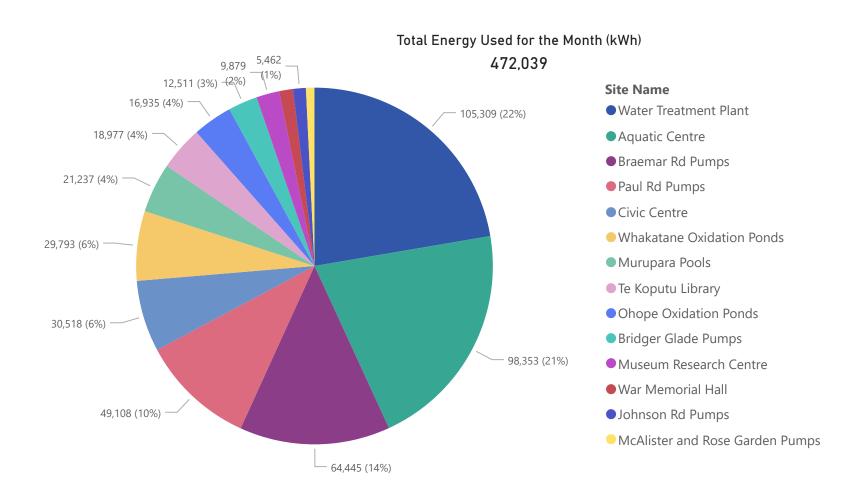


Summary

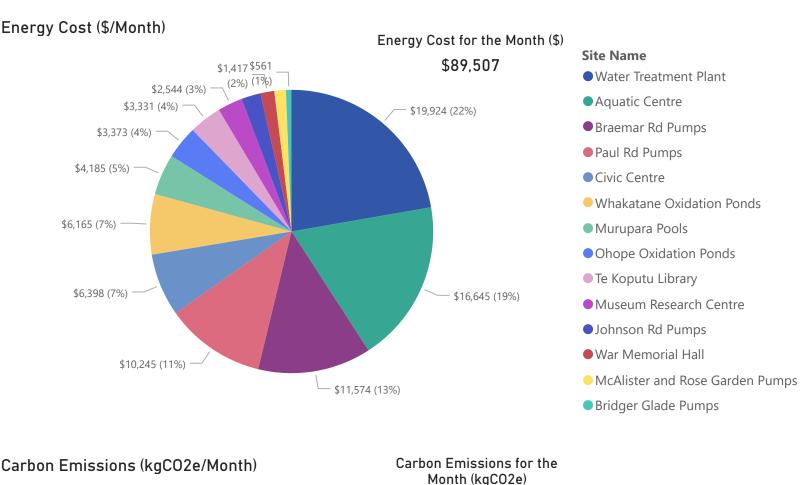
\$9,425 Monthly Energy Cost Savings	51,528 Elec. Savings (kWh/mo)	10% Elec. Savings (%)	642,319 R12M Electricity Savings (kWh/yr)	4,727 CO2e Savings (kg/mo)
\$99,133 R12M Energy Cost Savings	2,292 Gas. Savings (kWh/mo)	11% Gas. Savings (%)	-217,511 R12M Gas Savings (kWh/yr)	9,436 R12M CO2e Savings (kg/yr)

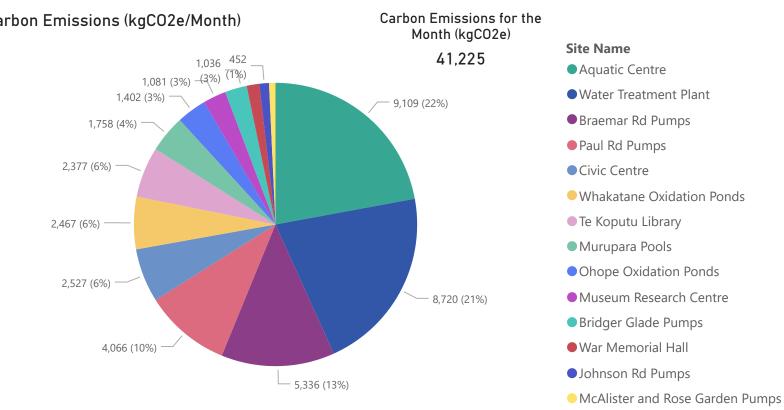
Total Energy (kWh/Month)





Summary

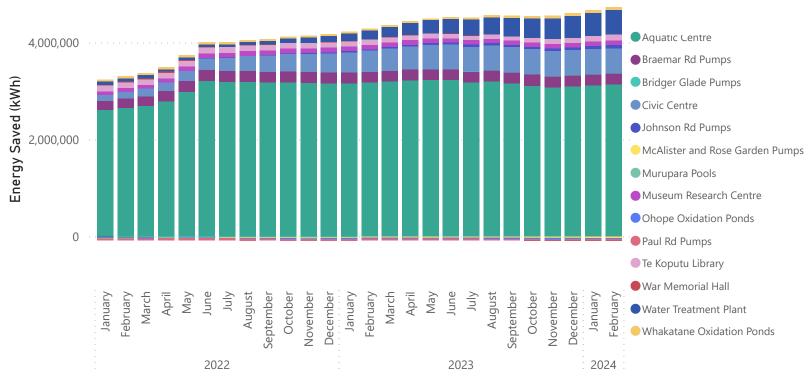






Summary

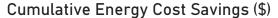
Cumulative Energy Savings (kWh)

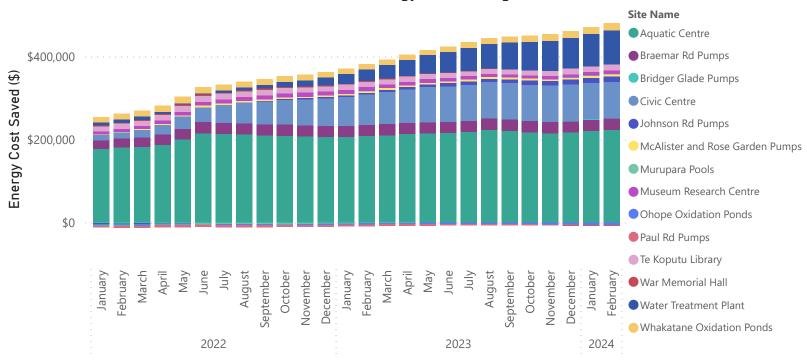


Note, cumulative savings are calculated starting July 2018

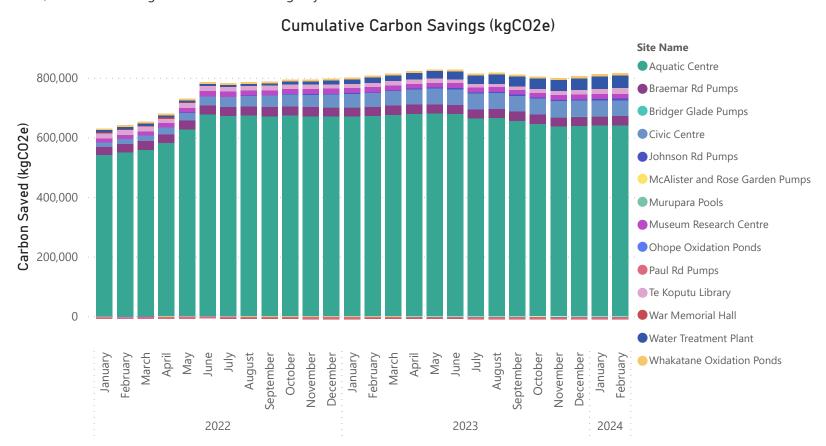


Summary



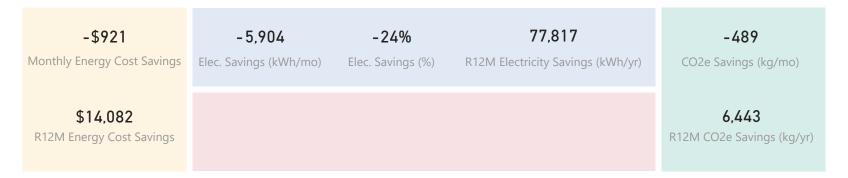


Note, cumulative savings are calculated starting July 2018





Civic Centre

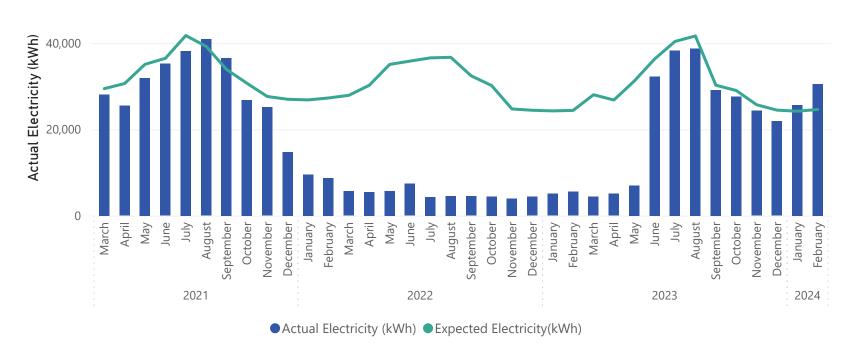


Comments:

It can be seen from the monthly electricity demand charts that demand was as expected for most of January, however, from 25 January the pattern of electricity use changes. This change continues into February. From 25 Jan, electricity use after hours did not decrease as significantly. Before 25 Jan, after hours demand dropped to around 20 kW consistently. After 25 Jan, afterhours demand is more variable and most commonly gets to 30 kW, an increase of 50%. This increase in electricity is the primary reason why electricity use was significantly more than expected this month.

