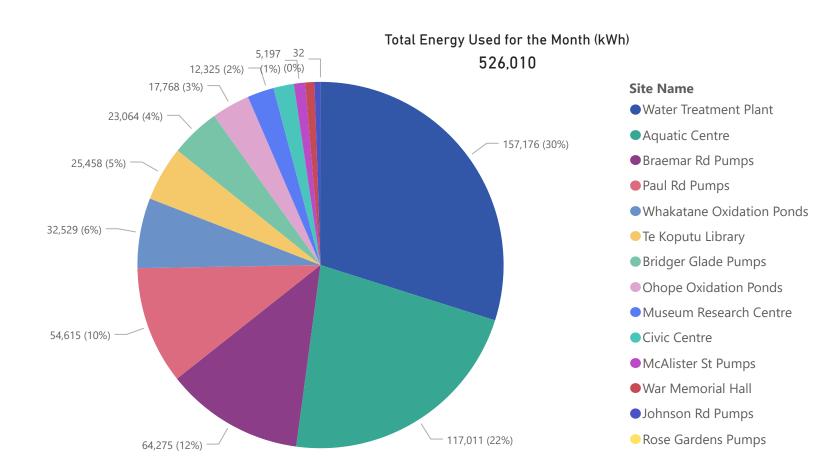


Summary

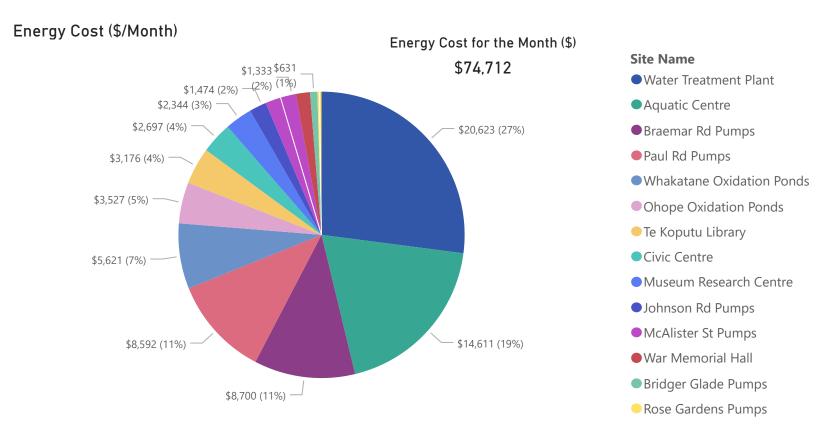
| \$5,741 Monthly Energy Cost Savings | 27,885 Elec. Savings (kWh/mo) | 5% Elec. Savings (%) | 281,673 R12M Electricity Savings (kWh/yr) | 9,204 CO2e Savings (kg/mo) |
|---------------------------------------|-------------------------------|--------------------------------|--|--|
| \$135,095 R12M Energy Cost Savings | 26,014 Gas. Savings (kWh/mo) | 61% Gas. Savings (%) | 1,384,545 R12M Gas Savings (kWh/yr) | 336,943 R12M CO2e Savings (kg/yr) |

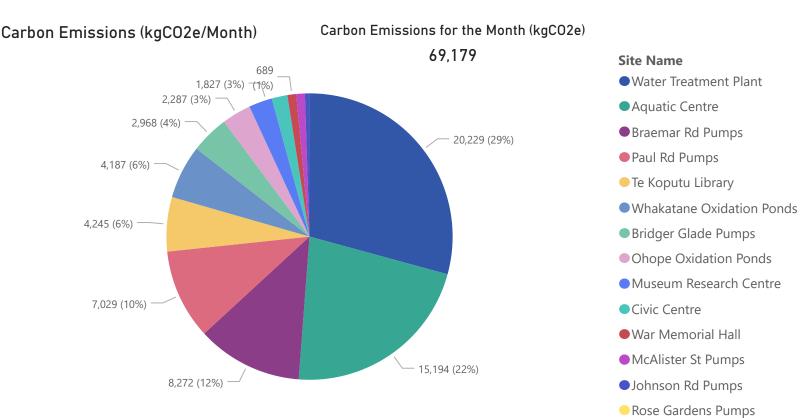
Total Energy (kWh/Month)





Summary

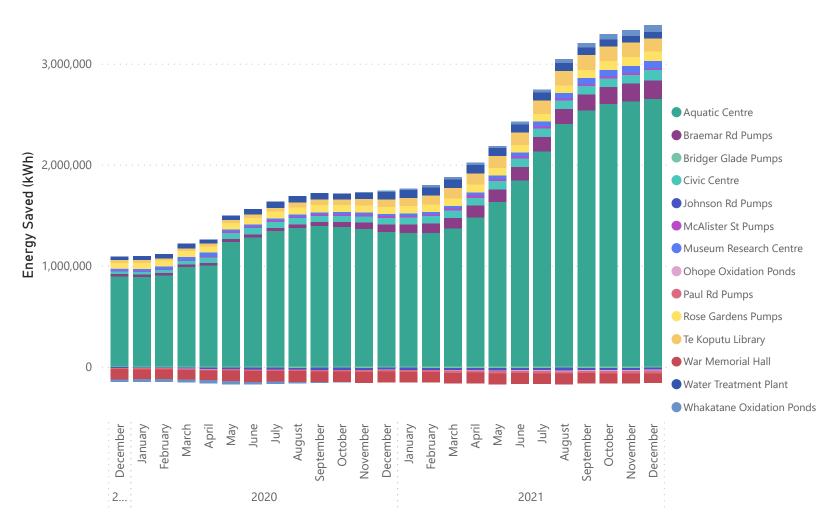






Summary

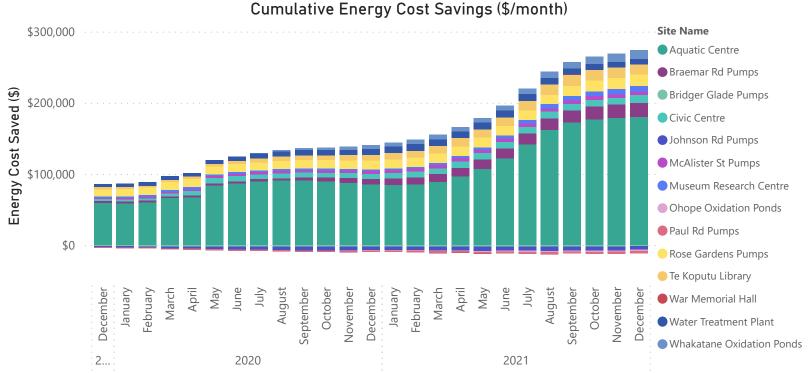
Cumulative Energy Savings (kWh)



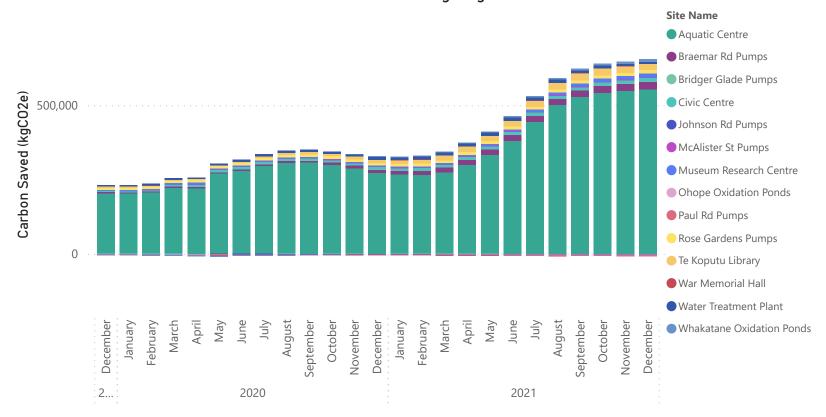


Summary





Cumulative Carbon Savings (kgCO2e/month)





Civic Centre

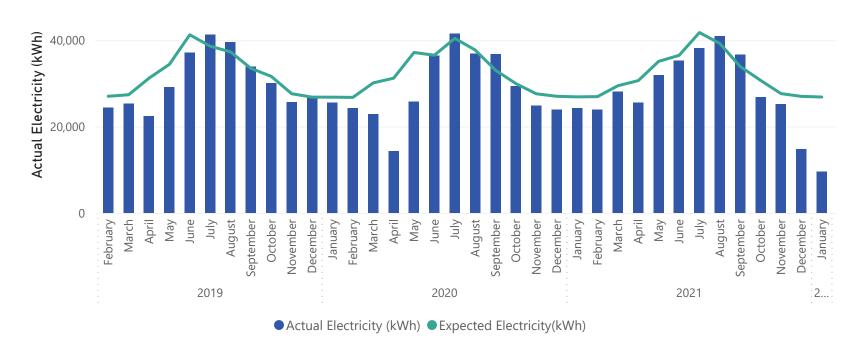
| \$1,852 | 17,303 | 64% | 49,175 | 2,216 |
|-----------------------------|------------------------|-------------------|-----------------------------------|---------------------------|
| Monthly Energy Cost Savings | Elec. Savings (kWh/mo) | Elec. Savings (%) | R12M Electricity Savings (kWh/yr) | CO2e Savings (kg/mo) |
| | | | | |
| \$5,322 | | | | 5,917 |
| R12M Energy Cost Savings | | | | R12M CO2e Savings (kg/yr) |

Comments:

Electric vehicle charging stations have been in use from March 2021, non-routine adjustments are on-going to account for the increased electricity use.

There were metering errors for the Civic Centre starting in November 2021, which persisted through to January 2022. The metering issues have now been resolved and usage for the Civic Centre has been updated. Electricity savings are higher than usual for the month, the Civic Centre renovation has displaced many office workers, which has decreased electricity demand.

