

EUGENE CITY COUNCIL AGENDA ITEM SUMMARY



Work Session: Envision Eugene Update - Environmental Stewardship

Meeting Date: January 26, 2011
Department: Planning and Development
www.eugene-or.gov

Agenda Item Number: A
Staff Contact: Lisa Gardner
Contact Telephone Number: 541-682-5208

ISSUE STATEMENT

Envision Eugene is a collaborative, community-based effort to balance the sustainability triple-bottom line framework of social equity, environmental stewardship and economic prosperity in planning for 34,000 new residents anticipated in the next 20 years. This work session provides an opportunity to learn more about one aspect of the triple-bottom line: *environmental stewardship*.

BACKGROUND

The City Council Vision embodies a triple-bottom-line framework, balancing social equity, environmental stewardship, and economic prosperity. Specifically, the vision is to:

Value all people, encouraging respect and appreciation for diversity, equity, justice, and social well-being, recognizing and appreciating our differences and embracing our common humanity as the source of our strength.

Be responsible stewards of our physical assets and natural resources, sustaining our clean air and water, beautiful parks and open spaces, livable and safe neighborhoods, and fostering a vibrant downtown, including a stable infrastructure.

Encourage a strong, sustainable and vibrant economy, fully utilizing our educational and cultural assets, so that every person has an opportunity to achieve financial security.

As discussed during the November 22 joint City Council/Planning Commission work session, the triple-bottom-line framework will anchor the Envision Eugene City Council work sessions leading up to council decisions in late February.

Legally, the City must provide enough residential, commercial and industrial land to accommodate 20 years of growth, and establish a Eugene-only urban growth boundary (UGB). Equally important, Envision Eugene is describing how this community wants to grow; creating a future picture of what Eugene will look like, and “moving the dials” on accomplishing City Council and community goals for social equity, environmental stewardship and economic prosperity.

In late February, the council will be presented with a “tool box” of strategies and tactics to consider for accomplishing the work of Envision Eugene. The various strategies will have ranging impact on

“moving the dials” and the concurrent impact on satisfying a portion of the residential, commercial and industrial land need.

By state law (and consistent with community values), land within the current urban growth boundary must first be used efficiently before the UGB can be recommended for expansion. Practically, the council will choose a package of strategies that satisfies all or a portion of the land need within the current UGB, with any unmet residual earmarked for UGB expansion.

Each strategy will be accompanied by one or more tactics, which are the actions that must be taken to successfully implement a strategy. If tactics are not approved concurrently with a strategy, “phantom capacity” is created, and the strategy is not a viable means of satisfying the land need within the current UGB.

Several Envision Eugene work sessions have been held in recent months. Most recently the work sessions have been laying the foundation for each of the triple-bottom-line elements – economic prosperity, social equity, and the topic of this work session, environmental stewardship. These work sessions are focused on baseline data, goals, frameworks, etc. Similar to the joint City Council/Planning Commission work session, different CRG members will be invited to participate in the work sessions to add their perspectives to the conversations.

Environmental Stewardship Foundation

Eugene has long been recognized as a national leader in environmental stewardship. Decisions made during the Envision Eugene project will influence several important topic areas, each of which is briefly described below. While many excellent programs are already in place, failure to address these issues through the Envision Eugene process will result in a lost opportunity to avoid potentially serious impacts to public health, livability and the environment.

Fossil fuel use, greenhouse gas emissions, and air quality:

Greenhouse gas inventories conducted for Eugene indicate that passenger vehicles (primarily cars and light trucks) account for approximately 16% of local greenhouse gas emissions, while local freight transportation accounts for an additional 5%. Burning fuels for transportation also harms public health directly by contributing pollutants to the airshed. Recent research, including the Health Impact Analysis completed as a part of Eugene’s Climate and Energy Action Plan, indicates that measures to increase biking, busing, and walking not only reduce fuel use and emissions, but also lead to better public health by improving fitness, improving air quality, and reducing automobile collisions.

