CITY OF PORTLAND AND MULTNOMAH COUNTY

LOCAL STRATEGIES TO ADDRESS CLIMATE CHANGE

JUNE

2015

CLIMATE ACTION PLAN SUMMARY

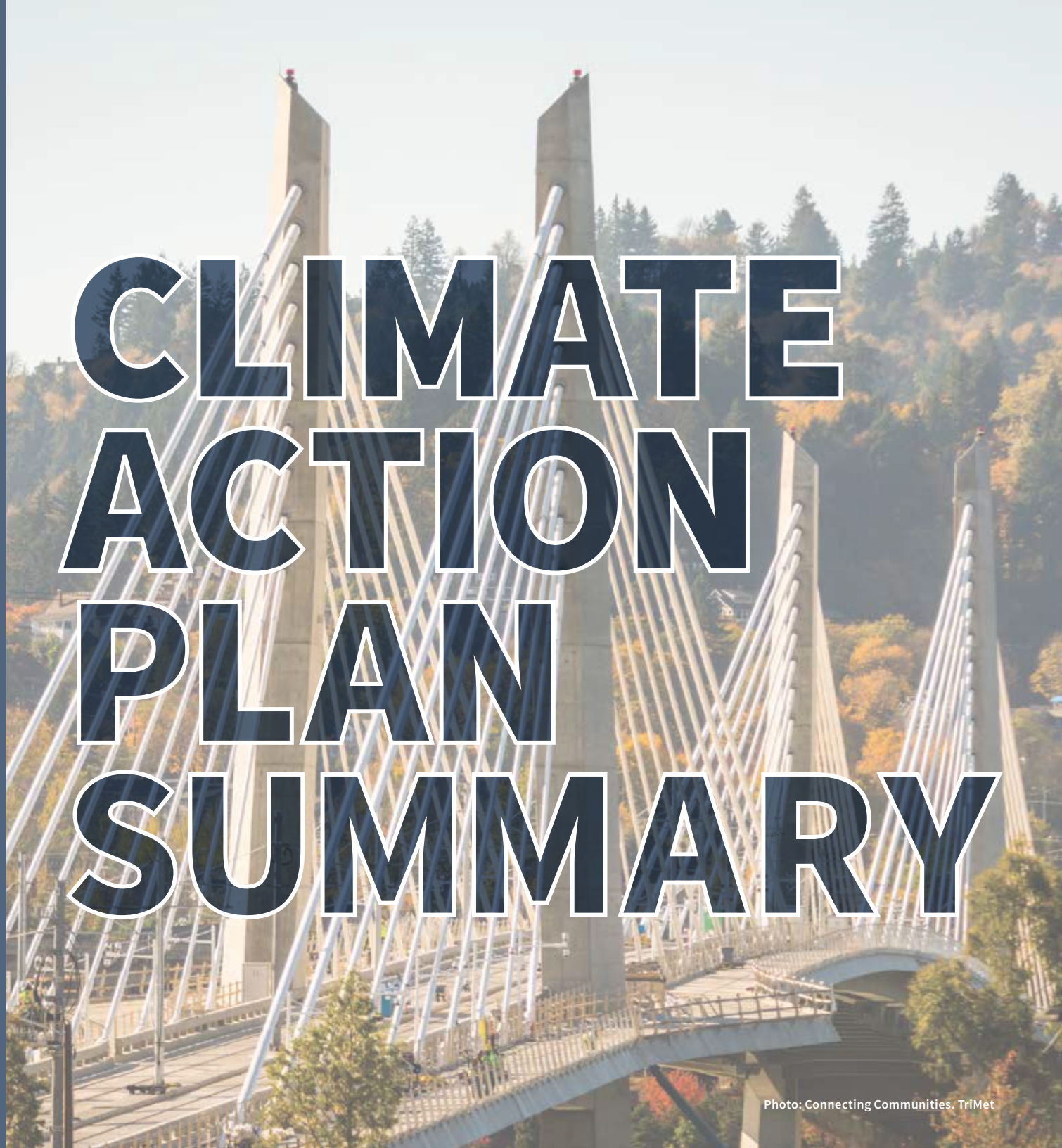

Photo: Connecting Communities. TriMet

Multnomah County

2050 VISION FOR PORTLAND AND MULTNOMAH COUNTY

PROSPEROUS

- Portland and Multnomah County are the heart of a vibrant region with a thriving economy.
- Green living-wage jobs are a key component throughout the regional economy.
- Households and businesses save money and resources by favoring energy-saving appliances and durable, repairable goods, and routinely share and rent vehicles and other goods.

CONNECTED

- Access to active transportation options has never been better, including frequent service transit to the city's many employment centers.
- Pedestrians, bicyclists and transit are prominent throughout Portland's vibrant community centers, bustling corridors and diverse neighborhoods.
- Vehicles are highly efficient and run on low-carbon electricity and renewable fuels.

The intertwined challenges of climate change, social inequity, economic volatility, degraded natural systems and the rising cost of living demand an integrated response that goes far beyond cutting carbon.

An 80 percent reduction of local carbon emissions by 2050 requires reimagining our community.

It means transitioning away from fossil fuels while strengthening the local economy and shifting fundamental patterns of urban development, transportation, buildings and consumption.

HEALTHY AND RESILIENT

- Homes and business buildings are affordable, healthy, comfortable, durable and highly efficient.
- The urban forest canopy, natural resources, biodiversity corridors and green roofs can be found throughout the community.
- Backyard gardens, farmers markets and other community-based food programs are plentiful, productive and thriving.
- The region's buildings, infrastructure, and natural and human systems are prepared to recover quickly from the impacts of a changed climate such as flooding, landslides and heat waves.

EQUITABLE

- Every resident, regardless of socio-economic status, has easy access to a walkable and bikeable neighborhood that includes retail, schools, parks, jobs and affordable housing.
- There are plentiful employment and small business opportunities led by and employing under-served and under-represented communities.
- Communities of color and low-income populations are involved in the development and implementation of climate-related programs, policies and actions.

CONTENTS

This summary document highlights key issues and actions outlined in the full City of Portland and Multnomah County 2015 Climate Action Plan and is intended to give a general overview of the primary goals and objectives of local climate action efforts.

Please refer to the full 2015 Climate Action Plan for more details, data and a comprehensive list of actions that the City and County intend to take over the next five years.

www.portlandoregon.gov/bps/climate

Photo: Tilikum Crossing, Bridge of the People. TriMet

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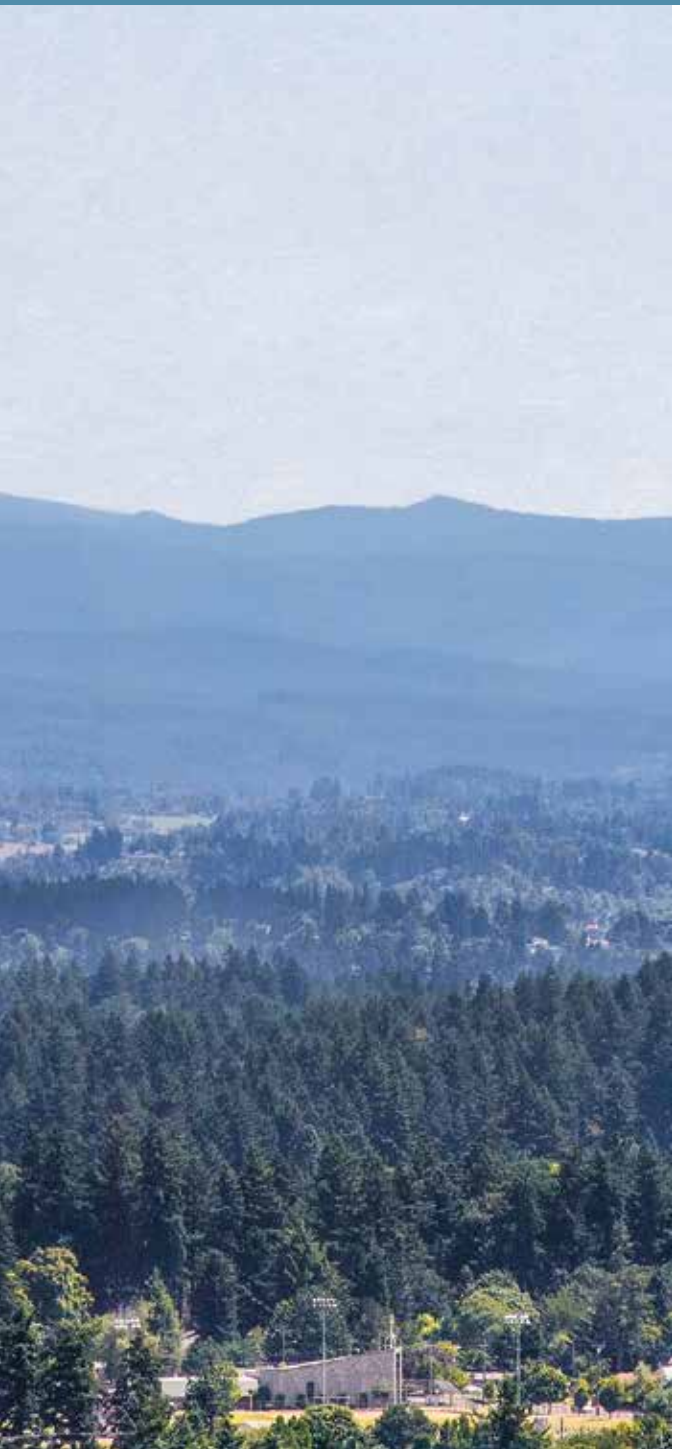
INTRODUCTION



Climate change is the greatest environmental challenge of the 21st century. It poses a serious threat not just to Oregon's natural treasures — forests, mountain snows and rivers — but also to our jobs and our health.

But climate change also presents huge opportunities. Vast amounts of money will be saved and made during the transition to a low-carbon community. Portland and Multnomah County are global leaders in that transition, and we have an unparalleled opportunity to make the switch in ways that create jobs and benefit all residents.

CLIMATE CHANGE IS A SERIOUS THREAT

Scientists expect that, should we fail to curb climate change, Oregonians may see more — and more intense — heat waves, droughts, heavy rains, floods, wildfires and landslides in the future.

These impacts could drag down our economy, stress our natural resources and worsen inequities facing many Oregonians.

Action is required at all levels, and local governments have a unique role to play in building low-carbon communities.

WE KNOW WHAT WE NEED TO DO, AND WE'RE ON OUR WAY

The good news is that Portland and Multnomah County are already taking action. We've reduced carbon emissions by 14 percent since 1990, despite growth in population and jobs. That's well ahead of the national trend. And we have a solid plan for continuing to reduce emissions that also benefits our economic, social and cultural lives.

WE'RE ADDING TOO MUCH CARBON TO OUR ATMOSPHERE

The world's scientists have concluded that carbon emissions from human activities have begun to destabilize the Earth's climate. (Throughout this document, the term "carbon emissions" refers to all greenhouse gas emissions.) Human influences on climate, already apparent at the global and continental scales, are altering the social, environmental and economic systems we rely upon (IPCC, 2013; IPCC, 2014).

Climate change is not just about warming. It is about the weather patterns that make up the climate, including temperature, wind, rainfall and storms. It is about the effects those changes create — heat waves, drought, wildfire, flooding and landslides.

