



# Background Report: Climate Change/Energy

## Milwaukie Comprehensive Plan Update

### Block 2 Topic Area

Prepared for the Comprehensive Plan Advisory Committee

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### Introduction

In the time since Milwaukie completed the last major update to its Comprehensive Plan in 1989, terms such as climate change, global warming, greenhouse gases, renewable energy and community resiliency have entered the common vernacular and been the focus of increasing amounts of attention at the local, state, national and global levels. There is nearly universal agreement among the world’s climate scientists that humans are contributing to climate change and global warming, and that is starting to have direct impacts on communities throughout the world<sup>1</sup>. Where there is less consensus is how cities such as Milwaukie, as well as their community partners, can and should address the threats of climate change and the need for more energy conservation and increased resiliency. This is especially true within the context of a Comprehensive Plan, which focuses primarily on establishing longer-term goals and policies related to land use and transportation. (See Table 1 for common climate change/energy definitions)

TERM	DEFINITION
Climate	The long-term average of temperature, humidity and rainfall patterns over an extended period of time.
Climate Change	A broad range of global phenomena created predominately by burning fossil fuels, which add heat-trapping gasses to Earth's atmosphere.
Global Warming	The upward temperature trend across the entire Earth since the early 20th century, and most notably since the late 1970s, due to increase in fossil fuel emissions since the industrial revolution.
Greenhouse Effect	Warming that results when gases such as carbon dioxide, methane, and nitrous oxide ("greenhouse gases") block heat from escaping the Earth's atmosphere, resulting in trapped heat and higher temperatures.
Carbon Footprint	The amount of equivalent carbon dioxide emissions released into the air as greenhouse gases by an individual or group.
Net Zero	When energy use results in no net emissions (production matches or exceeds consumption)
Carbon Neutral	When carbon emissions are reduced or offset entirely.

Table 1: Climate Change/Energy Definitions, Sources: Milwaukie Climate Action Plan, NASA

<sup>1</sup> NASA Global Climate Change FAQ, <https://climate.nasa.gov/faq/>

In May 2017, the City Council deemed climate change to be the “single largest threat to the future of citizens of Milwaukie”, and called for the creation and adoption of a [Climate Action Plan \(CAP\)](#). Scheduled to be adopted in October 2018, the CAP includes dozens of actions and mitigation strategies that the City, local households and businesses, and community partners can implement in an effort to reduce emissions and energy consumption, in the hopes of reducing the impacts of climate change or better preparing the community for its effects. The ultimate goal of the CAP is for Milwaukie to be a net zero building energy city by 2040, and fully carbon neutral by 2050.

The CAP’s focus on short and medium-term actions to address climate change and energy conservation is different than the role of the Comprehensive Plan. However, it does provide an excellent framework and necessary background information for establishing broader and longer-term climate change and energy goals and policies within the context of the built environment and multimodal transportation system. As the City begins the process to create a new Climate Change and Energy chapter of the Comprehensive Plan, it will build upon the CAP as well as the recently adopted Community Vision.

### Planning for Energy Conservation and Climate Change

Oregon has a set of 19 Statewide Planning Goals, which serve as the foundation of the state’s land use planning program that is implemented at the local level through the Comprehensive Plan. As the statewide goals were created in 1973, they do not specifically reference climate change, global warming, and other related concepts that have come to prominence in recent years. However, [Statewide Planning Goal 13](#) is entitled Energy Conservation, and seeks to conserve energy by calling for “land and use developed on the land” to “be managed and controlled so as to maximize the conservation of all forms of energy, based upon sound economic principles.”

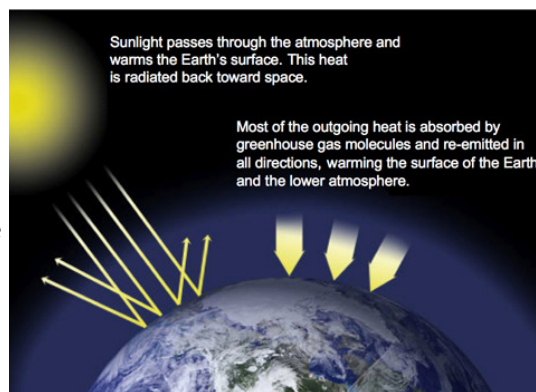


Figure 1: Greenhouse Effect, Source: NASA

Goal 13 includes a series of planning and implementing guidelines that cities are encouraged to follow to improve energy efficiency, and cover areas such as lot size, density, building height, and availability of light, wind and air. While the language in Goal 13 is largely outdated, there is nothing in state law that says that communities may not include additional topics in their Comprehensive Plan beyond what is required in the Statewide Planning Goals. In fact, recent years have seen the state increasingly focus on climate change, energy conservation and community resiliency outside of the Statewide Planning Goals.