The State requires local municipalities to promote transportation efficiency and reduce greenhouse gas emissions through land use and transportation policy. Elements of land use policy that have been shown to most strongly affect driving and associated greenhouse gas emissions and air pollutants include:

- Housing density in the urban core and along major transit corridors
- Mix of residential and commercial uses within small geographic areas (e.g. presence of 20-minute neighborhoods)
- Quality and quantity of walking, biking, and transit infrastructure
- Ability to move freight efficiently

Home energy use:

In addition to influencing transportation and land use, Envision Eugene can influence the size and configurations of dwellings. Research indicates that, in addition to typically being more affordable, *small homes* and *multifamily homes* have smaller greenhouse gas footprints and fewer environmental impacts overall. According to the Oregon Department of Environmental Quality, “Reducing home size is a significant leverage point for environmental impact reduction and may be a more effective measure than achieving minimum levels of ‘green’ certification.”

Critical Habitats, including Farm and Forest Lands:

As the city considers future growth strategies for undeveloped and underdeveloped lands (both inside and outside Eugene’s UGB), there are a variety of environmental factors which need to be considered, including:

- Potential loss of productive farm and forest land, particularly for any areas considered for expansion of Eugene’s UGB
- Impacts to sensitive habitats such as wetlands, riparian areas, oak savannahs and other areas supporting rare and sensitive plant and animal species
- Potential impacts associated with development in flood plains
- Accommodating additional stormwater runoff as a result of increased impervious surfaces and soil compaction
- Increased spread of invasive species
- Increased noise and light pollution

While state law provides a certain level of guidance on many of these factors, Eugene maintains a substantial amount of discretion to establish local strategies that balance these environmental factors with other important community values.

Public Parks, Open Space and Natural Areas:

Eugene’s Parks and Open Spaces are central to the livability of the community. They provide recreational opportunities, wildlife habitat, space for public gatherings, and open space. An increasing population will put more pressure on these resources, creating a need to increase the current system’s carrying capacity. This capacity can be increased through improvements to existing parks and by designating new parks and natural areas, especially in locations of higher population density.

Water Quality:

Increased density and expansion into currently undeveloped land will impact the quantity and quality of stormwater flowing into Amazon Creek, Spring Creek, and the Willamette River. Without mitigation, impacts can affect aquatic habitats, including federally endangered species such as Chinook salmon, as well as the quality of drinking water and recreational opportunities these waterways afford.

Envision Eugene represents a unique opportunity to make decisions that will have a number of long lasting environmental impacts and can help the community avoid potentially serious impacts to public health, livability and the environment.

RELATED CITY POLICIES

- Growth Management Policies
- City of Eugene Environmental Policy
- Eugene Community Climate and Energy Action Plan Recommendations
- Parks Recreation and Open Space Comprehensive Plan Strategies

COUNCIL OPTIONS

For discussion only, no formal action is required

CITY MANAGER'S RECOMMENDATION

No action is required on this item. Therefore, no recommendations are offered by the City Manager.

SUGGESTED MOTION

No action is required on this item. Therefore, no motions are suggested.

ATTACHMENTS

A. Eugene Community Climate and Energy Action Plan - *Land Use and Transportation* section

FOR MORE INFORMATION

Staff Contact: Lisa Gardner 541-682-5208

Staff E-Mail: lisa.a.gardner@ci.eugene.or.us

Project Website: www.envisioneugene.org

Land Use and Transportation

LAND USE AND TRANSPORTATION

What is the Land Use and Transportation Action Area?

This section of the Community Climate and Energy Action Plan considers how the community is spatially organized, and how that organization affects transportation needs. The transportation systems in this section are those that move people and local freight: passenger vehicles, bicycles, mass transit systems, air transport and local freight distribution systems, and the roads and other infrastructure required for these systems. Transportation of goods is discussed in Chapter 4: Consumption and Waste section.

Although a particular land use may directly impact consumption of fossil fuels and emission of greenhouse gases, in most cases, the more important impacts of land uses are on the demand for transportation systems. Land use directly impacts transportation system needs and transportation systems contribute significantly to fossil fuel consumption and GHG emissions. As the two are so connected, this plan will consider them together and outline action items for each that will affect the other.

What Part of Eugene's GHG Footprint Comes From Land Use and Transportation?

According to the analysis completed for the Metro Regional Greenhouse Gas Inventory,^[30] about 25 percent of the Portland area's greenhouse gas emissions are associated with local transportation systems. This plan will assume that GHG impacts for Eugene are similar. The majority of emissions come from on-road commercial vehicles, private cars and air travel, with rail, marine and mass transit contributing smaller amounts of greenhouse gases (see Figure 6).

