EUGENE WATER & ELECTRIC BOARD
2012 GREENHOUSE GAS INVENTORY

JULY 2013

PREPARED BY GOOD COMPANY

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ACKNOWLEDGEMENTS

Andrew Janos collected and analyzed the data for the *Operations Inventory*.

This inventory and other climate change related information is available online at: www.eweb.org/sustainability/climatechange

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Good Company provided technical assistance in the preparation of the inventory and drafted the report. Good Company's contact for this work is David Ponder: david.ponder@goodcompany.com.

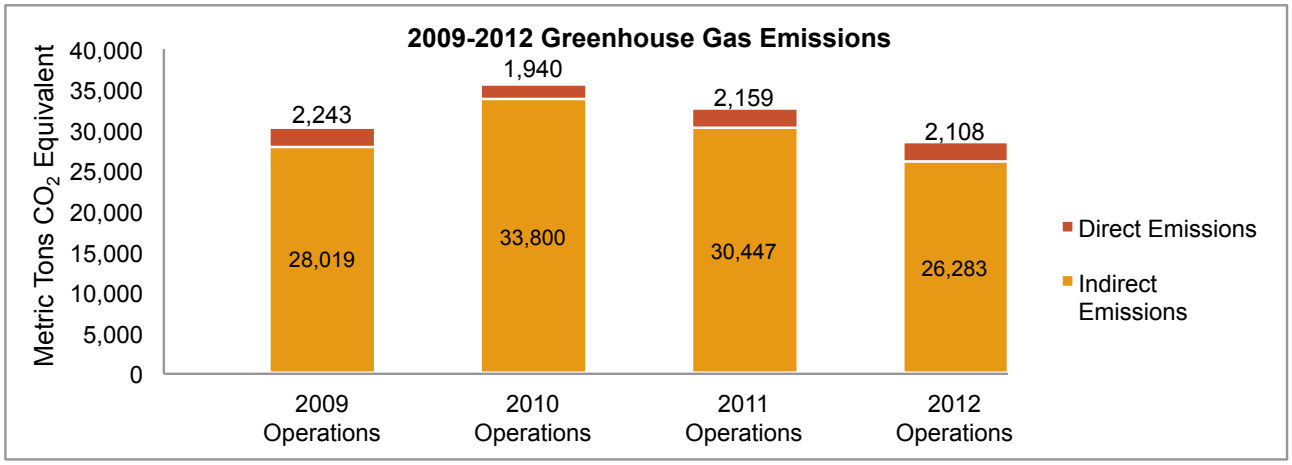
EXECUTIVE SUMMARY

In order to better understand our contribution to global climate change and to measure our progress in reducing our climate impacts, EWEB annually prepares a greenhouse gas (GHG) inventory. This year's report differs from past reports in that it only includes GHG emissions associated with EWEB's core business operations, such as fleet, electricity and natural gas use, and the procurement of goods and services. In light of constrained budgetary resources, this year's report does not include an inventory of the GHG emissions associated with EWEB's power resources nor a calculation of the GHG emissions associated with EWEB's electric retail power resources.

EWEB'S OPERATIONS CARBON FOOTPRINT

Our 2012 operations GHG emissions totaled an estimated 28,391 metric tons of carbon dioxide equivalent (MT CO_2e). This represents a decrease nearly 13% below 2011 levels, driven primarily by reductions in emissions embodied in purchased goods and services along with more modest declines in emissions associated with business travel and vehicle and equipment fleet operations. Figure 1 below shows the four-year trend in EWEB's GHG emissions[1].

Figure 1: 2009-2012 Operations Inventory



EWEB'S GREENHOUSE GAS REPORTING TO THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

While EWEB scaled back voluntary reporting of emissions associated with our electric power resources, we continue to meet our regulatory GHG reporting requirements. Under Oregon's GHG reporting rules, consumer-owned utilities, like EWEB, are only required to report the megawatt hours of electricity distributed to end users of electricity in Oregon (i.e., our retail customers) from generators owned or operated by the utility and from electricity purchased from the Bonneville Power Administration (BPA) and other sellers. According to EWEB's reporting to DEQ, 87% of the power distributed to our retail customers in 2012 was from BPA (a combination of hydroelectric, nuclear, wind and unspecified market purchases) and 12% was from EWEB's owned hydroelectric resources. The remaining 1% came from a combination of wind, local solar and biogas, and other hydroelectric resources.

