

City of Tualatin

Climate Action Planning Research Update

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Executive Summary

This report serves as an update to the City of Tualatin Council to inform them on the current state of climate action planning in the State of Oregon and regionally. It outlines important definitions for understanding climate action planning such as greenhouse gases, greenhouse gas inventories, and climate action plans. As well, it further defines and provides examples of the most common types of plans: community and operational.

The bulk of the research pertains to the focus areas commonly found in Oregon climate action plans: buildings and energy, urban form and land use, transportation, natural systems and resources, consumption and waste management, climate resilience and preparedness and public health. Examples are provided to contextualize and demonstrate how these targets focus on actions and strategies. Finally, the report concludes with an overview of how local plans have been developed. There is a focus on communities that are geographically close, demographically similar or organizationally similar. It provides an overview of how plans were developed in these communities, how much they cost and the content of the final products.

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Definitions

Green House Gas (GHG) is “A gas that emits infrared radiation from a level where the temperature is colder than the surface. The net effect is a local trapping of part of the absorbed energy and a tendency to warm the planetary surface. CO₂, methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), Hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) are the six Kyoto greenhouse gases covered by the United Nations Framework Convention on Climate Change (UNFCCC).”¹

Green House Gas Inventory is a study that quantifies greenhouse gas emissions generated within a specific boundary, i.e. the City of Tualatin. Most communities use these GHG inventories to measure and track the footprint of city operations and community emissions. Many jurisdictions and consultants follow the [Intergovernmental Panel on Climate Change](#) (a United Nations intergovernmental body) standard for international reporting, the Greenhouse Gas Protocol.²

Climate Action Plans are plans that discuss climate change and are usually based on a local greenhouse gas (GHG) inventory and other climate vulnerability assessments. It is intended to be a comprehensive roadmap that outlines specific actions an agency will undertake to reduce emissions. They often focus on activities that can achieve the greatest, cost-effective emission reductions.³

Sustainability Action Plans are plans that address a variety of environmental issues and may include sections specific to climate actions. They typically focus on protecting natural resources, remaining resilient and reducing the impact on the environment.⁴

Climate Resilience/Adaptation Plans are plans that focus on preparing for and adapting to climate change. These plans often include natural disaster vulnerabilities (wildfire, etc.) and may integrate strategies to reduce greenhouse gas emissions with preparation strategies for communities that will help them to thrive through climate change impacts.⁵

Energy Plans are plans that focus on energy efficiency and conservation, but may touch on energy’s impact on climate change.

¹ https://www.co.washington.or.us/Support_Services/Sustainability/upload/Greenhouse-Gas-Inventory-Report-2016.pdf

² <https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities>

³ <https://www.ca-ilg.org/climate-action-plans>

⁴ <https://gvr.fortlauderdale.gov/greener-government/sustainability-action-plan>

⁵ https://kresge.org/sites/default/files/library/community_drive_resilience_planning_from_movement_strategy_center.pdf

Context

OREGON

In 2007, Legislation ([HB 3543](#)) called on Oregon to prepare for climate change effects, and reduce GHG levels to certain levels below 1990 levels. In 2020, these goals were expanded by the [Governor's Executive Order 20-04](#), directing the state to reduce GHG levels even further.⁶

<u>HB 3543, 2007</u>	→	<u>EO 20-04, 2020</u>
10% below 1990 levels by 2020		45% below 1990 levels by 2030
75% below 1990 levels by 2050		80% below 1990 levels by 2050

In 2020, the State of Oregon has worked to draft the climate and health focused, [Climate Change Adaptation Framework](#). Meanwhile, a number of cities and counties have already started the process of Climate Action Planning. A few have been in place since the early 2010s, and are about to undergo updates, while many others have only been implemented in just the last few years. The cities of [Ashland](#), [Bend](#), [Eugene](#), [Beaverton](#), [Corvallis](#), [Milwaukie](#), [Lake Oswego](#) and counties such as [Portland and Multnomah County](#) and [Hood River County](#) have created plans. However, other cities and jurisdictions in the region and across the state have started the process of creating climate action plans or have other sustainability or environmentally related plans. Included in later sections is a matrix of the different and most common components and general definitions of sections included in existing climate action plans in Oregon, as well as brief profiles looking deeper at the plan development of cities and towns that are most similar to the City of Tualatin.

- **Climate Action Plans in Progress:**
 - o Tigard, Gresham, [Lincoln County/Newport](#), [Salem](#) and [Clackamas County](#)
- **Sustainability Plan/Sustainability Action Plans or Energy Action Plans:**
 - o [Forest Grove](#), [Washington County](#), [Hillsboro](#), [West Linn](#), Wilsonville, [Tigard](#) and [Talent](#)

REGIONAL

Clackamas County

Sarah Allison, Clackamas County's Sustainability Analyst, shared the efforts of Clackamas County since they began in 2008 with the Action Plan for a Sustainable Clackamas County. Staff renewed climate specific efforts in 2019. They internally created a scope of work, published the Request for Proposals (RFP) in April 2020, closed the RFP in August and selected the support of Sustainability Solutions and CoCreative in October 2020.

