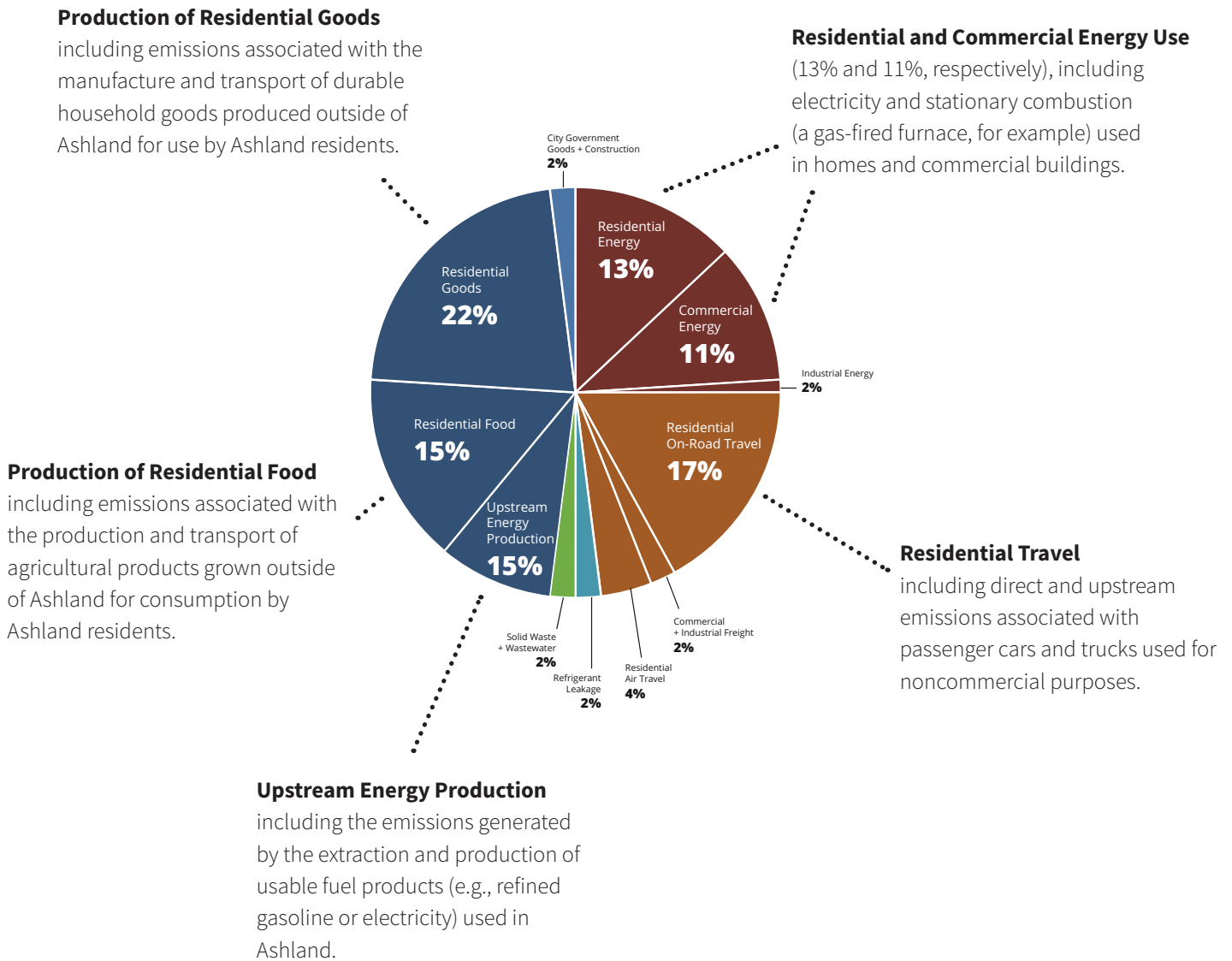
**Seasonal and climate-dependent industries such as agriculture, outdoor recreation, and tourism will be threatened under changing conditions.**

# Ashland's Greenhouse Gas Emissions

To keep global greenhouse gas emissions below what is needed to avoid 2 degrees Celcius warming, the IPCC estimates that global emissions need to be reduced by 40 to 70% by 2050, and that carbon neutrality needs to be reached by the end of the century. In 2015, the City commissioned a greenhouse gas inventory to understand and characterize the sources of Ashland’s emissions and trends in emissions over time. In 2015, Ashland’s greenhouse gas (GHG) emissions footprint was approximately 300,000 metric tons of carbon dioxide equivalent (MT CO2e), representing 0.5% of Oregon’s total emissions. The vast majority (83%) of Ashland’s emissions stem from five main sources: production of residential goods and food, residential travel, residential and commercial energy use, and upstream energy production.

## WHERE DO EMISSIONS COME FROM?

The chart below shows how different sources and sectors contribute to Ashland’s 2015 carbon footprint.



**Consumption-based emissions** include emissions generated outside of the community to produce the goods and food consumed by Ashland residents.

**Level of certainty: LOW**

**What's included?**

- Household consumption of food and goods
- City government consumption, including from the production of goods and some purchased services
- Fuel production

**Sector-based emissions** include locally-produced emissions from buildings, cooling systems, and water and waste processing.

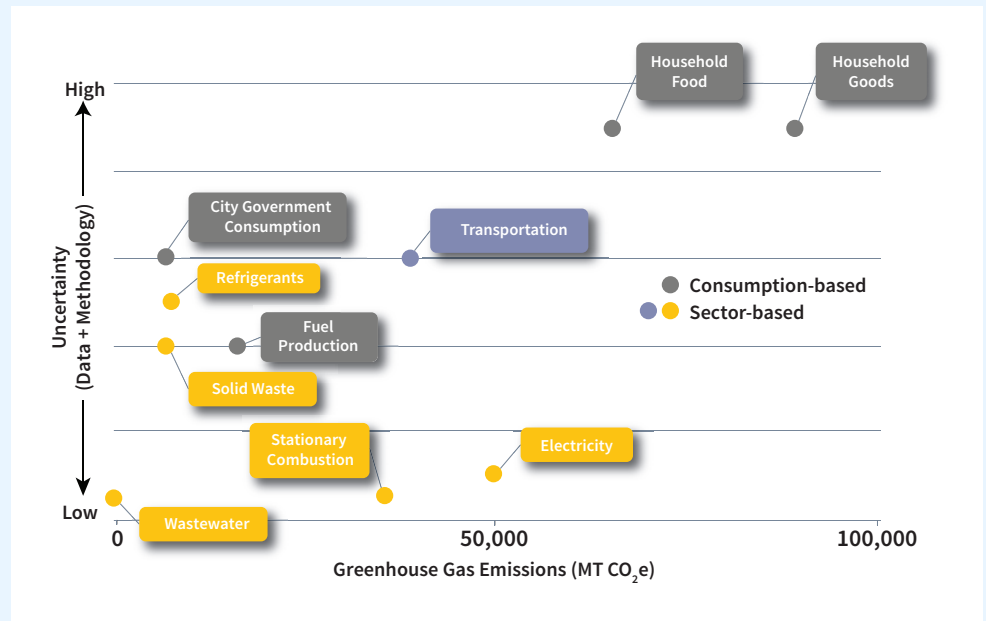
**Level of certainty: HIGH**

**What's included?**

- Building energy use in residential, commercial, and industrial sectors
- Transportation energy use
- Methane emissions from waste disposal
- Wastewater treatment
- Emissions from refrigerants

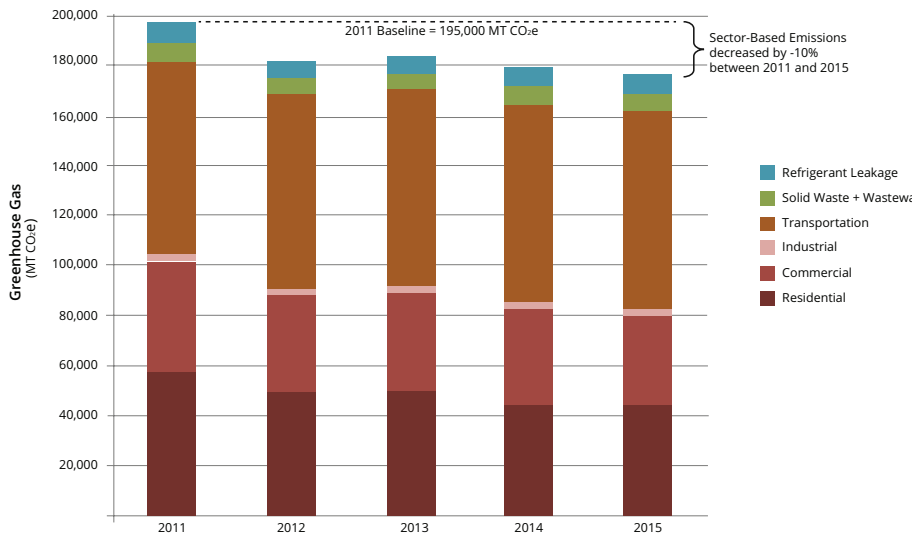
There is some degree of uncertainty in any GHG inventory. This uncertainty can come from incomplete data or uncertainty in translating units of activity into emissions.

Understanding the sources of uncertainty should improve future inventory and reporting efforts, including prioritization of additional data-gathering, framing inventory results, and developing mitigation goals and tracking systems.



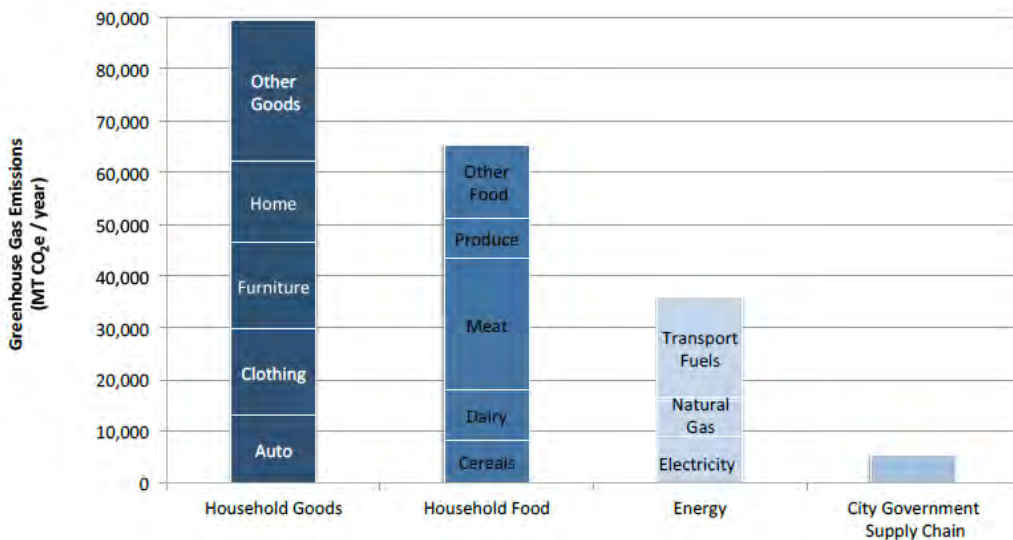
### HOW HAVE ASHLAND'S EMISSIONS CHANGED OVER TIME?

Ashland's per-household GHG emissions have decreased nearly 6% over the past five years. Households in Ashland are producing nearly 25% fewer GHG emissions than the average Oregon household. Nearly all of Ashland's GHG reductions can be attributed to changes in emissions from the built environment. Together, residential, commercial, and industrial buildings saw their GHG emissions footprint decrease by 21% from 2011 to 2015, largely due to increased renewable electricity on the regional grid, decreased electricity use in the residential sector, and decreased natural gas use due to warmer winters.



### HOW DO CONSUMPTION EMISSIONS STACK UP?

Emissions from household goods are dominated by home construction, furniture, clothing, and vehicle purchases, while the production of meat accounts for a large share of food consumption emissions from Ashland residents. The chart below shows these and other sources of consumption-based emissions in Ashland for the 2015 fiscal year.



## Building on a Foundation

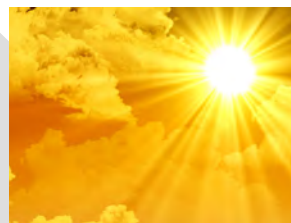
Ashland has already made notable progress toward reducing both its community emissions and its vulnerability to the potential impacts of climate change. Ashland has a variety of plans, policies, programs, and studies that are connected to the needs and solutions for addressing climate change issues and challenges. Some of these documents already emphasize climate solutions described in this plan, while others will need to be updated to integrate climate change and climate action. Where linkages are clear, this plan highlights “levers” in existing plans and programs and brings them together to address a common goal.



This plan builds on the great work Ashland has done to-date to present a more coordinated and strategic pathway toward realizing the city’s climate vision.



City-sponsored events like the Ashland Climate Challenge have engaged the Public around climate issues.



The community solar project Solar Pioneer II gives citizens an opportunity to purchase locally-generated renewable energy.



The City recently completed a City Facilities Energy Audit that identified energy efficiency upgrade opportunities at City facilities.



A retro-commissioning incentive program provides financial and technical assistance to tune up energy systems in commercial and residential buildings.



A new city Water Master Plan will incorporate future climate risks to water supply and quality into future service planning and activities.



### WHAT ARE WE DOING RIGHT NOW?

Below are examples of plans, programs, policies, and studies that link to the goals and actions of the Climate and Energy Action Plan:

#### PLANS

- Comprehensive Plan
- Water Master Plan
- Transportation System Plan and Regional Transportation Model
- Economic Development Strategy
- Neighborhood Master Plans
- Emergency Management Plan
- Community Wildfire Preparation Plan
- 2016 Ashland Forest Plan

#### PROGRAMS

- Emergency management
- Community Emergency Response Team (CERT)
- Firewise
- Forest Resiliency Project
- Water conservation incentive and outreach
- Energy efficiency assistance
- Solar incentives
- Renewable Energy Certificates (RECs)
- Nature Center education

#### POLICIES

- Land use code
- Wildland-urban interface (WUI) code and fire code
- Energy contract with BPA

#### STUDIES

- City facility efficiency and solar assessment
- Solid waste and recycling annual report
- Renewable energy assessment
- GHG inventory

## A Coordinated Effort

Climate change is a cross-cutting issue. Contributions of greenhouse gas emissions stem from activities across sectors and sources, from transportation and energy to buildings and materials management. Strategies to prepare for climate change cut across traditional disciplines, ranging from water and natural resource management to public health and safety.

Multifaceted challenges require integrated solutions. Many of the solutions and strategies presented in this plan are not new, and many are already part of existing City plans, programs, and policies that are focused within individual City departments. This plan brings those solutions together in an integrated and strategic way to address the climate challenge, and where needed, proposes adjustments or expansions to meet climate goals. Implementing this plan requires forging relationships and coordinating across traditional departmental and stakeholder boundaries to form synergistic, efficient, and effective solutions.

This plan primarily focuses on strategies and actions that Ashland's City government can take to help address climate challenges. However, **all parties have a role and must be a part of the solution**, including Ashland residents, businesses, organizations, and government. This plan provides suggestions for actions that residents, visitors, businesses, and organizations can take to play their part in tackling climate change.



*“Combating climate change is a fundamental responsibility for everyone, everywhere. The status quo is clearly unacceptable.*

*For the sake of future generations, making progress, together, as a community, is urgent.”*

**Rich Rosenthal,**

Ashland City Councilor and Chair of the CEAP ad-hoc committee

# Key Terms

## GREENHOUSE GAS

A gas that absorbs and emits thermal radiation in the atmosphere, contributing to the “greenhouse effect” by preventing heat from leaving the atmosphere. CO<sub>2</sub> is the most common greenhouse gas, but this category also includes methane, nitrous oxide, ozone, and even water vapor (picture a humid day). Greenhouse gases vary greatly in the strength and persistence of their warming effect; for example, methane has a greenhouse effect approximately 72 times stronger than CO<sub>2</sub>, but its atmospheric lifespan is much shorter.

## ENERGY

For this plan, “energy” refers to power or heat produced from fuels or processes and used for a variety of applications, including for transportation, heating, cooking, and electricity generation. In Ashland, energy is largely consumed in the form of natural gas, electricity, and gasoline. The majority of electricity consumed by Ashland residents is purchased from Bonneville Power Administration, which provides electricity largely from hydro and nuclear resources. Other sources of electricity for Ashland include locally-produced solar and hydropower, and sources from the regional electricity grid, which include coal, biomass power, and other renewable sources such as wind.

## CLIMATE MITIGATION

Strategies and actions focused on slowing the pace and lessening the severity of climate change by reducing or offsetting greenhouse gas emissions. Overarching Goal 1 on page 26 focuses on mitigation.

## CLIMATE ADAPTATION

Strategies and actions focused on changing behavior, land use, and environmental management to prepare, protect, and build resilience of infrastructure, ecosystems, public health, and quality of life to anticipated effects of climate change. Overarching Goal 2 on page 14 focuses on adaptation. Although used interchangeably in this plan, there are slight difference between climate adaptation, and resilience: The strategies and actions in this plan address both climate adaptation and resilience.

Adaptation refers to action to prepare for and adjust to new conditions, thereby reducing harm or taking advantage of new opportunities. \*

Resilience refers to the capacity of a social or ecological system to continue to function despite disturbances.

## SOCIAL EQUITY

Maintaining or creating a “level playing field” or equality of opportunity, often through 1) simple fairness and equal treatment, 2) distribution of resources to reduce inequalities in universal programs and services, and 3) redistribution of resources to level the playing field through targeted programs.\*\* Social equity is a cornerstone of this plan—see the “Climate and Equity” section on page 40 for more information on the role of equity in climate action and the ways in which equity is reinforced through the Ashland Climate and Energy Action Plan.

\*National Climate Assessment, 2014

\*\* Norman-Major, 2011. “Balancing the Four E’s; or Can we Achieve Equity for Social Equity in Public Administration?” *Journal of Public Affairs Education*. 17(2), 233–252

*Ashland's climate vision for 2050 is to be a **resilient** community that has **zero net** greenhouse gas emissions, embraces **equity**, protects **healthy ecosystems**, and creates opportunities for **future generations**.*

## Overarching Goals

This Climate and Energy Action Plan provides a strategic path toward achieving two primary goals:

**GOAL 1:** Reduce Ashland’s contribution to climate change by **reducing community greenhouse gas emissions.**

**GOAL 2:** Prepare the city’s communities, systems, and resources to be **more resilient to climate change impacts.**

### Goal 1: Reduce Greenhouse Gas Emissions

Cities play an important role in reducing greenhouse gases. More than 80% of Americans and 50% of the world’s population live in urban areas. Therefore, the design of cities, including their built environment and transportation systems, strongly influence GHG emissions. Ashland recognizes that it must minimize its negative impact on the global environment. While urgent action is needed, many climate actions cannot be completed overnight, so a long-term approach is needed to achieve deep reductions.

The Climate and Energy Action presents the following long-term targets for reducing greenhouse gas emissions associated with city and community activities:

For the community:

- Reduce overall Ashland community greenhouse gas emissions by 8% per year, on average.

For City of Ashland operations:

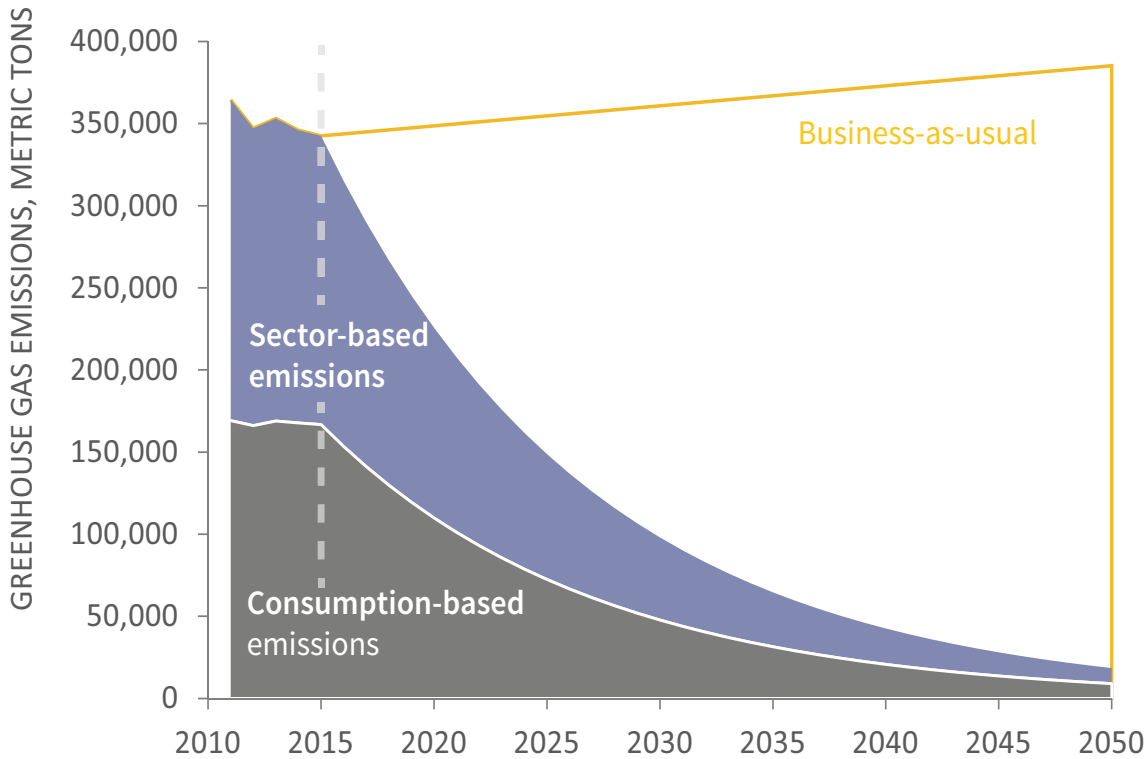
- Reach carbon neutrality by 2030.
- Reduce fossil fuel consumption by 50% by 2030 and 100% by 2050.

The 8% annual target represents emissions reductions necessary to prevent the worst climate change impacts (see the Methodology appendix for more information). Specifically, it identifies how much the world on average would need to cut emissions each year to result in a concentration of carbon dioxide in the atmosphere under 350 parts per million.

To further underscore the importance of setting and reaching this target, this plan recommends that the community and city targets and related goals be adopted by ordinance. This action indicates to the community the highest level of commitment by the City Council to take meaningful action.

## ASHLAND'S TARGETED GHG EMISSIONS

8% per year average reduction in total emissions



The strategies and actions in this plan are a starting point and strategic framework for making and assessing progress over time. This plan does not provide a pathway for achieving this target, as the target represents a degree of action that cannot be accurately modeled using current greenhouse gas accounting methodologies. Consequently, some real-world reductions in Ashland may not be reflected in near-term GHG inventories because available tools for evaluating consumption-related emissions do not currently capture changes in Ashland's consumption behaviors. This plan assumes that methodologies will be refined in the future to enable more accurate measurement of emission reductions. For example, the Oregon Department of Environmental Quality is developing a tool that can be used to more accurately quantify consumption-based emissions, and will be applied to Ashland's next GHG inventory.

Emissions reductions were modeled against the proposed higher-level strategies in this plan. The "Moving the Needle: A Thought Experiment" section summarizes outcomes for that modeling exercise to reveal how various actions taken by the City and community could result in measurable emissions reductions.

### **Goal 2:** Prepare for Projected Climate Change Impacts

Ashland will experience varying impacts of climate change at different times. Some of the impacts are already being felt, including lower snowpack and more smoke and heat in the summer. As climate changes our environment and its systems and resources, Ashland will need to anticipate the changes and take action to mitigate or adapt to the impacts.

This goal calls for Ashland to recognize these climate change threats and take actions to ensure that Ashland can withstand the impacts while sustaining or improving quality of life for all its citizens. These actions could include approaches to minimizing community's exposure to climate impacts, the sensitivity of people or infrastructure that are exposed, or capacity to adjust or bounce back.



# A Strategic Approach

**This plan presents a strategy that is customized to Ashland's unique characteristics.** Ashland can influence its ability to address or prioritize particular climate and energy strategies as a result:

- **Utility ownership.** Ashland's electricity utility is municipally owned, which grants the City direct control over utility operations, business decisions, and related program activities.
- **Energy mix.** Ashland purchases energy from Bonneville Power Administration, which is largely sourced by hydropower.
- **Engaged community.** Ashland citizenry are highly engaged in community issues and activities.
- **Political will.** Ashland's leadership is historically supportive of innovative actions and environmental leadership.
- **History of climate action.** Ashland has a long history of environment- and climate-related policies and actions to build upon, including the first community solar project in Oregon and effective energy efficiency programs.
- **Heavy tourism influence.** Ashland's industry is largely tourist-based, meaning that a portion of the city's greenhouse gas emissions comes from the behavior of visitors, over which the City has less direct influence. Ashland's interactions with tourists could also potentially give Ashland's actions a greater geographic reach, however, as visitors bring the Ashland experience back home with them.
- **Small city in a rural environment.** Ashland is a small town, which brings both benefits and challenges. On one hand, governments of small communities can have more direct contact and influence over its services and utilities. On the other hand, smaller communities have fewer available resources for climate action compared to larger cities, and advocating for changes at the state and national level could be more difficult.

- **Direct influence on water supply.** Ashland has direct ownership and control over much of its water supply. However, climate change will impact that supply.
- **Progressive state-level activities.** The State of Oregon has introduced ambitious climate policies and regulations, as well as tools and resources for supporting local climate action.

Given these particular characteristics coupled with information on Ashland's greenhouse gas emission sources and anticipated impacts from climate change, the following **overarching strategic initiatives** were identified to guide the strategies and actions presented in this plan. While the strategies and actions in this plan are organized by focus areas such as Buildings and Energy, Transportation and Land Use, and Natural Systems, these initiatives, described in the following sections, cut across these focus areas to emphasize synergistic and integrated solutions for addressing climate in Ashland.

- Transition to clean energy.
- Maximize water and energy efficiency and reuse.
- Support climate-friendly land use and management.
- Reduce consumption of carbon-intensive goods and services.
- Inform and work with residents, organizations, and government.
- Lead by example.



### Transition to clean energy

Energy used for buildings and transportation comprises half of Ashland's historic greenhouse gas emissions.

- Most of these emissions are from the combustion of natural gas by residential and commercial buildings, electricity consumption, and gasoline used to fuel residential on-road travel.

Addressing energy-related emissions requires a combination of reduced and lower-carbon energy use. The majority of energy consumed by Ashland's buildings is purchased from Bonneville Power Administration (BPA), which sources its electricity largely from hydro and nuclear power. The majority of energy consumed by Ashland's transportation sector come from the direct combustion of gasoline and diesel fuel. Switching existing fuels, such as natural gas and gasoline, to cleaner fuels such as low-carbon electricity can lower the overall emissions profile of Ashland's current energy use and reduce reliance on fossil fuels. Furthermore, the introduction of new clean energy sources, such as local renewable energy, as well as increased conservation and energy efficiency, can help offset the increased electricity loads caused by fuel-switching and increased cooling demands anticipated under future climate change. These actions in combination act synergistically to reduce total energy-related emissions.

