



# What is our community's carbon footprint?

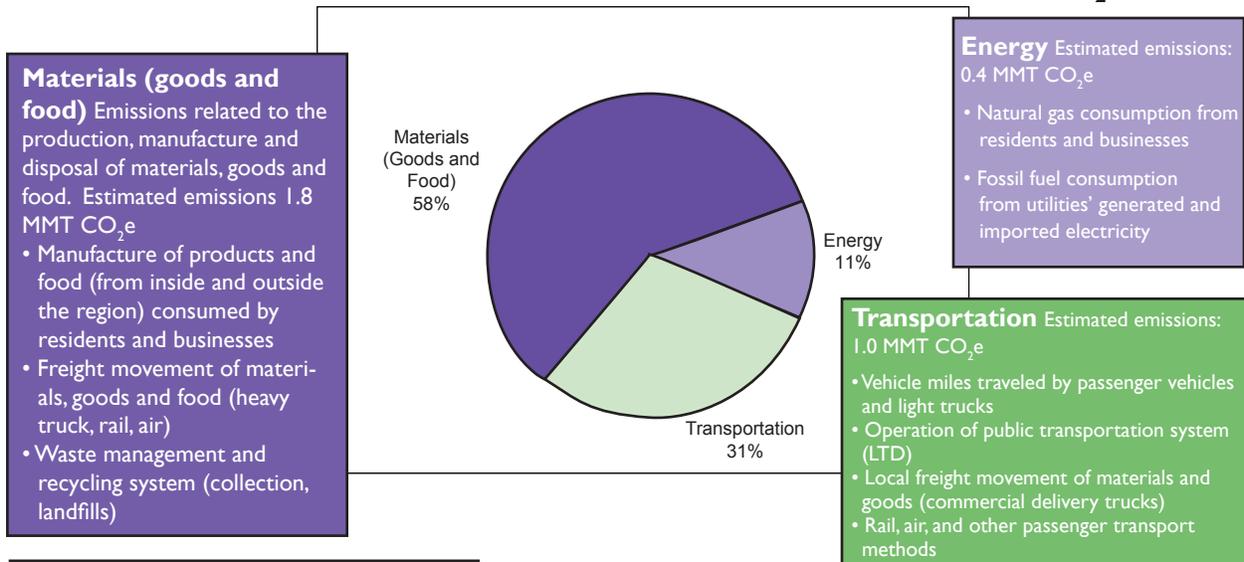
## Our part of the equation...

What is a carbon footprint? The word “carbon” in carbon footprint generally refers to six greenhouse gases (GHG) including carbon dioxide, which are primarily generated by combusting fossil fuels (such as natural gas, petroleum and coal). Scientists have identified human-made sources of GHG emissions as a significant contributor to global warming or climate change. A community footprint refers to the greenhouse gas (or carbon) emissions generated by business operations and individual community members within a community's defined geographic boundary.

The following report summarizes the results of a community greenhouse gas inventory for the Eugene-Springfield metropolitan area. The report characterizes how our community contributes to emissions, addressing how much global warming pollution is being emitted and where those emissions are coming from. It will serve as a baseline for measuring progress as the community strives to reduce its emissions. The first step to reducing our community's carbon footprint is to find out just how big an imprint we are collectively leaving behind.

The chart below depicts the relative scale of three categories of greenhouse gas emissions for the Eugene-Springfield metropolitan area: materials, energy and transportation. Greenhouse gases are emitted as a result of the production and disposal of goods and food, how far and by what mode we transport freight and passengers, and the energy we consume to heat and cool our buildings and run equipment. The total emissions associated with these activities comprise Eugene-Springfield's community carbon footprint, which is estimated at about 3.2 million metric tons for July 2005 to June 2006. This total represents about 4.6 percent of Oregon's total greenhouse gas emissions (which are estimated at about 70 million metric tons per year<sup>1</sup>). An average household in the Eugene-Springfield area has a footprint of approximately 31.9 metric tons (MT) CO<sub>2</sub>e/year, less than the average Oregon household footprint of 42 metric tons CO<sub>2</sub>e/year<sup>2</sup>.

### Eugene-Springfield Community Greenhouse Gas Emissions, 2005/2006 3.2 Million Metric Tons<sup>3</sup> (MMT) Carbon Dioxide Equivalent<sup>4</sup> (CO<sub>2</sub>e)



<sup>1</sup> [http://www.oregon.gov/ENERGY/GBLWRM/Oregon\\_Gross\\_GhG\\_Inventory\\_1990-2005.htm](http://www.oregon.gov/ENERGY/GBLWRM/Oregon_Gross_GhG_Inventory_1990-2005.htm) Accessed on October 8, 2010

<sup>2</sup> <http://www.deq.state.or.us/programs/sustainability/carboncalculator.htm> Accessed on October 8, 2010

<sup>3</sup> A metric ton, sometimes referred to as a metric tonne, is an international unit of mass, equal to 2204.6 pounds. Million metric tons (MMT) is a common measurement used in greenhouse gas inventories.