Additionally, they conducted a GHG inventory to determine their operational footprint and begin moving on emission reduction for city operations. Clackamas County set priorities for actions to focus on cost effective actions and strategies, electricity goals (100% renewable for county operations) and a fleet analysis. As well, they conducted a community level inventory, including per capita and community wide estimates for emissions for every city, including Tualatin, in Clackamas county. Simultaneously, they created a GHG emissions reduction goal in-line with the [Intergovernmental Panel on Climate Change](#) standard, based on the most up to date climate science -- carbon neutral by 2050.

They've begun the process of engaging the public in the climate action planning process and have budgeted \$200,000 for the plan development with engagement at around 40% of the budget. They have a community task force with a monthly meeting and are planning surveys, online campaigns, website education and engagement and more. They have a focus on youth engagement, rural-urban strategies, racial equity and just transitions. A just transition lens means that as they move from a carbon intensive community to a less carbon intensive community, they are aware there will be changes to the job market and economy but are not solely relying on private actors or the market to fix it or make changes. This lens will ensure climate action does not negatively impact vulnerable populations.

⁶ <https://www.oregon.gov/energy/energy-oregon/Pages/Climate-Change.aspx>

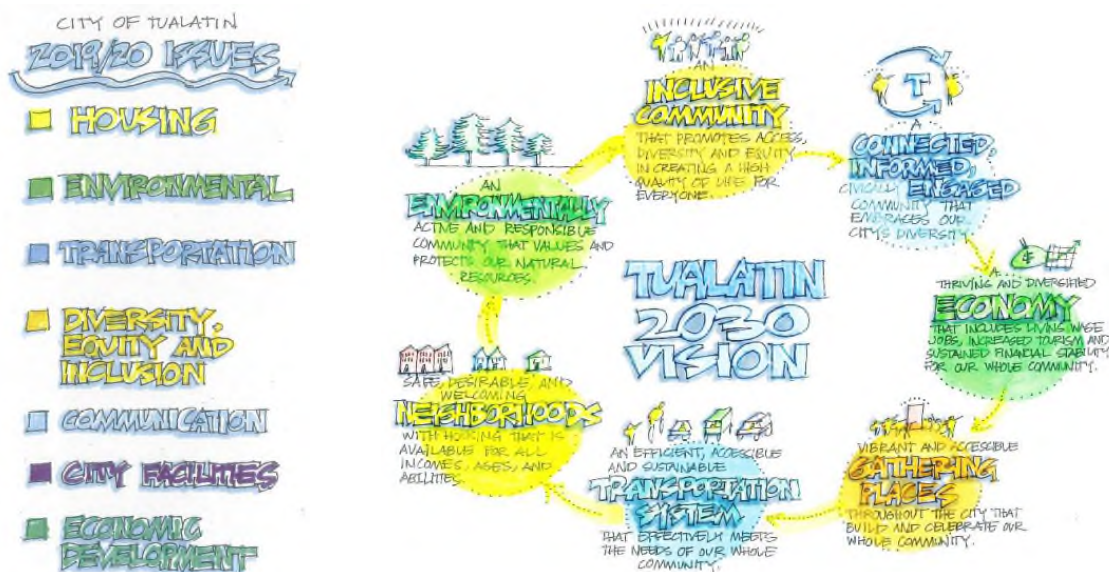
Washington County

Robin Straughan, Washington County’s Sustainability Coordinator, shared that Washington County has not initiated any coordinated community-based climate action work to date. Historically their team has been tasked with working on internal sustainability of County operations, so focusing on internal plans, metrics, projects, programs and employee engagement. In addition, Washington County facilitates [the Partners for a Sustainable Washington County Community](#), a coalition of 15 cities and organizations in Washington County, including Tualatin. Their vision is to be a “collaborative, innovative Washington County that is well-equipped to support diverse and healthy communities, environments and economies for current and future generations.”

Metro

In 2014, Metro Policy Advisory Committee (MPAC) and Joint Policy Advisory Committee on Transportation (JPACT) finalized a recommendation to the Metro Council on the [Climate Smart Strategy](#) and supporting actions which was adopted by the Metro Council that same year. The Climate Smart Strategy is “a set of policies and actions to guide how the region moves forward to integrate reducing greenhouse gas emissions with ongoing efforts to keep this region a great place”. The actions focus on transportation funding, advancements in clean fuels and vehicle technologies and collaboration among multiple partners to seek opportunities to implement projects that combine the most effective greenhouse gas emissions reduction strategies.⁷

LOCAL: CITY OF TUALATIN



While pursuing a climate action plan is most explicitly correlated with the 2019/2020 vision of Environmental goals and the Tualatin 2030 Vision of “An environmentally active and responsible community that values and protects our natural resources” there are clear correlations to most, if not all city goals and visions. Generally, climate action plans can easily connect to other city plans, goals and efforts. Climate Action Plans focus on the reduction of emissions so as to preserve the natural environment, improve the communities’ built and natural environments, as well as serve the public health and economy.