The following Climate and Energy Action Plan strategies are cornerstones of this clean energy transition:

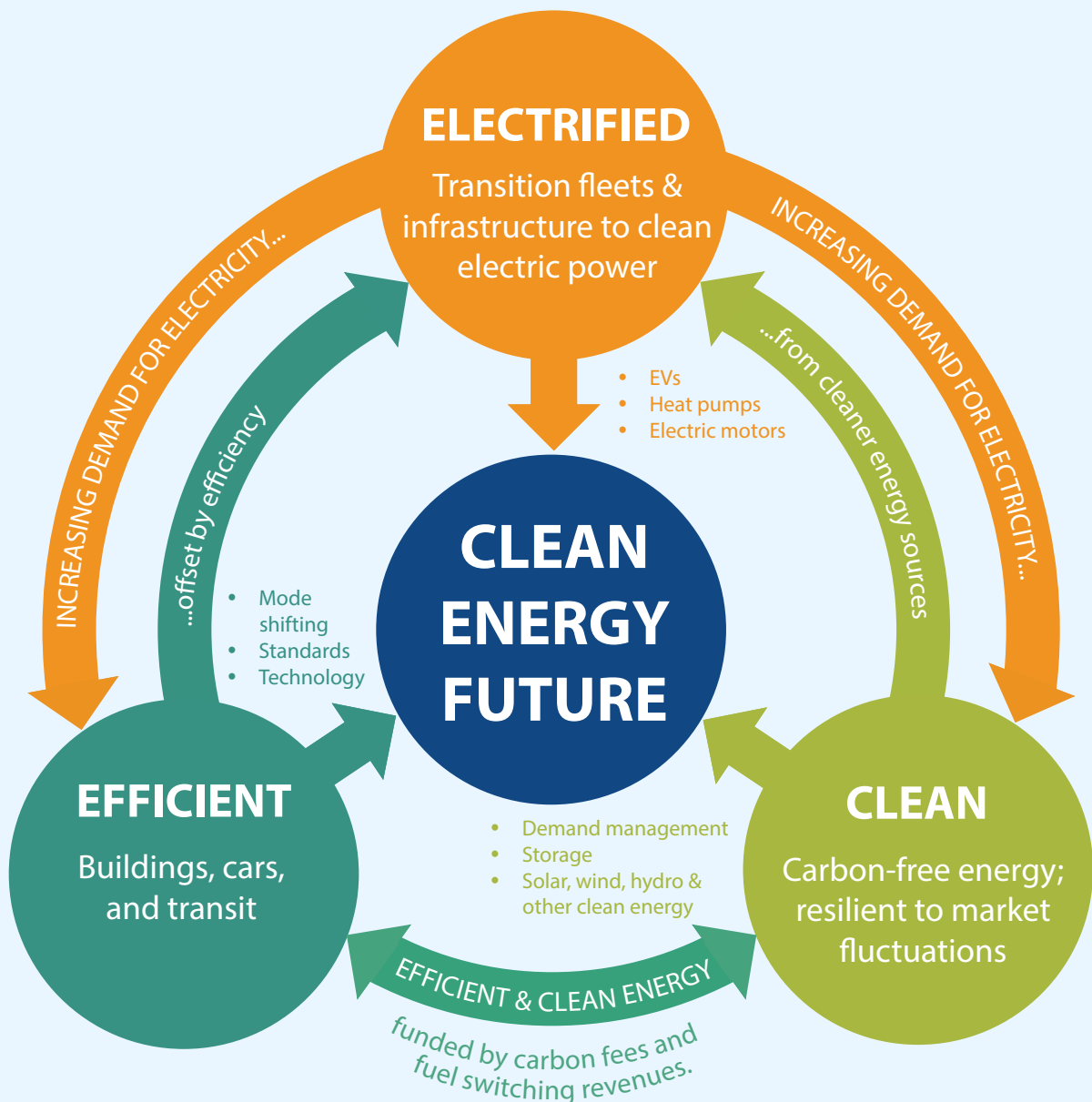
- Support cleaner energy sources.
- Support more efficient vehicles.
- Improve energy demand management.

Example actions within these strategies include supporting community solar projects, smart grid technologies, and actions and initiatives that accelerate fuel-switching such as electric vehicle infrastructure



**ASHLAND'S CLEAN ENERGY FUTURE:  
 A BALANCED, COST-NEUTRAL APPROACH**

Transitioning to a clean energy future in Ashland will require a combination of increased fuel-switching, clean energy sourcing, and efficiency. Taking this three-pronged approach will allow the electric utility to offset potential revenue losses from efficiency and off-grid electrical consumption with new revenues from switching gas-fueled cars and natural gas-heated homes to electric vehicles and electricity-heated homes. Through this strategy, Ashland will be able to lower its overall energy consumption, costs, and associated emissions.



### Maximize water and energy efficiency and reuse

The production and use of energy and water resources for the built environment greatly influences Ashland's greenhouse gas emissions and vulnerability to climate impacts. Energy used by buildings accounts for almost a third of Ashland's greenhouse gas emissions. Water consumption for residential and commercial buildings and surrounding green spaces put considerable stress on community water resources, which may become more scarce and in greater demand as temperatures increase and summer water availability declines.

Reducing water and energy resource use associated with Ashland's built environment will cut emissions, ease loads on the utility, and help secure resource supply and resiliency in a changing climate. The introduction of cleaner energy sources can reduce energy-related emissions to an extent, but improved energy use efficiency will also be required to achieve deep emission reductions. In general, cutting emissions through energy efficiency improvements can be more cost-effective than adding new renewable energy sources. The following Climate and Energy Action Plan strategies support water and energy efficiency:

- Encourage increased building energy efficiency.
- Adapt buildings to a changing climate.
- Manage and conserve community water resources.

Example actions include adjusting land use codes and incentives to support resource-efficient design, water reuse, and/or on-site storage systems; sponsoring building energy retrofit programs and water conservation rebate programs; introducing rate-based incentives; and providing educational materials aimed at awareness and behavior change. The introduction of passive and heat-tolerant building principles can also reduce cooling energy needs during heat waves and minimize heat-related public health impacts.

### Support climate-friendly land use and management

The use and management of Ashland's lands play a significant role in both reducing greenhouse gas emissions and preparing for climate impacts. Development that promotes walking, biking, and riding transit reduces emissions from on-road vehicles, which account for the majority of transportation-related emissions. Proper management and conservation of land resources can also support ecosystem services such as water storage and flow attenuation, shade, and biodiversity that make the city and its resources more resilient to threats posed by climate change.

Strategies in the Climate and Energy Action Plan that support climate-friendly land use and management are:

- Make Ashland even more friendly for people walking and biking to reduce dependence on vehicles.
- Support better public transit and ridesharing.
- Support more climate-ready development and land use.
- Promote ecosystem resilience.
- Manage ecosystems and landscapes to minimize climate-related health impacts.
- Manage and conserve community water resources.

Actions within these strategies feature transit-oriented development and infrastructure that supports walking and biking. Also, improved management and conservation of natural resources such as water and green spaces in and outside the city can help prepare the city for changes in temperatures, water availability, and wildfire risk.

## Reduce consumption of carbon-intensive goods and services

The production and delivery of goods and services consumed by Ashland households contribute almost half of Ashland's greenhouse gas emissions. These goods and services include food, furniture, home construction materials, electronics, and clothing; and the production of transport fuels, natural gas, and electricity consumed in Ashland. Certain foods, such as meats, are more carbon-intensive to produce than dairy and grains, and therefore contribute the largest proportion of food-related emissions.

Despite the large contribution of household consumption to Ashland's greenhouse gas footprint, the City of Ashland has little direct control over household purchasing behavior and product manufacturing and transportation. As a result City-initiated options to reduce emissions from this source are limited. However, it is expected that as global markets and energy sources become greener over time, so too would the goods and services that Ashlanders consume. Strategies in the Climate and Energy Action Plan that contribute toward reducing emissions associated with consumption of goods and services are:

- Reduce consumption.
- Support sustainable and accessible local production and consumption.

These strategies promote reduced consumption, facilitating marketplaces for reuse and sharing such as tool-lending libraries and reuse fairs, expanding the construction and demolition debris code to promote material salvage; sustaining local food production such as through farmers' markets and community gardens; and distributing outreach and education materials on the impacts of consumer choices.

## Inform and work with residents, organizations, and government

Reducing greenhouse gas emissions and building resilience to climate impacts in Ashland is a community-wide effort. Everyone, including residents, businesses, organizations, institutions, and departments within the City itself, must understand what is needed and work together to take action. This strategy involves the City working closely internally and with the public, local stakeholder groups, and other jurisdictions and agencies to communicate climate priorities, coordinate action, and inspire change. The City must continue to learn from and listen to these parties to ensure that actions are coordinated, relevant, and effective. This strategy involves paying particular attention to equity considerations in the context of climate change (see "Climate and Equity" section on page 21). Specific strategies within the Climate and Energy Action Plan that support this education and coordination effort include:

- Educate and empower the public.
- Educate and empower City staff.
- Mainstream climate considerations.
- Enhance City communication and coordination to minimize public health and safety impacts.
- Promote a sustainable local economy that minimizes emissions and vulnerability.
- Engage with other governments and organizations on regional, statewide, national, and international climate policy and action.

### Lead by example

Although emissions from the City of Ashland's operations make up a relatively small proportion of the community's overall greenhouse gas emissions, City leadership in reducing its own operational emissions can inspire community action, enhance operational efficiencies, and reduce costs. This strategy involves the City taking actions to reduce its own GHG emissions footprint and make City operations more climate resilient, including by training internal staff, optimizing City facilities, and improving equipment and purchasing processes. Strategies in the Climate and Energy Action Plan that support City leadership are:

- Maximize energy efficiency of City facilities, equipment, and operations.
- Increase the efficiency of City fleet and employee commuting.
- Improve sustainability of City operations and purchases.
- Conserve water use within City operations.

**VISION FOR THE FUTURE**  
**ASHLAND** CLIMATE & ENERGY ACTION PLAN





## Moving the Needle: A Thought Experiment

This plan sets forth an ambitious goal for reducing greenhouse gas emissions in Ashland. What does that mean for the average hlander and how the city operates? What kinds of changes would need to happen in Ashland to really move the needle on emissions? This section provides a thought experiment to demonstrate how a few example changes in Ashland’s behaviors and infrastructure could result in greenhouse gas emission reductions. It is merely a thought experiment to demonstrate the linkage between behavior and emissions — the scenario presented does not necessarily reflect what is realistic or would result by taking the actions in this plan. For more information on how specific actions in this plan may contribute toward Ashland’s greenhouse gas emission reduction goal, see the “What will this plan achieve?” section on page 39.

If the Ashland community made the achievements listed in the table below, then the community would be able to reduce its greenhouse gas emissions by an estimated 46% below 2015 levels by 2050, equivalent to each Ashland resident and business reducing its footprint by about 1.4% per year. These estimates are based on assumptions from similar analyses conducted by other municipalities and organizations in the Pacific Northwest.

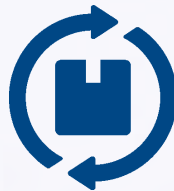
The progress that Ashland makes toward reducing its GHG emissions will also be influenced by broader state, regional, national, and international initiatives and policies. The federal Clean Power Plan, for example, if enacted, will reduce the GHG emissions associated with the U.S. energy grid by making power plants operate more cleanly and efficiently and expanding the capacity for zero- and low-emitting power sources. In 2016, the State of Oregon enacted legislation requiring Oregon’s major electricity suppliers to obtain 50% of their power from renewable sources by 2040. The law also sets a timetable for eliminating coal-fired electric power in the state, and it establishes a community solar program for Oregon. These and other anticipated regulations and programs, such as changes to the federal Corporate Average Fuel Economy (CAFE) standards, will further contribute toward Ashland’s emissions reduction goals and were taken into account in this analysis.

Ashland could achieve a **46% reduction** in greenhouse gas emissions **by 2050** if the community...



ENERGY

- Reduced energy use by 50% through energy efficiency measures.
- Shifted 14% of grid electricity consumption to distributed renewable energy generation.
- Transitioned 90% of natural gas used in buildings to electricity.



CONSUMPTION

- Reduced consumption-related emissions by 50% through activities such as product reuse, reducing meat consumption, or introduction of a carbon tax on products and services.



TRANSPORTATION

- Shifted 50% of motorized travel to walking or biking.
- For the remaining motorized travel:
  - Shifted 80% of private vehicles to electric vehicles.
  - Shifted 33% of commercial vehicles to electric vehicles.
  - Increased the average fuel efficiency of light-duty vehicles to 53 miles per gallon.

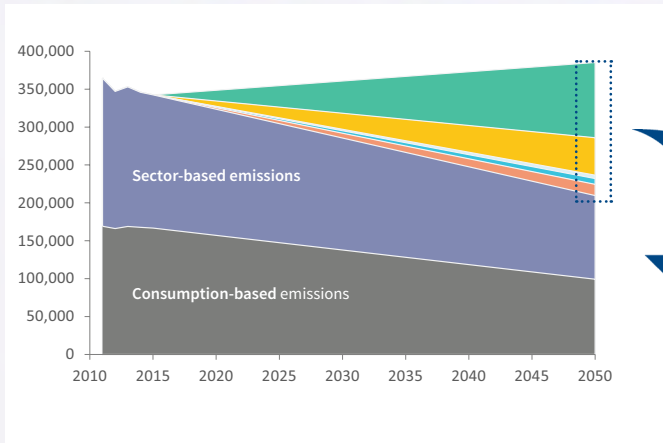
## What if?

A significant contributor to Ashland's modeled emissions reductions is the transition of liquid fuels like gasoline and diesel to electricity as more drivers switch to electric vehicles. However, there is some uncertainty around the exact makeup of Ashland's future electricity sources. The model above assumes that 55% of electricity is from zero-emission sources by 2050. However, if Ashland were to have zero-emission electricity by 2050, then the emission reductions would increase from 46% to 54%—equivalent to an average reduction of 1.9%, instead of 1.4%, per Ashland resident per year.



# VISION FOR THE FUTURE

## ASHLAND CLIMATE & ENERGY ACTION PLAN



The figure below shows how **Ashland could achieve a 46% reduction in emissions**, and example actions in the plan that could contribute.

### Consumption (26%)

**CM-1-2** Supporting "collaborative consumption" projects

**CM-3-2** Strengthening the Demolition Debris and Diversion ordinance

**CM-5-1** Introducing environmental-preferable purchasing guidance

### Renewable energy (1%)

**BE-1-2** Encouraging on-site and community solar energy production

**BE-3-1** Installing solar at City facilities

**BE-4-1** Introduction of virtual net metering

### Transportation (2%)

**ULT-1-2** Promoting transit, carpooling, and car-sharing

**ULT-2-1** Expanding bicycle infrastructure

**ULT-3-2** Requiring EV charging infrastructure in new development

26%

13%

1%

2%

4%

### Energy efficiency (13%)

**BE-2-2** Introducing building energy audit requirements

**BE-2-3** Addressing energy efficiency barriers in rent/lease properties

**BE-2-4** Establishing energy efficiency standards for affordable housing

### Transitioning from natural gas to electricity (4%)

**BE-1-1** Developing a comprehensive electricity utility plan

**BE-1-2** Increasing energy efficiency program participation

**BE-3-1** Implementing City facility improvements

## What will this plan achieve?

The modeled emission reductions in this section provide a sense of what could be achieved if Ashland took aggressive action on climate change by implementing actions set forth in the Plan. Reductions are presented as groupings of similar actions, but do not precisely represent the reductions associated with those actions. This is due to challenges in attributing emission reduction values to individual actions.

Potential emission reductions associated with individual actions can be difficult to quantify with certainty due to their interdependent nature. For example, reduced emissions associated with switching from gasoline to electric vehicles will depend largely on the mix of energy sources used to generate electricity and the average fuel economy of the vehicles. Emissions associated with use of electricity will in turn be affected by other actions in this plan, such as increased local renewable energy production. It is therefore difficult and counterproductive to single out reductions associated with any individual action.

Assessing emissions reductions is also complicated by uncertainty in underlying variables and assumptions. The efficacy of expanded education and outreach efforts around home energy efficiency will depend on many factors, including the populations to which outreach will be conducted, the extent to which the City has already reached existing residences, as well as external factors, such as the state of the economy, which influences people's willingness to take risks and invest in new technologies.

Given these limitations, actions in this plan were not quantitatively modeled for efficacy. Rather, actions were qualitatively assessed relative to other potential actions using a set of criteria that included estimated emissions reduction potential. Qualitative assessment informed the order of priority actions in this plan. It is expected that, at the time of implementation, the City will undertake more detailed modeling efforts to quantify anticipated outcomes.

### Climate and Equity

Equity is central to addressing climate change. Many of the countries most responsible for contributing to climate change, such as the United States, will not bear the brunt of global climate change impacts. Countries and communities that were not large historical emitters of greenhouse gases, such as small island nations, Arctic villages, and developing coastal communities, are facing a rapidly changing environment of thawing ice, flooded coasts, and extreme storms. Many of these communities do not have the resources or capabilities to protect, restore, or adapt to these changing conditions. It is the responsibility of the United States and its communities, as historical and current contributors to the problem, to be a committed and proportionate part of the solution.

**This plan provides a foundation for ensuring that Ashland contributes to being part of the climate change solution.**

Climate change will also have a disproportionate impact on some local populations. In Ashland, elderly, low-income, disabled, and minority populations will be most vulnerable to many changing climate conditions, such as threats from severe heat, wildfire smoke exposure, and flooding.<sup>1</sup> These populations may also suffer from other secondary impacts of climate change, such as risks to seasonal employment and agricultural productivity. **Ashland will need to commit special focus when implementing all actions in this plan to ensure the continued and improved prosperity and quality of life of these populations in the face of a changing climate.**

Actions to address these inequities, such as by reducing urban heat islands or providing disaster preparedness assistance to at-risk communities, will pay dividends not just for those populations but also for the greater Ashland community. When everyone is healthy, employed, and safe, the community enjoys greater economic and social stability and prosperity.

1. Source: Climate Change Vulnerability Assessment for Ashland and the Rogue Valley (2016).

### Elements of the Plan that Emphasize Equity

Equity is integrated throughout Ashland's Climate and Energy Action Plan. For example, the following plan elements emphasize and address equitable climate action:

- An **ambitious greenhouse gas emissions reduction target** that acknowledges the responsibility of developed societies to minimize harmful impacts to those who did not contribute to the problem.
- **Actions that focus on supporting vulnerable populations**, who will disproportionately suffer from many climate change impacts.
- **Including equity in prioritization criteria** for evaluating potential actions.
- **Progress indicators** that track equitable implementation of the plan, such as percent of Ashland residents experiencing health issues or with access to cooling centers.
- An **implementation plan** that calls for equity to be considered in the implementation phase of every action.

## Co-Benefits

In addition to the larger societal benefits that result from equitable and inclusive climate action, many strategies and actions in this plan result in other co-benefits, such as enhanced natural aesthetics, public health, economic vitality, or quality of life. For example, the introduction of energy-saving equipment and behaviors not only address climate goals, but they can also lower energy costs for residents and citizens. **This plan prioritizes these “win-win” solutions that benefit both the climate and other facets of the Ashland community.** Co-benefits associated with each action are identified with icons in the Implementation Plan.

Co-benefits considered in prioritizing the strategies and actions of this plan include the following:



**Support for low-income and disadvantaged communities.** When implemented carefully and correctly, actions such as local green job training and subsidy programs for energy efficiency upgrades can be especially helpful for low-income and disadvantaged communities.



**Public health.** Some actions that reduce greenhouse gas emissions also promote healthier lifestyles, such as supporting more people walking and biking and eating less carbon-intensive foods.



**Quality of life and well-being.** Many climate actions can also improve quality of life for Ashland citizens, such as benefits of green jobs to the local economy and creation of more comfortable and inviting homes through energy efficiency improvements.



**Local habitat, recreation and aesthetic.** In addition to enhancing ecosystem resilience, minimizing heat impacts, and storing carbon, actions that improve natural habitat and tree cover can also enhance natural beauty and provide recreational opportunities for visitors and residents.

*“In urban settings, neighborhoods with low socioeconomic status have some of the highest needs for climate adaptation and resilience-building efforts. Applying the concept of social equity to these efforts can help ensure that all communities are involved.”*

*U.S. Climate Resilience Toolkit*

### THE CLIMATE AND ENERGY ACTION PLAN AT-A-GLANCE

The table below summarizes the strategies and actions of this plan, detailed by focus area in the following sections.

#### BUILDINGS + ENERGY

SCOPE / TYPE

Strategy BE-1. Support cleaner energy sources		
BE-1-1. Develop a comprehensive plan for the Municipal Electric Utility.	C	Mi
BE-1-2. Promote switching to lower-carbon fuels.	C	Mi
BE-1-3. Facilitate and encourage solar energy production.	C	Mi/Ad
BE-1-4. Enhance production of on-site solar energy from City facilities.	M	Mi/Ad
Strategy BE-2. Encourage increased building energy efficiency and conservation.		
BE-2-1. Increase outreach efforts to expand participation in energy efficiency programs & promote climate-friendly building/construction.	C	Mi/Ad
BE-2-2. Require building energy audits to identify and incentivize cost-effective energy efficiency improvements.	C	Mi/Ad
BE-2-3. Identify and adopt strategies to reduce energy efficiency barriers in rent/lease properties.	C	Mi/Ad
BE-2-4. Establish minimum energy efficiency standards for the affordable housing program.	C	Mi/Ad
Strategy BE-3. Maximize efficiency of City facilities, equipment & operations.		
BE-3-1. Use results from City Facilities Energy Audit to prioritize Capital Improvement Plans (CIPs) & maintenance improvements.	M	Mi
Strategy BE-4. Improve demand management.		
BE-4-1. Expand the current net meter resolution to include and incorporate virtual net metering.	C	Mi
BE-4-2. Implement utility-level smart grid technologies to facilitate efficiency and distributed energy solutions.	C	Mi
Strategy BE-5. Prepare and adapt buildings for a changing climate.		
BE-5-1. Encourage heat-tolerant building approaches such as cool roofs and passive cooling.	C	Mi/Ad

#### URBAN FORM, LAND USE + TRANSPORTATION

Strategy ULT-1. Support better public transit and ridesharing.		
ULT-1-1. Coordinate with neighboring local governments to promote use of transit, carpooling, and car-sharing.	C	Mi
ULT-1-2. Work with RVTD to implement climate-friendly transit.	C	Mi
ULT-1-3. Establish policies to support development near transit hubs without displacing disadvantaged populations.	C	Mi
ULT-1-4. Evaluate feasibility of expanded local transit options.	C	Mi
Strategy ULT-2. Make Ashland more bike- and pedestrian-friendly.		
ULT-2-1. Implement bicycle- and pedestrian-friendly actions in the Transportation System Plan and Downtown Parking Management	C	Mi
ULT-2-2. Explore opportunities to convert to shared streets where appropriate to provide multimodal connectivity.	C	Mi
Strategy ULT-3. Support more-efficient vehicles.		
ULT-3-1. Implement a local fuel-related tax.	C	Mi
ULT-3-2. Revise land use codes to require EV charging infrastructure at multifamily and commercial developments.	C	Mi
ULT-3-3. Provide information about electric and hybrid vehicles and incentive programs on the City's website.	C	Mi
Strategy ULT-4. Support more climate-ready development and land use.		
ULT-4-1. Consider regulating construction or expansion in the Wildland Urban Interface (WUI) part of the urban growth boundary.	C	Ad
ULT-4-2. Revise community development plans to favor walkable neighborhoods and infill density.	C	Mi
ULT-4-3. Modify the WUI code to include construction techniques appropriate for wildfire-prone areas.	C	Ad
Strategy ULT-5. Increase the efficiency of City fleet vehicles and employee commuting.		
ULT-5-1. Provide carpool and vanpool parking, charging stations, and parking for EVs for City employees.	M	Mi
ULT-5-2. Conduct a city fleet audit and use it to set policy and targets.	M	Mi
ULT-5-3. Purchase verified carbon offsets to offset City staff travel.	M	Mi

#### CONSUMPTION + MATERIALS MANAGEMENT

Strategy CM-1. Reduce consumption of carbon-intensive goods and services.		
CM-1-1. Implement an education campaign for waste and consumption reduction strategies.	C	Mi
CM-1-2. Support "collaborative consumption" community projects.	C	Mi
CM-1-3. Conduct a study to determine effective ways to reduce and track consumption-based emissions.	C	Mi
Strategy CM-2. Support sustainable and accessible local production and consumption.		
CM-2-1. Partner with nonprofit organizations to promote the purchase of climate-friendly produce and products.	C	Mi
CM-2-2. Expand community gardening and urban agriculture at community gardens, schools, parks, and rooftops.	C	Mi/Ad
Strategy CM-3. Expand community recycling and composting.		
CM-3-1. Improve recycling programs, implement new education and outreach, and expand public space recycling.	C	Mi
CM-3-2. Update the multi-family recycling ordinance to encourage more diversion.	C	Mi
CM-3-3. Strengthen the Demolition Debris and Diversion ordinance to enhance enforcement, diversion, and reuse.	C	Mi
Strategy CM-4. Reduce food waste.		
CM-4-1. Support edible food donation.	C	Mi/Ad
CM-4-2. Provide a best practices guide to help households and businesses reduce food waste and consumption.	C	Mi/Ad
CM-4-3. Facilitate recycling of commercial food waste.	C	Mi/Ad
Strategy CM-5. Improve the sustainability of City operations and purchases.		
CM-5-1. Introduce City environmentally preferable purchasing (EPP) guidelines for City procurement.	M	Mi
CM-5-2. Assess the feasibility of co-digesting food waste and biosolids at the wastewater treatment facility.	M	Mi

## NATURAL SYSTEMS

<b>Strategy NS-1. Promote ecosystem resilience.</b>		
<b>NS-1-1.</b> Manage forests to retain biodiversity, resilience, and ecosystem function and services in the face of climate change. Use best available science to inform fire management and planning.	C	Ad
<b>NS-1-2.</b> Use green infrastructure such as bioswales, permeable pavement, other pervious surfaces to reduce flood risk and minimize sediment entry into creeks from trails and roads.	C	Ad
<b>NS-1-3.</b> Undertake restoration efforts to retain and restore native fish and riparian species.	C	Ad
<b>NS-1-4.</b> Map and protect areas that provide ecosystem services.	C	Ad
<b>Strategy NS-2. Manage and conserve community water resources.</b>		
<b>NS-2-1.</b> Evaluate incentives for practices that reduce use of potable water for nonpotable purposes and recharge ground water.	C	Mi/Ad
<b>NS-2-2.</b> Explore water-efficient technologies on irrigation systems and consider requiring them during permitting.	C	Mi/Ad
<b>NS-2-3.</b> Expand water conservation outreach and incentive programs for residents and businesses.	C	Mi/Ad
<b>Strategy NS-3. Conserve water use within City operations.</b>		
<b>NS-3-1.</b> Evaluate the potential for installation of rainwater collection systems at City facilities for graywater uses, and investigate opportunities for graywater reuse at existing and new City facilities and properties.	M	Mi/Ad
<b>NS-3-2.</b> Implement efficiency recommendations from the City facilities water audit.	M	Mi/Ad

## PUBLIC HEALTH, SAFETY + WELL-BEING

<b>Strategy PHSW-1. Manage ecosystems and landscapes to minimize climate-related health impacts.</b>		
<b>PHSW-1-1.</b> Promote the expansion of tree canopy in urban heat islands or areas that need air conditioning.	C	Ad
<b>Strategy PHSW-2. Promote a sustainable local economy that minimizes emissions and vulnerability.</b>		
<b>PHSW-2-1.</b> Engage leading employers in a dialogue on climate action.	C	Mi/Ad
<b>PHSW-2-2.</b> Support organizations, such as SOU, in evaluating risks to local food sources under climate change.	C	Ad
<b>Strategy PHSW-3. Minimize public health impacts.</b>		
<b>PHSW-3-1.</b> Work with vulnerable populations to create specific adaptation strategies that address public health.	C	Ad
<b>PHSW-3-2.</b> Identify and minimize potential urban heat impacts.	C	Ad
<b>PHSW-3-3.</b> Develop or enhance heat-warning systems for employees and the public.	C	Ad
<b>Strategy PHSW-4. Minimize public safety impacts.</b>		
<b>PHSW-4-1.</b> Update the City's emergency response plan and ensure that preparation and updates recognize and address likely climate change impacts.	C	Ad
<b>PHSW-4-2.</b> Identify and address populations and essential City services within the 100-year flood zone.	M	Ad

## CROSS-CUTTING STRATEGIES

<b>Strategy CC-1. Educate and empower the public.</b>		
<b>CC-1-1.</b> Create a formal public outreach and education plan to inform the community about climate actions.	C	Mi/Ad
<b>CC-1-2.</b> Support capacity of community groups to implement climate mitigation and adaptation initiatives.	C	Mi/Ad
<b>CC-1-3.</b> Assess the feasibility of a City-sponsored carbon offset program.	C	Mi/Ad
<b>Strategy CC-2. Educate and empower City staff.</b>		
<b>CC-2-1.</b> Ensure all City departments educate their staff members about the Climate and Energy Action Plan.	M	Mi/Ad
<b>Strategy CC-3. Mainstream and integrate climate considerations.</b>		
<b>CC-3-1.</b> Consider climate change in all City Council policy, budgetary, or legislative decisions and as part of the Council Communication document template.	M	Mi/Ad
<b>CC-3-2.</b> Consider CEAP goals in future updates of city plans.	M	Mi/Ad
<b>CC-3-3.</b> Expand mission statements of existing City Commissions to include consideration and perpetuation of climate action goals.	M	Mi/Ad
<b>Strategy CC-4. Engage with other governments and organizations around regional, statewide, national, and international climate policy and action.</b>		
<b>CC-4-1.</b> Engage with other governments and organizations around climate policy and action.	M	Mi/Ad

SCOPE OF IMPACT		TYPE OF IMPACT		
<b>KEY</b>	C	affects <b>community-wide</b> operations + climate goals.	Mi	addresses <b>mitigation</b> goals (lowers GHG emissions).
	M	affects <b>municipal</b> operations + climate goals.	Ad	addresses <b>adaptation</b> goals (builds resilience to climate impacts).
			Mi/Ad	addresses <b>both mitigation + adaptation</b> goals.





