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EUGENE CITY COUNCIL AGENDA

November 22, 2017

12:00 p.m. CITY COUNCIL WORK SESSION
Harris Hall
125 East 8th Avenue
Eugene, Oregon 97401

Meeting of November 22, 2017;
Her Honor Mayor Lucy Vinis Presiding

Councilors

Alan Zelenka, President	Mike Clark, Vice President
Emily Semple	Greg Evans
Claire Syrett	Chris Pryor
Jennifer Yeh	Betty Taylor

12:00 p.m. CITY COUNCIL WORK SESSION
Harris Hall, 125 East 8th Avenue

The Mayor calls the November 22, 2017, City Council work session to order.

A. Committee Reports and Items of Interest from Mayor, City Council and City Manager

B. WORK SESSION:
Climate Recovery Ordinance Update

Adjourn.

The Eugene City Council welcomes your interest in these agenda items. This meeting location is wheelchair-accessible. For the hearing impaired, an interpreter can be provided with 48 hours' notice prior to the meeting. Spanish-language interpretation will also be provided with 48 hours' notice. To arrange for these services, contact the receptionist at 541-682-5010. City Council meetings are telecast live on Metro Television, Comcast channel 21, and rebroadcast later in the week.

El consejo de la Ciudad de Eugene agradece su interés en estos asuntos de la agenda. El lugar de la reunión tiene acceso para sillas de ruedas. Se puede proveer a un intérprete para las personas con discapacidad auditiva si avisa con 48 horas de anticipación. También se puede proveer interpretación para español si avisa con 48 horas de anticipación. Para reservar estos servicios llame al 541-682-5010. Las reuniones del consejo de la ciudad se transmiten en vivo por Metro Television, Canal 21 de Comcast y son retransmitidas durante la semana.

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EUGENE CITY COUNCIL
AGENDA ITEM SUMMARY

Work Session: Climate Recovery Ordinance Update

Meeting Date: November 22, 2017 | Agenda Item Number: B
Department: Central Services | Staff Contact: Chelsea Clinton
www.eugene-or.gov | Contact Telephone Number: 541- 682-5649

ISSUE STATEMENT

The purpose of this work session is to provide Council with an update on the Climate Recovery Ordinance (CRO) including an update on internal greenhouse gas (ghg) emissions reductions plans, a proposal to update the Climate and Energy Action Plan (CEAP), and other related items.

BACKGROUND

In July 2016, Eugene City Council approved an update to the 2014 CRO by revising the adopted climate recovery goals and adding new targets and benchmarks. The key goals and milestones, and the reporting requirements are outlined in the table below.

2016 CRO Goal	Milestones	Reporting-2 Yr	Reporting-5 Yr
Internal GHG Emissions	By 2020, zero ghg emissions from operations or offset with 15% annual ghg emissions reductions	Status Update 2018, 2020, 2022, etc.	Comprehensive Review 2021, 2026
Fossil Fuel Use a) Internally b) Community Wide	By 2030, reduce fossil fuel use from 2010 levels by 50%, with 2.5% annual reduction.	Status Update 2018, 2020, 2022, etc.	Comprehensive Review 2021, 2026
Reduce Community Wide GHG Emissions	By 2100, total community emissions equate 350PPM level, with 7.6% annual reduction	Status Update 2018, 2020, 2022, etc.	Comprehensive Review 2021, 2026
Reporting actions will include the completion of a ghg and fossil fuel use inventory in 2018 and 2020, utilizing the previous year's data. The five year comprehensive report will be completed in 2021 based on 2020 data and include the ghg/fossil fuel inventory and a review of the progress of action items outlined in the 2018 Climate and Energy Action Plan 2.0 (CEAP 2.0) project.			

The following list provides timing and actions related to the CRO.

- 2014 – City Council passed the CRO.
- 2016 – City Council updated the CRO to include targets and benchmarks for reaching the climate action goals.
- 2016 – Mayor Piercy called for the convening of an Ad Hoc Work Group to give input on a CRO Communications Plan and a proposal to update the CEAP.
- 2017 – Mayor's CRO Ad Hoc Work Group convened, reviewed and provided feedback on the CEAP proposal herein.

2017 CRO Implementation Activities

1. Internal GHG Reduction Plans

Climate action plans for the Fleet and Fire will be complete by the end of 2017 and Facilities has completed a plan. Each plan, put together by a team of department staff, CMO staff, and consultants, lays out what actions will be needed to meet the internal CRO goals, expected costs, co-benefits and other expected impacts. These three services areas are the first to be addressed and CMO will continue to facilitate tailored climate action plans for each department in the City.

2. Community Climate and Energy Action Plan 2.0

In 2016, the Mayor's CRO Ad Hoc Work Group was initiated by Mayor Piercy with Councilor Zelenka as chair. In spring 2017, the Ad Hoc Work Group started meeting with the focus of evaluating CRO communications, a process to update the CEAP, and potential community individual action/behavior change programs. A staff team convened a project planning team to develop the CEAP 2.0 update proposal and produce a professional cost estimate for the work. The CEAP 2.0 proposal was reviewed and endorsed by the Ad Hoc Work Group. Membership included community members and elected officials as listed in Attachment D.

3. CRO Maintenance – Communications, Inventories, Methodologies

a) The City revamped the CRO webpages in 2016. In addition, feedback from the Mayor's CRO Ad Hoc Work Group suggested staff develop a high level scope of work for a comprehensive CRO communications strategy within the next 3 months.
b) 2016 internal and 2015 community wide ghg emissions inventories (based on fossil fuel use and other factors) have been completed in the last 18 months.
c) The 2014 CRO directed the City Manager to adopt Administrative Rules that prescribes the ghg emissions inventory methodology. The methodology work has been completed and rules are being finalized for adoption.
d) The CMO Sustainability Program will continue to provide coordination on information requests, communications updates and integrate new information (e.g. CIP and TSP deliverables), and respond to Council and community request for information.

TRIPLE BOTTOM LINE

The Triple Bottom Line (TBL) continues to be a guiding principle in the development of the Internal GHG Reduction Plans, the Community Climate and Energy Action Plan 2.0, and the CRO Communications Plan scope. Each of these items focuses on environmental health by developing plans and communicating about how we can achieve the CRO goals and to adapt to a changing climate. In addition, the plans take into account the cost of each action, allowing for staff, Council and community to choose the most cost-effective pathway forward. Finally, social equity is addressed in each plan, with particular emphasis placed on engagement of and outcomes for marginalized communities.

COUNCIL OPTIONS

This is an opportunity for Council to receive information and discuss the proposed plans. Action is not required at this time. Council will be asked to consider funding for the proposed plans as part of the FY18 Supplemental Budget 2 in December.

ATTACHMENTS

A. CEAP 2.0 Proposal
B. 2016 Internal Greenhouse Gas Inventory
C. 2015 Community Wide Greenhouse Gas Inventory
D. List of Mayor's CRO Ad Hoc Work Group Members

FOR MORE INFORMATION

Staff Contact: Chelsea Clinton
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Staff E-Mail: chelsea.d.clinton@ci.eugene.or.us

Climate and Energy Action Plan 2.0

PROJECT SUMMARY

In 2016, the Eugene City Council updated the Climate Recovery Ordinance (CRO) to include targets and benchmarks for reaching the 2014 CRO adopted goals, as well as, added a new annual greenhouse gas (ghg) emissions reduction target of 7.6%. During the past year, the City has initiated the development of departmental ghg emissions reduction strategies to address the CRO's internal goal, yet the primary plan for addressing community-wide emissions is the community Climate and Energy Action Plan (CEAP). Completed in 2010, the CEAP has guided a number of City, community based, and local partner agency efforts over the past seven years. As part of the direction from City Council in 2016, the City identified updating the CEAP as an organizational priority.

The focus of this CEAP 2.0 Proposal is to continue to foster the actions of the City as well as our community's agencies, companies and organizations in moving toward carbon neutrality, reduced fossil fuel use, and adapting to climate change. The project is predicated on a Triple Bottom Line (TBL) approach to include elements of environmental, social equity, and economic sustainability. The TBL serves as a link to the Eugene City Council's goals and vision for a healthy and vibrant community by incorporating a wide breadth of values and perspectives into community wide plans. The TBL priorities which the CEAP 2.0 incorporates include: 1) increased community understanding of the impacts of climate change and greater involvement in the development and implementation of adopted actions; 2) addressing social equity concerns as they relate to the impacts of climate action; and 3) providing a 'business case' economic assessment to evaluate the cost and benefit for adopted actions.