When the City of Tualatin joined the [Climate Mayors Network](#) in 2017, they joined 13 other cities in Oregon committed to preparing for addressing climate change; Albany, Beaverton, Corvallis, Eugene, Gladstone, Gresham, Hood River, Milwaukie, Mosier, Portland, Rockaway Beach, Salem and West Linn.

Clackamas County conducted [a countywide GHG emissions inventory](#) for community emissions. They created estimates for every city in proportion to the population. They estimate with Tualatin’s 2018 population of 27,602 that **the 2018 GHG Emissions (estimated) are 251,764 metric tons of CO₂**. This does not detail or account for operational emissions- emissions that are directly related to or from City infrastructure.

⁷ [Climate Smart Strategy](#)

Plan Composition

TYPES OF PLANS

There are two types of plans prevalent in Oregon. There are community level and internal/operational or “municipal” plans. The primary difference is that community-level plans focus on the community at large, while internal plans focus specifically on city facilities and operations.

Community based plans have strategies that focus on community infrastructure or development in order to reduce community-based emissions. They often incorporate the use of partners within the community and require more public involvement or engagement. Operational, internal, or municipal based plans focus explicitly on actions that can be taken regarding city operations to either mitigate or adapt to climate change. Some cities have tackled community plans and operational plans simultaneously (Corvallis), while others chose to supplement the community action plan later with an internal plan (Bend).

Community Examples:

- Implement utility-level smart grid tech to facilitate efficiency and distributed energy solutions. (Ashland)
- Incentivize workplace electric vehicle charging in parking lots. (Milwaukie)
- Support distributed solar energy development. (Corvallis)

Operational Examples:

- Incorporate contractor efficiency/emissions standards into bids/contracts to ensure contractors use fuel efficient, low polluting vehicles and equipment. (Corvallis)
- Enhance production of on-site solar energy from City facilities. (Ashland)
- Energy audits of City facilities, feasibility studies for active systems to reduce energy/fuels. (Corvallis)

TYPES OF ACTIONS/STRATEGIES

Actions and strategies in the following target areas primarily focus on mitigation and adaptation. Increasingly, plans also include sequestration strategies, depending on the land use and urban form of the jurisdiction. Areas with goals or opportunities around tree canopy, for example, might include sequestration goals.

Mitigation

Mitigation strategies aim to reduce greenhouse gas emissions into the atmosphere by targeting the source of production.

- Work with Clackamas County, TriMet and Metro to develop micro-transit from park-and-ride or light rail station to local destinations. (Milwaukie)

Adaption or Resilience

Adaptation strategies focus on long, transformative, actions implemented to adapt to the impacts of climate change.

- 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. (Ashland)

Sequestration

Sequestration strategies focus on developing or increasing “sinks” that can capture or store gases, such as forests and soil.⁸

- Increase tree canopy to 40% by 2040. (Milwaukie)

⁸ https://www.oregon.gov/lcd/CL/Documents/CLIMATE_CHANGE_ADAPTATION_FRAMEWORK_08-12-2020.pdf

COMMON COMPONENTS

GHG Inventory

- Since the primary aim is to reduce emissions and negative impacts of climate change, if a GHG inventory is not conducted, there are still actions and strategies a city can take in order to reduce emissions that are grounded in reliable climate-science.⁹

Co-Benefits

Co-benefits are non-emission reduction-based benefits which the community or city has deemed a priority. For instance, economic improvements (i.e. green job creation) or equitable outcomes (i.e. green job creation for underemployed communities). Often these co-benefits are determined by council or by a citizen committee with council/staff involvement. Co-benefits are also considered when prioritizing actions for implementation and when comparing strategies for efficiency.

Equity

Equity is considered in all plans in some way. Some climate action plans devote a specific section to equity, but more commonly, and increasingly in newer plans, equity is a principle and lens which is applied to all sections, strategies and actions. Equitable outcomes are listed as a co-benefit in most plans, and equity is considered in how the plan is developed and who participates in the planning process, as well as in how strategies and actions are prioritized. Definitions of equity and approaches to equity differ, however, equity should be considered in terms of procedure (who is involved in decision-making, what is the accountability process) and distribution (who is impacted and how).¹⁰

Most managers interviewed expressed that their plan updates would involve higher consideration of equity, in terms of engagement and understanding the impacts of the actions and strategies they prioritized. Clackamas County, in particular, identified that “just transitions” was a priority to them and have committed to using this lens for assessing all strategies, actions and engagement opportunities.