# BUILDINGS & ENERGY



# Buildings & Energy

While many people think of greenhouse gas emissions, they picture cars and trucks; however, commercial, residential, and industrial buildings are some of the largest energy users—and thus responsible for a large portion of greenhouse gas emissions. Ashland’s built environment accounts for more than one-quarter (27%) of the city’s total emissions, more than all types of transportation combined. This represents a significant opportunity to reduce emissions and help Ashland meet its reduction targets. On the plus side, because building emissions are primarily due to energy used for electricity, heating, and cooling, energy efficiency measures can dramatically reduce building emissions. Installing efficient lighting, heating, ventilation, and air conditioning (HVAC) systems, windows and insulation, and other upgrades can significantly reduce the amount of energy a building requires.

Because most buildings’ energy use Ashland is predominantly in the form of electricity, changes in the fuel mix used to generate electricity—for example, by replacing a coal-fired power plant with wind turbines—reduce the GHG emissions footprints of all buildings that draw electricity from the grid. These factors, among others, contributed to a reduction of 21% in overall emissions from Ashland’s built environment from 2011 to 2015. The impact of energy efficiency improvements

was especially pronounced among residential homes, which saw a 9% decrease in electricity demand over the same period.

Climate change will have complicated effects on Ashland’s built environment. On one hand, warmer winters will mean buildings require less energy to heat, which will cause natural gas use to decline. The number of heating degree days—a measure of the number of degrees that a day’s average temperature is below 65°F, commonly used to describe heating energy demand in buildings—decreased by 20% between 2011 and 2015, contributing to a 13% drop in natural gas use. Conversely, reduced snowpack due to climate change may affect regional hydropower capacity, and increased temperatures will increase energy demand for cooling during the dry summer months. The projected increase in wildfire frequency and severity may also put transmission lines at risk, making electricity less reliable in the region.



## Progress to Date

Ashland’s commercial, residential, and industrial building energy use declined 21% from 2011 to 2015. These changes were due largely to increased renewable electricity in the regional grid, decreased electricity use in the residential sector, and reduced natural gas use from warmer winters.

Ashland owns its own electric utility, which means that the City has greater control over its electricity rates and programs compared to other cities. This arrangement has contributed to the City’s progress in supporting community renewable energy and improving building systems efficiency. The City has implemented three successful programs focused on expanding renewable energy sources and improving the energy efficiency of existing residential, commercial, and government buildings:

- A **retro-commissioning incentive program** provides financial and technical assistance to tune up energy systems in commercial and residential buildings. This program offers incentives to building owners and occupants to upgrade or replace building systems—including lighting, HVAC, heating—with newer and more efficient equipment.
- **Solar Pioneer II**, a 63.5-kilowatt City-sponsored community solar project, gives citizens the opportunity to “adopt” one of its 363 panels as a way to purchase local renewable energy.
- A **City Facilities Energy Audit** identified energy efficiency opportunities at the City’s own facilities.

## Goals and Indicators

### Goals

- Reduce greenhouse gas emissions associated with Ashland’s building energy use.
- Increase energy and water efficiency in City and private buildings.
- Protect Ashland’s building stock and energy supply from climate impacts.

### Potential Indicators

- Commercial and residential building energy use and associated emissions.
- Local renewable energy production.
- Energy and water use per unit building area.
- Proportion of buildings that use heat-resistant materials, passive buildings, and/or white roofs.

### Strategies and Actions

#### Strategy BE-1. Support cleaner energy sources.

Efforts to support cleaner energy sources will minimize harmful pollution associated with energy use and help meet the additional energy needs as climate change causes temperatures to rise. This strategy deals with enhancing the use of cleaner fuels through fuel-switching in residential and commercial buildings and renewable energy production and generation.

#### PRIORITY ACTIONS

##### **C** **Mi** BE-1-1. Develop a comprehensive plan for the Municipal Electric Utility.

The transition to low-carbon energy such as renewables will require taking a broad-level approach that transcends traditional utility boundaries. Although some aspects would not fall under the traditional purview of the utility, a comprehensive energy plan for the Municipal Electric Utility that addresses clean energy, energy efficiency, and electrification of the transportation sector will provide a more strategic path forward for maximizing societal benefits and achieving climate goals. This plan would set targets, address policy and service issues, and identify potential solutions related to comprehensive energy planning. For example, the plan could delineate energy rate structures and efficiency/conservation program funding levels, targets for installation of solar photovoltaics within the City's distribution grid, a long-term strategy for wholesale power acquisition, and demand management. The recently adopted 10% new, local, and clean energy by 2020 ordinance is a key policy decision that would play a large role in development and shaping of this plan.

##### **C** **Mi** BE-1-2. Promote switching to lower-carbon fuels.

With relatively clean electricity sources, Ashland has great potential to reduce GHG emissions through switching from higher-carbon fuels such as wood burning, natural gas, and gasoline to lower-carbon electricity. This action calls for the City to work across departments in a coordinated and strategic manner to identify ways to promote this kind of fuel switching in the community.

##### **C** **Mi** **Ad** BE-1-3. Facilitate and encourage solar energy production.

Local generation of renewable energy can offset emissions associated with energy consumption from the electric grid, and in some cases, may also mitigate climate-related risks to the hydropower electricity supply due to snowpack declines and increased drought risk. This action calls for the City to support increased solar energy production in Ashland, such as through the installation of a large-scale community solar project or rooftop solar panels on buildings in the community. It is worth noting that City-sponsored community solar has faced cost challenges in the past, so this action would need to address potential financial hurdles, like finding a nongovernmental organization or institution to sponsor the project or by developing new models and policies to facilitate community interest and investment, such as virtual net metering and solar production aggregation. The new Oregon Renewable Energy Cooperative Law will facilitate this process, allowing renewable energy cooperative corporations to be created and capitalized without the requirement of securities registration. It will also be important to ensure that new renewable energy installations do not negatively impact natural habitats or ecosystems.

M

## BE-1-4. Enhance production of on-site solar energy from City facilities.

Mi  
Ad

Enhancement of solar energy production capacity at City facilities would reduce electricity demand from the grid, set an example for the Ashland community, and provide reliable power for both the City operations and broader community.

### OTHER ACTIONS

- Establish a solar recognition program for neighborhoods or populations who support renewables, such as for those who meet a certain percentage of electricity needs through renewable energy.
- Coordinate with Oregon cities to promote and reinforce standards around renewable energy, such as higher renewable portfolio standards and requirements for new construction.
- Develop promotional materials that encourage solar investments.

## Solar Pioneer I and II

From 2000 to 2002, the City of Ashland, in collaboration with the Bonneville Environmental Foundation, implemented the Solar Pioneer I project, involving installing photovoltaic arrays totaling 30 kilowatts (kW) at the Civic Center, Oregon Shakespeare Festival, and Southern Oregon University. The project was funded in part by voluntary contributions from more than 260 ratepayers, who paid small surcharges on their utility bills to support the project. In addition to bringing renewable energy to the city, the program aimed to inform Ashland residents about solar energy.

Building on the success of the first round of the program, Ashland launched Solar Pioneer II in 2007, which used the same community funding mechanism to finance a 63.4-kW photovoltaic system on the City service center.



### Strategy BE-2. Encourage increased building energy efficiency and conservation.

In addition to changing the energy source, cutting energy use within buildings presents another opportunity to reduce emissions. This strategy presents actions to reduce energy consumption through efficiency improvements in the commercial and residential sectors.

#### PRIORITY ACTIONS



BE-2-1. Increase outreach efforts to expand participation in energy efficiency programs and promote climate-friendly practices in building and construction.

Ashland currently provides energy conservation incentives and educational materials to residents and businesses through its electric energy efficiency programs. The program currently provides guidance for conducting home energy audits, as well as incentives for weatherization, improved heating and cooling, and more efficient appliances. Expanded outreach efforts will ensure that all Ashland residents are aware of these valuable programs and understand actions they can take to be more energy efficient in the home. For example, the City could discuss with businesses ways to reduce conduct a comprehensive energy audit. The City could also explore other ways to promote climate-friendly buildings, such as through introducing new mandates into the land use code that require mitigation (e.g., reduced energy use) and/or adaptation (e.g., increased cooling) elements in the built environment.



BE-2-2. Require building energy audits to identify and incentivize cost-effective energy efficiency improvements.

Energy used in Ashland's building stock accounts for more than one-quarter of the city's greenhouse gas emissions. The City could require and facilitate energy audits and/or scores for Ashland's buildings, perhaps triggered at the point of sale or permitting phase for new development or major remodels. For example, the City of Portland requires commercial buildings over a certain size threshold to annually report their energy use. The City also recently proposed a policy that would require sellers of single-family homes to obtain a home energy performance report and disclose the report to the City and prospective home buyers. The audits could educate property managers about energy use and opportunities, help the City understand building energy use, and facilitate implementation of energy-saving measures.



BE-2-3. Identify and adopt strategies to reduce energy efficiency barriers in rent/lease properties.

Residents and businesses who own their properties often have stronger incentives to invest in energy efficiency technologies and equipment than those who rent or lease their homes and offices. Although more difficult to motivate, the introduction of energy efficiency approaches in rental and lease properties presents a significant opportunity for reducing emissions from buildings.

C

Mi  
Ad

BE-2-4. Establish minimum energy efficiency standards for the affordable housing program.

Ashland's Affordable Housing Program is an ongoing program that provides incentives to promote affordable housing development and requirements for affordability. The establishment of minimum energy efficiency standards for these housing units present a valuable opportunity to make homes more comfortable and energy efficient for residents, while also lowering energy bills and supporting those most in need.

## OTHER ACTIONS

- Launch a program for providing home energy scores when a house is listed for sale.
- Coordinate with other cities to establish and implement more energy-efficient building code standards.
- Restart the energy and green business challenges.
- Expand partnership with the school district to support energy efficiency programs and solar installation.
- Enhance retailer, contractor, and building professional training and awareness of best practices and rebates.
- Implement a program to pay for actual energy savings instead of upfront payments for modeled savings.
- Explore opportunities to encourage increased shading of homes and other buildings, such as through increased tree canopy cover or design features.



### Strategy BE-3. Maximize efficiency of City facilities, equipment & operations.

Although City buildings contribute only a small proportion of the city's overall emissions, efficiency improvements to City facilities can allow the City to lead by example and communicate to residents that energy-efficient buildings can be beautiful, affordable, and comfortable. This strategy aims to reduce emissions associated with the City's built environment and promote energy conservation.

#### PRIORITY ACTION

**M** BE-3-1. Use results from City Facilities Energy Audit to prioritize City Facilities Capital Improvement Plans (CIPS) and maintenance improvements.

**Mi** City facilities frequently undergo routine maintenance and improvement projects. This action calls for using an evaluation of City facilities to identify opportunities for energy (and water) efficiency upgrades. The evaluation could be used to integrate more energy-efficient practices and equipment into City maintenance schedules and prioritize efficiency upgrades within capital improvement plans (CIPs).

#### OTHER ACTIONS

- Continue to monitor and adjust load-shifting measures at the wastewater treatment facility.
- Pursue Leadership in Energy and Environmental Design (LEED) or ENERGY STAR certification for existing and new City buildings. Adopt the LEED for Existing Buildings (LEED-EB) rating system or equivalent to guide operation, management, and upgrade of the City's existing building inventory.

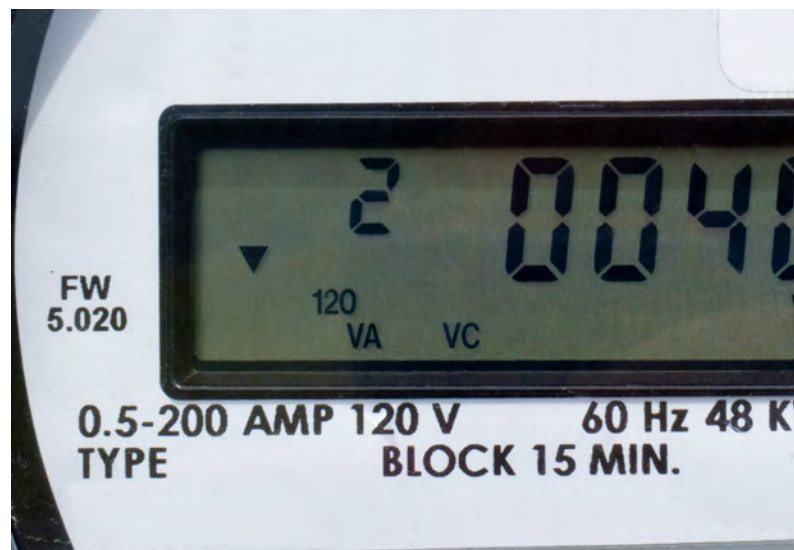
### Strategy BE-4. Improve demand management.

Managing the timing and intensity of energy demand can help make sure that more polluting forms of energy are not needed during peak times of high demand.

#### PRIORITY ACTIONS

**C** BE-4-1. Expand the current net meter resolution to include and incorporate virtual net metering.

**Mi** Net metering allows customers who generate their own electricity to sell the excess electricity back into the grid. Traditional net metering works at the level of the individual electricity meter, where excess energy supplied to the grid results in running the meter backwards. Virtual net metering, on the other hand, credits energy generation that occurs at another location against one's electricity bill. Working outside the utility meter enables residents to experience the financial benefits of generating renewable energy even if they are unable to generate the electricity on their own property. Expanding current net metering will make energy generation more cost-effective and available to Ashland's residents, including through such mechanisms as community solar.



**C** BE-4-2. Implement utility-level smart grid technologies to facilitate efficiency and distributed energy solutions, such as storage.

**Mi**

Implementing new energy solutions requires bringing the electricity delivery systems, or the “grid,” into the 21st century. Updating the grid involves enabling automation, remote control, and two-way communication. These updates help the grid to handle sources of electricity like wind and solar power and to integrate electric vehicles. Smart grids also collect data and allow residents to better understand their energy use and identify energy-saving opportunities. Implementing smart grid technologies will enable the adoption of clean energy solutions, and complementary strategies promoting renewable energy, electric vehicles, and energy efficiency will help realize the environmental benefits of the smart technologies.

**Strategy BE-5.** Prepare and adapt buildings for a changing climate.

The City can promote actions that help adapt buildings to withstand climate impacts such as extreme heat and wildfire, as well as protect building dwellers and visitors through improved design and functionality.

**PRIORITY ACTIONS**

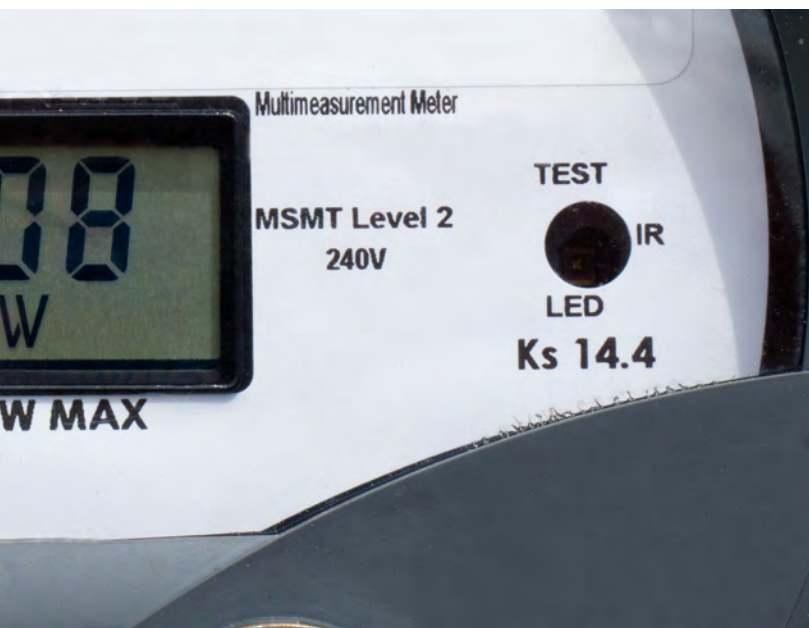
**C** BE-5-1. Encourage heat-tolerant building approaches such as cool roofs and passive cooling.

**Ad**

Buildings play a role in both withstanding climate change impacts as well as providing infrastructure to protect people from impacts. Buildings will be subject to potential increased flooding, extreme temperatures, and exposure to wildfires. At the same time, buildings can also shelter inhabitants and visitors from many of these impacts. To optimize the built environment to address climate change, the City can encourage heat-tolerant building approaches, such as cool roofs that block heat and passive cooling features such as improved air circulation designs. There are many venues available to encourage the public and developers to adopt these building approaches, including through education and incentive programs.

**OTHER ACTIONS**

- Consider future climate conditions when designing or upgrading City buildings and incorporate resilience-building elements such as heat-resistant materials, passive cooling, and white roofs.
- Enhance resiliency of building energy to fluctuations in energy markets and supply.



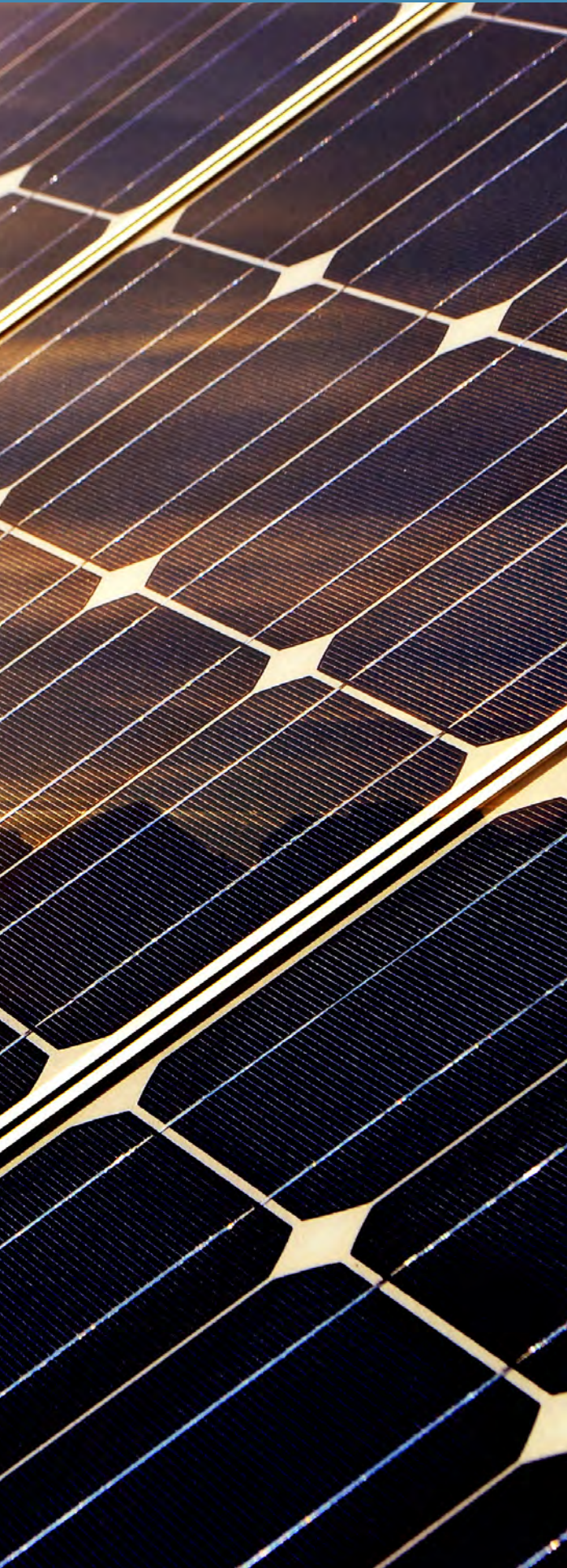




### Southern Oregon University

Southern Oregon University (SOU) has used its position as one of Ashland’s leading institutions to advance sustainability programs, both on campus and by serving as a hub to connect with and support the community. SOU’s ongoing sustainability efforts include implementing energy efficiency and solar power projects, reducing waste, and conducting greenhouse gas inventories to assess its progress in reducing emissions. SOU was one of the first universities in the country to offset 100% of its energy and water use, with on-site renewable energy generation, carbon offset credits, and Water Restoration Certificates. The university also worked closely with Bee City USA—an organization that honors cities for their commitment to supporting pollinators—to create Bee Campus USA, an offshoot designation that recognizes pollinator-friendly campuses.





## The Role of the Community

Here are some actions that everyday Ashland residents and organizations can take to make a difference in addressing climate change within our buildings and energy systems:

### Make your home or business **energy- and water-efficient.**

Simple improvements can make a big difference for energy and water use. Weatherization, equipment upgrades, and basic behavior changes can also make your space more comfortable and lower utility bills.

### Explore participation in **renewable energy** programs.

Community solar programs provide opportunities for residents to participate in renewable energy programs without needing to install solar panels on their own roofs. There are increasing options for residents to participate in these programs, including the development of a new statewide community solar program that will soon be available to all Oregon residents.

### **Think small** before you rent or buy.

Consider what size home or business you need, and consider downsizing to avoid having to spend more on energy.





# URBAN FORM, LAND USE & TRANSPORTATION

# Urban Form, Land Use & Transportation

The movement of goods and services is central to Ashland's economy and community—and one of the largest GHG-emitting sectors. Emissions from the transportation sector made up nearly one-quarter (23%) of the city's total emissions in 2015. Residential on-road vehicle use accounts for nearly three-quarters of the sector's emissions, followed by residential air travel. While emissions from buildings have decreased markedly since 2011, transportation emissions have seen no significant change. This speaks to the challenge of reducing emissions from vehicles, the vast majority of which burn fossil fuels and, unlike buildings, are difficult to retrofit in ways that improve their efficiency or reduce GHG emissions.

While electric vehicles are becoming more available and affordable, near-term progress on reducing Ashland's transportation-related emissions can focus on reducing reliance on personal vehicles by improving public transit access and convenience, and by improving urban design to support higher densities while keeping housing affordable. Also worth noting are potential climate-driven impacts on alternative forms of transportation. With increased temperatures and wildfire-induced smoke, biking and walking may become more hazardous and thus increase reliance on vehicles. Addressing challenges like these is crucial to improving the resilience and reducing the greenhouse gas emissions footprint of Ashland's transportation.

Climate change also puts Ashland's infrastructure at greater risk of damage or destruction. More frequent and severe wildfires and floods may threaten roads, bridges, and real estate, and hotter summers may increase the rate of deterioration of some building materials. Culverts and road crossings may not be sized

to withstand increased flooding, and roads bordering rivers and streams may be at risk of inundation. The City, its residents, and private property owners will need to work together to reduce the risks that extreme weather events pose to Ashland's infrastructure.

## Progress to Date

Ashland has made strides in incorporating climate and sustainability priorities into its land-use policies. Many of Ashland's existing plans and standards address activities that contribute toward emissions from the transportation sector, including the Transportation System Plan, local land use code, and Comprehensive Plan. Some examples of climate-friendly actions and requirements in these plans are:

- Street standards and street classifications in the **Transportation System Plan** promote shared streets that incorporate infrastructure for people walking, biking, and riding mass transit.
- The City's **Comprehensive Plan** and street standards highlight connectivity as a requirement in new development.
- The City's **land use code** has a "Pedestrian Places" component, which encourages the creation of walkable mixed-use areas that "encourage walking, bicycling, and transit use."

## Goals and Indicators

### Goals

- Reduce community and City employee vehicle miles traveled and greenhouse gas emissions.
- Improve vehicle efficiency and expand low-carbon transport, including within the City's fleet.
- Support local and regional sustainable growth.
- Protect transportation infrastructure from climate impacts.

### Potential Indicators

- Transportation emissions.
- Community vehicle miles traveled.
- Emissions per mile traveled.
- Average city "Walk Score."
- Transit and bicycling ridership.

## Strategies and Actions

### Strategy ULT-1. Support better public transit and ridesharing.

Rogue Valley Transportation District (RVTD) provides Ashland's primary public transit service for visitors and residents. RVTD provides intercity and regional public transit within Jackson County, serving the city of Ashland as well as Talent, Phoenix, and Medford with fixed-route bus and dial-a-ride paratransit service.

Residents have voiced a desire for expanded public transit options, including more frequent and accessible downtown bus service, cleaner-fueled public transit vehicles (e.g., electric buses), and other public transit systems such as shuttles or trolleys. These options can reduce per-person emissions associated with residential on-road transportation, as well as reduce congestion, save fuel costs, and provide transportation options for those who cannot afford or choose not to own a personal vehicle.

### PRIORITY ACTIONS



ULT-1-1. Coordinate with neighboring local governments to promote use of transit, carpooling, and car-sharing.

Ashland is already a member of the Rogue Valley Transportation District (RVTD), which provides shared bus service to cities throughout the greater Jackson County area. Currently, RVTD is examining a Bus Rapid Transit (BRT) line in their 2040 Transit Master Plan. Using RVTD as a model, the City together with nearby jurisdictions, can support, promote, and potentially provide additional service offerings, such as carpooling and car-share programs, that expand transportation options within each community and strengthen important connections to other areas in the Rogue Valley.

**C**  
**Mi** ULT-1-2. Work with RVTD to implement climate-friendly transit, including continuing to move towards more efficient buses and expanded ridership.