<sup>4</sup> The six greenhouse gases which dominate global warming pollution are included in the total, normalized so that the relative warming “strength” of each of the gases is equivalent to that of carbon dioxide (carbon dioxide equivalent or CO<sub>2</sub>e).

## How does this compare with other inventories?

The Eugene-Springfield community has a smaller footprint than the United States as a whole or the Portland Metro area, due in large part to:

- Abundant sources of clean energy from hydropower compared to the U.S. as a whole;
- Lower per capita vehicle travel, due to a number of factors including local planning practices that have curtailed sprawl, encouraged bike and walking travel modes, and supported transit travel with a regional transit system; and
- Lower incomes, resulting in lower estimated consumption of goods.

The emissions per year compare as follows:

	Materials per capita (MT CO <sub>2</sub> e)	Energy per capita (MT CO <sub>2</sub> e)	Transportation per capita (MT CO <sub>2</sub> e)	Total per capita emissions (MT CO <sub>2</sub> e)	Total emissions (MMT CO <sub>2</sub> e)
U.S.	10.0	7.7	5.6	23.3	6,989
Portland Metro	10.6	5.9	5.5	22.0	31
Eugene-Springfield	7.9	1.6	4.3	13.8	3.2

*Note: The emissions for energy are influenced by both consumption levels and the intensity of GHG released per unit of electricity generation (referred to as an emissions factor). In this case, the key difference in the per capita energy for the Portland Metro area as compared to the Eugene-Springfield is the use of a different emissions factor for electricity generation. The Eugene-Springfield inventory uses the average emissions based upon utility specific portfolios for electric utilities serving the area, which differs from the approach used in Portland Metro, which used the emissions from the regional electrical grid within which power may be traded. The regional mix of power generation includes more fossil fuel based sources than do local utilities such as EWEB. As a result, the carbon content of power from the regional grid is greater than that of local utilities.*

## How do greenhouse gases contribute to climate change?

Gases that trap heat in the atmosphere are referred to as ‘greenhouse gases’ (GHGs). The six key GHGs are Carbon Dioxide, Methane, Nitrous Oxide, Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride. While some GHGs occur naturally, they are also emitted through human activities that involve combustion of fossil fuels, industrial processes, and certain land use practices. The last three – HFCs, PFCs and SF<sub>6</sub>,—all powerful GHGs, do not occur in nature.

Over time, as the human population has increased, the production of food, goods, shelter, and energy to sustain and enhance living conditions, has also increased. These activities have depended to a large extent on energy from the burning of fossil fuels, oil, natural gas, and coal, which emits carbon dioxide and other GHGs into the atmosphere.

Greenhouse gases are being emitted faster than they can be removed by the Earth’s natural systems. The excess GHGs act to trap heat and cause the overall average global temperature to rise, resulting in climate disruption. This results in changes to the basic weather patterns that make up our climate, including temperature, wind, and rainfall patterns and storms.

Recent studies have revealed risks to human welfare related to these climate impacts, such as changes to water supply, food production, the spread of infectious diseases, and other issues<sup>5</sup>. At the same time, continued reliance on the burning of fossil fuels makes us vulnerable to energy insecurity in several ways. An insufficient national supply of oil causes the United States to depend on imports from countries that may be hostile to our interests. In addition, extraction and transmission of fossil fuels can result in significant environmental damage and their use can exacerbate air pollution. Finally, as non-renewable resources, it appears likely that fossil fuels will eventually become scarce and thus much more expensive, thereby potentially causing significant hardship to larger and larger segments of the population over time.

<sup>5</sup> “Preparing for Climate Change in the Upper Willamette River Basin of Western Oregon: Co-Beneficial Planning for Communities and Ecosystems,” US Department of Agriculture, Climate Leadership Initiative, and National Center for Conservation Science and Policy, 2009.

<sup>5</sup> IPCC, 2007: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 996 pp.

## What is being done in our community?

Various branches of government, community organizations, and individuals have or are moving proactively to develop alternative energy sources and to limit the use of fossil fuels.

The State of Oregon is pursuing a number of different initiatives, including:

- Setting overall statewide greenhouse gas emission reduction goals (Stabilize emissions and begin reduction by 2010, Achieve 10% reduction below 1990 levels by 2020, and Achieve 75% reduction below 1990 levels by 2050).<sup>6</sup>
- Developing a low-carbon fuel standard<sup>7</sup> and adapting low-emission vehicle rules.<sup>8</sup>
- Establishing a statewide transportation greenhouse gas reduction strategy.<sup>9</sup>
- Creating a toolkit to assist local governments in developing and executing actions and programs to reduce greenhouse gas emissions from the light vehicle sector.<sup>10</sup>
- Adopting greenhouse gas reporting rules.<sup>11</sup>

The City of Eugene has initiated a number programs and practices to help achieve its vision of a more sustainable Eugene.<sup>12</sup> Recently, the City completed a Climate and Action Energy Plan<sup>13</sup> that outlines strategies to 1) reduce community-wide greenhouse gas emissions 10 percent below 1990 levels by 2020, 2) reduce community-wide fossil fuel use 50% by 2030, and 3) identify strategies that will help the community adapt to both changing climate and increasing fossil fuel prices.