Targeted Areas for Strategies and Actions

This section details the common targeted areas in climate action plans. They specifically focus on areas that will reduce GHG emissions and the overall carbon footprint of the city. The following are the most common:

- Buildings and Energy;
- Urban Form and Land Use;
- Transportation;
- Natural Systems and Resources;
- Consumption and Waste/Materials Management;
- Climate Resilience and Emergency Preparedness; and
- Public Health and Community Wellbeing

Each targeted area is usually accompanied by an understanding of this area’s GHG emission footprint and identifies community partners, related plans and/or important co-benefits.

Buildings & Energy

This section focuses on the efficient use of energy by city-owned buildings and community use of energy in new development as well as opportunities to retrofit existing buildings.

Example Actions:

- Develop a community solar project hosted at a city facility. ([Beaverton](#))
- Engage NW Natural to develop strategy for becoming “net zero” from natural gas by 2040. ([Milwaukie](#))

⁹ <https://www.epa.gov/greeningepa/greenhouse-gases-epa>

¹⁰ <https://www.dhs.wisconsin.gov/publications/p01637.pdf>

- Target an Energy Use Intensity of 22 (Net Zero) for all new City facility/redevelopment projects. Partner with Energy Trust of Oregon, Path to Net Zero program on new construction. ([Lake Oswego](#))
- Reduce the total energy use of all buildings built before 2010 by 25%. ([Portland](#))

Urban Form & Land Use

It often considers housing, increasing density and opportunities for policy. These sections are occasionally included in the transportation section as the compact layout or density of a city impacts the transportation emissions.

Example Actions:

- Develop code to encourage passive house design. ([Beaverton](#))
- Implement variable system development charges to encourage ADU development. ([Milwaukie](#))

Transportation

Sometimes land use and urban form are incorporated into this section as land use and transportation planning are intimately connected. Strategies and actions in these sections aim to create more options for better and more efficient transportation and consider opportunities for investment in public transit.

Example Actions

- Support school bus fleet electrification and the installation of fast charging equipment. ([Beaverton](#))
- Set targets for EV adoption by 2035. Publish status annually on the City's website by 2021. ([Eugene](#))
- Promote sidewalk credit purchases outside of pedestrian corridors. ([Milwaukie](#))
- Continue to provide Universal Transit passes to City employees. ([Lake Oswego](#))

Consumption & Waste/Materials Management

This section deals with consumer choices and waste and materials management. It explores strategies to reduce environmental impact of the lifecycle of goods from manufacturing, packaging, distribution, product use and associated energy demands as well as disposal.

Example Actions:

- Increase business participation in food donation and food scraps collection program. ([Beaverton](#))
- Explore technologies that reclaim water, harvest grey water, rain water and energy waste at City facilities. Rainwater harvest demonstration, FY 20-22 Water Conservation Program. ([Lake Oswego](#))
- Prepare for state rule change that all multifamily tenants have opportunity to recycle by 2025. ([Eugene](#))

Natural Systems & Resources

This category addresses green spaces, water, sometimes food, and the general natural systems that support soil, air, water, plants, and animals. Usually this section talks about watersheds and water sources, forested areas and other green spaces. This section also most often covers sequestration methods and opportunities.

Example Actions:

- Enhance street tree strategy- increase water retention, mitigate heat effect. ([Beaverton](#))
- With Tree Board, develop tree planting program focused on low income neighborhoods. ([Milwaukie](#))
- Retrofit city facilities with green infrastructure. ([Corvallis](#))

Climate Resilience & Emergency Preparedness

Strategies and actions in this section do not pertain directly to emission reduction strategies, rather they aim to improve the community's overall ability to bounce back from climate related events (acute or ongoing) as well as to be prepared for and minimize negative impacts of climate related emergencies.

Example Actions:

- Utilize relevant vulnerable populations maps, develop an outreach plan to engage vulnerable populations to be two-weeks-ready with emergency supplies by 2023. (Eugene)
- Partner with organizations to host community sustainability education events in public spaces. (Lake Oswego)

Public Health/Community Wellbeing

Acute events such as wildfires and flooding have significant impacts on public health. In addition, increased and prolonged heat, dramatic weather events and the introduction of disease from migrating insects, animals and people have potential health implications, both physical and mental. Actions in this section prepare for both the mitigation of the events as well as adaptation and response to such events in order to promote a healthy and resilient community. This target area is occasionally overlapping with the Climate Resilience and Emergency Preparedness sections, as well.

Example Actions:

- Develop wildfire smoke rescue centers. (Beaverton)
- Develop public flood/fire risk zone maps and implement signage on streets. (Milwaukie)
- In case of outages, ensure backup generator operability; investigate transition to non-fossil fuel alternatives. (Corvallis)

Other targets:*Public Education:*

Public education, as well as employee education, is occasionally a separate chapter but is also often included in other target areas as indicated in the examples above.

Food and Agriculture:

Climate change is changing the physical environment in ways that may require new agricultural practices due to weather, pests, weeds, and water availability. A general shift in food consumption toward a plant-based diet can reduce GHG emissions. Agriculture may provide a carbon sequestration opportunity. This topic is at times included in the natural resources section of plans, but not always.

