

Municipality of North Perth

2022/2023 Carbon Footprint Reduction and Compensation Strategy Report

Purpose:

1. To outline the progress that the Municipality of North Perth has made in reducing/compensating our carbon footprint in 2022.
2. To outline the actions that the Municipality of North Perth will be taking in 2023 to reduce and compensate for our carbon footprint.

2022 Progress

A. Carbon Reduction

In 2022, fuel and electricity quantities were monitored in all aspects of the Municipality's operations. The results are listed and compared to 2017, 2018, 2019, 2020, and 2021 figures in the below charts:

2017-2018 North Perth Carbon Comparison

| Product | 2018 | | 2017 | | Year Difference |
|---------------|---------------------------|---------------------|---------------------------|---------------------|-------------------|
| | Quantity | kgCO2 | Quantity | kgCO2 | kgCO2 |
| Electricity | 5,367,526.18 kWh | 220,068.57 | 5,180,400.71 kWh | 212,396.43 | |
| Propane | 25,594.40 L | 38,647.54 | 27,425.50 L | 41,412.51 | |
| Natural Gas | 285,563.71 m ³ | 536,574.72 | 187,616.71 m ³ | 352,531.80 | |
| Furnace Oil | 27,549.10 L | 75,071.30 | 22,970.00 L | 65,593.25 | |
| Gasoline | 31,646.91 L | 72,439.78 | 33,601.06 L | 76,912.83 | |
| Diesel | 153,656.87 L | 409,188.24 | 153,181.45 L | 407,922.20 | |
| Totals | | 1,351,990.16 | | 1,156,769.02 | 198,221.15 |

Comments:

- Emissions increase of 198,221.15 kgCO2 in 2018
- Increase is attributed to the first full-year operation of the Steve Kerr Memorial Complex (electricity and natural gas)

2018-2019 North Perth Carbon Comparison

| Product | 2019 | | 2018 | | Year Difference |
|---------------|---------------------------|-------------------|---------------------------|---------------------|--------------------|
| | Quantity | kgCO2 | Quantity | kgCO2 | kgCO2 |
| Electricity | 4,247,254.18 kWh | 174,137.42 | 5,367,526.18 kWh | 220,068.57 | |
| Propane | 14,008.7 L | 21,153.14 | 25,594.40 L | 38,647.54 | |
| Natural Gas | 122,545.03 m ³ | 230,262.11 | 285,563.71 m ³ | 536,574.72 | |
| Furnace Oil | 11,106.1 L | 30,264.12 | 27,549.10 L | 75,071.30 | |
| Gasoline | 52,294.14 L | 119,701.29 | 31,646.91 L | 72,439.78 | |
| Diesel | 154,115.8 L | 410,410.38 | 153,656.87 L | 409,188.24 | |
| Totals | | 985,928.46 | | 1,351,990.16 | -366,061.70 |

Comments:

- Emissions decrease of 366,061.70 kgCO2 in 2019
- Solar power contributed to savings of 21,721 kgCO2 in 2019

2019-2020 North Perth Carbon Comparison

| Product | 2020 | | 2019 | | Year Difference kgCO2 |
|---------------|---------------------|---------------------|---------------------------|-------------------|--------------------------|
| | Quantity | kgCO2 | Quantity | kgCO2 | |
| Electricity | 5,953,372.26 kWh | 244,088.28 | 4,247,254.18 kWh | 174,137.42 | |
| Propane | 38,418.50 L | 58,011.94 | 14,008.7 L | 21,153.14 | |
| Natural Gas | 213,870.79 m3 | 401,863.21 | 122,545.03 m ³ | 230,262.11 | |
| Furnace Oil | 15,225.40 L | 41,489.22 | 11,106.1 L | 30,264.12 | |
| Gasoline | 48,124.18 L | 110,156.25 | 52,294.14 L | 119,701.29 | |
| Diesel | 134,768.30 L | 358,887.18 | 154,115.8 L | 410,410.38 | |
| Totals | | 1,214,496.08 | | 985,928.46 | 228,567.62 |

Comments:

- Emissions increase of 228,567.62 kgCO2 in 2020
- Solar power contributed to savings of 33,704 kgCO2 in 2020

2020-2021 North Perth Carbon Comparison

| Product | 2021 | | 2020 | | Year Difference kgCO2 |
|---------------|---------------------|---------------------|---------------------|---------------------|--------------------------|
| | Quantity | kgCO2 | Quantity | kgCO2 | |
| Electricity | 6,246,508.68 kWh | 256,106.86 | 5,953,372.26 kWh | 244,088.28 | |
| Propane | 21,720.50 L | 32,797.96 | 38,418.50 L | 58,011.94 | |
| Natural Gas | 209,747.32 m3 | 394,115.21 | 213,870.79 m3 | 401,863.21 | |
| Furnace Oil | 10,084.40 L | 27,479.99 | 15,225.40 L | 41,489.22 | |
| Gasoline | 48,339.15 L | 110,648.31 | 48,124.18 L | 110,156.25 | |
| Diesel | 157,523.29 L | 419,468.77 | 134,768.30 L | 358,887.18 | |
| Totals | | 1,240,617.10 | | 1,214,496.08 | 26,121.02 |

Comments:

- Emissions increase of 26,121.02 kgCO2 in 2021
- Solar power contributed to savings of 35,333 kgCO2 in 2021