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

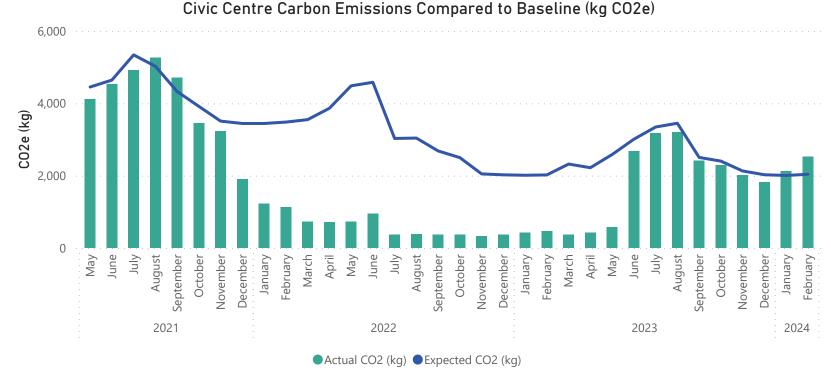
Civic Centre Electricity Use Compared to Baseline (kWh)



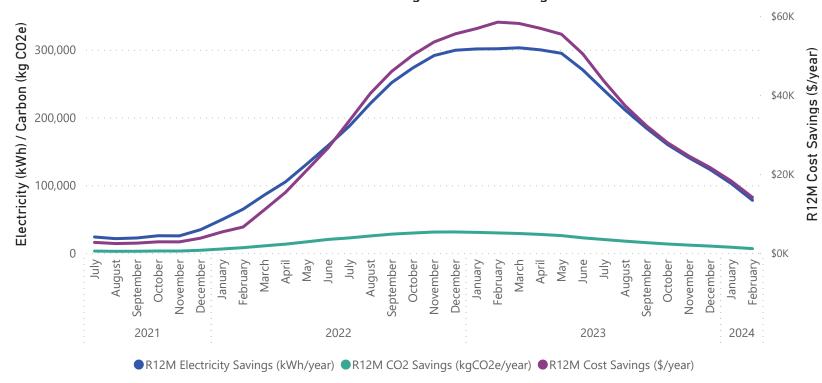


Civic Centre





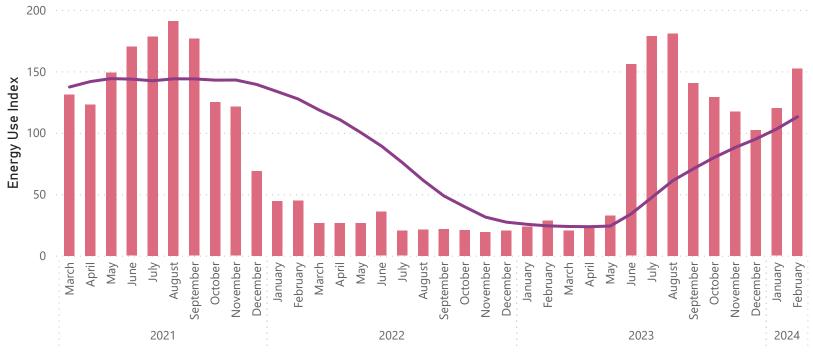






Civic Centre

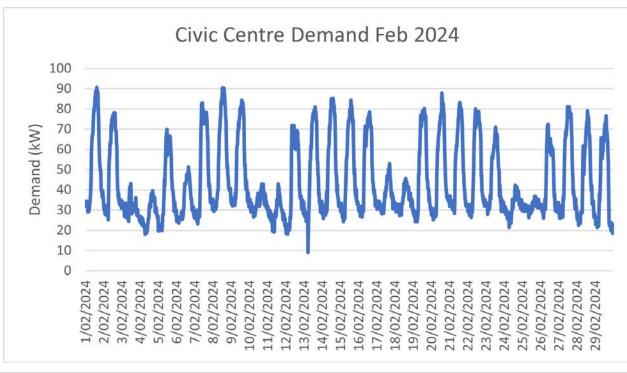


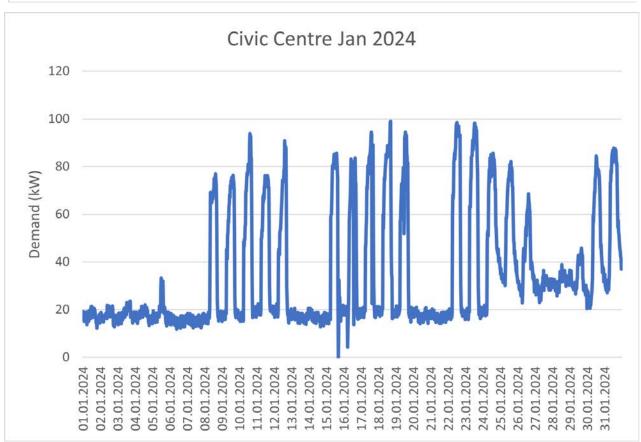


●EUI Monthly (kWh/year/m^2) ●EUI R12M (kWh/year/m^2)



Civic Centre







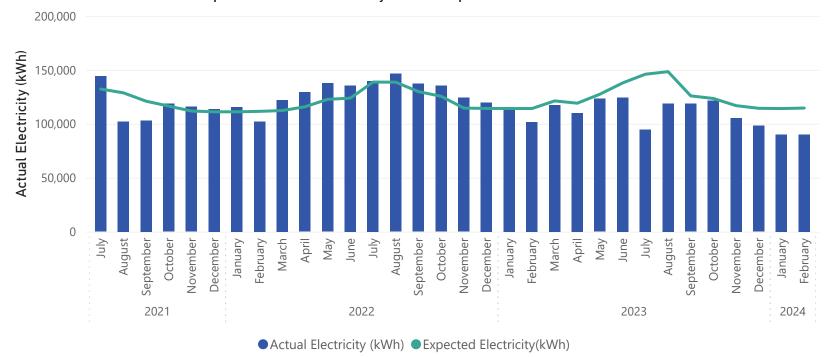
Aquatic Centre

\$3,159 Monthly Energy Cost Savings	24,423 Elec. Savings (kWh/mo)	21% Elec. Savings (%)	196,360 R12M Electricity Savings (kWh/yr)	836 CO2e Savings (kg/mo)
\$15,084 R12M Energy Cost Savings	- 5,896 Gas. Savings (kWh/mo)	-261% Gas. Savings (%)	-233,163 R12M Gas Savings (kWh/yr)	-30,637 R12M CO2e Savings (kg/yr)

Comments:

Electricity use was less than baseline in Feb 2024. Gas boilers were used for three days in February due to a fault with the heat pumps. Heat pumps are still providing the majority of heating and over February only 8,100 kWh of gas was used, which is small compared to total site energy use. The EUI for the month is significantly less than average over the past 12 months which aligns with heating from the heat pumps as a primary source, which are a more efficient technology compared to gas boilers.

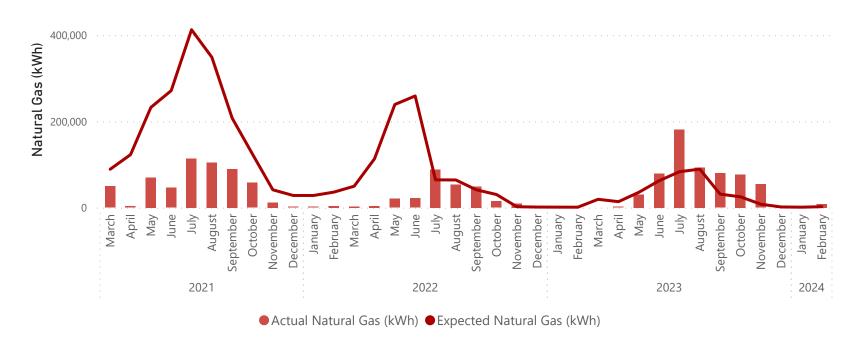
Aquatic Centre Electricity Use Compared to Baseline (kWh)



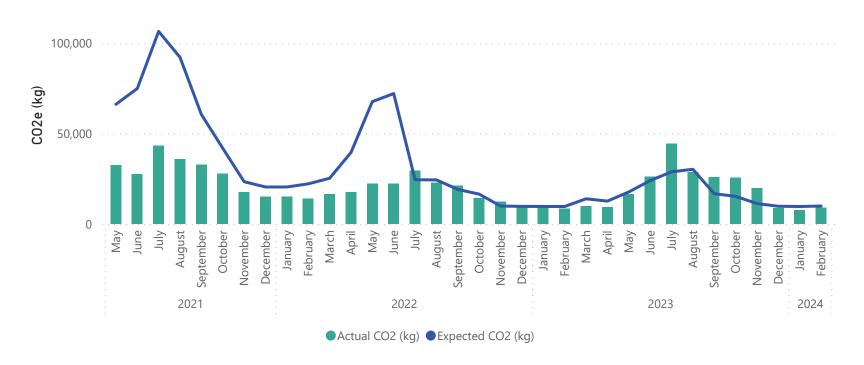


Aquatic Centre

Aquatic Centre Natural Gas Compared to Baseline (kWh)

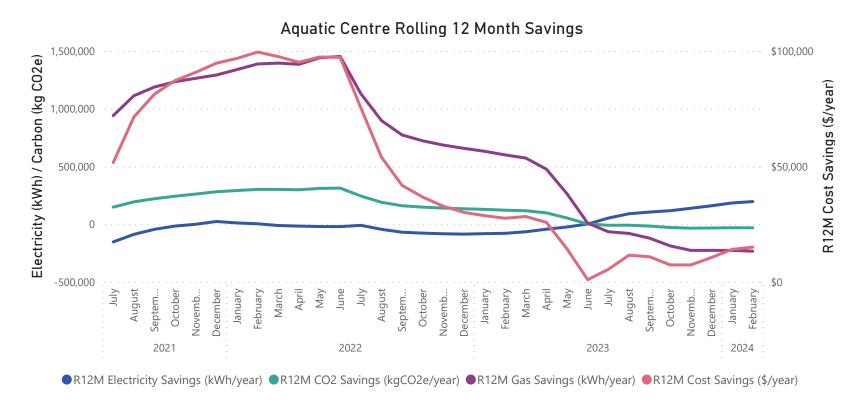


Aquatic Centre Carbon Emissions Compared to Baseline (kg CO2e)