The City and neighboring jurisdictions in the RVTD already have a longstanding and successful partnership that has brought public transit to residents throughout the area. Recently, RVTD introduced the One Bus Away app, allowing riders to view schedule and arrival information in real time. In 2016, RVTD also began piloting an electronic fare called TouchPass that allows riders to purchase card passes that can be reloaded from a computer or mobile device. This action calls on Ashland to use its position as a partner in the RVTD to continue to improve the convenience, sustainability, and accessibility of its services.

**C**  
**Mi** ULT-1-3. Establish policies to support development near transit hubs without displacing disadvantaged populations.

Transit-oriented development (TOD) increases housing density within walking distance of transit hubs. Creating a TOD zoning overlay or similar policy could reduce car use, but Ashland will need to design any policy carefully to avoid unintended consequences, such as gentrification that threatens housing affordability and could displace vulnerable populations.

**M**  
**Mi** ULT-1-4. Evaluate the feasibility of expanded local transit options.

Rogue Valley Transportation District currently offers the only bus service in Ashland, and service and routes are limited. This action calls on the City to evaluate options for additional intra-city service to augment existing RVTD service and provide more public transit options to residents. This assessment would involve determining potential transit providers, assessing demand, identifying possible routes, and estimating costs and funding sources for purchasing and operating a transit fleet.

### OTHER ACTIONS

- Provide additional park-and-ride lots to promote public transit and reduce downtown congestion.

### Strategy ULT-2. Make Ashland more bike- and pedestrian-friendly.

On-road transportation generates nearly one-fifth of Ashland’s total emissions. It is difficult to substantially improve the efficiency of existing cars and trucks, so one of the most feasible methods of reducing emissions from them is to make other forms of transportation more desirable. A city that supports people walking and biking not only reduces the need for residents to drive but also offers the public health co-benefit of encouraging exercise.

#### PRIORITY ACTIONS

**C** ULT-2-1. Implement bicycle- and pedestrian-friendly actions in the City's Transportation System Plan and Downtown Parking Management Plan.

**Mi**

For bicycling to be considered a viable alternative to driving, the City will need to invest in infrastructure to improve its safety and convenience. For example, the City could encourage installing bike lanes at schools and arteries connecting to schools, or provide dedicated bicycle infrastructure downtown or at area hotels. The City should commit to implementing bicycle-related actions in the Transportation System Plan and Downtown Parking Management Plan, such as 1) installation of bike intersection safety improvements; 2) increased bike lane infrastructure; and 3) expansion of on- and off-street bike racks, shelters, and sharing.

**M** ULT-2-2. Explore opportunities to convert to shared streets where appropriate to provide multimodal connectivity.

**Mi**

Shared streets are popular because they offer improvements for people walking and biking while preserving vehicle access. This action will spur Ashland to assess which streets or corridors may make sense to convert to shared streets due to their current use, potential future use, location, or other considerations.

#### OTHER ACTIONS

- Provide incentives for employer-sponsored bicycle programs, including for City employees.
- Conduct a community survey to understand barriers to biking.
- Implement projects that reallocate a portion of the right-of-way to spaces that are friendly to people walking, such as installation of parklets where appropriate.
- Further evaluate options for reducing vehicle use downtown in future updates of the transportation system plan.



### Strategy ULT-3. Support more-efficient vehicles.

With on-road vehicle use responsible for nearly 20% of Ashland's overall emissions, improving the overall efficiency of the cars and trucks use throughout the city could have a significant impact on meeting greenhouse gas reduction goals. While most vehicles already on the road are likely not cost-effective to retrofit, the City can make progress by focusing on providing education, incentives, and support for hybrids, electric vehicles (EVs), and other cleaner-fueled vehicles.

#### PRIORITY ACTIONS

##### **C** ULT-3-1. Implement a local fuel-related tax.

**Mi** Having a sense of the baseline use of fossil fuels for transportation can help Ashland shape the most effective fuel-switching policies and incentives possible. A local gas tax or a carbon tax on gasoline and diesel would serve as an indicator of fuel demand, while also providing the City with funds that could be used to improve transportation infrastructure, expand public transit options, or invest in other actions. A gas tax would also encourage drivers to change their behavior to reduce their use of fossil fuels.

##### **C** ULT-3-2. Revise land use codes to require EV charging infrastructure at multifamily and commercial developments.

**Mi** Lack of charging infrastructure is a barrier to expanded use of electric vehicles. Additionally, residents in multifamily buildings typically have little say in whether their buildings offer the charging equipment necessary to support electric vehicle use. Requiring new multifamily and commercial developments to provide charging stations will make electric vehicle use possible and practical for a larger segment of Ashland's population by giving them the ability to charge their vehicles near where they live, work, and shop.

##### **C** ULT-3-3. Develop and provide information about electric and hybrid vehicles and incentive programs on the City website.

**Mi** The technology and market for hybrids and EVs can be difficult for consumers to decipher. Educating the public on these vehicles—and the rebates and incentives available for them—is an easy and low-cost early step that can make the process of choosing and purchasing one of these vehicles more straightforward. The City could also explore opportunities to work with organizations like Drive Oregon to organize promotional events and with dealerships to increase availability of electric vehicles.

#### OTHER ACTIONS

- Expand and increase enforcement of anti-idling policy.
- Initiate a partnership with Tesla to install a supercharging EV station in Ashland.
- Designate a portion of downtown parking spaces for EVs.
- Promote low-carbon fuels and technologies in taxicabs and for-hire vehicles.

### Strategy ULT-4. Support more climate-ready development and land use.

Ashland’s population is growing, and with a larger population comes new development. Updating zoning requirements and land-use policies can shape new development to be as climate-resilient as possible.

#### PRIORITY ACTIONS

**C**  
**Ad** ULT-4-1. Consider regulating further construction or expansion in the Wildland Urban Interface (WUI) part of the urban growth boundary.

The WUI zone includes areas on the fringe of Ashland where homes and buildings are in close proximity with undeveloped lands. Evidence from other cities indicates that wildfires are most deadly and destructive when they burn into denser neighborhoods on the outskirts of town. Expanding the WUI and/or limiting construction can limit the density of these areas, reducing the risk of severe damage as the frequency and intensity of wildfires increase.

**C**  
**Mi** ULT-4-2. Revise community development plans to favor walkable neighborhoods and infill density.

Ashland has a series of long-range planning documents that guide development across Ashland districts, neighborhoods, and natural areas. Revisiting these plans to ensure that they support climate-ready development needs, such as walking, biking, transit, parking management, and climate adaptation features, will ensure that Ashland development is consistent with the City’s climate goals and commitments. It will be important to ensure that

these activities do not come at the expense of higher housing costs, which could disadvantage low-income populations.

**C**  
**Ad** ULT-4-3. Modify the WUI code to include construction techniques appropriate for wildfire-prone areas.

Ashland’s WUI zones are the most wildfire-threatened parts of the city, and the risk of wildfires affecting these areas will only increase as climate change increases the frequency and severity of fires. Modifying the WUI code to require more resilient construction techniques can minimize the risk that new structures built in the WUI are damaged or destroyed by fire.

#### OTHER ACTIONS

- Require, through a Brush Ordinance, property construction and maintenance for “defensible space.”
- Consider regulating further construction or expansion in the WUI part of the urban growth boundary (UGB).
- Evaluate future climate impacts on transportation infrastructure and operations, including critical needs for emergency response, goods and services movement, and community access.
- Change zoning to minimize development in high flood-risk areas.

### Strategy ULT-5. Increase the efficiency of City fleet vehicles and employee commuting.

To move Ashland toward a future of low-carbon transportation, the City should lead by example. While the City's own emissions are relatively small compared to personal and commercial vehicle use, there is an opportunity to make internal improvements that demonstrate its commitment to supporting efficient vehicles, alternative fuel sources, and public/shared transportation.

#### PRIORITY ACTIONS

**M**  
**Mi** ULT-5-1. Provide carpool and vanpool parking, charging stations, and parking for EVs for City employees.

Supporting multiple commute options for City employees is an important step on the path to reducing the use of fossil fuels for transportation, one of Ashland's biggest sources of greenhouse gas emissions. Encouraging the use of ridesharing, vanpooling, and alternative fuel vehicle use among City staff will set an example for private citizens and serve as tangible evidence of the City's commitment to sustainability. Furthermore, some of this infrastructure—EV charging stations, for example—can be opened to the public, increasing its positive impact. The City could also pursue new policies and programs for encouraging City employees to drive less for their daily commute.

**M**  
**Mi** ULT-5-2. Conduct a city fleet audit and use it to set policy and targets for higher-efficiency vehicles, vehicle-sharing across departments, and out-of-town vehicle use.

Conducting an audit of the City's vehicles is a straightforward and low-cost action that sets the stage for policies to govern the fuel efficiency of the fleet and/or mandate a transition to alternative fuel vehicles over time.

**M**  
**Mi** ULT-5-3. Develop policy to require the purchase of verified carbon offsets to offset City staff travel.

Ashland has no control over the policies, fuel sources, and infrastructure of jurisdictions beyond the city limits. Purchasing carbon offsets is a straightforward action that allows the City to extend its commitment to reducing its emissions to staff who travel for work reasons. Furthermore, if the City's offset payments are invested in local projects, they can provide a wide range of co-benefits to the local community.

#### OTHER ACTIONS

- Improve biking amenities at City facilities such as showers, lockers, and covered/secured bike parking.
- Take advantage of potential opportunities under the new state clean fuels program.
- Increase incentives for sustainable City employee commuting such as through competitions or cost shares.



## Rogue Valley Transportation District

The Rogue Valley Transportation District pools resources and shares service across a number of cities in the greater Jackson County area, while keeping costs down by taking advantage of economies of scale. The RVT currently operates seven routes that provide vital intercity public transit connections that enable car-free travel throughout the Rogue Valley, reducing the need for Ashland residents to own cars and providing greater mobility for children, students, the elderly, and others who may not be able to or want to drive.

In addition to providing standard bus service, the RVT operates a paratransit service that is available to senior citizens, people with disabilities, or others who are unable to use the standard bus service. In 2016, Jackson County voters approved a levy that restored Saturday and evening services, as well as expanded service to southwest Medford, Rogue Regional Medical Center, and the Rogue Community College Table Rock Campus.



## The Role of the Community

Here are some actions that everyday Ashland residents and organizations can take to make a difference in addressing climate change.

Take a **walk**, ride a **bike**, or take **public transit**.

Leaving your personal vehicle behind when commuting or running errands can make a big difference for your carbon footprint and can also be a healthy and enjoyable alternative to driving.

Purchase a **fuel-efficient** vehicle.

When purchasing your next personal vehicle, consider more efficient alternatives such as hybrid or electric vehicles.





# CONSUMPTION & MATERIALS MANAGEMENT

# Consumption & Materials Management

Upstream emissions from the production and transportation of food and goods account for 48% of Ashland’s total emissions—more than any other sector.

A large portion of food emissions are from the production of meat, and household goods emissions are largely from home construction, furniture, clothing, and vehicle purchases. Because Ashland’s industrial sector is small and there is no significant agriculture within city limits, the Ashland community relies almost entirely on imported goods, food, and energy products to meet its needs. Encouraging greater local food production would have emissions reduction benefits while simultaneously improving food security and availability for Ashland’s residents. Climate change may disrupt global supply chains and thereby affect the cost of household goods and services that local residents and businesses rely on. While these emissions are large, they are “indirect” emissions that are not under the same level of community control as the local, sector-based emissions. While Ashland might change local development codes to address building energy, there is no similar ability to influence production efficiencies for imported goods and services. Therefore, Ashland’s potential actions related to consumption and materials management mostly center on influencing consumption behavior and supporting a variety of local and/or more sustainable purchasing options for its residents.

Climate change is also expected to increase stressors such as pests, disease, and drought on the region’s small local agriculture sector, potentially reducing the availability of local food. Global climate change

could also disrupt global markets and supply chains, potentially resulting in global price increases and resource scarcities.

## Progress to Date

Ashland exemplifies its commitment to reduced waste and local sourcing through a variety of programs, ordinances, and offerings, such as the following:

- **Bans on plastic bags and polystyrene containers:** In 2014, the City approved an ordinance to substantially reduce consumption of single-use plastic carryout bags. The City also bans polystyrene foam food packaging at local restaurants, retail food vendors, and nonprofit food providers.
- **Community garden programs, farmers’ markets, and co-ops:** Ashland enjoys a number of venues for growing and purchasing locally produced food, including at four City-sponsored community gardens, the Rogue Valley Growers and Crafters Market, and at retailers like the Ashland Food Co-op.
- **Residential curbside recycling programs and outreach:** Recology provides curbside recycling service to Ashland residents, as well as education and outreach programs on backyard composting and reduce/reuse best practices. Recology also provides a drop-off recycling center for some hard-to-recycle materials.

## Goals and Indicators

### Goals

- Reduce solid waste and wastewater greenhouse gas emissions.
- Increase waste diversion through waste prevention, recycling, and composting.
- Reduce consumption of climate-intensive food, products, and services.
- Support locally-produced products.

### Potential Indicators

- Solid waste and wastewater greenhouse gas emissions.
- Waste diverted from landfill to recycling and composting.
- Consumption-related emissions.
- Number of community gardens and farmers markets.





### Strategies and Actions

#### Strategy CM-1. Reduce consumption of carbon-intensive goods and services.

Because the City cannot directly influence how goods are produced outside its jurisdiction, its main feasible option is to reduce the use of targeted carbon-intensive goods and services by encouraging residents to change their consumer habits, such as by supporting shared use programs that reduce the need to own products.

#### PRIORITY ACTIONS

**C**  
**Mi** CM-1-1. Implement an education campaign for waste and consumption reduction strategies.

Private consumption of food and goods is the largest single source of Ashland’s greenhouse gas emissions. While the City does not have the ability to directly control or reduce these emissions, it can encourage sustainable habits and purchasing decisions that target common sources of waste and carbon-intensive consumption. For example, the City could continue to include tips and instructions for energy-saving opportunities within City bills and newsletters, or provide additional information and outreach for replacing inefficient appliances, opting-out of junk mail, and available reuse stores.

**C**  
**Mi** CM-1-2. Support “collaborative consumption” community projects.

Collaborative consumption reduces demand for new products by facilitating the sharing and/or repair of existing products in the community. Tool libraries, for example, allow community members to avoid purchasing new tools by instead borrowing from a communal pool of donated tools. The City can explore how best to encourage sustainable consumption and sharing activities like tool libraries and repair cafes, such as through mini-grant programs.

**C**  
**Mi** CM-1-3. Conduct a study to determine effective ways to reduce and track consumption-based emissions.

Current approaches for tracking and mitigating consumption-based emissions are coarse and relatively undefined. The City should continue to evaluate new approaches and tools for more accurately and effectively addressing this important emissions source.

**Strategy CM-2.** Support sustainable and accessible local production and consumption.

Supporting environmentally responsible production of goods and food locally—in or around Ashland—is beneficial because it eliminates the emissions associated with shipping goods produced far away to the city, and because it gives the City greater influence on encouraging sustainable production practices.

**PRIORITY ACTIONS**



CM-2-1. Partner with nonprofit organizations to promote the purchase of local produce and products, such as through a “buy climate-friendly first” food purchasing initiative for public institutions.

One way the City can support sustainable local food production is to work with independent organizations to showcase and support climate-friendly retailers and products. The City could work with systems such as the Ashland School District, Southern Oregon University, and Asante Ashland Community Hospital to incorporate “climate-friendly first” food purchasing.



CM-2-2. Expand community gardening and urban agriculture opportunities at community gardens, schools, parks, and rooftops.

Increasing the land and resources available for local agriculture can help satisfy a portion of the city’s demand for food, reducing the quantity of food that must be imported from outside the region. “Greening” public spaces can have numerous co-benefits, too, including offsetting the urban heat island effect and providing garden space to those who do not have yards. The City could work to expand existing local food programs, such as by encouraging farms to work directly with organizations such as churches or schools to provide community-supported agriculture (CSA) programs.

**OTHER ACTIONS**

- Consider climate change-related risks to local supply chains in implementation of the economic development strategy.
- Work with nonprofits and universities to create outreach and training materials about agricultural practices that reduce greenhouse gas emissions and increase diversity and drought resistance.

### Strategy CM-3. Expand community recycling and composting.

Diverting more waste from the landfill is one of the most direct strategies Ashland can focus on to reduce the environmental impacts of the city's consumption. While the City cannot influence upstream production methods at factories and farms beyond its city limits, minimizing downstream waste has a clear and measurable positive impact that will help Ashland move toward its sustainability goals.

#### PRIORITY ACTIONS

**C**  
**Mi** CM-3-1. Improve recycling programs, implement new education and outreach, and expand public space recycling.

Making recycling a convenient and straightforward process is crucial to helping Ashlanders to reduce waste disposal and increase diversion from the landfill. Education and outreach, better signage, and placing more bins in public areas are some of the potential ways to improve recycling in Ashland.

**C**  
**Mi** CM-3-2. Update the multi-family recycling ordinance to encourage more diversion.

Historically, increasing diversion rates from multi-family residential waste streams has been challenging. The City should update and expand recycling standards and requirements for existing and future multifamily housing to increase recycling diversion rates consistent with the Council approved recycling program updates. These actions should be implemented in accordance with recommendations provided by the ad-hoc Recycle Center Committee.

**C**  
**Mi** CM-3-3. Strengthen the Demolition Debris and Diversion ordinance to enhance enforcement and increase diversion and reuse.

Due in large part to the sheer quantity of material involved, home demolition has an outsized impact on Ashland's materials management strategy. Targeting buildings for reuse and salvage not only reduces the quantity of material being sent to the landfill, but also creates a local market of recovered building materials that can be used again in new construction projects, remodels, and landscaping. This actions calls for enhancing Ashland's current Demolition Debris and Diversion ordinance so that it is more strictly enforced and encourages further diversion and reuse of building materials. The City could explore the introduction of mandates for a greater percentage of deconstruction over time and also consider efforts to promote reuse of those materials in new construction projects.

#### OTHER ACTIONS

- Implement an education campaign for waste and consumption reduction strategies such as replacing inefficient appliances, opting-out of junk mail, and reuse stores.
- Examine options for expanding commercial and residential composting; assess the feasibility of establishing a permitted facility to compost or anaerobically digest organic materials and food waste.
- Improve City facilities to encourage waste reduction, such as by installing water bottle-

**Strategy CM-4. Reduce food waste.**

Production of food is a large emissions source, and, unfortunately, a significant portion of the food that makes it into Ashland’s homes and businesses spoils or is otherwise wasted. Reducing this waste—and using the remaining food waste productively—will ensure that Ashland gets the most benefit possible out of its food. In addition to reducing the GHG emissions associated with wasted food, edible food that would have gone to waste can be donated to residents who might otherwise struggle to afford groceries.

**PRIORITY ACTIONS**



CM-4-1. Support edible food donation through coordination with the food bank and donations from City and community partner events.

The environmental benefits of reducing food waste means there is more food to share with those in need. This action calls on the City and community to work with the food bank to make sure edible leftover food at public events ends up on dining tables, not in the landfill.



CM-4-2. Provide a kitchen best practices guide to help households and businesses reduce food waste and consumption.

Educating residents and businesses on how to reduce food waste is a low-cost option to reduce wasted food, a preventable source of greenhouse gas emissions.



CM-4-3. Facilitate recycling of commercial food waste.

While reducing food waste by addressing its root causes is the best option, some food waste will always remain. The City can serve a central role in taking advantage of this waste stream by arranging for discarded food to be used for energy production, including the use of cooking oil for biodiesel and biofuels. The City could also consider working with Recology to provide organic waste pickup services.

**OTHER ACTIONS**

- Seek grant funds to launch a food waste reduction campaign for residents, such as the U.S. Environmental Protection Agency's Food: Too Good to Waste program.

### Strategy CM-5. Improve sustainability of City operations and purchases.

City operations account for a relatively small portion of Ashland's emissions, they are a relatively easy target for sustainability improvements because the City has direct control over them.

#### PRIORITY ACTIONS

M

CM-5-1. Introduce City environmentally preferable purchasing (EPP) guidelines for City procurement.

Mi

Creating an EPP policy is a low-cost action that would guide City staff to choose more sustainable products and services by modifying the procurement process. While the complexity of Ashland's existing procurement process may make this action more difficult to implement, it is worth considering because a wide range of cities similar to Ashland have successfully implemented EPP policies of their own. For example, the City could require evaluation of electronic equipment using the Electronic Product Environmental Assessment Tool (EPEAT).

M

CM-5-2. Assess the feasibility of co-digesting food waste and biosolids to generate electricity at the wastewater treatment facility.

Mi

Generating electricity from the gases captured from decomposing organic matter is a win-win strategy: it prevents harmful GHGs from entering the atmosphere, and it creates electricity that can offset the wastewater treatment facility's energy use or be fed back onto the power grid.

#### OTHER ACTIONS

- Promote online citizen services (such as permitting and bill payment) to reduce paper use and car trips.
- Evaluate the use of low-carbon concrete and/or recycled asphalt shingles on City buildings.
- Evaluate feasibility of increased use of recycled aggregate in residential street construction and sidewalks.



## Rogue Valley Farm to School

The Rogue Valley Farm to School (RVF2S) program's mission is to educate children about our food system through hands-on programs, and bring healthy, local foods to their school cafeterias. RVF2S has relationships with five local farms in the valley, including The Farm at SOU. The organization facilitates the purchase of locally grown produce by schools, assists food service staff with estimating annual produce needs, and helps farmers use this information to plan their seasonal planting. It also facilitates field trips to farms and the creation of sustainable on-site gardens at schools.



## The Role of the Community

Here are some actions that everyday Ashland residents and organizations can take to make a difference in addressing climate change.

### **Eat** carbon-friendly.

Animal products are extremely GHG-intensive to produce compared to plants. Eating less meat and dairy can make a big cut in food consumption emissions. Eating regionally-grown food that is suitable for the southern Oregon climate can also make a difference through reduced transportation-related emissions.

### **Plan, prepare, and store food carefully to waste less food.**

Studies show that in America, approximately 40% of food never makes it to our dining tables—meaning the water, fertilizer, farm equipment, and transportation involved in producing this food and getting it to your refrigerator is wasted. Planning carefully when you shop and storing food properly can go a long way toward reducing food waste, and save you money, too.

### **Buy less** new stuff.

The purchase of manufactured goods is one of the largest contributors to Ashland's GHG emissions. Consider buying reused or borrowing items you only use infrequently to help reduce these emissions.

### **Buy things that last.**

The fewer items you purchase, the better for the environment. Investing in quality items that last longer often also makes sense for your wallet, since you don't have to keep replacing items when they break.





# NATURAL SYSTEMS



# Natural Systems

Although not formally accounted for in Ashland's greenhouse gas emissions inventory, natural ecosystems such as forests and wetlands capture and store carbon, acting as a greenhouse gas "sink." Proper ecosystem management optimizes this process of carbon sequestration and minimizes the potential risk of greenhouse gas emissions from wildfires.

The 2016 Ashland Forest Plan puts forth forest management objectives that take into account the important role of forests in a changing climate. Some relevant objectives from the plan include:

- Reducing the likelihood of high-severity fire through strategically placed fuels treatments and subsequent implementation of prescribed underburning to maintain reduced fuels and less fire-prone conditions;
- Managing for both development and maintenance of older forests that may sequester and retain large amounts of carbon over time;
- Focusing on protection and restoration of diverse forest structures, plant communities and associated genetic resources which are important mechanisms of resilience;
- Emphasizing multiple tree species management including species well selected to thrive in future warmer and drier conditions such as pines, hardwoods and shrub species (within prescribed spatial considerations for their potential to aggravate fire potential and hazard); and
- Monitoring and control of plant species that are prone to establishment and/or expansion in changing climates.

Many of Ashland's natural systems and surrounding natural areas will be harmed by climate change, threatening the ecosystem services they provide such as water filtration, flood abatement, pollination, recreation, and fire protection. Importantly, the effects of climate change on natural systems are interrelated and may compound each other; for example, more frequent and severe droughts will increase the risk of wildfires. Changes in temperature, snowpack, and the abundance of diseases and pests will stress sensitive and high-elevation plants, wildlife, and ecosystems such as the northern spotted owl, anadromous fish populations, and mid-elevation coniferous forests. Other stressors, such as habitat loss and pollution, exacerbate this risk by minimizing habitat connectivity and aggravating existing sensitivities.

Climate change may also benefit some species and ecosystems. For example, a species whose pathogens are sensitive to drought may experience reduced pathogen risk. However, these rarer cases are not the focus of this plan.

## Progress to Date

The City of Ashland works within its city limits and with partners outside its limits to promote sustainable management and conservation of its natural ecosystems. Here are some ways the City is currently taking action:

- The **Ashland Forest Resiliency Project** has produced planning documents that consider optimized forest fuel management and wildfire planning in the face of climate change.
- A new city **Water Master Plan** will incorporate future climate risks to water supply and quality into future service planning and activities.
- The City promotes **drought-tolerant landscaping** through education, outreach, and technical assistance.
- The City water utility has a **tiered rate structure** to provide incentives for conservation among the largest water uses.
- The **2016 Ashland Forest Plan** calls for over 500 acres of wildfire hazard reduction in and around the City, over 150 acres of commercial thinning, and the establishment of a controlled underburning program to continually reintroduce the natural role of fire in our fire-dependent ecosystem.



## Goals and Indicators

### Goals

- Enhance ecosystem health and resilience.
- Ensure sustained access to clean air and drinking water.

### Potential Indicators

- Acres of protected and restored habitat.
- Acres of forest maintained.
- Stream water quality.
- Water supply and consumption.

### Strategies and Actions

#### Strategy NS-1. Promote ecosystem resilience.

Climate change has the potential to significantly disrupt local ecosystems by altering precipitation patterns, increasing average temperatures, and making extreme weather events more frequent and severe. These changes can affect a wide range of ecosystem features and functions, from causing fish die-offs to disrupting pollinators. Local government policies and actions will play a key role in protecting ecosystem elements from climate-related threats.

#### PRIORITY ACTIONS

**C** NS-1-1. Manage forests to retain biodiversity, resilience, and ecosystem function and services in the face of climate change. Use best available science to inform fire management and planning to manage ecosystem health, community safety, and carbon storage.

**Ad** Responsible management of existing natural areas within and surrounding Ashland will bolster ecosystem health and prevent the breakdown of important ecosystem functions. The 2016 Ashland Forest Plan discusses these critical needs and considerations for City-owned forests in the context of a changing climate, and presents management approaches for balancing forest resilience, climate mitigation, and other priorities. The Ashland Forest Resiliency Stewardship Project addresses forest resilience beyond City-owned properties

through a plan that includes thinning smaller trees, reducing flammable fuels, and conducting controlled burns. Through these activities and close monitoring, adaptive management, and incorporation of future climate change projections into forest management and planning, the City will address climate change threats ecosystem stability and public health and safety.

**C** NS-1-2. Use green infrastructure such as bioswales, permeable pavement, other pervious surfaces to reduce flood risk and minimize sediment entry into creeks from trails and roads.

**Ad** Runoff from rainwater and snowmelt can carry pollutants and sediment into ecologically sensitive waterways. Pollution due to runoff and flooding in urban areas will likely become a more common—and more serious—problem for Ashland as climate change alters precipitation patterns and increases the frequency of severe rainstorms. Green infrastructure allows water to infiltrate into the soil, reducing the amount of polluted runoff that flows into sensitive creeks, wetlands, and other waterways. The City should continue to promote green infrastructure where possible and consider green infrastructure as a default option for on-site stormwater management.