APPROACH

CEAP 2.0 focuses on identifying the appropriate organizations, community entities, and companies – we shall deem these 'large-lever shareholders'. Large-lever shareholders are organizations in Eugene who have significant oversight and impact on community-wide fossil fuel use and ghg emissions or have the ability to effect or alter systems that will enable the community to adapt and prepare for climate change.

Large-lever shareholders will be asked to lead on actions that their mission and programs already deliver, identify additional efforts that they can contribute, and help coordinate across the community to implement in an efficient manner. This approach understands the urgency of the topic and is predicated on the requirement that the final updated CEAP 2.0 will include the actions, the responsible parties, and the secured commitments of resources to implement the identified strategies. This approach is called 'Strategic Doing' and will be modeled throughout the project.

The project team consists of staff from the City Manager's Office, including representatives from the Human Rights and Neighborhood Involvement team, a representative from the City's

Sustainability Commission, as well as consultants from Good Company, program staff and students from the University of Oregon's Community Service Center and Community Planning Workshop, and topical experts and community leaders from across the community as necessary.

This Project Proposal is broken into two stages. The Mitigation and Adaptation Stage focuses on the development of mitigation and adaptation actions with large-lever shareholders. The Individual Action/Behavior Change Program Stage is a process to develop a community-wide individual action/behavior change program which focuses on neighborhoods and households.

- The Mitigation and Adaptation Stage is focused on mitigating emissions and fossil fuel reductions as well as adaption to climate change. This stage delivers on the requirements to meet the community-wide goals within the CRO. In addition, this stage includes actions that will build community resiliency with a focus on the economic and equity impacts of a changing climate.
- The Individual Action/Behavior Change Program Stage includes the Mitigation and Adaptation Stage and advances the development of a community-wide individual action/behavior change program to raise awareness and promote individual and collective action to mitigate emissions and adapt to a changing climate.

The Mitigation and Adaptation Stage incorporates the necessary items to update the six chapters of the CEAP 1.0 including what's required to meet the CRO goals by mitigating ghg emissions and fossil fuel use and actions that are geared toward adapting to our changing climate. Three chapters will focus on mitigating the effects of climate change: Buildings and Energy Sourcing; Materials Management (which is an enhanced chapter as part of an Oregon DEQ grant); and Transportation and Urban Form – Long range planning. The project team will quantify the projected ghg emissions and fossil fuel reductions for existing community-wide actions (e.g. food waste composting program, bike/ped plans), and additional commitments that are developed through the project process. All actions will be assessed at the appropriate jurisdictional scale (e.g. City of Eugene, Metro Area, Lane County, state, etc.).

Three additional chapters will focus on climate adaptation: Urban Natural Resources, Food and Agriculture, and Health and Social Services. These chapters aim to increase understanding and clarify actions to prepare for both the acute and chronic effects of climate change, such as flood, drought, or food instability, and the long term community impacts based on population growth and scarcer resources. Again, the invited parties will be the organizations already doing some or all of this work that are able to expand their efforts.

For each chapter, "large-lever shareholders" will be engaged to determine:

1. What Implementation Partners and City do already and its effect on mitigation and adaptation goals,
2. What Implementation Partners and City do for citizens through their programs,
3. What residents/households can do,
4. What lobbying efforts – state and federal policy – to support,
5. How to specifically address human rights and equity in each chapter,
6. What benefit the actions will provide towards meeting the goals and targets of the CRO.

The Individual Action/Behavior Change Program Stage is additive to the Mitigation and Adaptation Stage. The process includes identifying actions, developing the program, and determining the budgetary resources required for implementation of a long term individual action/behavior change program that will provide guidance and support for Eugene residents to reduce carbon emissions and adapt to changes at the household and neighborhood levels. This effort will be based on best practices and successful programs that other communities have employed, emphasizing the Community Based Social Marketing (CBSM) approach to individual action and behavior change.

PROJECT SCOPE AND DELIVERABLES

STAGE 1 - MITIGATION and ADAPTION

TASK 1: Community Awareness

Goals:

Add to the City's current CRO related communications the following elements:

- Raise awareness about the City's process to update its Climate and Energy Action Plan
- Inform the public about opportunities to provide input into the plan
- Learn from the public about their concerns around climate change and the barriers that they see in addressing climate change in their own life
- Create a webpage that serves as the 'landing page' for CEAP 2.0 related updates, activities, and information

Approach

The team will establish a project webpage hosted on the City's website that will provide information on the CRO in general, the CEAP 2.0 process, and expected outcomes. It will also include information on how to participate, which will assist in the creation of an interested parties list. The webpage will be the landing site for all CEAP 2.0 related communications, including meeting notices, agendas and minutes, presentation materials, surveys (identified above), CRO progress newsletters, and draft documents for comment.

The City intends to develop a series of surveys for this project. The initial survey will be used to establish a baseline understanding of climate change and gauge the level of interest and support or opposition to existing actions. The survey will collect information (with approval) on interested parties for future outreach and survey efforts. A second survey can be initiated during the project process to provide the mechanism for community and shareholder input regarding the proposed actions. Lastly, at least 18 months after the CEAP is finalized, a follow-up survey based on the initial foundational effort will be conducted to gauge any change in awareness or interest in approved actions. Demographic information will be collected with surveys with options to opt out for privacy reasons.

The project team will seek to raise awareness about the CEAP 2.0 project with the community as a whole, placing specific emphasis on raising awareness with local technical experts, members of the business community, NGOs, neighborhood leaders, and representatives of the City's boards and commissions. In addition, the project team will develop culturally appropriate engagement opportunities and materials to raise awareness among more marginalized communities in Eugene.

To develop specific outreach strategies that work best for each of these communities, the project team will consult with the Human Rights and Neighborhood Involvement Office, Planning Department, and the Parks and Open Space Division to identify best practices and lessons learned from other public review processes. In addition, the project team will consult with regional partners in other municipal sustainability offices to learn what outreach strategies have worked for other communities when talking about the climate and energy.

The project team will utilize the CRO communications campaign work to develop key messages and content appropriate for outreach to different audiences.

Deliverables and Timeline: Month 1- End of Project

- CEAP Webpage
- Printed Materials
- Community Survey(s)
- Lists and contact info of interested parties by content areas and participation interest (e.g. volunteer at events, topical expert, etc.)
- Measures of engagement including number of people engaged, and when possible and where appropriate, demographic information

TASK 2: CEAP 2.0 Plan Development

Goals:

- Complete progress update of CEAP 1.0
- Identify and assess community wide policies that have potential to reduce ghg emissions and fossil fuel use
- Determine ghg emissions and fossil fuel reduction potential of existing community wide policies
- Assess internal City programs, policies, and authorities and recommend changes to meet CRO goals and CEAP objectives

Task 2a. Progress Update, Major Plan Review, Determine policy impact

Approach

Review the original CEAP, document progress to date, and prepare for engagement with implementation partners. The information will be built into an Excel-based dashboard for the City to be able to see the CEAP 1.0 and 2.0 at a glance and to record progress.

Review existing major policies and plans at the appropriate regional scale (e.g. Envision Eugene, Transportation System Plan, Lane County Solid Waste Master Plan, etc.). Document the alignment, gaps, and the anticipated mitigation effects of the policies and plans, if implemented, in rough scale. An initial list of policies and plans will be developed by the project team with input from the Mayor's CRO Ad Hoc Work Group.

Deliverables and Timeline: Months 1-3

- Action Implementation Status Table
- Forecasted ghg emissions reductions for adopted plans
- Identification of gaps and elements to scale for baseline mitigation and adaptation if plans were enacted

Task 2b: Development of internal City CRO Evaluation Procedure and Implementation Recommendations

Develop a procedure to evaluate City programs and processes for opportunities to advance the CRO goals. This procedure will be developed by City staff with input from the project team. It will be made available for other large organizations in Eugene to utilize as a model in identifying key questions and points for evaluation in a variety of processes. Examples of programs and policies that this procedure will be applied to are the City's Capital Improvement Program (CIP) and the forthcoming Transportation System Plan Implementation Project. This procedure will guide staff through a Triple Bottom Line evaluation with emphasis on the CRO but will include equity and economic impacts. CMO staff will work with staff in each department to apply this procedure to a list of prioritized processes and programs. Staff will develop recommendations on items that are evaluated using the procedure and provide those to the City Manager.