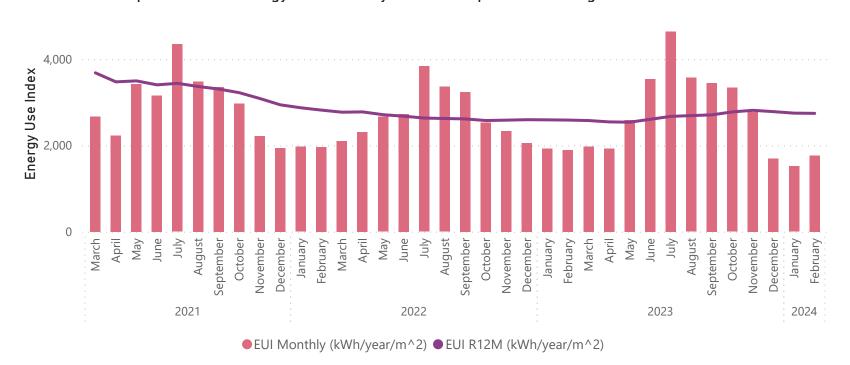




Aquatic Centre



Aquatic Centre Energy Use Index by Month Compared to Rolling 12-Month Values





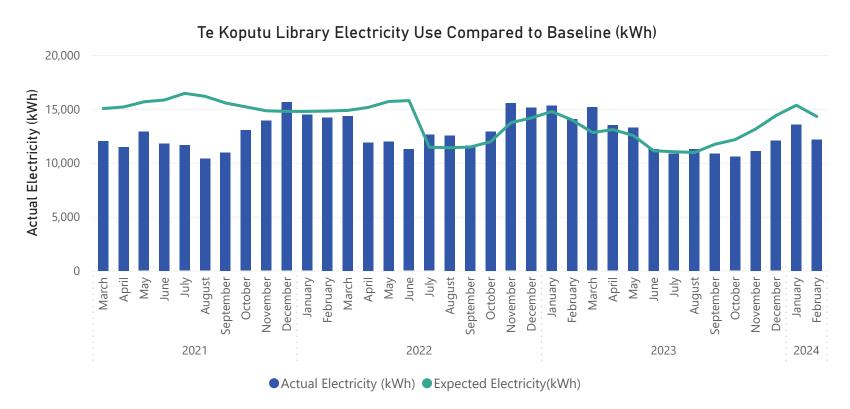
Te Koputu Library

\$904 Monthly Energy Cost Savings	2,132 Elec. Savings (kWh/mo)	15% Elec. Savings (%)	6,939 R12M Electricity Savings (kWh/yr)	1,512 CO2e Savings (kg/mo)
\$2,633 R12M Energy Cost Savings	6,640 Gas. Savings (kWh/mo)	49% Gas. Savings (%)	18,586 R12M Gas Savings (kWh/yr)	4,313 R12M CO2e Savings (kg/yr)

Comments:

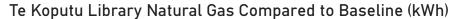
Electricity and natural gas use were both less than expected for the month, an excellent result and most likely a result of tuning the boiler and chiller. Both natural gas and electricity savings have shown significant savings over the past five months, particularly gas.

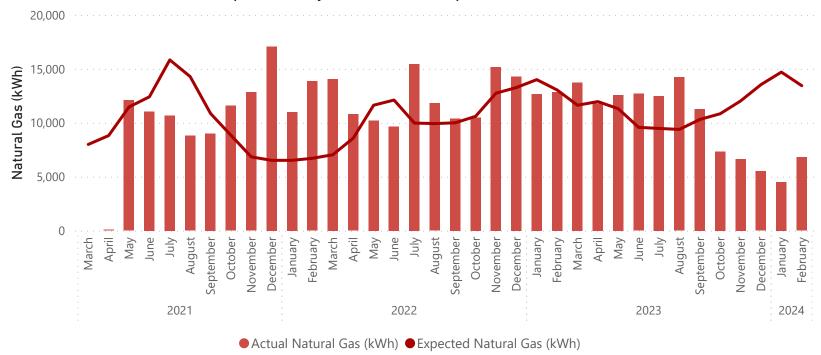
The Library's EUI has been relatively consistent from Oct 2023 and lower than average compared to the last 12 months, which is great.



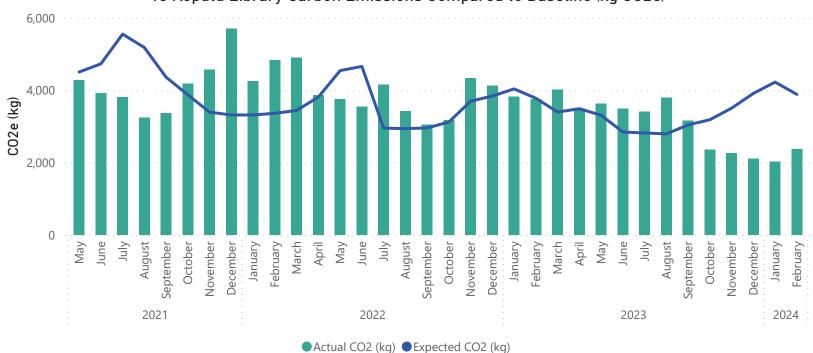


Te Koputu Library





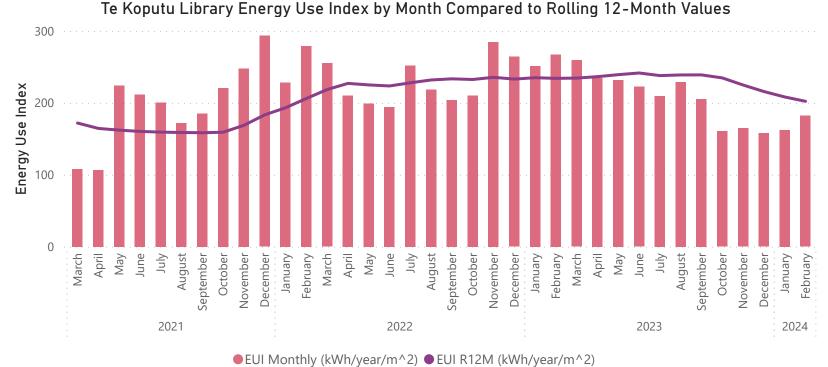




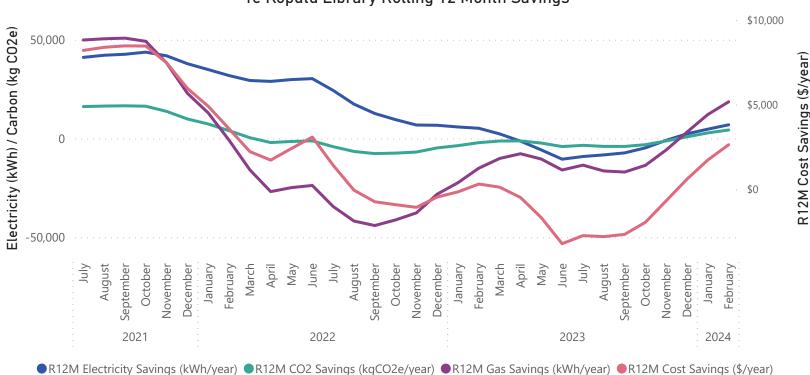


Te Koputu Library











Museum and Research Centre

\$310 Monthly Energy Cost Savings	1,668 Elec. Savings (kWh/mo)	18% Elec. Savings (%)	-4,321 R12M Electricity Savings (kWh/yr)	252 CO2e Savings (kg/mo)
-\$1,223	567 Gas. Savings (kWh/mo)	20%	- 5,055	-1,374
R12M Energy Cost Savings		Gas. Savings (%)	R12M Gas Savings (kWh/yr)	R12M CO2e Savings (kg/yr)

Comments:

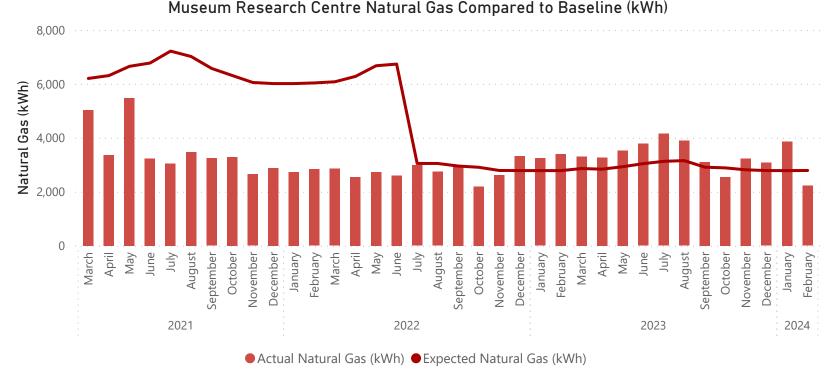
Natural gas and electricity were significantly less than expected, which is an excellent result which has not been seen for several years. Operation of the AHUs has been changed to combat high humidity, AHU fans speeds have been slowed down which has had a positive impact on energy consumption. Slower fan speeds can improve effectiveness of dehumidification by allowing air to cool down to lower temperatures, releasing more humidity. lower fan speeds also reduce electricity consumption as less power is required.