**C** NS-1-3. Undertake restoration efforts to retain and restore native fish and riparian species, including enhancement of fish-friendly operations and habitat at Reeder Reservoir and in Ashland and Bear Creeks.

**Ad**

The fish and riparian species that call southern Oregon home will likely be increasingly stressed by water scarcity and other climate-driven impacts on the health of local waterways. Undertaking habitat restoration and protection efforts not only supports healthy stocks of these species, but can provide co-benefits to residents and visitors by creating beautiful natural environments for visitors to enjoy and educational opportunities for residents to understand and appreciate native ecosystems and species. The City delineates Riparian Management Areas (RMAs), and the City’s Stream and Wetland Enhancement Guide provides a resource for learning to control erosion, manage invasive plants, and cultivate a healthy, native landscape. The 2016 Ashland Forest Plan lays out ecosystem service-driven management priorities within the over 5 miles of stream and 96 acres of riparian areas, as well as calls out specific opportunities for fisheries enhancement along Bear and Ashland Creek.

**C** NS-1-4. Map and protect areas that provide ecosystem services, such as remnant spring, wetland, and late successional forest habitats, through improved public lands management/ownership and promotion of conservation easements and private open spaces.

**Mi**  
**Ad**

This action focuses on identifying and prioritizing the protection of the most important elements of the local ecosystem through public ownership and conservation easements. The 2016 Ashland Forest Plan provides a variety of maps that could be used to begin prioritizing areas for protection.

**OTHER ACTIONS**

- Update the City’s approved street tree guide and landscape design standards for new development for tree species appropriate for a future local climate.
- Assess the deployment of ecosystem market approaches as a means to protect and restore ecosystems efficiently and effectively, such as by paying upstream landowners for water-friendly management of their lands.

### Strategy NS-2. Manage and conserve community water resources.

While minimizing the City's water use internally is important, conserving water in the community can have a greater impact due to its scale. Water conservation can have double benefits in the face of a changing climate: it can help the community be more prepared for drought, and also reduce stress to aquatic ecosystems and thereby enhance the resiliency of those ecosystems to a variety of climate and non-climate stressors. Through education, policy, and incentives the City can encourage the community to make meaningful water use reductions.

#### PRIORITY ACTIONS



NS-2-1. Evaluate incentives for practices that reduce use of potable water for nonpotable purposes and recharge groundwater.

Incentives can be a valuable tool to reduce water use and encourage the installation of rainwater collection and water reuse systems. As a bonus, these systems offer stormwater prevention co-benefits. Similar incentives have been used successfully in a number of other cities. The viability and benefits of these practices are currently being examined as part of Ashland's Comprehensive Water Master Plan update, including exploration of options to promote and install graywater reuse at community gardens and other local urban agri-

#### OTHER ACTIONS

- Introduce a system whereby when a new building is permitted, a conversation is triggered around the introduction of feasible new technologies that reduce water and wastewater.
- Manage upstream flows to minimize downstream flood risk, such as through habitat protection, restoration, or adjusted reservoir management.
- Explore new technologies for treating wastewater for use.

cultural areas, or better understand the relationship and tradeoffs between tree density and water availability..



NS-2-2. Explore water-efficient technologies on irrigation systems and consider requiring them during the permitting process.

Landscaping irrigation uses large quantities of water. Requiring advanced irrigation systems, especially for large commercial or multifamily properties, could have a significant impact on the city's water use. This action could also involve promotion of water-efficient landscape design and maintenance through revision of Site Design and Use Standards in the land use code.



NS-2-3. Expand water conservation outreach and incentive programs for residents and businesses.

Providing additional education and support to residents and businesses can help reduce water use by identifying easy, cost-effective ways to reduce water use; for example, by installing low-flow fixtures and faucet aerators. The City may consider providing additional financial incentives to encourage widespread adoption of these upgrades or to make more costly water-saving upgrades financially feasible all households, including lower-income families. This action could involve facilitating sustainability certifications, such as under the Salmon Safe certification program, at local businesses.

**Strategy NS-3.** Conserve water use within City operations.

While the City’s internal operations account for a relatively small portion of Ashland’s overall emissions, conserving resources sets a visible example that residents and businesses in the community can follow. Water use, in particular, will be important to minimize in the future: with more frequent and severe droughts due to climate-driven changes in precipitation and snowpack, Ashland and the surrounding area will have to manage its water resources to minimize the impacts of increasing water scarcity.

**PRIORITY ACTIONS**

**M**  
**Mi/Ad** NS-3-1. Evaluate the potential for installation of rainwater collection systems at City facilities for graywater uses, and investigate opportunities for graywater reuse at existing and new City facilities and properties.

This action aims to reduce the quantity of filtered, potable water used at City facilities by using rainwater for nonpotable uses, such as toilet-flushing and irrigation. Graywater recycling could further reduce the quantity of fresh, clean water used by the City for nonpotable purposes.

**M**  
**Mi/Ad** NS-3-2. Implement efficiency recommendations from the City facilities water audit.

The City is currently in the process of conducting an audit of water use at its facilities. The audit will help the City identify opportunities to reduce waste and improve the water efficiency of its operations.

**OTHER ACTIONS**

- Update City landscaping standards for reducing water consumption and chemical use.

### The Ashland Forest Resiliency Project

The Ashland Forest Resiliency Project is a ten-year stewardship program that aims to reduce wildfire risk and protect ecosystem features on approximately 7,600 acres of land. The project is a collaborative effort between the U.S. Forest Service, the City of Ashland, the Nature Conservancy, and the Lomakatsi Restoration Project. It focuses on thinning small trees and conducting controlled burns to prevent wildfires from spreading, while prioritizing saving large, old trees and preserving key habitat elements. In addition to implementing sustainable forestry techniques, the project includes an education component and has delivered presentations and field activities to more than 2,000 local students.



### The Role of the Community

Here are some actions that everyday Ashland residents and organizations can take to make a difference in addressing climate change.

Install **rain gardens, rain barrels, or cisterns** on your property.

Work with the City to learn about options for reducing stormwater runoff and increasing water storage and reuse at your home or business.

**Be waterwise** in your daily household water consumption.

Install water-efficient fixtures, take shorter showers, irrigate at night, and otherwise reduce water use.

Support **habitat protection and restoration**.

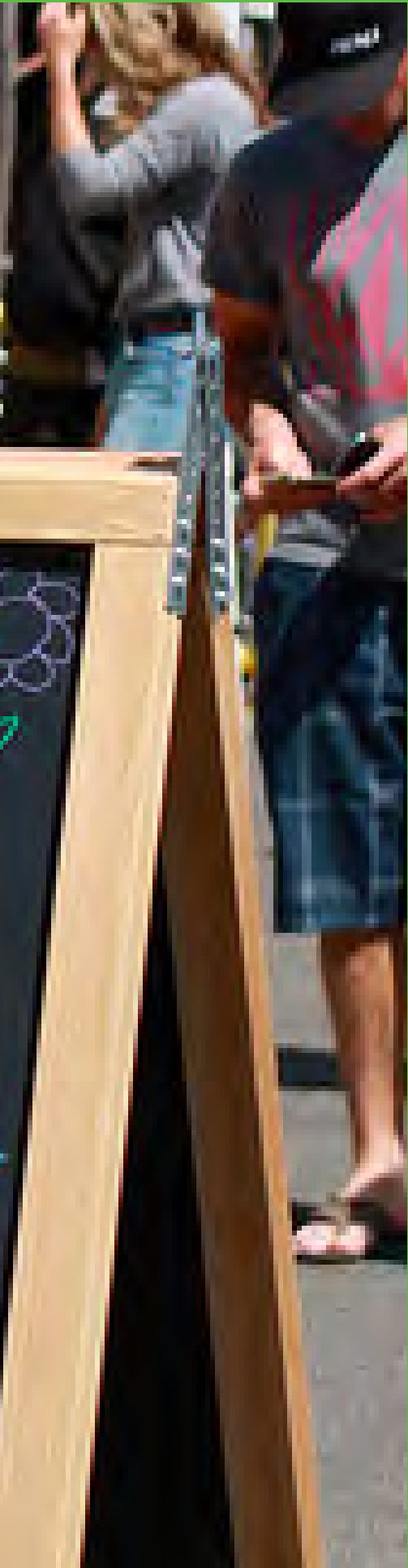
Volunteer at a habitat restoration event, donate to land conservancy or education organizations, and get outside!







Welcome  
to  
Opening Day!  
Shop LOCAL  
and support  
our neighboring  
businesses!



PUBLIC  
HEALTH,  
SAFETY &  
WELL-BEING

# Public Health, Safety & Well-being

Climate change may seem removed from issues of health, safety, and security, its effects may have significant impacts on Ashland's population. Increased heat waves, flooding, and wildfires threaten the health and safety of all residents, and Ashland's outdoor industry workers, the elderly and very young, and low-income populations are especially vulnerable.

Rafting, skiing, and other outdoor recreation industries may suffer from reduced snowpack and reduced summer flows, affecting workers throughout the local tourist industry. Increased wildfire risk will stress emergency services and increase the number of homes within wildfire risk areas. While many of the strategies and actions in other sections of this report have positive direct impacts or co-benefits on public health and safety, these issues are important enough to merit specific discussion. Without healthy, happy, and secure citizens, Ashland will not thrive.

*Note: Emissions associated with public health, safety, and well-being are encapsulated in other sectors of the greenhouse gas inventory and therefore cannot be independently evaluated.*

## Progress to Date

Although the City of Ashland has limited influence over the health and social security of its residents, the City has made great strides in supporting the local economy and preparing for emergency events:

- **Firewise Ashland** provides residents of the wildland urban interface with the knowledge and skills necessary to prepare for wildfires.
- The **Social Service Grant and Community Development Block Grant** programs support disadvantaged and at-risk populations.
- The annual **Ashland is Ready** workshop provides emergency planning assistance and information for residents.



## Goals and Indicators

### Goals

- Protect public health from air pollution and climate impacts.
- Improve community capacity to understand, prepare for, and respond to climate change security risks.

### Indicators

- Air quality
- Number of people that can be accommodated by available cooling centers.
- Tree canopy cover.
- Homes within the WUI.
- Percent of Ashland residents experiencing health issues such as asthma.

## Strategies and Actions

### Strategy PHSW-1. Manage

ecosystems and landscapes to minimize climate-related health impacts.

With average temperatures on the rise and extreme weather events predicted to become more common due to climate change, Ashland will need to consider adapting its management of the cityscape and ecosystems to protect its residents' quality of life.

### PRIORITY ACTIONS



PHSW-1-1. Promote the expansion of tree canopy in urban heat islands or areas that need air conditioning such as schools.



The urban heat island effect can have serious impacts on public health and quality of life, including causing heat-related fatalities among elderly or otherwise vulnerable people. The City can reduce this effect by increasing tree canopy cover in targeted areas that do not currently have adequate shade or air conditioning, as well as promote and educate citizens about the benefits of shading with trees and building features.

### OTHER ACTIONS


- Evaluate and implement slash removal methods that minimize smoke production, such as air curtain burners.
- Develop an incentive program to convert fuel-burning lawn equipment such as gas-powered lawn mowers and blowers to electric.
- Evaluate opportunities to plant additional trees near city facilities to reduce heat island.




**Strategy PHSW-2.** Promote a sustainable local economy that minimizes emissions and vulnerability.

Becoming more sustainable and preparing for the effects of climate change will require more than government action; the private sector also plays a central role. The City can serve as a thought leader, facilitator, and central coordinator to spur climate action by a wide variety of independent businesses.

**PRIORITY ACTIONS**

 PHSW-2-1. Engage leading employers in a dialogue on climate action, for example, by organizing and facilitating roundtables.

This action involves bringing local employers together with City staff and independent experts to discuss how climate change will affect their businesses, how to minimize those risks, and how to effectively incorporate climate and sustainability concerns into their businesses.

 PHSW-2-2. Support organizations, such as SOU, in evaluating risks to local food sources under climate change.

As discussed in Strategy CW-2, local food production minimizes greenhouse gas emissions associated with food transport, supports the local economy, and brings other sustainability benefits. As part of the City's work to support and expand local agriculture, it can consider taking a supporting the work of other organizations to evaluate how local food sources may be stressed or affected by climate change, and how best to navigate the challenges to ensure that local farms remain viable and productive. This work would include researching new crops, technologies, and innovative approaches, and working with farmers to adapt to climate change.

**OTHER ACTIONS**

- Work with businesses to assess their climate change vulnerability and plan for the future.

### Strategy PHSW-3. Minimize public health impacts.

Many of the facilities and services provided by the City can also serve as important venues for adapting to climate change. This strategy identifies ways that the City can work with the community to minimize public health impacts from climate change, such as heat, respiratory, and pathogen-related illnesses. This strategy also includes opportunities for the City to adjust or repurpose its current activities and facilities to help minimize public health threats, such as its libraries, parks, and emergency management services.

#### PRIORITY ACTIONS

**C**  
**Ad** PHSW-3-1. Work with vulnerable populations to create specific adaptation strategies to address public health risks.

Some populations and areas of the city will be more vulnerable to climate impacts than others. The City can work to minimize the impacts on its most at-risk populations and areas by working with residents and local organizations to identify and implement customized solutions. For example, outlying areas exposed to wildfires or low-lying homes and businesses in flood zones could receive tailored trainings to ensure readiness for the risks of their location. The City could work with at-risk populations such as the elderly or disabled to identify specific challenges in the face of a changing climate and customized solutions such as accessible cooling centers or additional health services.

**C**  
**Ad** PHSW-3-2. Identify and minimize potential urban heat impacts.

Climate change is expected to increase the number and severity of heat waves in Ashland, putting vulnerable people at greater risk of heat-related health complications and reducing the quality of life for all Ashland residents. The City can take steps to minimize the risks presented by heat waves by identifying where heat-related impacts will be most pronounced and working to encourage and/or directly implement strategies for offsetting these impacts, such as by designating cooling centers through the city, improving cooling systems in schools and senior centers, and incentivizing cooling strategies such as cool roofs/pavements and expanded tree canopy.

**C**  
**Ad** PHSW-3-3. Develop or enhance heat-warning systems for employees and the public.

Heat-warning systems help minimize the health dangers associated with extreme heat by giving the public a chance to plan ahead to avoid being outside or take refuge at a designated cooling center during the hottest periods.

#### OTHER ACTIONS

- Educate public and public health professionals about health risks posed by climate change, including potential changes in air quality and impacts on mental health.
- Adjust City-sponsored outdoor activity schedules and plan for indoor alternatives to accommodate longer and hotter summer seasons.

### Strategy PHSW-4. Minimize public safety impacts.

Climate stress adds additional burdens to City safety services. This strategy involves taking measures within City operations and current services to protect the public from injuries caused by extreme events like wildfires and flooding.

#### PRIORITY ACTIONS

**C**  
**Ad** PHSS-4-1. Update the City's emergency response plan and ensure that preparation and updates recognize and address likely climate change impacts.

From wildfires to floods, the emergencies that Ashland faces will increasingly be linked to climate change. The City can protect its citizens from these emergencies by incorporating climate projections and likely impacts into its existing emergency response plan.

**C**  
**Ad** PHSS-4-2. Identify and address populations and essential City services that are within the 100-year flood zone.

Climate-driven changes in precipitation and snowmelt patterns will likely increase the frequency and severity of flooding in the city. One way Ashland can mitigate the damage of severe floods is by identifying populations and essential services in flood-prone areas and working to relocate or protect them. This action could include examining adjustments to the Water Resources Ordinance chapter of the land use code, which stipulates setback requirements for properties located within at-risk areas.

#### OTHER ACTIONS

- Expand and publicize the Ready, Set, Go! Evacuation program.
- Utilize federal and state reporting and monitoring assets, such as the National Oceanic and Atmospheric Administration's Hazard Mapping System, to prepare for smoke and wildfire impacts.



## The Role of the Community

Here are some actions that everyday Ashland residents and organizations can take to make a difference in addressing climate change.

### Assemble an **emergency kit**.

Jackson County offers tips and checklists to help residents create emergency kits for their homes and cars. Visit the Jackson County Emergency Management website or contact Jackson County for more information.

### Stay informed.

Sign up for Citizen Alert!, a free program from Jackson County that sends community alerts to your phone and email when you register online.

### Prepare your home for the extremes.

Understand the risk of flooding or wildfire to your home, and take action to safeguard your home. Ashland provides free Firewise assessments for properties at potential risk of wildfire. Find more information at the City's Ready, Set, Go! Evacuation website.

### Understand the risks and how to mitigate them.

Injuries from heat exhaustion and wildfire smoke can be exacerbated by conditions such as dehydration, diabetes, heart conditions, and obesity. Staying healthy, avoiding harmful activities, and taking proper precaution can make sure you and your family are safe from deadly heat- and smoke-related illnesses.

Is your home  
Firewise?



## Firewise Ashland

Ashland is part of Firewise Communities, a national program that educates homeowners and community members on wildfire home safety. The City received its first Firewise Communities recognition award in 2011, and now the program recognizes a dozen different Ashland neighborhoods. The program provides residents within the wildland/urban interface (WUI) with knowledge and skills for taking action to prevent wildfire losses like addressing home construction and landscaping. These actions are designed to help houses withstand wildland fire without intervention like fire-fighting services. For more information or to become a Firewise neighborhood, visit [firewise.org](http://firewise.org) or call Ashland Fire and Rescue.







# CROSS-CUTTING STRATEGIES

# Cross-Cutting Strategies

## Progress to Date

Addressing climate change requires working across sectors to incorporate climate change considerations into all that we do. Only through a coordinated and multifaceted effort can significant progress be made. The City of Ashland has demonstrated a commitment to comprehensive climate action through development of this Climate and Energy Action Plan. Prior to the plan, the City also completed its first citywide greenhouse gas inventory, which served as an essential benchmark for understanding and taking action against the community's greatest GHG emission sources. The City has also hosted a number of public outreach and engagement events around climate change and sustainability, including the Ashland Climate Challenge in 2015.

## Goals and Indicators

### Goals

- Increase awareness of city climate goals and needs.
- Integrate climate change considerations into day-to-day City operations, planning, and decisionmaking.

### Indicators

- Public and City staff knowledge and understanding of climate change issues and actions.
- Number of City plans or activities that incorporate climate change considerations.



## Strategies and Actions

### Strategy CC-1. Educate and empower the public.

Addressing community-wide emissions starts with ensuring that the public understands climate change and what they can do to address the challenge. This strategy involves not just enhancing public knowledge, but also continuing to learn and understand the needs and challenges the public faces in taking action. It focuses on finding ways to address the public's needs and challenges through incentives, education, and behavior change programs.

#### PRIORITY ACTIONS

**C** CC-1-1. Create a formal public outreach and education plan to inform the community about climate actions and progress.



An informed community is critical to empowering and inspiring climate action. The outreach and education plan will inform residents about climate actions, what they accomplish, how they can be accessed or used, and how the community is progressing toward its targets.



CC-1-2. Support capacity of neighborhood and community groups to implement climate mitigation and adaptation initiatives.

Every community is different in how it affects and is affected by climate change. To accommodate these differences and to empower communities to take action, the City should provide resources and support for neighborhoods that wish to tackle climate change directly. Options could include providing resource guides or checklists, venues for community meetings, or mini-grant programs for specific adaptation actions. This action could include plans to conduct outreach specifically to schools and other important institutions and organizations in the city.



CC-1-2. Assess the feasibility of a City-sponsored carbon offset program.

In cases in which additional local, on-site emission reductions are not possible, the purchase of offsets can help the community attain additional emission reductions needed to meet the city's climate mitigation goals. The City should explore options for facilitating purchase of offsets by Ashland community members, such as through development of an online tool or interface.

#### OTHER ACTIONS

- Develop a climate-ready recognition program.



## Strategy CC-2. Educate and empower City staff.

Tasked with implementing the Climate and Energy Action Plan, City staff and leadership must understand threats and issues related to climate change and the actions needed to address it. This strategy deals with ensuring that all City departments inform their staff members about the Climate and Energy Action Plan and clarify their roles and expectations for its implementation.

**M**  
**Mi**  
**Ad** CC-2-1. Ensure all City departments educate their staff members about the Climate and Energy Action Plan.

This action includes identifying the expectations, roles, and responsibility of each department in meeting specific community and City operations actions within the Climate and Energy Action Plan.

## Strategy CC-3. Mainstream and integrate climate considerations.

As a cross-cutting issue, climate change should be integrated into all other City activities and processes, as relevant. This means that any decision that could affect or be affected by climate change should explicitly address that connection and ensure coherence with the city's climate action goals. For example, climate change should be considered in all City Council policy, budgetary, or legislative decisions, and as part of regular City Council communications.

**M**  
**Mi**  
**Ad**

CC-3-1. Consider climate change in all City Council policy, budgetary, or legislative decisions and as part of the Council Communication document template.

Council decisions present key points in the policy-setting process for incorporating and considering City priorities. Asking how policy, budgetary, and legislative decisions may affect or be affected by climate change during these key decision points will provide further assurance that no new policy or decisions hinder progress toward reaching Ashland's climate goals.

**M**  
**Mi**  
**Ad**

CC-3-2. Consider CEAP goals in future updates of city plans.

To enhance integration of climate change across City activities, climate mitigation and resiliency goals set for in this plan should be promulgated through future updates of related City plans. Example plans to which this action would apply include the City Comprehensive Plan, Water Master Plan, Transportation System Plan, Neighborhood Master Plans, Forest Plan, and Emergency Management Plans.





CC-3-3. Expand mission statements of existing City Commissions to include consideration and perpetuation of climate action goals.

There are a variety of existing City Commissions that focus on topics related to climate change. This action involves making an explicit connection to the role of climate change in the purview of these Commissions, and formalizing the inclusion of climate considerations and goals into the activities and objectives of those Commissions.



**Strategy CC-4.** Engage with other governments and organizations around regional, statewide, national, and international climate policy and action.

The City of Ashland can learn from the experience of others, and a larger, unified coalition can be more powerful. This strategy involves coordinating with other local governments that have set ambitious climate targets, such as Eugene, Portland, Seattle, and Fort Collins, to learn from their experiences, share best practices, and together advocate for broader regional, state, and national action and leadership.



CC-4-1. Engage with other governments and organizations around regional, statewide, national, and international climate policy and action.

Ashland should continue to collaborate with neighboring cities to share information and foster coordinated and unified action. The City should lead and pursue a partnership model, such as the King County-Cities Climate Collaboration in Washington State, to coordinate and enhance the effectiveness of local government climate and sustainability action within its region.



# NEXT STEPS

The goals, strategies, and actions presented in this plan signify an ambitious step forward for the Ashland community.

Although sustainable living, operations, and management is not new to Ashland, this plan pulls together the strong momentum and action that already exists in the city and provides a coordinated and intentional strategy going forward. Making progress on these goals will require Ashland's government and community to work together and commit dedicated time and resources.

This Climate and Energy Action Plan is only the beginning of an ongoing process. The accompanying Implementation Plan provides a framework for launching the implementation phase of the plan. This phase will require the City and community to take priority actions--outlining specific plans of action and resource needs among responsible parties--and monitoring and benchmarking progress along the way.

As details are outlined, more specific quantitative goals and milestones can be created driving the pace of strategy implementation. The Implementation Plan also details the proposed structure for ongoing plan implementation, monitoring, evaluation, and adaptive management, as well as a list of key actions to be taken in the first year of implementation. It concludes with a discussion of how the goals and strategies of this plan fit with a potential ordinance establishing binding greenhouse gas emission reduction targets.

Through careful and committed action by all Ashlanders, and with this plan as a basis, the city can achieve its vision of becoming a resilient community that has zero-net greenhouse gas emissions, embraces equity, protects healthy ecosystems, and creates opportunities for future generations.



### Implementation Plan

This implementation plan sets forth a proposed structure and schedule for implementation of the Climate and Energy Action Plan (CEAP). It contains the following sections:

- Year 1 Implementation Summary – A summary of key tasks to be accomplished in Year 1 of CEAP implementation, described in more detail in the following sections.
- Oversight – An ongoing structure for ongoing citizen oversight and involvement in CEAP implementation and long-term plan updates.
- Accountability and Enforcement – Potential policy mechanisms for ensuring that the CEAP is implemented to its full potential.
- City Staffing and Leadership– A structure for ongoing City staff resources and leadership for ensuring implementation of the CEAP and its ongoing success.
- Funding – Potential funding mechanisms and opportunities for financing specific CEAP actions.
- Monitoring and Evaluation – A mechanism and set of metrics for monitoring and evaluating CEAP progress and updating the plan as necessary.
- Equity – Guidance for ensuring that equity is considered in CEAP implementation.
- Near-term Actions – CEAP actions to be implemented by 2020.
- Implementation Schedule – Implementation detail for each priority CEAP action, including relative measures of action cost and effectiveness; accompanying co-benefits; timeframes for implementation; and responsible departments.

### Year 1 Implementation Summary

The focus in 2017 will be on establishing the institutional foundation for plan implementation and taking initial steps on key priority actions. Table 1 provides a schedule and key milestones for Year 1. Key activities to undertake are:

- **Formalize the city’s commitment** to CEAP actions and goals (e.g., ordinance or resolution).
- **Create and hire a full-time , permanent City CEAP staff position** that also includes clear high level management oversight and direction.
- **Form and convene a permanent City Advisory Commission** to provide guidance and oversight of plan implementation and future plan updates as described in the plan.
- **Create an internal City Climate Action Team** for City operations actions and to assist in coordinating the implementation of community actions that span multiple City departments.
- **Designate potential funding sources** for individual actions and identify additional funding needs and opportunities for ongoing plan implementation.
- **Establish CEAP progress indicators** and corresponding baselines and targets (including equity indicators).
- Determine and formalize Ashland’s approach to incorporating **equity considerations** into plan implementation.
- Commence priority **near-term CEAP actions.**

## Oversight

A Citizen Advisory Commission is recommended to oversee implementation of the CEAP. The Commission will be composed of stakeholders who represent Ashland residents, have interest, experience or expertise on climate-relevant topics or related policy work, and/or represent key community or civic organizations that may play a role in implementation.

Roles of the advisory committee could include:

- Monitoring and tracking progress towards meeting CEAP goals.
- Providing recommendations to the Climate and Energy Coordinator regarding CEAP progress and implementation.
- Ensuring that the CEAP stays up-to-date over time, with a focus on the three-year plan update cycle
- Reviewing and making recommendations as part of the three-year greenhouse gas (GHG) inventory update process

It is expected that the Commission will meet at least quarterly, and likely more often in the early stages of implementation.

## Accountability and Enforcement

Adoption of this Climate and Energy Action Plan will demonstrate the City of Ashland’s commitment to addressing the challenge of climate change in the Ashland community. Establishing a more formal City commitment to CEAP goals, such as through a resolution or ordinance, would be seen by many as reinforcing the importance of this plan and could help ensure implementation of CEAP actions and measurable progress toward meeting CEAP goals over time. A formal commitment can also be a considerable asset in the pursuit of grant funds and other funding sources to assist in the implementation of the plan.

**Table 1. Schedule and key milestone for Year 1 CEAP implementation.**

Item	FY17 Q1	FY17 Q2	FY17 Q3	FY17 Q4
<b>Citizen Advisory Commission</b>				
<b>Resolution/Ordinance</b>				
<b>City Staffing and Leadership</b>				
<b>Internal City Climate Action Team</b>				
<b>Identification of specific Funding sources</b>				
<b>Progress Indicators</b>				
<b>Equity Considerations</b>				
<b>Priority Near-Term Actions</b>				

# IMPLEMENTATION PLAN

## ASHLAND CLIMATE & ENERGY ACTION PLAN

### City Staffing and Leadership

The plan calls for the creation and hiring of a new, full-time a City Climate and Energy staff position dedicated to and charged with coordinating both internal and external implementation of the CEAP.