In addition, many organizations in our community are taking positive action to limit community greenhouse gas emissions, among them:

- EWEB and other area electricity providers, who are committed to providing customers with sustainable and clean sources of power, as well as substantial incentives for energy efficiency in homes and businesses<sup>14</sup>;
- Lane Transit District, who has an exceptional record as a transit provider, with more than 11 million transit trips annually;
- The City of Eugene's Green Building Program, which offers technical assistance, incentives, and education and training to promote green building efforts;
- Lane County Waste Management, which offers programs to encourage recycling; and
- Climate Masters at Home™ program, which helps residents understand the risks of climate change and the benefits of climate protection, and provides opportunities for people to enact change in their lives to reduce carbon emissions.

Additional information on different initiatives can be found on the City of Eugene website in the brochure "Moving toward a Sustainable Eugene" as well as within the Climate and Action Energy Plan.

In the coming months, the Central Lane Metropolitan Planning Organization will be working with our partners to plan for reductions in transportation-related carbon emissions in compliance with legislation passed by the Oregon State Legislature.

## What can YOU do?

You can find out how your household contributes to greenhouse gas emissions and discover some of the ways you can reduce your carbon footprint. The Oregon Carbon Calculator<sup>15</sup> allows individuals to estimate direct and indirect greenhouse gas emissions from household transportation, energy use, and consumption of food, goods, and services.

<sup>6</sup> <http://www.leg.state.or.us/ors/468a.html> Accessed on October 8, 2010

<sup>7</sup> <http://www.deq.state.or.us/aq/committees/lowcarbon.htm> Accessed on October 8, 2010

<sup>8</sup> <http://www.deq.state.or.us/aq/orlev/> Accessed on October 8, 2010

<sup>9</sup> <http://www.oregon.gov/ODOT/TD/TP/SB1059.shtml> Accessed on October 8, 2010

<sup>10</sup> <http://www.oregon.gov/ODOT/TD/TP/SB1059.shtml> Accessed on October 8, 2010

<sup>11</sup> <http://www.deq.state.or.us/aq/climate/reporting.htm> Accessed on October 8, 2010

<sup>12</sup> [http://www.eugene-or.gov/portal/server.pt?open=18&objID=271220&parentname=CommunityPage&parentid=2&mode=2&in\\_hi\\_userid=2&cached=true](http://www.eugene-or.gov/portal/server.pt?open=18&objID=271220&parentname=CommunityPage&parentid=2&mode=2&in_hi_userid=2&cached=true) Accessed on October 8, 2010

<sup>13</sup> [http://www.eugene-or.gov/portal/server.pt?open=17&objID=20331&DirMode=1&parentname=Dir&parentid=3&mode=2&in\\_hi\\_userid=2&cached=true#](http://www.eugene-or.gov/portal/server.pt?open=17&objID=20331&DirMode=1&parentname=Dir&parentid=3&mode=2&in_hi_userid=2&cached=true#) Accessed on October 8, 2010

<sup>14</sup> <http://www.eweb.org/saveenergy> Accessed on October 8, 2010

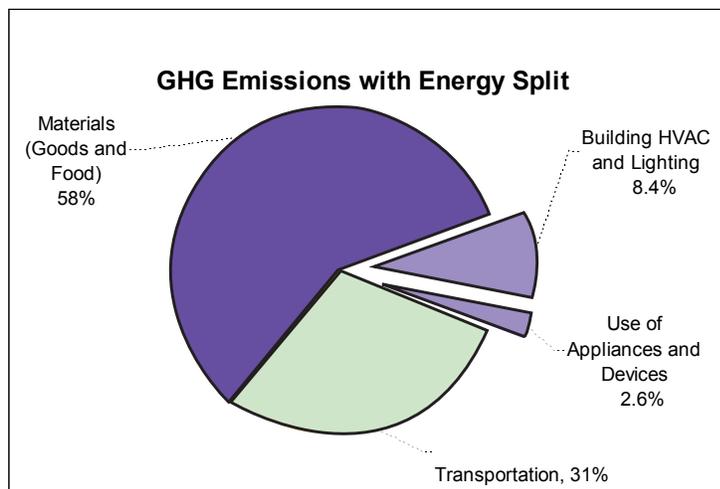
<sup>15</sup> <http://www.deq.state.or.us/programs/sustainability/carboncalculator.htm> accessed on October 8, 2010