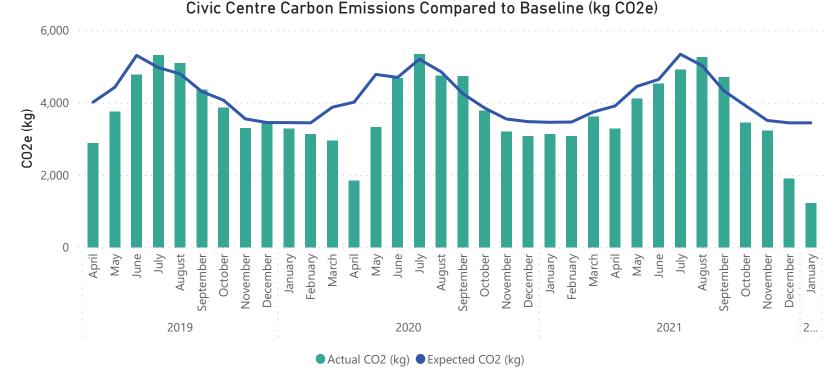
Civic Centre Electricity Use Compared to Baseline (kWh)





Civic Centre











Civic Centre





● EUI Monthly (kWh/year/m^2) ● EUI R12M (kWh/year/m^2)



Aquatic Centre

| \$1,452 Monthly Energy Cost Savings | -4,340 Elec. Savings (kWh/mo) | -4% Elec. Savings (%) | 11,370 R12M Electricity Savings (kWh/yr) | 5,270 CO2e Savings (kg/mo) |
|--|-------------------------------------|--------------------------------|--|--|
| \$96,802 R12M Energy Cost Savings | 26,733 Gas. Savings (kWh/mo) | 95% Gas. Savings (%) | 1,339,206 R12M Gas Savings (kWh/yr) | 292,215 R12M CO2e Savings (kg/yr) |

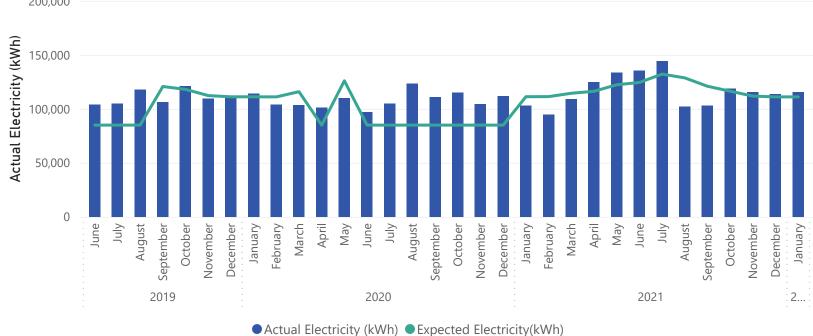
Comments:

The outdoor pool is now open year-round and uses a baseline that reflects this change.

Similar to previous months, electricity use was slightly more than baseline in January 2022, however, natural gas savings are excellent, with 95% for the month of January 2022.

Rolling 12 month savings have reached a new record, with approximately \$97,000 saved per year.

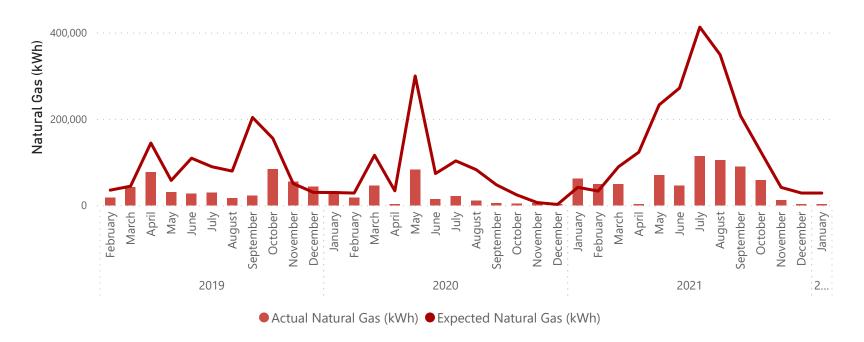
Aquatic Centre Electricity Use Compared to Baseline (kWh) 200,000



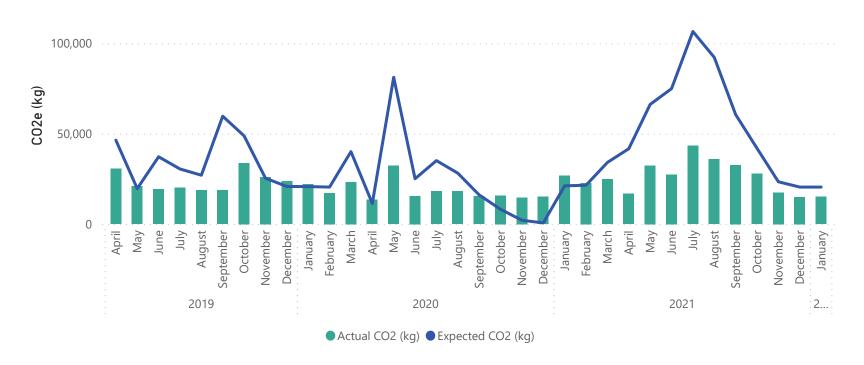


Aquatic Centre

Aquatic Centre Natural Gas Compared to Baseline (kWh)

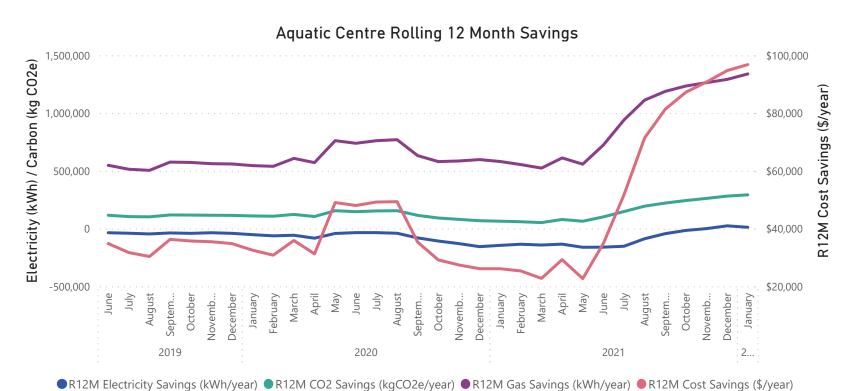


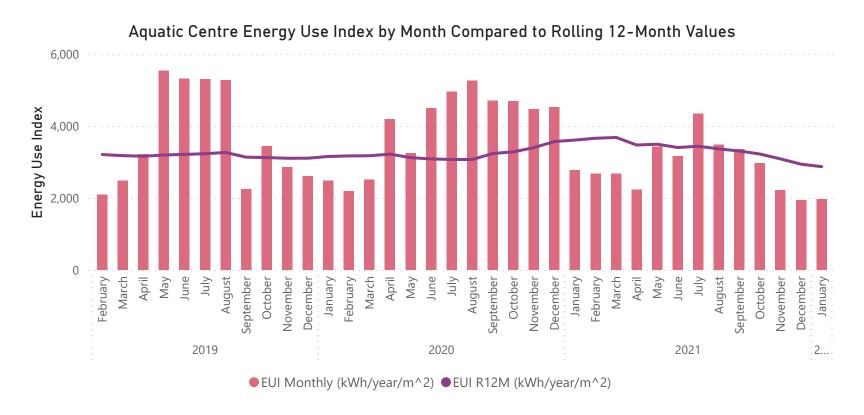
Aquatic Centre Carbon Emissions Compared to Baseline (kg CO2e)





Aquatic Centre







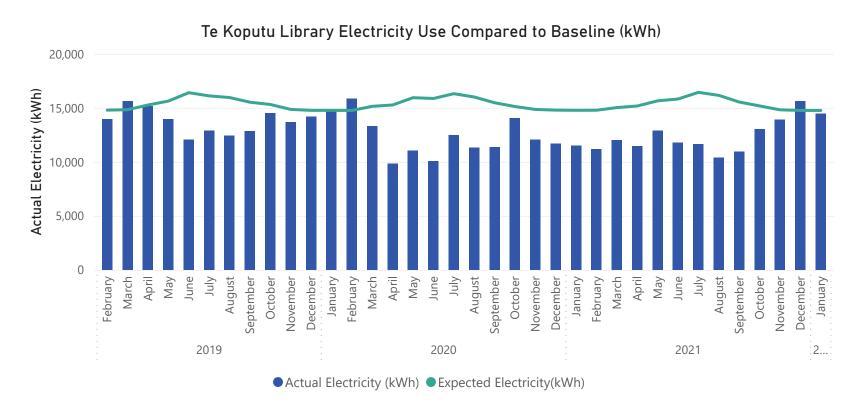
Te Koputu Library

| -\$294 Monthly Energy Cost Savings | 306 Elec. Savings (kWh/mo) | 2% Elec. Savings (%) | 34,894 R12M Electricity Savings (kWh/yr) | -926 CO2e Savings (kg/mo) |
|---------------------------------------|-------------------------------------|--------------------------------|---|--|
| \$4,905 R12M Energy Cost Savings | -4,473 Gas. Savings (kWh/mo) | -69% Gas. Savings (%) | 12,928 R12M Gas Savings (kWh/yr) | 7,347 R12M CO2e Savings (kg/yr) |

Comments:

Gas use was 69% more than expected. Average ambient temperature was similar for December 2021 and January 2022, however, less gas was used in January.

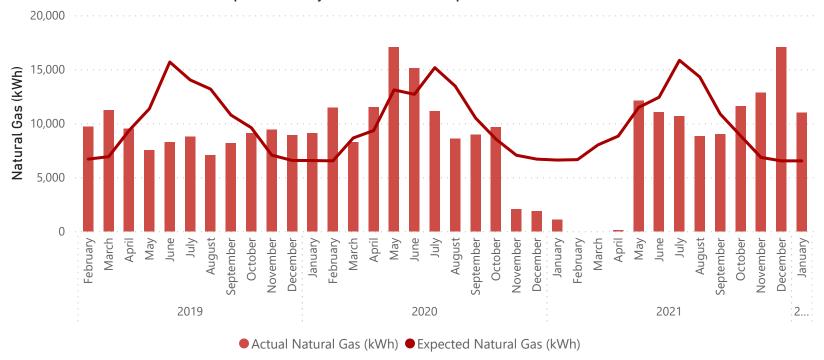
Dehumidification loads were significant in January, and this requires both electricity for cooling, as well as gas for re-heat. Control of relative humidity has improved, however further investigation is needed to understand if this is optimised or if the cooling and heating coils are fighting each other excessively.