Job responsibilities of the position include the following:

- Provide lead staff support to the CEAP Advisory Commission.
- Work with City departments to facilitate, design, and track strategy and action implementation.
- Develop and lead outreach efforts with external stakeholders, including public, to encourage taking actions identified in the CEAP.
- Provide leadership and direction to the City's internal advisory team on implementation activities, tracking, progress updates and developing advisory team recommendations to relevant internal and external implementing parties.
- Lead development and presentation of annual CEAP progress reports, as well as plan updates.
- Develop and implement a system to systematically review, adjust, and update plan strategies and actions as needed.
- Develop and lead the planned three year update cycle for the community and city greenhouse gas inventory
- Implement and maintain a dashboard or other interactive and publicly accessible platform for tracking and communicating progress to internal and external stakeholders.

The Climate and Energy staff position will have the following qualifications:

- Familiarity and working experience with both climate mitigation and adaptation, including greenhouse gas accounting methodologies and climate change projections and anticipated impacts.
- Experience managing climate-related programs that involve both internal and external stakeholders.
- Experience with public outreach and citizen engagement, preferably at the local municipal level.
- Experience managing climate-related programs that involve both internal and external stakeholders.

It is anticipated that an internal Climate Action Team will be formed within the City to coordinate and implement CEAP actions. The following departments should be represented as part of the Climate Action Team:

- Community Development (including Building Division and Planning Division)
- Ashland Municipal Utility (Electric)
- Administration
- Parks and Recreation
- Conservation
- Public Works
- Fire

## Funding

Funding for near-term actions of the CEAP will come from a variety of sources within the City budget depending on the type of action, the responsible department, and the legal and operational limitations of the particular funding source. Additionally, some of the actions recommended in the plan are expansion of existing City programs or efforts and therefore already have funding sources. However, incremental funding increases may be needed to meet the higher level of action called for in the plan.

Current and potential funding sources include:

- City general fund
- Electric Utility revenues
- Storm Water Utility revenues
- Water Utility revenues
- Bonneville Power Administration
- Federal and state grants
- Revolving loan funds
- Newly identified funding sources (see below)

As the implementation commences in earnest, City staff and the proposed CEAP advisory committee should pay particular attention to additional funding sources. This examination should include exploration of specific grant opportunities targeted at individual plan actions, potential new local revenue streams such as from a carbon/fuel tax, and multi-jurisdiction or public/private partnerships to provide the resources needed for City and community goal achievement.

## OFFSETS

Every time Ashland completes its greenhouse gas inventory, the City and community can evaluate the need to purchase carbon offsets to help meet emission reduction goals. Offsets provide a pathway for achieving emission reductions beyond what can be achieved internally.

Purchasing offsets means counting emission reductions achieved by another party and often in another geographic area. For example, Ashland could purchase offsets from Bonneville Environmental Foundation, which offers emissions reduction credits from regional and global renewable energy projects, forest enhancement projects, and waste methane and heat capture projects.

When an entity sells their carbon offsets, those emission reductions cannot be counted by anyone except the party that purchased the offsets, thereby minimizing the risk of double counting.

### Monitoring and Evaluation

Progress toward meeting CEAP targets and goals will be evaluated and tracked on an action-by-action basis with an overall progress report for all actions and activities provided on at least an annual basis. If possible, qualitative updates will be available on a quarterly basis.

The plan will be evaluated and updated on a three-year cycle to ensure that plan strategies and actions reflect the latest knowledge and best practices around climate mitigation and adaptation. The plan will also be reevaluated to assess whether actions are sufficient to meet emission reduction goals and, if not, to add new or expanded actions to the plan. To facilitate the three-year update, the Ashland community and City greenhouse gas inventories will also be updated on recurring cycle, one year in advance of the plan update process. This cycle will provide City staff and the proposed commission with concrete measurement results to inform plan evaluation and updates.

At a minimum, the following indicators will be tracked and reported on at least an annual basis. Due to data availability limitations, some of these indicators will require establishment of baseline and target values for meeting CEAP goals—to be developed in Year 1 of implementation. Additionally, it is expected that some methodologies for measuring some indicators, such as consumption-based greenhouse gas emissions, will evolve and improve over time.

Further development and build-out of the monitoring and evaluation indicators likely form a significant opportunity for the proposed new commission to work on as an early oversight activity.

Equity indicators will also be monitored, as available (see “Equity” section below).

Potential Progress Indicators

CEAP Goal	Primary Goal	Indicator	Target	2015 Baseline
<b>Overarching Goal 1: Reduce GHG Emissions</b>				
	Mi	Community GHG emissions (mtCO <sub>2</sub> e)	8% reduction per year	342,480
	Mi	City GHG emissions (mtCO <sub>2</sub> e)	0 by 2030	10,757
	Mi	Fossil fuel consumption (MMBTU)	50% reduction by 2030; 100% reduction by 2050	Unknown
<b>Overarching Goal 2: Prepare for Climate Impacts</b>				
	Ad	N/A (see individual focus areas)	N/A	N/A
<b>Buildings and Energy</b>				
Reduce building GHG emissions.	Mi	Building GHG emissions (mtCO <sub>2</sub> e)	8% reduction per year	82,426
Increase energy and water efficiency in City and private buildings.	Mi	Energy & water use per square foot (MMBTU/sf & CCF/sf)	TBD	Unknown
Protect Ashland's building stock and energy supply from climate impacts.	Ad	Proportion of buildings that use heat-resistant materials, passive heating/cooling, and/or white roofs (%) Local renewable energy production (%)	TBD	Unknown
<b>Urban Form, Land Use &amp; Transportation</b>				
Reduce transportation GHG emissions.	Mi	Transportation GHG emissions (mtCO <sub>2</sub> e)	8% reduction per year	79,000
Reduce community & City employee vehicle miles traveled.	Mi	Vehicle miles traveled (miles)	TBD	Unknown
Improve vehicle efficiency and expand low-carbon transport, including within City's fleet	Mi	Emissions per mile traveled (mtCO <sub>2</sub> e/mile) Transit ridership (passenger miles) and bicycling	TBD	Unknown
Support local and regional sustainable growth.	Mi/Ad	Average city "Walk Score"	TBD	53 <sup>ii</sup>
Protect transportation infrastructure from climate impacts.	Ad	TBD	TBD	TBD
<b>Consumption &amp; Materials Management</b>				
Reduce solid waste & wastewater GHG emissions.	Mi	Solid waste & wastewater GHG emissions (mtCO <sub>2</sub> e)	8% reduction per year	6,923
Increase waste diversion through waste prevention, recycling, and composting.	Mi	Waste diverted from landfill to recycling and composting (%)	TBD	Unknown
Reduce consumption of climate-intensive food, products, and services.	Mi	Consumption-related emissions (mtCO <sub>2</sub> e)	8% reduction per year	166,731
Support locally-produced products.	Mi/Ad	Community gardens (#) Farmers markets (#)	TBD	4 gardens; 1 farmers market
<b>Natural Systems</b>				

<sup>ii</sup> Source: <https://www.walkscore.com/OR/>

# IMPLEMENTATION PLAN

## ASHLAND CLIMATE & ENERGY ACTION PLAN

### Potential Progress Indicators, Continued

CEAP Goal	Primary Goal	Indicator	Target	2015 Baseline
Enhance ecosystem health and resilience.		Water quality (EPA score out of 100) Acres of forest maintained Acres of protected and restored habitat	TBD	Water quality = 60/100 <sup>iii</sup>  Over 2,000 acres of forests maintained <sup>iv</sup>
Ensure sustained access to clean air and drinking water.		Water consumption (avg MGD)	TBD	4.5 MGD <sup>v</sup>
<b>Public Health, Safety &amp; Security</b>				
Protect public health from air pollution and climate impacts.		Air quality (EPA score out of 100) Cooling center capacity (# people) Tree canopy cover (%)	TBD	Air quality = 70/100 <sup>vi</sup>
Improve community capacity to understand, prepare for, and respond to climate change security risks.		# homes in the wildland urban interface (WUI)	TBD	1,400 homes <sup>vii</sup>
<b>Emse-Cutting Strategies</b>				
Increase awareness of city climate goals and needs.		Public and staff knowledge and understanding of climate change issues and actions (e.g., # students engaged in AFR project)	TBD	(e.g., over 2,000 students <sup>viii</sup> )
Integrate climate considerations into City operations, planning, and decision-making.		Number of other City plans or activities that incorporate climate change considerations	TBD	2 (Water Master Plan Update; 2016 Ashland Forest Plan)

## Equity

Each action of the CEAP should be implemented in an equitable manner that addresses Ashland’s unique equity issues and concerns. The sections below provide suggestions for ensuring equitable implementation of the CEAP. It is expected that specific criteria and indicators will be determined and formalized in Year 1 of CEAP implementation.

### Equity Considerations

When planning for implementation, the City should consider equity impacts and potential benefits. For example, the City of Portland put forth the following equity considerations in implementation of their Climate Action Plan:

In addition, these equity considerations can be explicitly integrated into the cross-cutting strategy CC 3 1 “Consider climate change in all City Council policy, budgetary, or legislative decisions. Incorporate climate action considerations/relationship as part of the Council Communication (staff report) document template.” The inclusion of equity considerations as part of the standard formal communication template for City Council deliberation and decision making ensures that equity related impacts of City Council decisions are by default considered in the deliberation and able to be understood and commented on by the public.

### EQUITY CONSIDERATIONS

<b>Disproportionate impacts</b>	Does the proposed action generate burdens (including costs), either directly or indirectly, to communities of color or low-income populations? If yes, are there opportunities to mitigate these impacts?
<b>Shared benefits</b>	Can the benefits of the proposed action be targeted in progressive ways to reduce historical or current disparities?
<b>Accessibility</b>	Are the benefits of the proposed action broadly accessible to households and businesses throughout the community — particularly communities of color, low-income populations, and minority, women and emerging small businesses?
<b>Engagement</b>	Does the proposed action engage and empower communities of color and low-income populations in a meaningful, authentic and culturally appropriate manner?
<b>Capacity building</b>	Does the proposed action help build community capacity through funding, an expanded knowledge base or other resources?
<b>Alignment and partnership</b>	Does the proposed action align with and support existing communities of color and low-income population priorities, creating an opportunity to leverage resources and build collaborative partnerships?
<b>Relationship building</b>	Does the proposed action help foster the building of effective, long-term relationships and trust between diverse communities and local government?
<b>Economic opportunity and staff diversity</b>	Does the proposed action support communities of color and low income populations through workforce development, contracting opportunities or the increased diversity of city and county staff?
<b>Accountability</b>	Does the proposed action have appropriate accountability mechanisms to ensure that communities of color, low-income populations, or other vulnerable communities will equitably benefit and not be disproportionately harmed?



# IMPLEMENTATION PLAN

## ASHLAND CLIMATE & ENERGY ACTION PLAN

### Equity Indicators

Progress toward advancing equity through implementation of the CEAP will also be assessed as part of the monitoring and evaluation process. Identification and baseline assessment of relevant indicators will be an important part of Year 1 implementation. Potential process and outcome indicators related to climate resilience implementation identified by the National Association for the Advancement of Colored People (NAACP), for example, including the following:

### EXAMPLE CLIMATE RESILIENCE PROCESS / OUTCOME INDICATORS

<b>Infrastructure</b>	Solar and wind installation – community level, home, commercial/business (mapping/distribution)
<b>Economic Development and Jobs</b>	New, local jobs created
<b>Food Security</b>	Businesses temporarily or permanently closed (net new businesses)
<b>Housing</b>	Community Workforce Agreements for redevelopment projects
<b>Healthcare Services</b>	Households identified as food insecure
<b>Emergency Management</b>	Property values increased or reduced
<b>Planning and Decision Making</b>	Health care and mental health facilities

## Phase I Actions

The following twenty actions were identified as Phase I priority actions. Actions were identified as Phase I that meet one or more of the following criteria:

- Easy, early wins – relatively straightforward actions that demonstrate climate action and help the City hit the ground running on making progress toward climate goals.
- Foundational steps – actions that set the stage or guide direction for other actions.
- Complex, but important initiatives – actions that will make a big difference but may be challenging or resource-intensive to implement, so getting started as early as possible will be important.
- Windows of opportunity – actions align with or could synergize with other City plans, projects, or initiatives, and so should be implemented concurrently.

# IMPLEMENTATION PLAN

## ASHLAND CLIMATE & ENERGY ACTION PLAN

Buildings and Energy			
<b>BE-1-1. Develop a comprehensive plan for the Municipal Electric Utility.</b> Initiate planning process in 2017.			Foundational step
<b>BE-1-2. Facilitate and encourage solar energy production.</b> Begin exploring increased local solar energy production as part of the 10-by-20 ordinance implementation.			Window of opportunity
<b>BE-1-3. Enhance production of on-site solar energy from City facilities.</b> Prioritize and development implementation plan and funding for recently completed City facility solar audit.			Window of opportunity
<b>BE-2-1. Increase outreach efforts to expand participation in energy efficiency programs and promote climate-friendly building and construction.</b> Update the land use code for conservation housing density bonus, expand participation in City's <a href="#">Smartbuild</a> program, and expand zero-interest loan program opportunities.			Easy, early win
Urban Form, Land Use & Transportation			
<b>ULT-1-2. Work with the RVTD to implement climate-friendly transit.</b> Begin conversations with RVTD to begin transitioning to lower emission buses and exploring ways to expand access and ridership.			Complex, but important
<b>ULT-2-1. Implement bicycle-friendly Transportation System Plan (TSP) actions.</b> Begin implementing capital improvement plans as part of TSP implementation.			Window of opportunity
<b>ULT-2-2. Explore additional opportunities to convert to <a href="#">shared streets</a> where appropriate to provide multimodal connectivity.</b> Pursue East Main St super-sharrow concept through Transportation Commission.			Window of opportunity
<b>ULT-3-2. Revise land use codes to require EV charging infrastructure at multifamily and commercial developments.</b> Draft revised code.			Complex, but important
<b>ULT-3-3. Provide information about electric and hybrid vehicles and rebates on the City's website.</b>			Easy, early win
<b>ULT-4-1. Consider regulating further construction or expansion in the Wildland Urban Interface (WUI) part of the urban growth boundary (UGB).</b> Explore available policy instruments or incentives for limiting development in this area.			Complex, but important
Consumption and Materials Management			
<b>CM-2-1. Partner with nonprofit organizations to promote the purchase of climate-friendly produce and products.</b> Implement as part of Economic Development Strategy 1.3: local import substitution.			Easy, early win
<b>CM-2-2. Expand community gardening and urban agriculture at community gardens, schools, parks, and rooftops.</b> Offer additional trainings, programs, and gardening areas.			Easy, early win
Natural Systems			
<b>NS-1-1. Manage forests to retain biodiversity, resilience, and ecosystem function and services in the face of climate change. Use best available science to inform fire management and planning.</b> Continue efforts as part of the Ashland Forest Resiliency Project, and implement actions in the 2016 Ashland Forest Plan.			Window of opportunity
<b>NS-1-3. Undertake restoration efforts to retain and restore native fish and riparian species.</b> Identify and create new restoration sites, and continue maintaining existing sites.			Easy, early win
<b>NS-2-2. Explore water-efficient technologies on irrigation systems and consider requiring them during permitting.</b>			Complex, but important
Public Health, Safety, and Security			
<b>PHSS-2-1. Engage leading employers in a dialogue on climate action.</b> Convene ongoing, organized meetings in partnership with the Chamber of Commerce.			Foundational step
<b>PHSS-3-1. Identify and work with vulnerable neighborhoods to create site-specific adaptation strategies that address public health.</b>			Foundational step
Cross-Cutting Strategies			
<b>CC-1-2. Create a formal public outreach and education plan to inform the community about climate actions.</b>			Foundational step
<b>CC-2-1. Ensure all City departments educate their staff members about the Climate and Energy Action Plan.</b> City CEAP Coordinator can engage with each department.			Foundational step
<b>CC-4-1. Engage with other governments and organizations around climate policy and action.</b> Join a formal organization such as ICLEI to explore best practices and establish relationships with peer communities.			Foundational step

## Phase II Actions

The following forty actions were identified as Phase II priority actions. Priority actions that were not identified as Phase I were assigned as Phase II.

Buildings and Energy		
<b>Strategy BE-2. Encourage increased building energy efficiency.</b>		
BE-2-2. Require building energy audits to identify and incentivize cost-effective energy efficiency improvements.	C	II
BE-2-3. Identify and adopt strategies to reduce energy efficiency barriers in rent/lease properties.	C	II
BE-2-4. Establish minimum energy efficiency standards for the affordable housing program.	C	II
<b>Strategy BE-3. Maximize efficiency of City facilities, equipment &amp; operations.</b>		
BE-3-1. Use results from City Facilities Energy Audit to prioritize City Facilities Capital Improvement Plans (CIPs) and maintenance improvements.	M	II
<b>Strategy BE-4. Improve demand management.</b>		
BE-4-1. Expand the current net meter resolution to include and incorporate virtual net metering.	C	II
BE-4-2. Implement utility-level smart grid technologies to facilitate efficiency and distributed energy solutions.	C	II
<b>Strategy BE-5. Prepare and adapt buildings for a changing climate.</b>		
BE-5-1. Encourage heat-tolerant building approaches such as cool roofs and passive cooling.	C	II
Urban Form, Land Use & Transportation		
<b>Strategy ULT-1. Support better public transit and ridesharing.</b>		
ULT-1-1. Coordinate with neighboring local governments to promote use of transit, carpooling, and car-sharing.	C	II
ULT-1-3. Establish policies to support development near transit hubs without displacing disadvantaged populations.	C	II
ULT-1-4. Evaluate feasibility of locally-owned and operated transit.	M	II
<b>Strategy ULT-3. Support more-efficient vehicles.</b>		
ULT-3-1. Implement a local fuel-related tax.	C	II
<b>Strategy ULT-4. Support more climate-ready development and land use.</b>		
ULT-4-2. Further revise community development plans to favor walkable neighborhoods and infill density.	C	II
ULT-4-3. Modify the WUI code to include construction techniques appropriate for wildfire-prone areas.	C	II
<b>Strategy ULT-5. Increase the efficiency of City fleet vehicles and employee commuting.</b>		
ULT-5-1. Provide carpool and vanpool parking, charging stations, and preferred parking for EVs for City employees.	M	II
ULT-5-2. Conduct a city fleet audit and use it to set policy and targets.	M	II
ULT-5-3. Develop policy to require the purchase of verified carbon offsets to offset City staff travel.	M	II
Consumption and Materials Management		
<b>Strategy CM-1. Reduce consumption of carbon-intensive goods and services.</b>		
CM-1-1. Implement an education campaign for waste and consumption reduction strategies.	C	II
CM-1-2. Support "collaborative consumption" community projects.	C	II
<b>Strategy CM-3. Expand community recycling and composting.</b>		
CM-3-1. Improve recycling programs to make them easier to use and implement new education and outreach to increase recycling in all sectors; expand public space recycling.	C	II
CM-3-2. Strengthen the Demolition Debris and Diversion ordinance to enhance enforcement and increase diversion and reuse.	C	II
<b>Strategy CM-4. Reduce food waste.</b>		
CM-4-1. Support edible food donation.	C	II
CM-4-2. Provide a kitchen best practices guide to help households and businesses reduce food waste and consumption.	C	II
CM-4-3. Facilitate recycling of commercial food waste.	C	II

# IMPLEMENTATION PLAN

## ASHLAND CLIMATE & ENERGY ACTION PLAN

	Scope	Type
CM-5-1. Introduce City environmentally preferable purchasing (EPP) guidelines for City procurement.	M	M
CM-5-2. Assess the feasibility of co-digesting food waste and biosolids to generate electricity at the wastewater treatment facility.	M	M
<b>Natural Systems</b>		
<b>Strategy NS-1. Promote ecosystem resilience.</b>		
NS-1-2. Expand use of green infrastructure such as bioswales, permeable pavement, other pervious surfaces to reduce flood risk and minimize sediment entry into creeks from trails and roads.	E	M
NS-1-4. Map and protect areas that provide ecosystem services.	E	M
<b>Strategy NS-2. Manage and conserve community water resources.</b>		
NS-2-1. Evaluate the value and potential for incentives for practices that reduce use of potable water for nonpotable purposes and recharge ground water.	E	M
NS-2-3. Expand water conservation outreach and incentive programs for residents and businesses.	E	M
<b>Strategy NS-3. Conserve water use within City operations.</b>		
NS-3-1. Evaluate the potential for installation of rainwater collection systems at City facilities for graywater uses, and investigate opportunities for graywater reuse at existing and new City facilities and properties.	M	M
NS-3-2. Implement efficiency recommendations from the City facilities water audit.	M	M
<b>Public Health, Safety, and Security</b>		
<b>Strategy PHSS-1. Manage ecosystems and landscapes to minimize climate-related health impacts.</b>		
PHSS-1-1. Promote the expansion of tree canopy in urban heat islands or areas that need air conditioning such as schools.	E	M
<b>Strategy PHSS-2. Promote a sustainable local economy that minimizes emissions and vulnerability.</b>		
PHSS-2-2. Support organizations, such as SOU, in evaluating risks to local food sources under climate change.	E	M
<b>Strategy PHSS-3. Optimize City services to minimize public health impacts.</b>		
PHSS-3-2. Identify and minimize potential urban heat impacts, such as by designating cooling centers through the city, improving cooling systems in schools and senior centers, and incentivizing cooling strategies such as cool roofs/pavements and expanded tree canopy.	E	M
PHSS-3-3. Develop or enhance heat-warning systems for employees and the public.	E	M
<b>Strategy PHSS-4. Optimize City services to minimize public safety impacts.</b>		
PHSS-4-1. Update the City's emergency response plan and ensure that preparation and updates recognize and address likely climate change impacts.	E	M
PHSS-4-1. Identify and address essential City services that are within the 100-year flood zone.	E	M
<b>Cross-Cutting Strategies</b>		
<b>Strategy CC-1. Educate and empower the public.</b>		
CC-1-1. Support capacity of neighborhood and community groups to implement climate mitigation and adaptation initiatives.	E	M
<b>Strategy CC-3. Mainstream and integrate climate considerations.</b>		
CC-3-1. Consider climate change in all City Council policy, budgetary, or legislative. Incorporate climate action considerations/relationship as part of the Council Communication document template.	M	M
CC-3-2. Consider CEAP goals in future updates of city plans.	M	M

## Implementation Schedule

The table starting on the following page details when, why, and by whom timeframes by which all priority actions in the CEAP will be implemented. The list includes additional information on each action, including co-benefits and relative, qualitative estimates of implementation costs and effectiveness in meeting CEAP goals. The CEAP also includes additional actions that were not listed as “priority”—these actions will be implemented on an opportunistic and as-needed basis.

### Phases

Phases for CEAP priority actions are designated by budget biennials and represent the relative sequence of actions in the CEAP. All actions are slated for near-term commencement; it is expected that longer-term actions will be identified during the three-year plan update process. Actions identified as Phase II could be initiated in Phase I, but not at the expense of completing Phase I actions.

- Phase I: Complete by 2020
- Phase II: Complete by 2025

### Departments

Actions are labeled by the primary department responsible for implementation. It is expected that many of these primary departments will need to work with other supporting departments and/or external stakeholders to fully and successfully implement the action:

- Community Development (including Building Division and Planning Division)
- Ashland Municipal Utility (Electric)
- Administration
- Parks and Recreation
- Conservation Division
- Public Works
- Police / Fire

### Co-benefits



Benefits low-income or disadvantaged communities



Benefits local habitats, recreation, or natural aesthetic



Benefits households, local economy, City operations budget, or jobs



Benefits public health (e.g. by enhancing local air quality)

### Relative Rankings

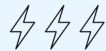
- \$ Lower relative implementation cost
- \$\$ Moderate relative implementation cost
- \$\$\$ Higher relative implementation cost



Effective in meeting CEAP goals



More effective in meeting CEAP goals



Most effective in meeting CEAP goals

# IMPLEMENTATION PLAN

## ASHLAND CLIMATE & ENERGY ACTION PLAN

	Scope	Type	Cost	Effectiveness	Co-benefits	Phase	Responsible Department
<b>Buildings and Energy</b>							
<b>Strategy BE-1. Support cleaner energy sources.</b>							
BE-1-1. Develop a comprehensive plan for the Municipal Electric Utility.	C	Mi	\$	⚡⚡⚡		I	Electric/Conservation
BE-1-2. Promote switching to lower-carbon fuels							
BE-1-3. Facilitate and encourage solar energy production.	C	Mi	\$\$	⚡⚡		I	Electric/Conservation
BE-1-4. Enhance production of on-site solar energy from City facilities.	C	Mi	\$\$	⚡		I	Public Works
<b>Strategy BE-2. Encourage increased building energy efficiency and conservation.</b>							
BE-2-1. Increase outreach efforts to expand participation in energy efficiency programs and promote climate-friendly building and construction.	C	Mi	\$\$	⚡⚡	⚖️	I	Conservation
BE-2-2. Require building energy audits to identify and incentivize cost-effective energy efficiency improvements.	C	Mi	\$\$	⚡⚡		II	Community Development
BE-2-3. Identify and adopt strategies to reduce energy efficiency barriers in rent/lease properties.	C	Mi	\$	⚡⚡⚡	⚖️	II	Conservation
BE-2-4. Establish minimum energy efficiency standards for the affordable housing program.	C	Mi	\$	⚡	⚖️	II	Community Development
<b>Strategy BE-3. Maximize efficiency of City facilities, equipment &amp; operations.</b>							
BE-3-1. Use results from City Facilities Energy Audit to prioritize City Facilities Capital Improvement Plans (CIPs) and maintenance improvements.	M	Mi	\$	⚡		II	Public Works
<b>Strategy BE-4. Improve demand management.</b>							
BE-4-1. Expand the current net meter resolution to include and incorporate virtual net metering.	C	Mi	\$\$	⚡⚡		II	Electric
BE-4-2. Implement utility-level smart grid technologies to facilitate efficiency and distributed energy solutions.	C	Mi	\$\$\$	⚡⚡⚡	💰	II	Electric
<b>Strategy BE-5. Prepare and adapt buildings for a changing climate.</b>							
BE-5-1. Encourage heat-tolerant building approaches such as cool roofs and passive cooling.	C	Ad	\$	⚡⚡	💰	II	Community Development
<b>Urban Form, Land Use &amp; Transportation</b>							
<b>Strategy ULT-1. Support better public transit and ridesharing.</b>							
ULT-1-1. Coordinate with neighboring local governments to promote use of transit, carpooling, and car-sharing.	C	Mi	\$	⚡⚡		II	Public Works
ULT-1-2. Work with RVTD to implement climate-friendly transit.	C	Mi	\$	⚡⚡	🚑	I	Public Works
ULT-1-3. Establish policies to support development near transit hubs without displacing disadvantaged populations.	C	Mi	\$	⚡⚡	⚖️	II	Community Development
ULT-1-4. Evaluate the feasibility of expanded local transit options.	M	Mi	\$\$\$	⚡⚡	🚑	II	Public Works
<b>Strategy ULT-2. Make Ashland more bike- and pedestrian-friendly.</b>							
ULT-2-1. Implement bicycle- and pedestrian-friendly actions in the City's Transportation System Plan and Downtown Parking Management Plan.	C	Mi	\$\$\$	⚡⚡⚡	🚑	I	Public Works
ULT-2-2. Explore opportunities to convert to shared streets where appropriate to provide multimodal connectivity.	M	Mi	\$\$\$	⚡⚡⚡	🚑	I	Public Works