Deliverables and Timeline: Months 3-9 or after the CEAP is complete

- CRO Evaluation Procedure vetted by City staff and project team
- City staff recommendations for how to alter existing processes and programs to further implement the CRO

TASK 3: Engage Implementation Partners (Agencies, Corporations, NGOs etc.)

Goals:

- Work with large-lever shareholders to identify and evaluate possible actions to include in the CEAP 2.0
- Measure the impact of the actions, including the impact on the CRO goals, progress in creating a community more resilient to climate change, co-benefits, social equity implications, and economic impacts
- Secure commitments from community partners for the actions to be included in the CEAP
- Work with shareholders to evaluate and incorporate community feedback on actions included in the CEAP
- Emphasize social equity in the process of developing each chapter as well as in the actions identified by large-lever shareholders

Approach

This task focuses on partnerships with large-lever shareholders. Large-lever shareholders are organizations in Eugene who have significant oversight and impact on community wide fossil fuel use and ghg emissions or have the ability to effect or alter systems that will enable the community to adapt and prepare for climate change. Additional partners will be engaged on each chapter with the goal of integrating triple bottom line values throughout each chapter's process and outcomes, such as equity advisors and the business community. Equity advisors will include representatives from historically underrepresented populations and others who can provide expertise around social equity during the plan development process.

The large-lever shareholders will produce six themed chapters (Buildings and Energy Sourcing; Materials Management; Transportation and Urban Form; Urban Natural Resources; Food and Agriculture; and Health and Social Services). Large-lever shareholders for each chapter will be brought together three times.

- Shareholder Meeting 1: Large-lever shareholders will discuss baseline actions of their organization's operations, programs for community members, and planned actions in the next 5-10 years (programs they can scale up or new efforts).

- *Interim Step.* The project team will conduct the technical and economic analysis for completing the actions between the first and second shareholder meeting, evaluating the impact and cost of reducing fossil fuel use and ghg emissions. Co-benefits, as well as any unintended consequences identified, of each action will also be included in the plan with particular emphasis placed on the economic and social equity implications.

- Shareholder Meeting 2: Large-lever shareholders will evaluate the impact these actions have towards reaching the CRO goals and preparing the community for the effects of climate change.

- *Interim Step.* The Community Review process (Task 4) will take place to provide widespread engagement of and input from the Eugene community regarding the planned actions.

- Shareholder Meeting 3: Large-lever shareholders will evaluate feedback from the community review process in Task 4.

"Strategic Doing" will be a key guiding principle of the development of these chapters. The process will include securing public commitments from actors to complete specific actions or implement specific policies. The final CEAP 2.0 proposal will only reflect the actions and policies the shareholders or another community entity has agreed to fulfill.

Deliverables and Timeline: Months 3-9

- Chapter shareholders, meeting materials, and best practices
- Mitigation or adaptation actions from large-lever shareholders
- Draft chapters with commitments
- Recommended CEAP 2.0 implementation and reporting program

TASK 4: Draft CEAP Chapters – Community Review

Goals:

- Inform the community about the actions to be included in the CEAP 2.0
- Gather community feedback about the proposed CEAP 2.0 actions
- Respond to feedback in a transparent and systematic way

Approach

The City will embark upon a 3-month long community engagement process to seek input on the DRAFT CEAP 2.0 actions. Similar to the community awareness outreach outlined in Task 1, the City will seek feedback about the proposed CEAP 2.0 actions from the community as a whole, placing specific emphasis on soliciting feedback from local technical experts, members of the business community, NGOs, neighborhood leaders, and representatives of the City's boards and commissions. In addition, the project team will develop culturally appropriate opportunities and materials to solicit feedback from more marginalized communities in Eugene.

As in Task 1, expertise from City staff and other partners will be sought to develop a robust community review process. The process will vary by group as the project team seeks to identify the best way to engage with each group. The project team expects to hold some community meetings, provide presentations to some groups, provide opportunities to review and comment on the plan on the website, and provide options for feedback using printed materials.

Summary notes from all meetings will be posted to the website. The project team will respond to comments made in writing as well as the main themes heard in meetings. A draft of the plan with these comments and responses will be posted to the website. Any changes to the CEAP 2.0 proposal will need to be in alignment with key project principles including making progress on the CRO goals and preparing the community for a changing climate, Strategic Doing, and the Triple Bottom Line values.

Deliverables and Timeline: Months 9-12

- Notes from community meetings
- Comments received in writing and responses to comments provided in a publicly available draft

TASK 5: Complete Final Plan

Goals:

- Finalize plan with large-lever shareholder commitments, public comments, and City of Eugene review
- Present to City Council for formal action

Approach

The project team will complete the final CEAP 2.0, incorporating findings from the community outreach and city staff recommendations. The Final Plan will be presented to Eugene City Council.

Deliverables and Timeline: Months 12-14

- Final CEAP 2.0

STAGE 2 – INDIVIDUAL ACTION/BEHAVIOR CHANGE PROGRAM

Task 6 – Citizen and Neighborhood CEAP 2.0 Implementation

The project team recommends using an integrated, inclusive, and community-based approach to engaging citizens in CEAP 2.0 implementation. Recognizing that traditional outreach approaches do not always engage a broad cross-section of the community, this approach seeks equitable engagement across social, political, economic, and geographic strata. In accordance with the overall project approach, the Individual Action/Behavior Change Program Stage seeks to leverage existing resources to implement the CEAP through programs the City and community partners already deliver. The objective of this task will be to identify, develop, assess impact, and determine financial feasibility for engagement activities that result in meaningful individual action/behavior change on the part of Eugene citizens. Sub-elements under this task focus on identifying specific, realistic, replicable, and measurable implementation approaches. The task will result in a scaled implementation engagement strategy for the City.

Goals:

- Identify and document current best practices related to sustainable behaviors
- Evaluate gaps in local programs and offerings
- Develop a program to fill gaps

Task 6-A: Identify Best Practices

Review and assess current individual action/behavior change programs that are in operation within the community (e.g. Love Food Not Waste, Commuter Solutions, Smart Trips, etc.). This task will engage a core group of program administrators from across the community, mostly from large-lever shareholders, to catalogue citizen-level climate mitigation or adaptation programs in the Metro area. This group will also identify best practices that are occurring in other communities, which will be catalogued by the project team.

Task 6-B: Identify Gaps in Programming

The core group from Task 6-A, working with input from the project team and advisory resources as needed, will evaluate the breadth of citizen-level programs across the city and best practices from other communities to create a framework for action sectors (e.g. energy conservation, food waste prevention, alternative transportation, etc.) that local programs can be indexed against. This process will identify gaps in local programming. The core team will then evaluate the feasibility for addressing those gaps, either within City operations, or through other community partners that are better suited for program deployment (e.g. BRING's RE:Think Business program). The project team will use the core group's recommendations to create a report identifying the primary sectors, programs, and best partners to develop the program.

Task 6-C: Program Development

Should the program fall within the responsibility of the City, or a community partner that the City could support, the project team will work with the core group to develop the framework of a new program and determine: program mission, outcomes, and vision; program operational

elements, targeted audiences, key performance metrics, co-benefits and financial estimate for budgeting purposes. The program will then be evaluated by City division managers and executive directors (as required) to create a 'decision package' and recommendation to be provided as part of the annual budget process for the City.

