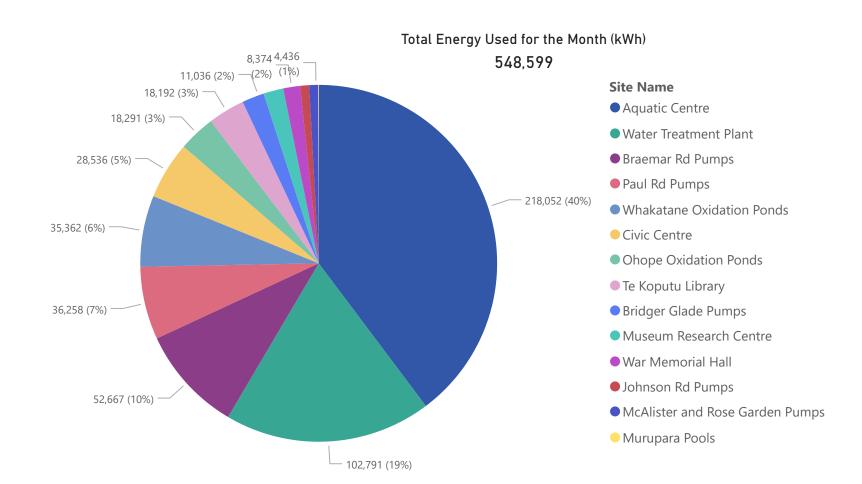


Summary

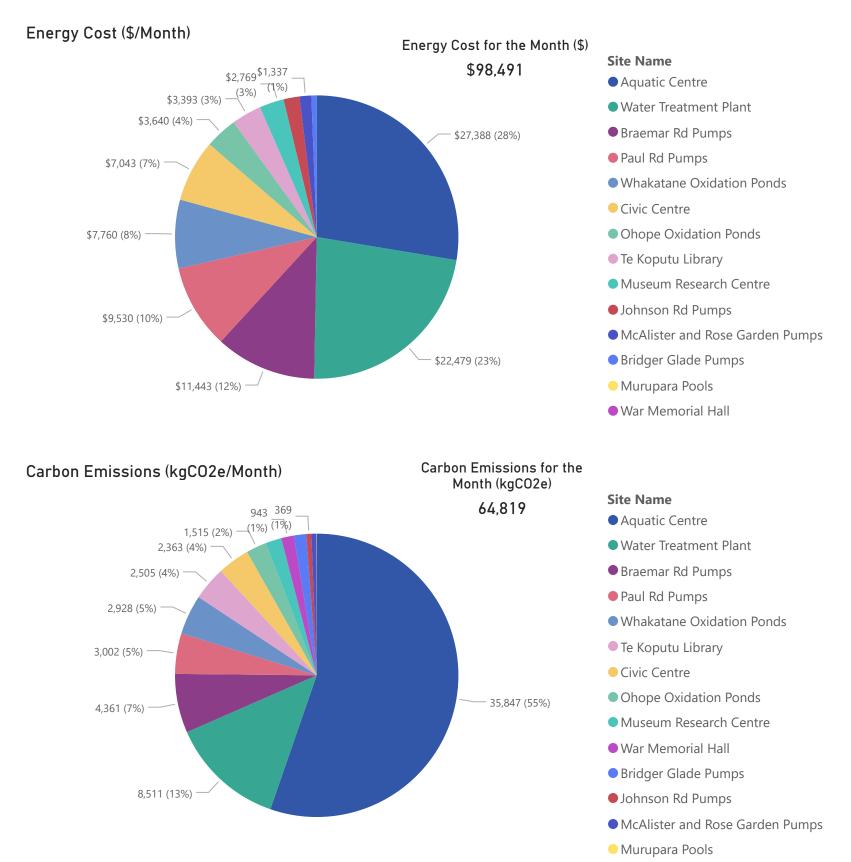
\$14,181 Monthly Energy Cost Savings	114,293 Elec. Savings (kWh/mo)	23% Elec. Savings (%)	745,559 R12M Electricity Savings (kWh/yr)	-7,696 CO2e Savings (kg/mo)
\$91,760 R12M Energy Cost Savings	-85,315 Gas. Savings (kWh/mo)	-109% Gas. Savings (%)	-486,957 R12M Gas Savings (kWh/yr)	-36,209 R12M CO2e Savings (kg/yr)

