



# WASTE AND MATERIALS MANAGEMENT WORKING GROUP

MEETING #1: OCTOBER 5, 3-5 PM



**Community Climate  
Action Plan**



## **City Council Resolution No. 3044**

### **CITY OPERATIONS**

Strategic Energy Management Plan to:

- Become carbon neutral by 2030
- Reduce fossil fuel use for City facilities and operations by
  - 40% by 2030
  - 70% by 2050

### **COMMUNITY WIDE**

Community Climate Action Plan to:

- Reduce fossil fuel use community wide by
  - 40% by 2030
  - 70% by 2050

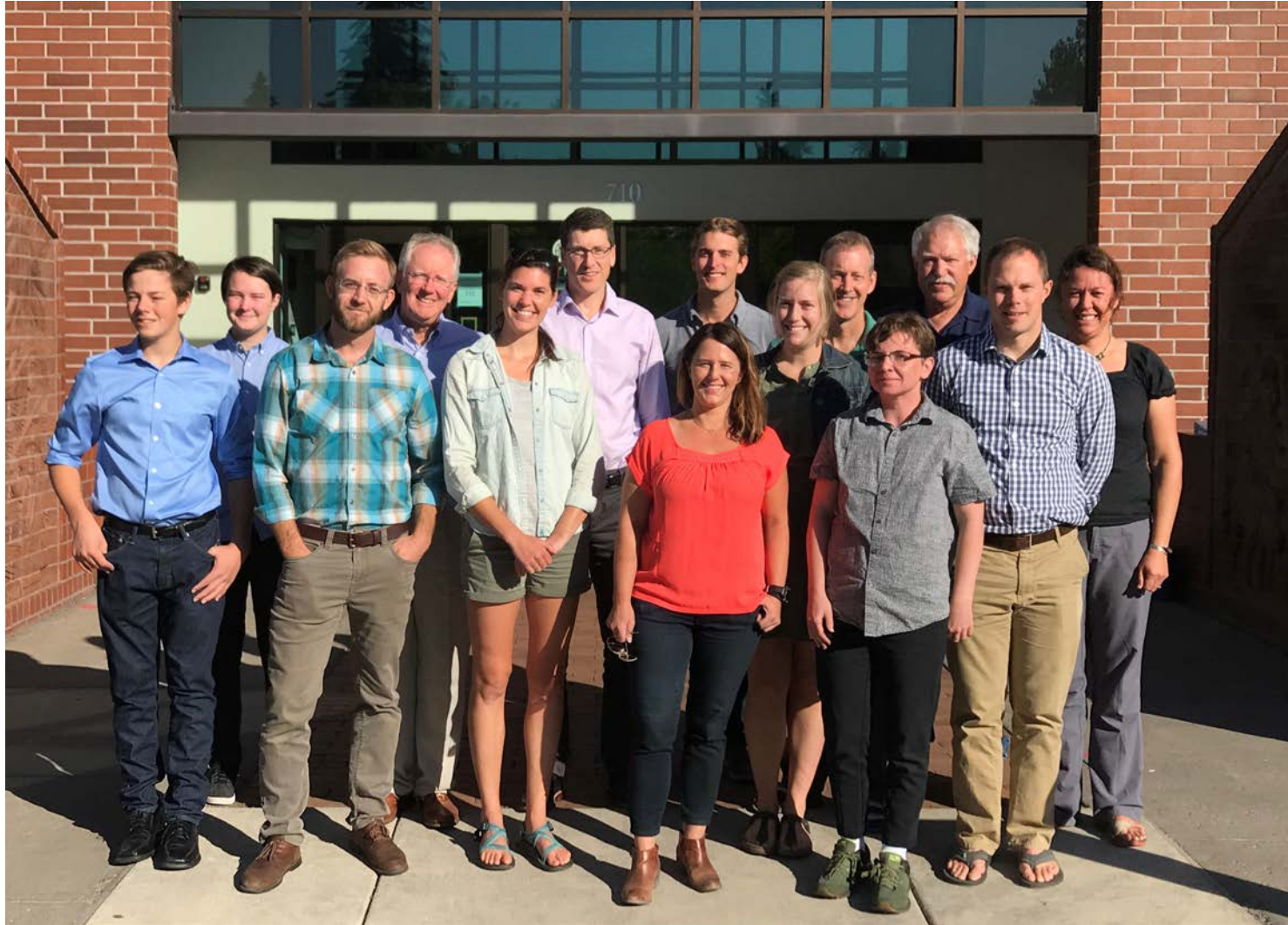
## **City Council Resolution No. 3099**

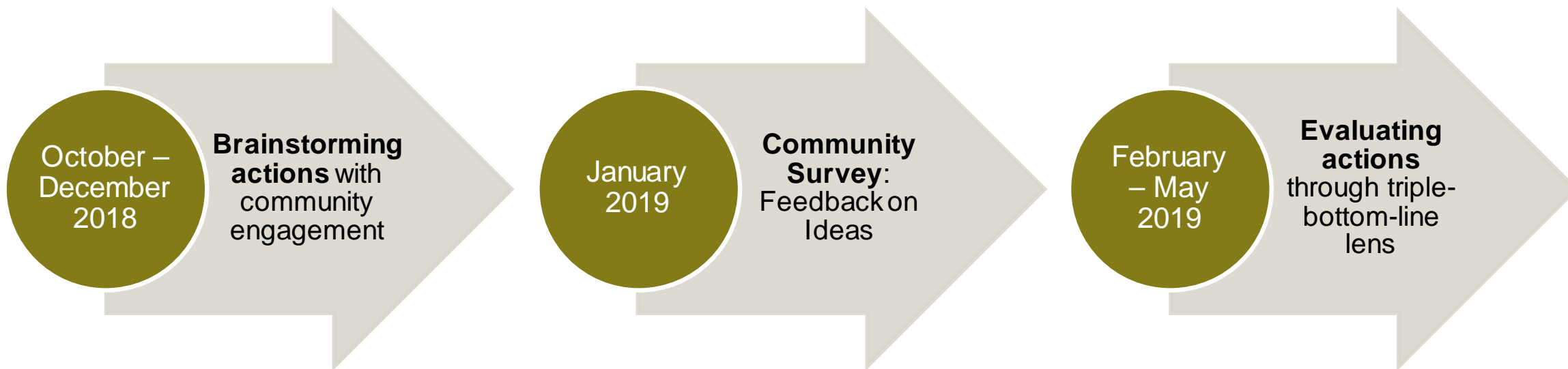
- Established Climate Action Steering Committee (CASC) to create Community Climate Action Plan (C-CAP)