# Source-by-Source Summary of Greenhouse Gas Emissions

## Energy (natural gas and electricity)

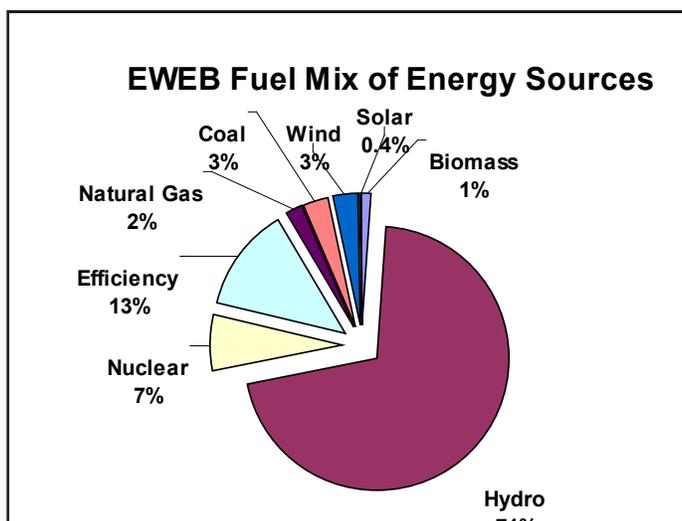
Energy used in buildings is the source of 11 percent of our community's greenhouse gas emissions.

Lighting, heating, and cooling buildings and the operation of appliances by residences, commercial establishments, and industrial buildings account for 0.4 million metric tons of carbon dioxide equivalent per year. Industrial energy use accounted for in this portion of the inventory is only for the energy used for the operation of the building, not for the local manufacture of goods and services.



Energy consumed in the Eugene-Springfield area is generated from the following sources:

- *Natural Gas.* Natural gas burned as a fuel is the largest source of energy GHG emissions, with approximately 1.1 MT CO<sub>2</sub>e per capita (or 65 percent) associated with natural gas production and consumption.
- *Electricity.* Electricity use is the second largest source of energy GHG emissions, with approximately 0.6 MT CO<sub>2</sub>e per capita (or 35 percent) associated with electricity production and consumption. Electricity in the Eugene-Springfield region is supplied by several different utilities, including EWEB, SUB, EPUD, Blachly-Lane and Pacific Power. A large portion of our energy is derived from hydropower. For example, EWEB (the largest supplier of electricity in the Eugene-Springfield metro area) sources approximately 71% of its electricity from hydropower. Emissions from



electricity vary from year to year, depending on both the amount of electricity consumed as well as the mix of energy sources used to generate the electricity. If the mix of energy sources becomes more heavily weighted toward fossil-fuel based sources, the emissions

from electricity use will grow, thereby increasing overall emissions from the energy system. Such a scenario may be triggered, for example, if the amount of water available to produce hydropower diminishes, if Bonneville Power Administration does not provide local utilities with their current hydropower contracts; if demand increases in the future due to population growth; or if new uses such as extensive electric car fueling come on-line.

- *Steam.* Natural gas powered by central steam service is provided within the downtown Eugene business district. EWEB is in the process of planning for decommissioning its steam utility and assisting customers' transition to alternative heating sources.
- Other smaller sources of energy include household fuel oil and fuel wood.

Renewable energy sources (other than large-scale hydropower) are growing rapidly, and this change, together with anticipated reforms in energy policy, modernization of the electricity network (e.g. smart grid technologies), and energy conservation efforts are expected to reduce emissions in the electricity sector over time. One example of these changes is the passage of Oregon State's renewable portfolio standard, under which the state's largest utilities will be required to provide renewable generation for 25% of retail sales by 2025.<sup>16</sup> As in all areas of consumption, the rate of population increase has to be offset by an increasing rate of adoption of renewable energy sources in order for progress to be shown.

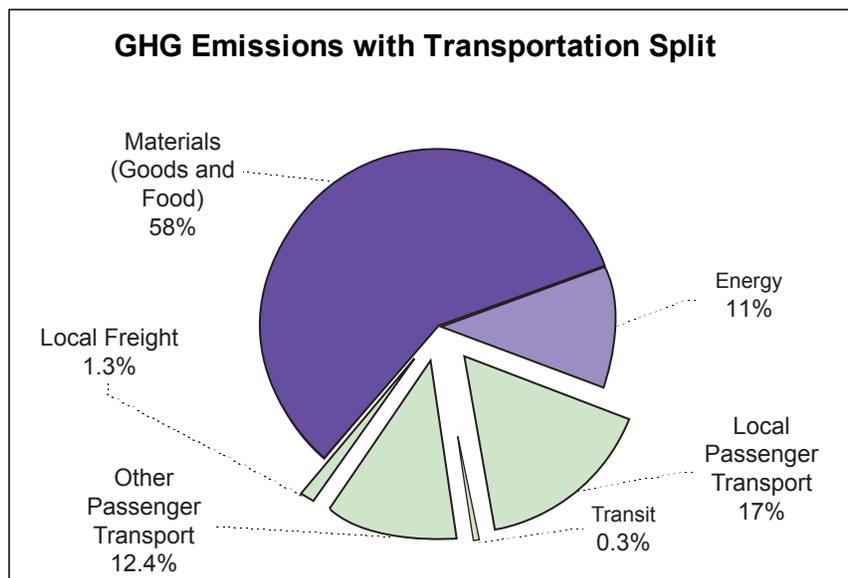
---

<sup>16</sup> [http://www.oregon.gov/ENERGY/RENEW/RPS\\_Summary.shtml](http://www.oregon.gov/ENERGY/RENEW/RPS_Summary.shtml) Accessed on October 8, 2010

## Transportation

Transportation is responsible for about 31 percent of the region's greenhouse gas emissions. These emissions come mainly from on-road commercial and private passenger vehicles, as well as other passenger transport such as air travel, with small shares from rail, marine, and transit sources.