Plan Development Snapshot

This highlights the estimated cost of plan development, the share of engagement and the cost of GHG inventories. When managers were not able to share or identify the cost, or an estimate, dashes are used. NA indicates that the city did not use or incorporate that component, i.e. Beaverton did not do engagement, Lake Oswego did not do a GHG inventory.

City	Cost \$	% Engagement	GHG Inventory \$	Timeframe
Ashland	130 K	~40%	37K	18 months
Bend	150K	-	-	18 Months
Beaverton	90K	NA	9K	3 years
Corvallis*	200K	-	-	18 months
Lake Oswego	110K	-	NA	3 years
Milwaukie	150K	~40%	-	18 months
Salem	52k-160k estimate	-	-	Ongoing
Clackamas	200K	~40%	25K	Ongoing

* Staff person conducted GHG inventory internally, so no extra associated cost

Components and Focus Matrix

Here, the plans that were reviewed are summarized, including year of plan adoption, plan type, targeted areas present in each plan, as well as the types of strategies and actions each city highlighted in their plans. More information on the communities which are most similar to the city of Tualatin are included in community profiles in the next section.

City	Year	Population	Plan Type		Target Areas							Strategy Type			
			Community	Operational	Buildings & Energy	Urban Form & Land Use	Transportation	Consumption & Waste	Natural Resources	Resilience/Preparedness	Public Health	Mitigation	Adaptation	Sequestration	
Ashland	2017	20,912	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Beaverton	2019	98,951	✓	Separate	✓	✓	✓	✓			✓	✓	✓	✓	
Bend	2020	97,519	✓	Separate	✓		✓	✓				✓	✓		
Corvallis	2016	57,213	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
Eugene	2016/20	171,245	✓	Separate	✓	✓	✓	✓				✓	✓		✓
Lake Oswego	2020	38,705	✓	✓	✓		✓	✓	✓		✓	✓	✓		
Milwaukie	2018	20,955	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓
Portland	2015/20	812,855	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

GHG Emissions and Reductions Goals

Each community highlighted in this report includes a GHG emission reduction goal, regardless of whether or not a GHG inventory was conducted. These are summarized below.

City	Inventory	Goal
Ashland	✓	Reduce overall community greenhouse gas emissions by 8% on average every year to 2050. Attain carbon neutrality in City operations by 2030, & reduce fossil fuel consumption by 50% by 2030 and 100% by 2050.
Beaverton	✓	Carbon neutral by 2050; Community Target: 100% reduction of greenhouse gas emissions by 2050 (from 2013 baseline year), City Operations Target: 50% fossil fuel reduction from 2009 baseline & carbon neutral by 2030.
Bend	✓	Reduce community-wide fossil fuel use by 40% by 2030. Reduce community-wide fossil fuel use by 70% by 2050.
Corvallis	✓	57% GHG reduction by 2030, 83% by 2050.
Eugene	✓	By 2030, reduce the total (not per capita) use of fossil fuels by 50% compared to 2010. By 2100, total GHG emissions reduced to an amount that is no more than the city of Eugene’s average share of a global atmospheric greenhouse gas level of 350ppm, to require a 7.6% annual average emission reduction level.
Lake Oswego		By 2035, buildings will have no net emissions from electricity use. By 2045, buildings will have no net emissions from onsite combustion of fuels. By 2050, reach carbon neutrality through reduce or offsetting carbon emissions from buildings, transportation & manufacturing & disposal of products within the City.
Milwaukie	✓	Net zero electricity by 2035, Net zero building energy by 2040. Greenhouse gas reductions by 2020, 15%: 2030, 35%: Carbon neutral by 2050
Portland	✓	GHG emission reduction, 40% by 2030 80% by 2050, carbon neutral by 2050. Climate Emergency Declaration amended 2030 goal to be 50% of 1990 levels.

Community Profiles

ASHLAND

Climate and Energy Plan, 2017 Cost of Plan Development: \$130,000 **Timeline:** 18 months

Community Snapshot
 Population size: 20,912 Median Age: 44
 Median Household Income: \$50,613
 Racial/Ethnic Makeup: 86 % White, 7 % Hispanic

GHG Reduction Goal

Reduce overall Ashland community greenhouse gas emissions by 8% on average every year to 2050. Attain carbon neutrality in City operations by 2030, and reduce fossil fuel consumption by 50% by 2030 and 100% by 2050.

Planning Process

The Mayor appointed a Climate and Energy Action Plan (CEAP) ad-hoc committee, consisting of community members, City staff and the project consultant team. They hired two firms to conduct analyses as well as public engagement. They conducted a GHG inventory, 5 Star Energy index and internal plan prior to development of the community plan. Their engagement was robust and included three public open houses between May and December 2016 which attracted over 200 participants and an online survey with over 135 responses. They also interviewed representatives from over 15 local organizations, businesses, and institutions. Additional approaches to add content and direction to the plan included leveraging and building on progress to-date and existing plans and programs, emphasizing equity and co-benefits, customizing strategies to fit Ashland's context and prioritizing actions that meet climate goals. The council approved a Climate and Energy Action Plan in 2017.