In 2010, Oregon Senate Bill 1059 was enacted, which directed the Oregon Department of Transportation (ODOT) and Oregon Department of Land Conservation and Development (DLCD) to work with local governments in metropolitan areas on ways to reduce greenhouse gas emissions (GHGs). The state and Metro have developed a number of other programs that it encourages cities to use to address climate change and increase energy efficiency, including [Cool Planning: A handbook on Local Strategies to Slow Climate Change](#) and [ODOT’s Greenhouse Gas Emissions Reduction Toolkit](#). In 2016, the state legislature adopted the Clean Electricity and Coal Transition Plan, which sets a target of 50% renewable energy by 2040 and a transition from coal-fired electricity by 2035. The state’s work has been supplemented by local utilities as well as Metro, the Portland metropolitan area’s regional government. Portland General Electric has committed to generating 70% of their energy from non-carbon sources in 2040 and reducing their greenhouse gas emissions by 80% from 1990 levels by 2050, while Metro has developed a [Climate Smart Strategy](#).

## City of Milwaukie Current Comprehensive Plan

As noted above, the existing Milwaukie Comprehensive Plan does not address the topics of climate change or resiliency. [Chapter 5 \(Transportation, Public Facilities and Energy Conservation\)](#) is broken into three individual elements, including an Energy Conservation Element. The Energy Conservation Element includes one goal statement, five objectives, and eight policies which are focused on addressing the requirements of Statewide Planning Goal 13. While focused exclusively on energy efficiency and conservation, the ideas covered by the five objectives provide an excellent initial framework for the climate change discussion in the Comprehensive Plan. Objectives cover the following topics:

- *Objective 1 – Land Use*  
Encourages an energy-efficient land use pattern.
- *Objective 2 – Transportation System*  
Encourages an energy-efficient transportation system.
- *Objective 3 – Construction*  
Encourages the construction industry to develop energy-efficient facilities.
- *Objective 4 – Site and Building Design*  
Encourages site design practices that will result in energy efficiency.
- *Objective 5 – Coordination*  
Calls for the City to participate in local, regional and statewide energy conservation programs.

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## Climate Change/Energy and Milwaukie’s Community Vision

In 2016-2017, the City of Milwaukie underwent a visioning and action plan process. The process was to create a new vision statement, goals, and action items to achieve in the next 20 years. The vision, goals, and actions received input from a variety of people and groups, including the Vision Advisory Committee (VAC), staff, Steering Committee, City Council, Planning Commission, and a variety of other stakeholders through a series of community events, surveys, and Town Halls.

The visioning process brought about several goals and action items related to climate change, resiliency and energy conservation, including a “Super Action” that calls for the City to be a model city in these areas and a Vision Statement that describes Milwaukie as a “resilient community, adaptive to the realities of a changing climate”. The relevant goals and action items are listed below:

### Vision Goal Statements:

*Planet 3: Milwaukie is a model city that produces more energy through renewable sources than it uses. It is a prepared and resilient community, adaptive to the realities of a changing climate.*

### Super Actions:

*Super Action 1: Make Milwaukie a model of resiliency, environmental stewardship and disaster-preparedness.*

Priority Vision Action Items for the next 2-5 years (as established by community town halls, survey, and the City Council) include:

*Planet 1.1: Implement city programs, incentives and development code amendments that promote sustainable development and help to better integrate the built environment and natural environment*

*Planet 3.1: Encourage energy and water efficiency and the use of renewable sources by offering rebates, incentives, and permit fee reduction or waivers*

*Planet 3.2: Develop a Climate Action and Energy Plan that aims to reduce the impacts of the Milwaukie community on climate change and by 2040 make Milwaukie a Net-Zero energy community that produces more electricity than it consumes*

*Planet 3.5: Ensure that the City's infrastructure and facilities can reasonably withstand natural or man-made disasters and that the City can continue to provide services during an emergency event*

*Planet 3.7: Promote household and neighborhood-level emergency preparedness by expanding the role and capacity of Community Emergency Response Teams (CERTs)*

## Assets & Trends for Incorporating Climate Change/Energy in Planning

### *A Wealth of Information on How Milwaukie Can Address Climate Change*

The 2018 Climate Action Plan is an important first step in addressing the reality of climate change in Milwaukie, and developing a comprehensive list of strategies to address climate change, energy conservation and resiliency that can be incorporated into the Comprehensive Plan's goals and policies. For example, knowing that an estimated 29% of Milwaukie's carbon footprint is from transportation emissions will allow the City to establish long-term goals and policies related to reducing our transportation-related emissions.