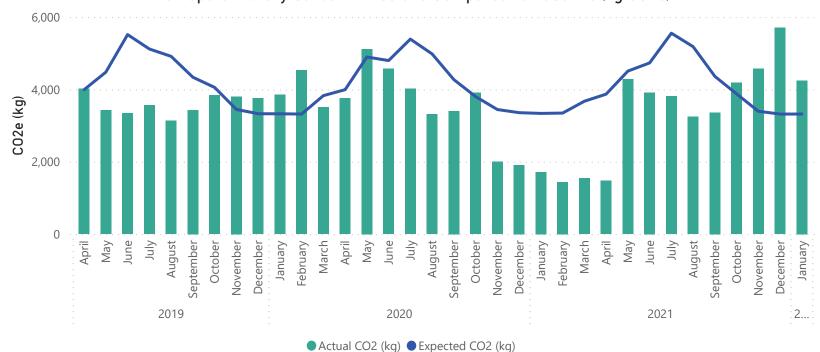


Te Koputu Library





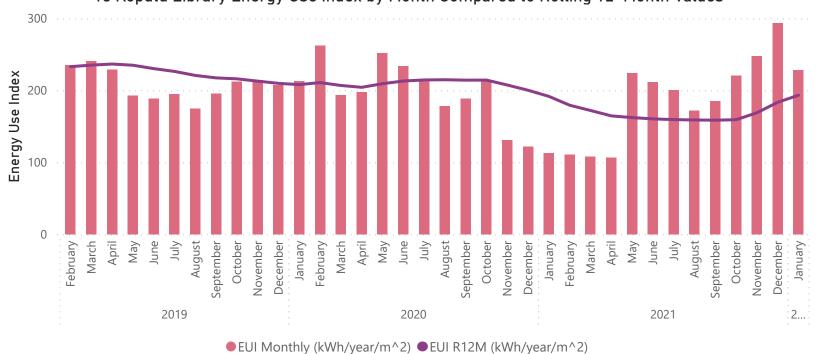


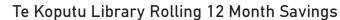


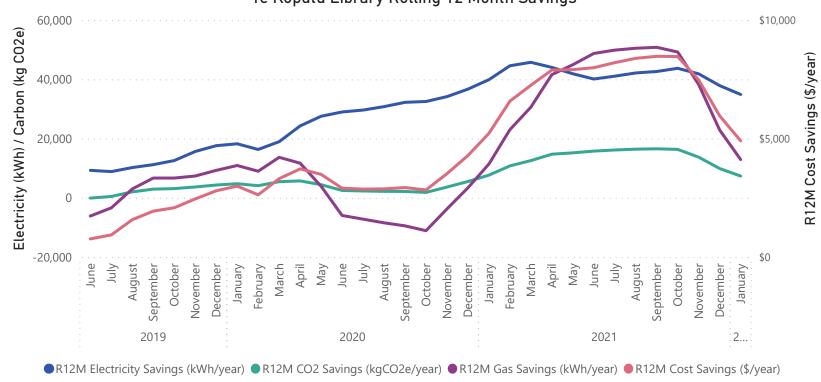


Te Koputu Library











Museum and Research Centre

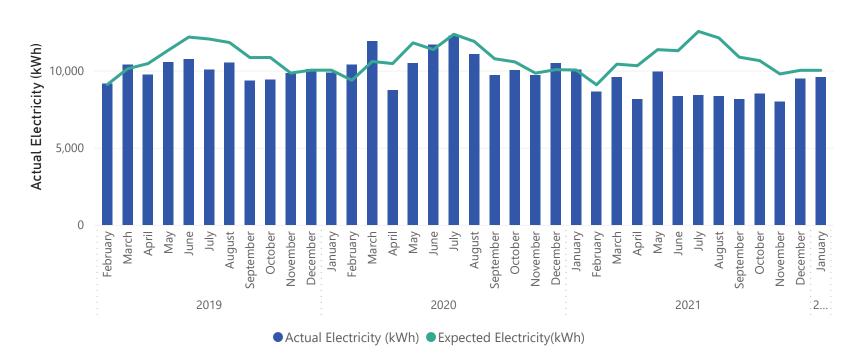
| \$287 Monthly Energy Cost Savings | 435 Elec. Savings (kWh/mo) | 4% Elec. Savings (%) | 23,316 R12M Electricity Savings (kWh/yr) | 766 CO2e Savings (kg/mo) |
|--|------------------------------------|--------------------------------|--|-------------------------------------|
| \$5,131 R12M Energy Cost Savings | 3,274 Gas. Savings (kWh/mo) | 54% Gas. Savings (%) | 34,180 R12M Gas Savings (kWh/yr) | 10,411 R12M CO2e Savings (kg/yr) |

Comments:

The trend for the rolling 12 month EUI continues to drop for the Museum and Research Centre and rolling 12 month savings have also increased this month, which is good. Electricity use has increased in December 2021 and January 2022 compared to June to November 2021 period, which can partly be attributed to more council staff occupying the building as the Civic Centre is being re-developed.

Some savings reflect the recent work on the HVAC system, operation of the air handling unit has been changed as well as modifying timing on air conditioning. Some of the savings in August and September 2021 are likely attributed to the Museum and Research Centre being closed to public during alert level 3.

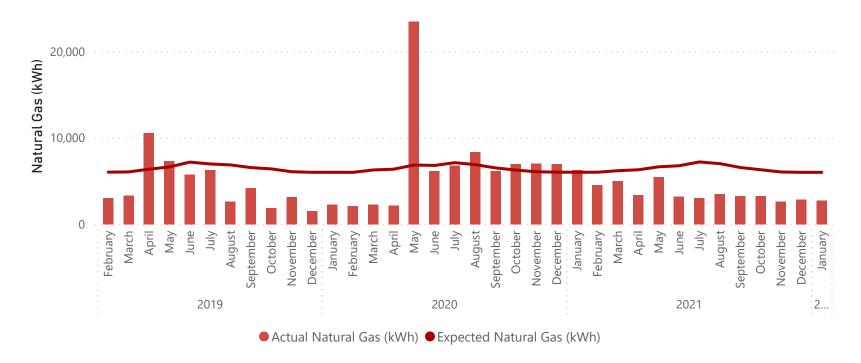
Museum Research Centre Electricity Use Compared to Baseline (kWh)



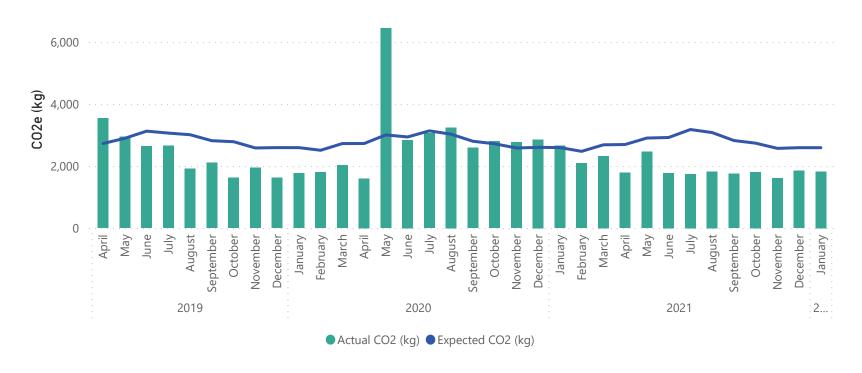


Museum and Research Centre

Museum Research Centre Natural Gas Compared to Baseline (kWh)

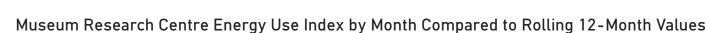


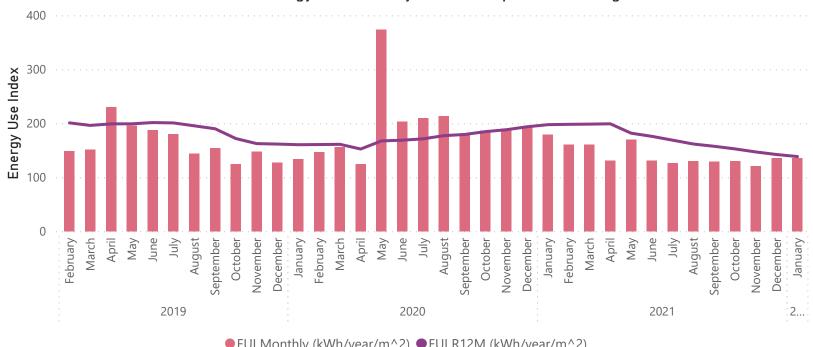
Museum Research Centre Carbon Emissions Compared to Baseline (kg CO2e)





Museum and Research Centre











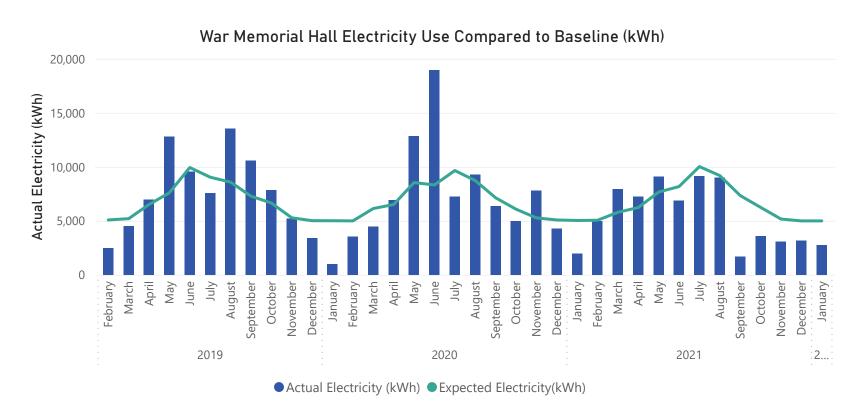
War Memorial Hall

| \$284 Monthly Energy Cost Savings | 2,264 Elec. Savings (kWh/mo) | 45% Elec. Savings (%) | 12,361 R12M Electricity Savings (kWh/yr) | 396 CO2e Savings (kg/mo) |
|--|------------------------------|--------------------------|--|--|
| \$1,144 R12M Energy Cost Savings | | | | 1,207 R12M CO2e Savings (kg/yr) |

Comments:

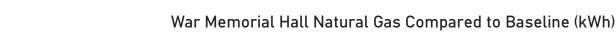
A baseline was created for War Memorial Hall that adjusts for ambient temperature. The baseline period is July 2020 to June 2021. The War Memorial Hall uses more electricity and gas in winter months.