Deliverables and Timeline: (Months 14-20)

- Report on local programs and best practices from other communities
- Framework and indexing document outlining gaps in local programming
- Recommendations for program development
- Program design and feasibility document that includes co-benefits of the program

City of Eugene, Oregon
2016 Operational Greenhouse Gas Inventory

Report prepared by Good Company, May 2017

Introduction

The City of Eugene previously conducted operational greenhouse gas (GHG) inventories based on 2000, 2005, and 2010 data. This inventory, based on 2016 data, provides an update to allow the City to assess its progress towards meeting its operational GHG goal of carbon neutrality by 2020 for Scope 1 and Scope 2 emissions (based on a 2010 baseline). The sources of emissions include: natural gas combustion by buildings; gasoline and diesel combustion by City-owned vehicles and equipment; and electricity and district steam use by buildings.[1]

Summary of Findings

Between 2010 and 2016, the City's Scope 1 and Scope 2 emissions have *decreased* by -1,416 MT CO_2e, or -19.5% compared to emissions in 2010, using market-based accounting for electricity.[2] This decrease is the result of Scope 2 electricity-related emissions, which have decreased by -489 MT CO_2e or -56.2%. Emissions from the City's fleet have *increased* by 81 MT CO_2e or 2.7%. Emissions from natural gas and district steam used to heat air and water at City facilities have *decreased* by -1,033 MT CO_2e or -30.1% since 2010. Scope 1 and Scope 2 emissions from City operations have *decreased* by -1,416 MT CO_2e or -19.5%. To meet Eugene's Climate Recovery Ordinance (CRO) targets, emissions will need to decrease another -2,951 MT CO_2e by 2020, or another 40.5% compared to 2010 emissions. City operational emissions have continued to *decrease* even as Eugene's population *increased* by 5% over the same period. As a result, City operational emissions per resident served (MT CO_2e / person) has decreased by -23% since 2010.

Figure 1: Summary of Scope 1 and Scope 2 (market-based) emissions, 2010, 2013, and 2016.

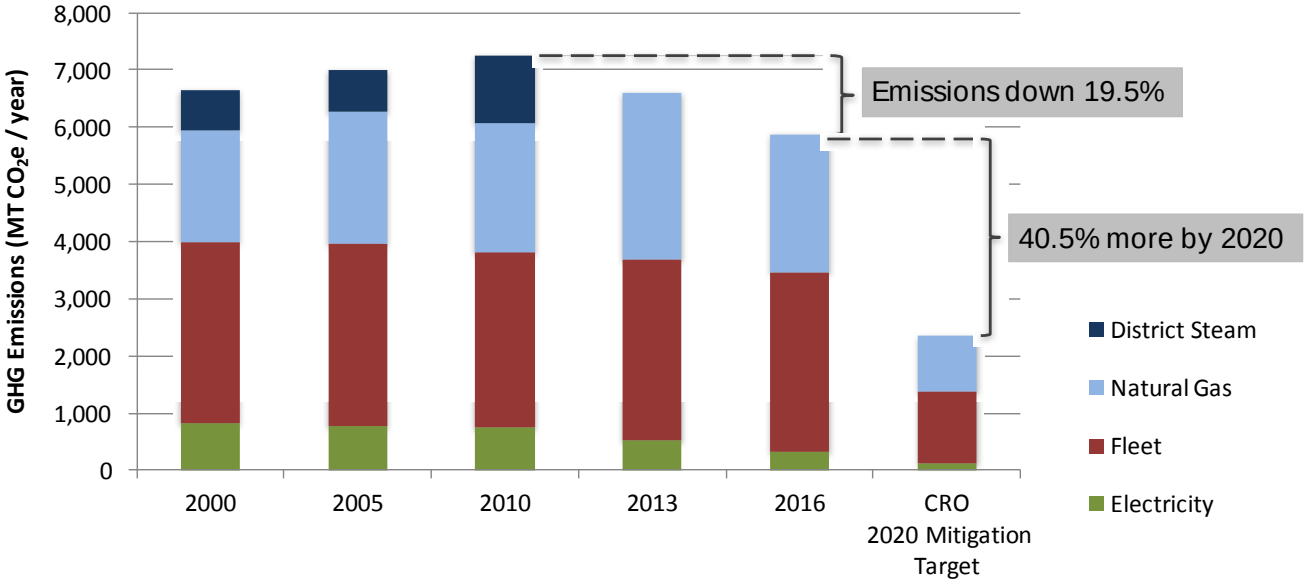
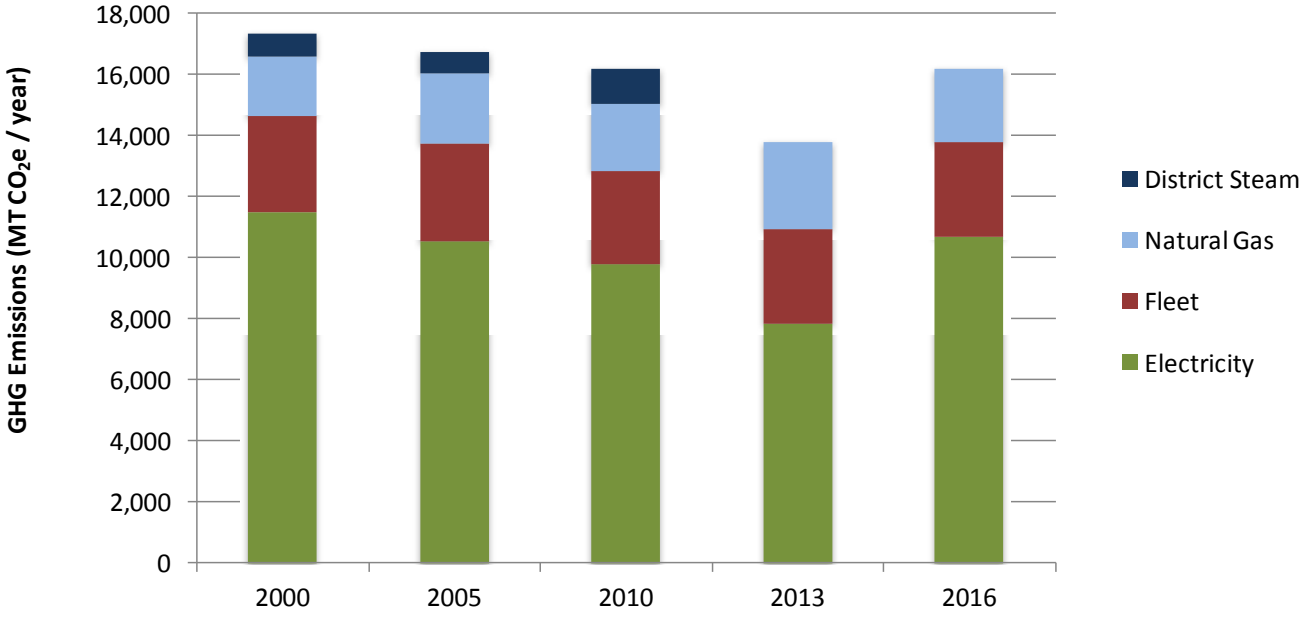


Figure 2 on the next page considers the same emissions sources, but uses the location-based accounting methodology for electricity emissions. For more details, see the Location-based versus Market-based accounting section on Page 4. All emissions values on Figure 2 are identical to Figure 1, except electricity which is significantly greater using the location-based methodology. This results in greater overall emissions, as well as a significant increase between 2013 and 2016. This increase is the result of significantly less low-carbon hydro-electricity being available on the regional grid, which increased the emissions intensity of Northwest electricity by more than 35% compared to 2012. Using the location-based electricity accounting method, Scope 1 and Scope 2 emissions are unchanged since 2010.

[1] Fugitive refrigerant leakage, a Scope 1 emissions source included previous inventories, is excluded from this update because these emissions were previously found to be relatively small in scale and data is time intensive to collect.

[2] While inventories were conducted in 2000 and 2005, 2010 is the first year presented here because the City's Climate Recovery Ordinance (20567) states that targets should be set and measured against a 2010 baseline.

Figure 2: Summary of Scope 1 and Scope 2 (location-based) emissions, 2010, 2013, and 2016.