### *A Proactive and Engaged Community*

Climate change, resiliency, and energy conservation have been priority issues in Milwaukie in recent years. The Milwaukie City Council is scheduled to adopt a Climate Action Plan in October 2018, and in Fiscal Year (FY) 2019 the City is committed to funding a full-time position that deals with climate change and forming a committee for implementation of the Climate Action Plan. Approximately 100 people attended the Climate Action Plan's 2018 Summit, indicating a high level of community interest in these topics. The 2017 Community Vision and Action Plan includes numerous actions related to addressing climate change and improving community resiliency, and was the impetus for the development of the Climate Action Plan.

### *Support from State, Regional, and Utility Partners*

As noted in the introduction, the State of Oregon, Metro, and local utilities have shown a commitment to addressing climate change, energy conservation and resiliency through various legislation and programs. In addition to those mentioned in the introduction, these include the and Oregon Sustainable Transportation Initiative and a 2017 Executive Order calling for future state buildings to be net-zero energy.

## Opportunities & Challenges Influencing Climate Change/Energy Planning

- Milwaukie is dominated by detached single family residential households, which have a high carbon footprint. 93% of Milwaukie residents in the workforce work outside of Milwaukie, with the vast majority of those commuting by single occupancy vehicles, resulting in high transportation emissions.



Figure 2: Climate Action Plan Summit, Picture by Hamid Shibata Bennett

- Small variations in future temperature increases tied to climate change can result in a wide spectrum of potential impacts, as well as the associated costs to mitigate these impacts. For example, according to the City’s Climate Action Plan, one degree Celsius is projected to be the difference in whether or not all of Milwaukie Bay Park is permanently underwater in the year 2100. The Comprehensive Plan should provide adequate flexibility to address these future impacts.
- The top six hottest summers on record in Oregon all occurred between 2004 and 2018, and the summers of 2017 and 2018 saw periods of significantly reduced air quality due to wildfires. It will be important to fight complacency on this topic and dismiss it as the “new normal”.
- The Pacific Northwest is expected to experience population growth directly related to climate change, as residents of other climate-change affected areas (such as drought) move to the region. The City and its local, regional, and state partner agencies will need to plan for this growth.
- Emerging technologies to address climate change and energy conservation often come at an increased cost for businesses and development, at least in their early stages. The City will need to consider and balance economic concerns and adequately budget for climate change.
- Milwaukie is a small city whose actions, on the grand scale of things, will have a very small impact on climate change and energy conservation. However, it does have the opportunity to provide a model to other jurisdictions throughout the region and nation, with the hope of spurring additional action by others.



Figure 3: Downtown Milwaukie Covered in Wildfire Smoke, Summer 2018

### Policy Questions, Observations, and Implications

The Climate Action Plan includes a very detailed list of action items and mitigation measures, while the Comprehensive Plan is more geared towards establishing general goals and policies related to land use and transportation planning. As we think about developing goals and policies for the Comprehensive Plan, we will need to balance the needs and actions from the Climate Action Plan with the flexibility and high-level guidance that a Comprehensive Plan typically provides. Below are some questions and observations to consider.

- Do the five topic areas covered in the existing Comprehensive Plan Conservation Element objectives provide a good framework for the updated chapter? What else needs to be included?
- How should we regulate development within our floodplains and other areas susceptible to the impacts of climate change?

- How can we better prepare (“harden”) our utility and transportation infrastructure (water, sewer, electricity, transit, streets, etc.) to improve resiliency in the face of climate change and the increased likelihood of natural disasters such as flooding, fires, and earthquakes?
- Many homes and businesses in Milwaukie are located adjacent to the Willamette River, Kellogg Creek, and Johnson Creek. How do we incorporate topics such as climate change and natural disaster resiliency into Comprehensive Plan policies related to housing and economic development?
- Climate change adaptation is anticipated to be expensive, as cities will need to mitigate for or adapt to impacts related to higher temperatures, flooding, fires, and other climate change-related events How can the City provide adequate funding to address potential impacts, at least as they relate to the areas of land use and transportation planning? How do we balance climate change adaptation and continue to support and encourage economic development growth?

There are numerous topics related to climate change that also touch on other Comprehensive Plan chapters. For example, impacts to floodplains touches on the Natural Hazards chapter, while economic resiliency is also an Economic Development issue. As we develop new goals and policies, we will need to consider the best structure for addressing climate change within the Comprehensive Plan. The Synthesis stage of the Comprehensive Plan Update will provide an opportunity to put goal and policy language in the most appropriate place.