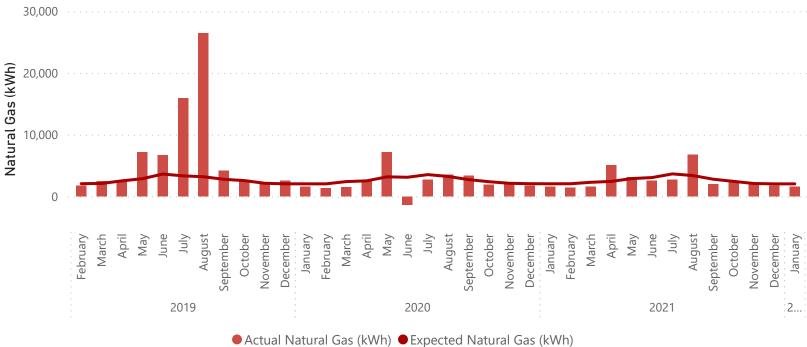
The War Memorial Hall is on a NHH account, some months' usage may be estimated by the retailer and captured by a subsequent meter reading. Manual meter readings can improve accuracy of electricity and gas usage.



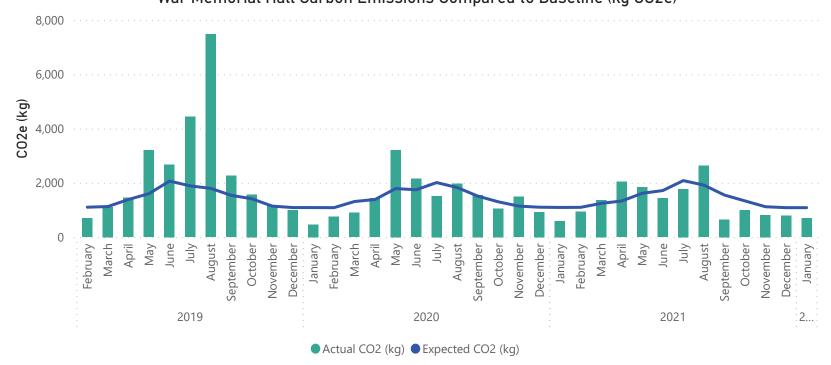


War Memorial Hall





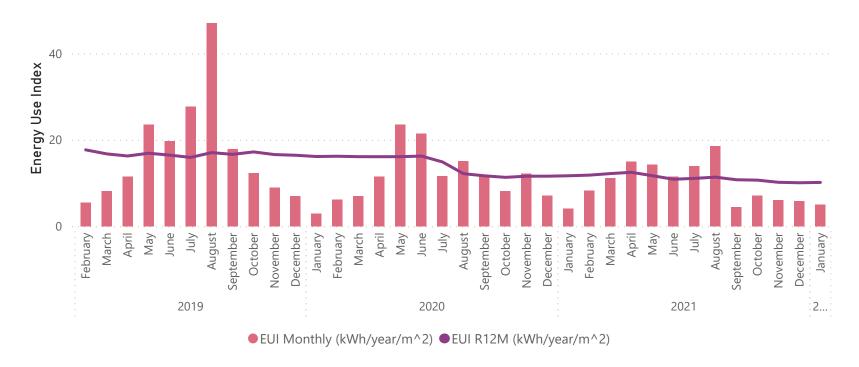
War Memorial Hall Carbon Emissions Compared to Baseline (kg CO2e)

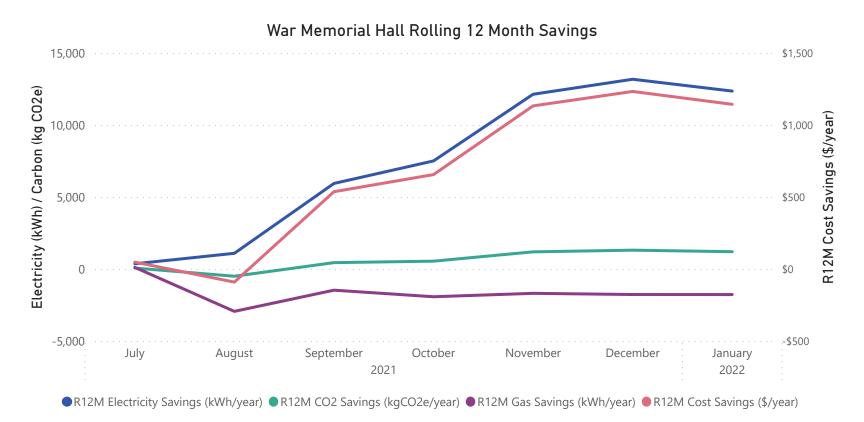




War Memorial Hall

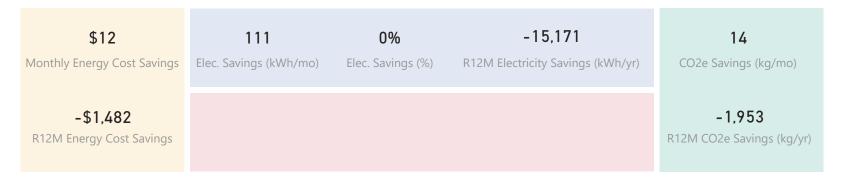
War Memorial Hall Energy Use Index by Month Compared to Rolling 12-Month Values







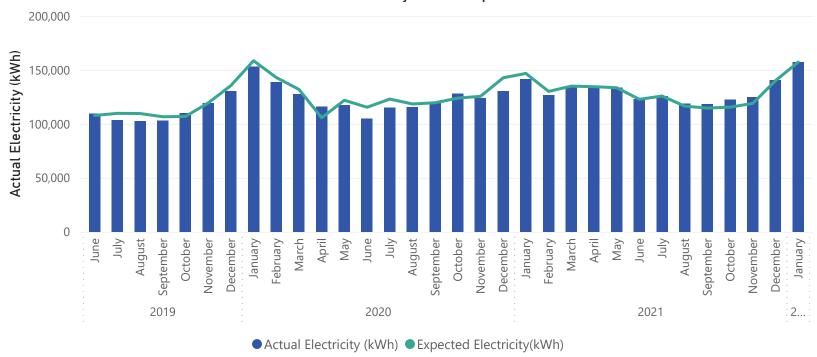
Water Treatment Plant



Comments:

January 2022 was a month of high demand. The WTP's electricity use was close to expected and the EUI has decreased over recent months.

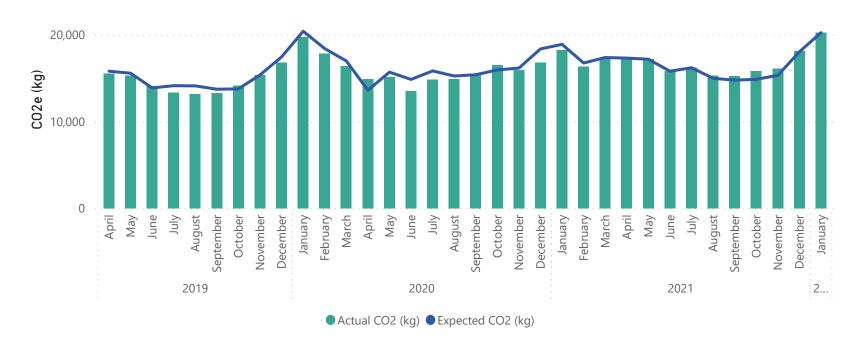
Water Treatment Plant Electricity Use Compared to Baseline (kWh)

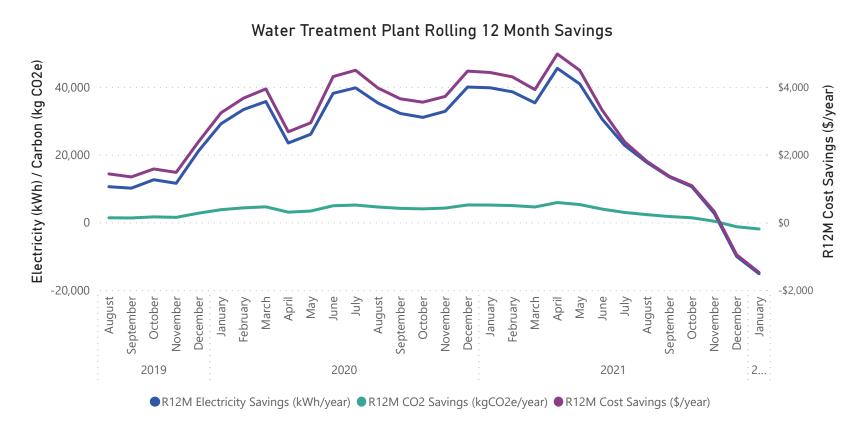




Water Treatment Plant

Water Treatment Plant Carbon Emissions Compared to Baseline (kg CO2e)

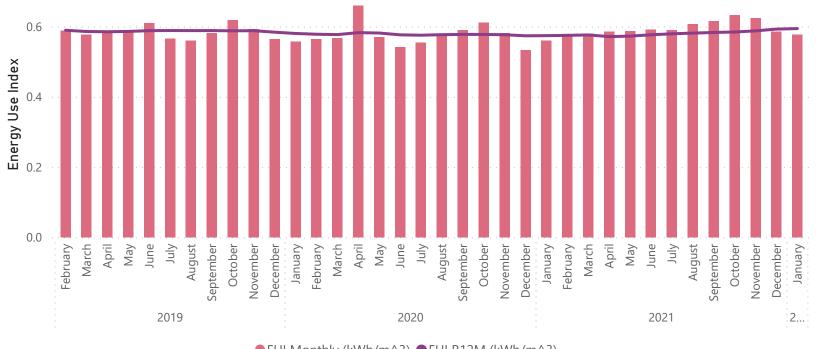






Water Treatment Plant

Water Treatment Plant Energy Use Index by Month Compared to Rolling 12-Month Values





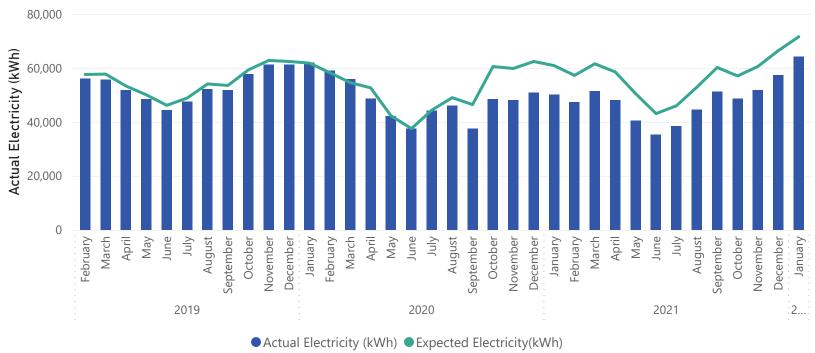
Braemar Road Pump Station

| \$776 | 7,285 | 10% | 106,534 | 885 |
|-----------------------------|------------------------|-------------------|-----------------------------------|---------------------------|
| Monthly Energy Cost Savings | Elec. Savings (kWh/mo) | Elec. Savings (%) | R12M Electricity Savings (kWh/yr) | CO2e Savings (kg/mo) |
| | | | | |
| \$11,591 | | | | 14,166 |
| R12M Energy Cost Savings | | | | R12M CO2e Savings (kg/yr) |
| | | | | |

Comments:

Continued savings from high efficiency pumps and motors, installed September 2020. Rolling 12 month savings are approximately \$12,000 per year and 106,000 kWh per year. January 2022's EUI has increased over December 2021. Since November 2020, when the pumps were operating most efficiently, the EUI has increased by 11%.