Community Climate  
Action Plan

# CLIMATE ACTION STEERING COMMITTEE





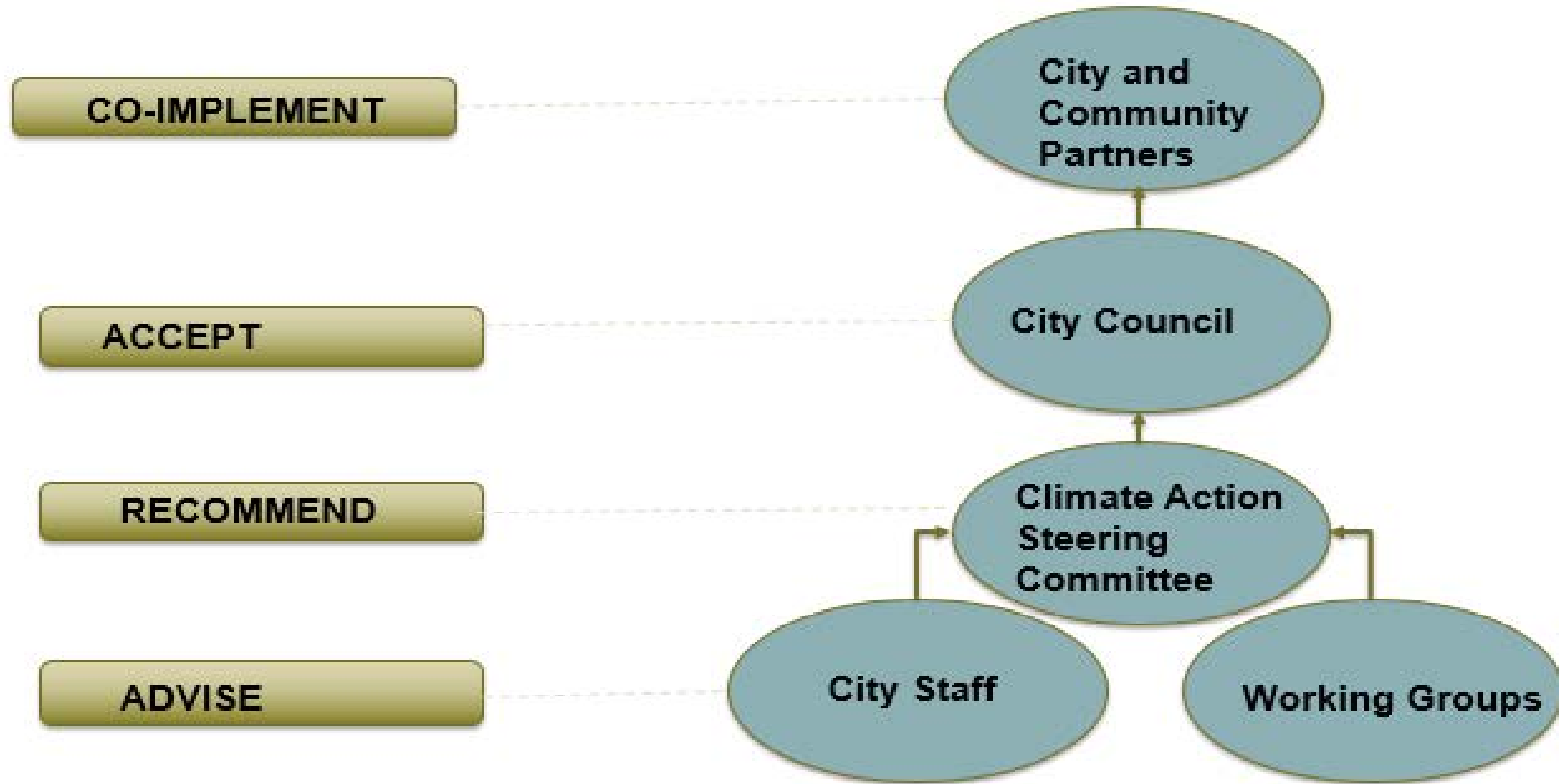




## Sector Working Groups

- Led by Climate Action Steering Committee members
- Direct input on barriers, objectives, and equity considerations
- *Brainstorm and create* list of potential climate actions