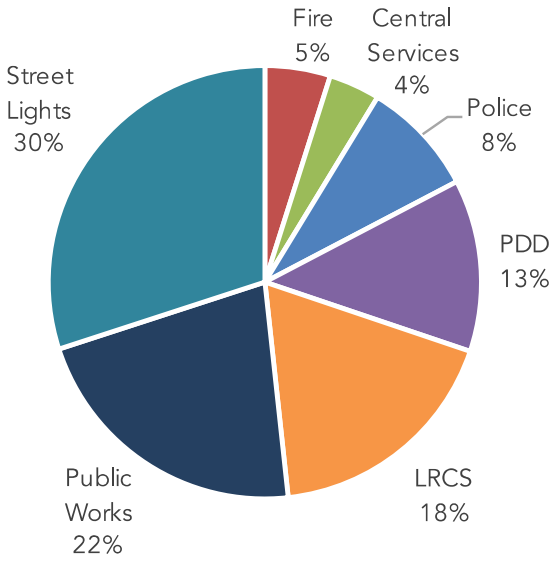


Detailed Findings

Electricity

In 2016, City buildings consumed 25,725 MWh of electricity and emitted 10,659 MT CO_2e (using location-based accounting) and 334 MT CO_2e (using market-based accounting). Within City operations the largest consumers of electricity include street lights, Public Works, Library, Recreation, and Cultural Services (LRCS), and Planning and Development (PDD). Overall the City's electricity consumption has increased by 1% between 2010 and 2016.

Figure 2: Summary of 2016 electricity use, by department / service area.



Location vs. Market-Based Electricity Accounting

The most widely used standard for public agency greenhouse gas inventories is the Greenhouse Gas Protocol's *Scope 2 Guidance*, which suggests that organizations account for Scope 2 emissions using two methods - location-based[3] and market-based[4].

Figure 3 and 4 provide a comparison of emissions calculated using the location-based and market-based accounting methodologies. As is shown in Figure 4, the City purchases its electricity exclusively from EWEB and therefore market-based emissions are calculated solely using EWEB's utility-specific emissions factor. EWEB's emission factor is about 30 times less carbon intensive than the regional average. This is because EWEB is predominantly supplied through contracts with Bonneville Power Administration (BPA) and their generation supply is largely from low-carbon, hydroelectric and nuclear resources. EWEB's owned-generation resources are also from low-carbon sources (hydro and wind).

Figure 3: Comparison of the City's location-based vs. market based electricity emissions. Note: Scope 1 emissions are provided for comparison purposes.

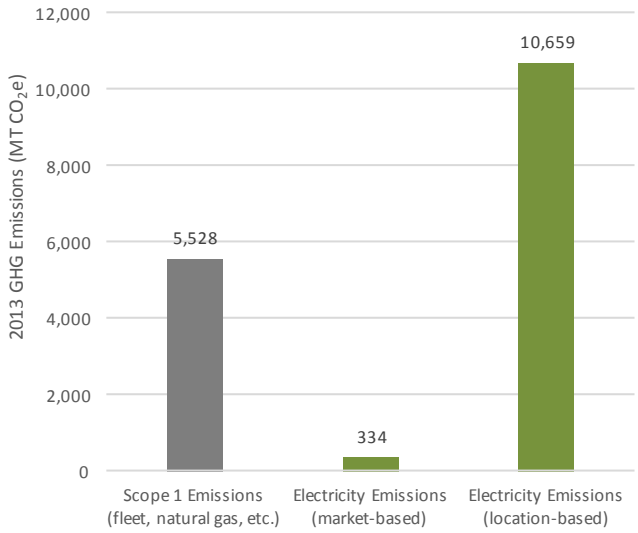


Figure 4: Details of location-based and market-based emissions calculations.

Accounting Method	Activity Data[1]		Emissions Factor		Emissions
	MWh / year	% of Total Use	Description	MT CO_2e / MWh	MT CO_2e
Location-Based	25,725	100%	Regional Grid Ave. (NWPP)[2]	0.414	10,659
				Location-Based Total:	**10,659**
Market-Based	25,725	100%	Utility-Specific (EWEB)[3]	0.013	334
	0	0%	Power Purchase Agreements	-	-
	0	0%	Renewable Energy Credits	-	-
				Market-Based Total:	**334**

Note 1: Activity data based on City of Eugene's 2016 electricity consumption.
Note 2: Northwest Power Pool (NWPP) Emissions Factor is from eGRID 2014. 2014 is the most recent factor available.
Note 3: Utility-Specific factor is based on 2016 reporting by Oregon Department of Environmental Quality (ODEQ).

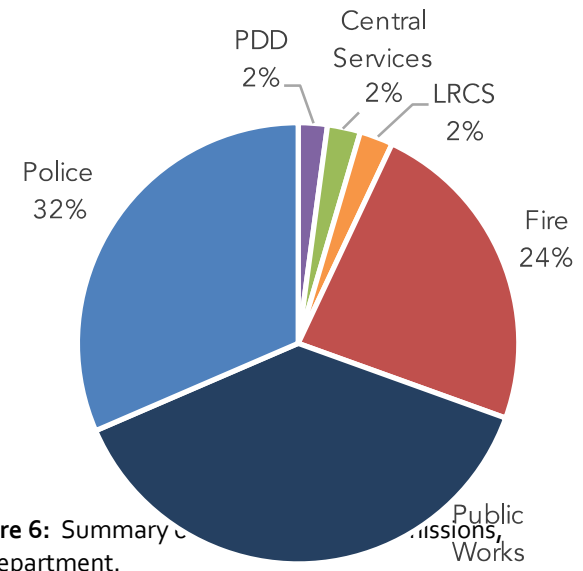
[3] **Location-based method (or regional grid)** represents the average emissions intensity of a specific electricity grid with defined geographic and temporal boundaries. It therefore represents the average GHG impacts associated with using or not using (due to efficiency or conservation) a kilowatt-hour of electricity by an organization. This method is focused on the connection between collective consumer demand and the emissions associated with supplying that demand and maintaining grid stability.

[4] **Market-based method (or utility specific)** represents emissions from the electricity generation contracts that an organization has purposefully chosen. Related choices could include selection of a specific electricity utility (in markets with more than one); contracting with a specific supplier (in a Power Purchase Agreement (PPA)); or the purchase of renewable energy credits (RECs). This accounting method documents the carbon intensity of "contractual instruments" that convey the "environmental attributes" from a specific electricity supplier to the purchaser.

Fleet

In 2016, the City's fleet consumed 382,000 gallons of fuel and emitted 3,552 MT CO_2e. The City's fleet is made up of a variety of vehicles and equipment that are primarily fueled with gasoline blended with ethanol (E10) and diesel blended with biodiesel (B5). The fleet also uses B20 and B50 blends for certain applications during certain times of the year. Biodiesel made up roughly 19% of the City's total diesel use in 2016. Figure 5 summarizes emissions, by department. Within City operations the largest consumers of fleet fuels include Police, Public Works, and Fire.

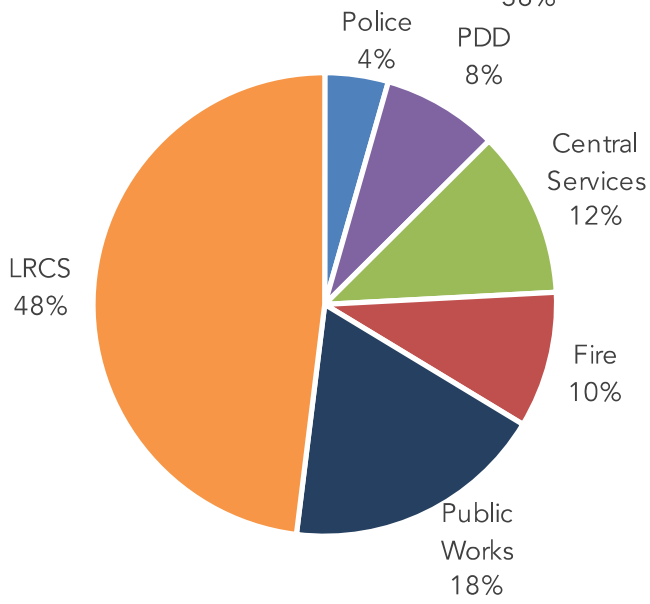
Figure 5: Summary of combined 2013 gasoline and diesel emissions, by department.



Facility Heat (Natural Gas and District Steam)

In 2013, City buildings consumed 467,746 therms of natural gas and emitted 2,481 MT CO_2e. The City's emissions from grid-supplied district steam and natural gas for facility heating needs have *increased* by 6% since 2010 and *decreased* by 18% since 2013. The recent decrease is likely due to the warmer winters we have experienced in recent years and the corresponding decrease in facility heating needs. City operations no longer use district steam as an energy source. These facilities have been transitioned to high-efficiency natural gas furnaces, which resulted in a net decrease in GHG emissions. Within City operations the largest consumers of natural gas include Fire and Emergency Services, Cultural Services, Library, Recreation, and Planning.