One impetus for this analysis is the state mandated goal for reducing emissions from light-duty vehicles<sup>17</sup> by 2035. The segment labeled "local passenger transport" (17 percent of total regional emissions) is the share of Eugene-Springfield metropolitan area emissions that will be addressed by this goal.



Note: The emissions from freight movement of materials associated with material consumption are accounted for as part of the inventory of the materials/goods and food system.

The annual per capita emissions from local passenger transport are slightly less in the Eugene-Springfield metro area (2.4 MT CO<sub>2</sub>e) as compared to Portland Metro (3.1 MT CO<sub>2</sub>e) and the United States (3.4 MT CO<sub>2</sub>e). Most of the local passenger transport (approximately 66%) consists of trips within the MPO boundaries, with an average of 11.4 miles travelled per person in an average weekday. These trips represent trips to work, convenience trips for shopping, recreation, entertainment, and school. When all trips within the Eugene-Springfield are accounted for, an average household emits over 5.5 MT CO<sub>2</sub>e per year for local transportation, which is approximately 17% of total household emissions.

Transit is a small source of current emissions (0.3%), and increased transit ridership is one of the key strategies for reducing overall transportation emissions. An average passenger mile travelled by bus is more efficient than one travelled by private vehicle. It is estimated that transit riders in the area annually save the region 0.06 MT CO<sub>2</sub>e per person, or approximately three percent of the regional local passenger transport emissions, by taking transit rather than driving a car.

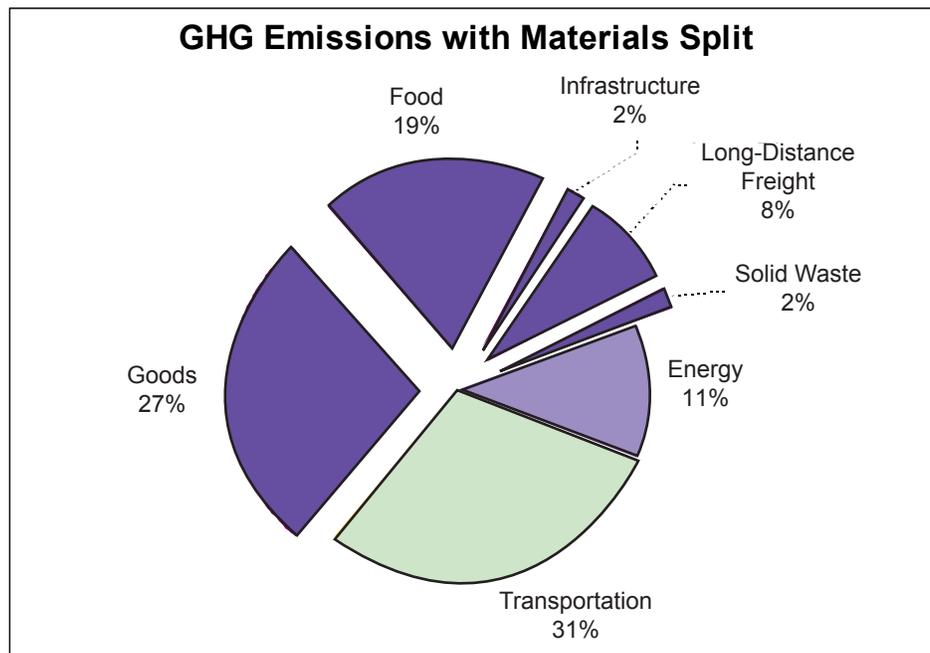
Reducing the number of miles traveled or shifting those miles to more efficient modes of transportation such as bicycling, walking or transit, is one of the key opportunities to reduce emissions rates for local passenger transport over time. Point2point Solutions<sup>18</sup> operates several different programs that are geared toward making it easier for citizens to find safe and affordable ways to get from "point 2 point". These individual efforts can be combined with other changes to reduce overall transportation emissions, such as: increasing use of low carbon fuels; increasing use of electric or hybrid vehicles, in conjunction with increased renewable energy generation; and increasing vehicle fuel efficiency.

<sup>17</sup> The legislation specifies that the emissions goal applies to vehicles weighing up to 10,000 pounds. For more information, please see <http://www.oregon.gov/ODOT/TD/TP/SBI059.shtml> Accessed on October 8, 2010

<sup>18</sup> <http://www.point2pointsolutions.org/> Accessed on October 8, 2010

## Materials, Goods and Food (Production, Movement, and Disposal)

Consumption of materials and goods comprise the largest slice of GHG emissions. Approximately 58 percent of community greenhouse gas emissions are estimated to come from the resource extraction, manufacture, and distribution of materials, goods, and food for final use and consumption by residents and business operators. A small component of these emissions is also associated with the landfill disposal of food and products. These life-cycle stages of manufacturing and distribution, which are generally invisible to consumers, are a large and important part of our carbon footprint and have been excluded from typical GHG inventories.



