

Staff Report

To: RCPA Board of Directors
From: Julian Ruzzier-Gaul, CivicSpark Fellow
Item: 4.3.1 – Water & Solid Waste Inventory Updates
Date: March 12, 2018

Issue:

Information only.

Background:

Greenhouse Gas Inventory

Tracking greenhouse gas (GHG) emissions data and trends is critical to understanding the role local communities play in reducing GHG emissions while planning for growth and prosperity. Through the Climate Action 2020 project, the RCPA evaluated historic, baseline, and future emissions in Sonoma County using internationally accepted community scale protocols and locally specific emissions data.

Historic data revealed a decline in total and per capita emissions since 1990, but the forecasts showed that in the absence of new actions, local GHG emissions will again rise. The work of the RCPA, its members, and partners, focuses on driving a continued downward trajectory in community-wide emissions, towards the long-term goal of 80% below 1990 levels by 2050.

The RCPA is currently updating the community-wide GHG inventory, based on 2015 data. RCPA staff provided an update to GHG emissions from building energy use in February and will continue to provide updates to the Board of Directors on the other main emissions sources (Building Energy, Water & Wastewater, Transportation & Land Use, Solid Waste, and Livestock & Fertilizer) identified in the Climate Action 2020 Plan. This report highlights the GHG emissions reductions resulting from the impacts of projects and programs developed to reduce emissions from water conveyance and solid waste processing. Further information and graphics are in the attached fact sheets.

Water Sector Analysis Highlights

Countywide emissions from water conveyance and processing drastically decreased between 2010 and 2015. In 2010, GHG emissions from water conveyance were approximately 3,642 metric tons of carbon dioxide equivalent (MTCO_{2e}). In 2015, GHG emissions from water conveyance GHG emissions were approximately 163 MTCO_{2e}. Efforts lead by the Sonoma

County Water Agency resulted in this substantial GHG emissions reduction. Further detail is below:

- **The pumping and conveyance of water is extremely energy intensive and the Water Agency is one of the largest consumer in terms of energy used to convey water in Sonoma County.** Similar to 2010, , the Water Agency conveyed almost 60% of Sonoma County’s water in 2015, with the other 40% coming from groundwater and recycled water sources. The difference lies in the means by which the Water Agency procures the electricity to convey this water.
- **The Water Agency now procures 100% of its electricity needs through renewable and carbon free resources.** The Water Agency’s approximate energy portfolio for 2015 includes 7% from on-site solar, 5% from SCP’s EverGreen Program, 27% from Warm Springs Dam hydropower, 7% from other hydropower, and 55% from landfill gas. Of the 100% renewable and carbon free sources the Water Agency utilizes, 83% are from sources within Sonoma County.
- **Cleaner emissions factors from the three main electricity providers (SCP, PG&E and PWRPA) played a large role in the sharp reduction in emissions.** The 2015 inventory used a weighted emissions factor for the three above energy providers. Since 2010, the emissions factor for PG&E and the Power and Water Resource Pooling Authority’s decreased, and SCP began providing electricity to Sonoma and Mendocino County customers, which was the largest addition to decreased emissions from water conveyance.

Solid Waste Sector Analysis Highlights

Countywide GHG emissions from solid waste processing increased 35% from approximately 138,692 metric tons of carbon dioxide equivalent (MTCO₂e) in 2010 to 213,561 MTCO₂e in 2015. In 2010, emissions from solid waste processing accounted for about 4% of total, countywide emissions. This percentage will likely increase once calculations are complete for each of the inventory sources mentioned on the previous page.

Emissions from solid waste processing likely increased for the following reasons:

- **The Redwood Landfill processes a majority of countywide waste, but does not process methane as efficiently as previously measured.** In 2010, the Redwood Landfill used a methane collection efficiency rate of 90%. Upon further research, RCPA staff found that the internal GHG Inventory completed for the Redwood Landfill used the State average of 75% for their methane collection efficiency. Therefore, the 2015 inventory uses the 75% methane collection rate, consistent with the U.S. Community Protocol for GHG Inventories, for all landfills processing Sonoma County waste.

Changes within waste haulers in 2017 may have positive impacts for the next countywide GHG Inventory update. All Sonoma County jurisdictions except for the cities of Sonoma, and Windsor have entered into an agreement with a new waste hauler - Recology Inc., for recycling, waste collection, and composting collection services. Recology has the mission to “conserve resources, reduce greenhouse gas emissions, and divert material away from the landfill.” The Town of Windsor’s new waste hauler, Sonoma County Resource Recovery, also pledges to offer increased outreach and education for recycling and waste diversion.