Figure 6: Summary c…issions, by department.



Methodology

The methodology used for this inventory follows The Climate Registry's *Local Government Operations Protocol*. Methodological details, as well as "GHG 101" information, is documented in the City's previous GHG inventory reports. The 2010 report may be downloaded at https://www.eugene-or.gov/DocumentCenter/View/9467. Note: Eugene's wastewater treatment plant emissions are under the management of a cooperative community partnership, Metropolitan Wastewater Management Commission (MWMC), not the City of Eugene. MWMC has completed independent GHG inventories for calendar years 2010, 2012, and 2014.

Thanks to City of Eugene staff – Lynne Eichner (facilities) and Denora Garfield (fleet fuel) – for providing data to support this inventory.

Eugene, Oregon
Community Greenhouse Gas Inventory
Sector-Based Inventory for 2010 – 2015
Consumption-Based Inventory for 2013

Report prepared by Good Company, December 2016

INTRODUCTION

In the effort to better understand our community's carbon emissions, the City of Eugene has engaged Good Company to complete an update to the community's greenhouse gas (GHG) inventory. A GHG inventory quantifies the GHG emissions associated with a specific boundary – such as operational control within an organization or the geographic boundary of a community – for a specific period of time. By conducting inventories at regular intervals, community stakeholders can understand trends and manage emissions from specific sources and activities. The results of the GHG inventories will be used to support a 2017 update of the Eugene community's Climate and Energy Action Plan (CEAP) and provides the foundation for a GHG emissions tracking and management system related to the City's Climate Recovery Ordinance (No. 20567).

FINDINGS IN BRIEF

- Eugene's 2015 sector-based GHG emissions total **1.59 million MT CO_2e**. The largest sources of community emissions include passenger and freight transportation (32%) followed by commercial (24%) and residential (23%) energy use.
- Eugene's sector-based GHG emissions have decreased by -14% since 2010. This is the result of decreased electricity and natural gas use attributed to warmer winters combined with greater levels of clean electricity generation on the regional electricity grid. Transportation fuel use also decreased by about -7% over the time period.
- The Eugene community's sector-based emission *intensities* also declined between 2010 and 2015. On a per capita basis, emissions have declined by almost -18%, while total population has increased by 4.6 percent In 2015, the average Eugene resident's sector-based carbon footprint is 9.7 MT CO_2e / person, down from11.8 MT CO_2e/person in 2010.
- Eugene's consumption-based emissions estimate, which includes production emissions for imported goods, foods and services consumed in Eugene, totals **3.45 million MT CO_2e**. Production emissions for items consumed by the Eugene community totals **1.86 million MT CO_2e**
- In 2015, the average resident's consumption-based carbon footprint is 21.7 MT CO_2e, roughly 2.2 times greater than the sector based footprint.

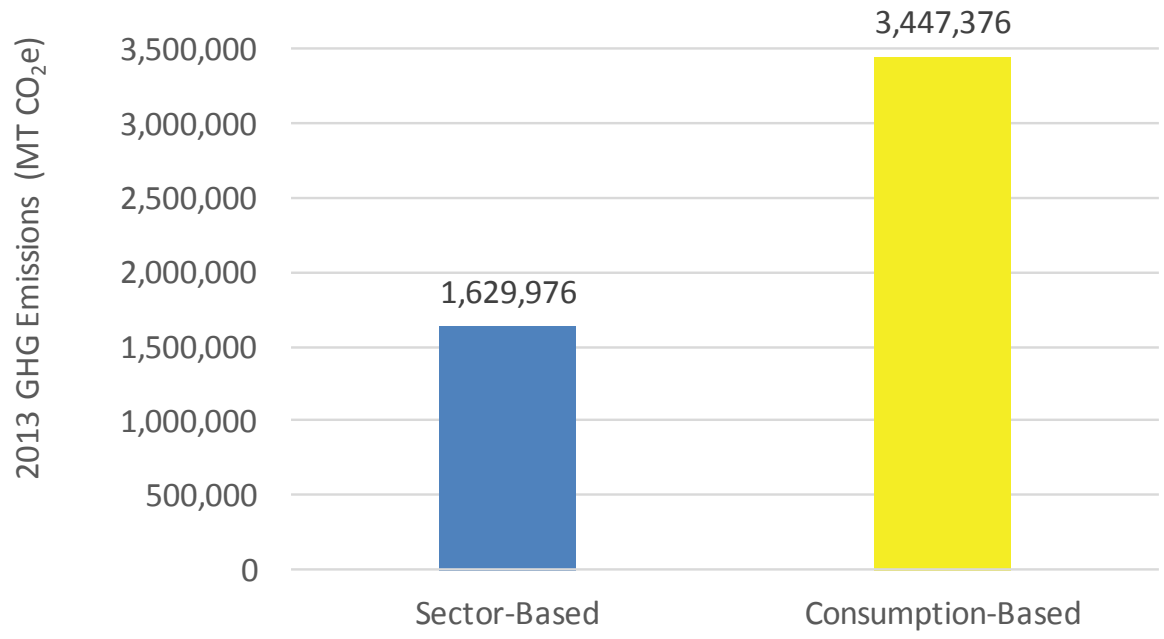
INVENTORY APPROACH

This inventory documents the community of Eugene, Oregon's greenhouse gas emissions (GHGs) for calendar years 2010 through 2015. Inventory results are presented using two types of inventory methodologies – Sector-Based and Consumption-Based.

- ***Sector-based emissions inventories*** (or in-geographic boundary inventories) include local emissions from energy use by homes, businesses, and vehicles as well as emissions from landfilling solid waste and wastewater treatment.
- ***Consumption-based emissions inventories*** include local, sector-based emissions, but also include emissions that are generated during production and delivery of imported goods, energy and food consumed within the Eugene community, and exclude sector based emissions from local production that are exported.

These two inventory types together offer a more comprehensive view of the Eugene community's GHG emissions. The community has greater control over sector-based emissions sources, as well as better data, which is why this accounting methodology is most often used to set emissions mitigation goals. Consumption-based emissions from the production of imported goods, food, energy, and services are more difficult to measure and track, but when accounted for make up a significant portion of the community's emissions. Figure 1 compares community emissions using sector-based and consumption based GHG accounting methodologies.

Figure 1: Comparison of 2013 Sector-Based and Consumption-Based Community Emissions.



SECTOR-BASED (IN-BOUNDARY) INVENTORY

Eugene's sector-based emissions inventory (SBEI) totaled **1.59 million metric tons** of carbon dioxide equivalent (MT CO_2e)[1] for calendar year 2015. These 2015 emissions are summarized on Figure 2 by sector. Emissions from the residential, commercial, and industrial (RCI) sectors are dominated by electricity and natural gas energy use. A small portion of RC emissions are the result of fugitive loss of refrigerant gases from cooling equipment. Transportation emissions are primarily from the combustion of gasoline (E10) and diesel (B5) fuels in local, on-road passenger and freight vehicles as well as off-road equipment.[2] Landfilled solid waste disposal and wastewater treatment emissions make up the remaining sources.

Figure 2: Eugene 2015 emissions by sector.

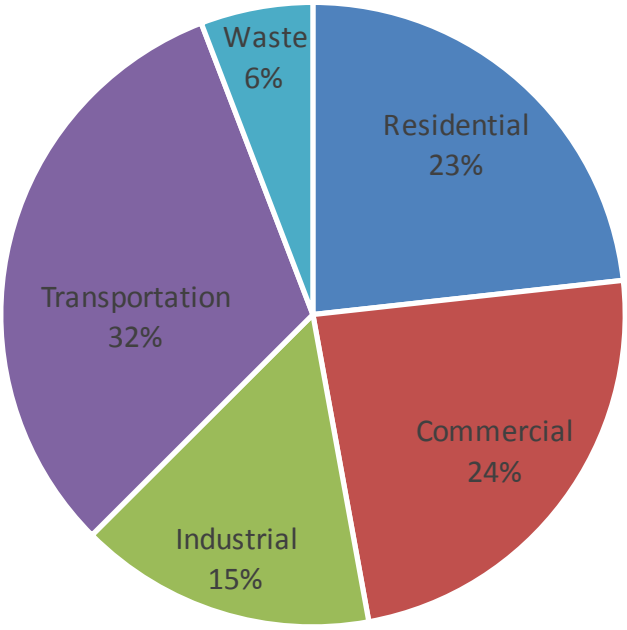


Figure 3 (on the next page) details Eugene's Sector-Based emissions for the period between 2010 and 2015., showing a -14% reduction in that period. Eugene's per capita emissions declined by -19% as population increased by 4.6%. During this period, total natural gas use and the associated emissions declined by about -2.6%. The residential sector led the reduction, which is attributed to relatively warm winters over the last two years.