Museum Research Centre Electricity Use Compared to Baseline (kWh) Actual Electricity (kWh) 10,000 5,000 August August June August March July March July September October November December January February September October November December January February September October November December January 2021 2022 2023 2024 Actual Electricity (kWh)Expected Electricity(kWh)

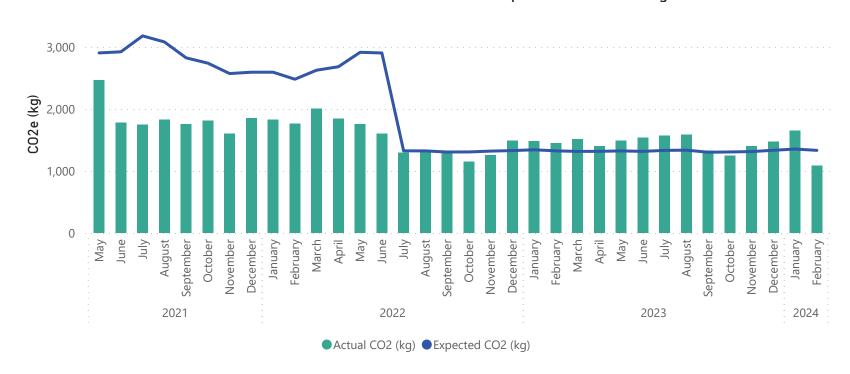


Museum and Research Centre



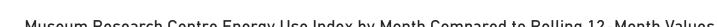


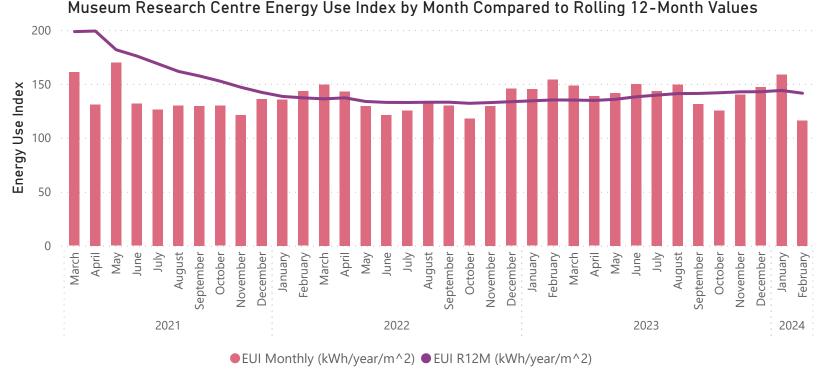
Museum Research Centre Carbon Emissions Compared to Baseline (kg CO2e)



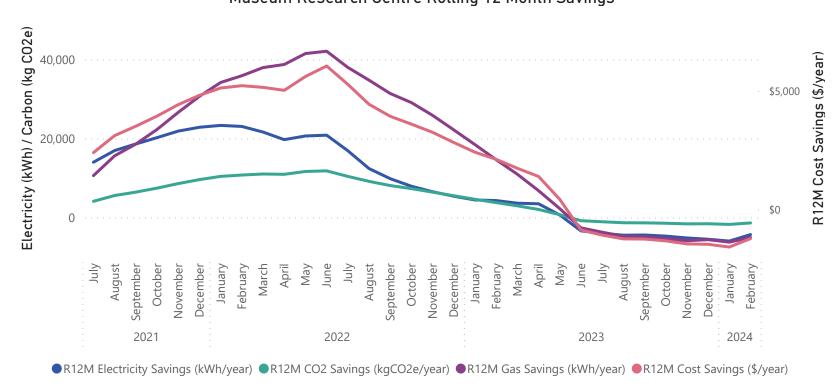


Museum and Research Centre





Museum Research Centre Rolling 12 Month Savings





War Memorial Hall

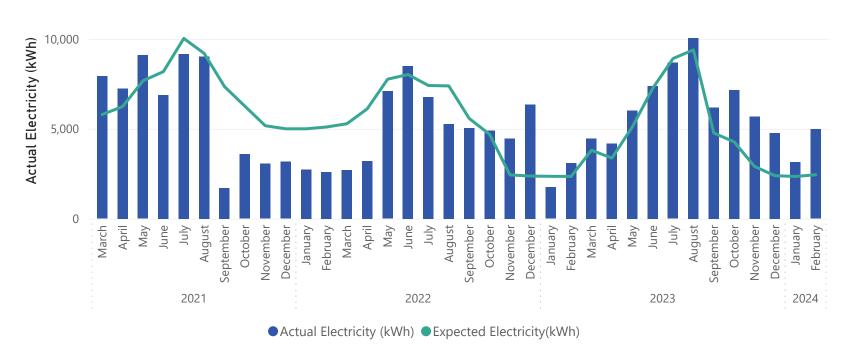
-\$313 Monthly Energy Cost Savings	-2,531 Elec. Savings (kWh/mo)	-104% Elec. Savings (%)	-15,751 R12M Electricity Savings (kWh/yr)	-12 CO2e Savings (kg/mo)
-\$2,345 R12M Energy Cost Savings	981 Gas. Savings (kWh/mo)	52% Gas. Savings (%)	2,121 R12M Gas Savings (kWh/yr)	-878 R12M CO2e Savings (kg/yr)

Comments:

The War Memorial Hall used more electricity than expected. Eleven of the past 12 months have used more electricity than expected. This may be due to higher occupancy rates than usual. February used twice as much electricity as expected, however this may be partially due to when the meter was read.

The hall has used less natural gas than expected since October 2023. Natural gas use has decreased in recent months as ambient temperature is higher and less heating is required.

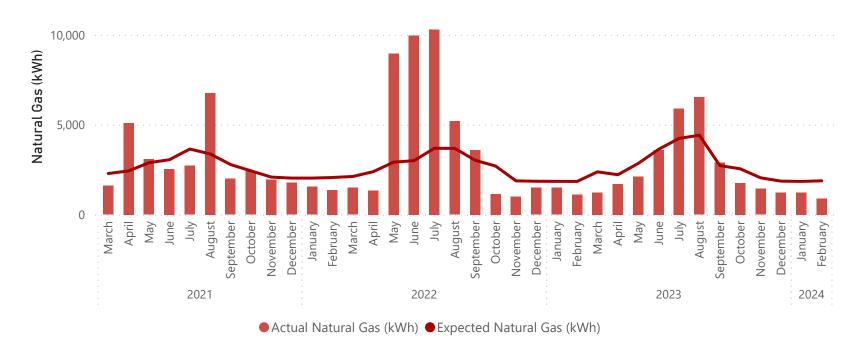
War Memorial Hall Electricity Use Compared to Baseline (kWh)



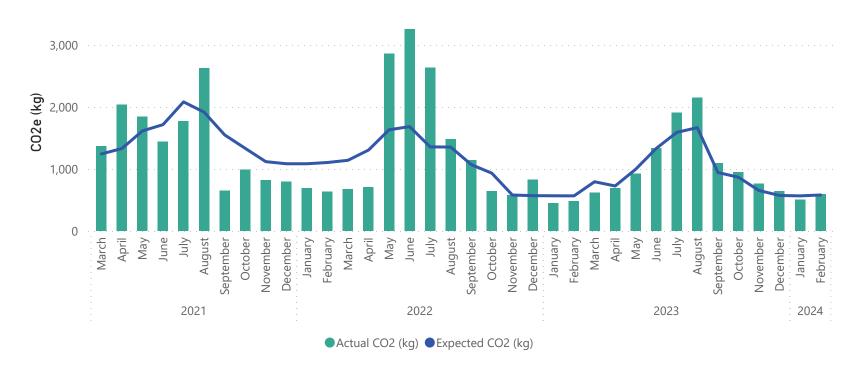


War Memorial Hall

War Memorial Hall Natural Gas Compared to Baseline (kWh)



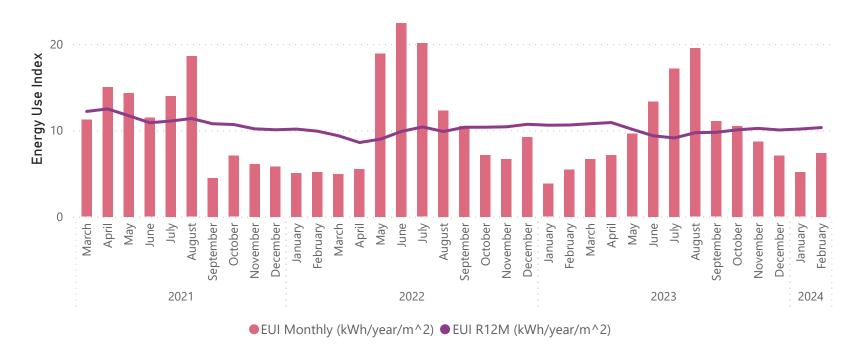
War Memorial Hall Carbon Emissions Compared to Baseline (kg CO2e)

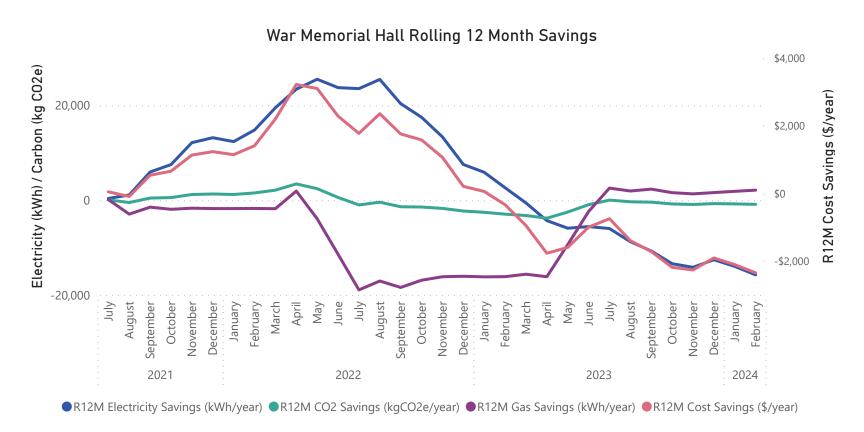




War Memorial Hall

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







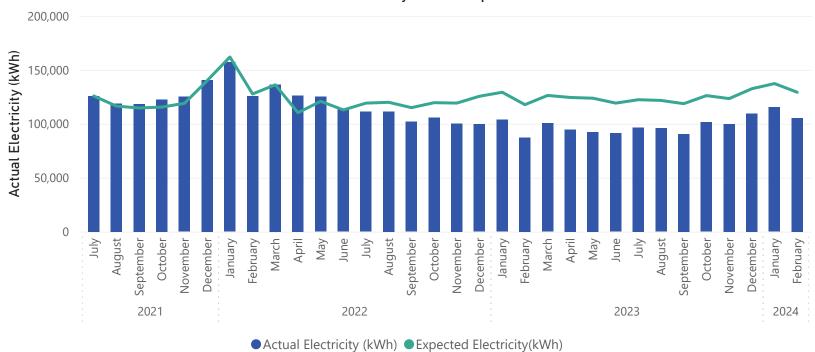
Water Treatment Plant

\$3,585	23,982	19%	311,613	1,986
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
\$52,765 R12M Energy Cost Savings				25,802 R12M CO2e Savings (kg/yr)

Comments:

Another month of savings has been achieved at the WTP. Consistent savings between 15-25% have been observed since November 2022.