“Goods” (27 percent) and “food” (19 percent) include the life-cycle greenhouse gas emissions of items such as clothing, furniture, cars, food, and beverages. Packaging of products and single-use disposable items also contribute a part of these emissions.

The movement of goods and food (8 percent) from distant United States production sites to the Eugene-Springfield area are quantified as long-distance freight. This long-distance movement of materials often looms large in our perception, but depending on the item, may in fact be a smaller slice of the item’s overall carbon footprint. For example, freight-related emissions contribute only one-eighth of the total emissions related to the provision of food. Most food-related emissions result from the growing of food (especially feed for animals) and, to a lesser extent, food processing.

Methane emissions from solid waste generated within the Eugene-Springfield metro area contributes approximately two percent of the GHG emissions. Lane County and its cities are currently diverting over 45 percent of waste from the landfill by implementing successful waste reduction and recycling programs, with net carbon reduction benefits. Further efforts to shop sustainably, reduce waste, and recycle are expected to reduce emissions rates in the materials, goods, and food system over time.

# Summary of Calculation Assumptions

## Overview

It is important to note that the methodologies for carbon counting are still being developed and standardized. As a result, the methods used in this inventory could change over time. Traditionally, GHG emissions have been accounted for by characterizing the percentage of total emissions by various economic sectors (i.e., Industrial, Commercial, Residential, Transportation, and Electric Power Industry).

Both the Cities of Eugene and Springfield used the sectors-based approach of emissions accounting in their previous inventories and the approach is a common method used in community greenhouse gas inventories. However, a new approach has been developed by the U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response: this approach evaluates the emissions by 'systems' (e.g. production and movement of food, goods and services, transportation, energy, and land management) to enable an evaluation of the carbon footprint of a community from a perspective that focuses on consumption and the collective impact of the community. This inventory follows the systems-based methodology developed by EPA<sup>19</sup> and further adapted by Portland Metro<sup>20</sup> to serve as a means to conduct a community GHG inventory.

## Why a Systems-Based Inventory?

Under a systems-based inventory, greenhouse gas data are viewed from a consumption standpoint, in which all of the greenhouse gas impacts "embodied" in goods and materials consumed by residents and businesses within the Eugene-Springfield metropolitan area - from resource extraction, manufacturing, and transport to final disposal - are included in our carbon footprint. In other words, the choices made by consumers are all important.

A systems-based approach includes the emissions associated with the materials (goods and food) we buy, use, and throw away, which are not accounted for in sector-based community inventories. Since emissions associated with materials are the largest emissions category, a systems-based inventory is able to provide a more complete picture of the community's greenhouse gas emissions.

Traditional sector-based inventories have not addressed the impact of consumption and can therefore misrepresent the beneficial impacts of energy conservation and materials conservation.

Evaluating consumption and its role in driving greenhouse gas emissions allows governments and communities the opportunity to evaluate materials management policies and programs actions that offer an opportunity to reduce greenhouse gas emissions.

There are trade-offs in the approach used here. The calculations related to material flows (goods, food, and waste) rely on national data with regional adjustments, rather than direct measurements. As a result, the values in the inventory are estimates. The Eugene-Springfield metropolitan region's material consumption per capita, however, is not anticipated to be significantly different from national averages and the methodology provides a sense of scale with a clear message: consumption of goods and materials matters as much as direct expenditure of energy and transportation fuel.

The systems-based inventory approach is an evolving inventory approach, and a growing number of communities are beginning to use this approach, including Portland Metro<sup>20</sup>, King County<sup>21</sup>, and the State of California<sup>22</sup>. Oregon Department of Environmental Quality is also researching how production and consumption of materials (and generation of wastes) in Oregon contributes to greenhouse gas emissions<sup>23</sup>.

<sup>19</sup> "Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices," EPA (2009), [www.epa.gov/oswer/docs/ghg\\_land\\_and\\_materials\\_management.pdf](http://www.epa.gov/oswer/docs/ghg_land_and_materials_management.pdf) Accessed on October 8, 2010

<sup>20</sup> <http://www.oregonmetro.gov/index.cfm/go/by.web/id=24198/level=1>

<sup>21</sup> <http://www.kingcounty.gov/environment/dnrp/newsroom/newsreleases/2010/april/0420Greenhouse-gas.aspx>

<sup>22</sup> <http://www.climatechange.ca.gov/research/> Accessed on October 8, 2010

<sup>23</sup> <http://www.deq.state.or.us/lq/sw/wasteprevention/wpstrategyupdates.htm> Accessed on October 8, 2010

## Approach

The overall approach uses the data from the US EPA Inventory for the United States as a whole, and adjusts or replaces individual components of the inventory with more geographically relevant data. For example, in calculating the emissions for materials, goods, and foods, the per capita emissions are modified to account for the difference between median income per household in the U.S. and Eugene-Springfield metropolitan area. This modification assumes that because household income is less within the Eugene-Springfield community than the U.S. average, our households will purchase less, thus reducing per capita emissions.