[1] All GHG emissions totals include both "anthropogenic" and "biogenic" sources.

CALCULATING THE CARBON FOOTPRINT OF ELECTRICITY USE

In past years, EWEB advised customers preparing their own corporate GHG inventories to report GHGs associated with their electricity consumption using both the emissions factor for the regional electric grid – the Northwest Power Pool – and EWEB's Retail Power Delivery Metric. Since this year's report does not include an analysis of the specific mix of power resources delivered to our retail customers and its associated emissions, EWEB's advice for 2012 GHG inventories is to use only the regional emissions factor (see Figure 1 below).

Figure 2: 2012 Emissions Factors for EWEB Customers Calculating Indirect Emissions Associated with Electricity Consumption

2012 EMISSIONS FACTORS FOR EWEB CUSTOMERS CALCULATING INDIRECT EMISSIONS ASSOCIATED WITH ELECTRICITY CONSUMPTION		
Emissions Factor	METRIC	STANDARD
	MT CO_2e/MWh	lbs. CO_2e/MWh
Northwest Power Pool Regional Average	.373	823

GREENHOUSE GAS REPORTING SCOPES AND INVENTORY BOUNDARIES

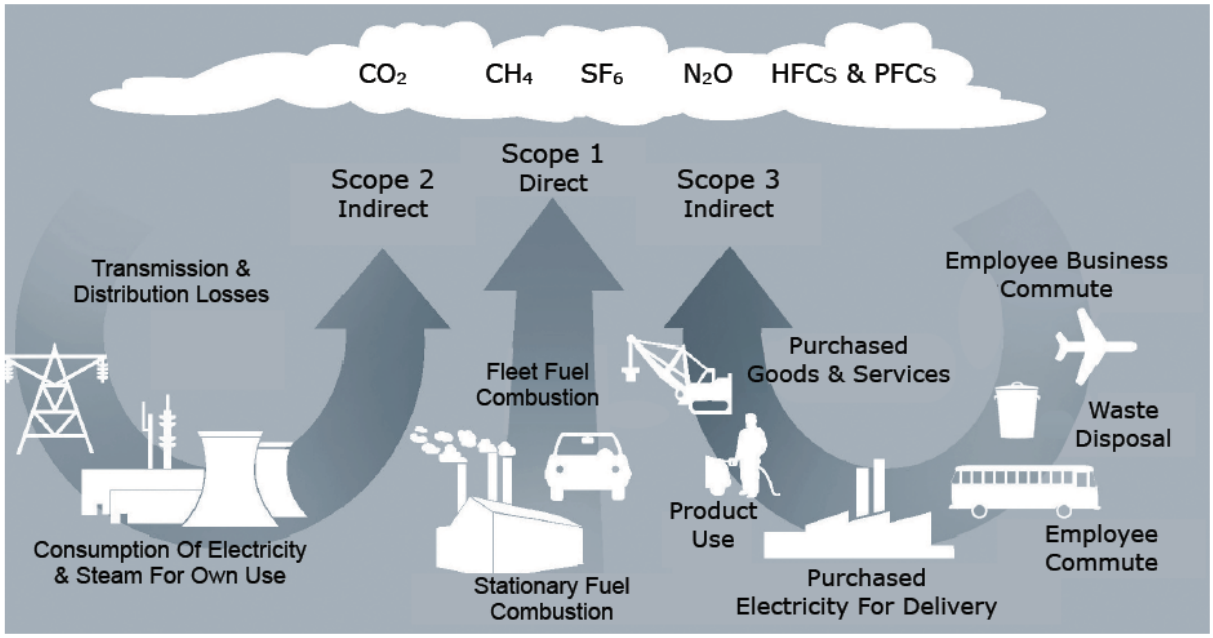
In quantifying our operational emissions, EWEB followed the guidelines of The Climate Registry's *General Reporting Protocol*. Per The Climate Registry's protocol, emissions sources are divided into three reporting scopes (see Figure 3 below).

Scope 1 – This includes direct GHG emissions that originate from operations-based equipment and facilities owned or operated by EWEB, such as the stationary and mobile combustion of fossil fuels, including vehicles and generators. This also includes the fugitive release of sulfur hexafluoride (SF_6) from the operation of high voltage equipment used in electricity transmission and distribution equipment.