Planning Components

- GHG Inventory**
- Buildings & Energy**
- Urban Form or Land Use**
- Transportation**
- Consumption & Waste**
- Natural Resources**
- Resilience/Preparedness**
- Public Health**

Highlights

Because Ashland is the owner of their municipal energy source, they have a strong focus on energy throughout their plan. Each section focuses on its impact and importance, provides a to-date progress report, details goals and benchmarks, and specific strategies and actions. Since the plan adoption, the City Council adopted a social justice resolution. The climate plan update will consider equity as a third priority (alongside mitigation and adaptation), with metrics and methodology considered. As well, recent climate related stressors (wildfires) in the area have emphasized a regional need for collaboration and linking and leveraging resources.

Strategy Types

- Mitigation Adaptation Sequestration

BEND

Community Climate Action Plan, 2019 Cost of Plan Development: Unknown Timeline: 18 months

GHG Reduction Goal

Reduce community-wide fossil fuel use by 40% by 2030. Reduce community-wide fossil fuel use by 70% by 2050.

Planning Process

A staff person was hired for climate action planning development and a Steering Committee was created in 2018. Together they acted as the City’s primary advisors to guide the engagement process and develop strategies and actions. Technical consultants were hired to conduct a Greenhouse Gas Emission Inventory. The Committee then set guiding principles, identified key resources and stakeholders and established multiple technical working groups assigned to each target area. In an iterative process, the technical working groups, Steering Committee, and consultants ran scenarios to identify strategies that would meet their GHG reduction goal and were palatable to the community. Community input was incorporated throughout the process through an online open house, an online survey, and attendance at committee meetings. The City Council adopted the Community Climate Action Plan in 2019.

Community Snapshot

Population size: 97,519 Median Age: 38
 Median Household Income: \$62,664
 Racial/Ethnic Makeup: 86 % White, 9% Hispanic

Plan Components

- GHG Inventory**
- Buildings & Energy**
- Urban Form or Land Use**
- Transportation**
- Consumption & Waste**
- Natural Resources**
- Resilience/Preparedness**
- Public Health**

Highlights

Each section of the plan considers implementation responsibilities, savings and expenditures associated with actions and cumulative emission reductions potential (in metric tons). An additional working group was created to consider each section and strategy through an equity lens. The equity analysis was then added to each chapter of the plan. An internal/operational plan was developed after the adoption the community climate action plan, with significantly less public engagement but increased internal engagement of staff.

Strategy Types

- Mitigation
- Adaptation
- Sequestration

CORVALLIS

Community Climate Action Plan, 2016 Cost of Plan Development: \$200,000 Timeline: 18 months

GHG Reduction Goal

57% GHG reduction by 2030, 83% by 2050.

Community Snapshot

Population size: 57,213 Median Age: 27
 Median Household Income: \$49,835
 Racial/Ethnic Makeup: 76% white, 8% Hispanic,
 10% Asian, 4% two +

Planning Process

A Climate Action Task Force was created in 2015. From this task force, additional task teams were created to work on each target area. Teams were composed of City staff and representatives from public institutions, non-profit organizations and businesses who would either be impacted by the plan or were partners in implementation. Each team identified, prioritized and evaluated mitigation and adaptation actions which were then analyzed according to their effectiveness and cost. In an iterative process, the Climate Action Task Force, task teams, and consultant solicited and incorporated feedback from the community. Specific strategies included identifying an external group of “Reviewers” who collected suggestions and ideas from their networks, and multiple public outreach sessions. The task force prepared a draft Climate Action Plan for City Council consideration and adoption in 2016.

Plan Components

- GHG Inventory**
- Buildings & Energy**
- Urban Form or Land Use**
- Transportation**
- Consumption & Waste**
- Natural Resources**
- Resilience/Preparedness**
- Public Health**

Strategy Types

- Mitigation Adaptation Sequestration

Highlights

Each section of the plan highlights a clear definition and purpose of the section. Then, each section clearly defines whether it is a community level or municipal strategy and action. After the development of the plan, the community and municipal implementation strategies were divided between the economic development and public works departments. As of the interview (2020) only the municipal side had steadily been adapting and implementing the plan.

LAKE OSWEGO

Sustainability and Climate Action Plan, 2020 **Cost of Plan Development:** \$110,000 **Timeline:** 3 Years

Community Snapshot
 Population size: 38,705 Median Age: 47
 Median Household Income: \$100,461
 Racial/Ethnic Makeup: 83% White, 7% Asian, 5% Hispanic

GHG Reduction Goal

By 2035, Lake Oswego’s buildings will have no net emissions from electricity use. By 2045, buildings will have no net emissions from onsite combustion of fuels. By 2050, reach carbon neutrality through reducing or offsetting carbon emissions from buildings, transportation, and manufacturing and disposal of products within the City.