Modifications to account for more geographically relevant data have been made to the following emission systems:

### Materials, Goods, and Food

- It is important to note that this analysis is focused on final consumption that happens within the Eugene-Springfield community. Industrial emissions from the manufacture of goods for export to and consumption by other communities do not appear in this analysis.
- A certain share (20%) of goods and food production was assumed to occur within the Eugene-Springfield metropolitan area. Emissions from electricity for that share were adjusted by the region's lower carbon intensity. This is the same assumption used in Portland Metro's study.
- The per capita emissions for goods are modified to account for the difference between U.S. and the Eugene-Springfield metropolitan area median income per household.
- Per capita landfill methane emissions for the Eugene-Springfield metropolitan area were calculated using solid waste model outputs for Short Mountain landfill.
- Emissions associated with long-haul transport of goods are accounted for in the "materials, goods and food" system. Based upon the region's travel model, 83% of the transportation associated with the Provision of Goods is long-haul, while the remaining 17% is local freight movement.
- The estimates do not account for international trade due to lack of data on foreign production and supply chains. It is anticipated that inclusion of emissions from international trade would raise the greenhouse gas emissions related to material consumption.

### Energy

- Energy emissions have been based on the amount of kWh of electricity, therms of gas, and gallons of fuel oil used by residents and businesses in the region.
- Approximately 3% of homes within the Eugene-Springfield metropolitan area also heat their houses with wood stoves. The CO<sub>2</sub> from combusting wood has not been included in the inventory, because sustainable forestry management is a larger state and national issue which will not directly factor into emission reduction strategies for the Eugene-Springfield metropolitan area.
- The regional split between heating, ventilation, and air conditioning (HVAC)/lighting and appliances/devices was assumed to be the same as the national split.
- Industrial energy use is categorized as the energy used for the operation of industrial buildings, not for the local manufacture of goods and services. The amount of industrial energy used for operating buildings comes from the EPA.
- Average per capita U.S. electricity consumption was modified using actual electricity consumption data gathered from local utilities to reflect the consumption trends of Eugene-Springfield metropolitan area residents and businesses.
- A utility specific factor based upon the resource mix in the utility's portfolio has been used as the greenhouse gas emissions factor for electricity use. That is, the carbon content for electrical energy for this area is represented as a mix of sources (wind, hydro,

solar, coal, gas) reported by local utilities. For SUB, Blachly-Lane, and EPUD, a majority of the energy is purchased from Bonneville Power Administration (BPA) – therefore the utility portfolio for BPA was used for these utilities.

- Average per capita U.S. natural gas consumption was modified using actual natural gas data to reflect the consumption trends of Eugene-Springfield metropolitan area residents and businesses.

#### Transportation

- Local Passenger Transport by auto was estimated from the region's 2004 regional travel model. Local passenger transport is composed of trips with an origin and destination that occur wholly within the Eugene-Springfield metropolitan area boundaries, as well as those trips that originated within the boundary of the Eugene-Springfield metropolitan area and left the region. Only the miles travelled within the Eugene-Springfield metropolitan area boundary are counted. Vehicle miles travelled by passenger vehicles within the region were converted to carbon dioxide emissions using a profile of vehicle type and fuel efficiency specific to the West Coast. Congested speed was not considered in these calculations at this time. (Higher congestion typically results in slow speeds and increased idling, and thus decreased fuel economy, all of which lead to higher emissions).
- The full life cycle cost associated with fuel production was included as part of the assessment of transportation emissions. Life cycle cost is an approach in which all energy inputs used to extract, refine, store, and transport fuels are considered, not just the tail pipe emissions from the use of fuels.
- Transit emissions were calculated based on fuel use reported by LTD for bus and para-transit service, and by passenger miles of van pools
- A share (17%) of freight emissions associated the transport of goods and food is from local deliveries within the Eugene-Springfield metropolitan area. This would include local package and mail deliveries, transport from warehouses to local stores, delivery of gravel and other products to homes, and other similar activities.