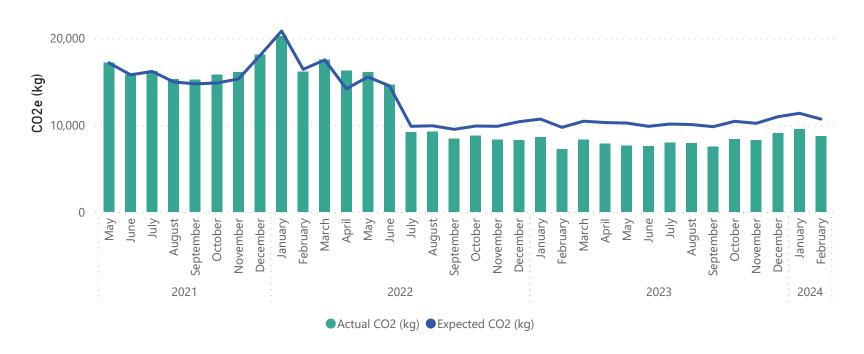
Water Treatment Plant Electricity Use Compared to Baseline (kWh)

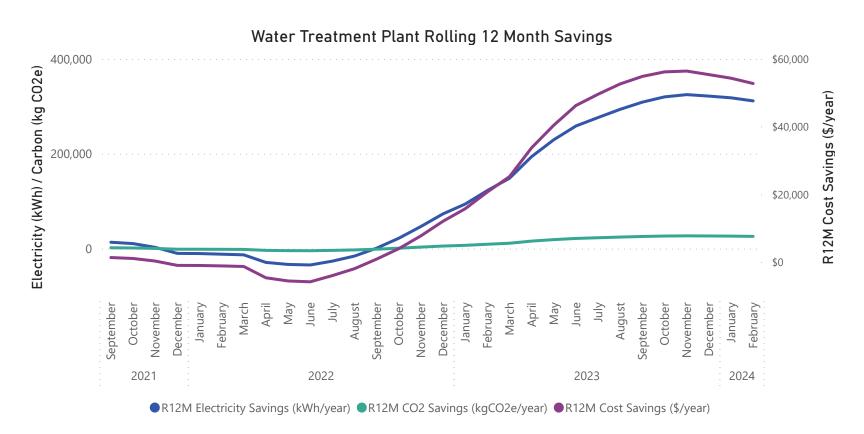




Water Treatment Plant

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





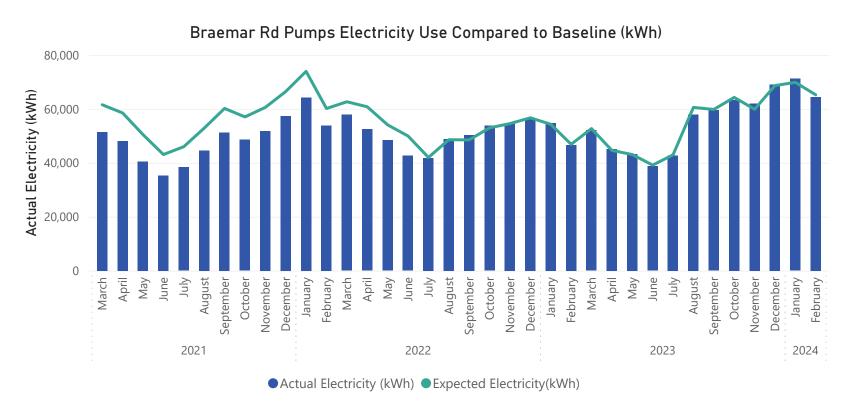
Braemar Road Pump Station

\$119	784	1%	1,326	65
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
\$363 R12M Energy Cost Savings				110 R12M CO2e Savings (kg/yr)

Comments:

Braemar Rd pump station has been re-baselined in January 2024, the baseline period is Jul 2023 to Jan 2024 and has an R2 value of 0.99. New baseline is required as work completed to meet water quality requirements which added filters and new low lift pumps.

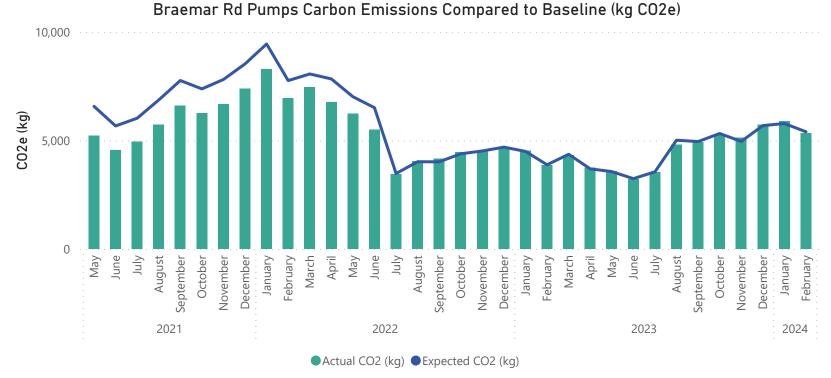
A contractor was able to supply accurate flows, which show the impact of increased pumping requirements from new filters, using around 24% more electricity on average. New tags will be added to SCADA in future which will capture water metering.

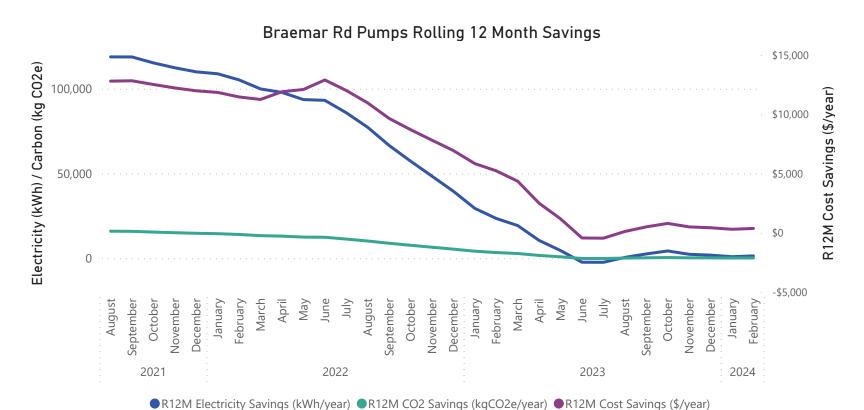




Braemar Road Pump Station



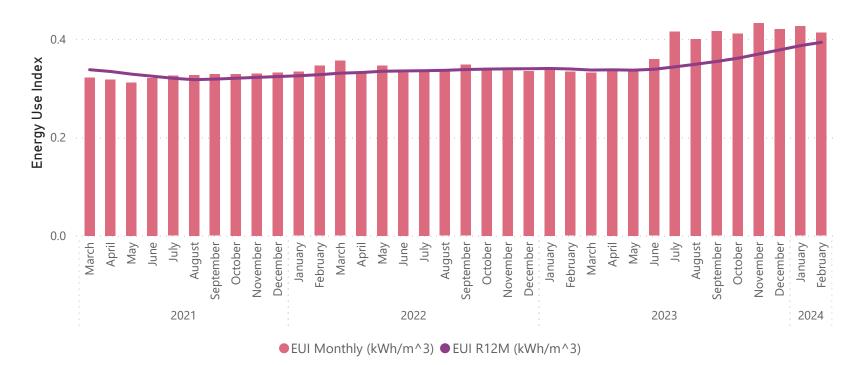






Braemar Road Pump Station

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



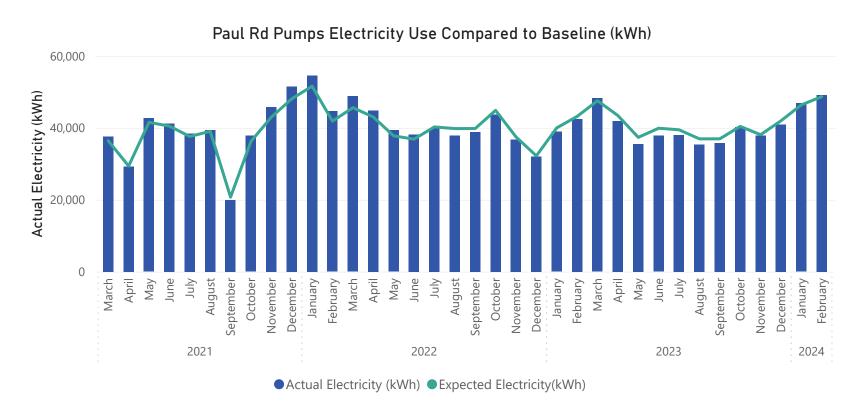


Paul Road Pump Station

-\$63 Monthly Energy Cost Savings	-417 Elec. Savings (kWh/mo)	- 1% Elec. Savings (%)	9,567 R12M Electricity Savings (kWh/yr)	-35 CO2e Savings (kg/mo)
\$1,787 R12M Energy Cost Savings				792 R12M CO2e Savings (kg/yr)

Comments:

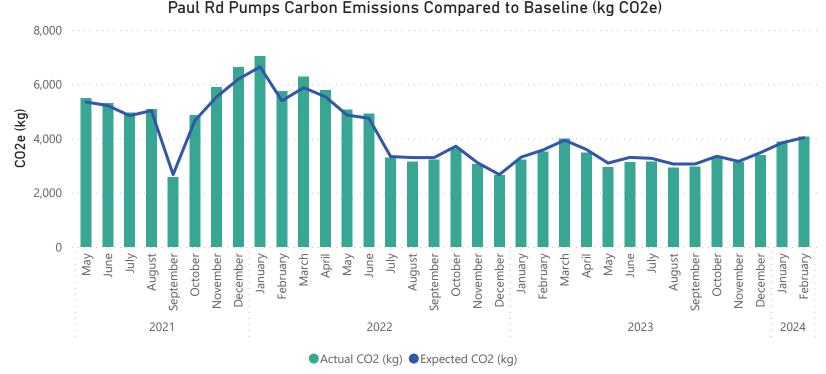
Electricity use was close to expected at Paul Road Pump Station. Energy performance has been consistent each month from April 2023, with savings or marginal increase above expected electricity.