Scope 2 – This includes indirect GHG emissions associated with the purchase of electricity and steam for internal consumption.

Scope 3 – This includes all other indirect GHG emissions resulting from EWEB's operational activities that occur from sources owned or controlled by another entity, such as business travel, employee commute, embodied emissions in purchased goods and services, and emissions from landfilled solid waste.

Figure 3: Greenhouse Gas Accounting Reporting Scopes



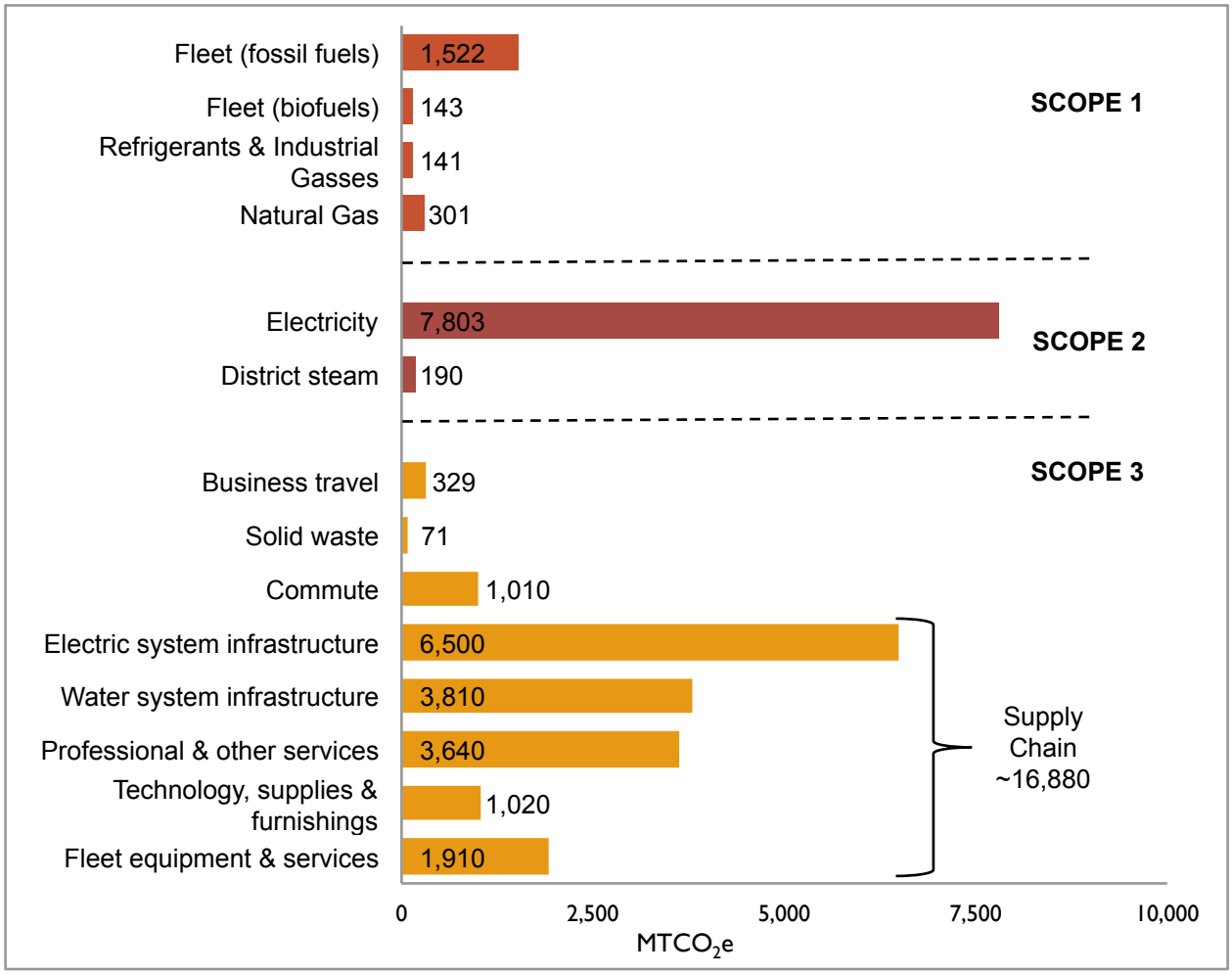
Source: WRI/WBCSD Greenhouse Gas Protocol, Corporate Accounting and Reporting Standard (Revised Edition), Chapter 4.

