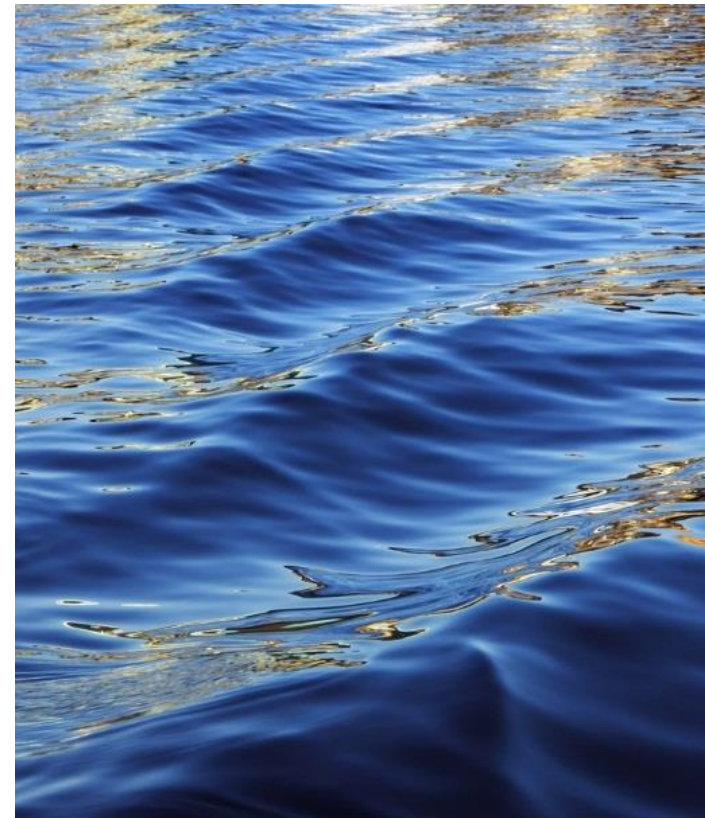




Laramie Greenhouse Gas Emissions Inventory

August 27, 2019



Background

- Alliance for Renewable Energy of Laramie
 - Net-zero emissions goal
 - 100% renewable energy
- Spring 2019 Campus Sustainability course ENR 4600
 - Research calculators
 - Begin gathering data
 - General view of emissions produced by municipal operations
- Summer 2019 Internship
 - Funded by the University of Wyoming Campus Sustainability Committee
 - Emissions generated by each department
 - Close information gaps
 - Better analyzing results

Goals



Create an inventory of emissions generated by government operations in the City of Laramie.



Establish an emissions baseline to develop feasible goals and target dates.



Identify areas of economic and environmental improvement.