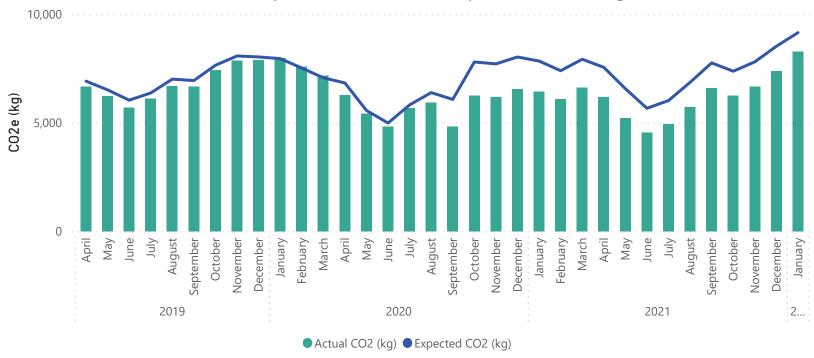
Braemar Rd Pumps Electricity Use Compared to Baseline (kWh)



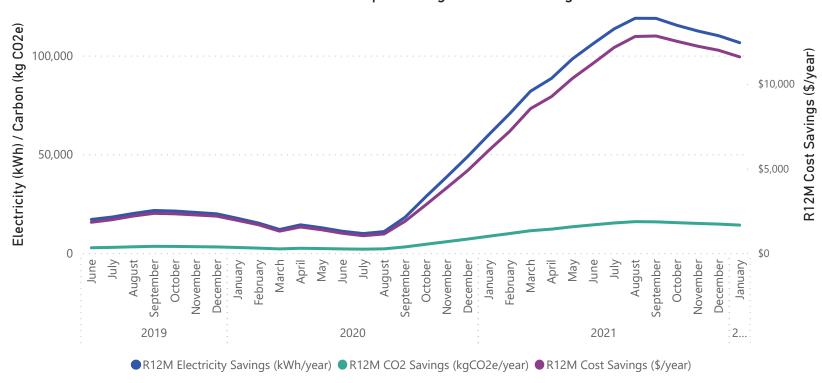


Braemar Road Pump Station



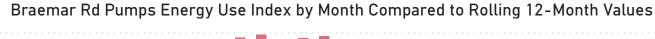


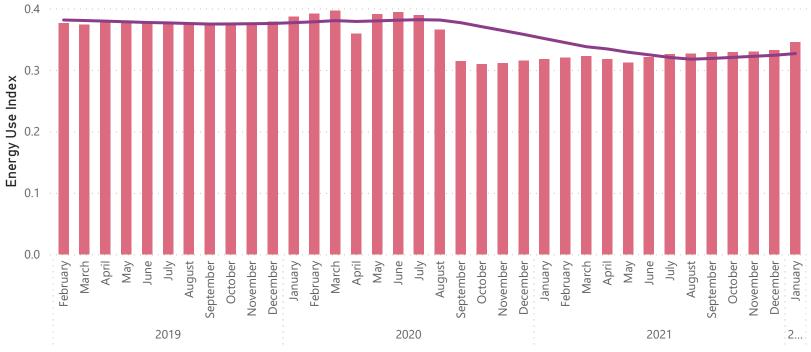






Braemar Road Pump Station





● EUI Monthly (kWh/m^3) ● EUI R12M (kWh/m^3)



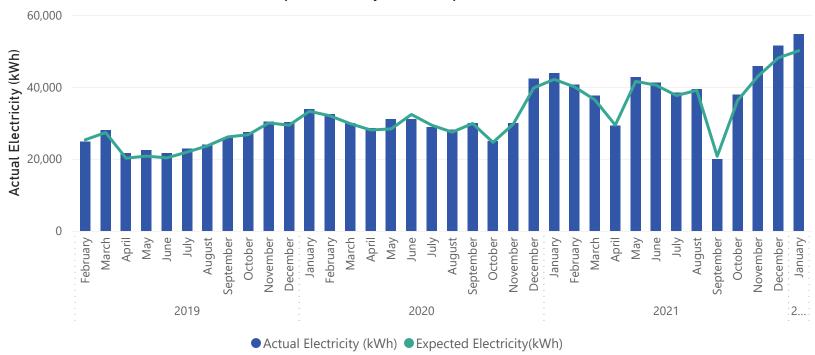
Paul Road Pump Station

| -\$488 | -4,548 | -9% | -16,367 | -584 |
|-----------------------------|------------------------|-------------------|-----------------------------------|---------------------------|
| Monthly Energy Cost Savings | Elec. Savings (kWh/mo) | Elec. Savings (%) | R12M Electricity Savings (kWh/yr) | CO2e Savings (kg/mo) |
| -\$1,720 | | | | -2,096 |
| R12M Energy Cost Savings | | | | R12M CO2e Savings (kg/yr) |

Comments:

Demand has increased for the fourth month in a row. High demand in January and electricity use that is more than expected may indicate that the pump is operating outside its optimum efficiency range.

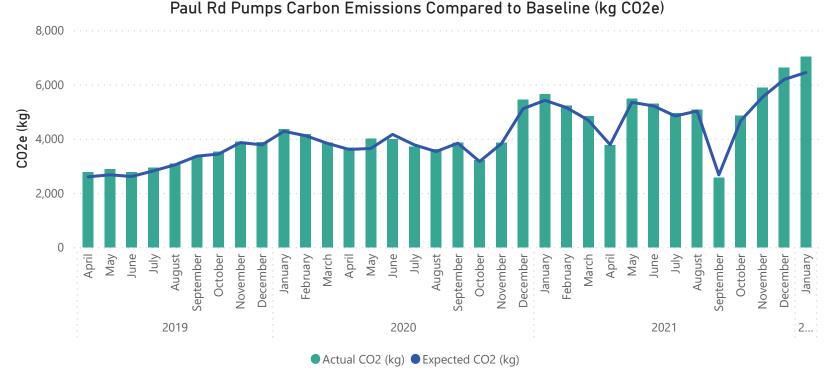
Paul Rd Pumps Electricity Use Compared to Baseline (kWh)

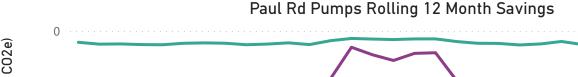


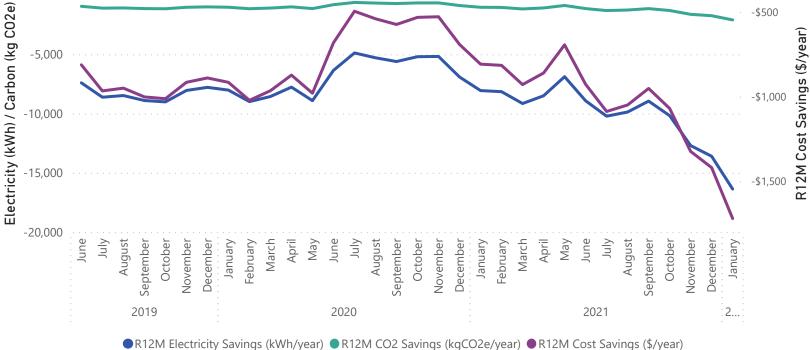


Paul Road Pump Station





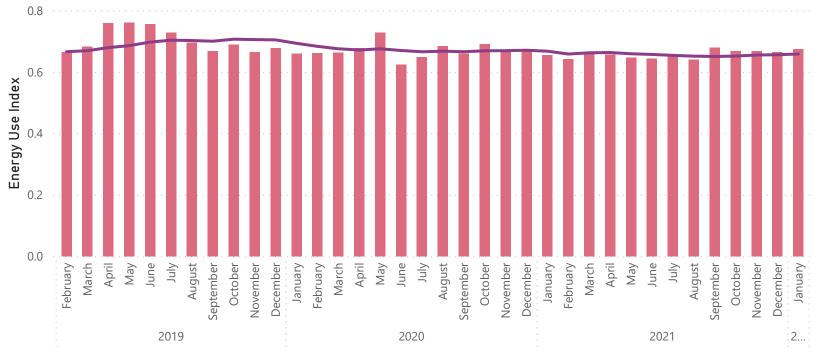






Paul Road Pump Station





● EUI Monthly (kWh/m^3) ● EUI R12M (kWh/m^3)



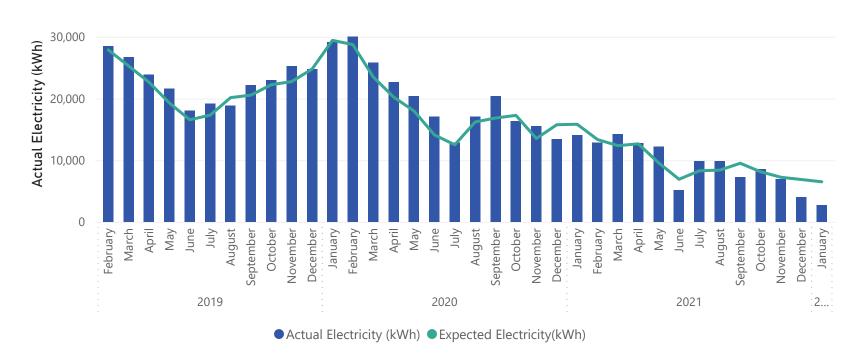
Johnson Road Pump Station

| \$829 | 3,758 | 58% | 3,228 | 484 |
|-----------------------------|------------------------|-------------------|-----------------------------------|---------------------------|
| Monthly Energy Cost Savings | Elec. Savings (kWh/mo) | Elec. Savings (%) | R12M Electricity Savings (kWh/yr) | CO2e Savings (kg/mo) |
| \$716 | | | | 419 |
| R12M Energy Cost Savings | | | | R12M CO2e Savings (kg/yr) |
| | | | | |