***Working Groups advise the Climate Action Steering Committee***

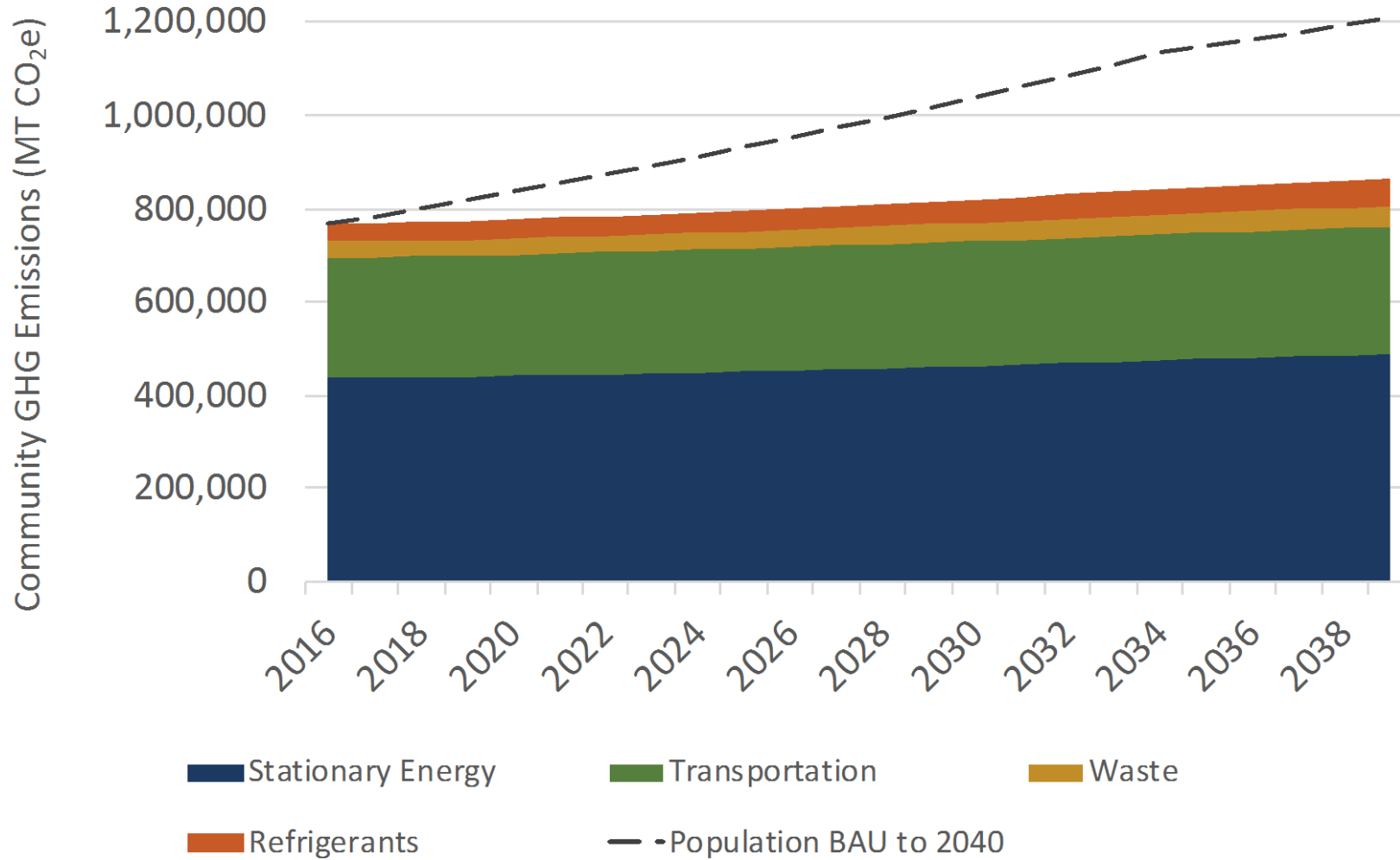


# **BEND COMMUNITY GHG INVENTORY & WASTE AND MATERIALS MANAGEMENT**



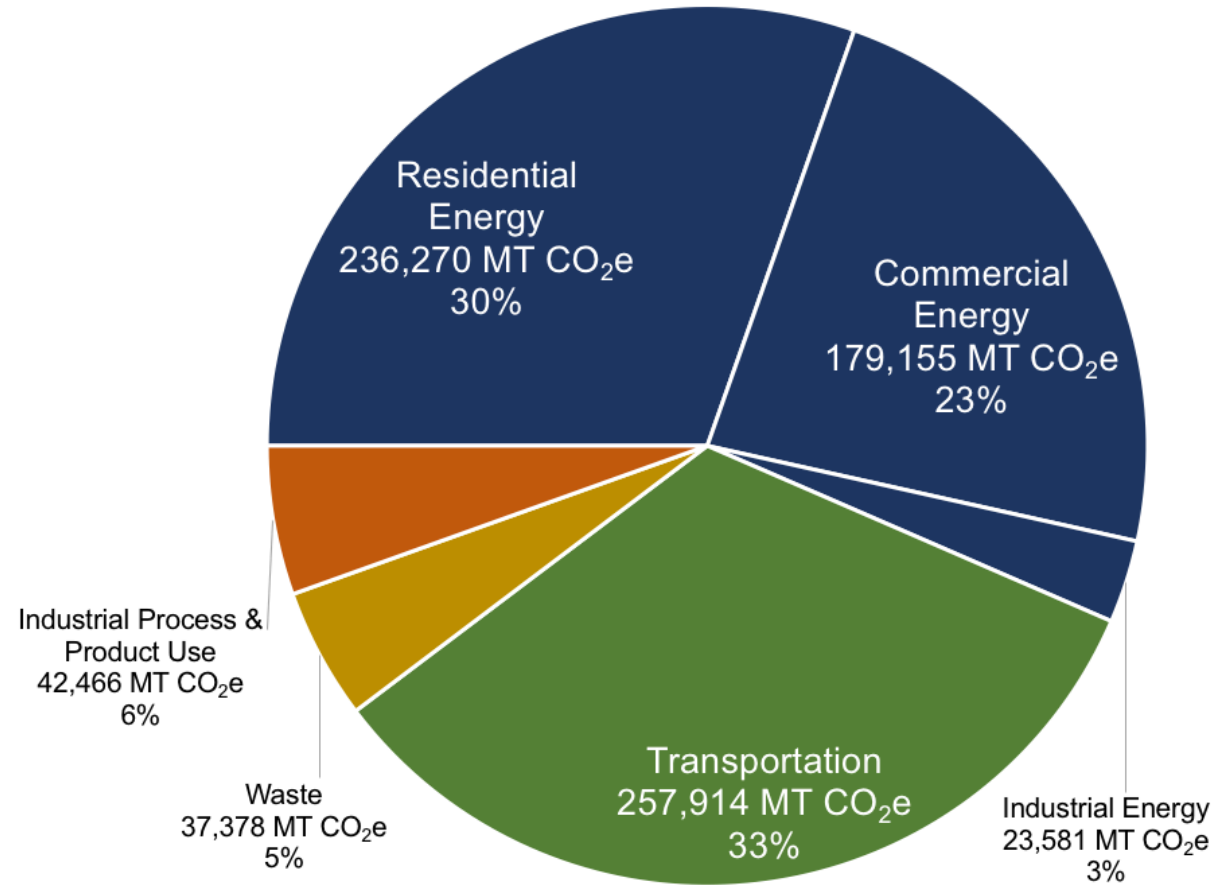


## Business As Usual Emissions Forecast





Bend Sector-Based Greenhouse Gas Emissions  
776,765 MT CO<sub>2</sub>e  
9.3 MT CO<sub>2</sub>e per capita





## RELEVANT SOURCES OF EMISSIONS

### WASTE

Disposal in landfills and wastewater treatment produces methane, most of which is collected and used for energy, but a fraction leaks out to the atmosphere, having a negative climate impact

### HOUSEHOLD CONSUMPTION

Emissions that are generated outside of the community during the production of goods, foods, energy and services that are consumed by residents of Bend. These emissions are large in scale but are more difficult to accurately measure over time compared to other sources of emissions included in the inventory.



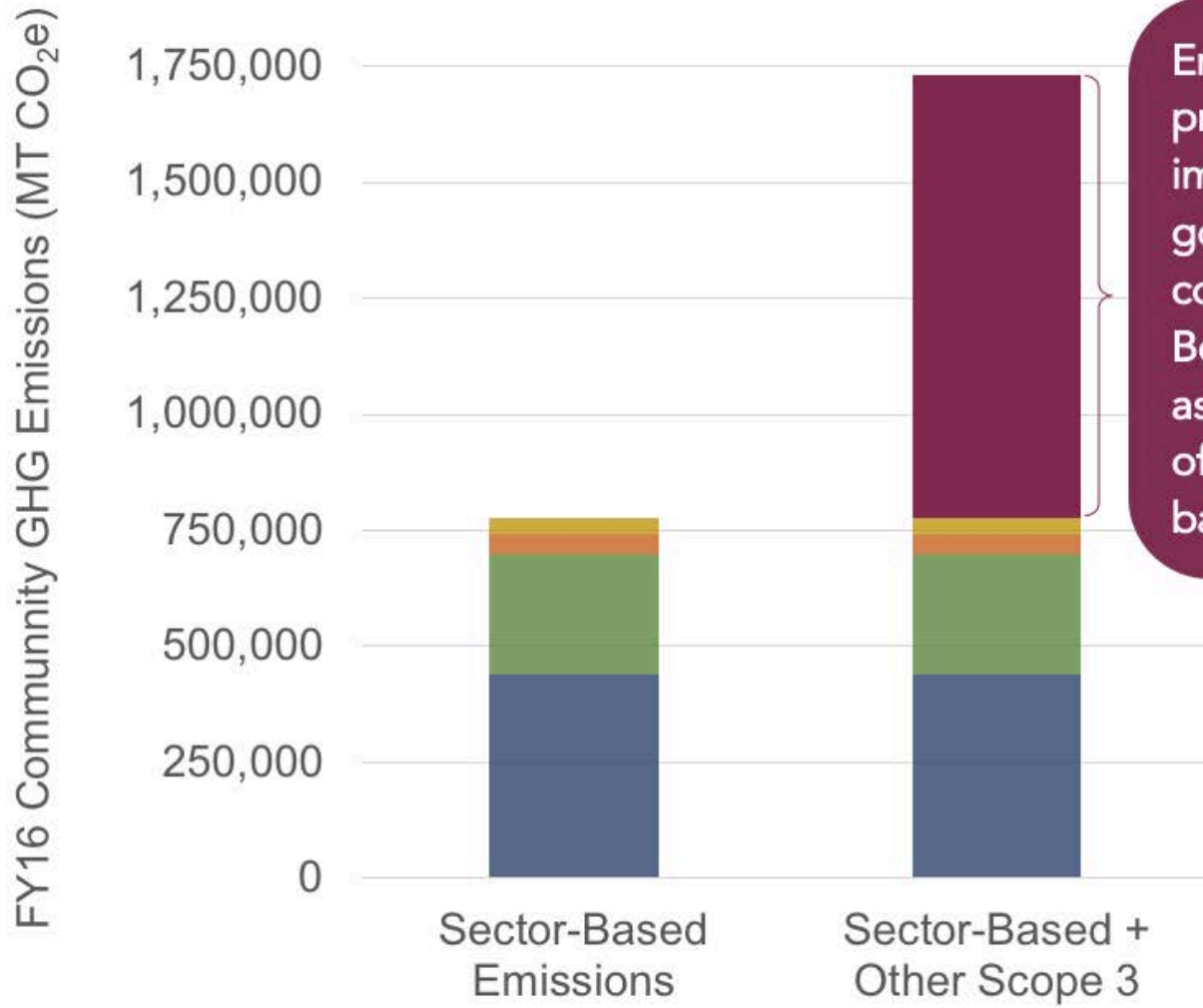
## HOUSEHOLD CONSUMPTION

**Household goods:** Emissions from extraction, manufacture, and transportation of raw materials into final products such as construction, automobile, furniture, clothing, and other goods.