Climate affects nearly all aspects of our lives:

- The health of the parks and rivers we play in, and natural resources that fish and wildlife species rely upon for food and raising their young.
- The kinds of infectious diseases and pests that can thrive in our region and affect our health, including mosquitoes that carry West Nile virus and Dengue fever.
- The quality of the air we breathe, including air pollution and allergens that can trigger asthma attacks.
- The experience of keeping our roads, homes, families and businesses safe from floods and landslides during intense winter rains.

Carbon emissions from burning fossil fuels and land use changes — including deforestation — are the primary drivers for climate change today and in the future. Simply put, we're adding too much carbon to the atmosphere by burning fossil fuels like coal, natural gas and gasoline to heat and power our homes, businesses and factories and to fuel our vehicles.

PORTLAND HAS BEEN STEADILY CUTTING CARBON FOR MORE THAN A DECADE

We can reduce carbon emissions, and Portland and Multnomah County have a track record of success. Portland has been working at this for more than 20 years, since we adopted the 1993 Carbon Dioxide Reduction Strategy — the nation's first local plan for cutting carbon. The result: Local emissions have dropped since peaking in 2000. That puts us years ahead of the national trend (see Figure 1).

City of Portland Archives, Oregon, A2000-020.7, 1985
Pioneer Court House Square opening ceremony

LOCAL CARBON EMISSIONS HAVE DROPPED 14 PERCENT SINCE 1990, WELL AHEAD OF THE NATIONAL TREND

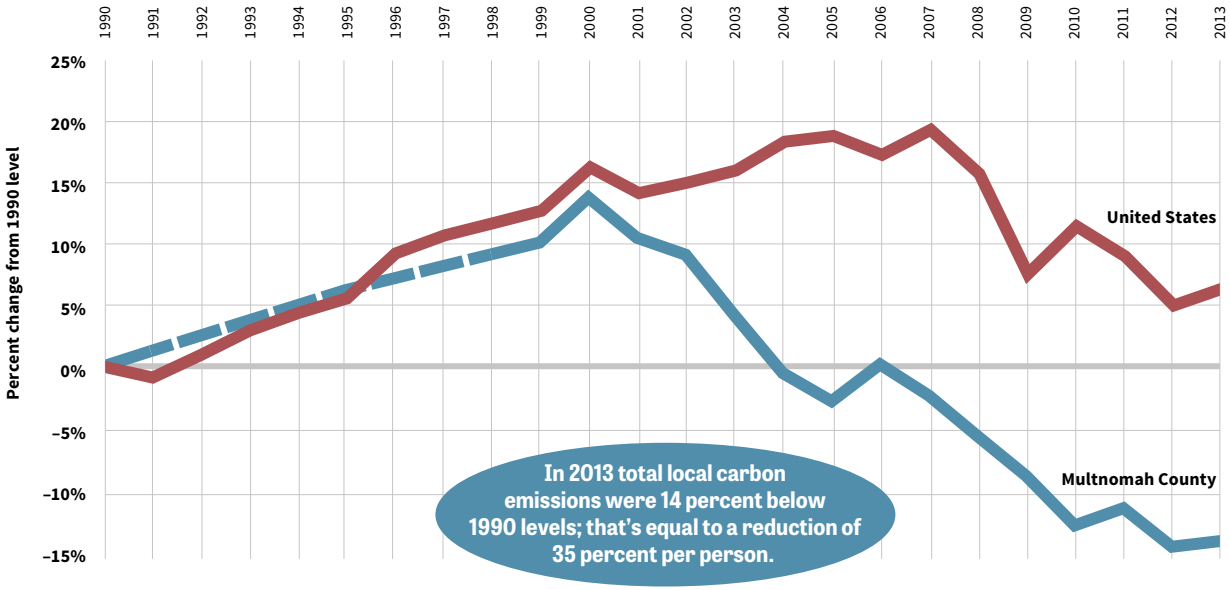


Figure 1. Communitywide carbon emissions (1990–2013). *Source: Portland Bureau of Planning and Sustainability*

Portland and Multnomah County are national leaders in reducing carbon emissions.

Since 2000, when local emissions hit their highest levels, Multnomah County's emissions have declined. Among other factors, these reductions are due to a combination of:

(1) improved efficiency in buildings, appliances and vehicles;

(2) a shift to lower-carbon energy sources like wind, solar and biodiesel;

(3) more walking, biking and public transit; and

(4) reduced methane emissions from landfills and more recycling.

Portland and Multnomah County have committed to reducing local carbon emissions by 80 percent below 1990 levels by 2050, with an interim goal of a 40 percent reduction by 2030.

Clean technology — including green building design and construction, and clean energy like solar and wind power — provides more than 12,000 jobs in Multnomah County.

POPULATION AND JOBS ARE UP, EMISSIONS ARE DOWN

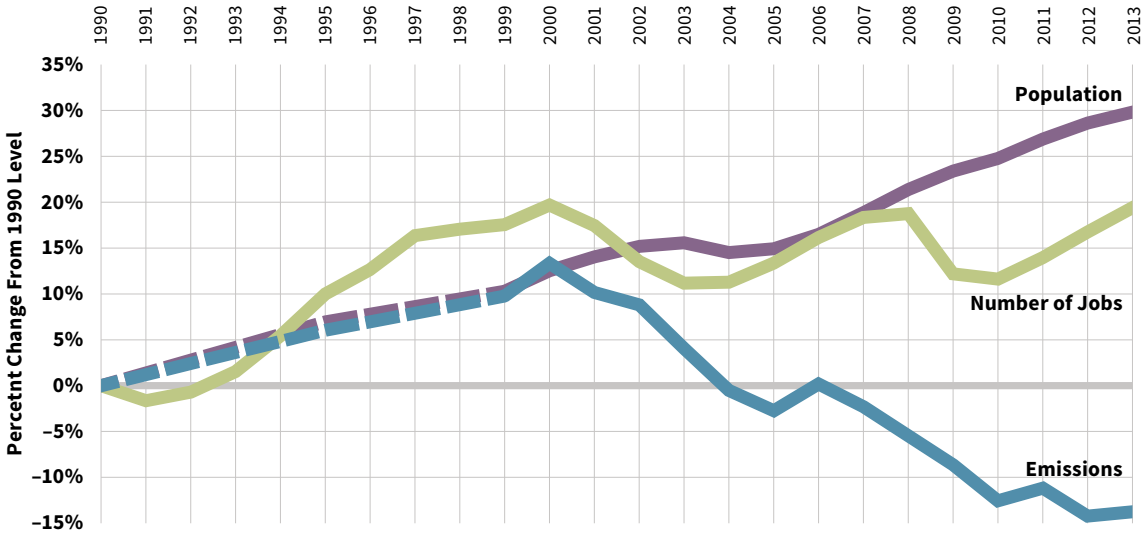


Figure 2. Change in Multnomah County carbon emissions compared to growth in population and jobs (1990–2013). *Source: Portland Bureau of Planning and Sustainability*

Portland's experience suggests that cities can reduce emissions as their economies and populations grow.

Even as Multnomah County has experienced a 31 percent increase in population and a 20 percent increase in jobs since 1990, total carbon emissions have fallen during the same period.

REDUCING CARBON EMISSIONS IS GOOD BUSINESS

Want to make businesses more efficient and competitive and save residents money? Reduce carbon emissions.

As Portland shifts away from fossil fuels, new jobs in energy management, renewable energy and low-carbon products and services will be created.

- When residents weatherize their homes, it not only creates jobs for construction workers and skilled labor but also cuts utility bills.
- When businesses increase energy efficiency, they reduce operating costs and employ electricians, engineers, builders and plumbers.
- When the City and County promote training and equitable hiring and contracting policies that create opportunities for under-represented populations, it helps ensure the economic benefits of climate action are shared by all.

Portland businesses are already exporting the products and services they've developed in response to climate change — from highly efficient building improvements to stormwater management. As the world moves to a low-carbon economy and invests in climate-ready communities, Portland businesses will reap the rewards of their leadership.

Beyond job creation, Oregon's shift away from fossil fuels can also indirectly benefit the economy. Because Oregon has almost no fossil fuel resources (e.g., oil fields or coal mines), the money we spend on these energy sources contributes little to the local economy. When Oregon businesses and residents redirect their energy dollars toward energy efficiency and renewable fuels, we keep our money in the community, and expand markets for products and services that benefit the local economy.

NOW IS THE TIME TO ACT

As the magnitude of climate change becomes clearer, so too does the need for an even more ambitious response. When Portland and Multnomah County adopted the 2009 Climate Action Plan, we committed to reducing carbon emissions by 40 percent from 1990 levels by 2030 and by 80 percent reduction from 1990 levels by 2050.

BY 2050, PORTLAND WILL PRODUCE LESS THAN A QUARTER OF THE EMISSIONS WE DO TODAY

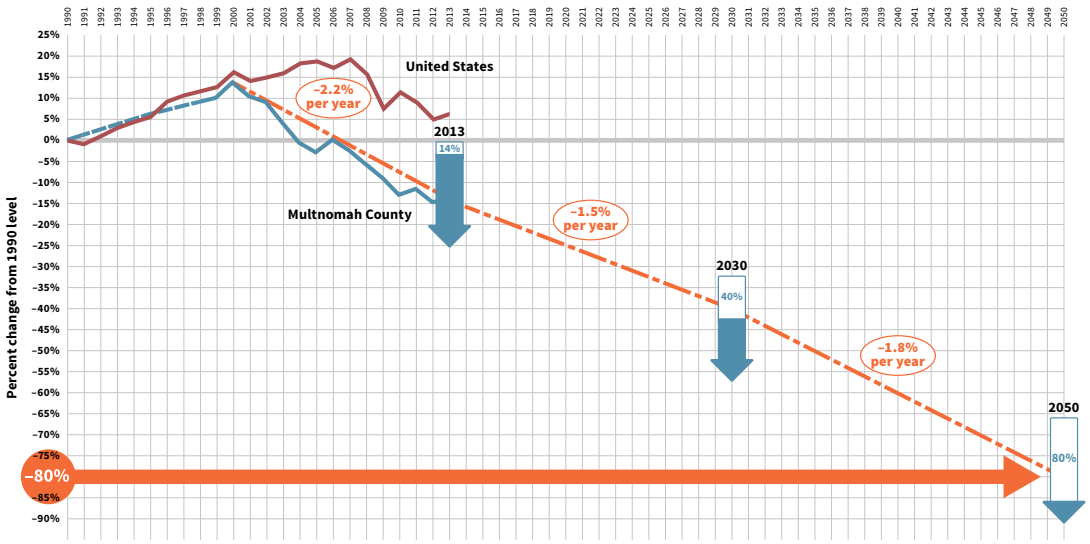


Figure 3. Carbon emission trend and reduction goals. *Source: Portland Bureau of Planning and Sustainability*

Portland and Multnomah County have committed to reducing local carbon emissions by 80 percent below 1990 levels by 2050, with an interim goal of a 40 percent reduction by 2030. The City and County can only achieve these goals by working together with other governments, nonprofits, academia, residents and the business community.

WHEN WE PROTECT THE CLIMATE, WE WIN

When Portland reduces the energy we need to power our homes and businesses, invests in renewable energy, makes smart decisions about urban development and transportation and considers climate change risks in decision-making, we see:

- Better air quality and improved human health.
- New jobs and greater reinvestment in the local economy.
- Lower energy bills.
- Shorter commute times between home, work and school, and more opportunities for people to walk, bike or take public transit.
- Less damage to social and environmental systems due to drought, floods and fire, and fewer disruptions in services.

