

Mobile Combustion - Calculation

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Activity Data

Fuel Use by Department and Fuel Type

This table summarizes fuel consumption by department. These are the activity data used to calculate CO₂ emissions.

	Gasoline	Diesel	Biodiesel (B5)	Biodiesel (B20)
Units	Gallons	Gallons	Gallons	Gallons
Town	-	10,062	-	-
Total	-	10,062	-	-

Energy Use by Department and Fuel Type

This table summarizes energy use by department (MMBtu).

	Gasoline	Diesel	Biodiesel (B5)	Biodiesel (B20)
Town	-	1,390	-	-
Total	-	1,390	-	-

CO₂ Calculations

Gross CO₂ Emissions

CO₂ Emissions (MT) = Fuel use × kg CO₂/unit of fuel × MT/kg

	Gasoline	Diesel	Biodiesel (B5)	Biodiesel (B20)
EF: kg CO ₂ /gal (or g.g.e.)	8.78	10.21	10.17	10.06
Town	-	103	-	-
Total	-	103	-	-

Employee Commute

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This sheet is where you will calculate

Please enter the number of employees who use each mode of transportation to work. Default transportation mode proportions are from the American Communities Survey.

Once you enter this information, the

1. Enter Employee Data

Please enter the number of employees in each department. This will be used to calculate the commute

Department	Number of employees
Town	4

2. Enter mode of transit proportions, commute length, and work days

Please enter what percentage of employees use each form of transportation to work. These values will be used to calculate the average commute length. Default values are from the American Communities Survey, and represent the average distribution of transportation mode from a travel survey of city employees.

Mode	Employees who use mode (%)	Default Values
Single Occupancy Vehicle	100%	76%
Carpool	0%	10%
Motorcycle	0%	0%
Transit	0%	5%
Bike	0%	1%
Walk	0%	3%
Work at home	0%	4%
Other	0%	1%
Total	100%	

Please enter the average one-way commute length for city employees. Default commute distance is 12.6 miles (see <http://www.fhwa.dot.gov/policy/2010cpr/execsum.htm>).

This commute distance may be longer or shorter than the average commute for your city's employees.

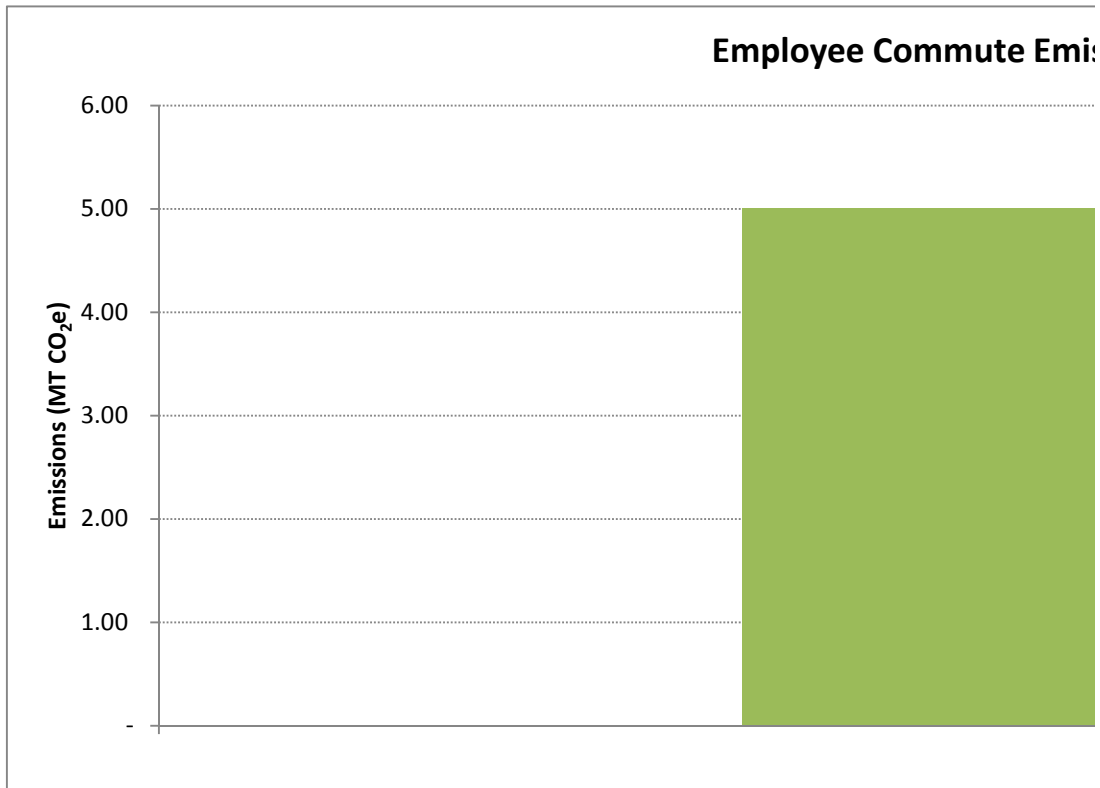
Average One-Way Commute Length (miles)	7.0	12.6
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Please enter the number of days each city employee works per year. This number will be multiplied by the number of work days per week, two weeks (10 days) of vacation, and 10 federal holidays.