**Household food:** Emissions from agricultural (energy for irrigation, production of fertilizers, methane emissions from livestock, etc.), transportation of raw materials and other finished products emissions/



# Community Climate Action Plan



Emissions from the production of imported food, goods, and energy consumed by the Bend community are as large as sources of local, sector-based emissions.

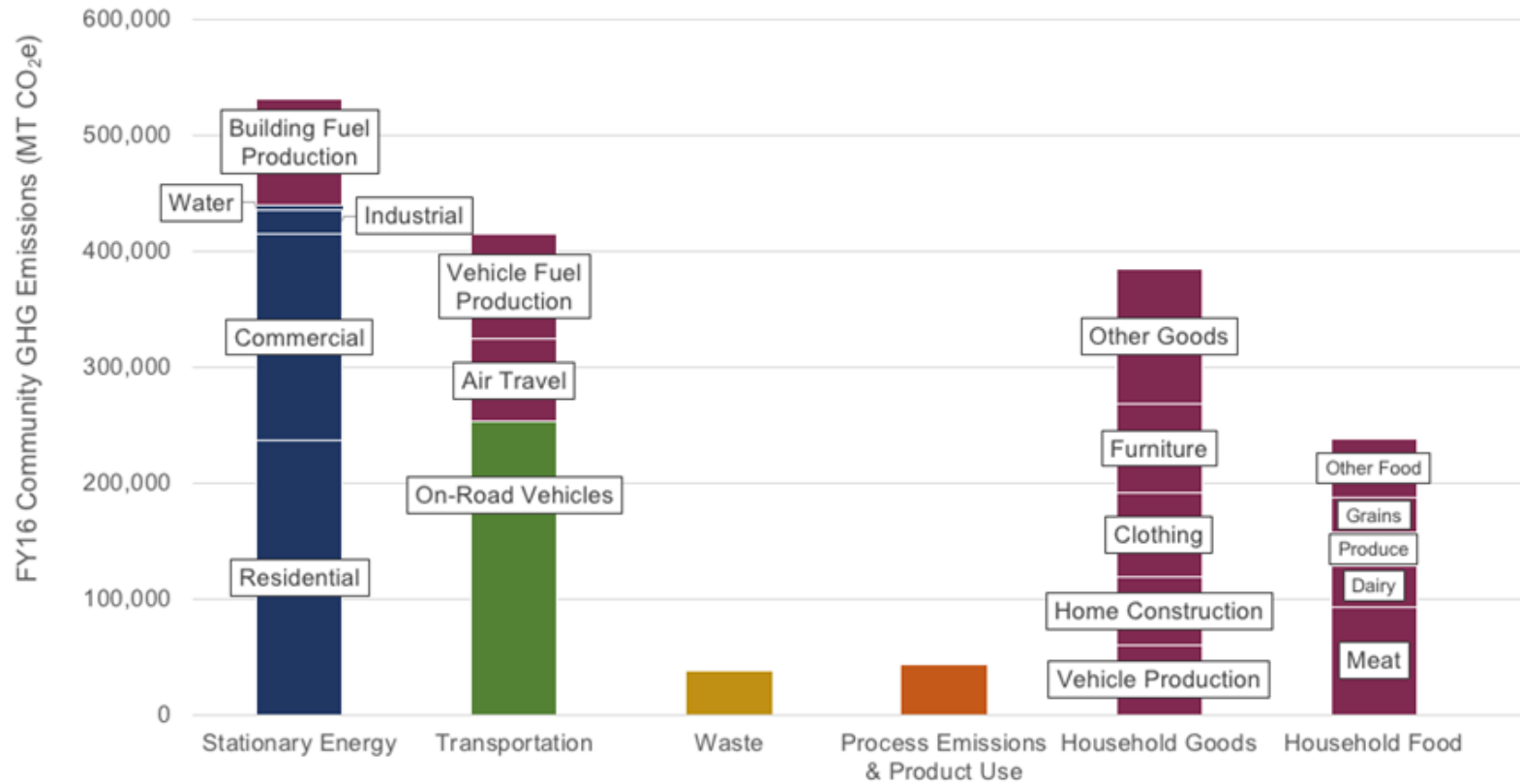
**\*Emissions from household consumption = 871,543 MT CO<sub>2</sub>e**



**Bend Sector-Based Greenhouse Gas Emissions**  
with *Household Consumption and Community Fuel Production*

809,352 MT CO<sub>2</sub>e Sector-Based\*

871,543 MT CO<sub>2</sub>e Household Consumption and Community Fuel Production (magenta)



**Figure 4:** Detailed summary of sector-based emissions and comparison to emissions from household consumption and fuel production.

*Note\* Figure 3 presents location-based emissions for electricity. Market-based emissions details are included in Figure 5 and Figure 7*

*Note2: Other Goods include electronics, toys, personal care products, cleaning products, printed reading materials, paper, office supplies, and medical supplies.*



1. ODEQ Materials Management Program – Elaine Blatt, DEQ
2. Local Waste System and SWMP Update – Timm Schimke, Deschutes County
3. Current and future waste programs – Brad Bailey, Bend Garbage
4. Current education programs – Denise Rowcroft, The Environmental Center