CITY CLIMATE LEADERSHIP AWARDS FINALIST 2014

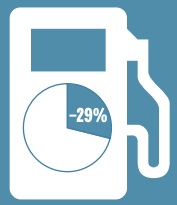
In 2014 Portland received a C40 and Siemens Climate Leadership Award for its Healthy Connected City strategy, an honor placing it alongside Amsterdam, Barcelona, London, Melbourne, and New York as a global leader in responding to climate change.

"Portland stands proudly alongside the global megacities that make up the C40," Mayor Charlie Hales said. "We're delighted to have the honor and recognition that Portland's Healthy Connected City approach has proven to be a powerful carbon-reduction strategy."

WE'VE PROVEN THAT WE CAN DO THIS

Portland homes use 11 percent less energy per person today than in 1990, and each year Multnomah County reduces the energy cost burden of 10,000 low-income households.

Portland now has over 390 ecoroofs covering nearly 20 acres of rooftop, managing millions of gallons of stormwater each year.



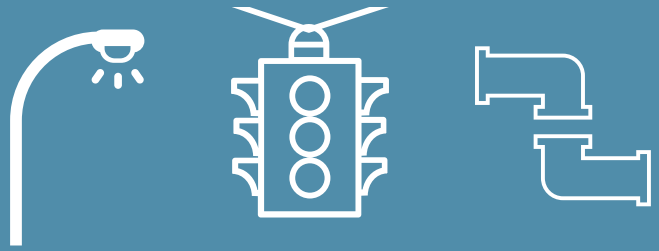
Portlanders use 29 percent fewer gallons of gasoline per person today than in 1990.

Portland is a national leader in recycling with a 70 percent overall recycling rate for residential and commercial waste.

Over three million new trees and shrubs have been planted in Portland's natural areas since 1996 through the City's revegetation work.

BE CART SMART

Since 2011, residential garbage taken to the landfill from Portland has decreased by over 35 percent.

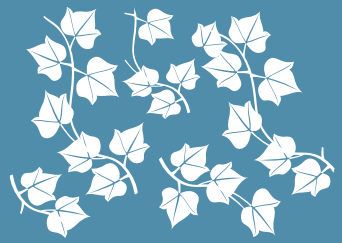


Through improvements to the efficiency of City and County operations, including traffic lights, water and sewer pumps and building lighting systems, energy savings total over $6 million a year, approximately 25 percent of the City and County's energy bill.

Solar energy systems in Portland increased from a dozen in 2003 to nearly 3,000 today.

Since 1990, the Portland region has added and expanded four major light rail lines and the Portland Streetcar, as well as over 260 miles of bikeways.

About six percent of Portlanders bike to work, nine times the national average, with over 12,000 more people bike commuting today compared to 1990.



The City has treated and managed invasive plants on over 7,400 acres of public parks, roadsides and private property since 2008.

Transit ridership has almost doubled over the past 20 years, and TriMet provided 100 million rides in 2013.

Multnomah County is home to more than 250 green building projects.

Collection of compostable materials has more than doubled through the curbside collection program.

WHILE WE CUT CARBON, WE MUST ALSO PREPARE FOR THE EFFECTS OF CLIMATE CHANGE

Although Portland is already working to reduce carbon emissions, our future climate is projected to include hotter, drier summers with more high heat days (over 90ºF) and warmer winters with the potential for more intense rain events.

These projected changes to our region's climate are likely to lead to more:

- **HEAT WAVES**
- **DROUGHT**
- **WILDFIRE**
- **FLOODS**
- **LANDSLIDES**

As the climate changes, we could face risks to our sewer, electricity, transportation, stormwater and flood control systems. In addition, our communication and emergency response services could be significantly impacted.

Our natural systems have adapted to historic climatic conditions. However, rapid climate changes can stress or overwhelm nature's ability to clean air and water, pollinate food and keep pests in check. That stress can damage habitat, wildlife and people.

Our health care system will also face new challenges associated with uncharacteristic events, straining existing capacity to manage the risks of heat-related illness, air pollution and diseases.

CLIMATE ACTION THROUGH EQUITY

Climate change affects everyone. Our work to respond to climate change should, too.

Portland's work to protect the climate has already delivered community benefits. However, we have not shared equitably in those economic and health benefits. In particular, communities of color and low-income people have been left out.

Different communities experience the effects of climate change in different ways. Rising energy prices hurt some more than others. So do lack of access to energy efficient and affordable housing, and quality healthcare. That means poor people are more likely to suffer the burdens of climate change than others.

The City and County are committed to leveling this playing field. We're working to:

- Increase access to transit, sidewalks, bike lanes and other transportation options.
- Reduce exposure to pollution and excessive heat.
- Improve access to parks and other natural resources.
- Reduce burdens of housing and energy costs.

Climate actions can help by:

- Promoting investments in energy-efficient homes that are safer, more comfortable and affordable.
- Investing in infrastructure that improves health and enhances pedestrian and bike safety, especially in East Portland.
- Improving accessibility and expanding transportation options and neighborhood amenities, while addressing the pressures that lead to gentrification.
- Building resilience and improving the health of our natural systems, including urban trees, open spaces, rivers, streams and wetlands, and the fish and wildlife that rely on them.

Money-saving opportunities will emerge and economic growth will occur during the transition to a low-carbon economy. These economic opportunities will either exacerbate existing disparities or help bring prosperity to more people. Policies and implementation approaches must be prioritized that help share the opportunities and benefits of climate action equitably.

WE MUST DO IT TOGETHER

Climate change cannot be solved by government in isolation. Businesses, residents, institutions and non-profit organizations all have essential roles to play. Government (local, state and federal) can jump-start change through policy-making and market incentives. It can also lead by example, support the work of others through education, outreach and technical assistance, and engage communities of color and other under-served populations.

Businesses and residents ultimately determine our success. Across the community, small daily choices and behaviors, such as whether to take the bus or drive, add up. When you insulate a house, upgrade the lighting system in a commercial building, plant a tree or buy a fuel-efficient vehicle, these individual decisions add up to meaningful reductions in carbon emissions.

At the national level, the federal government must shift its energy policies away from fossil fuels and align its vast research and development resources with climate protection. The State of Oregon has an invaluable role to play in transportation investments, strengthening building codes, regulating utilities, managing forest lands, reducing waste and guiding local land use policies. Oregon has established statewide goals to reduce carbon emissions to 10 percent below 1990 levels by 2020 and 75 percent by 2050.

Metro, with its land use planning and regional growth management mandate, regional greenspace program, and solid waste management role, has an opportunity to scale up carbon reduction and the climate change preparation actions and priorities outlined in this plan to a regional level.

Achieving the goals outlined in this Climate Action Plan will require extensive collaboration among all levels of government, non-profits and community organizations, academia, the public and the business community.

Climate Equity means the just distribution of the benefits of climate protection and alleviation of unequal burdens created by climate change. This requires intentional policies and projects that simultaneously address the effects of and the systems that perpetuate both climate change and inequality.

WE'RE ON OUR WAY

The *Climate Action Plan* charts a path to reduce local carbon emissions 80 percent below 1990 levels by 2050 with specific objectives to achieve by 2030. In the near term, the Climate Action Plan identifies over 100 actions to be completed or significantly underway in the next several years. The City of Portland and Multnomah County will act decisively to implement these actions and evaluate progress, adapting and revising as necessary. We will report on community carbon emissions annually and identify new actions every five years.

The objectives and associated actions are grouped into the following categories:

BUILDINGS AND ENERGY

URBAN FORM AND TRANSPORTATION

CONSUMPTION AND SOLID WASTE

FOOD AND AGRICULTURE

URBAN FOREST, NATURAL SYSTEMS AND CARBON SEQUESTRATION

CLIMATE CHANGE PREPARATION

COMMUNITY ENGAGEMENT, OUTREACH AND EDUCATION

LOCAL GOVERNMENT OPERATIONS

Multnomah County

IMPLEMENTATION

MAXIMIZING THE CO-BENEFITS OF TAKING ACTION

While transitioning away from fossil fuels, we must also:

- **Strengthen the local economy.**
- **Shift patterns of urban development, transportation, buildings and consumption toward low-carbon options.**
- **Create and maintain high-quality jobs that are accessible to all.**
- **Improve community livability and public health.**
- **Advance social and racial justice.**
- **Build strong, resilient infrastructure and support natural systems.**

BUILDINGS AND ENERGY

Buildings are the single largest contributor to carbon emissions in Multnomah County, accounting for more than 40 percent of total emissions from a sector-based perspective.

Fossil fuels still dominate the electricity mix. Two-thirds of the electricity that serves Multnomah County is generated from coal and natural gas (see Figure 4).

OUR POWER ISN'T AS GREEN AS WE THINK IT IS

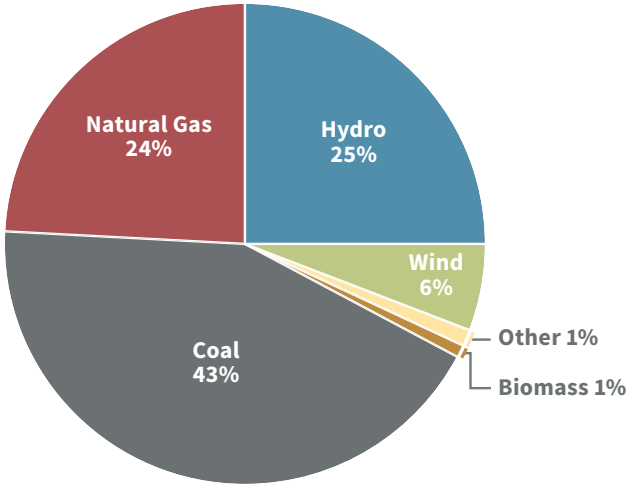


Figure 4. Weighted average of electricity fuel sources for Multnomah County (2010–2012). *Source: Portland Bureau of Planning and Sustainability*

Unlike the municipal utilities of Seattle and Tacoma (Washington) and Eugene (Oregon), which get nearly all of their power from zero-carbon sources, Portland's electric utilities rely primarily on coal- and natural gas-fired power plants.

Reducing carbon emissions from building energy use requires two types of changes:

- Improved energy efficiency.
- Reduced carbon intensity of energy supplies, primarily by phasing out coal and increasing renewable sources of electricity such as solar and wind power.

The costs to provide energy for heating, lighting and appliances are strongly influenced by the efficiency of homes and apartments. Many low-income families live in less-efficient buildings with outdated heating systems and appliances. Energy efficiency programs must be designed to minimize the cost burden to low-income populations and communities of color that are already under financial stress.

The number of solar energy systems installed in Portland increased from a dozen in 2003 to more than 600 in 2009, and more than 3,000 systems are in operation today.

2030 Objectives

2030 Objective 1. Reduce the total energy use of all buildings built before 2010 by 25 percent.

2030 Objective 2. Achieve zero net carbon emissions in all new buildings and homes.

2030 Objective 3. Supply 50 percent of all energy used in buildings from renewable resources, with 10 percent produced within Multnomah County from on-site renewable sources, such as solar.

Five-year priorities

Building energy performance reporting: Energy performance benchmarking and ratings are tools that standardize and score how efficiently homes and other buildings use energy. Reporting performance publicly makes building energy consumption more transparent, helping buyers and sellers more accurately value energy efficiency in buildings.