INVENTORY BOUNDARIES

This inventory estimates calendar year 2012 GHG emissions associated with EWEB's facility operations. The quantification of our facility operations emissions is limited to EWEB facilities in the Eugene-Springfield, Oregon metropolitan area and at our McKenzie River hydroelectric facilities at Leaburg, Walterville and Carmen-Smith.

In 2012, the largest single source of emissions associated with EWEB's operations continued to be from our supply chain – those GHG emissions embodied in purchased goods and services (see Figure 4 below). However, given the limitations of the methodology used to calculate these emissions, they should be considered estimates[2]. The second-largest source of emissions is from EWEB's own consumption of electricity (see Figure 6 on page 11 for addition detail), followed by equipment and vehicle fleet operations.

Figure 4: 2012 Greenhouse Gas Emissions Associated with EWEB Operations

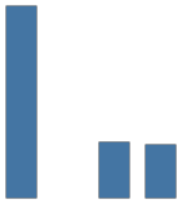


EWEB's ability to manage our GHG emissions varies considerably across emissions scopes. We have specific control over some sources, such as our vehicle fleet, and can and do take direct steps to minimize emissions associated with the utilization of these vehicles. Influencing emissions in our supply chain is more challenging, as we do not control the energy and carbon intensity of our suppliers manufacturing processes. However, we can seek to mitigate our supply chain emissions by making changes in our purchasing decisions by specifying lower carbon intensive products (e.g., choosing goods with high recycled content).

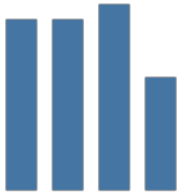
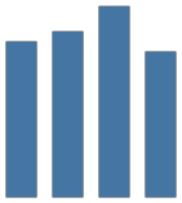
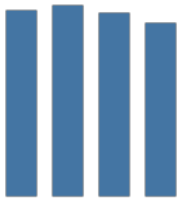
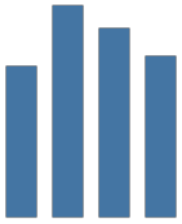
[2] The methodology for estimating supply chain carbon is Economic Input-Output Life-Cycle Analysis (EIOLCA). EIOLCA, while reputable and credible as an estimation tool, lacks precision because the analysis is not built on vendor-specific data. Therefore, the estimate, while useful for "sense of scale", is not precise.

The tables (see Figure 5 below) below summarize the sources of EWEB's operations emissions from 2009-20112. For additional detail on the underlying methods please refer to the 2009 GHG Inventory available at: http://www.eweb.org/public/documents/sustainability/GHGreport2009.pdf.

Figure 5: 2009-2012 Greenhouse Gas Emissions by Scope

Scope 1 (Metric Tons Carbon Dioxide Equivalent)					
Fleet					
2009	*2010*	*2011*	*2012*	*History*	*Comments*
1,664 (Fossil) 62 (Biogenic)	1,601 (Fossil) 66 (Biogenic)	1,642 (Fossil) 120 (Biogenic)	1,522 (Fossil) 143 (Biogenic)		Tailpipe emissions associated with the combustion of fuels for the operation of EWEB's vehicle and equipment fleet. EWEB has set a goal of reducing fossil fuel use by 50% by 2030 compared to 2009 levels. In 2012, fossil fuel consumption was 8% lower than 2009 levels. The year-to-year increases in "biogenic" emissions results from a combination of increases in biofuel consumption (a result of EWEB's effort to reduce fossil fuel consumption) and changes in ethanol and biodiesel blending requirements.
Refrigerants and Industrial Gasses					
2009	*2010*	*2011*	*2012*	*History*	*Comments*
511	0	151	141		Emissions associated with the fugitive release of refrigerants used in EWEB's HVAC systems and sulfur hexafluoride (SF6) used in electric transmission and distribution equipment. Emissions are based on the quantity of gasses periodically added to these systems and, as a result, emissions vary from year to year depending on maintenance cycles. In 2009 and 2011, emissions are associated solely with HVAC maintenance, while 2012 emissions are associated solely with SF6, EWEB's first-ever release.
Natural Gas					
2009	*2010*	*2011*	*2012*	*History*	*Comments*
0	266	243	301		Emissions associated with the combustion of natural gas used to heat EWEB's Headquarters and Roosevelt Operation's Center. The increase in 2012 emissions over 2011 levels is attributable to the the conversion of EWEB's Headquarters buildings from district steam to natural gas.