# MATERIALS MANAGEMENT IN OREGON

## AN OVERVIEW OF DEQ WORK



**Elaine Blatt**  
**Bend C-CAP**  
**Materials Management Working Group**  
**Bend, OR**  
**October 9, 2018**

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# WHY MATERIALS MATTER

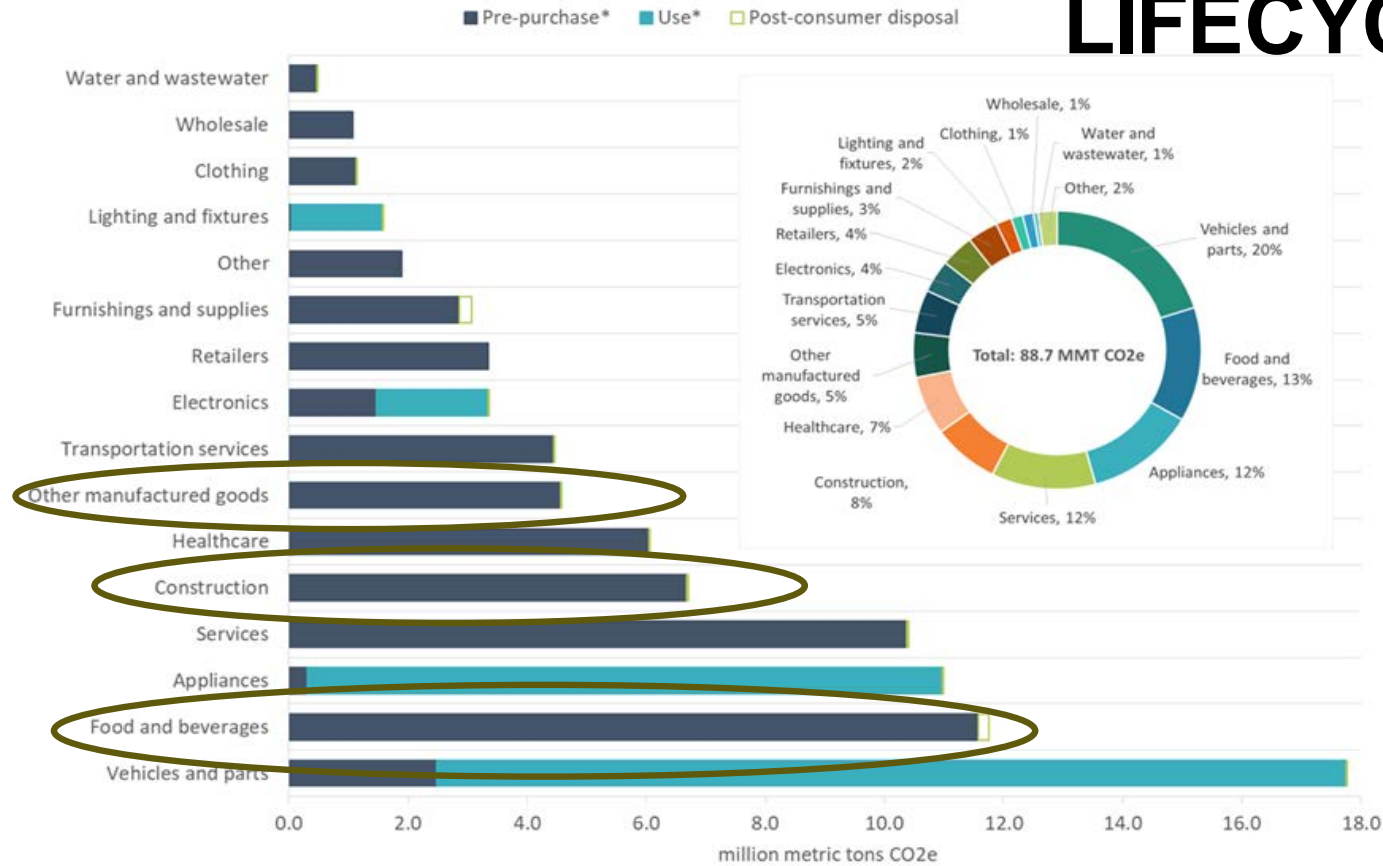


# SUSTAINABLE MATERIALS MANAGEMENT: A “LIFE CYCLE” VIEW OF IMPACTS AND ACTIONS



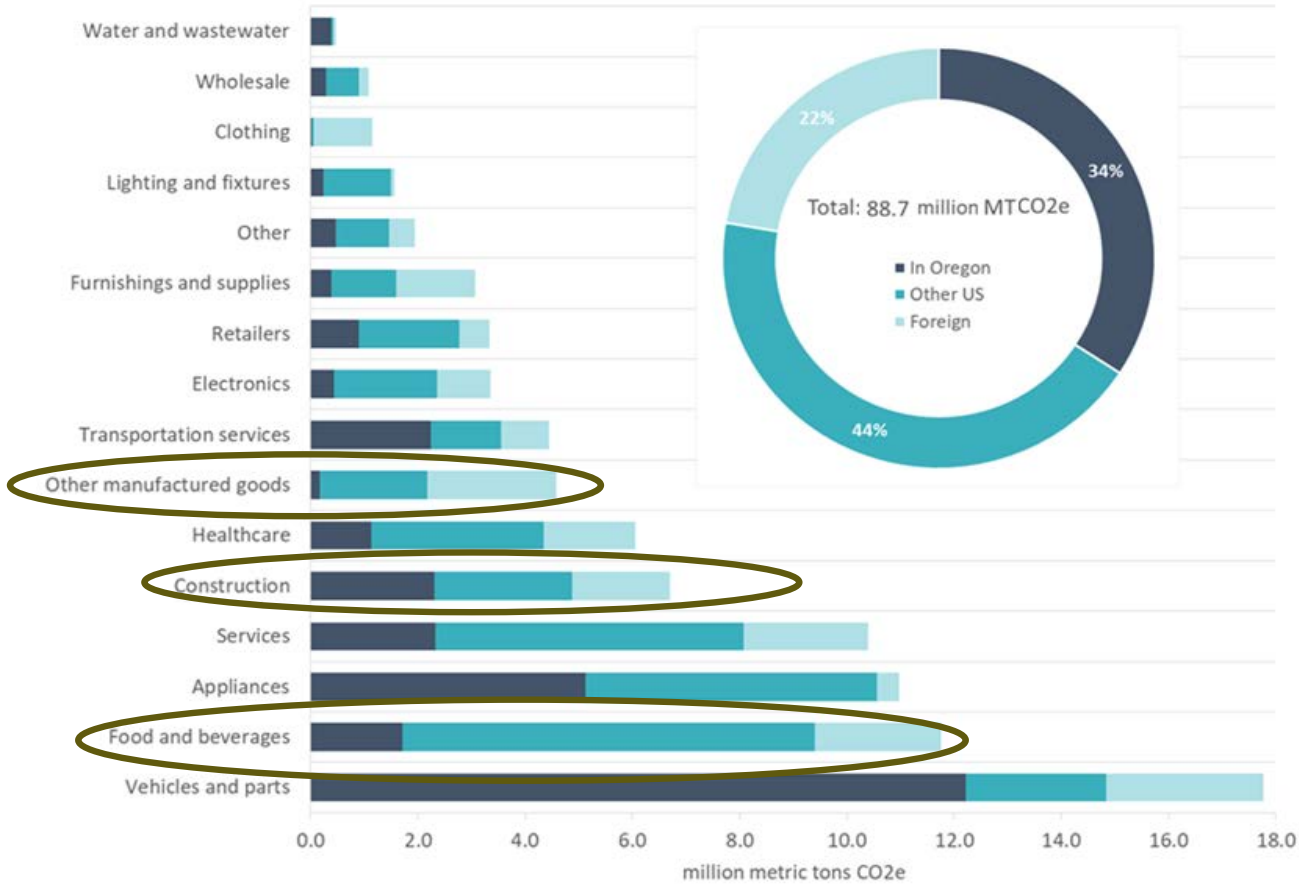


# 2015 OREGON GHGS EMISSIONS BY CATEGORY + LIFECYCLE STAGE



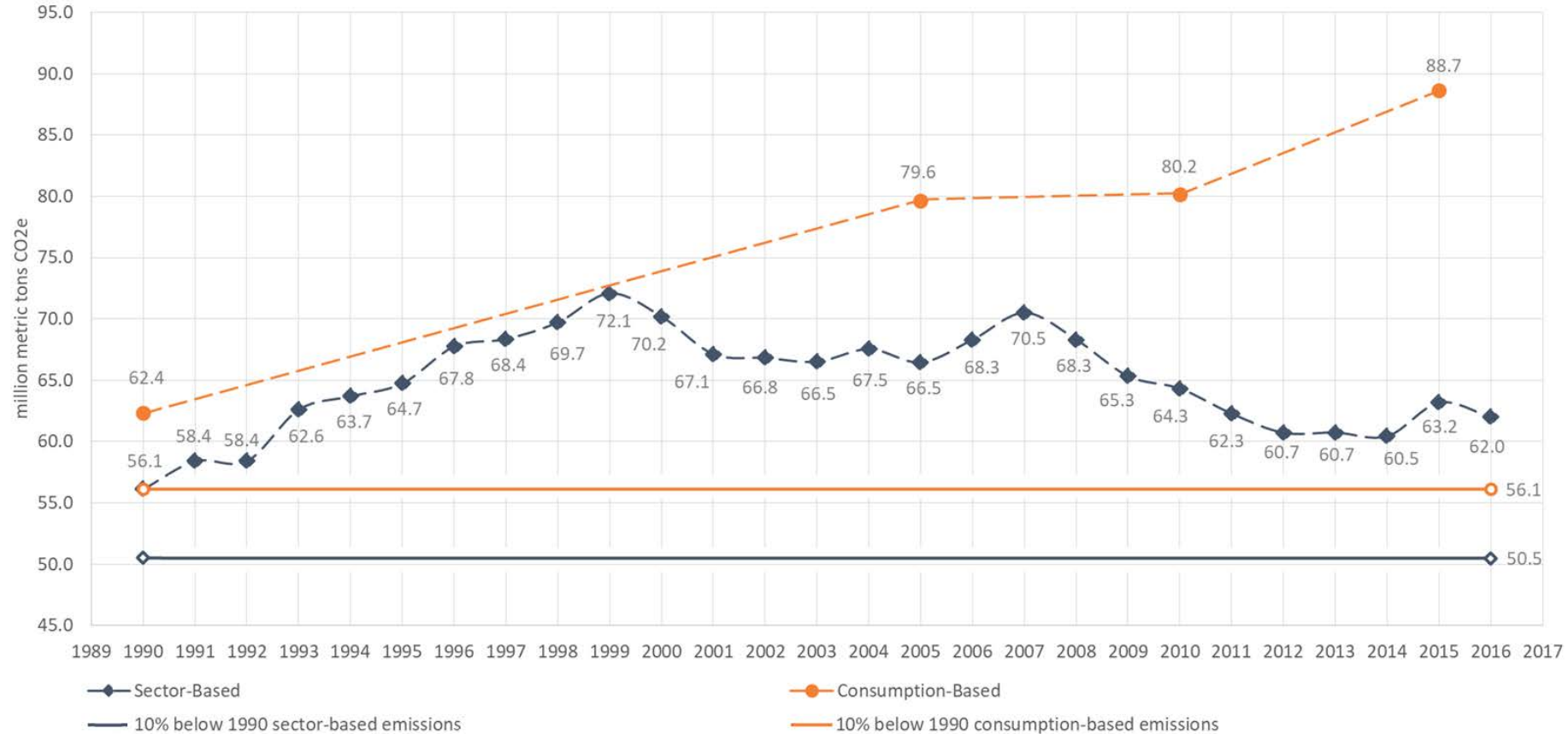
\* "Pre-purchase" are all emissions that occur prior to final purchase, including production, supply chain, transport, retail and wholesale. "Use" refers to emissions resulting from the use of vehicles, appliances, electronics and lighting. Other categories (e.g., food and clothing) have use phase emissions that are accounted for elsewhere. For example, emissions from cooking and laundering are both assigned to the category of "appliances", which include ranges and clothes dryers.

# CONSUMPTION-BASED EMISSIONS BY LOCATION



2015 Oregon consumption-based greenhouse gas emissions, by location of emission

# TRENDS IN OREGON SECTOR-BASED AND CONSUMPTION-BASED GHG EMISSIONS, 1990 - 2016




# HOW MIGHT ONE REDUCE CONSUMPTION-BASED EMISSIONS? (FOCUSING ON MATERIALS)

- A few current examples from DEQ:
  - Preventing the wasting of food
  - Extending the lifespan of products (“Make Every Thread Count”)
  - Environmental product declarations for concrete
  - Reuse/repair
  - Recycling
- Local government toolkit under development this year by Carbon Neutral Cities Alliance (international)  
<http://carbonneutralcities.org/>

# PREVENTING THE WASTING OF FOOD

**Oregon DEQ Strategic Plan for Preventing the Wasting of Food**



**Materials Management**  
 700 NE Multnomah  
 Portland, OR 97232  
 Phone: 503-229-5696  
 800-452-4011  
 Fax: 503-229-6762  
 Contact: Elaine Blatt  
[www.oregon.gov/DEQ](http://www.oregon.gov/DEQ)

**DEQ**  
 State of Oregon  
 Department of  
 Environmental  
 Quality



**WASTED FOOD WASTED MONEY** Save money. Save resources. Be a leader.



**Join other Oregon businesses and be part of the solution to stop wasted food.**  
 Each year, an estimated 20 to 40 percent of all food produced or imported for consumption in the United States is never eaten. That's as much as 83 million tons of wasted food. Of that food, 40 percent is estimated to come from consumer-facing businesses—businesses like yours. And that wasted food means wasted money, by some estimates as much as \$27 billion annually for U.S. businesses.

**The good news is that reducing waste isn't hard and really pays off.**  
 Studies show that nearly all businesses that try to reduce their wasted food through wasted food measurement, employee training, and waste prevention practices experienced a positive return on investment. Over half of businesses studied had more than a 100% return on investment—a \$4 return on every dollar invested. It's as simple as joining other Oregon businesses in taking four simple steps.