Key actions:

1A — Commercial Energy Performance Benchmarking
1B — Residential Energy Performance Ratings

Solar: Community solar represents the next phase of Portland's solar initiatives. Solarize Portland brought rooftop solar to thousands of Portland homeowners, but many more thousands of residents don't have this opportunity. Renters, for example, are typically not able to install solar on their apartment buildings. Other barriers include shading, roof orientation and financial constraints. Community solar programs recognize these barriers and provide an alternative to on-site solar generation for a broader segment of the population.

Key actions:

3B — Installed Solar and Solar Access
3C — Community Solar

Carbon pricing: When we increase the price of something, we generally use less of it. Putting a price on carbon has helped to reduce emissions in California, British Columbia, nine states in the northeastern United States, and dozens of countries.

Key actions:

1H — Carbon Price

Net zero buildings: The best time to address building efficiency is in the initial building design stage. Buildings that have been designed and built with performance as the primary goal are capable of outperforming similar existing buildings that have been retrofitted for efficiency.

Key actions:

2A — Oregon Building Code
2B — Minimum Performance
2C — Net-Zero Energy Projects

Portland is home to more than 180 certified LEED (Leadership in Energy and Environmental Design) green buildings.

URBAN FORM AND TRANSPORTATION

Land use planning and transportation policies and investments are among the most important opportunities for the City and County to address carbon emissions. The transportation of goods and people accounts for nearly 40 percent of the carbon emissions in Multnomah County.

Portland must achieve significant transportation-related emission reductions to achieve the 2050 carbon goal of an 80 percent reduction below 1990 levels. Coordinated land use policies, low-carbon transportation infrastructure and changes in daily decisions by residents and businesses are actions that will help.

Three factors strongly influence carbon emissions from transportation in the following ways:

- The overall urban form or shape of the community. This includes where jobs and housing are located, access to parks and open spaces, and the location of stores and services.
- How people and goods move around (e.g., on foot or by bicycle, bus, car or truck).
- The fuels used to power transit, cars and trucks (e.g., electricity, biofuels, diesel, gasoline).

HEALTHY CONNECTED NEIGHBORHOODS IMPROVE EQUITY AND REDUCE CARBON EMISSIONS

Portland's land use plan calls for growth to be concentrated in a network of centers of different sizes, each of which serves multiple neighborhoods. These "healthy connected neighborhoods" are places that support the health and well-being of residents and the vitality of local businesses. In these neighborhoods, people of all ages and abilities have safe and convenient access to more of the goods and services needed in daily life — grocery stores, schools, libraries, parks and gathering places — reachable on foot or by bike. They are well connected to jobs and the rest of the city by transit. They have a variety of housing types and prices so households of different sizes and incomes have more options.

Today, over 60 percent of Portland's households are part of connected neighborhoods (see Figure 5). Portland has seen the results of how these neighborhoods reduce carbon emissions and help keep money in the local economy that would otherwise be spent on fossil fuels. The other 40 percent of Portlanders do not have safe and convenient access to transit, commercial services, jobs, or in many areas, even sidewalks. This is especially critical in East Portland, which is home to many low-income households and youth.

The Climate Action Plan, as well as many other City and County Plans including the Portland Plan and the Comprehensive Plan, seek to prioritize actions and investments to reduce these disparities and improve access to opportunities for under-served communities.

SOME PORTLAND NEIGHBORHOODS ARE MORE COMPLETE THAN OTHERS

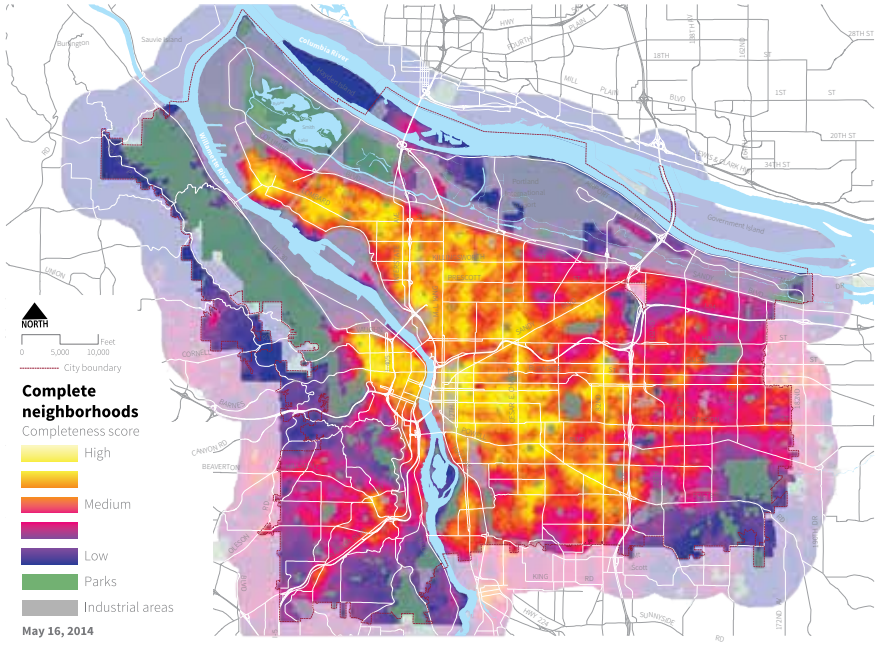


Figure 5. Complete neighborhoods. *Source: Portland Bureau of Planning and Sustainability*

The City developed the 20-minute neighborhood index to measure access to community amenities, products and services. The areas shown in yellow have the highest levels of access to services and amenities. The areas shown in purple have the lowest levels of access.

2030 Objectives

2030 Objective 4. Create vibrant neighborhoods where 80 percent of residents can easily walk or bicycle to meet all basic daily, non-work needs and have safe pedestrian or bicycle access to transit. Reduce daily per capita vehicle miles traveled by 30 percent from 2008 levels.

2030 Objective 5. Improve the efficiency of freight movement within and through the Portland metropolitan area.

2030 Objective 6. Increase the fuel efficiency of passenger vehicles in use to 40 miles per gallon and manage the road system to minimize emissions.

2030 Objective 7. Reduce lifecycle carbon emissions of transportation fuels by 20 percent.

Five-year priorities

Stable funding: Portland has strategies for improving the transit, bike and pedestrian networks and for preserving and increasing affordable housing options, but funding for these projects is far less than required to implement the plans. Without a sustainable funding source, it will be impossible to build and maintain needed street improvements.

Key actions:

4A — Multimodal Transportation Funding
4B — State Transportation Funding
4C — City Transportation Funding

Land use planning: Portland's vision of healthy connected neighborhoods, in part, means walking is the preferred method of travel for trips of 1 mile or less, and bicycling is preferred for trips up to 3 miles. In addition to reducing traffic, investing in transit, pedestrian and bicycle infrastructure provides Portlanders with safety, health and economic benefits.

Key actions:

4H — Regional Transportation Demand Model
4I — TriMet Service Enhancement Planning
4L — Portland Transportation System Plan
4M — Citywide Mode Share Targets

Active transportation: Making it easier to walk and bike for typical errands helps reduce pollution, provides everyday opportunities for healthy and stress-reducing activities, and reduces the amount of money spent on gas, parking and car maintenance.

Key actions:

4Q — Affordable Housing Access to Transit
4S — Active Transportation
4X — Transit Coverage and Efficiency

Lower-carbon fuels: Vehicles powered by biofuels, electricity and natural gas provide a key opportunity to reduce the lifecycle carbon emissions of transportation fuels. Widespread adoption of electric and natural-gas-fueled vehicles will accelerate carbon emission reductions from the transportation sector.

Key actions:

7A — Electric Vehicles
7C — Low-Carbon Fuel Standards
7E — Low-Carbon Fueling Infrastructure

About 6 percent of Portland residents bike to work, nine times the national average, with over 12,000 more people bike commuting to work in 2010 compared to 1990.

Transit ridership has almost doubled over the past 20 years, and TriMet provided 100 million rides in 2013.

CONSUMPTION AND SOLID WASTE

The things we buy matter. Over one-third of local consumption-based carbon emissions come from the food and goods (e.g. clothing, electronics and furniture) that we purchase.

While recycling and composting are critical steps in reducing carbon emissions associated with the things we buy, 68 percent of Multnomah County's consumption-based carbon emissions are generated before the point of purchase, occurring when items are made, transported and sold (see Figure 6).

To achieve carbon reduction goals, individuals, businesses, governments and other organizations not only need to recycle and compost, but also make more sustainable production and purchasing decisions.

MAKING GOODS WE USE GENERATES THE MAJORITY OF CONSUMPTION EMISSIONS

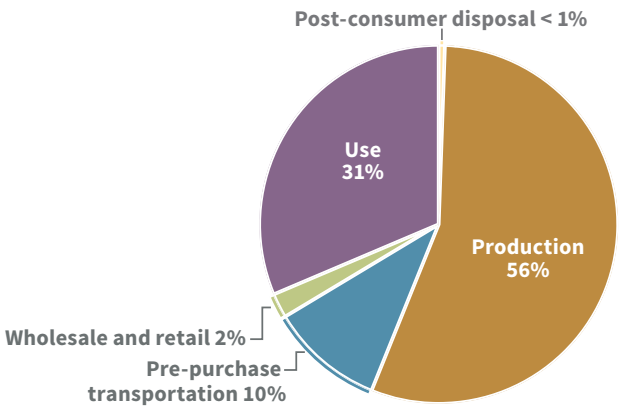


Figure 6. Multnomah County consumption-based carbon emissions by lifecycle phases (2011). *Source: Portland Bureau of Planning and Sustainability*

More than half of all consumption-based carbon emissions are generated when a product is produced or manufactured. The transportation and sale (wholesale, retail) of the product adds an additional 12 percent. On average, 68 percent of a product's lifecycle emissions are generated before a consumer begins to use the product.

For some goods, like clothing and furniture, lifecycle carbon emissions are almost entirely generated during the production of the goods. These items are good candidates to maintain, repair and re-use. Other products, like light bulbs, appliances and vehicles, generate most of their emissions from their use. From a carbon perspective, these are the best goods to replace with more efficient options, as they quickly make up for the emissions generated by manufacturing them.

EMISSIONS FROM PRODUCTION AND USE VARY GREATLY BY PRODUCT

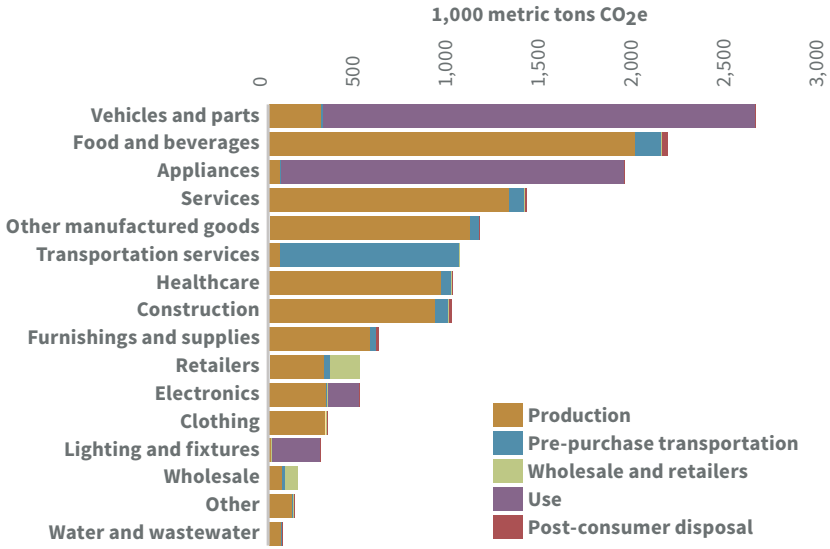


Figure 7. Five-Phase lifecycle carbon emissions summary by product and service (1,000 metrics tons CO_2 equivalents) (Consumption-based inventory, 2011). *Source: Portland Bureau of Planning and Sustainability*

Carbon emissions are generated throughout a product's lifecycle. Some goods generate more emissions in their production (like food and beverages), while others generate more emissions through their use by consumers (like vehicles and appliances).