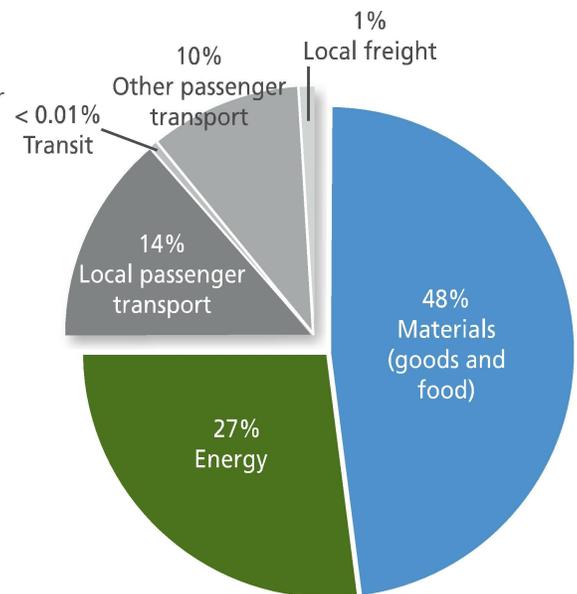


Figure 6: Greenhouse gas emissions by system.
Source: Metro Regional GHG Inventory

^[30] "Regional Greenhouse Gas Inventory; The Carbon Footprint of Residents and Businesses Inside the Portland Metropolitan Region," Metro Regional Government, April 2010.

How Do Land Use and Transportation Contribute to Greenhouse Gas Emissions?

Land use decisions influence where people live and do business, and where the schools, services and industry are located. Distances and available transportation modes between home, stores, work and school have a significant impact on transportation needs and are a major driver of a community's greenhouse gas outputs.

Metro's study found that local passenger transportation accounts for 14 percent of greenhouse gas emissions in the region. Other passenger transport, primarily long distance ground transportation and air travel, accounts for 10 percent, and mass transit for less than 0.01 percent, of total regional GHG emissions. As stated above, emissions from long distance freight are associated with transporting goods rather than people, and their scope, impacts, and reduction strategies are discussed in Chapter 5: Consumption and Waste.

How Will Rising Fuel Prices Impact Land Use and Transportation?

Increases in fuel prices will discourage the use of less fuel-efficient transportation modes such as the single-occupancy vehicle. As operating a private vehicle becomes more expensive, Eugene will likely see an increase in demand for mass transit and other transportation options, and for housing nearer to employment, which could lead to denser land use patterns.

How Can Eugene Prepare Land Use and Transportation Systems for Rising Fuel Prices?

Fuel prices and demand for transportation alternatives can rise more quickly, as in 2008, than transportation systems can adapt. If investments are made in alternatives to the single-occupant vehicle, the community will be better prepared for increases in the price of fuel and subsequent shifts in transportation demand. With alternatives in place, such as improved mass transit, bicycling, and electric vehicle infrastructure, the community can shift more easily away from expensive transportation. Alternative transportation will be particularly important for community members who cannot afford to purchase newer, more fuel-efficient or electric-powered automobiles.

Another proactive measure that will reduce transportation-related GHG emissions is making fuel-wise land use decisions that reduce dependence on single-occupant vehicles, such as facilitating infill development and developing walkable neighborhoods.



Preparing Eugene’s Land Use and Transportation Systems for Climate Change.

A recent study of potential climate change scenarios for the Eugene area concluded that the community may experience more severe storm events and resultant flooding, as well as an increase in forest fires.^[31] This analysis suggests that transportation systems will be impacted, especially roads and railroads, and those along rivers and streams, or on unstable slopes, will be especially vulnerable. Increased storms and wildfire smoke may also impact air travel and transport of goods. In order to minimize the impacts to the transportation system, planning and design efforts must consider these scenarios.

In addition to impacts on the transportation system, the same study suggests that the Eugene area could experience an influx of *climate refugees*, people moving away from areas that have become less livable due to a rise in sea level, severe storms, or prolonged drought. Land use and transportation planning processes must consider possible impacts on the community.