**4 STEPS TO SAVE MONEY**

- Figure out where you are wasting food and how much that waste is costing you. Is it coming from storage, preparation or plate waste? Check out our simple measurement tools to get started and take the one-week measurement challenge.
- Engage staff to identify and make small shifts to how you do business. Changes in purchasing, storage, food preparation, labeling, inventory management, or manufacturing practices can save money and waste less food.
- Once you know where your waste is coming from, find the strategies that are right for you. The best strategy for one business may be a completely different strategy for another. Make the changes that work for you.
- Document your progress by tracking purchasing and waste so you can see how much you saved. Use it for inventory management.

[www.wasteless.com](http://www.wasteless.com)

**BY SAVING MONEY, YOU'RE SOLVING A LARGER PROBLEM.**  
 While reducing wasted food will improve your bottom line, small shifts in your business can lead to big changes in addressing the significant environmental, economic and social problem that affects Oregonians and generations to come.

**Know the Facts**

- In the U.S., nearly \$278 billion—close to Oregon's entire GDP—is spent annually growing, processing and preparing food that is never eaten.
- One in six people living in Oregon is food insecure.
- Two percent of energy use in the U.S. is dedicated to growing, manufacturing, transporting, refrigerating, and cooking food that is never eaten, or enough electricity to power all of the homes in Oregon for the next 30 years.
- Nearly five percent of the fresh water supply in the U.S. is used to produce food that is never eaten.
- Food contributes to 15 percent of Oregon's consumption-based greenhouse gas emissions. Only our use of vehicles contribute more to Oregon's carbon footprint.

**DID YOU KNOW?**  
 The top cost of wasted food for a business is the cost of labor spent to get the food thrown away.  
 Reducing your carbon footprint is better than buying a new car.  
 Food waste is the largest source of methane gas in the U.S.  
 25% to 35% of all businesses are not measuring their waste.  
 45% of waste is not recycled.

**WASTED FOOD WASTED MONEY RESOURCE GUIDE**  
 The Oregon Department of Environmental Quality has created a resource guide to help you reduce food waste in your business. It includes information on how to measure food waste, how to reduce food waste, and how to track your progress. This guide is available for businesses of every size and industry.  
[www.deq.state.or.us](http://www.deq.state.or.us)