2021-2022 North Perth Carbon Comparison

| Product | 2022 | | 2021 | | Year Difference |
|---------------|------------------|---------------------|------------------|---------------------|-------------------|
| | Quantity | kgCO2 | Quantity | kgCO2 | kgCO2 |
| Electricity | 6,119,419.73 kWh | 250,896.21 | 6,246,508.68 kWh | 256,106.86 | |
| Propane | 72,905.2 L | 110,086.86 | 21,720.50 L | 32,797.96 | |
| Natural Gas | 235,432 m3 | 442,376.73 | 209,747.32 m3 | 394,115.21 | |
| Furnace Oil | 11,500.2 L | 31,338.04 | 10,084.40 L | 27,479.99 | |
| Gasoline | 41,233.49 L | 94,383.45 | 48,339.15 L | 110,648.31 | |
| Diesel | 181,310 L | 482,810.40 | 157,523.29 L | 419,468.77 | |
| Totals | | 1,411,891.69 | | 1,240,617.10 | 171,274.59 |

Comments:

- Emissions increase of 171,274.59 kgCO2 in 2022
- Solar power contributed to savings of 28,431.61 kgCO2 in 2022

B. Carbon Compensation

North Perth's Carbon Compensation Strategy is to plant three trees per tonne of CO2 emitted (Base Year 2014).

| | kgCO2 | tCO2 | Trees per Tonne | Total Trees to be Planted |
|---------------------------------|--------------|----------|-----------------|---------------------------|
| Total Emissions for 2014 | 1,316,433.18 | 1,316.43 | 3 | 3,949 |
| Total Emissions for 2015 | 1,173,282.36 | 1,173.28 | 3 | 3,520 |
| Total Emissions for 2016 | 1,159,595.29 | 1,159.60 | 3 | 3,479 |
| Total Emissions for 2017 | 1,156,769.02 | 1,153.77 | 3 | 3,461 |
| Total Emissions for 2018 | 1,351,990.16 | 1,351.99 | 3 | 4,056 |
| Total Emissions for 2019 | 985,928.46 | 985.93 | 3 | 2,958 |
| Total Emissions for 2020 | 1,214,496.08 | 1,214.50 | 3 | 3,644 |
| Total Emissions for 2021 | 1,240,617.10 | 1,240.62 | 3 | 3,722 |
| Total Emissions for 2022 | 1,411,891.69 | 1,411.90 | 3 | 4,235 |

Comments:

- In 2019, approximately 1050 trees and 300 shrubs were planted on municipal lands, drains and boulevard plantings.
- In 2020, approximately 2700 trees and 1000 shrubs were planted on municipal lands, drains and boulevard plantings.

- In 2021, approximately 1700 trees and 1000 shrubs were planted on municipal lands, drains and boulevard plantings.
- In 2022, approximately 1850 trees and 300 shrubs were planted on municipal lands, drains and boulevard plantings.

2022/2023 Projects and Activities

A. Carbon Reduction

- Greenhouse gas reduction plan presented to and adopted by Municipality of North Perth Council in October 2021

B. Carbon Compensation

- Some planned plantings for 2023 include:
 - Working in collaboration with MVCA to plant trees at the Steve Kerr Memorial Complex and other locations within the Municipality of North Perth
- Grant funding has been received under Municipal Modernization Program – Intake 2 to implement a Paperless Software Solution to allow key functions of the municipality to be paperless.
- Council of the Municipality of North Perth designated an 8-acre portion of land at Robert Mathers Park as a Memorial Naturalized Park area.
- Continue reporting on solar panels at Steve Kerr Memorial Complex. Lifetime savings from 2018-2021 is \$279,060.00 and 90,758 kgCO₂.
- Continue partnership with the Regional EV Charging Network Strategy implementing the installation of Level 2 and Level 3 (DC Fast Charging) stations for public use.
- Flood mapping with the Maitland Valley Conservation Association
- Perth County Stewardship program to bring in a Climate Coordinator
- BRA – renewable natural gas
- Electric fleet

Carbon Footprint Reduction Target

Original target was to reduce our carbon footprint by 10 percent (131.6 tonnes) by 2025. A 10-year average will be used since fuel consumption is weather based.

| | kgCO ₂ | tCO ₂ | Difference tCO ₂ |
|---|-------------------|------------------|-----------------------------|
| Total Emissions for 2014 | 1,316,433.18 | 1,316.43 | |
| Total Emissions for 2015 | 1,173,282.36 | 1,173.28 | -143.15 |
| Total Emissions for 2016 | 1,159,595.29 | 1,159.60 | -13.68 |
| Total Emissions for 2017 | 1,156,769.02 | 1,156.77 | -2.83 |
| Total Emissions for 2018 | 1,351,990.16 | 1,351.99 | 195.22 |
| Total Emissions for 2019 | 985,928.46 | 985.93 | -366.06 |
| Total Emissions for 2020 | 1,214,496.08 | 1,214.50 | 228.57 |
| Total Emissions for 2021 | 1,240,617.10 | 1,240.62 | 26.12 |
| Total Emissions for 2022 | 1,411,891.69 | 1,411.90 | 171.28 |
| Total Reduction in tCO₂ | | | |

Goals Moving Forward

1. Continue reporting on trees being planted for more effective and comprehensive tracking.
2. Continue to naturalize vacant green spaces in the municipality.
3. Reduce North Perth's carbon footprint by 25% by 2025 (Base Year 2014). GHG emission reduction opportunities will be identified in North Perth's community-wide GHG emission reduction plan.
4. Track GHD emissions against growth, facility, and fleet.
5. Proceed to examine overall sustainability in relations to GHD.