Efforts Underway

A number of government agencies, business, and non-profit organizations are working to reduce the community’s dependency on fossil fuels for transportation. For years Eugene has developed and implemented land use regulations, such as the state required Urban Growth Boundary, that facilitate compact growth and reduce transportation demand. The community has nationally-recognized mass transit, and bicycle infrastructure systems that decrease dependence on single-occupant vehicles. Likewise, alternate modes advocacy, undertaken by City staff along with partners such as point2point solutions, Lane Coalition for Healthy Active Youth, Bike Lane Coalition, Greater Eugene Area Riders, and many others, continues to press for more non-vehicle transportation infrastructure. However, the community must do even more to meet the Eugene City Council’s goal of reducing fossil fuel use 50 percent by 2030. Below is a list of objectives and related action items that will help Eugene reach this goal.

^[31] “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.

ENVISION EUGENE in the year 2030. Envision your neighborhood, home, job, school, and your favorite parks and shops – and how you will get there. In the spring of 2010, Eugene’s Planning Division started a community conversation, called Envision Eugene, to think about how Eugene will grow and change over the next 20 years. The plan will help answer the questions of how and where we will accommodate a population of nearly 200,000 people; and where’s the balance between increasing density and preserving what’s important to us about our neighborhoods, city, and area?

Envision Eugene has been collecting community input through workshops, websites, and surveys to help inform the creation of our community plan. People are being asked to think about ways to grow inside the existing urban growth boundary (UGB), and if necessary, where and how might the boundary be expanded. Concepts from the Climate and Energy Action Plan like 20 minute neighborhoods, increasing reliance on buses, bikes and walking, and special setbacks for Bus Rapid Transit, are key components of the Envision Eugene discussion.

In the fall of 2010, Envision Eugene will ask community members to help select a preferred growth scenario that meets the city’s land needs and promotes the most sustainable, livable, prosperous city possible. To learn more about Envision Eugene and how you can be involved, visit our website at:

www.EnvisionEugene.org.



OBJECTIVES AND ACTIONS FOR LAND USE AND TRANSPORTATION:

Objective 10:

Create 20-minute neighborhoods, where 90 percent of Eugene residents can safely walk or bicycle to meet most basic, daily, non-work needs, and have safe pedestrian and bicycle routes that connect to mass transit.

“Twenty-minute neighborhoods” are those in which a significant number of regular trips can be made in 20 minutes without using a personal automobile. A resident might walk to the grocery store or school and meet many of their recreational and social needs without using a car. Creating these neighborhoods is an important step toward meeting our greenhouse gas and fossil fuel reduction goals. This objective cannot be achieved by local government alone; success will depend on partnerships with neighborhoods, businesses, Lane Transit District, school districts, and others.

Implementing the 20-minute neighborhoods action will ultimately increase the mix of land uses (residential next to commercial, near schools, near parks) in the urban area, and increase connectivity of alternative transportation systems such as bike paths, pedestrian paths, and the bus system. Recent research suggests that accessibility of destinations is strongly associated with *vehicle miles traveled (VMT)*, and “walking is most strongly related to measures of land use diversity, intersection density, and the number of destinations within walking distance.”^[32] Work is underway at the state and regional levels to create the models that can predict how much greenhouse gas reductions can really be achieved by making these changes. In the absence of those tools, there is broad agreement that these changes can and will have a significant and lasting reduction in the use of gasoline and diesel fuel in our urban areas.

High Priority Actions:

- 10.1. Make the creation of 20-minute neighborhoods a core component of the Eugene Plan and the Eugene Bicycle and Pedestrian Master Plan.
- 10.2. By 2013, complete and implement a 20-minute neighborhoods plan:
 - 10.2a) Identify funding for necessary planning effort.
 - 10.2b) Identify key accessibility components for 20-minute neighborhoods: e.g., schools, parks, grocery store, retail services, etc.
 - 10.2c) Conduct a network gap analysis to determine needs.
 - 10.2d) Identify steps to improve the number and distribution of 20-minute neighborhoods.
 - 10.2e) Coordinate with *opportunity siting* and *infill compatibility standards* planning.

^[32] “Travel and the Built Environment: A Meta-Analysis,” Ewing et. al. 2010.

Objective 11:
Increase density around the urban core and along high-capacity transit corridors:

Growing evidence indicates that increasing the density of development around the urban center and transit corridors is an effective strategy for reducing fossil fuel use and greenhouse gas emissions. This type of development increases access to services, increases bikeability and walkability, reduces single occupant auto trips, and makes transit more effective.^{[33],[34],[35]} In addition to reducing fossil fuel use by curbing single-occupant vehicle trips, preventing sprawling land use appears to help communities adapt to climate change by reducing the number of extreme heat events.^[36]

High Priority Actions:

- 11.1.** Zone future commercial and high-density residential uses in and around the urban core, and along EmX and other high-capacity transit corridors to accommodate urban growth.
- 11.1a) Coordinate with opportunity siting and infill compatibility standards planning efforts.