Fire Debris Impacts on Next GHG Inventory

There will be an increase in the volume of countywide waste due to the impacts of debris removal from the October 2017 wildfires. The full impact of this debris removal on GHG emissions is still unknown. The RCPA staff will be sure to monitor the impacts of fire debris removal on countywide GHG emissions and provide an update to the Board once the data becomes available.

Policy Impacts:

None.

Fiscal Impacts

None.

Staff Recommendation:

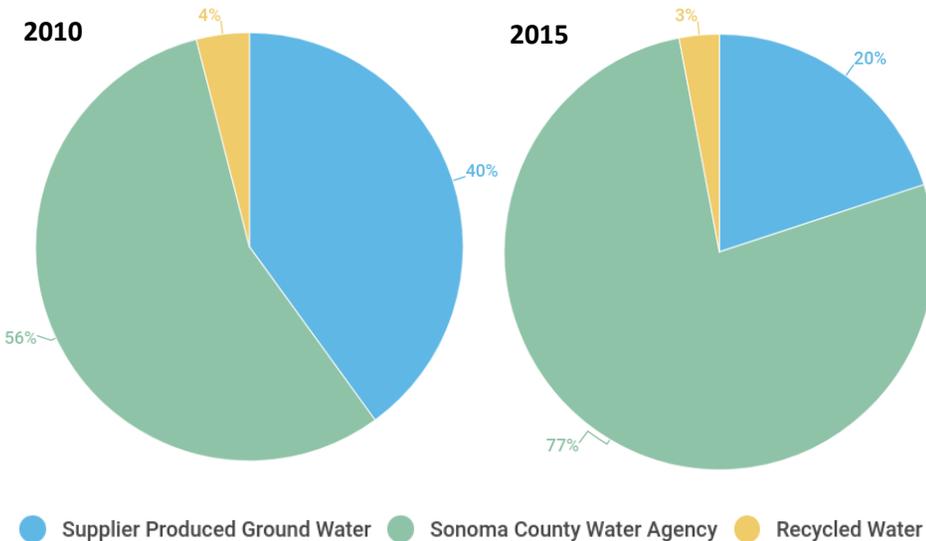
Information only.



WATER

Countywide emissions from water conveyance and processing dropped approximately **96%** from 2010 to 2015. GHG emissions from water conveyance were approximately 3,642 metric tons of carbon dioxide equivalent (MTCO₂e) in 2010 and approximately 163 MTCO₂e in 2015. This enormous reduction largely resulted from the efforts of the Sonoma County Water Agency to procure 100% of its electricity needs through renewable and carbon free resources.

The Sonoma County Water Agency provider more jurisdictions with water using more energy efficient processing in 2015 when compared to 2010.

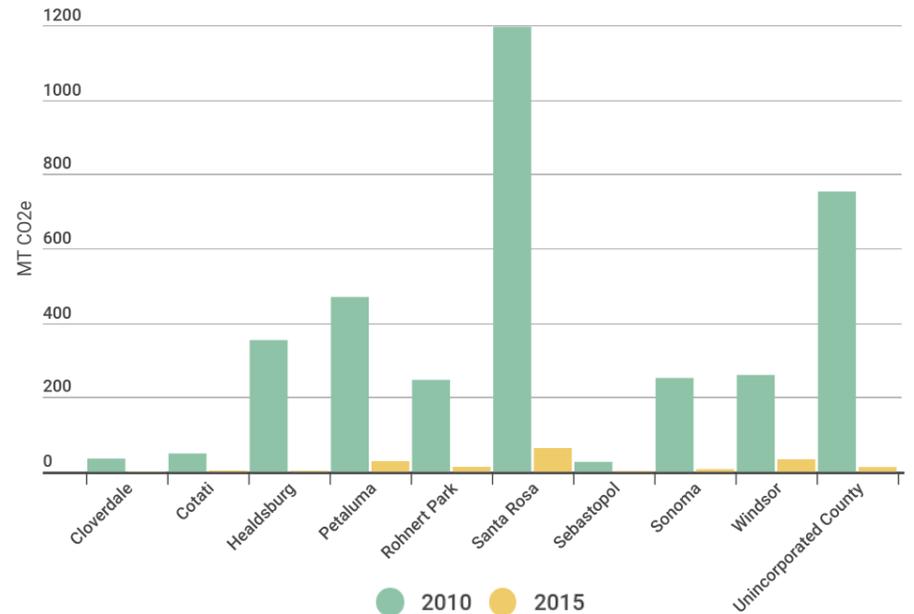


Water & Wastewater (0.5% of 2010 emissions)*

GHG Reduction Targets

Reduce water consumption	22,600 MTCO ₂ e
Use more recycled water and grey water	19,217
Use more renewable energy in water systems	75
Improve the efficiency of water and wastewater infrastructure	2,556
	759

Total GHG emissions from water conveyance have substantially decreased.