Comments:

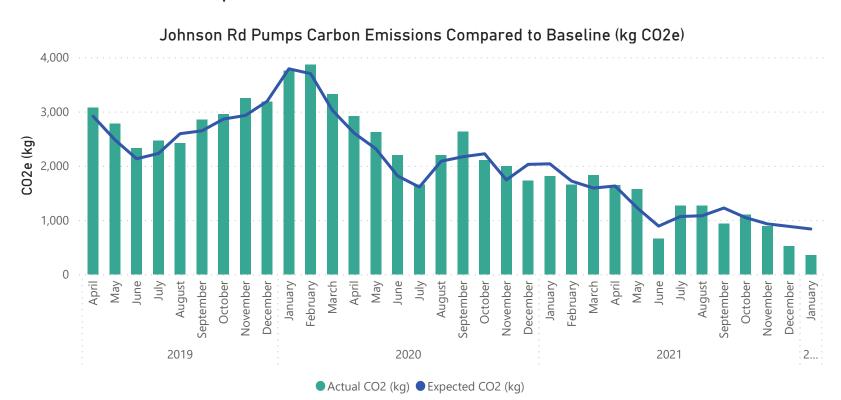
The pumps at Johnson Rd have been used less than previous years. The rolling 12-month EUI for Johnson Road Pump Station has increased over the past year as demand decreases. This is expected as the pump station has a non-zero baseload.

Johnson Rd Pumps Electricity Use Compared to Baseline (kWh)

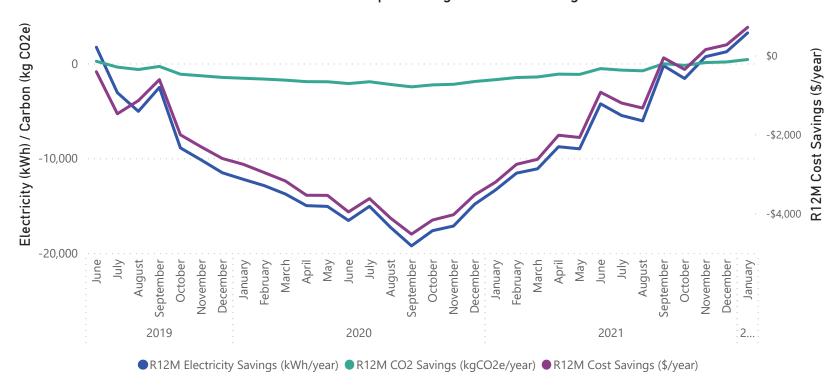




Johnson Road Pump Station



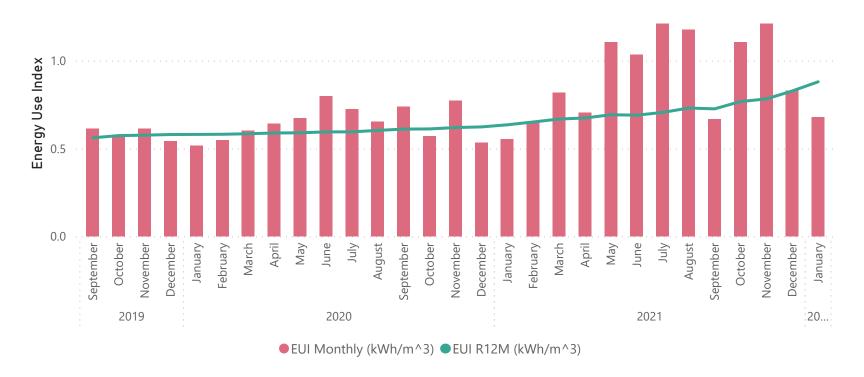
Johnson Rd Pumps Rolling 12 Month Savings





Johnson Road Pump Station

Johnson Rd Pumps Energy Use Index by Month Compared to Rolling 12-Month Values





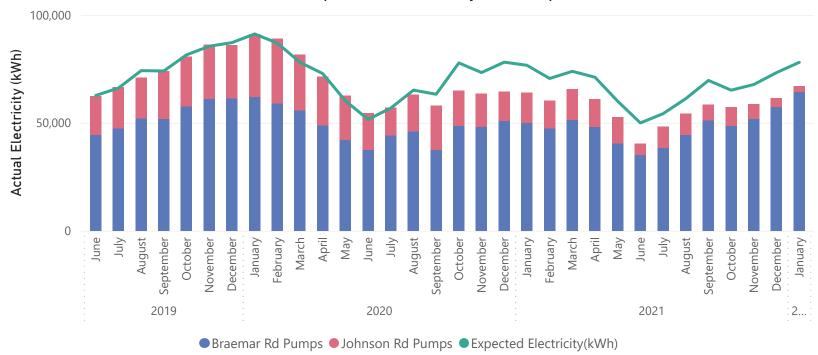
Johnson and Braemar Rd Pump Stations

| \$1,604 Monthly Energy Cost Savings | 11,043 Elec. Savings (kWh/mo) | 14% Elec. Savings (%) | 109,761 R12M Electricity Savings (kWh/yr) | 1,369 CO2e Savings (kg/mo) |
|--|-------------------------------|--------------------------|---|-------------------------------------|
| \$12,307 R12M Energy Cost Savings | | | | 14,585 R12M CO2e Savings (kg/yr) |

Comments:

It is clear from the combined monitoring how the new, more efficient pumps (installed September 2020) at Braemar Road greatly contribute to the collective savings. On an EUI basis, even before the more efficient pumps were installed, Braemar Road was pumping water more efficiently than Johnson Rd.

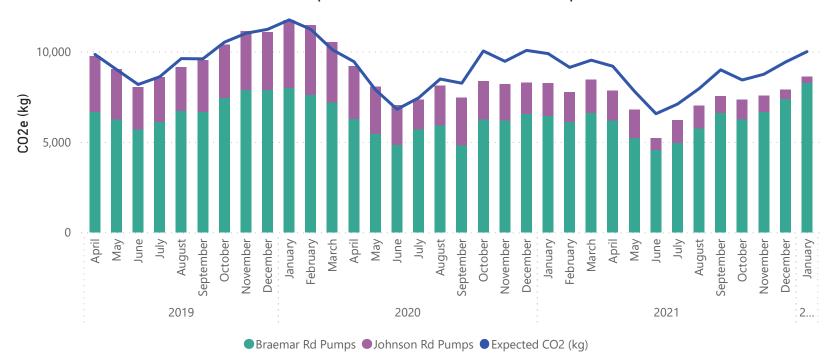
Johnson and Braemar Rd Pump Stations Electricity Use Compared to Baseline (kWh)

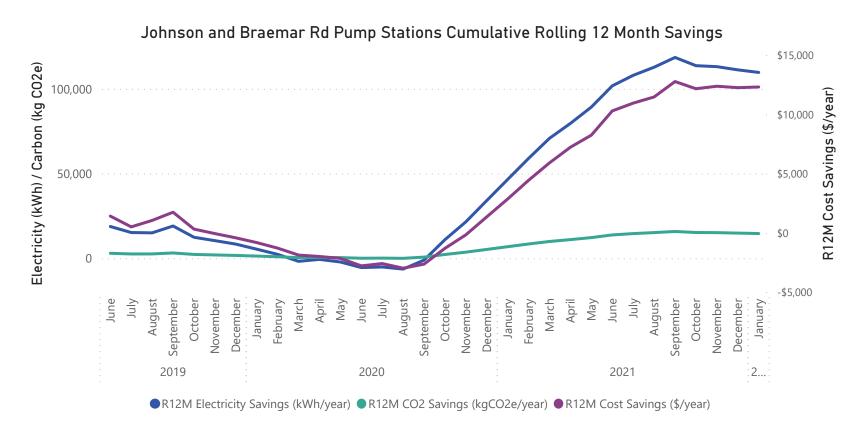




Johnson and Braemar Rd Pump Stations

Johnson and Braemar Rd Pump Stations Carbon Emissions Compared to Baseline (kWh)

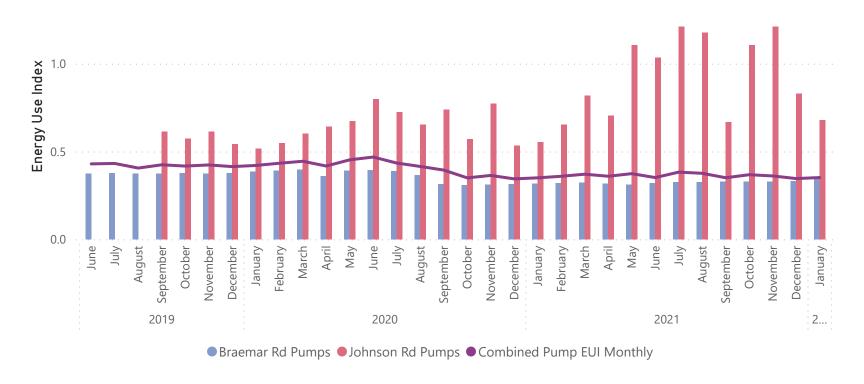






Johnson and Braemar Rd Pump Stations

Johnson and Braemar Rd Pump Stations Energy Use Index by Month





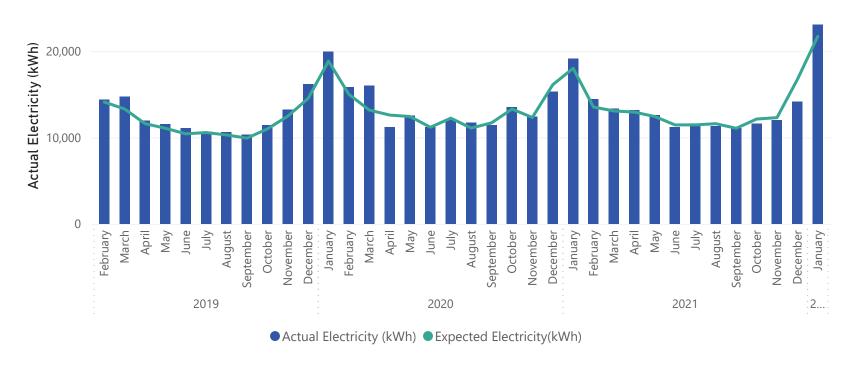
Bridger Glade Pump Station

| -\$249 | -1,355 | -6% | 1,109 | -174 |
|---------------------------|---------------------------|-------------------|-----------------------------------|---------------------------|
| Monthly Energy Cost Savin | gs Elec. Savings (kWh/mo) | Elec. Savings (%) | R12M Electricity Savings (kWh/yr) | CO2e Savings (kg/mo) |
| | | | | |
| \$209 | | | | 143 |
| R12M Energy Cost Saving | s | | | R12M CO2e Savings (kg/yr) |
| | | | | |

Comments:

January 2022 has broken the trend that electricity use has generally been as expected, or less than baseline, since June 2021. January 2022 was a month of high demand, historically months of high demand have typically used more electricity than expected. This may indicate that during periods of high demand the pump station is operating outside of its best efficiency point.