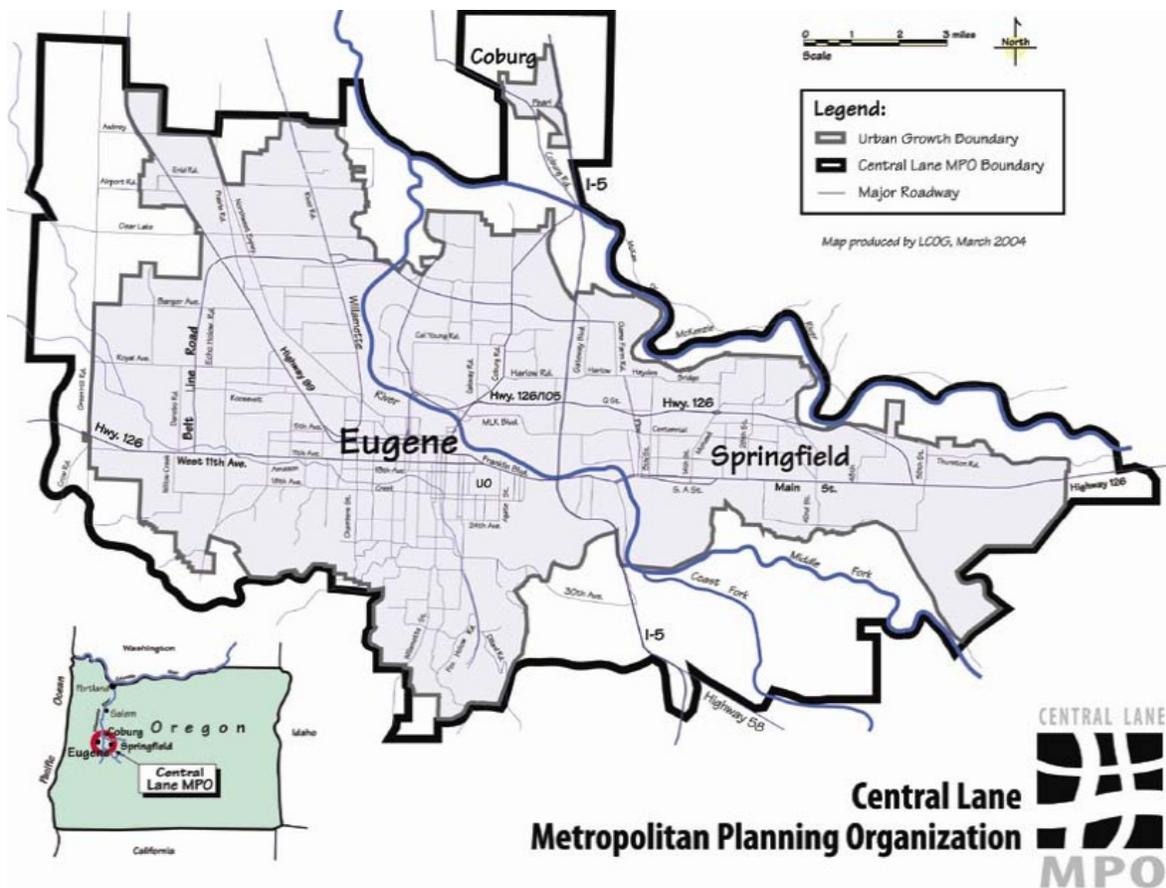
## Central Lane MPO's Role in Managing the Region's Greenhouse Gas Emissions

Lane Council of Governments (LCOG) is the Metropolitan Planning Organization for the Central Lane County area that includes the Eugene-Springfield metropolitan area and Coburg. The Central Lane Metropolitan Planning Organization (MPO) is the lead agency for regional transportation planning and distribution of federal transportation dollars for the central Lane County area. The MPO works cooperatively with local governments and transit providers to set priorities for transportation needs.

This report describes the inventory of carbon emissions within the community of the boundary of the MPO, an area that includes the cities of Eugene, Springfield and Coburg, and a portion of the surrounding unincorporated area of Lane County, Oregon (see map).

The MPO's main role with respect to greenhouse gas emissions is to evaluate the transportation-related impacts and plan for strategies to reduce these emissions. The state will set greenhouse gas reduction targets for the region in 2011. Under legislation passed in 2009 (House Bill 2001<sup>24</sup>), the MPO is planning for reductions in transportation-related carbon emissions.

In addition, the MPO shares the insights from this analysis to inform the actions of other regional partners working on greenhouse gas reduction strategies in the areas of resource efficiency, waste management, food production, building design, economic development, and planning.



<sup>24</sup> Oregon House Bill 2001, also known as the Oregon Jobs and Transportation Act, is the transportation funding plan adopted by the 2009 Legislature. <http://www.leg.state.or.us/09reg/asures/hb2000.dir/hb2001.en.html> Accessed on October 8, 2010

Lane Council of Governments performed this analysis based upon a methodology adopted by Portland Metro for their community inventory, in partnership with Good Company.

The MPO would like to recognize and thank the following individuals and organizations who contributed to this analysis:

Josh Skov and Aaron Toney, Good Company

Tom Williams, EWEB

Felicity Fahy, EWEB

Marc LePine, Springfield Utility Board

Rob Currier, EPUD

Hillary McBride, EPUD

Joe McFadden, Blachly-Lane Electric Cooperative

Greg Stiffler, NW Natural

Daniel Hurley, Lane County Waste Management Division

Sarah Grimm, Lane County Waste Management Division

David Allaway, Oregon DEQ

Tom Schwetz, LTD

Kevin Belanger, LTD

Mike Hogle, Oregon Metro

Heidi Rahn, Oregon Metro