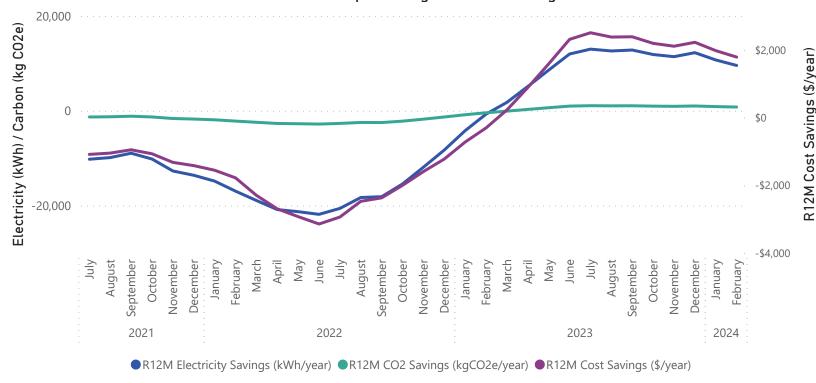


Paul Road Pump Station





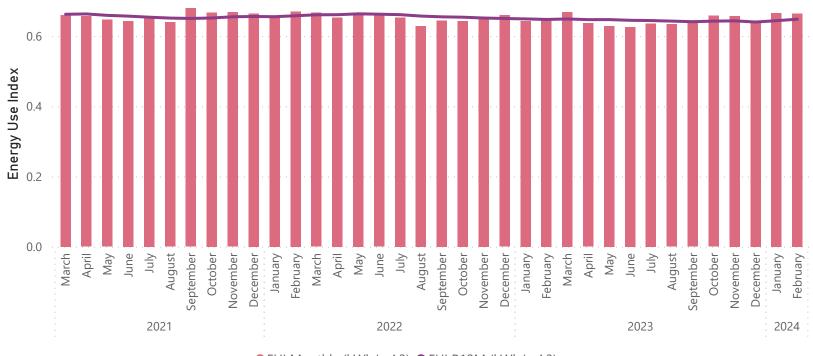






Paul Road Pump Station

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



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



Johnson Road Pump Station

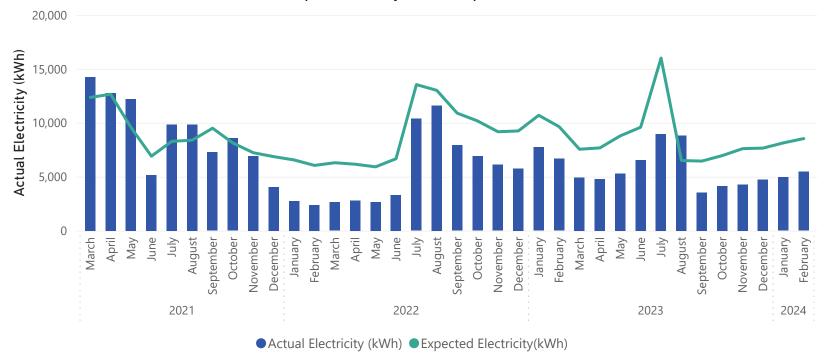
3,078	36%	34,947	255
Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
			2,894
			R12M CO2e Savings (kg/yr)
	•		

Comments:

Johnson Rd Pump used 36% less electricity than expected. Over the past six months demand has been increased steadily.

The pump has been achieving consistent savings from Dec 2021, with the exception of August 2023, which may be due to when the electricity meter was read or the increased electricity use may be due to some interactive effects between Johnson and Braemar Rd pump stations.

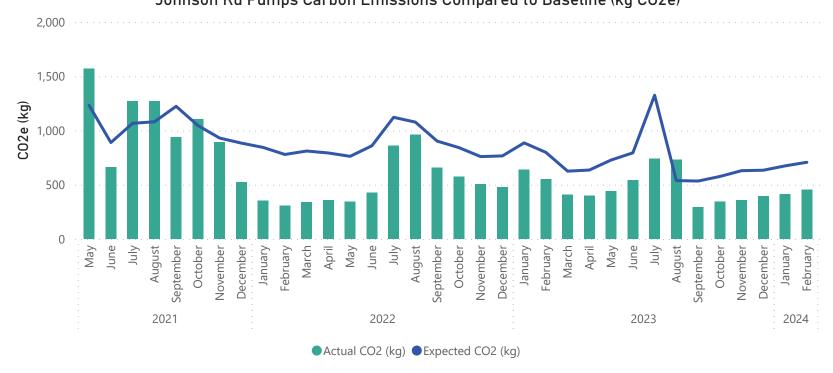
Johnson Rd Pumps Electricity Use Compared to Baseline (kWh)

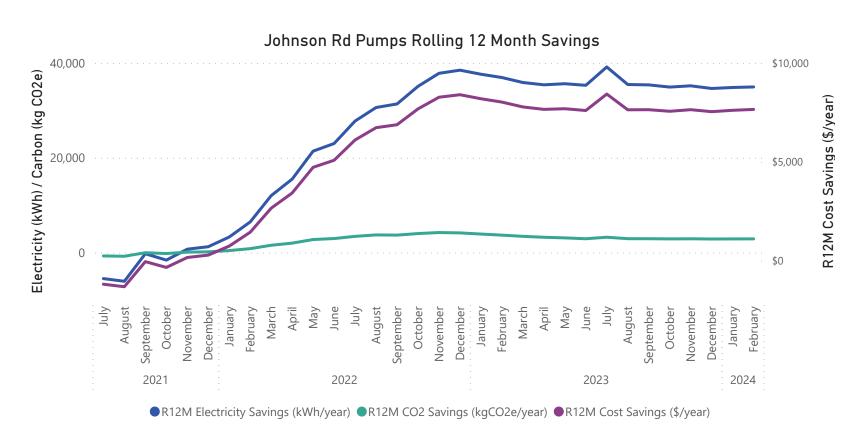




Johnson Road Pump Station



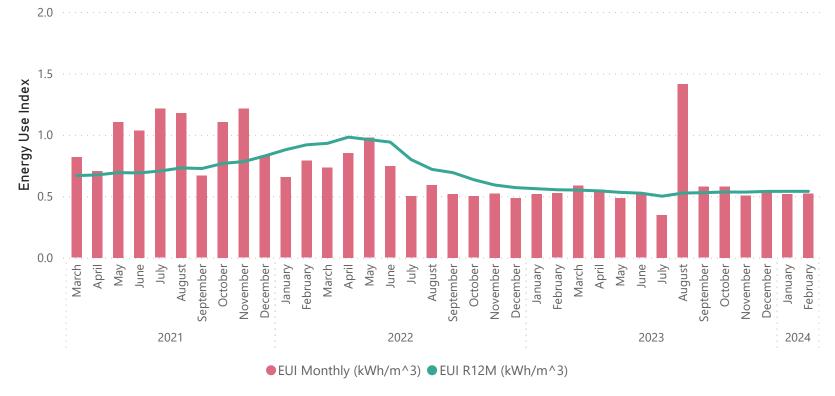






Johnson Road Pump Station







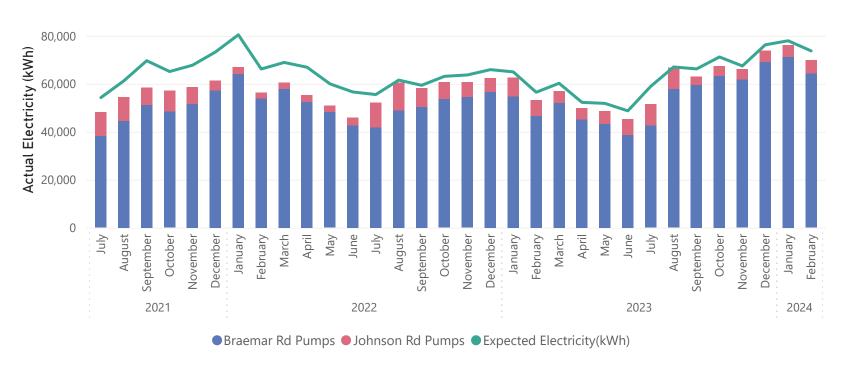
Johnson and Braemar Rd Pump Stations

\$803	3,862	5%	36,273	320
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
\$8,013 R12M Energy Cost Savings				3,003 R12M CO2e Savings (kg/yr)
Wiziwi Energy Cost Savings				TYTEIN COLE SUVINGS (Kg/yl)

Comments:

Braemar Rd pump station has been re-baselined due to new pumping requirements from additional screens added, which has increased electricity use by approximately 24%.

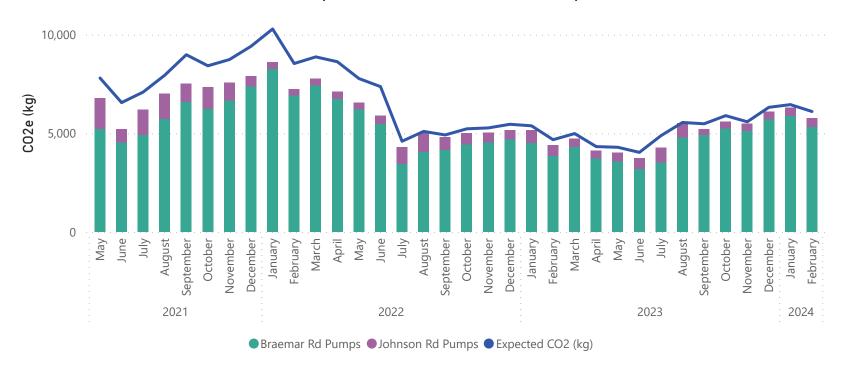
Johnson and Braemar Rd Pump Stations Electricity Use Compared to Baseline (kWh)