Planning Process

In 2017, the City Council voted to create an internal Climate Action Plan. Community advocates desired a more robust community action plan as well. A citizen’s advisory committee was then created, comprised of 3 members of the Sustainability Advisory Board, 3 members from the Lake Oswego Sustainability Network and staff. They began researching and writing climate action recommendations. No consultants were initially hired. The committee called on knowledgeable community members to contribute analysis to the plan. Over 50 pages of research was compiled to support their 10 selected recommended actions. The City held a public open house for the Climate Action Plan in March 2018 and in 2019, the City retained ICLEI- Local Governments for Sustainability, to draft a streamlined Climate Action Plan incorporating feedback and to draft a Lake Oswego specific list of climate adaptation actions. The plan was then adopted in 2020.

Plan Components

- GHG Inventory**
- Buildings & Energy**
- Urban Form or Land Use**
- Transportation**
- Consumption & Waste**
- Natural Resources**
- Resilience/Preparedness**
- Public Health**

Highlights

Each section of the plan highlights the goals with an associated entity or organization designated responsibility, an estimated timeline, an assessment of climate and equity benefits as well as estimated annual cost per action. The sections further link existing and future planning efforts to actions and provide personal/household action recommendations for the broader community.

Strategy Types

- Mitigation Adaptation Sequestration

MILWAUKIE

Community Climate Action Plan, 2018 Cost of Plan Development: \$150,000 Timeline: 18months

GHG Reduction Goal

Net zero electricity by 2035, Net zero building energy by 2040. Greenhouse gas reductions of 15% by 2020, 35% by 2030 and carbon neutral by 2050.

Planning Process

Milwaukie first conducted a Carbon Footprint Analysis, which is a calculation of current and projected future community carbon footprint. The City Council appointed the Climate Action Plan Committee (CAPC) composed of residents and key partners to advise the internal project team. Following the development of the committee, six workshops with major organizational and agency partners were held to educate and determine priorities with implementation partners. Public engagement was conducted through a variety of means with a climate fair, a town hall, Spanish-language focus group and online surveys. With the models and the guidance of the committee they developed an implementation timeline for City-led strategies and the Plan. The plan was adopted in 2018 by the City Council.

Plan Components

- GHG Inventory**
- Buildings & Energy**
- Urban Form or Land Use**
- Transportation**
- Consumption & Waste**
- Natural Resources**
- Resilience/Preparedness**
- Public Health**

Strategy Types

- Mitigation
- Adaptation
- Sequestration

Community Snapshot

Population size: 20,955 Median Age: 40
 Median Household Income: \$63,421
 Racial/Ethnic Makeup: 84% White, 9% Hispanic

Highlights

Each section of the plan accounts for how each action will be implemented and who will be responsible. There are details included focusing on the timeframe for implementation, potential GHG reductions, cost/savings per metric ton of CO2, emissions reduced and associated co-benefits. Each section also contains recommended actions for the personal/household level related to each topic area.

Table of Links

SECTION/ITEM	LINK
DEFINITIONS	
<i>Intergovernmental Panel on Climate Change</i>	https://www.ipcc.ch/
<i>Washington County GHG Inventory Report</i>	https://www.co.washington.or.us/support_services/sustainability/upload/greenhouse-gas-inventory-report-2016.pdf
<i>GHGH Protocol</i>	https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities
<i>Climate Action Plans</i>	https://www.ca-ilg.org/climate-action-plans
<i>Fort Lauderdale Sustainability Action Plan</i>	https://gyr.fortlauderdale.gov/greener-government/sustainability-action-plan
<i>Community-Driven Climate Resilience Planning: A Framework</i>	https://kresge.org/sites/default/files/library/community_drive_resilience_planning_from_movement_strategy_center.pdf
CONTEXT	
OREGON	
<i>House Bill 3543</i>	https://www.oregonlegislature.gov/Bills_Laws/Laws/statutes/2007orlaw0907.html
<i>Governor's Executive Order 20-04,</i>	https://www.oregon.gov/Gov/Documents/Executive_Orders/Eo_20-04.pdf
<i>State of Oregon Climate Change Adaptation Framework</i>	https://www.oregon.gov/Lcd/CL/Documents/CLIMATE_CHANGE_ADAPTATION_FRAMEWORK_08-12-2020.pdf
EXISTING CLIMATE PLANS	
<i>Ashland Climate and Energy Action Plan</i>	https://www.ashland.or.us/Files/Ashland%20Climate%20and%20Energy%20Action%20Plan_pages.pdf
<i>Beaverton Community Climate Action Plan</i>	https://www.beavertonoregon.gov/DocumentCenter/View/27980/Beaverton-Climate-Action-Plan---2019
<i>Bend Community Climate Action Plan</i>	https://www.bendoregon.gov/Home/Showdocument?Id=43933
<i>Corvallis Climate Action Plan</i>	https://archives.corvallisoregon.gov/Public/Electronicfile.aspx?Dbid=0&Docid=920368
<i>Eugene Climate Action Plan</i>	https://www.eugene-or.gov/3936/CAP20-Background
<i>Lake Oswego Climate Action Plan</i>	https://www.ci.oswego.or.us/Sites/Default/Files/Fileattachments/Final_Compiled_SCAP.pdf
<i>Milwaukie Climate Action Plan</i>	https://www.milwaukieoregon.gov/Sites/Default/Files/Fileattachments/Sustainability/Page/85191/2018_1003_Climateactionplan.pdf
<i>Portland Climate Action Plan</i>	https://multco.us/File/42548/Download
CLIMATE ACTION PLANS IN PROGRESS	
<i>Lincoln County/Newport Climate Action Plan</i>	https://350oregoncentralcoast.org/Lincoln-County-Climate-Action-Plan-Video-And-Report/
<i>Salem Climate Action Plan Process</i>	https://salemclimateactionplan.com/Our-Process
<i>Clackamas County Climate Action Plan Process</i>	https://www.clackamas.us/Sustainability/Climateaction