2030 Objectives

2030 Objective 8. Reduce consumption-related emissions by encouraging sustainable consumption and supporting Portland businesses in minimizing the carbon intensity of their supply chains.

2030 Objective 9. Reduce food scraps sent to landfills by 90 percent.

2030 Objective 10. Reduce per capita solid waste by 33 percent.

2030 Objective 11. Recover 90 percent of all waste generated.

Five-year priorities

Consumption-based emissions: Portland residents, businesses and other organizations can reduce the upstream carbon emissions associated with the goods they use by making simple changes in the way they choose to meet their needs. This may include renting, sharing, fixing and reusing goods as well as choosing products with lower emissions across the entire lifecycle. Portland-based manufacturers have the opportunity to examine their supply chains and potentially reduce the carbon emissions associated with their products.

Key actions:

8A — Sustainable Consumption and Production
8B — Be Resourceful Campaign
8C — Product Stewardship

Food waste: Portland residents and businesses do such a great job recycling paper, cardboard and containers and composting their yard debris that food scraps now make up the biggest slice of landfill-bound waste. - Preventing food waste in the first place offers the greatest carbon benefits. However, when food waste is unavoidable, scraps can be put to better use creating energy or compost.

Key actions:

9A — Food Waste
9B — Composting

Waste recovery: Portland's recovery rate is among the highest in the United States, with 70 percent of all waste generated in Portland recovered through recycling, composting or anaerobic digestion. Portland has established a citywide objective of recovering 75 percent of all waste by 2015, but with current technology, it is possible to recover more than 90 percent. Significant opportunities remain to recover waste, including recycling and food-scraps from businesses and multifamily buildings.

Key actions:

10A — Waste Prevention
11A — Technical Assistance
11B — Construction and Demolition Debris
11C — Portland Recycles Plan
11F — Multifamily
11G — Local Recovery Infrastructure

With the addition of weekly food scrap composting service and garbage collection every other week in 2011, residential garbage taken to the landfill has decreased by over 35 percent and collection of compostable materials has more than doubled.

FOOD AND AGRICULTURE

In Multnomah County, an estimated 15 percent of carbon emissions result from supplying food and beverages to residents and businesses. This figure may approach 30 percent when food system impacts such as agriculture-related deforestation and soil degradation are included.

FOOD CHOICE IS A KEY FACTOR IN CARBON EMISSIONS

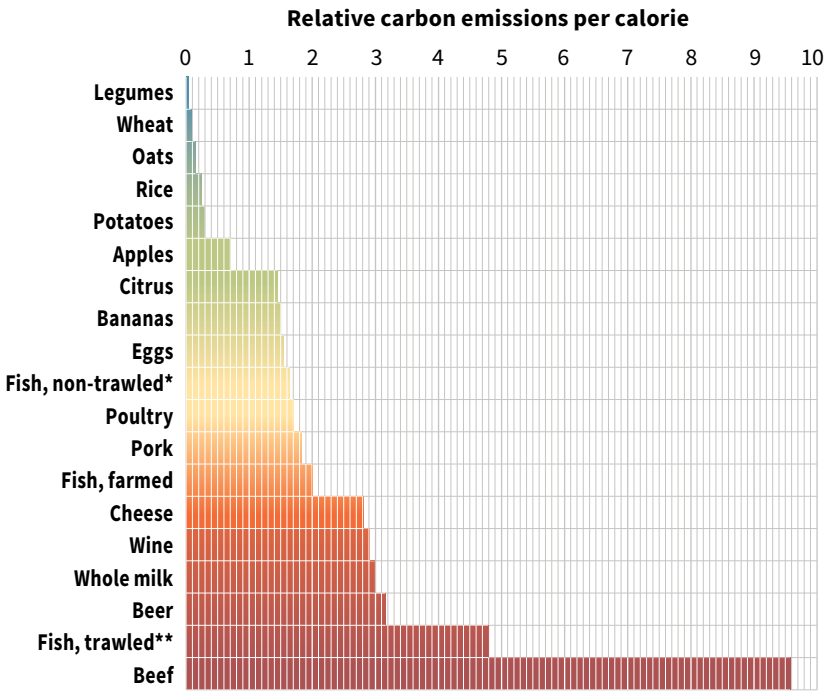


Figure 8. Carbon emissions from food choice, by calorie. Prepared by: Accuardi, Zachary (2016, forthcoming), see References for primary sources. *e.g., wild salmon, **e.g., red snapper.

On a per calorie basis, consumption of red meat results in three times the carbon emissions of cheese, nearly six times the emissions of chicken, fish, and eggs, and more than twenty times that of many grains and vegetables.

PICKING LOWER-CARBON FOODS

Meat and dairy production contribute significantly to climate change both because feeding grain to livestock is resource-intensive and cattle produce significant methane emissions. Figure 8 illustrates the relative carbon "foodprint" of food types.

Supporting a strong local food system has many benefits for the economy and the community. However, about 84 percent of the carbon emissions from food come from production, while 11 percent come from transportation of the food (supply-chain transport as well as final delivery).

By choosing to eat lower-carbon foods, residents can eat a healthier diet, bolster the local economy, help preserve the agricultural land base and in some cases reduce emissions from transporting foods. To do so, residents must have:

- Increased access to affordable fresh fruits and vegetables.
- Reduced consumption of processed and packaged foods.
- Knowledge and skills to make healthy consumption choices.

In addition, many low-income populations and communities of color may not have equitable access to lower-carbon food choices — especially fruits, vegetables and less processed or packaged foods. Expanding food-buying clubs and cooperatives, farmers markets and community-supported agriculture programs that participate in the Supplemental Nutrition Assistance Program (SNAP) creates opportunities for low-income people to buy less processed, lower carbon foods.

2030 Objective

2030 Objective 12. Reduce the consumption of carbon-intensive foods and support a community-based food system.

Five-year priorities

Low-carbon foods: Residents of Multnomah County can reduce the impact of food choices on climate change — and improve personal, environmental and economic health — by choosing "low-carbon" foods. Lifecycle analysis shows that beef, cheese and pork generate the most carbon emissions per ounce.

Key actions:

12A — Outreach and Education
12B — Partnerships and Engagement

Community-based food system: Although eating locally produced food has a smaller impact than choosing low-carbon food, the consumption of local food can reduce transportation emissions, strengthen the local economy, help preserve the region's agricultural land base and support a community-based food system that can reshape our relationship with food.

Key actions:

12D — Policies and Programs
12E — Skills Development

PRODUCTION HAS MORE IMPACT THAN HOW FAR FOOD TRAVELS

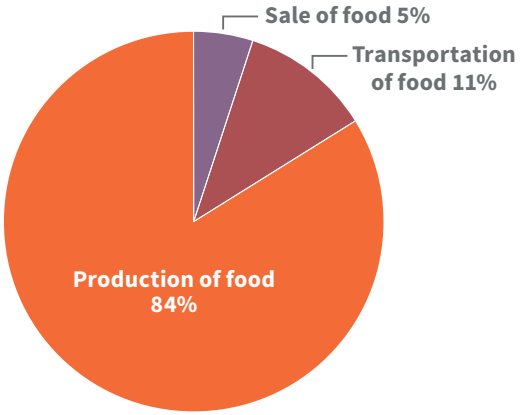


Figure 9. Carbon emissions from the food system. *Source: Weber and Matthews, 2008*

Producing and processing food is much more carbon intensive than the emissions from transporting food.

From a carbon perspective, not all food is created equal — and what we choose to eat has more of an impact than how far that food has traveled to get to us.

URBAN FOREST, NATURAL SYSTEMS AND CARBON SEQUESTRATION

Trees and other vegetation are critical elements of Portland and Multnomah County's climate preparedness strategy. This natural green infrastructure also helps reduce carbon in the atmosphere by sequestering and storing carbon.

Moreover, while wilderness forests cover far more area than urban forests, urban forests can have a greater impact per area of tree canopy than non-urban forests due to faster growth rates, increased proportions of large trees and indirect effects of reduced building energy use.

Soil also provides important potential for carbon sequestration. Deeper soils and unpaved soils provide additional and more stable carbon storage, and wetlands have a particularly high soil carbon density.

Preserving and restoring the urban forest, healthy soils and wetlands help slow climate change while also providing water retention, wildlife habitat and opportunities to grow food.

Green infrastructure can also reduce flooding and provide shade, reducing risk for communities across a range of issues. Integrating green infrastructure into the transportation system, new development and retrofits can allow streetscapes and other outdoor spaces to contribute to Portland's carbon reduction and climate preparation goals.

Expanding the urban forest canopy and protecting natural systems also create opportunities to address existing disparities for low-income populations and communities of color related to tree canopy cover, access to nature, air quality and asthma rates.

Improved access to nature can also lead to increased physical activity and improved air quality, which positively influence health outcomes. Research has shown that when natural areas are closer to where people live, residents tend to use them for physical activity such as walking or biking, which can improve both fitness and mental health.

For all of these reasons, investments in green infrastructure, reductions in impervious areas and the expansion of urban forest canopy should be targeted in areas that lack these resources.

The City has planted over 3 million new trees and shrubs in Portland's natural areas since 1996. The City's revegetation work improves the air quality and the health of local watersheds, and helps to sequester carbon and cool the urban environment.

2030 Objective

2030 Objective 13. Sequester carbon through increased green infrastructure (trees, plants, soil) and natural areas. Reduce effective impervious areas by 600 acres. Expand the urban forest canopy to cover at least one-third of the city, with a minimum canopy cover of 25 percent of each residential neighborhood and 15 percent of the central city, commercial and industrial areas.

Five-year priorities

Tree canopy: In addition to providing a critical role in preparing for climate change, trees and other green infrastructure help the City and County reach carbon reduction goals by sequestering carbon dioxide and reducing building energy use through cooling and shading in summer and reducing heat loss in winter. The primary focus is retaining the existing tree canopy, increasing planting of diverse large-species trees where appropriate, and keeping trees healthy through an active maintenance program.

Key actions:

13A — Tree Programs
13B — Canopy Targets
13C — Tree Code

Depaving: Reducing impervious area helps retain space for trees, vegetation, soil and other green infrastructure as the community grows. Creative site development, retrofitting existing development and proactive depaving efforts will be needed to achieve the goal of a 600-acre net reduction of effective impervious area by 2030. Community partnerships and participation are essential to achieving these goals.

Key actions:

13E — Natural and Green Infrastructure Funding
13F — Designing with Nature

Portland now has over 390 ecoroofs covering nearly 20 acres of rooftop, managing millions of gallons of stormwater each year.