	Scope	Type	Cost	Effectiveness	Co-benefits	Phase	Responsible Department
<b>Strategy ULT-3. Support more-efficient vehicles.</b>							
ULT-3-1. Implement a local fuel-related tax.	C	Mi	\$	⚡⚡⚡		II	Administration/Legal
ULT-3-2. Revise land use codes to require EV charging infrastructure at multifamily and commercial developments.	C	Mi	\$	⚡⚡⚡	🏠	I	Community Development
ULT-3-3. Provide information about electric and hybrid vehicles and rebates on the City's website.	C	Mi	\$	⚡⚡		I	Conservation
<b>Strategy ULT-4. Support more climate-ready development and land use.</b>							
ULT-4-1. Consider regulating further construction or expansion in the Wildland Urban Interface (WUI) part of the urban growth boundary (UGB).	C	Ad	\$	⚡⚡⚡	🌲	I	Community Development/Fire
ULT-4-2. Further revise community development plans to favor walkable neighborhoods and infill density.	C	Mi	\$	⚡⚡⚡	🏠	II	Community Development
ULT-4-3. Modify the WUI code to include construction techniques appropriate for wildfire-prone areas.	C	Ad	\$	⚡⚡		II	Community Development
<b>Strategy ULT-5. Increase the efficiency of City fleet vehicles and employee commuting.</b>							
ULT-5-1. Provide carpool and vanpool parking, charging stations, and parking for EVs for City employees.	M	Mi	\$\$	⚡	🏠	II	Public Works
ULT-5-2. Conduct a city fleet audit and use it to set policy and targets.	M	Mi	\$	⚡		II	Public Works
ULT-5-3. Develop policy to require the purchase of verified carbon offsets to offset City staff travel.	M	Mi	\$	⚡		II	Administration
<b>Consumption and Materials Management</b>							
<b>Strategy CM-1. Reduce consumption of carbon-intensive goods and services.</b>							
CM-1-1. Implement an education campaign for waste and consumption reduction strategies.	C	Mi	\$	⚡⚡		II	Administration
CM-1-2. Support "collaborative consumption" community projects.	C	Mi	\$	⚡⚡	💰	II	Administration
CM-1-3. Conduct a study to determine effective ways to reduce and track consumption-based emissions.							
<b>Strategy CM-2. Support sustainable and accessible local production and consumption.</b>							
CM-2-1. Partner with nonprofit organizations to promote the purchase of climate-friendly produce and products.	C	Mi	\$	⚡⚡	💰	I	Administration
CM-2-2. Expand community gardening and urban agriculture opportunities at community gardens, schools, parks, and rooftops.	C	Mi	\$\$	⚡⚡	⚖️	I	Administration/Parks
<b>Strategy CM-3. Expand community recycling and composting.</b>							
CM-3-1. Improve recycling programs to make them easier to use and implement new education and outreach to increase recycling in all sectors; expand public space recycling.	C	Mi	\$\$	⚡		II	Conservation
CM-3-2. Update the multi-family recycling ordinance to encourage more diversion.							
CM-3-3. Strengthen the Demolition Debris and Diversion ordinance to enhance enforcement and increase diversion and reuse.	C	Mi	\$\$	⚡⚡		II	Conservation
<b>Strategy CM-4. Reduce food waste.</b>							
CM-4-1. Support edible food donation.	C	Mi	\$	⚡	⚖️	II	Conservation



# IMPLEMENTATION PLAN

## ASHLAND CLIMATE & ENERGY ACTION PLAN

	Scope	Type	Cost	Effectiveness	Co-benefits	Phase	Responsible Department
CM-4-2. Provide a kitchen best practices guide to help households and businesses reduce food waste and consumption.	C	Mi	\$	⚡⚡		II	Conservation
CM-4-3. Facilitate recycling of commercial food waste.	C	Mi	\$\$	⚡⚡		II	Conservation
<b>Strategy CM-5. Improve sustainability of City operations and purchases.</b>							
CM-5-1. Introduce City environmentally preferable purchasing (EPP) guidelines for City procurement.	M	Mi	\$	⚡		II	Administrative Services
CM-5-2. Assess the feasibility of co-digesting food waste and biosolids to generate electricity at the wastewater treatment facility.	M	Mi	\$\$\$	⚡⚡		II	Public Works
<b>Natural Systems</b>							
<b>Strategy NS-1. Promote ecosystem resilience.</b>							
NS-1-1. Manage forests to retain biodiversity, resilience, and ecosystem function and services in the face of climate change. Use best available science to inform fire management and planning to manage ecosystem health, community safety, and carbon storage.	C	Ad	\$	⚡⚡⚡	🌲	I	Fire
NS-1-2. Expand use of green infrastructure such as bioswales, permeable pavement, other pervious surfaces to reduce flood risk and minimize sediment entry into creeks from trails and roads.	C	Ad	\$	⚡⚡	🌲	II	Community Development
NS-1-3. Undertake restoration efforts to retain and restore native fish and riparian species.	C	Ad	\$\$	⚡⚡	🌲	I	Parks & Recreation
NS-1-4. Map and protect areas that provide ecosystem services.	C	Ad	\$\$	⚡⚡	🌲	II	Parks & Recreation
<b>Strategy NS-2. Manage and conserve community water resources.</b>							
NS-2-1. Evaluate the value and potential for incentives for practices that reduce use of potable water for nonpotable purposes and recharge ground water.	C	Mi	\$\$	⚡⚡⚡	🌲	II	Conservation
NS-2-2. Explore water-efficient technologies on irrigation systems and consider requiring them during the permitting process.	C	Mi	\$\$	⚡⚡⚡		I	Conservation
NS-2-3. Expand water conservation outreach and incentive programs for residents and businesses.	C	Mi	\$\$	⚡	💰	II	Conservation
<b>Strategy NS-3. Conserve water use within City operations.</b>							
NS-3-1. Evaluate the potential for installation of rainwater collection systems at City facilities for graywater uses, and investigate opportunities for graywater reuse at existing and new City facilities and properties.	M	Mi	\$\$	⚡		II	Public Works
NS-3-2. Implement efficiency recommendations from the City facilities water audit.	M	Mi	\$\$	⚡		II	Public Works
<b>Public Health, Safety, and Well-being</b>							
<b>Strategy PHSW-1. Manage ecosystems and landscapes to minimize climate-related health impacts.</b>							
PHSW-1-1. Promote the expansion of tree canopy in urban heat islands or areas that need air conditioning such as schools.	C	Ad	\$	⚡⚡	🌲	II	Parks & Recreation/ Community Development
<b>Strategy PHSW-2. Promote a sustainable local economy that minimizes emissions and vulnerability.</b>							
PHSW-2-1. Engage leading employers in a dialogue on climate action, for example, by organizing and facilitating roundtables.	C	Mi	\$	⚡⚡	💰	I	Conversation
PHSW-2-2. Support organizations, such as SOU, in evaluating risks to local food sources under climate change.	C	Ad	\$	⚡	💰	II	Administration

	Scope	Type	Cost	Effectiveness	Co-benefits	Phase	Responsible Department
<b>Strategy PHSW-3. Optimize City services to minimize public health impacts.</b>							
PHSW-3-1. Work with vulnerable populations to create specific adaptation strategies to address public health risks.	C	Ad	\$	⚡⚡		I	Administration/Fire
PHSW-3-2. Identify and minimize potential urban heat impacts.	C	Ad	\$\$	⚡	 	II	Parks & Recreation/Fire
PHSW-3-3. Develop or enhance heat-warning systems for employees and the public.	C	Ad	\$	⚡		II	Fire
<b>Strategy PHSW-4. Optimize City services to minimize public safety impacts.</b>							
PHSW-4-1. Update the City's emergency response plan and ensure that preparation and updates recognize and address likely climate change impacts.	C	Ad	\$	⚡⚡⚡		II	Fire
PHSW-4-1. Identify and address populations and essential City services that are within the 100-year flood zone.	C	Ad	\$\$	⚡⚡		II	Public Works
<b>Cross-Cutting Strategies</b>							
<b>Strategy CC-1. Educate and empower the public.</b>							
CC-1-1. Create a formal public outreach and education plan to inform the community about climate actions and progress.	C	Mi	\$	⚡⚡		I	Administration
CC-1-2. Support capacity of neighborhood and community groups to implement climate mitigation and adaptation initiatives.	C	Mi	\$	⚡⚡		II	Administration
CCC-1-3. Assess the feasibility of a City-sponsored carbon offset program.							
<b>Strategy CC-2. Educate and empower City staff.</b>							
CC-2-1. Ensure all City departments educate their staff members about the Climate and Energy Action Plan.	M	Mi	\$	⚡		I	Administration
<b>Strategy CC-3. Mainstream and integrate climate considerations.</b>							
CC-3-1. Consider climate change in all City Council policy, budgetary, or legislative decisions and as part of the Council Communication document template.	M	Mi	\$	⚡⚡⚡		II	Administration
CC-3-2. Consider CEAP goals in future updates of city plans.	M	Mi	\$	⚡⚡⚡		II	Administration





# Appendices

## **CLIMATE TRENDS SUMMARY**

This summary provides more information on projected climate change impacts and trends in Ashland, including changes in temperature, precipitation, and natural hazard risk.

## **PUBLIC ENGAGEMENT PROCESS OVERVIEW**

The public provided valuable input that helped shape the plan. See when and how the public was consulted, and how public input was used in the plan.

## **EMISSIONS MODELING AND TARGET-SETTING METHODOLOGY**

Take a behind-the-scenes look at the process used to model Ashland's greenhouse gas footprint and set emissions-reduction targets.

## **ASHLAND GREENHOUSE GAS INVENTORY**

This document summarizes the city's emissions by sector and activity type from 2011 through 2015, and set the emissions baseline used to identify goals and prioritize strategies and actions throughout this plan.

# Council Communication

## July 19, 2016, Business Meeting

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### Climate and Energy Action Plan – Project Update

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**FROM:**

Adam Hanks, Management Analyst, adam@ashland.or.us

**SUMMARY**

The ad-hoc Climate and Energy Action Plan Committee (CEAP) has been working on the development of a draft plan to bring to Council in January of 2017, per Council request. A process progress check-in was included in the plan to provide the Mayor and Council with an update on the work of the committee and the project consultant team. This update will summarize the work to date and focus primarily on the CEAP's first milestone recommendation of overall plan goals and targets that form the foundation for the remainder of the plan development.

**BACKGROUND AND POLICY IMPLICATIONS:**

At the instigation of the Conservation Commission and with the support of Council, Mayor Stromberg created the CEAP in June of 2015 with a core group of members. Additional members have been added since that time, with a final member total of 13 (11 voting members).

The CEAP began meeting in September of 2015, assisting staff in the development and issuance of a request for proposals for consultant services for the project. With considerable involvement of the committee in the review and selection process, Cascadia Consulting Group was selected in February of 2016 to assist the committee and City staff in the development of the plan document as well as facilitate the public involvement process throughout the project.

The first major milestone recommendation request posed to the committee was for the overall plan goals and targets. Knowing that the goals and targets set the foundation for how the implementing actions are developed, reviewed, prioritized and selected. As the goals and targets lay the foundation for the rest of the plan, the goals/targets milestone was selected as a Council check-in time in the plan development timeline.

To assist the CEAP in developing this first milestone recommendation, a public open house was held on May 24, 2016, to introduce the project to the community, to update them on the existing science-based data guiding the project and to solicit their input and feedback on the importance of the topic and the aggressiveness with which to build the plan. An online survey also was made available on the City's website to gather the same input/feedback for those that were unable to attend the open house. The open house had an attendance of approximately 175-200 and 40 online survey responses were submitted.

At both its June 15 and July 6, 2016, meetings, the Committee went through a series of structured questions to build an overall draft plan vision with accompanying goals and targets to meet that vision.



Below are the preliminary goal/target recommendation:

- 1) A goal of carbon-neutral by 2047, using a sector-based methodology (i.e. this goal doesn't include consumption)
- 2) Five-year benchmark/milestone intermediate targets (2022, 2027, 2032, 2037, 2042, 2047)
- 3) All calculations and benchmarking based on 2015 as the base year
- 4) Final recommended goal/targets will include specific fossil fuel and GHG based targets for City operations (specifics TBD by committee)
- 5) Committee will be discussing further how consumption issues factor into the plan and whether a separate goal should be established for consumption-reduction recommendation along with the sector-based plan
- 6) Committee is still discussing the merits of adopting goals/targets by ordinance and the optimal timing for proposing an ordinance to Council.

**COUNCIL GOALS SUPPORTED:**

22. Prepare for the impact of climate change on the community.
  - 22.1 Develop and implement a community climate change and energy plan

**FISCAL IMPLICATIONS:**

The recommendations being presented to Council are preliminary. The final plan will include short-, mid-, and long-term prioritized implementing actions for accomplishing the recommended goals and targets. The implementation plan will include cost estimates for all actions, as well as cost/benefit calculations. No financial commitments are being requested at this time.

**STAFF RECOMMENDATION AND REQUESTED ACTION:**

The preliminary recommendations of the CEAP will be used to develop the implementation component of the plan. While no specific, formal action is requested at this time, Council feedback on the recommended goals and targets would be valuable for any modifications necessary before CEAP begins the actions and implementation phase of the project.

**SUGGESTED MOTION:**

N/A

**ATTACHMENTS:**

- June 15, 2016 – CEAP Ad-Hoc Committee Meeting Packet

**ADDITIONAL LINKS**

- [www.ashland.or.us/climateplan](http://www.ashland.or.us/climateplan)
- CEAP Public Input Summary – June 2016  
[http://www.ashland.or.us/Files/AshlandCEAP\\_BaselinePublicInputSummary.pdf](http://www.ashland.or.us/Files/AshlandCEAP_BaselinePublicInputSummary.pdf)





## Climate and Energy Plan Committee Meeting Agenda

June 15, 2016 | 5:30-7:30 | Community Development Building  
51 Winburn Wy – Siskiyou Room

### Agenda

Duration	Item	Lead
5 min	<b>Call to Order</b> <ul style="list-style-type: none"><li>• Approval of Minutes – May 18, 2016</li><li>• Icebreaker Question</li></ul>	Roxane
15 min	<b>Public Forum</b>	
20 min	<b>Review/Discussion of Open House #1</b> <ul style="list-style-type: none"><li>• Committee Survey in Packet</li></ul>	All
10 min	<b>Committee Decision Making Process</b>	Roxane
60 min	<b>Vision, Goals &amp; Targets - Committee Recommendations</b> <ul style="list-style-type: none"><li>• Draft Vision statement in packet</li><li>• Goals/Targets question breakdown in packet</li><li>• Goals/Targets discussion guide in packet</li></ul>	All
10 min	<b>Upcoming Meetings</b> (Committee meeting July 6 and Council meeting July 19)	Adam

**MINUTES FOR THE CLIMATE & ENERGY ACTION PLAN ad hoc COMMITTEE**  
**Wednesday, May 18, 2016**  
**Siskiyou Room, 51 Winburn Way**

**1. Call to Order**

Councilor Rich Rosenthal called the meeting to order at 5:30 p.m.

Committee members James McGinnis, Cindy Bernard, Greg Jones, Isaac Bevers, Jim Hartman, Bryan Sohl, Marni Koopman, Louise Shawkat, Roxane Beigel-Coryell, and Claudia Alick were present. Staff member Adam Hanks was present. Consultant Andrea Martin and Eugene City Councilor Alan Zelenka participated in the meeting by phone.

**2. Approval of minutes**

Bevers clarified names of public speakers from previous minutes.

**Minutes were approved with amendments made by Bevers.**

**3. Around the Room**

Group did around the room team building regarding their favorite part of their morning routine.

**4. Public Input**

Huelz Gutchen: Stated he has been talking at City Council meetings for a while and recently has been putting those discussions on YouTube. He stated that Commissioner Hartman recently called him a bulldog – he doesn't believe he is, but that he is just a community development director "wanna be." He wants this position because climate issues are so important. He stated that in China there are over 1 billion people, all on one grid. There is one set of rules for all aspects of electricity use, solar panel installation, etc. We can regulate similarly here. He stated that Exxon recently got into trouble for hiding climate issues for years.

Robert Block-Brown: He is here representing Rogue Climate and is in support of all the youth presentations and participation in this process. He offered appreciation for the group's work. He encouraged the group to have the plan be science-based, socially equitable, and something that protects Ashland's quality of life. He also encouraged the group to have an ordinance in order to make sure there is plan accountability. He and Rogue Climate are looking forward to the open house and they, along with the Interfaith Social Justice Coalition, have been putting out information about the open house to encourage participation.

Ken Crocker: Stated that he has been sitting with two things since the last meeting: 1) that it seems like we're on a path to set targets of where we want to be in 2050 but we should avoid focusing on targets which may change. He instead encouraged the group to focus on how to change Ashland culturally to meet the challenge of climate change. In other words, be focused on what we can do to be more adaptable. 2) The plan relies on the City of Ashland to help implement and this might be scary for city staff. The group needs to build into the plan sufficient resources for city staff to implement effectively. He encouraged Hanks in his role as the liaison to city staff.



## **5. Review of Climate Assessment Document**

Hanks stated the document is currently still in draft form. Some of the document will be adjusted for the sake of public understanding and inclusion in the upcoming open house. Consultant Martin reviewed some of the plan and requested the group give input on what might be missing. This document is related to the “primary” climate impacts, but doesn’t take the next step to say how these impacts might affect specific sectors in the community.

Martin reiterated that there will be visuals (charts, graphs, etc.) added to make the document more readable before it is finalized.

Group discussed the possibility of including low and high climate predictions. Some thought that Cascadia’s choice of moderate and extreme predictions were well chosen. Most of the group agreed that using standard scenarios is important for consistency between the plans of various communities in the northwest. There was some concern that much of the information is very global – which is important for framing – but not much is reflective of our specific area.

Group discussed the desire to have the specific data sources referenced better in the document.

Group requested inclusion of both night-time temperature and freezing temperature predictions. Martin agreed to see if those could be included.

Group discussed possible inclusion of analysis of demographic shifts due to climate change (climate refugees). Martin stated that there likely isn’t data available for this.

Group discussed why the climate science primer is on page 28, rather than at the beginning of the document. Martin stated this was done because most of the people who will be looking at this document are looking for the hard science, and won’t need the primer. Group determined that including a brief primer in the executive summary might help.

## **6. Open House #1**

Martin thanked the group for the input they gave at the last committee meeting. She stated they are working on getting a videographer to record the event and participate in one of the stations. She gave details of when the committee needs to arrive and how they will be used at the open house. Group gave their general preferences regarding which station they would like to be assigned. Group thanked Martin for her work. Martin’s conference call ended.

## **7. Goals and Targets in Ordinance Form**

Group discussed whether it would be appropriate to let the Council know at the scheduled July update that there is a strong possibility of an ordinance proposed as part of this plan. Group discussed what timeline would be most appropriate.

Eugene City Council member, Alan Zelenka, joined the group via conference call to discuss how the ordinance in Eugene came to be, what has been positive from the ordinance and what challenges they have faced due to the ordinance. Some of what he encourage the group to consider when drafting/proposing an ordinance:

- Having an ordinance has the force of law and public hearings are required for changes to the ordinance.
- Use the ordinance (or discussions of the ordinance) to engage the community to participate in the plan.
- Be specific on timelines for every piece of the plan.
- Have scientifically-based actions. “Having an unrealistic goal is worse than having no goal.”
- Short-term goals need to be consistent with long-term goals. Having an ordinance helps keep that consistency.
- Think about the overall costs – focus on the lowest cost options for achieving goals. In other words, having either social or economic costs too high will cause the plan to fail.
- Make sure that the reporting requirements are realistic.

Group discussed with Zelenka if there has been any negativity from the plan or the ordinance. He stated there hasn't been much, other than people frustrated by the perception that nothing is being done. He stated that Cities aren't good at letting people know what they have achieved, and encouraged the group and the city to be transparent about every achievement and to frequently report what they are doing well.

Group asked if Eugene included consumption in their plan. He stated the next update to the plan will include some of that, it's just harder to track accurately.

Group asked if the ordinance helped to make funds available for city projects (or staffing). Zelenka stated that there was no real additional funding but that it has helped create a “core staff” team who help focus and implement projects in each department. It also helps with selecting what projects will get funded in the CIP.

Group asked if the Eugene plan considered including carbon offsets to achieve goals. Zelenka stated they are now considering using offset to achieve the 2020 goals (up to 40% of the goal). They are looking into focusing on local offsets to also use it as a “mini economic development tool.”

Group thanked Zelenka for his information and his phone call ended.

Group discussed whether it was appropriate to move forward with an ordinance at this time. Most agreed it was too early in the process to create a specific ordinance but it shouldn't be left out of the process. Most felt it was important to get more community input and to let the Council know that this concept will likely be coming to them as part of the action plan. Group expressed concerns with rushing to an ordinance without getting the details correct.

### **8. Geos Project Update**

Koopman stated that Geos is moving forward with their polling project. They have incorporated the comments from the committee and will be doing a test run of the poll next week. Geos is also doing five vulnerability meetings with local community leaders. They are hoping to schedule most of these meetings in early June.

*Rosenthal departed the meeting at 7:21 p.m.*

Koopman stated that the vulnerability assessment information will be used in the group's process, mostly during the development of adaptation strategies. Hopefully the information gathered will make the adaptation strategies more robust.

### **9. Next Meeting**

Hanks stated that there have been some adjustments to the meeting schedule (shown in packet) to reflect a better connection between the projects such as the open houses and other group activities. The next full-committee meeting is June 15, 2016 at 5:30 p.m., though members are encouraged to attend the city staff and committee member workshop on May 25<sup>th</sup> at 2:00 p.m.

### **10. Adjournment**

Meeting adjourned at 7:28 p.m.

Respectfully submitted,  
Diana Shiplet, Executive Assistant

# ACEAP Committee After Action Review (AAR) of Public Meeting #1 (raw results) Published: June 9, 2016

## What went well in the meeting and why?

- There was a great turnout as far as the number of people and how engaged they were in the issue. The meeting went smoothly and was well staffed and the booths were easy to navigate and there were lots of people to answer questions and get information. The city staff and council attendance was impressive and reflected the importance of the issue. Specifically, Adam Hanks and Diana Shippet should be commended for their organization and logistical preparation - it was due to a lot of work on their end that things went so smoothly.  
6/6/2016 10:27 AM [View respondent's answers](#)
- Nice turn out.  
6/5/2016 12:23 PM [View respondent's answers](#)
- The event was well-promoted and generated an excellent turnout. The robust attendance appeared to produce the intended outcome: lots of citizen feedback.  
6/5/2016 9:28 AM [View respondent's answers](#)
- There was good turn out from the public and the stations provided a convenient way to supply information and receive feedback/input from the public without causing too much of a cluster.  
6/1/2016 11:57 AM [View respondent's answers](#)
- Introductions and talks by the Mayor, Rich Rosenthal, Adam Hanks.  
6/1/2016 10:47 AM [View respondent's answers](#)
- Sorry, but could not attend. However, from my read of the local press and comments from others, it appears to have been a successful event.  
6/1/2016 7:41 AM [View respondent's answers](#)
- The layout with the placement of the welcome table-was inviting the placement of the tables: seemed crowded together, space for folks to gather would have been better to have more space from one table and easel to another. Demonstrated waste reduction with reusable plates/cups. The main speaker from the consultant company was not dynamic-no enthusiasm, too long and technical. The room temperature was about right--usually too cold. Asking for help putting away chairs was good. Introduction of the ceap committee good. appreciated the city's outreach-in news services etc...  
6/1/2016 7:39 AM [View respondent's answers](#)
- A lot of people enthusiastically showed up. They were interested in learning about the science of climate change, the projected effects on Ashland and the surrounding area, and in visioning on Ashland's future.  
5/31/2016 11:02 PM [View respondent's answers](#)

## What would you suggest for areas of improvement in future public meetings, and why?

- The feedback that I have heard from folks that came included: 1) It was really exciting to see so many people there engaged in the plan and they felt like the event had great energy. 2) People liked the booths, and liked that way of engaging, others also felt like a more traditional public forum would have been good where people could have heard each others comments, and brought up ideas publicly. It would be good to have more opportunity for people to speak and be heard. 3) Some people were hoping for more details regarding what options the city is considering for the plan so that they could respond directly to actual

programs / policies / and plans as opposed to just general ideas. 4) The science presentation was hard to follow and hard to understand how the findings actually related to our community. The style of presentation was extremely dry. More of a story telling style with important take home messages would be more effective, especially if given by a dynamic speaker who is trusted by the community. 5) It seemed like a lot of the usual suspects in attendance. - it would be great to see more effort in getting other community members to engage in different ways.

6/6/2016 10:27 AM View respondent's answers

- We needed to give the public 3 choices of goals, and let them vote on them. Also, the issue was not properly framed globally in terms of what is needed to avoid a 2 degree C increase, why that 2 degree limit is chosen by all countries in Paris, and why they are even hoping to strive for 1.5 degrees.

6/5/2016 12:23 PM View respondent's answers

- The PA system at the Armory was inadequate for the crowd assembled; there needed to be a dynamic MC to introduce speakers and to convey process context.

6/5/2016 9:28 AM View respondent's answers

- The presentation was very boring and dry. I would suggest having different presenters and maybe being more mindful about what information is important to present and what can be discussed on a smaller scale with expert groups. I would also suggest having an opportunity for an open forum Q&A. People didn't really have an opportunity to ask questions, other than at the stations, but it probably would have been beneficial to have open Q&A.

- 6/1/2016 11:57 AM View respondent's answers

- Have some time, 30-45 minutes for open forum with perhaps a panel of Ad-Hoc members and the audience having a discussion.

6/1/2016 10:47 AM View respondent's answers

- Try to reach out to other constituents. Events and topics such as this have a tendency to bring out the same people. Need to figure out a way to engage others.

6/1/2016 7:41 AM View respondent's answers

- some education on how to access city website and how to navigate-this is not easy put address on big screens while folks are milling around. a new flyer will have to be developed eliminating the first date with reason for having the Sept meeting clear. There were few Council members present-they need to show up.. Representatives from commissions should be evident.

6/1/2016 7:39 AM View respondent's answers

- The stations were good. It would be better to have station facilitators in front of the tables interacting with the public. This way they "feel" our commitment. The speakers for the presentations were not inspiring. Lots of data was presented but in a dry and unappealing manner. Passionate speakers make for engaged audiences. We definitely need to change how speakers engage with the public at future events. Design future meetings that engage the audience in active Q&A during or after each speaker. People feel heard this way.

5/31/2016 11:02 PM View respondent's answers

## General Comments

- There seems to be a lack of understanding about how the science feeds into the planning process in general, and the public outreach more specifically. Presenting the science in a really engaging and educational manner is a fantastic tool for community engagement. Yet communication of the science needs to come from trusted and dynamic experts, it needs to come in forms that are easy to understand and that tell a story (such as online short illustrated videos or a short handout with take home messages), and it needs to be clear how the science leads the decision making process (a science-based plan). Also, some of the science was presented in a misleading manner (specifically wildfire) that could affect decision making regarding that topic. The science presentation at the public workshop caused me to tune out and disengage rather than want to learn more. At the workshop with the city, the science was again cast aside, rather than explored and discussed so that

everyone is on the same page as to what the science is telling us and what it is not telling us. This can create confusion later, as different people will be recommending different strategies based on their very different understanding of what climate change really means for Ashland. Having Mark Yaconelli, Jeff Golden, or another beloved Ashland leader address the topic and act as the MC can really change the dynamics of the meeting. Plus, it is worth including art, music, and/or something out of the ordinary to keep peoples' attention and make it more fun.