Electricity use (kilowatt-hours consumed) declined by 4.7% between 2010 and 2015. This reduction is also attributed to warmer winters over the last two years. In addition to a reduction in community electricity use, the carbon intensity of the electricity used by our community also decreased by almost -21% due to greater electricity production from hydroelectric and wind generation resources on our regional electricity grid. (See page 5 for further discussion of electricity-related emissions.)

Use of transportation fuels and the associated emissions have decreased between 2010 and 2015. Gasoline emissions have decreased by about -8%, while diesel emissions have decreased by about -2%. Solid waste emissions, as reported by Lane County for Short Mountain Landfill, increased by 14% over the time period.

[1] Metric tons of carbon dioxide equivalent (MT CO_2e) is the international standard unit for measurement and reporting of greenhouse gas emissions.

[2] Oregon's Renewable Fuel Standard requires that all motor gasoline (with limited exceptions) is E10 (10% ethanol and 90% gasoline). Diesel fuel is required to be B5 (5% biodiesel and 95% diesel).

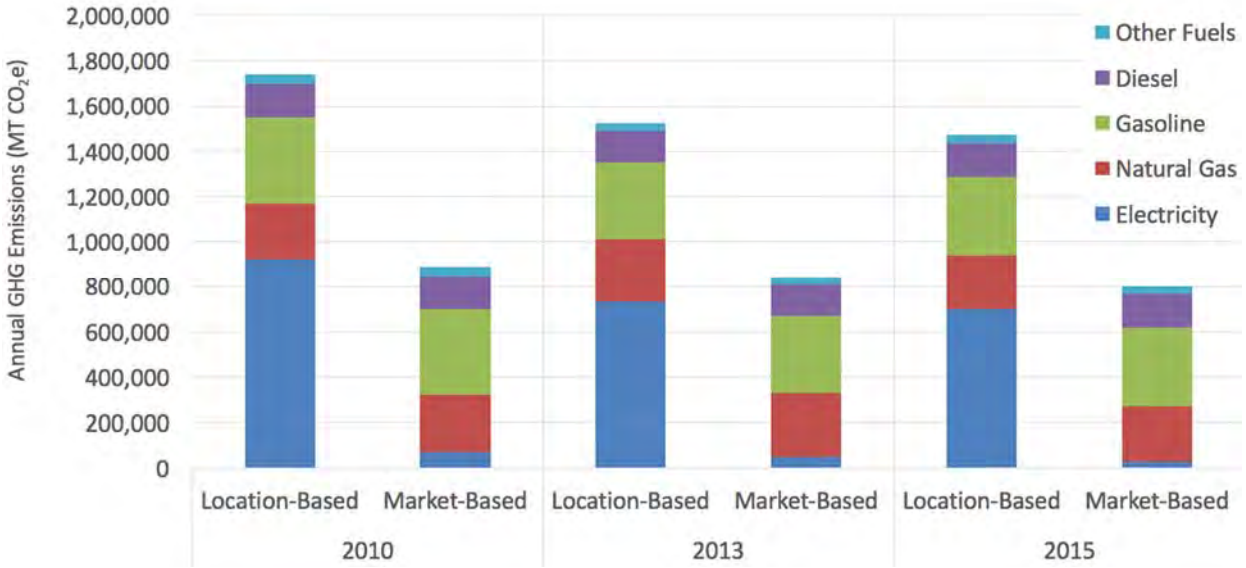
Figure 3: Detailed summary Eugene's 2010 – 2015 GHG sector-based emissions by sector and energy type. *Note - This table includes emissions using two accounting methods for electricity – Location-based and Market-based. These two methods are described in more detail on the following page. The Sector sub-totals (light blue highlighted rows) include location-based emissions for electricity.*

Total Emissions (MT CO2e / year)	2010	2011	2012	2013	2014	2015	Change since 2010
Residential	**465,375**	**485,023**	**385,764**	**402,095**	**377,561**	**362,041**	**-22%**
Electricity (Location-Based)	367,984	381,316	285,929	297,644	279,024	271,079	-26%
Electricity (Market-Based)	*28,736*	*14,888*	*12,245*	*20,591*	*12,869*	*11,609*	*-60%*
Natural Gas	70,766	76,436	74,735	78,713	73,192	65,617	-7%
Other Fuels	14,406	14,848	12,066	12,704	12,311	12,311	-15%
Refrigerant Loss	12,219	12,423	13,034	13,034	13,034	13,034	7%
Commercial & Industrial	**772,057**	**771,818**	**661,533**	**668,344**	**662,973**	**643,006**	**-17%**
Electricity (Location-Based)	553,970	546,276	435,045	433,446	427,547	428,631	-23%
Electricity (Market-Based)	*43,259*	*21,329*	*18,631*	*29,986*	*19,896*	*18,356*	*-58%*
Natural Gas	178,255	185,538	190,444	201,296	197,907	176,856	-1%
Other Fuels	27,613	27,581	23,010	20,568	24,485	24,485	-11%
Refrigerant Loss	12,219	12,423	13,034	13,034	13,034	13,034	7%
Transportation	**527,170**	**511,405**	**490,492**	**478,854**	**488,914**	**492,829**	**-7%**
Gasoline (E10)	377,602	360,313	349,540	340,019	343,787	346,540	-8%
Diesel (B5)	149,568	151,092	140,952	138,835	145,127	146,289	-2%
Waste	**82,381**	**78,168**	**86,953**	**80,684**	**84,894**	**93,565**	**14%**
Landfilled Solid Waste	80,030	75,817	84,251	77,982	82,192	90,863	14%
Wastewater Treatment Process	2,351	2,351	2,702	2,702	2,702	2,702	15%
Total Emissions (Location-Based)	**1,846,983**	**1,846,414**	**1,624,741**	**1,629,976**	**1,614,341**	**1,591,440**	**-14%**
Total Emissions (Market-Based)	**997,024**	**955,040**	**934,643**	**949,463**	**940,535**	**921,696**	**-8%**
Per Capita Emissions (Location-Based)	**11.8**	**11.8**	**10.3**	**10.2**	**10.1**	**9.7**	**-18%**
Per Capita Emissions (Market-Based)	**6.4**	**6.1**	**5.9**	**6.0**	**5.9**	**5.6**	**-12%**

Figure 3 accounts for electricity emissions using two methods – Location-Based and Market-Based[3] - based on Greenhouse Gas Protocol's *Scope 2 Guidance*. The *Global Community GHG Protocol* requires users to report using the location-based method, which uses an average emissions factor for the Northwest's regional electricity grid to calculate emissions (i.e. Northwest Power Pool). The Guidance suggests conducting a sensitivity analysis using the market- based method. This accounting method uses EWEB's utility-specific carbon intensity[4], based on its owned and contracted generation resources, to calculate emissions. Eugene's market-based emissions are about 18 times less carbon intensive than the regional average. This is because EWEB, as a public utility, predominantly contracts with Bonneville Power Administration (BPA) who's generation supply is largely from low-carbon, hydroelectric and nuclear resources and EWEB's owned, low-carbon resources which include hydro and wind.

Figure 4 presents Eugene's energy-related emissions, by energy type, including both the location-based and market-based electricity-accounting methodologies. This graphic highlights the significance of the electric accounting methodology used when presenting results. Scope 2 protocol guidance describes the Location-based method as a representation of the average GHG impacts associated with electricity use within a defined geographic territory and time period. While the Market-based method represents electricity that has been purposefully chosen via the GHG impacts associated with EWEB's electricity supply contracts that serve the community. Both methods are useful for different purposes; together, they provide a fuller documentation and assessment of risks, opportunities, and changes to emissions from electricity supply over time. See Greenhouse Gas Protocol's *Scope 2 Guidance* for details.