Objective 12:
Include the potential for climate refugees when conducting land use planning.

The negative impacts of climate change in the Pacific Northwest may be low relative to impacts in other regions of the US and globally. This could bring about rapid movements of climate refugees—people leaving unlivable locations seeking less-impacted areas. In order to prepare for these possible impacts, city and community planning activities must be increasingly flexible and broad-thinking.^[37]

High Priority Actions:

- 12.1.** Closely monitor the community's population growth rate to gauge whether population projections are accurate.
- 12.1a)** Set population thresholds that will trigger review of community growth plans; for example, if growth rates are significantly different than projections for several years in a row.
- 12.1b)** If trends show a significantly higher rate of population increase than was assumed in the planning process, Eugene should update its planning model sooner than legally required.

^[33] "Cost-Effective GHG Reductions through Smart Growth & Improved Transportation Choices: An economic case for investment of cap-and-trade revenues," Center for Clean Air Policy, July 2009.

^[34] "Moving Cooler: An analysis of transportation strategies for reducing greenhouse gas emissions," Urban Land Institute, 2009.

^[35] "Travel and the Built Environment: A Meta-Analysis," Ewing et. al. 2010.

^[36] "Urban Form and Extreme Heat Events: Are Sprawling Cities more Vulnerable to Climate Change than Compact Cities?" Stone, et. al., 2010.

^[37] The City of Eugene is currently undergoing a land use planning process, *Envision Eugene*, to be completed in early 2011, that will determine how the next 20 years of population growth will be accommodated.



Objective 13:

Continue to expand and improve Eugene’s bicycle and pedestrian infrastructure and connectivity to increase the percentage of trips made by bike and on foot.

In order to increase the number of trips taken by bike or on foot, gaps in bicycle and pedestrian transportation systems must be identified and necessary improvements must be made. In May 2010, the City of Eugene will begin work on a Eugene Pedestrian and Bicycle Master Plan. This project will identify gaps in the bike and pedestrian networks and enable the community to focus resources for infrastructure where most needed. A systematic approach to improving bike and pedestrian transportation networks, will advance Eugene toward meeting community fossil fuel and greenhouse gas reduction targets.

High Priority Actions:

- 13.1.** Create a pedestrian and bicycle master plan that will accomplish the following:
 - 13.1a)** Identify mobility gaps in the bicycle and pedestrian transportation system.
 - 13.1b)** Recommend improvements to increase safety (real and perceived), comfort, speed, and convenience for users of all ages and skill levels.
 - 13.1c)** Create a plan for implementing the necessary system improvements.
 - 13.1d)** Identify funding sources for *implementation*.
- 13.2.** Increase the mileage and connectivity of bicycle boulevards and shared-use paths to encourage biking by cyclists of various skill levels.
- 13.3.** Create a “Complete Streets” policy that requires all subsequent transportation and rehabilitation projects to incorporate infrastructure for bicycles, pedestrians, and mass transit service.

HEALTH IMPACTS OF CLIMATE ACTION

Many of the actions contained in this plan will have positive impacts that go beyond saving energy and fossil fuel. With help from Upstream Public Health, a non-profit health advocacy organization, an effort was made to assess some of the possible health-related impacts—and the product is the first ever Health Impact Assessment (HIA) conducted on a local climate action plan.

Similar to environmental impact assessments that require federal agencies to consider the environmental impact of their proposed actions, HIAs are used to evaluate the potential health effects of a project or policy before it is implemented. The assessments are voluntary and typically focus on health outcomes such as obesity, physical inactivity, asthma, injuries, and social equity.

The HIA found that many of the transportation-related objectives in the Plan are likely to positively affect the public's health. Several policies aimed at reducing greenhouse gas emissions also result in increased physical activity, better air quality, and fewer vehicle crashes. These changes lead to reduced rates of chronic disease and mortality, reduced respiratory illness, and fewer injuries and fatalities from vehicle collisions. The full report is available as appendix 5 of this report and more information is available online at:

www.upstreampublichealth.org.