SUSTAINABILITY PLAN/SUSTAINABILITY ACTION PLANS OR ENERGY ACTION PLANS:

<i>Forest Grove Sustainability Action Plan</i>	https://www.forestgroveor.gov/sites/default/files/fileattachments/sustainability/page/243/action_plan_final.pdf
<i>Washington County Sustainability Plans</i>	https://www.co.washington.or.us/support_services/sustainability/sustainability-plans.cfm
<i>Hillsboro Climate Action Opportunities Framework</i>	https://www.hillsboro-oregon.gov/home/showdocument?id=2375%20&%20https://www.hillsboro-oregon.gov/home/showdocument?id=796
<i>Sustainable West Linn Strategic Plan</i>	https://westlinn-oregon.gov/sites/default/files/fileattachments/planning/page/6056/res_2015-15.pdf
<i>Tigard Sustainability Action Plan</i>	http://agendas.tigard-or.gov/docs/2013/acstudy/20131022_646/1409_draftsustainabilityactionplan-10-22-13.pdf
<i>Talent Clean Energy Action Plan</i>	http://cityoftalent.org/SIB/Files/Planning/Conservation/2017-2018TalentCleanEnergyActionPlan.Pdf

REGIONAL

<i>Intergovernmental Panel on Climate Change Standard</i>	https://www.ipcc.ch/
<i>State of Oregon, Addressing Climate Change</i>	https://www.oregon.gov/energy/energy-oregon/pages/climate-change.aspx
<i>Partners for A Sustainable Washington County Metro Climate Smart Strategy</i>	https://www.co.washington.or.us/support_services/sustainability/sustainable-partners.cfm
	https://www.oregonmetro.gov/sites/default/files/2015/05/29/climatesmartstrategy-finalversion-2014.pdf

LOCAL

<i>Climate Mayors Network</i>	http://climatemayors.org/
<i>Clackamas GHG Emissions Inventory Report</i>	https://dochub.clackamas.us/documents/drupal/ed26f5ed-7c39-4b7f-975e-6970a3fbf49d

TYPES OF STRATEGIES AND ACTIONS

<i>Oregon Climate Change Adaptation Framework</i>	https://www.oregon.gov/lcd/cl/documents/climate_change_adaptation_framework_08-12-2020.pdf
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TARGETED AREAS FOR STRATEGIES AND ACTIONS

<i>EPA Greenhouse Gases</i>	https://www.epa.gov/greeningepa/greenhouse-gases-epa
<i>Climate and Health Community Engagement Toolkit</i>	https://www.dhs.wisconsin.gov/publications/P01637.pdf

GREENHOUSE GAS INVENTORIES

<i>Ashland GHG inventory Report</i>	http://www.ashland.or.us/files/ashland_ghg_inventory_report.pdf
<i>Beaverton Greenhouse Gas Inventory</i>	https://www.beavertonoregon.gov/documentcenter/view/9577/green-house-gas-inventory-2008_2013
<i>Bend Community Greenhouse Gas Inventory</i>	https://www.bendoregon.gov/home/showdocument?id=38856
<i>Corvallis Community Greenhouse Gas Inventory</i>	https://www.corvallisoregon.gov/publicworks/page/community-greenhouse-gas-inventory
<i>Eugene Community GHG Report</i>	https://www.eugene-or.gov/documentcenter/view/45062/2017-eugene-community-ghg-report
<i>Milwaukie GHG Inventory memo</i>	https://www.milwaukieoregon.gov/sites/default/files/fileattachments/sustainability/page/85191/milwaukie_capc_ghg_inventory_memo.pdf
<i>Portland GHG Inventory Report</i>	https://www.portlandoregon.gov/water/63676