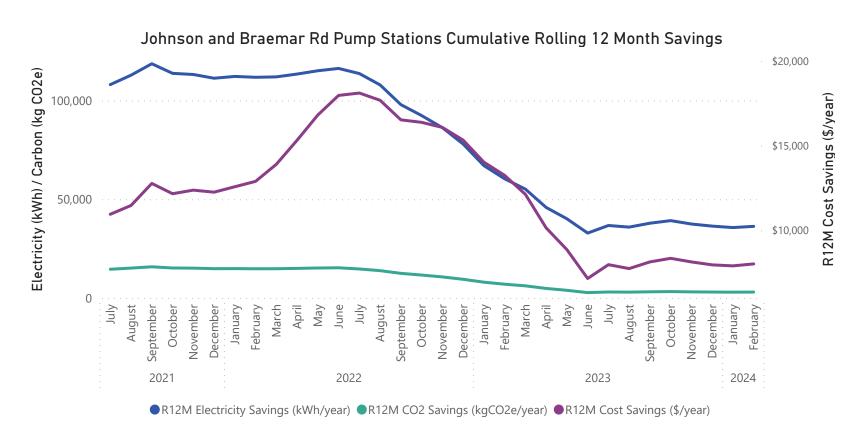




Johnson and Braemar Rd Pump Stations

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

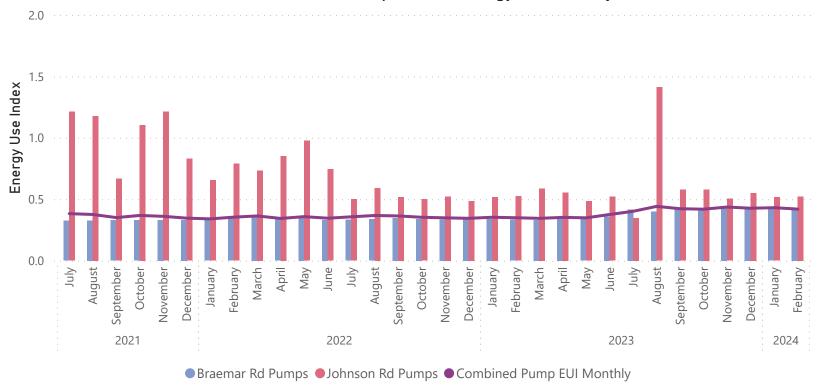






Johnson and Braemar Rd Pump Stations







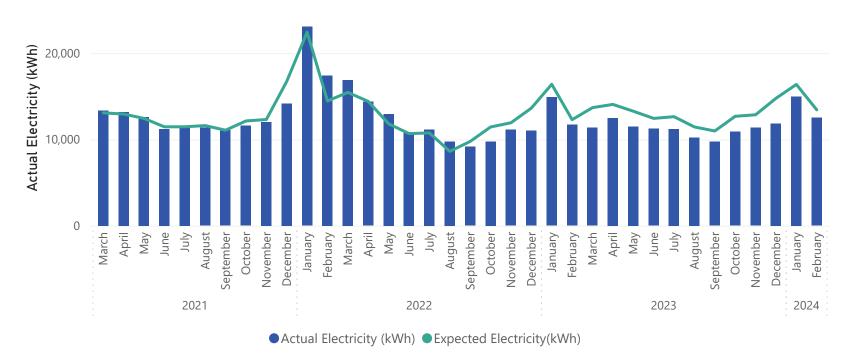
Bridger Glade Pump Station

\$162	913	7%	19,306	76
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
\$3,412 R12M Energy Cost Savings				1,599 R12M CO2e Savings (kg/yr)

Comments:

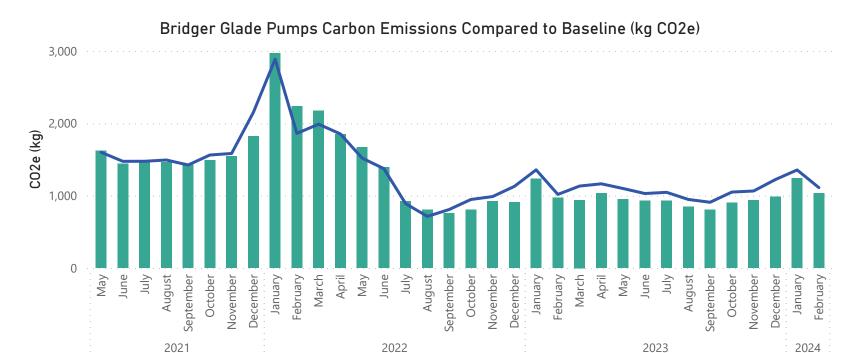
Bridger Glade Pump Station has used less electricity than expected since September 2022, which is excellent. This is due to new supply pumps that were installed in late August 2022. Savings over the past year are \$3,400, 19,300 kWh, and 1,600 kg CO2e.

Bridger Glade Pumps Electricity Use Compared to Baseline (kWh)

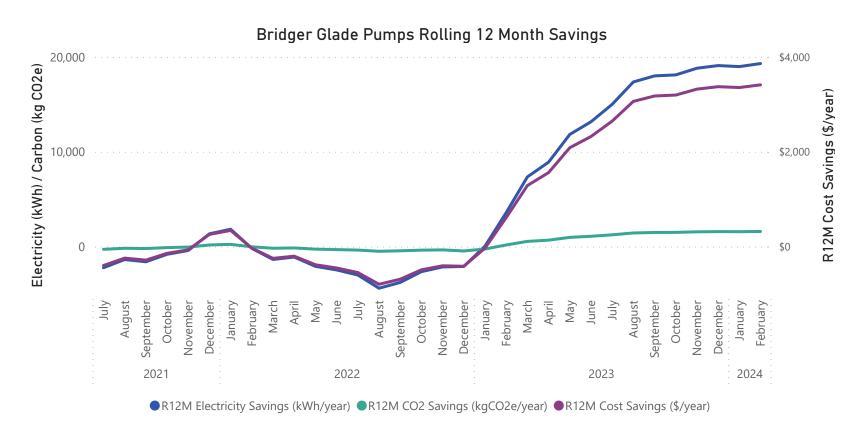




Bridger Glade Pump Station



■Actual CO2 (kg)■Expected CO2 (kg)





Bridger Glade Pump Station







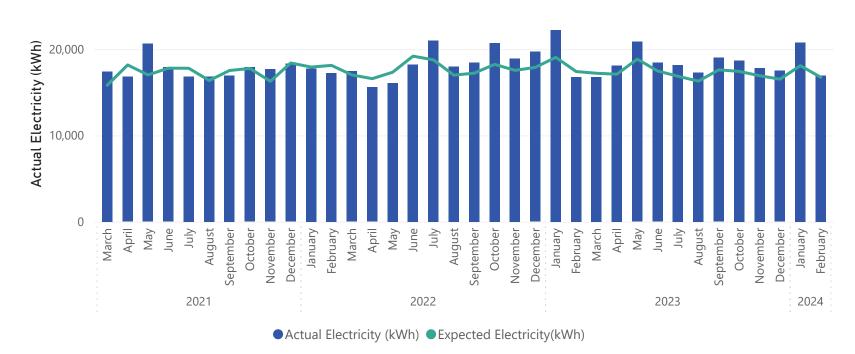
Ohope Oxidation Ponds

-\$36 Monthly Energy Cost Savings	-200 Elec. Savings (kWh/mo)	- 1% Elec. Savings (%)	-13,210 R12M Electricity Savings (kWh/yr)	-17 CO2e Savings (kg/mo)
-\$2,362 R12M Energy Cost Savings				- 1,094 R12M CO2e Savings (kg/yr)

Comments:

Ohope Oxidation Ponds have used more electricity than expected in 11 of the last 12 months. Rainfall has generally been higher than usual, which may contribute to higher electricity usage. The monthly EUI in February is more than average for the past 12 months.

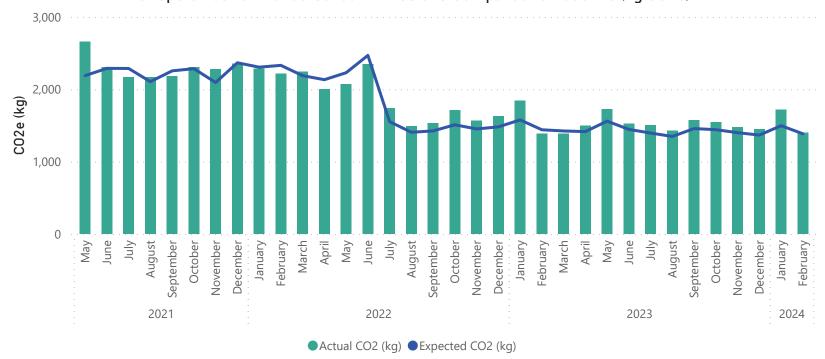
Ohope Oxidation Ponds Electricity Use Compared to Baseline (kWh)



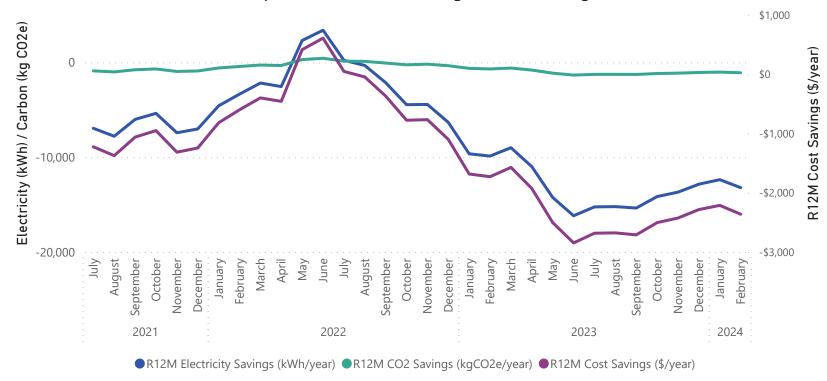


Ohope Oxidation Ponds











Ohope Oxidation Ponds





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

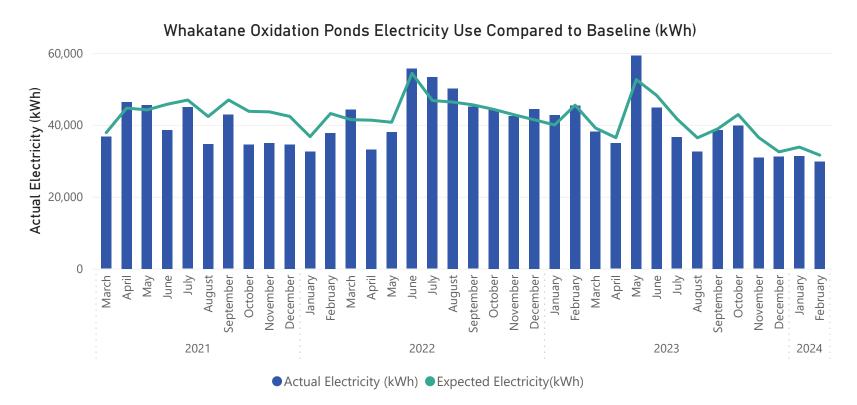


Whakatane Oxidation Ponds

\$1,397	1,798	6%	22,967	149
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
\$5,270 R12M Energy Cost Savings				1,902 R12M CO2e Savings (kg/yr)

Comments:

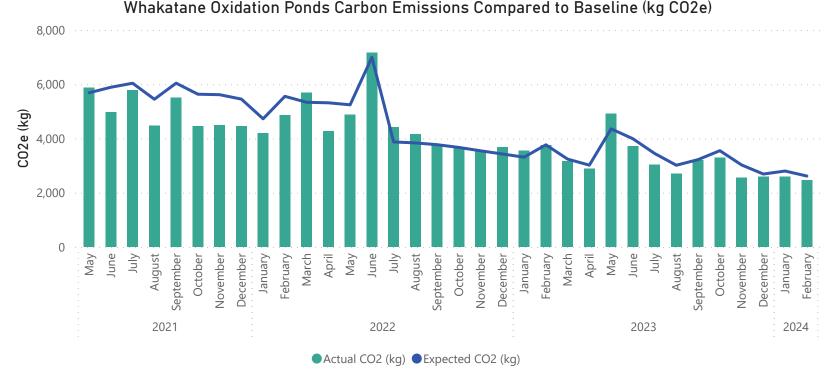
The oxidation ponds used less electricity than expected in February 2024. February 2024 was a month with lower than average rainfall, approximately 76mm of rain was recorded for the month. The EUI for the month is above average compared to the last 12 months.