Objective 14:

Increase the supply of integrated, convenient, efficient, and cost-effective public transit:

Mass transit is one of the more effective strategies to reduce transportation reliance on single-occupant vehicles. Not only does increased use of transit reduce GHGs,^[38] but it can provide a lower-cost, accessible transportation alternative.

High Priority Actions:

- 14.1. Diversify funding sources for Lane Transit District (*LTD*) to increase the long-term reliability of mass transit service while maintaining cost effective and fuel efficient transit service.
- 14.2. Align City of Eugene Transportation System Plan and LTD's long-range transit plan to integrate bus routes into the broader alternative transportation system.
 - 14.2a) Partner with LTD to help inform service changes and improvements.
 - 14.2b) Create special *setbacks* along future *Bus Rapid Transit (BRT)* or other mass transit corridors to accommodate future right-of-way expansion.
 - 14.2c) Determine the role of mass transit in accomplishing greenhouse gas emission reduction goals by working with LTD in developing the Long Range Transit Plan.
- 14.3. Invest in transit infrastructure that meets future access and mobility needs while consuming less fossil fuel.
 - 14.3a) Maximize electrification of the regional mass transit systems.
 - 14.3b) Increase use of hybrid vehicles including buses and other heavy vehicles.

^[38] "Moving Cooler: An Analysis of Transportation Strategies for Reducing GHGs," The Urban Land Institute, 2009.

Objective 15:**Expand outreach, marketing and education about climate-friendly transportation alternatives.**

In order to be motivated to change their behavior, community members must understand the effects of their transportation choices on overall greenhouse gas emissions and the available alternatives to the single-occupant vehicle. Emissions reductions can be realized by reducing the number of people who drive in single-occupant vehicles and by educating the community about how to be more fuel-efficient when they do drive their automobiles.

High Priority Actions:

- 15.1.** Increase promotion of bicycling, walking, mass transit, car-pooling, telecommuting, high-occupancy vehicles, and emergency ride home programs as attractive alternatives to driving.
- 15.2.** Increase the community's understanding of fuel-efficient driving techniques.

Objective 16:**Ensure maximum efficiency in current and future freight systems.**

Movement of goods is important for the community's economy; however, it typically produces significant greenhouse gas emissions.^[39] As Eugene makes changes to transportation systems to decrease reliance on fossil fuels, efficient delivery of food, consumer goods, and other materials must be maintained.

High Priority Actions:

- 16.1.** Plan for efficient freight transportation that minimizes greenhouse gas emissions and fossil fuel consumption, and accomplishes the following:
 - 16.1a)** Connects multiple modes—train, truck, van, car, bicycle.
 - 16.1b)** Accommodates upper Willamette Valley commercial, industrial and agricultural freight needs.
 - 16.1c)** Facilitates efficient local deliveries.

^[39] "Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions," Urban Land Institute, July 2009.

Objective 17:
Increase the use of low-carbon vehicles and fuels to improve overall fuel-efficiency and reduce vulnerability to fluctuating oil prices.



In order to meet the stated fossil fuel reduction target (reduced 50 percent by 2030), some of the current automobile transportation must be transitioned from fossil fuels to electricity. This will require considerable new infrastructure, some of which is now in the planning phase. According to the Oregon Department of Transportation, “Reducing on-road vehicle GHG emissions by 75 percent from 1990 levels would be equivalent to reducing Oregonian’s per capita annual consumption of petroleum fuels from 567 gallons to 68 gallons. This will not be achievable without transformative changes in vehicle fleets and fuels such as electrification of the light vehicle fleet.”^[40]

High Priority Actions:

- 17.1.** Accelerate the transition to plug-in hybrids and electric vehicles. Partner with Lane County, EWEB, auto retailers, electrical contractors, UO, LCC, and others.
 - 17.1a)** Support the installation of a network of electric car charging stations.
 - 17.1b)** Require installation of electric car charging stations in new multifamily housing.
 - 17.1c)** Use guidance provided by the University of Oregon Electric Vehicle strategy.
- 17.2.** Conduct research to understand what role biofuels can play in decreasing Eugene’s vulnerability to energy markets. Work with partners at LTD, the Oregon Department of Energy, etc.
 - 17.2a)** Complete research by 2013 so that outcomes can inform the next CEAP.

^[40] “Background Report: The Status of Oregon Greenhouse Gas Emissions and Analysis,” Oregon Department of Transportation, October 2009.