Workdays per year	220	240
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Employee Commute Emissions Summary

Emissions by Department (MT CO ₂ e)	
	CO₂
Town	5.01
Total	1,382.17



Background Calculations

Employees by Department and Mode

Number of Employees who use mode = # of employees × percentage of employees who use each mode

	Single Occupancy		
	Vehicle	Carpool	Motorcycle
Town	4	0	0.0
Total	1104	0	0

Daily CO₂ Emissions by Department and Mode

$CO_2 \text{ Emissions/Day} = \text{Employees traveling} \times \text{Trip Distance/day} \div \text{People/Mode} \div \text{miles per gallon} \times \text{MT CO}_2/\text{kg} \times \text{kg CO}_2/\text{gal} \times \text{MT/kg} = \text{MT CO}_2/\text{day}$

	Single Occupancy		
	Vehicle	Carpool	Motorcycle
CO ₂ Emission Factor (kg/gal)	8.78	8.78	8.78
mpg	21.6	21.6	43.4
People/Mode	1	2	1

Town	0.02	-	-
Total	6.28	0.00	0.00

Annual CO₂ Emissions by Department and Mode

Annual CO₂ Emissions (MT) = MT CO₂/commute day × commute days/yr

	Single Occupancy Vehicle	Carpool	Motorcycle
Town	5.01	-	-
Total	1,382.17	0.00	0.00



Local GHG Inventory Tool:

Total Town of Roseboom Emissions (MT CO ₂ e)								
	CO ₂	CH ₄	N ₂ O	HFCs	PFCs	SF ₆	Total MT CO ₂ e	Percent of Total
Scope 1	119.57	0.03	0.34	-	-	-	119.95	8%
Scope 2 - Location Based	-	-	-	-	-	-	-	0%
Scope 2 - Market Based (for informational purposes only)	-	-	-	-	-	-	-	
Scope 3	1,382.17	-	-	-	-	-	1,382.17	92%
Total Gross Emissions	1,501.74	0.03	0.34	-	-	-	1,502.11	100%
Total Net Emissions	1,501.74	0.03	0.34	-	-	-	1,502.11	100%

Emissions by Source (MT CO ₂ e)								
Source	CO ₂	CH ₄	N ₂ O	HFCs	PFCs	SF ₆	Total	Percent of Total
Stationary Combustion	16.84	0.00	0.00	-	-	-	16.84	1%
Mobile Combustion	102.73	0.03	0.34	-	-	-	103.11	7%
Solid Waste	-	-	-	-	-	-	-	0%
Wastewater Treatment	-	-	-	-	-	-	-	0%
Electricity - Location Based	-	-	-	-	-	-	-	0%
Electricity - Market Based (for informational purposes only)	-	-	-	-	-	-	-	
Employee Commute	1,382.17	-	-	-	-	-	1,382.17	92%
Water	-	-	-	-	-	-	-	0%
Ag & Land Management	-	-	-	-	-	-	-	0%
Urban Forestry	-	-	-	-	-	-	-	0%
Waste Generation	-	-	-	-	-	-	-	0%
Total (Gross Emissions)	1,501.74	0.03	0.34	-	-	-	1,502.11	100%
Total (Net Emissions)	1,501.74	0.03	0.34	-	-	-	1,502.11	100%

Gross Emissions by Department		
Department	Total (MT CO ₂ e)	Percent of Total
Town	124.95	8%
Total	20,657.15	1375%