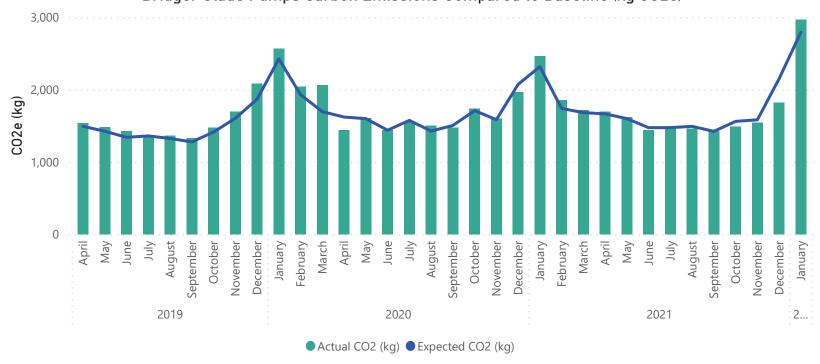
Bridger Glade Pumps Electricity Use Compared to Baseline (kWh)



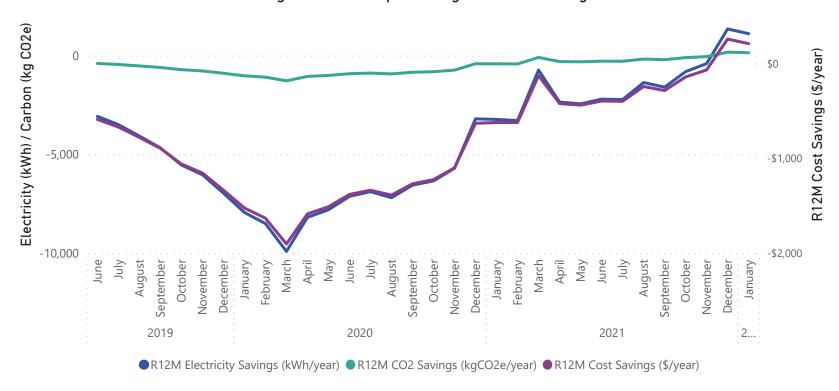


Bridger Glade Pump Station





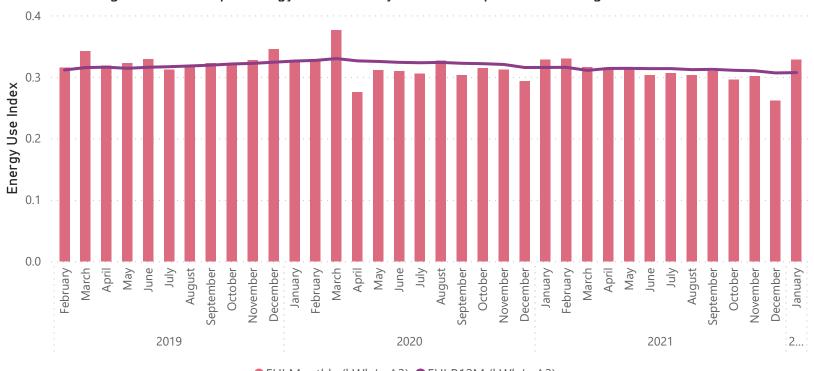
Bridger Glade Pumps Rolling 12 Month Savings





Bridger Glade Pump Station

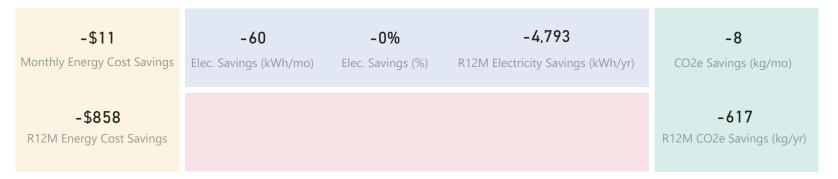
Bridger Glade Pumps Energy Use Index by Month Compared to Rolling 12-Month Values



● EUI Monthly (kWh/m^3) ● EUI R12M (kWh/m^3)



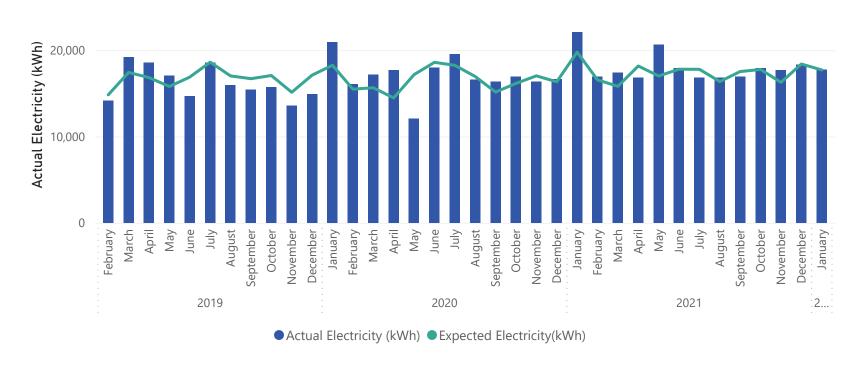
Ohope Oxidation Ponds



Comments:

Ohope oxidation pond electricity use was similar to baseline in January 2022.

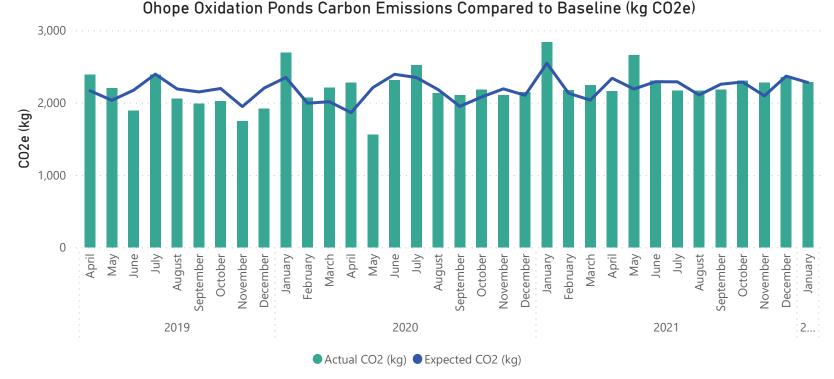
Ohope Oxidation Ponds Electricity Use Compared to Baseline (kWh)

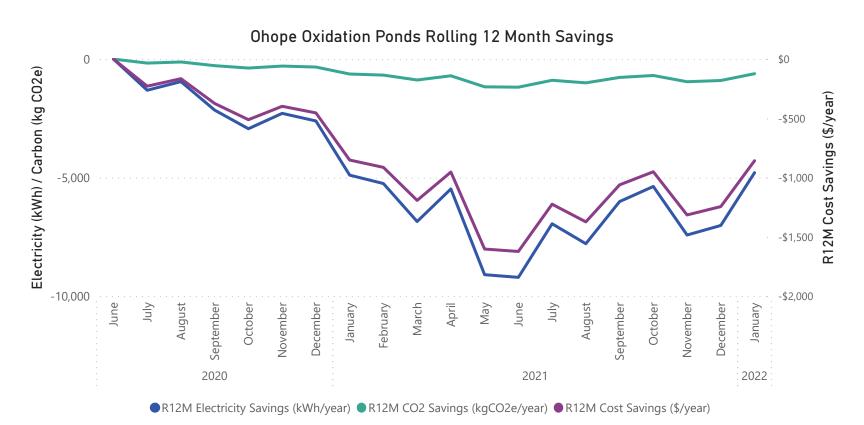




Ohope Oxidation Ponds









Ohope Oxidation Ponds

Ohope Oxidation Ponds Energy Use Index by Month Compared to Rolling 12-Month Values





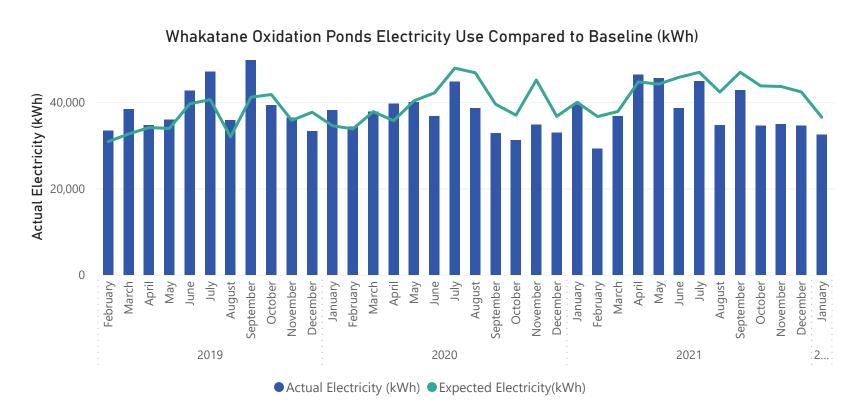
Whakatane Oxidation Ponds

| \$550 | 3,981 | 11% | 56,117 | 512 |
|-----------------------------|------------------------|-------------------|-----------------------------------|---------------------------|
| Monthly Energy Cost Savings | Elec. Savings (kWh/mo) | Elec. Savings (%) | R12M Electricity Savings (kWh/yr) | CO2e Savings (kg/mo) |
| \$7,842 | | | | 7,222 |
| R12M Energy Cost Savings | | | | R12M CO2e Savings (kg/yr) |

Comments:

The Whakatane Oxidation Ponds have two ICPs, the aerators are set up as a time of use (TOU) account (supplied by Mercury), and the pumps are non-TOU (supplied by Genesis).