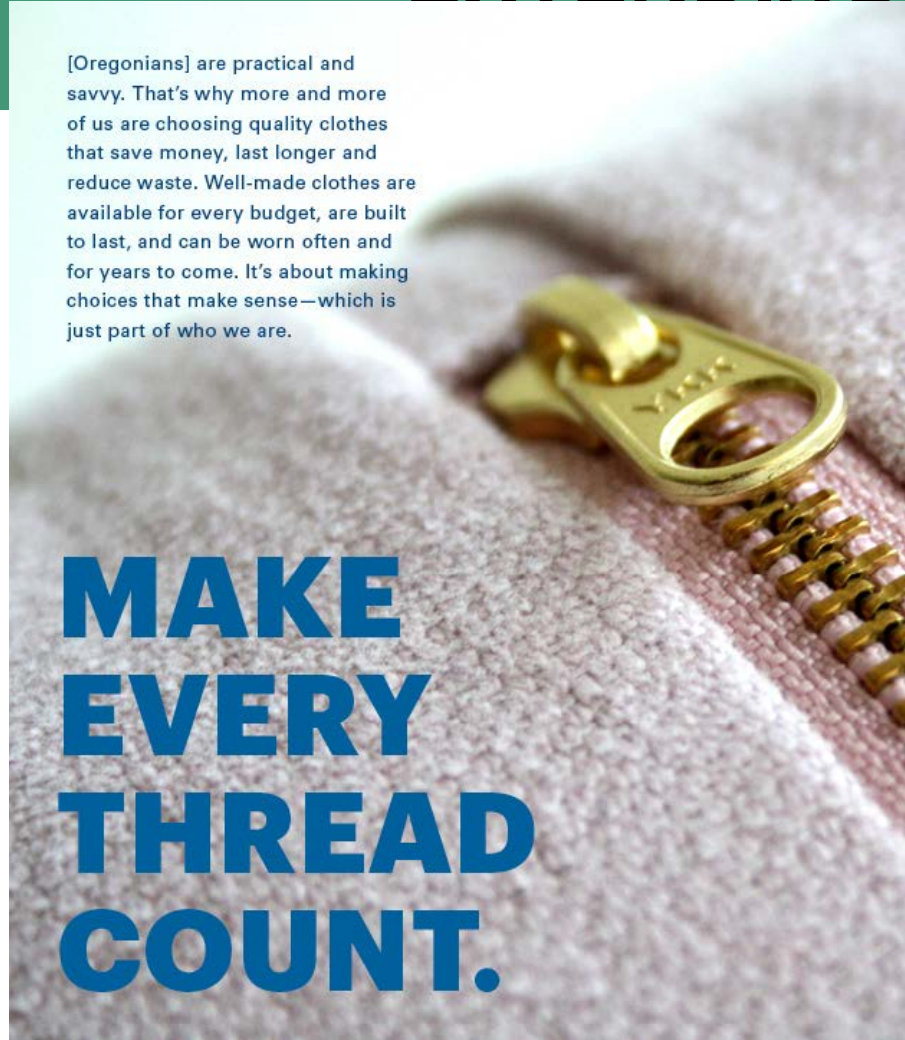
Join other Oregon businesses and be part of the solution to stop wasted food. Save money. Save resources. Be a leader.  
[Visit www.wasteless.com](http://www.wasteless.com) for more information.

<http://www.oregon.gov/deq/mm/Pages/foodwastestrategy.aspx>



# EXTENDING THE LIFESPAN OF PRODUCTS

[Oregonians] are practical and savvy. That's why more and more of us are choosing quality clothes that save money, last longer and reduce waste. Well-made clothes are available for every budget, are built to last, and can be worn often and for years to come. It's about making choices that make sense—which is just part of who we are.



## MAKE EVERY THREAD COUNT.

### HAGAMOS QUE CADA HILO CUENTE.

Los [Oregonians] somos prácticos e inteligentes. Es por eso que cada vez más estamos eligiendo ropa de calidad que dura más, reduce los desperdicios, y nos permite ahorrar dinero. La ropa de buena calidad está disponible para todos los tipos de presupuestos, está hecha para que dure. Se trata de hacer elecciones sensatas, algo que nos caracteriza como comunidad.

Visita [sitioweb.com](http://sitioweb.com)



- EXTEND THE LIFE OF YOUR CLOTHES**
  - USE PROPER CARE WHEN LAUNDRING
  - LOOK FOR QUALITY WHEN PURCHASING
  - WEAR CLOTHES THREE MONTHS LONGER
- WORLDWIDE CLOTHING PRODUCTION DOUBLED BETWEEN 2000 AND 2014**

By 2014, the number of garments exceeded 100 billion.
- LOW QUALITY CLOTHES DON'T LAST AS LONG AS THEY USED TO. THE LIFE OF CONSUMER PRODUCTS SHORTENED BY 50% FROM 1992 TO 2002.**
- THE AVERAGE CONSUMER BUYS 60% MORE CLOTHING PER YEAR THAN 15 YEARS AGO**

... and keeps it only half as long.
- 42% OF OREGONIANS SURVEYED END UP REGRETTING A CLOTHING PURCHASE**
- AMERICANS THROW AWAY OVER 32 BILLION POUNDS OF TEXTILES A YEAR.**
- 1,500 GALLONS OF WATER TO MANUFACTURE**
  - ONE T-SHIRT + ONE PAIR OF JEANS
  - That's how much water you will drink in 13 years!
- WHY WE GET RID OF CLOTHING IS PREVENTABLE**
  - RIPPED SEAM (7%)
  - DOESN'T FIT (6%)
  - HOLE IN FABRIC (3%)
  - POOR QUALITY (19%)
  - NO LONGER LIKE IT (33%)
- EXTENDING CLOTHING USE BY JUST THREE MONTHS CAN REDUCE CARBON, WATER AND WASTE FOOTPRINTS BY UP TO 10 PERCENT.**



# ENVIRONMENTAL PRODUCT DECLARATIONS FOR CONCRETE



## EPD "Nutrition" Label

### Your Building Product

Amount per Unit

LCA IMPACT MEASURES	TOTAL
Primary Energy (MJ)	12.4
Global Warming Potential (kg CO <sub>2</sub> eq)	0.96
Ozone Depletion (kg CFC- 11 eq)	1.80E-08
Acidification Potential (mol H <sup>+</sup> eq)	0.93
Eutrophication Potential (kg N <sup>-</sup> eq)	6.43E-04
Photo-Oxidant Creation Potential (kg O <sub>3</sub> eq)	0.121

Your Product's Ingredients: Listed Here

<http://www.ocapa.net/oregon-concrete-epds>

# REFUSE AND REPAIR





# OREGON'S MATERIAL RECOVERY SYSTEMS



**THANK YOU**



Elaine Blatt

Oregon DEQ

[blatt.elaine@deq.state.or.us](mailto:blatt.elaine@deq.state.or.us)

# **SOLID WASTE MANAGEMENT**

In

DESCHUTES COUNTY

# STATE LAW DESIGNATES LOCAL GOVERNMENTS AS THE RESPONSIBLE PARTY FOR PROPER MANAGEMENT OF SOLID WASTE IN THEIR BORDERS

- The Department of Environmental Quality (DEQ) is the regulating authority
  - Ensures compliance at permitted facilities
  - Ensures compliance with opportunity to recycle laws
- The County owns, operates, and holds the DEQ permits for all disposal facilities and administers franchised collection in unincorporated areas of the County.
- The City administers franchised collection within its borders
- State law dictates recycling requirements
  - County must provide collection of recyclables at all disposal sites.
  - Cities have a variety of requirements/options listed in state law for providing the opportunity to recycle in their city

# SOLID WASTE MANAGEMENT PLANNING

- It is critical that cities and the county work together to effectively manage solid waste.
- County has and will continue to make significant investments in disposal infrastructure and needs assurances that waste flows to those facilities in order to pay for them.
- There are agreements between the city and county directing waste to county approved facilities.
- Decisions that the city makes can have impacts on disposal facilities
- Consistency between the County and each City is important

# CURRENT PLAN DEVELOPMENT STATUS

- Knott landfill is expected to be full by 2029
- The need to determine future disposal triggered the planning effort
  - New landfill in County
  - Long haul to existing landfill
  - Conversion technology to extract energy from waste prior to landfilling
- Plan will look at entire system to insure all aspects are working together.



# PRIMARY GOAL OF THE SOLID WASTE MANAGEMENT PLAN

- “To work cooperatively with Cities and service providers to offer citizens and businesses an integrated solid waste management system that delivers quality and cost-effective services while achieving the best use of our resources and reducing waste disposed in landfills.”