*This GHG emissions percentage and reduction goals are also applicable to emissions from wastewater processing, an update to the wastewater sector is going to be provided in the coming months.



SOLID WASTE



Solid Waste (4% of 2010 emissions)

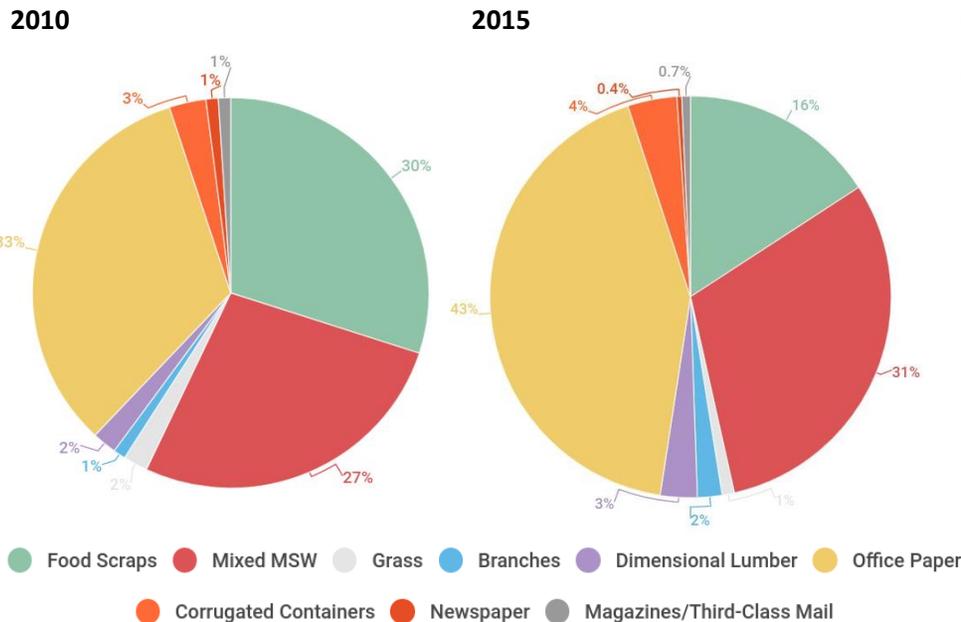
GHG Reduction Targets

Increase solid waste diversion
Increase capture and use of methane from landfills

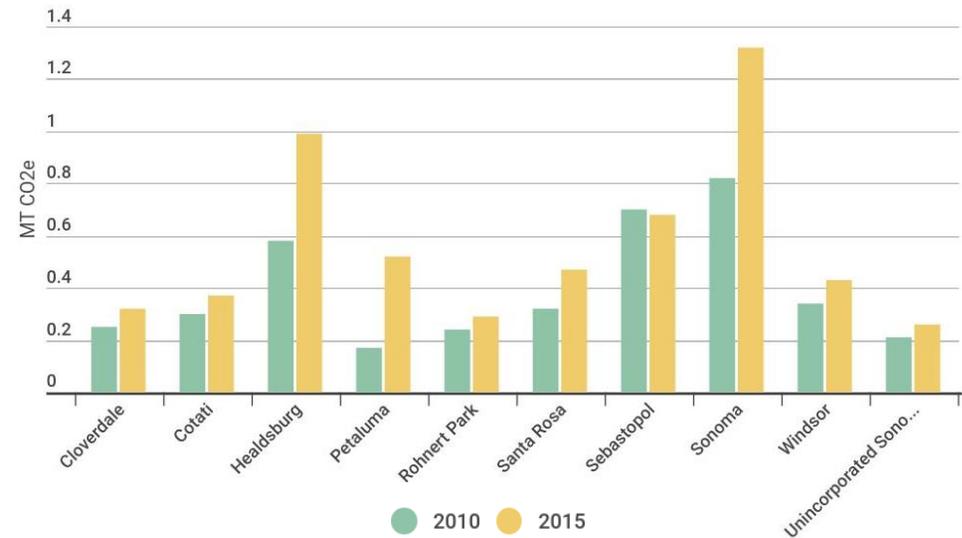
65,400 MTCO₂e
53,877
267,027

Countywide GHG emissions from solid waste processing increased approximately 35% between 2010 and 2015. In 2010, emissions from solid waste processing accounted for about 4% of total, countywide emissions. This percentage will likely increase once calculations are complete for each of the inventory sources mentioned in Climate Action 2020.

The total tonnage of waste disposed within Sonoma County went up between 2010 and 2015. The GHG emissions by waste type also changed.



Per Capita GHG emissions from solid waste processing has increased in most Sonoma County jurisdictions.



GHG Emissions from solid waste processing will likely decrease in the coming years.

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