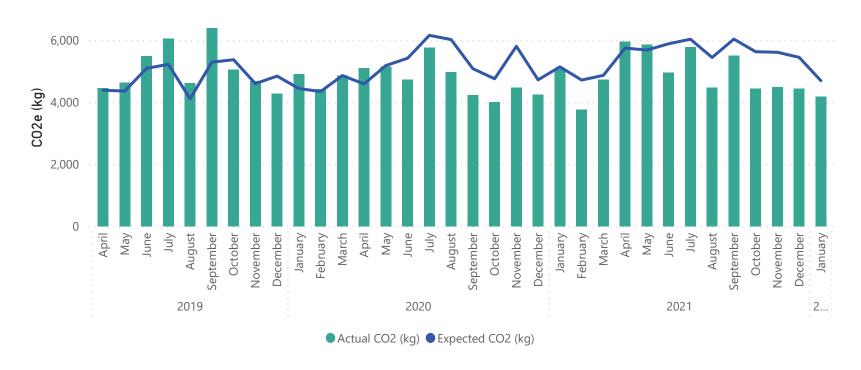
The oxidation ponds used a similar amount of electricity to the previous three months, however, the volume of water treated has decreased. The EUI for January 2022 has increased by 50% over December 2021.

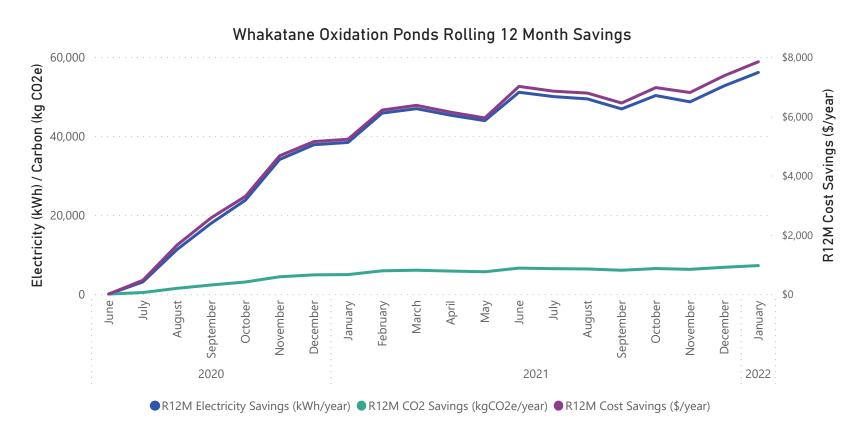




Whakatane Oxidation Ponds

Whakatane Oxidation Ponds Carbon Emissions Compared to Baseline (kg CO2e)

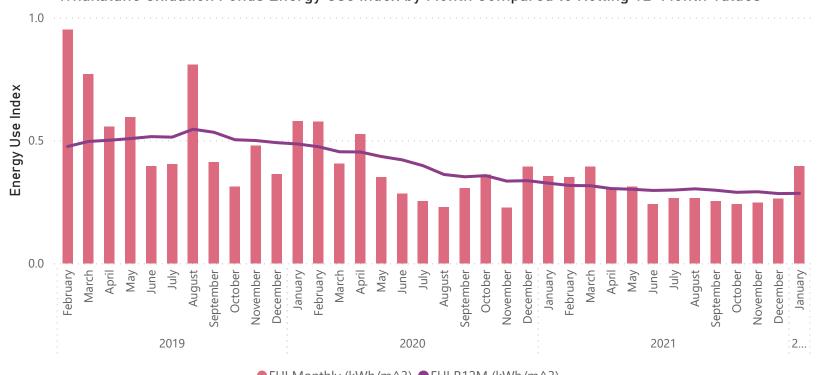






Whakatane Oxidation Ponds

Whakatane Oxidation Ponds Energy Use Index by Month Compared to Rolling 12-Month Values





McAlister Street Pump Station

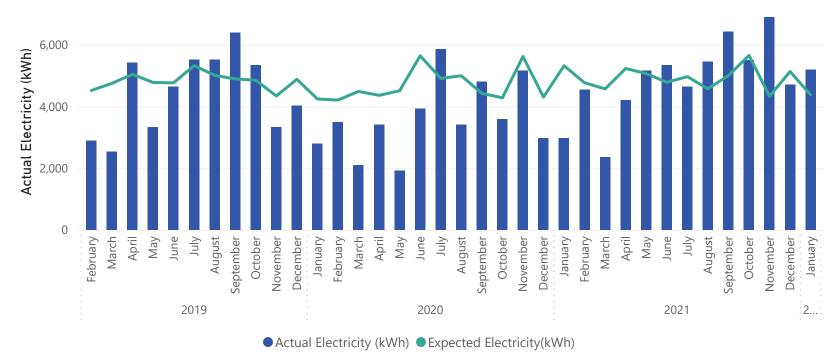
| \$59 | -821 | -19% | -1,973 | -106 |
|-----------------------------|------------------------|-------------------|-----------------------------------|---------------------------|
| Monthly Energy Cost Savings | Elec. Savings (kWh/mo) | Elec. Savings (%) | R12M Electricity Savings (kWh/yr) | CO2e Savings (kg/mo) |
| \$1,081 | | | | -254 |
| R12M Energy Cost Savings | | | | R12M CO2e Savings (kg/yr) |
| | | | | |

Comments:

A baseline was created for McAlister Street Pump Station that adjusts for the amount of rainfall at the Kopeopeo weather station. The baseline period is September 2020 to August 2021.

McAlister Street Pump Station is on a NHH account, some months' usage may be estimated by the retailer and captured by a subsequent meter reading. Manual readings at the end of each month would help with the accuracy of monitoring reports.

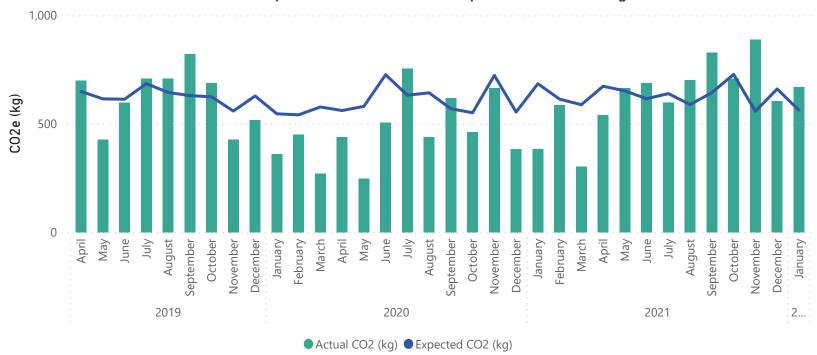


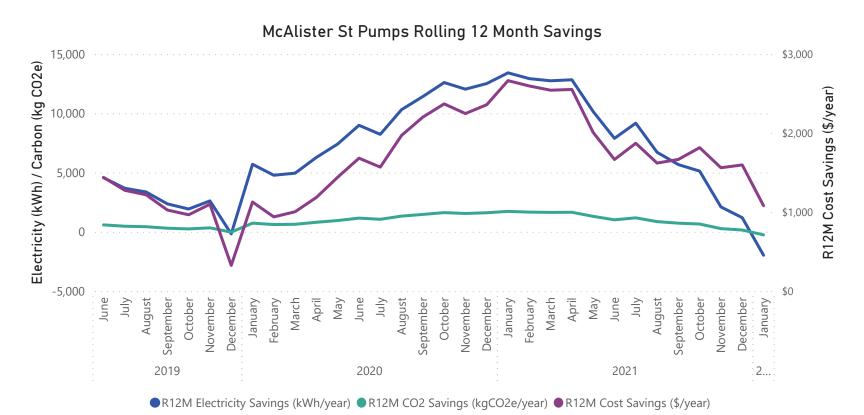




McAlister Street Pump Station









Rose Gardens Pump Station

| \$682 | 3,565 | 99% | 21,872 | 459 |
|-----------------------------|------------------------|-------------------|-----------------------------------|---------------------------|
| Monthly Energy Cost Savings | Elec. Savings (kWh/mo) | Elec. Savings (%) | R12M Electricity Savings (kWh/yr) | CO2e Savings (kg/mo) |
| \$4,412 | | | | 2,815 |
| R12M Energy Cost Savings | | | | R12M CO2e Savings (kg/yr) |

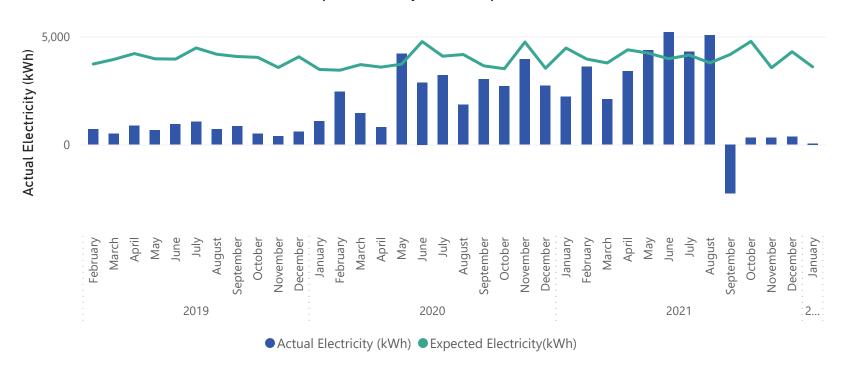
Comments:

A baseline was created for Rose Gardens Pump Station that adjusts for the amount of rainfall at the Kopeopeo weather station. The baseline period is September 2020 to August 2021.

The Rose Gardens Pump Station is on a NHH account, some months' usage may be estimated by the retailer and captured by a subsequent meter reading. The meter reading for August was over-estimated by the retailer, September's usage is derived from an actual reading and August's estimated reading. Credit was issued for the over-estimation in August 2021. Manual meter readings can improve accuracy of electricity usage.

Low usage in recent months reflect a positive change that was made in how the pump operates.

Rose Gardens Pumps Electricity Use Compared to Baseline (kWh)





Rose Gardens Pump Station

Rose Gardens Pumps Carbon Emissions Compared to Baseline (kg CO2e)