## **PLAN RECOMMENDATIONS SO FAR**

1. Residential Yard Waste/Food waste
2. Commercial Food Waste
3. Upgrade organic waste processing facilities
4. Construction & Demolition Debris
5. Focus on Tourism
6. Multifamily Recycling
7. Expand education and promotion

# **LOCAL WASTE PROGRAMS BRAD BAILEY, BEND GARBAGE**



**RETHINK WASTE**

DESCHUTES COUNTY





**FIX IT SHARE IT**  
**BORROW IT REFILL IT**  
**OPT OUT OF IT**



# RECYCLE SMARTER, NOT MORE



RECYCLE : FACTS & FIGURES



## PLASTIC BAGS

DON'T BELONG IN THE RECYCLING BIN!

**Rethink about it!** Plastic bags require different processing than curbside recycling. Find out where you CAN recycle them and learn more about drop-off recycling on our website.

RethinkWasteProject.org  **RETHINKWASTE**

REDUCE : IDEAS & INSPIRATION

**40%** OF FOOD  
IN AMERICA  
IS WASTED



**Rethink about it!** Start thinking like a food waste warrior. Start planning your meals carefully, buy fewer groceries and learn how to revive would-be throwaways. Another tip? Consider your freezer your new BFF. Get your family in on the mission and watch habits start to change! Learn more on our website.



[RethinkWasteProject.org](http://RethinkWasteProject.org) **RETHINKWASTE**

REUSE : TIPS & TRICKS

**DARE TO  
REPAIR**



**Rethink about it!** Ripped backpack, busted lawn mower, flickering lamp? Resist the throwaway culture and feel good about becoming a fixer, a mender, a DIY repairer. Check out our website to learn more about rework-it-yourself tips or when you can plug into our next Repair Café.



[RethinkWasteProject.org](http://RethinkWasteProject.org) **RETHINKWASTE**

RECYCLE : FACTS & FIGURES

**10¢** REFUND



**Rethink about it!** It pays to recycle, especially since the can and bottle deposit in Oregon increased to 10¢ this year. Get the whole family in on it! You'll be doing something good for our community – and your pocketbook. Check out more recycling tips on our website.



[RethinkWasteProject.org](http://RethinkWasteProject.org) **RETHINKWASTE**

COMPOST : GARBAGE OR GARDEN

**JUST ADD  
WORMS**



**Rethink about it!** Nature is amazing, isn't it? To keep your compost working efficiently, give it a good stir every so often. Or better yet, add worms! Worm composting is great in our high desert climate, whether you compost indoors or in your backyard. Check out our website for more compost ideas.



[RethinkWasteProject.org](http://RethinkWasteProject.org) **RETHINKWASTE**





- REDUCE
- REUSE
- RECYCLE
- COMPOST
- HAZARDOUS WASTE



## FIND A RECYCLER OR REUSER

### GET STARTED

Not sure what to do with items that aren't collected curbside? Think before you throw anything away. Use the search boxes below to find local businesses that reuse and recycle a wide variety of stuff.

Batteries

- Select--
- Auto batteries
- Hearing aid batteries
- Household alkaline batteries
- Rechargeable batteries**
- Watch batteries

This database provides numer... County residents and businesses to reuse... inclusion does not constitute an endorsement of any kind, and we will attempt to keep all listings up to date. Ultimately, we advise contacting the listings to confirm current information.



A project of The Environmental Center



## Recycle Like Santa

### Here's how.

It's estimated that between Thanksgiving and New Year's Day, more than 1 million tons of additional waste is generated EACH WEEK nationwide. And that doesn't even take into account all the waste and resources used upstream, around the world, to create all the new stuff people buy this time of year. Hopefully you've shopped with the earth in mind, **so here's our cheat sheet to help you reuse and recycle at your gift exchange.**

[READ MORE](#)



THE RETHINK FOOD WASTE CHALLENGE WORKS!

“I’VE BEEN FORWARDING EACH WEEK’S TIPS TO MY MOM WHO HAS HAPPILY REPORTED THAT SHE HAS SAVED MONEY AT THE STORE BY SHOPPING HER FRIDGE, FREEZER AND PANTRY TO HELP PLAN MEALS!”

## A LITTLE FOOD FOR THOUGHT

Taking the **Rethink Food Waste Challenge** is easy, we promise. We’ll help you figure out how much food is really going to waste in your home — and how to make small shifts in how you shop, store, and prepare food, so you can toss less, eat well, and save money. The best part? Take the challenge whenever it works for you!

## SAVING FOOD AND SAVING MONEY!

The average person who took the 4-week Deschutes County Rethink Food Waste Challenge reduced their wasted food by 59% from week 1 to week 4. That’s a lot of dollars in the pocket!

**Sign up at [RethinkWasteProject.org/FoodWaste](https://RethinkWasteProject.org/FoodWaste)**

Join us at the Volcanic Theater Pub on 9/24 for *Wasted! The Story of Food Waste*, produced by Anthony Bourdain.

SIGN UP FOR THE CHALLENGE TODAY!



 A program of The Environmental Center

RETHINK RECYCLING

# RECYCLE LIKE A LOCAL



**Rethink about it!** We all love Central Oregon— it's why we chose to be here. We also choose to make recycling a priority in our community. Whether you're a newcomer, visitor or been here a long time, check out recycling tips on our website that will help you make a difference in this place we love.

**RethinkWasteProject.org**



**RETHINKWASTE**  
A project of The Environmental Center 



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[denise@envirocenter.org](mailto:denise@envirocenter.org)  
[RethinkWasteProject.org](http://RethinkWasteProject.org)  
541.385.6908 x14



## 1. Waste Hierarchy Approach

i.e. education and outreach programs, promoting reuseables, banning styrofoams or plastics

## 2. Low Impact Sourcing

i.e. promoting local food hubs, city sustainable procurement initiatives,

## 3. Circular Economy

i.e. EcoDistricts, Innovation Districts centered on re-use, investing in expanded recycling programs



<https://nerc.org/news-and-updates/blog/nerc-blog/2015/05/12/materials-management-and-the-circular-economy>



# **WASTE & MATERIALS MANAGEMENT OBJECTIVES, BARRIERS, AND EQUITY CONSIDERATIONS**



1. Establish and commit the Bend Community on a path toward zero waste
2. Reduce overall consumption impacts in Bend Community
3. Support and increase diversion of special waste streams
4. Develop special programs to minimize impact of food system
5. Create a comprehensive community waste reduction educational platform
6. Have the public sector lead in waste diversion culture



## **BARRIERS**

- Landfill is cheaper
- Low incentive for businesses
- Recycling infrastructure very limited nationwide (and worldwide)
- Lifecycle perspective not prevalent in businesses and institutions (from manufacturing standpoint or consuming standpoint)
- Lots of externalities that aren't incorporated
- Insufficient education and outreach to all sectors
- Human habits engrained
- Convenience vs. costs/efforts
- Lifespan of landfill

## **EQUITY CONSIDERATIONS**

- Relatively harder for disadvantaged populations to put in the extra time, steps, resources that it takes to divert waste
- Access to information
- Access to transportation, space that is required for recycling or other waste diversion

# EXERCISE



- Split into small groups around tables – up to 6 tables total
- Each table should have a facilitator from the CASC or City Staff
- Fill out worksheet with your own ideas on sticky notes
- Provide feedback on:
  - Objectives
  - Barriers
  - Equity Considerations
- Let us know if we missed any objectives
- TIME: 30-45 minutes total





- Brainstorm, ask your friends and networks – what actions should we take?
- Review Pre-Meeting Reading Materials to be Posted on CASC website
  - W&MM White Paper
  - CNCA Framework for Long Term Deep Carbon Reduction Planning Waste Systems Chapter
  - City of Aspen Greenhouse Gas Reduction Toolkit Waste and Landfill Chapter



**Community Climate  
Action Plan**