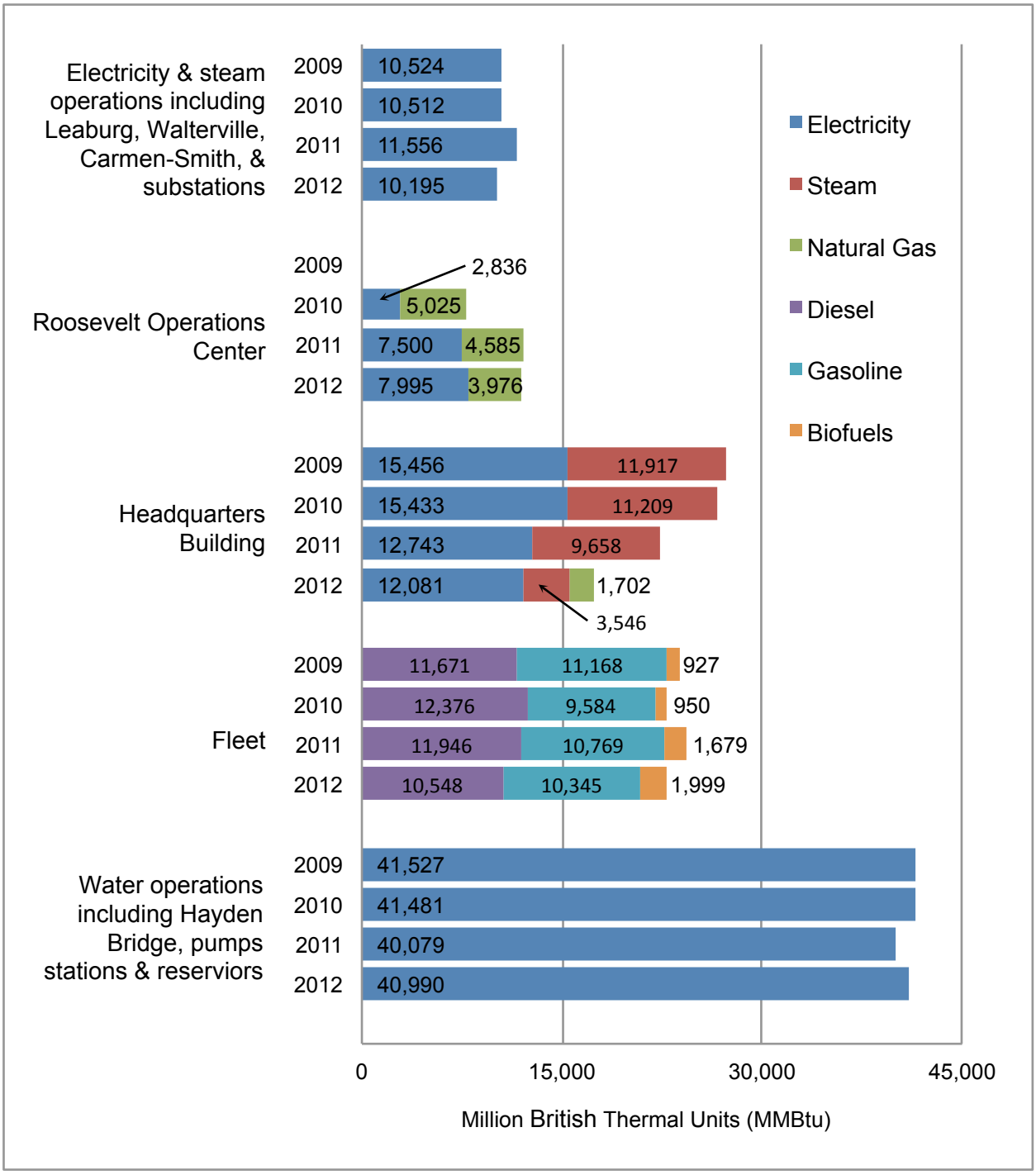
Scope 2 (Metric Tons Carbon Dioxide Equivalent)					
Electricity					
2009	*2010*	*2011*	*2012*	*History*	*Comments*
8,720 (Regional emissions factor)	8,065 (Regional emissions factor)	7,868 (Regional emissions factor)	7,803 (Regional emissions factor)		Emissions associated with EWEB's self-consumed electricity usage. Between 2009 and 2011 emissions in this category fell by nearly 10%, a result of a downward trend in the regional emissions factor and not a reduction in EWEB's total electricity consumption - which has remained relatively stable across reporting years (see Figure 6 on page 10 for 2009-2012 trends in direct energy use by facility). Note that in past years, EWEB calculated emissions associated with electricity consumption using a carbon intensity factor based on EWEB's retail power deliveries. Since no retail power delivery emissions factors were calculated for 2012, EWEB is presenting results based on the carbon intensity of the regional electric power grid for all years to facilitate year-to-year comparisons.
District Steam					
2009	*2010*	*2011*	*2012*	*History*	*Comments*
1,054	1,043	898	190		Emissions associated with EWEB's consumption of district steam for heating EWEB's Headquarters. The decrease in emissions is attributable to reduced steam consumption at EWEB Headquarters. EWEB finished decommisioning the steam plant in June 2012.