6/6/2016 10:27 AM [View respondent's answers](#)

- The committee needs to have a speaker at the next meeting with key talking points agreed to by the group.

6/5/2016 12:23 PM [View respondent's answers](#)

- Open House No. 2 should be held at a different venue with more comfortable seating and a more audible PA system, such as the Rogue River Room at SOU. The most dynamic speakers on the committee should be utilized to explain key information to attendees.

6/5/2016 9:28 AM [View respondent's answers](#)

- Many people at the event mentioned how boring and dry the presentation was.

6/1/2016 11:57 AM [View respondent's answers](#)

- I have spoken with many people who simply could not make it to the 1st public forum. They are very interested in having an opportunity to review material and give their input, just as those who were at the event had an opportunity to do so. After each open house we should post a replica of what went on at each open house for a period of time after the public event (including video and ppts of speakers). A website should contain all of the material and a link to a survey for each of the questions brought before the public during the open house and allow others who were unable to attend the meeting to give their input as well. 2) Speakers at the public meetings should have a more dynamic interaction with the audience. Some speakers at the first public meeting presented data in a very dry and possibly overwhelming way. We need lively, engaging speakers when presenting material and data.

6/1/2016 10:50 AM [View respondent's answers](#)

- Need to have some time to discuss "The Vision". Not just go over projected temps and data. Get people involved with sharing specific ideas, or present specific ideas and see how the community reacts.

6/1/2016 10:47 AM [View respondent's answers](#)

- Potential strategies: this is going to be a selling event to get folks on board...really important to point out the benefits of potential strategies...what is in it for 'me'

6/1/2016 7:39 AM [View respondent's answers](#)

- I appreciate the intent of the contractor and the city staff in making this a great event. Kudos to both. And, we have an opportunity to improve public engagement and passionate involvement in our next two public meetings. Additionally, We should take advantage of an electronic media opportunity for further and new public involvement. A poll like this one with the same questions posed as at the event would expand our reach to the public for critical input. Creating a new poll and sending out an invite to all of the mailing lists, and referenced in other ways, is warranted.

5/31/2016 11:02 PM [View respondent's answers](#)

# Committee Vision and Goal Setting

June 15, 2016

## Objective

The vision and goals are preliminary and will be communicated to City Council and the public as the plan development process moves forward. The vision and goals will be the basis by which the plan elements are constructed. Through the plan development process, the goals and targets are subject to revision by the committee as the CEAP is further defined

## Procedure

The committee will attempt to reach consensus on all decisions and recommendations. If consensus cannot be reached, decision-making will occur using the motion/second and committee member voting on each component.

## Committee Roles and Responsibilities

1. Members accept the responsibility to come to meetings prepared for the discussion. Members will work between meetings to educate themselves on issues.
2. Members will recognize the legitimacy of the concerns and interests of others, whether or not they are in agreement with them. Members will participate in the spirit of giving the same priority to solving the problems of others as they do to solving their own problems.
3. Members will share discussion time and encourage everyone to participate fully. Members will attempt to present their views in a succinct manner and will cooperate with the facilitator to ensure that everyone is given equitable time to state their views.
4. Members will never interrupt another and will listen respectfully to others, even while disagreeing. Only one person will speak at a time. Members will not participate in side conversations.
5. Members will look for common ground and areas of agreement as the foundation for building consensus recommendations. Members will communicate their concerns, needs, and diverse opinions but will not give ultimatums.
6. After the meeting, be respectful of the decision-making process and other committee members even if you may not completely agree with the outcome(s)

## 1. Vision

Discuss and approve the following vision statement:

Ashland **leads** on climate action to foster a **resource-efficient, diverse, and prosperous** community with **secure** and sustainable access to clean **air, water**, food, and **green spaces** for future generations.

## 2. Preliminary Goal

Using the breakdown of questions provided below, discuss and vote on your preference for Ashland's long-term community emissions reduction goal.

1. Which type of inventory would you like to include in Ashland's emission reduction goal?
  - a. Sector-based emissions
  - b. Consumption-based emissions
2. Do you think Ashland should include purchasing of offsets as an option to reach its emission reduction goal?
  - a. Yes
  - b. No
3. Do you think Ashland should have a specific goal for reducing emissions from City operations?
  - a. Yes
  - b. No
4. If yes to #3, should the targets be fossil fuel reductions or GHG?
  - a. Fossil Fuel
  - b. GHG
  - c. Both
5. Which year do you think Ashland should use as a base year for its greenhouse gas reduction goal?
  - a. 2011
  - b. 2015
6. What do you think Ashland's reduction goal for 2050 should be?
  - a. <80% reduction by 2050
  - b. 80% reduction by 2050
  - c. 90% reduction by 2050
  - d. 100% reduction by 2050 (i.e., carbon neutral)
  - e. >100% reduction by 2050
7. Which years should be used for intermediate targets?
  - a. 2018, 2025, 2040
  - b. 2020, 2030, 2030
  - c. 2022, 2028, 2034, 2040
  - d. 2025, 2035
  - e. Other combo



### 3. Goals/Targets Adopted by Ordinance

1. Should plan include recommendation for goals/targets to be adopted by Ordinance?
  - f. Yes
  - g. No
2. If yes, should ordinance match the plan goals/targets or be something different (i.e. absolute vs aspirational)
  - a. Match
  - b. Different
3. If Different, how should the goals/targets in ordinance be structured?

## Emissions Reduction Goal Setting: Discussion Guide

### Sector Based vs. Consumption Based Emission Targets

(Excerpt from City of Ashland GHG Inventory – February 2016)

Ashland's community greenhouse gas (GHG) inventory includes both "sector-based" and "consumption-based" emissions. Sector-based emissions include local emissions from building energy use in residential, commercial and industrial sectors, transportation energy use, methane emissions from solid waste disposal, wastewater treatment, and fugitive leakage of refrigerants from cooling systems. Consumption-based emissions are generated outside the community in order to produce the goods and food consumed by Ashland residents. Together, they make up a community's total emissions.

The community has greater control over the sector-based emissions sources, as well as better data, which is why these emissions are typically the primary accounting methodology used to set emissions mitigation goals. While the community does not control the means of production for the majority of goods and food it consumes, there is local control and choice in the quantity of demand; the types of products; and vendors who supply the products.

### Ashland GHG Emissions, Past and Future

- **Trends:** Total emissions decreased 6% between 2011 and 2015, and sector-based emissions decreased 10%. These decreases are largely attributable to increased renewable electricity on the regional grid, decreased residential electricity use, and decreased natural gas use due to warmer winters. Reductions are greater on a per-capita basis (12% and 8% for sector- and consumption-based, respectively).
- **Composition:** Buildings and transportation are the largest contributors to sector-based emissions (contributed 27% and 23% to overall emissions in 2015, respectively), while household goods and food contributed 48% to the overall emissions. City government operations, refrigerant leakage, and solid waste and wastewater contributed a relatively small amount to overall emissions (2% each).
- **Public perception:** Initial public response to the GHG inventory reveal a desire to be bold, ambitious, and show leadership in setting goals and actions and motivating the community. There is also an emphasis on changing personal habits and behaviors, as well as instituting a legally-binding emissions reduction goal. The highest-priority emissions sources are buildings and energy and transportation and land use.

- Projections:** As shown in Figure 1, preliminary modeling shows that, assuming expected increases in CAFÉ standards and state renewable portfolio standards, Ashland can expect a 28% reduction in GHG emissions from 2015 to 2050 under a business as usual scenario. Meeting an 80% reduction by 2050 goal would require an additional 40% reduction in vehicle miles travelled, 40% reduction in building energy use, and 55% reduction in refrigerant leakage and waste emissions, as shown in Figure 2.

Figure 1. Preliminary emissions forecasting for Ashland

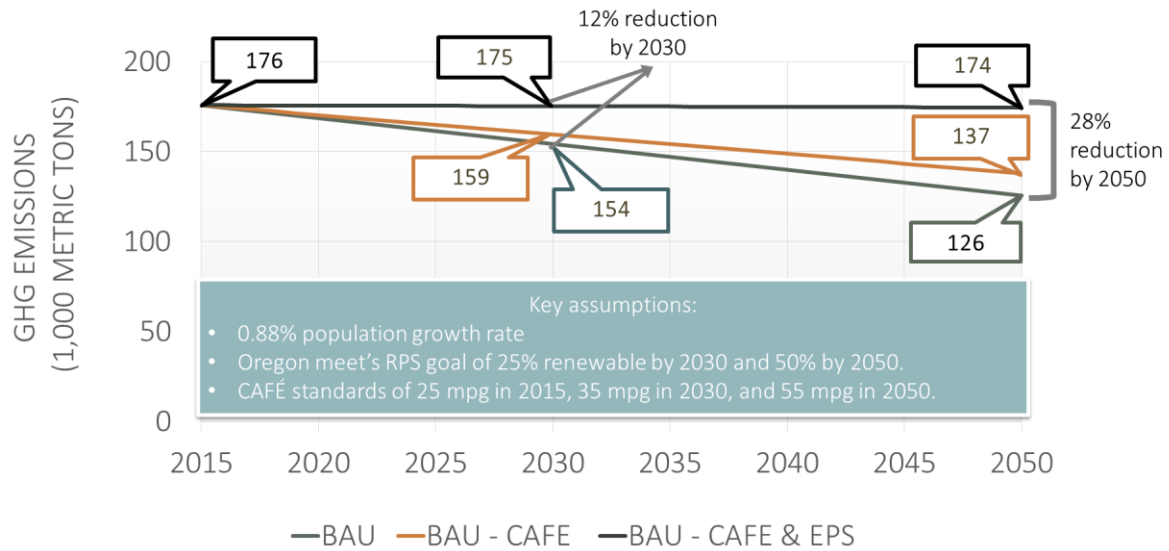
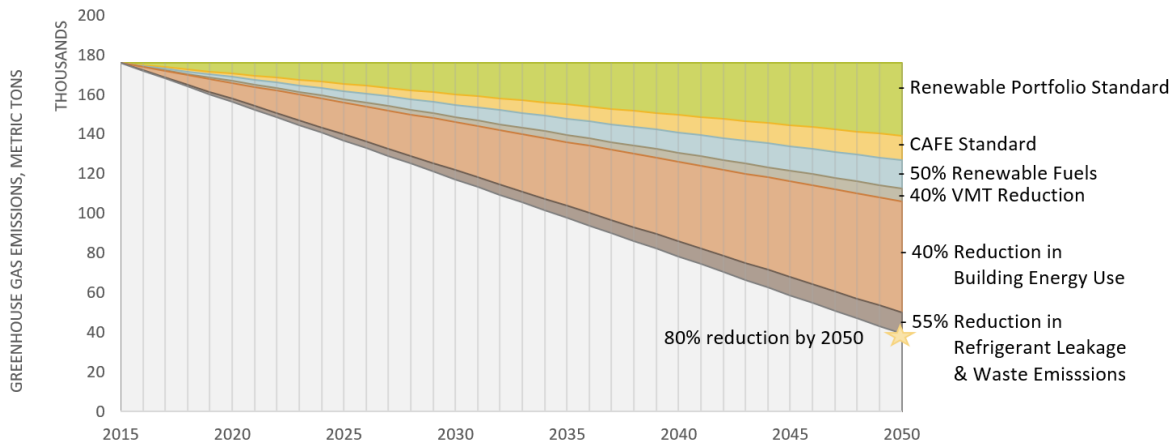


Figure 2. Preliminary wedge analysis for Ashland



### Other Jurisdictions

ICLEI and WWF's 2015 *Measuring Up 2015* report summarizes greenhouse gas reduction targets set by 132 local governments for their communities. The report revealed the following trends:

- 25% of examined communities set 80% or greater by 2050 or earlier (largely from IPCC recommendation).
- 46% set target equal or greater than US target of 26-28% below 2005 levels by 2025.

- 3% of examined communities (n=4) set a 100% or net zero emissions target.
- Those communities with 5-year targets range from 4-25% reductions.
- Those communities with 2030 targets range from 35% to 50% reductions.
- Those communities with 2050 targets range from 50% to 100% reductions (80% is by far most common)

Emissions targets for other Oregon jurisdictions are summarized below:

City of Eugene

- Reduce community-wide greenhouse gas emissions 10% below 1990 levels by 2020 and 75% by 2050
- Reduce community-wide fossil fuel use 50% below 2005 levels by 2030

City of Corvallis

- Reduce overall community fossil fuel use 30% below 2012 levels by 2020
- Reduce overall community fossil fuel use 55% below 2012 levels by 2030
- Reduce overall community fossil fuel use 85% below 2012 levels by 2050

State of Oregon (House Bill 3543)

- Reduce greenhouse gas emissions 10% below 1990 levels by 2020
- Reduce greenhouse gas emissions 75% below 1990 levels by 2050
- Targets derived from IPCC recommendations at the time

City of Portland/Multnomah County

- Reduce local carbon emissions 40% from 1990 levels by 2030
- Reduce local carbon emissions 80% from 1990 levels by 2050

## Goal Element Pros and Cons

Goal Element	Pros	Cons
<b>Inventory Type</b>		
Sector-based emissions	<ul style="list-style-type: none"> <li>✓ Consistent with other jurisdictions</li> <li>✓ Straightforward accounting that is more “controllable”</li> <li>✓ Consumption and waste could be perceived as lower priority by public/city staff/committee</li> </ul>	<ul style="list-style-type: none"> <li>- Not as comprehensive</li> <li>- “Leaves out” major community emission source</li> <li>- Could be perceived by public as not important to address/improve on</li> </ul>
Consumption-based emissions	<ul style="list-style-type: none"> <li>✓ More comprehensive</li> <li>✓ Addresses individual behavior issue</li> </ul>	<ul style="list-style-type: none"> <li>- More difficult to reach goal</li> <li>- Difficult to represent changes in inventory (modeled data)</li> <li>- Not perceived as high a priority from public/city staff/committee</li> </ul>
<b>Offsets</b>		
Include	<ul style="list-style-type: none"> <li>✓ Provides a straightforward avenue to reach ambitious goals</li> <li>✓ Provides direct economic connection to taking action</li> </ul>	<ul style="list-style-type: none"> <li>- Could be perceived as an “easy-out” that doesn’t carry co-benefits of other “in-house” actions</li> <li>- Could be costly</li> <li>- Minimal precedent from other jurisdictions</li> <li>- Not as easily understood by public (detached)</li> </ul>
Do not include	<ul style="list-style-type: none"> <li>✓ Avoids potentially burdensome costs</li> <li>✓ Consistent with most other jurisdictions</li> </ul>	<ul style="list-style-type: none"> <li>- Means goal must be met using internal actions, which could be difficult-to-impossible, depending on the goal (especially if consumption is part of goal)</li> </ul>
<b>City operations goal</b>		
Include	<ul style="list-style-type: none"> <li>✓ Holds City accountable</li> <li>✓ Is an emissions sources that the City has large influence over</li> <li>✓ Demonstrates leadership</li> <li>✓ Helps influence/secure budget funding to meet goal</li> </ul>	<ul style="list-style-type: none"> <li>- Could be confusing to have two different goals</li> <li>- Holds City accountable if goal is not met</li> <li>- May be “more effort than it’s worth” - very small proportion of overall emissions</li> <li>- In many cases, meeting targets would be subject to budget approvals (not completely in city staff control)</li> </ul>
Do not include	<ul style="list-style-type: none"> <li>✓ Reduces risk if goal is not met</li> <li>✓ Focuses attention on largest sources of emissions</li> </ul>	<ul style="list-style-type: none"> <li>- Could be perceived as the City not taking enough action</li> <li>- May discourage “deep” action within City operations</li> <li>- Missed opportunity to communicate importance of the plan if not held accountable</li> </ul>

Goal Element	Pros	Cons
<b>Base Year</b>		
2011	<ul style="list-style-type: none"> <li>✓ Close to 2010, which is a common baseline year for other jurisdictions</li> <li>✓ Makes goal easier to achieve, since emissions already decreased from 2011 to 2015</li> </ul>	<ul style="list-style-type: none"> <li>- Not the most up-to-date reflection of emissions</li> <li>- May be perceived as arbitrary, perhaps raising suspicion of foul play?</li> </ul>
2015	<ul style="list-style-type: none"> <li>✓ Reflects current state of emissions</li> <li>✓ Most complete/accurate data available</li> </ul>	<ul style="list-style-type: none"> <li>- Makes goal harder to achieve since does not account for reductions already made</li> </ul>
<b>2050 Reduction goal</b>		
<80%	<ul style="list-style-type: none"> <li>✓ Easiest to achieve – more of a “sure bet”</li> <li>✓ Consistent with Oregon state goal (except Oregon’s goal was for 1990 base year)</li> </ul>	<ul style="list-style-type: none"> <li>- May be perceived as not ambitious enough</li> <li>- Inconsistent with IPCC recommended reductions</li> </ul>
80%	<ul style="list-style-type: none"> <li>✓ Consistent with many other jurisdictions (although they have earlier base years)</li> <li>✓ Consistent with IPCC recommendation relative to 1990 baseline year</li> </ul>	<ul style="list-style-type: none"> <li>- Somewhat outdated</li> <li>- More difficult and costly to achieve than &lt;80%</li> </ul>
85%	<ul style="list-style-type: none"> <li>✓ Recognizes need to curb emissions more than original IPCC recommendation</li> </ul>	<ul style="list-style-type: none"> <li>- More difficult and costly to achieve than &lt;85%</li> </ul>
100%	<ul style="list-style-type: none"> <li>✓ Motivating (although could be unmotivating if considered impossible or unrealistic)</li> </ul>	<ul style="list-style-type: none"> <li>- Not achievable without offsets, which may be costly</li> <li>- To be achievable, may have to limit scope of emissions included in goal to those city has most influence over</li> <li>- Largely unprecedented (only a handful of other jurisdictions have set carbon neutral goals)</li> </ul>
>100%	<ul style="list-style-type: none"> <li>✓ Motivating (although could be unmotivating if considered impossible or unrealistic)</li> </ul>	<ul style="list-style-type: none"> <li>- Not achievable without offsets, which may be costly</li> <li>- Unprecedented in the U.S.</li> </ul>

Committee Meeting Schedule	Date	Time	Objectives/Outputs
CAEP Committee Meeting	May 18, 2016	5:30 PM	Climate Assessment (OCCI) review, final open house prep
<b>Public Open House #1</b>	May 24, 2016	5:30 PM	Plan/Process Awareness, input on mitigation/adaptation action ideas/concepts
City Staff/CEAP Committee Workshop #1	May 25, 2016	2:30-5:00	Discuss goals/targets, criteria for evaluating actions
CAEP Committee Meeting	June 15, 2016	5:30 PM	Prep for workshop #2
<del>City Staff/CEAP Committee Workshop #2</del>	<del>June 30, 2016</del>	<del>?</del>	<del>Initial actions/options screening</del>
CAEP Committee Meeting	July 6, 2016	3:30 PM	Prep for Council goals/target presentation; review draft target/opportunity summary document
<b>City Council meeting</b>	<b>July 19, 2016</b>	<b>7:00 PM</b>	Present baseline, initial draft goals/targets
CAEP Committee Meeting	August 17, 2016	5:30 PM	Potential Chamber Forum style open house ??
CAEP Committee Meeting	September 7, 2016	3:30 PM	Chamber Forum review, Open House prep, Outreach updates
<b>Public Open House #2</b>	September 20, 2016	5:30 PM	Input on actions and options review
City Staff/CEAP Committee Workshop #3	September 21, 2016	?	Implementation planning
CAEP Committee Meeting	October 19, 2016	5:30 PM	Review of Open House #2 input; review action/evaluation document
City Staff/CEAP Committee Workshop #4	November 16, 2016	?	Review draft plan
<b>Public Open House #3</b>	December 7, 2016	5:30 PM	Review draft plan
CAEP Committee Meeting	January 4, 2017	3:30 PM	Final review
<b>City Council meeting</b>	<b>January 17, 2017</b>	<b>7:00 PM</b>	Presentation/potential adoption of draft plan

## **BEFORE THE CITY COUNCIL OF ASHLAND, OREGON**

AN ORDINANCE CONCERNING THE CURRENT AND FUTURE PROTECTION OF THE HEALTH, SAFETY, AND WELFARE OF RESIDENTS AND ECOSYSTEMS OF THE CITY OF ASHLAND, OREGON,

A. Climate change is caused by anthropogenic activities, primarily from the consumption of fossil fuels that emit greenhouse gases, primarily carbon dioxide (CO<sub>2</sub>) and methane, the primary component of natural gas.

B. Mean global temperature is increasing as a result of increased concentrations of greenhouse gasses in the atmosphere.

C. The decade from 2000 to 2010 was the warmest on record; 2015 and 2014 are the two the hottest years on record; and the twelve consecutive months of May 2015 through April 2016 have each set a record for global average surface temperatures for their respective months.

D. CO<sub>2</sub> levels in the atmosphere surpassed 400 parts per million (ppm) for the first time in 800,000 years in the year 2013 and now are at the brink of permanently remaining above 400 ppm in the absence of a global effort to reduce emissions.

E. Scientists predict that by 2100 average global temperatures will be 2 to 11.5 degrees Fahrenheit higher than they are now, depending on the rate of emissions.

F. As climate change continues, the Pacific Northwest will experience a considerable amount of variation in temperature and precipitation. This is expected to have a significant impact on the local environment, economy, and community while affecting all sectors including water and other natural resources, agriculture, and recreation/tourism.

G. Emissions of greenhouse gases are already impacting global ecosystems causing ocean acidification, ocean warming, and warming of the Earth's surface. Continuation of these trends lead to rising seas, more frequent and severe weather events, heavy rainfall and flooding, heat waves and drought, intense and destructive wildfires, disrupted ecosystems and agriculture, more disease, famine, disrupted economic sectors and job markets, conflict and human loss of life, increased social and economic inequity resulting in a an added burden on those least able to adapt.

H. The health, welfare, and economic future of the citizens of Ashland are threatened by these climatic changes.

I. Meaningful action is needed at all levels of government to mitigate climate change, effectuate climate recovery, and leave a healthier environment and atmosphere for future generations. The City of Ashland ("The City") is ready to do its part, and will engage its residents, visitors, businesses and organizations to do the same.

K. This ordinance is based on the widely-accepted science of climate change. Specifically, this ordinance is a direct effort to contribute to climate stabilization and to respond to the present and future adverse impacts climate change poses to our health and safety, our environment, and our local and global economies.

L. State and Federal goals and mandates – **More to come here**

M. With the passage of this ordinance, Ashland commits itself to actively and significantly reducing all GHG emissions emanating from within city limits. The GHG reduction targets prescribed in this ordinance are designed to be consistent with science-based goals, primarily the goal of returning global atmospheric CO2 concentrations to below 350 ppm by the year 2100.

N. The City will be guided and directed by a Climate and Energy Action Plan, which will be created and developed by the City with input from Ashland residents. Progress in meeting the prescribed reductions will be monitored and reported on by the City, and course corrections to the plan can and should be made, as needed over time.

O. Failure to complete the Climate and Energy Action Plan and take meaningful action could permanently affect the safety, health, welfare, and economic future of the City and its residents. Delayed action could also result in increased City costs and community impacts.

**SECTION 1: The City of Ashland Municipal Code (AMC) Chapter 9 is amended by adding new Sections to read as follows:**

**9.40 CLIMATE RECOVERY**

**9.40.010 Definitions** - The following words and phrases whenever used in this chapter shall be construed as defined in this section.

- A. “Carbon Neutral” means zero net emissions of greenhouse gases (GHG)
- B. “City Operations” means
- C. “GHG Baseline” means the carbon emissions calculations for 2015 as found in the 2016 Greenhouse Gas Inventory document
- D. More to come**

**9.40.20 – Climate Recovery Goals - Community**

- A. By the year 2100, total community greenhouse gas emissions shall be reduced to an amount that is no more than the city of Ashland’s average share of a global atmospheric greenhouse gas level of 350 ppm, which is estimated in 2016 to require an annual average emission reduction of 8%.
- B. The per capita fossil fuel use in the City shall be reduced by at least 50% by 2030 and 100% 2050.



#### **9.40.030 – Climate Recovery Goals – City Operations**

- A. Using actions contained in the Climate and Energy Action Plan, City operations, facilities and services shall reach carbon neutrality by 2030.
- B. The City shall reduce its fossil fuel consumption by at least 50% by 2030 and 100% by 2050.

#### **9.40.040 – Climate and Energy Action Plan**

- A. The Climate and Energy Action Plan shall contain the following:
  - 1. Plan for City Operations (CEAP-CO), which shall contain specific and measurable GHG reduction targets and milestones to guide and direct City operations in achieving the required carbon mitigation and fossil fuel reduction targets.
  - 2. Plan for the Community (CEAP-C), which shall contain specific and measurable GHG reduction targets and milestones to guide and direct the community in achieving the required carbon mitigation and fossil fuel reduction targets.
  - 3. Each plan shall contain the following:
    - a. Strategies, actions, timelines and progress indicators to meet GHG reduction targets
    - b. Measurements to evaluate progress and achievement of actions
    - c. Minimum reporting content and schedule for City Council for CEAP and GHG Inventory
    - d. Identified process for plan amendments, including comprehensive review on a three year cycle.
    - e. Identified role of the Climate and Energy Action Plan Commission in advisory and recommendation capacity for CEAP implementation and updates

ORDINANCE NO. \_\_\_\_\_

AN ORDINANCE CREATING THE CLIMATE AND ENERGY ACTION COMMISSION

**2.27– Climate and Energy Action Plan Advisory Commission**

**2.27.005 – Purpose**

Upon adoption of this ordinance, the Mayor shall establish a permanent Citizen Commission to provide oversight and recommendations regarding the implementation of the Climate and Energy Action Plan, as well as recommending updates and modifications to the Climate and Energy Action Plan (CEAP) document.

**2.27.010 – Establishment – Membership**

The Commission shall reflect and represent a wide range of community interests and perspectives, including environmental, energy efficiency, renewable energy, academic and business, low income, equity, and health, communities of color and elderly. The Commission shall consist of nine (9) voting members, including at least two (2) of whom shall be 25-years-old or younger at the time of appointment. Eight (8) of the members shall reside within the City, and one (1) may be an at large member living within the Ashland urban growth boundary. One (1) Mayor or City Councilor and one (1) City staff person shall serve on the Commission as non-voting, *ex-officio* members. The primary staff liaison shall be appointed by the City Administrator and shall serve as Secretary of the Commission. Voting members shall be appointed by the Mayor with confirmation by the City Council

**2.27.020 - Powers and Duties**

- A. Monitor and advise on the Implementation of the Climate and Energy Action Plan for the Community and City Operations
- B. Recommend modifications to benchmarks, targets or implementing actions contained in the CEAP as needed to incorporate the best available science and practices to achieve CEAP related goals and targets.
- C. Monitor progress toward achieving the reductions of GHG emissions prescribed by this ordinance
- D. Work to ensure that the CEAP considers public input and long-term social, economic and environmental impacts
- E. Recommend changes in city ordinances, rules and processes that facilitate and/or incentivize residents and businesses to reduce their GHG emissions
- F. Work to ensure the plans are socially equitable for all community members including low-income, young people, persons of color, elderly and those living with disabilities.
- G. Work to ensure the CEAP protects Ashland’s quality of life by identifying, benefiting, and preserving long-term natural resources, services, amenities, institutions, industries, and community characteristics valued by Ashland residents.