EPA Municipal Operations Emissions Calculator

Ease of Use

Reputable Source

Help/ Guidance through EPA Resources

Specific to Municipal Operations

Calculator Breakdown

Scope 1

- Direct emissions

Scope 2

- Indirect emissions from the consumption of purchased electricity

Scope 3

- Other indirect emissions

Scope 1

Stationary
Combustion

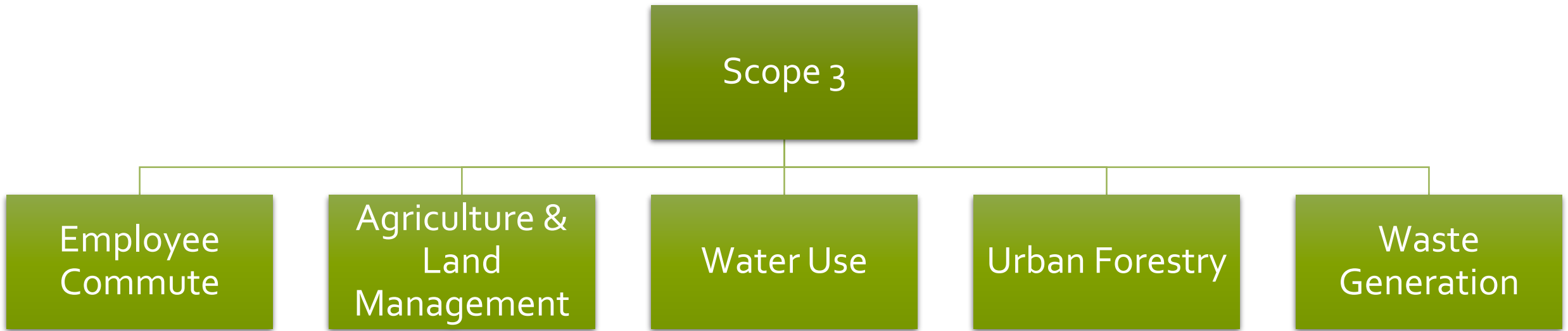
Mobile
Combustion

Solid Waste

Wastewater

Scope 2

Electricity
Use

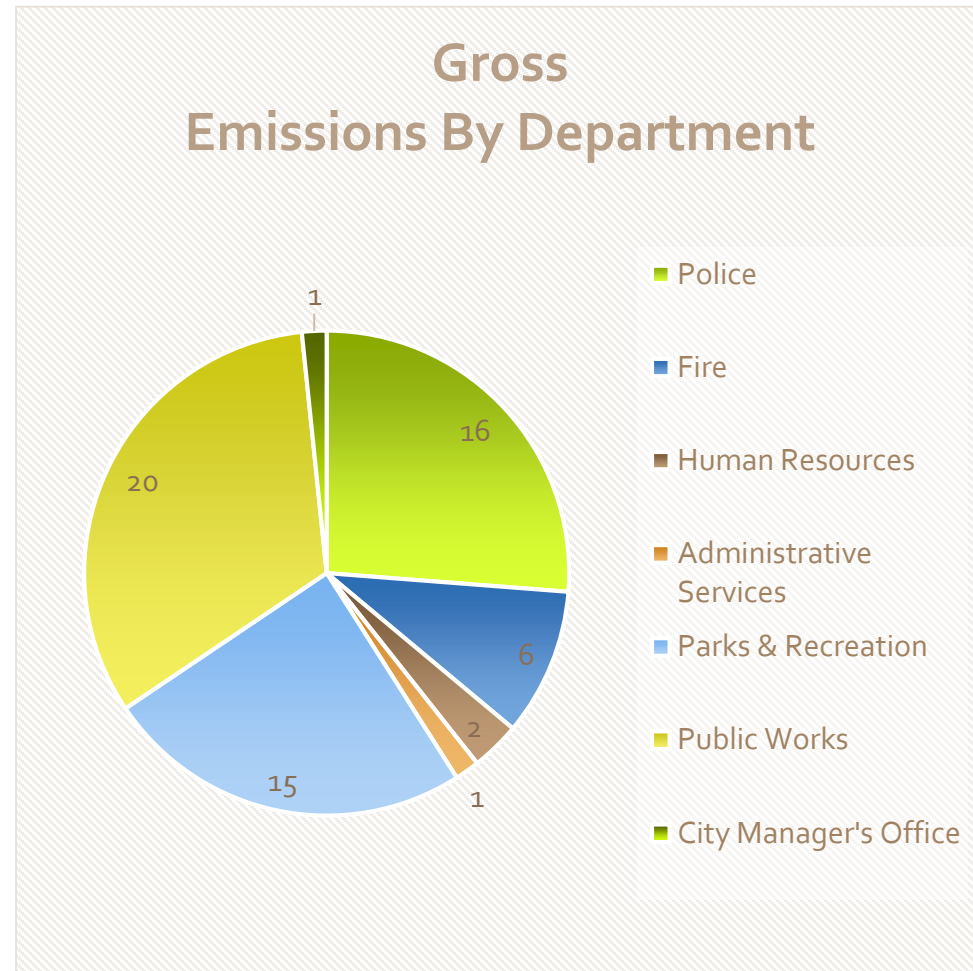


Process



Results (Department)

- Public Works- 3,583.14 MT CO₂e
 - Vehicles
 - Equipment
 - Buildings/ Infrastructure
- Police- 2,855.60 MT CO₂e
 - Vehicles
- Parks & Recreation- 2,809.31 MT CO₂e
 - Vehicles
 - Equipment
 - Buildings/ Infrastructure
- Fire- 1,125.42 MT CO₂e
 - Vehicles and Equipment
- Human Resources- 315.02 MT CO₂e
 - Employee Commute
- City Manager's Office- 191.52 MT CO₂e
 - Monolith Ranch
- Administrative Services- 142.72 MT CO₂e
 - Utility Billing