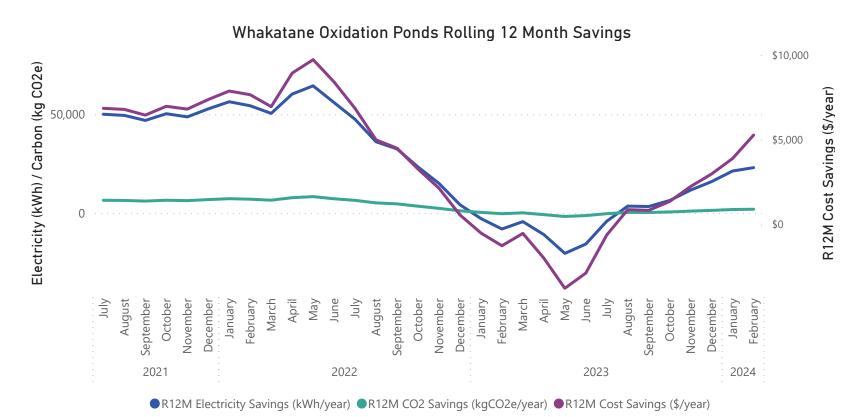




Whakatane Oxidation Ponds

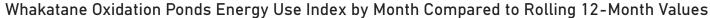


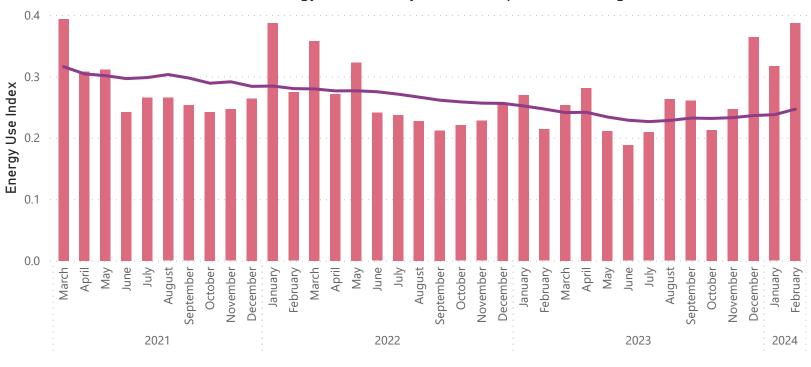






Whakatane Oxidation Ponds





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



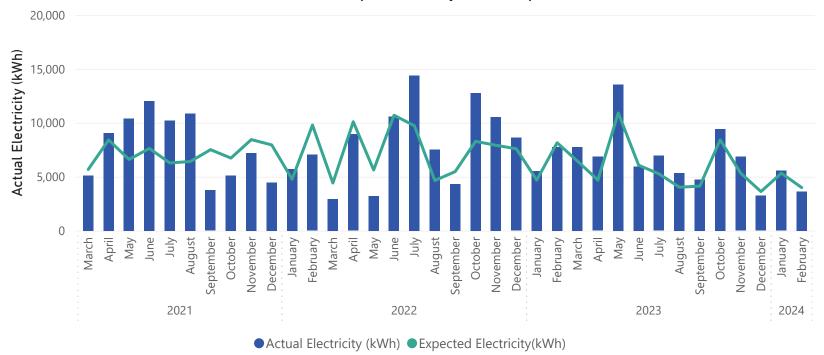
McAlister Street and Rose Garden Pump Stations

\$204 Monthly Energy Cost Savings	355 Elec. Savings (kWh/mo)	9% Elec. Savings (%)	-11,606 R12M Electricity Savings (kWh/yr)	29 CO2e Savings (kg/mo)
\$1,050 R12M Energy Cost Savings				-961 R12M CO2e Savings (kg/yr)

Comments:

The pump stations used 9% less electricity than expected this month. Approximately 44mm of rain coincided within the billing period. Rainfall over the past 12 months averaged about 110mm per month.

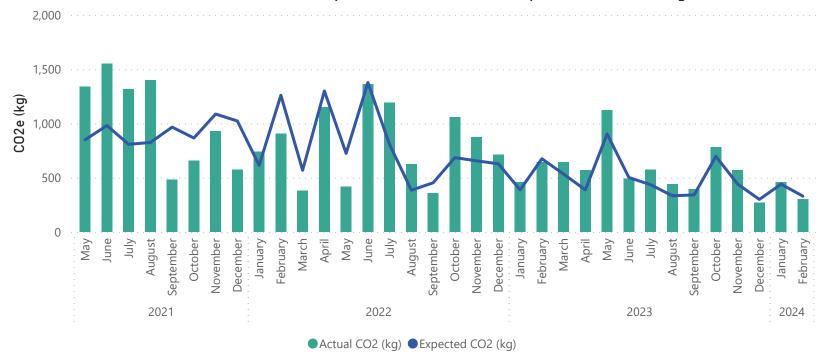
McAlister and Rose Garden Pumps Electricity Use Compared to Baseline (kWh)

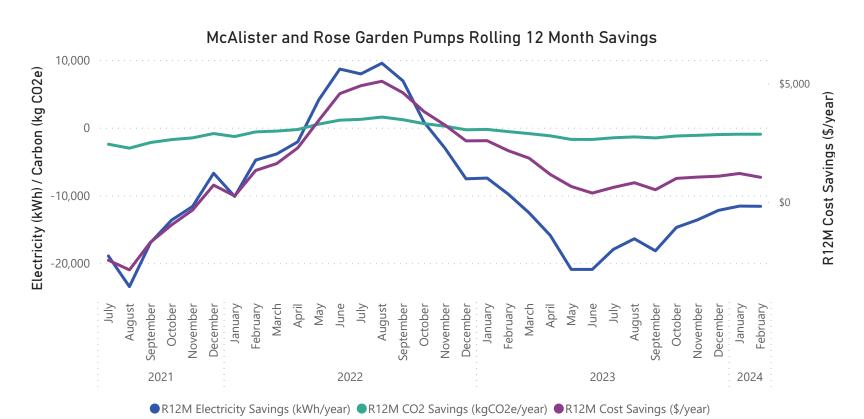




McAlister Street and Rose Garden Pump Stations

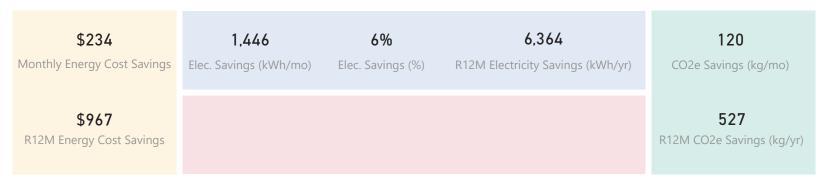






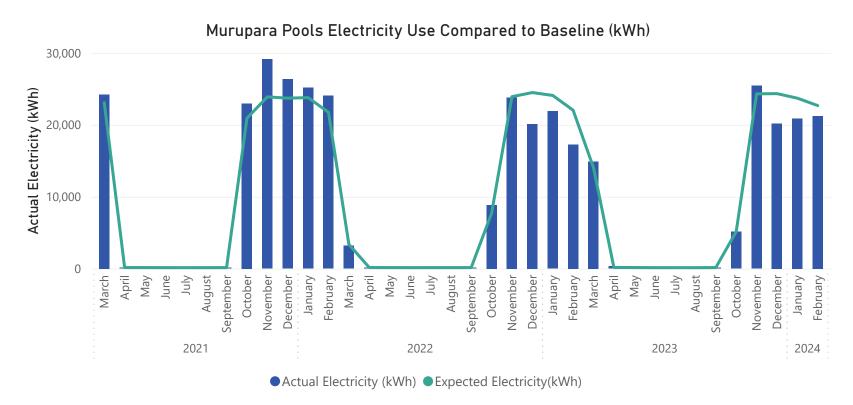


Murupara Pools



Comments:

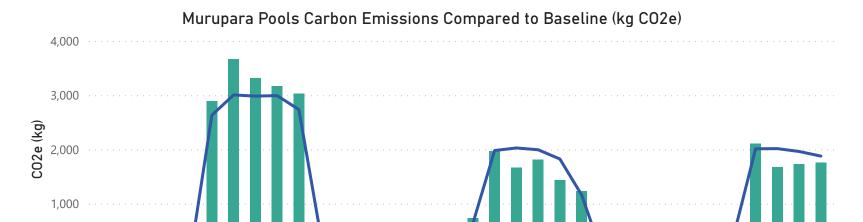
Murupara Pools have opened for the season, heating of the pools started in late October 2023, electricity use in February was 6% less than expected.





Murupara Pools

June July August





August

September October November February

January

December

March

September October November December

January

2024

August

2023

March

February

November

December January

September October

2021

April

June

2022

