

MUNICIPALITY OF NORTH PERTH

CARBON FOOTPRINT REDUCTION AND COMPENSATION STRATEGY

September 28, 2015
Revised: October 12, 2016

1. Carbon Footprint:

Base Year: 2014

See attached sheets for 2014, 2015, and 2016 for total North Perth emissions

2. Carbon Footprint Reduction Strategy:

- a. Vehicles/Equipment to be replaced with more fuel efficient vehicles/equipment. Will seek to replace with the most fuel efficient vehicle/equipment in class for the use needed.
- b. Vans/Trucks will be replaced with electric powered vehicles or other non fossil fuel source vehicles when technology is available at a reasonable price. Potential 12 vehicles to be replaced.
- c. Tractors/Riding Lawnmowers will be replaced with alternative energy source when equipment reaches end of its lifespan and when technology is available at a reasonable price.
- d. Maintain Municipal Vehicle Comparison to insure fleet compares with industry standards.
- e. Install Fleet Complete GPS Solution in our fleet. Monitors vehicle idling, speeding, rapid acceleration, braking etc., to reduce fuel consumption. Program has other valuable risk management benefits for the municipality.
- f. Explore alternate energy options i.e. solar panels, etc.

Carbon Footprint Reduction Target:

To reduce carbon footprint by 10 percent (47.6 tonnes) by 2025. A 10 year average will be used since fuel consumption is weather based.

CARBON COMPENSATION STRATEGY:

Base year- 2014

Carbon Footprint: 1,316,433.18 tonnes of CO2 emitted = 3,949 trees

Target: Plant 1000 trees each year (includes developer planted trees as required by agreements)

Other initiatives:

- Develop Tree Maintenance and Replacement Policy (drafted).
- Establish and maintain an annual tree planting count.
- Allocate and prioritize public land for tree planting.

Municipality of North Perth
Carbon Footprint Initiative
2014

Electricity Usage			
2014 Estimate	Hydro Usage (kWh)	Emission Factor (kgCO ₂ /kWh)	Total Emissions (kgCO ₂)
	58,581,733.22	0.041	228,851.06

Propane Usage			
2014 Estimate	Propane Usage (L)	Emission Factor (kg/L)	Total Emissions (kgCO ₂)
	49,063.80	1.51	74,086.34

Fuel Usage (Gasoline and Diesel)			
2014 Estimate	Gas/Diesel Usage (L)	Emission Factor (kg/L)	Total Emissions (kgCO ₂)
	195,055	2.663 *used emission factor for diesel as it was the higher value between gas and diesel	519,431.47

Natural Gas Usage			
2014 Estimate	Natural Gas Usage (m ³)	Emission Factor (kg/m ³)	Total Emissions (kgCO ₂)
	220,407.81	1.879	414,146.27

Furnace Oil Usage			
2014 Estimate	Furnace Oil Usage (L)	Emission Factor (kg/L)	Total Emissions (kgCO ₂)
	29,327.72	2.725	79,918.04

Total Emissions kgCO₂ → 1,316,433.18

Total Trees to be Planted → 3,949

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Carbon Footprint Initiative
2015

Electricity Usage			
2015 Estimate	Hydro Usage (kWh)	Emission Factor (kgCO ₂ /kWh)	Total Emissions (kgCO ₂)
	5,464,294.90	0.041	224,036.09

Propane Usage			
2015 Estimate	Propane Usage (L)	Emission Factor (kg/L)	Total Emissions (kgCO ₂)
	16,667.80	1.51	25,168.38

Fuel Usage - Diesel			
2015 Estimate	Diesel Usage (L)	Emission Factor (kg/L)	Total Emissions (kgCO ₂)
	134,859.52	2.663	359,130.90

Fuel Usage – Gasoline			
2015 Estimate	Gas Usage (L)	Emission Factor (kg/L)	Total Emissions (kgCO ₂)
	39,777.50	2.289	91,050.70

Natural Gas Usage			
2015 Estimate	Natural Gas Usage (m ³)	Emission Factor (kg/m ³)	Total Emissions (kgCO ₂)
	207,411.07	1.879	389,725.40

Furnace Oil Usage			
2015 Estimate	Furnace Oil Usage (L)	Emission Factor (kg/L)	Total Emissions (kgCO ₂)
	30,888.40	2.725	84,170.89

Total Emissions kgCO₂ → 1,173,282.36

Total Trees to be Planted → 3,520

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2016

Electricity Usage			
2016 Estimate	Hydro Usage (kWh)	Emission Factor (kgCO ₂ /kWh)	Total Emissions (kgCO ₂)
	4,766,066.17	0.041	185,401.15

Propane Usage			
2016 Estimate	Propane Usage (L)	Emission Factor (kg/L)	Total Emissions (kgCO ₂)
	15,454.10	1.51	23,335.69

Fuel Usage - Diesel			
2016 Estimate	Diesel Usage (L)	Emission Factor (kg/L)	Total Emissions (kgCO ₂)
	163,939.85	2.663	436,571.82

Fuel Usage – Gasoline			
2016 Estimate	Gas Usage (L)	Emission Factor (kg/L)	Total Emissions (kgCO ₂)
	35,484.24	2.289	81,223.43

Natural Gas Usage			
2016 Estimate	Natural Gas Usage (m ³)	Emission Factor (kg/m ³)	Total Emissions (kgCO ₂)
	200,337.35	1.879	376,433.88

Furnace Oil Usage			
2016 Estimate	Furnace Oil Usage (L)	Emission Factor (kg/L)	Total Emissions (kgCO ₂)
	20,781.40	2.725	56,629.32

Total Emissions kgCO₂ → 1,169,602.84

Total Trees to be Planted → 3,509.00