Since 2008, the City's comprehensive invasive species programs have treated and managed invasive plants on over 7,400 acres of public parks, roadsides and private property.

CLIMATE CHANGE PREPARATION

Portland's future climate is expected to include hotter, drier summers with more high-heat days and warmer winters with the potential for more intense rain events.

To prepare for the impacts of climate change, the City and County are working to reduce exposure to risks and strengthen capacity to respond. Because of the breadth of potential impacts, preparing for climate change requires an adaptive management approach. This is an approach that monitors efforts and promotes flexible strategies that leave a range of future options available.

Preparing for climate change also requires steps to understand how impacts may affect people most vulnerable to issues such as heat, poor air quality and flooding. The City and County are prioritizing climate change preparation actions in areas facing current and historical disparities, including where low-income populations and communities of color live.

In addition, cities experience the urban heat island effect, in which the urban area is significantly warmer than surrounding rural areas. Densely concentrated roads, sidewalks and buildings in an urban environment are made of materials that retain and re-radiate heat. Waste heat, like that radiating off a vehicle's engine or from a building's air conditioning system, also contribute.

While climate change will impact everyone, low-income populations and communities of color may be more susceptible to climate impacts, particularly heat and associated poor air quality.

MAJOR ROADS AND AREAS WITH LESS VEGETATION RESULT IN "HOT SPOTS"

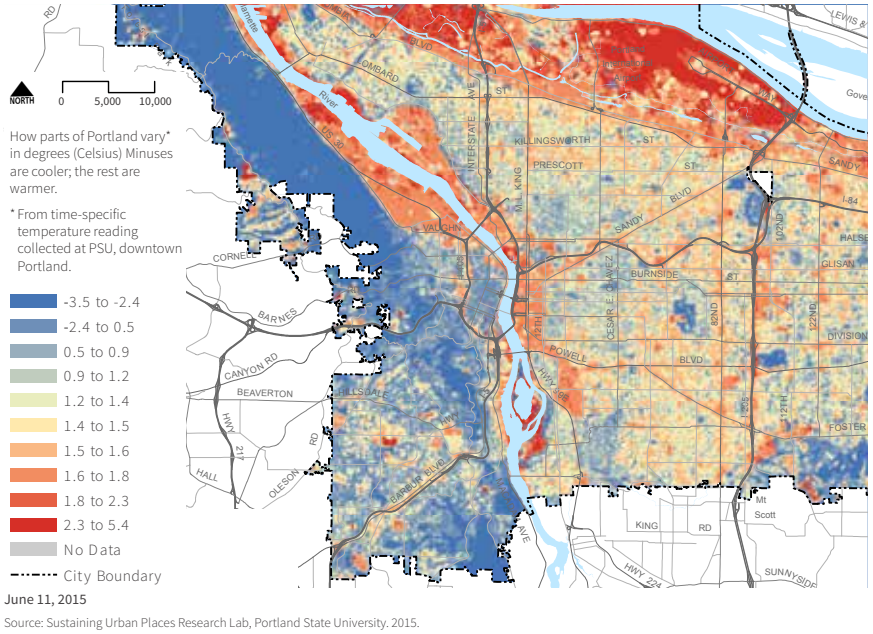


Figure 10. Urban heat islands in Portland. *Source: Sustaining Urban Places Research Lab, Portland State University. 2015.*

Temperatures in Portland tend to be the coolest in Forest Park and neighborhoods with high concentrations of trees and less development. Higher temperatures are recorded along freeways and busy roads (e.g., 82nd Ave., Sandy Blvd., Foster Road and Martin Luther King, Jr. Blvd.), and in industrial areas (e.g., central east side, northwest and the Columbia corridor).

2030 Objectives

2030 Objective 14. Reduce risks and impacts from heat, drought and wildfire by preparing for hotter, drier summers with increased incidence of extreme heat days.

2030 Objective 15. Reduce risks and impacts from flooding and landslides by preparing for warmer winters with the potential for more intense rain events.

2030 Objective 16. Build City and County staff and community capacity to prepare for and respond to the impacts of climate change.

Five-year priorities

Hot, dry summers: Higher temperatures may result in increased air pollution, such as ground-level ozone and pollen counts, worsening Portland's already high incidence of respiratory illnesses and allergies. Such conditions may be exacerbated by air quality impacts resulting from the potential of increased wildfires. Higher temperatures and shifts in precipitation patterns also lead to increased surface water temperatures, reduced flows in rivers and streams and negative impacts on fish and wildlife and the habitats that support them.

Key actions:

14A — Decrease Urban Heat Islands
14B — Urban Heat Island Maps
14D — Health Impacts of Extreme Heat
14I — Natural Systems and Increased Temperatures
14M — Urban-Wildland Interface Fires

More intense rain events: Winters with more intense rain events would stress Portland's systems for managing stormwater runoff and urban flooding. Shifts in how rain falls in winter would likely increase the number of landslides, particularly following long periods of rain that have saturated the soil. With more rain, groundwater levels can rise, increasing the risk of large, deep landslides.

Key actions:

15A — Floodplains
15B — Managing Stormwater Naturally
15F — Landslide Risk

Decision-making and capacity building: Climate variability and change must be routinely integrated in virtually all aspects of City and County work, including setting policy, making budget decisions, updating zoning and other codes, investing in infrastructure, delivering health services and fostering emergency preparedness. The City and County must also ensure that all residents share the benefits of taking action to prepare for climate change.

Key actions:

16A — Emergency Management
16C — Vulnerable Populations
16E — Asset Management
16F — Monitoring and Data Collection

Portland's future climate is expected to include hotter, drier summers with more high-heat days, and warmer winters with the potential for more intense rain events.

COMMUNITY ENGAGEMENT, OUTREACH AND EDUCATION

Public policy alone will not solve climate change. Residents, businesses, nonprofit organizations and community groups will play critical roles to implement new policies. Many businesses and organizations have already shown how they are improving quality of life and growing a thriving economy while addressing climate change.

Portland residents have a global reputation for their green preferences, from the 80 percent participation rate in home food-scrap collection to the 1,000+ car-sharing vehicles available. On average, Portlanders borrow 33 library items per person each year — more than four times the national average. In addition, local voters have consistently supported investing in, acquiring and restoring natural areas and expanding the region's trail network.

Public policy can help individuals and businesses make low-carbon choices through a range of tools like labeling, education, regulations, incentives and public investments. And local governments and community organizations can help individuals and businesses gain access to and utilize the tools and resources they need to take action.

In implementing the Climate Action Plan, the City and County recognize that engaging deliberately with different audiences and a broad range of communities is essential to success. While many of the actions identified in the plan are focused on the content of the activity, how those programs and policies are developed and delivered is equally important.

The City and County are committed to deepening involvement with communities of color and low-income populations in responding to climate change. Engagement strategies will take into account existing barriers and attempt to mitigate them, as well as supporting existing community-based efforts to address climate change.

Portland is home to a wide range of businesses and organizations that make resource conservation the core of their business model.

2030 Objectives

2030 Objective 17. Engage communities, especially impacted under-represented and under-served populations, in the development and implementation of climate change-related policies and programs.

2030 Objective 18. Motivate all Multnomah County residents and businesses to change their behavior in ways that reduce carbon emissions.

Five-year priorities

Community engagement: An essential step to addressing existing inequities is to create opportunities for people most impacted to be at the table for today's decisions. That can only happen if policymakers and members of under-represented and under-served communities know each other, trust each other and work collaboratively toward common interests and priorities.

Key actions:

17A — Alignment with Community Efforts
17C — Expand and Deepen Engagement

Outreach and education: Many businesses, community organizations, government leaders and residents have shown a commitment to addressing climate change while maintaining a high quality of life and a thriving economy. To build on this commitment, the City and County will support community-wide public engagement campaigns to educate, inspire and make accessible some of the most cost-effective, healthy and easy solutions.

Key actions:

18A — Portland CAN! (Climate Action Now)
18B — Community Events
18C — Fix-It Fairs
18E — Business Technical Assistance

LOCAL GOVERNMENT OPERATIONS

Just as the City and County set policy and provide technical assistance, education, outreach and incentives to help the community achieve the objectives in the Climate Action Plan, the City and County must also lead the way in their own operations.

Carbon emissions from City of Portland and Multnomah County operations account for about 1 percent of total local emissions and result from various activities and facilities, including:

- Buildings such as fire and police stations, offices, parks and community centers, detention facilities, libraries and health clinics.
- Transportation infrastructure like streetlights, traffic signals, and the Portland Streetcar.
- Drinking water, wastewater and stormwater systems, including treatment facilities and pump stations.
- Fleets of passenger vehicles as well as heavy-duty construction equipment.

THE CITY AND COUNTY HAVE WALKED THE TALK BY REDUCING EMISSIONS

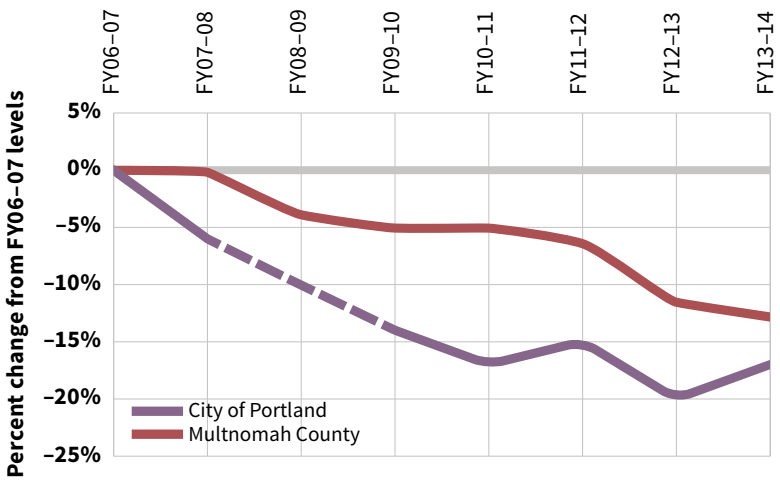


Figure 11. City of Portland and Multnomah County carbon emissions trends. *Source: Portland Bureau of Planning and Sustainability and Multnomah County Office of Sustainability*

Emissions from City of Portland and Multnomah County operations have declined to 17 percent and 13 percent, respectively, below FY06-07 levels.

2030 Objective

2030 Objective 19. Reduce carbon emissions from City and County operations by 53 percent from FY 06–07 levels.

Five-year priorities

Operations: The City and County own and operate hundreds of buildings, tens of thousands of streetlights and traffic signals and large-scale industrial plants. As public entities, the City and County can invest in capital projects with relatively long payback periods and, like all businesses, must continue to examine every facet of operations for emission reduction opportunities.

Key actions:

19A — Financing Energy Efficiency
19B — Efficiency Projects
19I — Energy Performance Tracking
19N — Sustainable Procurement

Through improvements to City and County operations including traffic lights, water and sewer pumps and building lighting systems, energy efficiency saves almost $6 million per year, approximately 25 percent of the City and County's energy bill.

IMPLEMENTATION

Building the capacity of staff and the community to implement and evaluate actions to reduce carbon emissions and prepare for climate change is critical to achieving the vision and goals outlined in the Climate Action Plan.

In addition to collaborating with other jurisdictions, successful implementation of the Climate Action Plan will also require active partnerships with the business community, academia, nonprofits and other cities and counties.