Scope 3 (Metric Tons Carbon Dioxide Equivalent)					
Business Travel					
2009	*2010*	*2011*	*2012*	*History*	*Comments*
497	495	542	329		Estimated emissions associated with air travel, employee-owned vehicles used for business purposes and rental vehicles. The increase from 2010 to 2011 is the result of overall increase in business travel in 2011, with the largest increases in GHG emissions coming from air travel and travel in employee-owned vehicles. The decline in 2012 levels is reflective of a substantial reduction in business air travel.
Solid Waste					
2009	*2010*	*2011*	*2012*	*History*	*Comments*
76	80	93	71		Emissions associated with unsorted non-hazardous solid waste landfilled at the Lane County Short Mountain Landfill. Not included in this total are emissions associated with the disposal of hazardous materials (e.g., incineration of used motor oil), as information about the processes used in that disposal was unavailable and therefore emissions could not be accurately calculated. The year-to-year changes in emissions is the result of differences in the estimated volumes of waste landfilled.
Employee Commute					
2009	*2010*	*2011*	*2012*	*History*	*Comments*
1,086	1,117	1,066	1,010		Estimated emissions associated with employee commute based on employee surveys about mode of transportation and distance traveled. The 2012 estimate of commute emissions is based on the 2011 survey results, adjusted for changes in staff size. Over a period of three years, suveys have shown a consistent pattern in employee commute modes. Not included in this total are emissions associated with customer or visitor trips to EWEB facilities.
Supply Chain					
2009	*2010*	*2011*	*2012*	*History*	*Comments*
~16,000	~23,300	~19,980	~16,880		Estimated emissions associated with energy consumption in the manufacture and production of goods and services purchased by EWEB. The year-to-year change in emissions is the result of fluctuations in the dollars spent by EWEB in the analyzed set of purchasing data, which prior to 2011 excluded some capital improvement projects because of insufficient data. Beginning in 2011 EWEB began reporting all expenditures associated with capital improvement projects. The total expenditures included in the supply chain analysis for 2009-2012 were respectively: $43.9 million, $55.3 million, $51.3 million and $47.7 million.

TRENDS IN ENERGY CONSUMPTION BY FACILITY

Figure 6 below shows EWEB's energy consumption, by facility and energy source from 2009-2012. Overall, EWEB's energy consumption has been stable over the reported period, with a 7% range in total energy consumption between the high (2011) and low (2009) years. While energy consumption at the Headquarters campus has decreased over the reporting period, the increased energy use at the Roosevelt Operations Center has offset this decline.