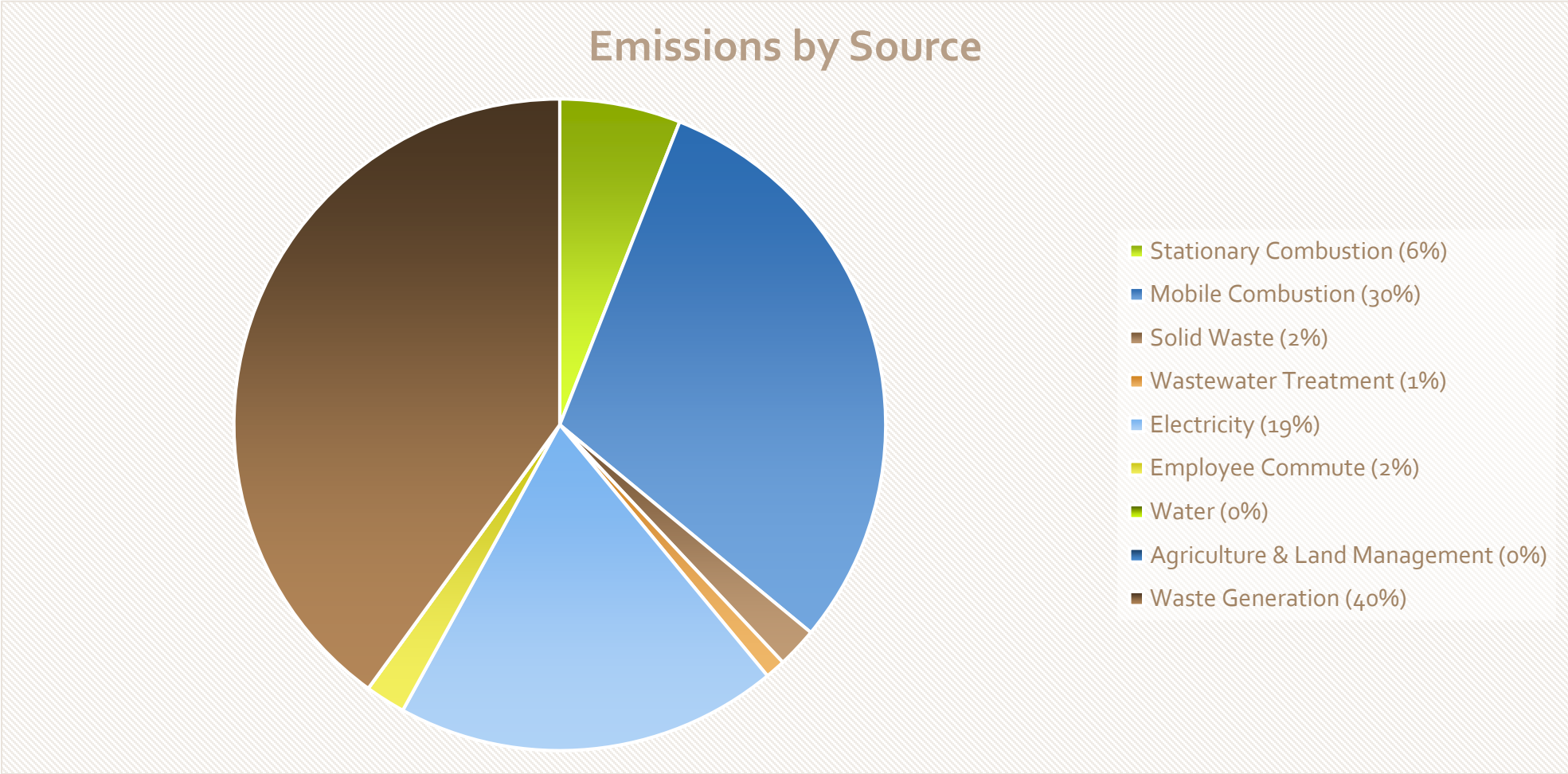


Results (Scope)

- Carbon Sequestration- Urban Forestry
 - 35% tree cover including residential and commercial areas
 - Not a long-term solution
 - Potential emissions generated through maintenance
 - General calculators account for all tree cover in the same way

Total City of Laramie Emissions (MT CO2e)					
	CO ₂	CH ₄	N ₂ O	Total MT CO ₂ e	Percent of Total
Scope 1	6,650.44	503.55	83.44	7,237.43	39%
Scope 2	3,374.84	8.45	14.71	3,397.99	19%
Scope 3	(12,918.10)	7,311.67	72.29	(5,534.14)	-30%
Total Gross Emissions	10,340.29	7,823.67	170.44	18,334.39	28%
Total Net Emissions	(2,892.83)	7,823.67	170.44	5,101.28	28%

Results (Source)





Special Thanks to...

Rachael Budowle- Haub School of Environment and Natural Resources

Darren Parkin- City of Laramie Managers Office

Monika Leininger- Alliance for Renewable Energy of Laramie