To that end, City and County staff will work collaboratively across bureaus, departments and jurisdictions to:

- Review climate research, trends, regulations and best practices.
- Foster cross-disciplinary collaboration between agencies and program areas, as well as with academia, the private sector, nonprofits and community organizations that serve communities of color and low-income populations.
- Ensure the actions are implemented equitably.
- Follow an adaptive management approach to allow continual improvements and reprioritize when necessary.
- Implement actions that (1) benefit under-served and under-represented communities and (2) benefit the communities and natural systems most vulnerable to climate change impacts.
- Re-examine and update the key findings and actions of the Climate Action Plan strategy every five years.
- Report on progress toward implementing the actions outlined in this plan annually, as well as on progress toward achieving more equitable outcomes.

EQUITY WORKING GROUP

Through funding from the Bullitt Foundation, the Local Sustainability Matching Fund and Multnomah County, six organizations were funded to partner with City and County staff to integrate equity into the Climate Action Plan through the creation of an Equity Working Group.

The organizations were selected because of their expertise and experience working for communities of color and low-income populations. They also stood out for their potential to bridge policy issues to grassroots work.

Through this process, the City and County sought to be intentional about building a relationship of mutual capacity building. For staff, this meant learning to translate policy and process to be responsive to community needs; for the community members, it meant building an understanding of climate change policy. The process met these goals and served as a catalyst for new collaborations between Equity Working Group members and City and County staff.

OPAL

APANO

Wisdom of the Elders

UPSTREAM PUBLIC HEALTH

Coalition of Communities of Color

Groundwork Portland

2030 Objective

2030 Objective 20. Build City and County staff and community capacity to ensure effective implementation and equitable outcomes of climate action efforts.

Five-year priorities

Decision-making and accountability: Opportunities to reduce carbon emissions and consider the risks of climate variability and change need to be routinely integrated in virtually all aspects of City and County work, including policy-setting and budget-making decisions; the creation of market incentives; development of education and outreach strategies; zoning and other code updates; public investments, including infrastructure; health service delivery; and emergency preparedness.

Key actions:

20F — Budget Performance Measures
20L — Metrics
20M — Progress Reports

Partnerships: Portland's success to date in reducing carbon emissions rests on a foundation of sound land use and transportation planning, consistent investment in energy efficiency and supporting state and regional policies. The success is also a function of effective collaboration with other jurisdictions, academia and nonprofits.

Key actions:

20H/20I/20J/20K — Partnerships

Building community capacity: The City and County want to ensure that the benefits of taking action to reduce carbon emissions and prepare for climate change are shared by all residents. Many of the actions outlined in the Climate Action Plan present opportunities to implement existing policies and efforts to increase the utilization of firms owned by and employing under-served and under-represented communities.

Key actions:

20A — Community Capacity
20D — Workforce Development
20E — Career Development

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PORTLAND Climate Action Now!

IT'S UP TO US TO ACT ON CLIMATE. WE CAN! WE ARE.

Portland residents love our environment. We love our communities, our forests, our mountains and our rivers. But climate change is here, it's happening, and it threatens the places where we live, work and play, making it harder for us — and our kids and grandkids — to enjoy this wonderful place.

Here's the good news. There's national momentum to reduce carbon emissions in a meaningful way. And locally, Portland residents, businesses and community leaders have already helped Portland cut carbon emissions by 14 percent. Portlanders' everyday actions also save money, clean our air and make our neighborhoods more livable.

But there is still more work ahead for us to reach our goal of reducing carbon emissions by 80 percent by 2050. Together, we can help protect our families' health and our kids' future.

Portland Climate Action Now! offers the tools you need to get started

YOUR HOME

Simple changes, like weatherizing and using LEDs, can save energy and money and increase the comfort of your home.

YOUR STUFF

Consider new ways to get the things you need, like borrowing or renting, to save money and conserve resources.

YOUR FOOD

Choose more fruits, vegetables and whole grains to keep your family healthy and reduce your climate impact.

GETTING AROUND

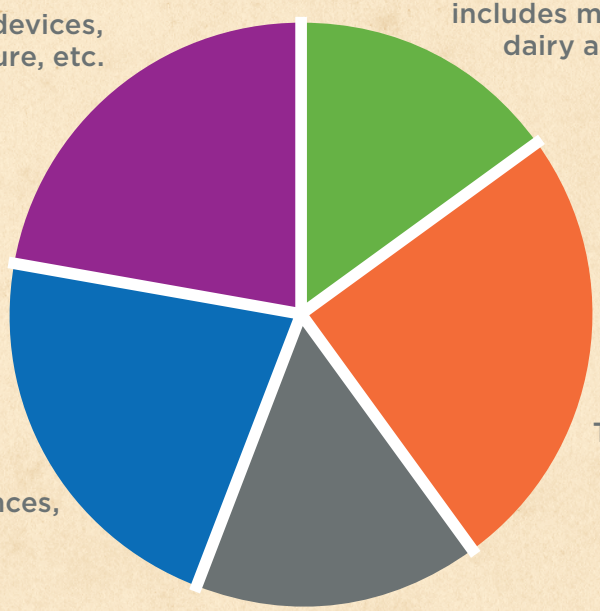
A mix of walking, biking and transit saves gas and helps you get daily exercise.

YOUR COMMUNITY

Work with your friends and neighbors to take climate action together.

WHERE DO YOUR CARBON EMISSIONS COME FROM?

While much of our carbon pollution comes from driving and powering our homes, it's just as important to make thoughtful choices about the food and other stuff we buy.



22%
YOUR STUFF
Clothing, mobile devices, computers, furniture, etc.

15%
YOUR FOOD
The typical American diet includes many processed foods, dairy and meat products

25%
GETTING AROUND
The miles driven around in cars

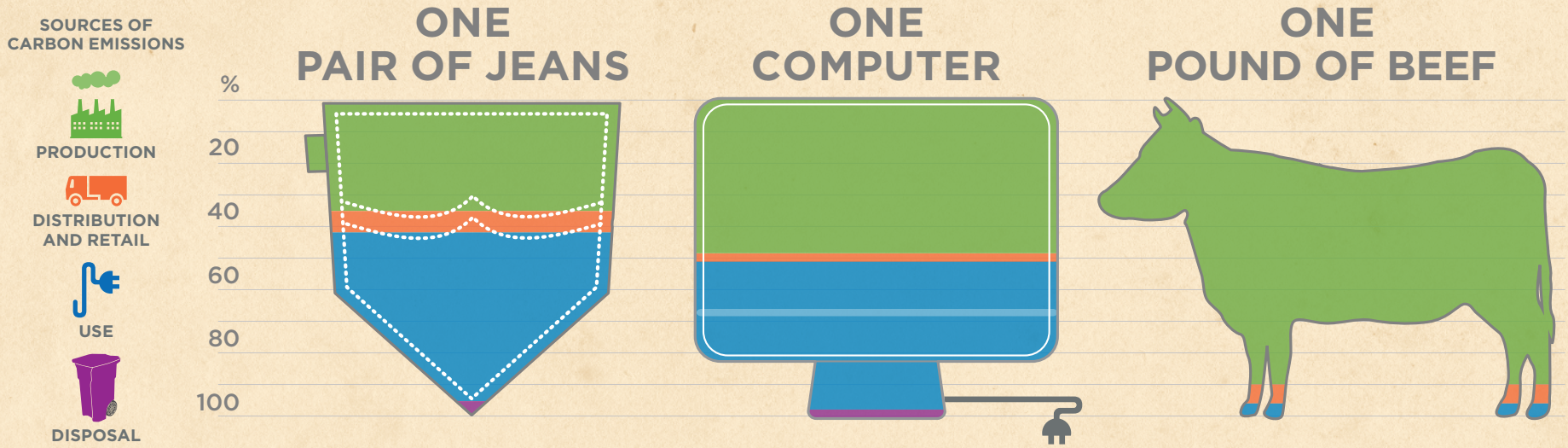
16%
SERVICES
Healthcare and other

22%
YOUR HOME
Powering lights and appliances, heating and cooling

Did you know that 67% of Portland's electricity comes from fossil fuels, like coal?

IT TAKES ENERGY TO MAKE THE THINGS WE BUY AND USE EVERY DAY

And most of that energy comes from carbon polluting sources. From farm or factory to your home, buying something costs more than just money.



The carbon pollution is equivalent to driving

77 MILES

The carbon pollution is equivalent to driving

2,333 MILES

and that's only one family dinner!

The carbon pollution is equivalent to driving

30 MILES

So, what CAN we do? Wash jeans in cold water and line dry. Turn off the computer when not in use and repair it rather than buying a new one. Try eating lower-carbon foods, such as vegetables, grains or chicken.

TOGETHER, OUR SIMPLE ACTIONS MAKE A BIG DIFFERENCE

YOUR HOME

USE ENERGY-EFFICIENT LIGHT BULBS

LEDs last longer and will save you money on your energy bill.

Switch all of your 100-watt incandescent light bulbs to 9.5-watt LEDs.

ANNUAL SAVINGS

40 incandescents replaced by LEDs saves:	On electric bill:	On carbon pollution. Equivalent to driving:
1 person	**$317**	**6,508 miles**
1,000 people	**$317,000**	**6,508,000 miles**

WANT TO DO MORE?

- With a caulk gun and some weather stripping tape, you can be a DIY weatherization champ. Seal cracks around windows, doors and wall outlets to reduce drafts, protect against moisture and improve indoor air quality.
- Try taking a shorter shower, and hang dry your clothes rather than using a clothes dryer. Tweaking a few home habits can make a big difference! Bonus — you save on energy and water bills, too.

YOUR STUFF

BORROW ITEMS YOU NEED INFREQUENTLY

Borrowing items you seldom need will save you storage space and money.

Next time you need an extension ladder, borrow one from a neighbor or a tool library rather than purchasing your own.

ANNUAL SAVINGS

Borrowing a ladder saves:	On the cost of a ladder:	On carbon pollution. Equivalent to driving:
1 person	$369	829 miles
1,000 people	$369,000	829,000 miles

WANT TO DO MORE?

- Buy, maintain and repair clothes, gadgets and furniture so that they will last a long time. When you buy something new, look for stuff that's durable and that you'll love a long time. You'll save time and money by not having to replace them.
- Make a shopping list so you won't be tempted to "impulse buy." Check the list — could that power tool, formal dress or sports equipment be rented, purchased used or borrowed from a friend instead?

YOUR FOOD

BUY JUST THE FOOD YOU'LL EAT

The average American family tosses a quarter of the food they buy. Get more from your food with proper storage and by eating perishable food first.

By eating all of the food you buy, rather than tossing it, you'll save money on your grocery bill and time at the store.

ANNUAL SAVINGS

Reducing your grocery shopping by 25 percent saves:	On grocery bill:	On carbon pollution. Equivalent to driving:
1 person	$1,600	4,106 miles
1,000 people	$1,600,000	4,106,143 miles

WANT TO DO MORE?

- Choose more fruits, vegetables and grains to help you live healthy, save money and lower your carbon impact.
- Big or small, compost it all! Whether you are cleaning out the fridge, scraping your plate or prepping food, composting all of your food scraps is an important way to reduce your carbon emissions.

GETTING AROUND

BIKE OR WALK FOR SHORT TRIPS

Run errands locally and close to home so you can go by foot or bike.