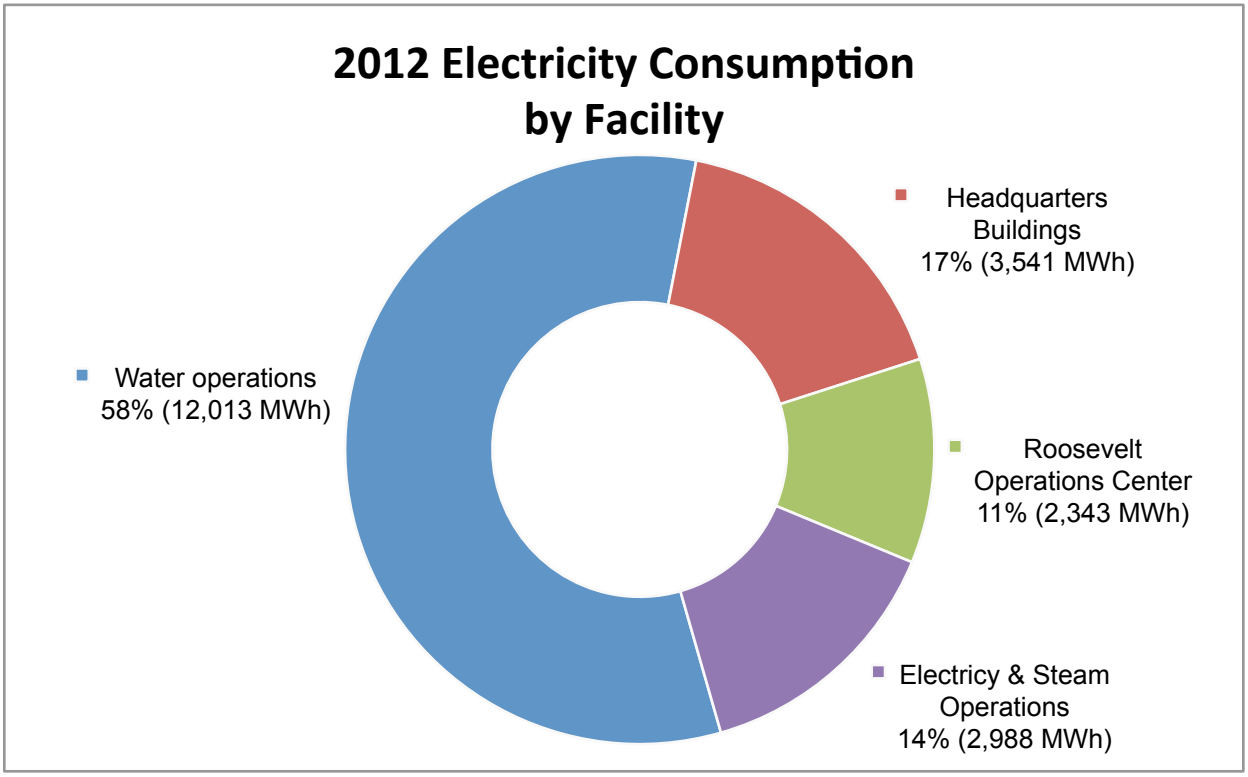
Figure 6: 2009-2012 Energy Consumption, by Facility and Energy Source



ELECTRICITY CONSUMPTION, BY FACILITY

Figure 7 below shows EWEB's electricity consumption, by facility for 2012. The operation of the Hayden Bridge Treatment Plant and other water operations account for the majority (58%) of EWEB's electricity consumption, more than 12,000 MWh. EWEB's downtown headquarters are the second-largest source of electricity consumption (3,541 MWh), followed by electricity consumption associated with EWEB's hydroelectric facilities on the McKenzie River and other electricity operations (2,988 MWh). The Roosevelt Operations Center accounted for remaining portion of EWEB's 2012 electricity consumption (2,343 MWh).

Figure 7: 2012 Electricity Consumption by Facility



CONCLUSIONS

While EWEB's 2012 GHG emissions are at their lowest level since 2009, most of these reductions are a result of lower emissions associated with the purchase of fewer goods and services due to budget reductions that have delayed acquisition of equipment and implementation of capital construction projects.

In order to meet our 2020 goal of reducing our operations GHG emissions by 25% below 2009-levels, EWEB must persistently peruse internal energy efficiency measures, continue to transition fleet and equipment fuel consumption to lower carbon alternatives and optimize fleet efficiency, and as well as seek out opportunities to minimize the GHG impact of our purchase of goods and services by carefully analyzing material choices.