Figure 4: Comparison community emissions, by fuel type, using location- and market-based electricity accounting methodologies.



CONSUMPTION-BASED INVENTORY

In 2013, the City of Eugene, working with the Oregon Department of Environmental Quality, completed a consumption based inventory (CBEI), that estimated an emissions total of 3.45 million MT CO_2e.

[3] For details about these two accounting methodologies see Greenhouse Gas Protocol's Scope 2 Guidance.
[4] Utility-specific factors are provided by Oregon Department of Environmental Quality (ODEQ) based on EWEB regulatory reporting.

Emission sources found to be significant in the sector-based inventory are also significant in the consumption-based inventory, such as building and vehicle energy use. Many of these emissions are shown on Figure 5 in the Product Use column. Figure 5 also shows the significance of emissions generated outside of Eugene during production of goods, food, energy and services in the Production column. As in the sector-based inventory, waste disposal represents a relatively small fraction of the community's emissions.

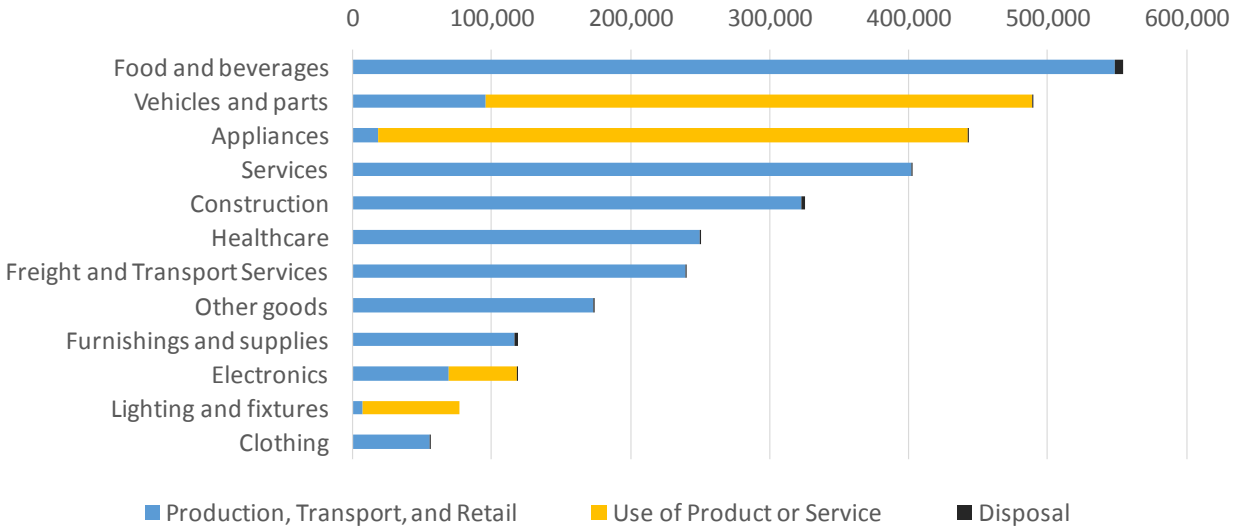
Figure 5: Summary of the Eugene's community's 2013 consumption-based emissions.

Category	Production, Transportation, and Retail	Product Use	Disposal	Total Emissions	Per-Capita Emissions	Percent of Total
Food and beverages	547,984	-	6,304	**554,288**	**3.5**	**16%**
Vehicles and parts	96,107	392,547	84	**488,738**	**3.1**	**14%**
Appliances	18,349	423,810	5	**442,163**	**2.8**	**13%**
Services	401,993	-	568	**402,561**	**2.5**	**12%**
Construction	322,772	-	2,728	**325,500**	**2.0**	**9%**
Healthcare	250,006	-	92	**250,098**	**1.6**	**7%**
Freight and Tranport Services	238,985	-	5	**238,990**	**1.5**	**7%**
Other manufactured goods	173,102	-	53	**173,155**	**1.1**	**5%**
Furnishings and supplies	116,615	-	2,747	**119,362**	**0.7**	**3%**
Electronics	69,330	48,898	44	**118,271**	**0.7**	**3%**
Retailers	134,807	-	-	**134,807**	**0.8**	**4%**
Lighting and fixtures	6,776	69,940	-	**76,716**	**0.5**	**2%**
Clothing	55,097	-	94	**55,191**	**0.3**	**2%**
Other	54,574	-	8	**54,581**	**0.3**	**2%**
Water and wastewater	12,948	-	6	**12,954**	**0.1**	**0%**
Total Emissions	**2,499,445**	**935,195**	**12,736**	**3,447,376**	**21.7**	**100%**
Per-Capita Emissions	**15.7**	**5.9**	**0.1**	**21.7**		
Percent of Total	**73%**	**27%**	**0.4%**	**100%**		

Production of food and beverages, vehicles, construction materials, air travel services, furnishings, electronics, and clothing are all significant consumption categories for the community. Figure 6 (on the next page) summarizes select categories from Figure 5 in graphic form to show the scale of emissions by lifecycle stage for select consumption categories.

Figure 6 highlights the need to develop and implement GHG mitigation strategies differently depending on the category of consumption. For example, selecting food types, based on the carbon intensity of production would be an effective strategy to reduce this large source of community emissions. Whereas for vehicles, the majority of emissions are generated during use so climate action strategies should focus on selecting vehicles for efficiency and that utilize low-carbon fuels.

Figure 6: Lifecycle emissions, split by lifecycle stage, for select consumption categories.



INVENTORY METHODOLGY

The Eugene **sector-based inventory** follows ICLEI's U.S. Community Protocol for Accounting and Reporting Greenhouse Gas Emissions in combination with the more recent Global Protocol for Community-Scale Greenhouse Gas Emissions Inventories and Scope 2 Guidance by World Resource Institute and ICLEI. Electricity-related emissions accounting guidance is provided by Greenhouse Gas Protocol's *Scope 2 Guidance*. ICLEI'S web-based *ClearPath* Community-Scale Emissions Management Software was used to calculate all greenhouse gas (GHG) emissions for the Eugene's Community Inventories, 2010 - 2015. Data and calculation files are cataloged in a corresponding audit trail comprised organized by inventory year.

The Eugene **consumption-based inventory** incorporates Eugene's sector-based emissions into a consumption-based emissions inventory model that was developed by Stockholm Environment Institute for Oregon Department of Environmental Quality (ODEQ) to support completion of the State of Oregon's 2005 Consumption-Based Inventory. ODEQ staff used the 2010 version of the Oregon model to estimate the Eugene community's 2013 consumption-based emissions.

All community GHG emissions presented in this report are represented in metric tons of carbon dioxide equivalent (MT CO2e). Quantities of individual GHGs are accounted for in the ICLEI's *ClearPath* carbon calculator and include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), CFCs, PFCs, and sulfur hexafluoride (SF6) per the Kyoto Protocol. All GHG calculations use the global warming potentials (GWP) as defined in the International Panel on Climate Change's 5th Assessment Report (IPCC AR5).

ATTACHMENT D

Mayor's Climate Recovery Ordinance Ad Hoc Work Group Members

In 2016, the Mayor's CRO Ad Hoc Work Group was initiated by Mayor Piercy with Councilor Zelenka as chair. In spring 2017, the Ad Hoc Work Group started meeting with the focus of evaluating CRO communications, a process to update the CEAP, and potential community individual action/behavior change programs. The Ad Hoc Work Group Members included:

1. Mayor Lucy Vinis
2. Councilor Alan Zelenka
3. Councilor Greg Evans
4. Councilor Chris Pryor
5. Brittany Quick-Warner
6. Corina McWilliams
7. Howard Saxion
8. Ingrid Kessler
9. Jim Neu
10. John Scholl
11. Jon Kloor
12. Joshua Skov
13. Kristie Hammitt
14. Kurt Corey
15. Mark Schoening
16. Matt McRae
17. Matthew Schroettnig
18. Rob Zako