One trip by bike for 20 minutes every week, instead of taking a car, will save you money and you'll be getting exercise, too.

ANNUAL SAVINGS

Avoiding one car trip per week saves:	In gas money:	On carbon pollution. Equivalent to driving:
1 person	$28.40	171 miles
1,000 people	$28,400	171,000 miles

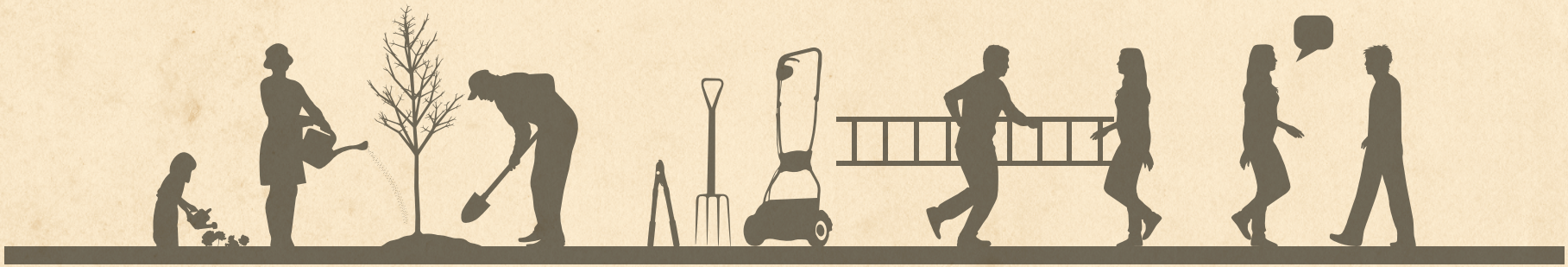
WANT TO DO MORE?

- Get on the trip chain! Combine several errands into one trip to reduce the number of miles driven.
- Keeping your car tuned up and your tires inflated increase fuel efficiency.

GET INVOLVED IN YOUR COMMUNITY

You don't have to take on climate change by yourself.
Get connected with others involved in climate action, get out there and spur some real change.

LET'S DO EVERYTHING WE CAN TO ENSURE A HEALTHY AND VIBRANT FUTURE FOR OUR CHILDREN.



VOLUNTEER IN YOUR COMMUNITY

Take action locally, such as planting trees, repairing items or saving energy.

HOST AN EVENT

Host a yard sale, swap event or tool sharing library.

TELL YOUR FRIENDS

Let your friends know what you've been up to.
They may want to help, too!

PORTLAND CAN!

TAKE IT A STEP FURTHER. VISIT WWW.PORTLANDCAN.ORG

Bureau of Planning and Sustainability
Innovation. Collaboration. Practical Solutions.

City of Portland, Oregon
Charlie Hales, Mayor • Susan Anderson, Director

BUSINESSES ARE A KEY PLAYER IN ACHIEVING PORTLAND'S CLIMATE ACTION GOALS

Portland businesses are already taking action.
Whether you're brewing beer, working on a laptop, or manufacturing a product, every workplace can make an impact. The City of Portland and its partners celebrate some of Portland's early climate leaders in the business community.

SUSTAINABILITY AT WORK GOLD CERTIFIED

Widmer Brothers is a NE Portland Brewery founded by Kurt and Rob Widmer, who helped lead the Pacific Northwest craft beer movement in the 1980s. Their American-style Hefeweizen remains the #1 selling craft beer in Portland and is now one of the best-selling wheat beers in the country.

Number of Employees: 250

- 100% of the pub's electricity is generated from clean, renewable wind-power, through Pacific Power's Blue Sky program.
- The brewery and pub have been composting for over 10 years through the City's Portland Composts! program, with the restaurant composting more than 4 tons each month.
- 100% of the brewery's spent grain is used by regional farms as cattle feed.
- All glass waste from the bottling process is recycled just miles from the brewery into new glass bottles.
- Widmer Brothers has achieved a recycling diversion rate of 99.5%, keeping many tons of waste out of landfills. The brewery's water conservation and reuse efforts have resulted in a water usage to beer ratio (gallons of water to produce a gallon of beer) of 3.6 has been achieved, one of the lowest in the industry.

SUSTAINABILITY AT WORK GOLD CERTIFIED

ZGF Architects is a design firm in downtown Portland, focused on architecture, urban and interior design. Their projects span the nation, and their focus on sustainability is evident in their projects as well as in their day-to-day operations.

Number of Employees: 200

- ZGF's early leadership in sustainable design has helped put Portland on the map as a magnet city for green building expertise.
- Headquartered in a LEED Platinum building that includes rainwater reclamation, solar hot water heating, and a roof garden.
- Electric-vehicle charging station available for employees.
- Energy efficient lighting throughout.
- Transit pass provided to all employees, along with sheltered, secure bike room and showers.

SUSTAINABILITY AT WORK GOLD CERTIFIED

Apex Wellness Center, located in SE Portland, offers therapeutic massage, acupuncture, family medicine and chiropractic services. In 2009 Apex's owner, Rebecca Schacker, purchased a foreclosed home in the Foster-Powell neighborhood and transformed it into an energy efficient, ADA accessible, bike friendly commercial space with water-efficient native plant landscaping.

Number of Employees: 6

- 4.48 kW solar panel system installed with a Green Features Grant from the Portland Development Commission
- Bike shelter with an ecoroof filled with drought-resistant native plants.
- Shower facilities provided for staff to encourage bike commuting.

Sustainability at Work

JOIN PORTLAND'S COMMUNITY OF BUSINESS LEADERS AND TAKE CLIMATE ACTION NOW!

Top Climate Actions for Businesses

- **Buy renewable energy for both electricity and natural gas**. *PGE, Pacific Power, and NW Natural all offer clean, renewable energy from sources in the Northwest.*
- **Replace lighting with long-lasting, super-efficient LED bulbs.** *Most LED bulbs last more than decade and use a fraction of the energy.*
- **Give your employees — and your customers — a reason to commute by transit, in a carpool, on foot or by bicycle.**
- **Keep your food scraps out of the trash.** *More than 900 Portland businesses already collect food scraps, and all Portland haulers will collect them.*
- **Buy recycled-content materials.** *100% recycled-content paper is widely available, along with a wide variety of other office products.*
- **Ask your employees and customers for their best ideas!**

READY TO TAKE ACTION? GET HELP!

Join the thousands of Portland organizations that have already taken advantage of free hands-on guidance and resources from the City's Sustainability at Work program.

Sustainability at Work, a program of the Bureau of Planning and Sustainability, helps individuals and green teams improve workplace recycling, composting, water and energy efficiency, and sustainable transportation. Advisors are available for on and off site consultation, on-going support and timely updates about local resources, grants and events.

Be inspired. Get recognized.

Look through the online directory of Sustainability at Work certified businesses and you'll find a wide variety of organizations taking actions to reduce their environmental impact. Get ideas for your own workplace, and consider getting certified — it's a great motivator and an excellent way to promote your organization's commitment to sustainability.

Sustainability at Work

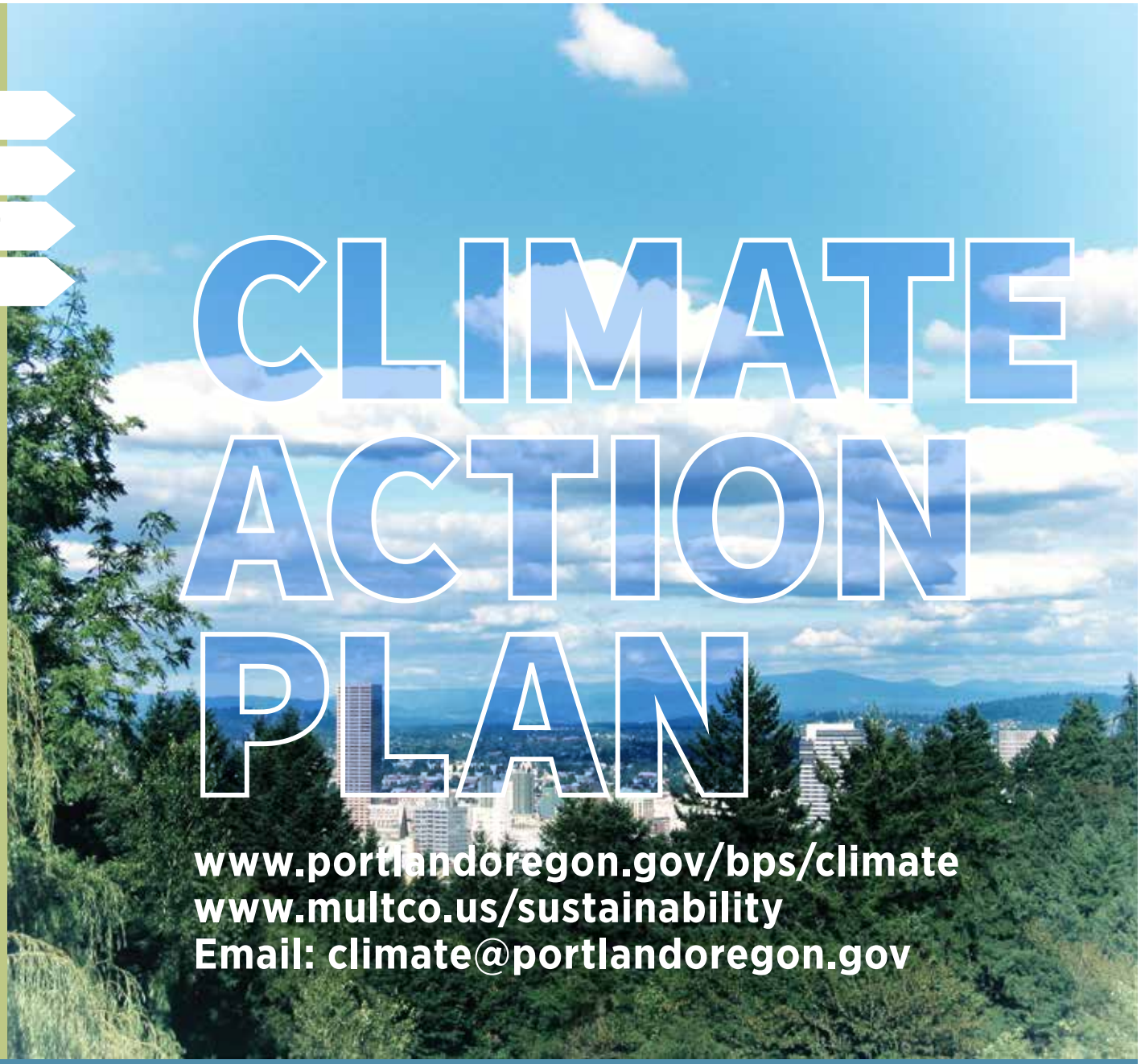
www.sustainabilityatworkpdx.com

CREATING A

- PROSPEROUS
- CONNECTED
- HEALTHY AND RESILIENT
- EQUITABLE

LOW-CARBON COMMUNITY

Together, Portland residents, businesses and local leaders have already helped Portland cut carbon by 14 percent.



CLIMATE ACTION PLAN

www.portlandoregon.gov/bps/climate
www.multco.us/sustainability
Email: climate@portlandoregon.gov

2015 LOCAL STRATEGIES TO ADDRESS CLIMATE CHANGE

Multnomah County