Total Energy (kWh/Month)





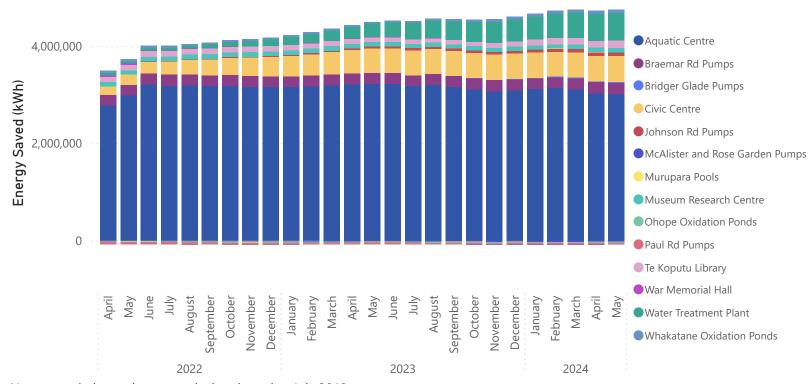
Summary





Summary

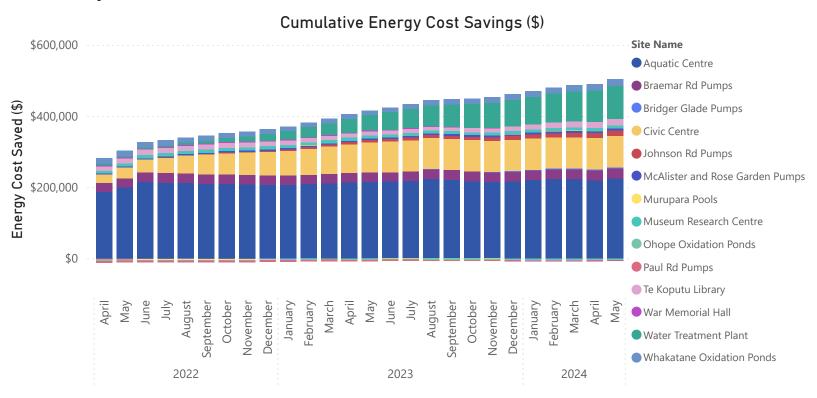
Cumulative Energy Savings (kWh)



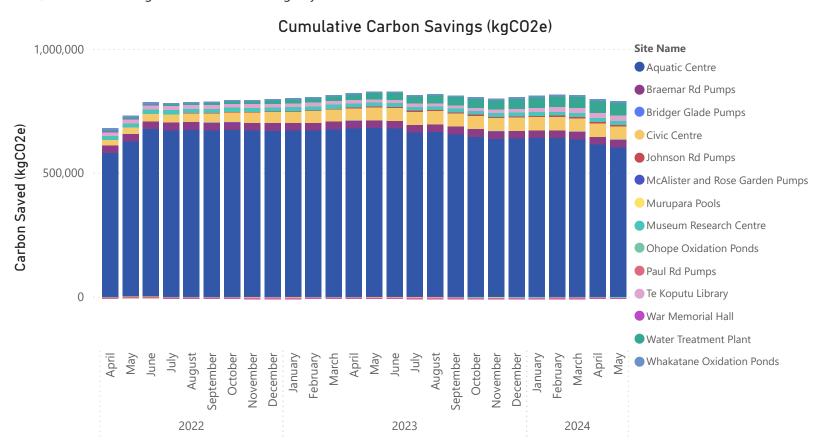
Note, cumulative savings are calculated starting July 2018



Summary



Note, cumulative savings are calculated starting July 2018





Civic Centre

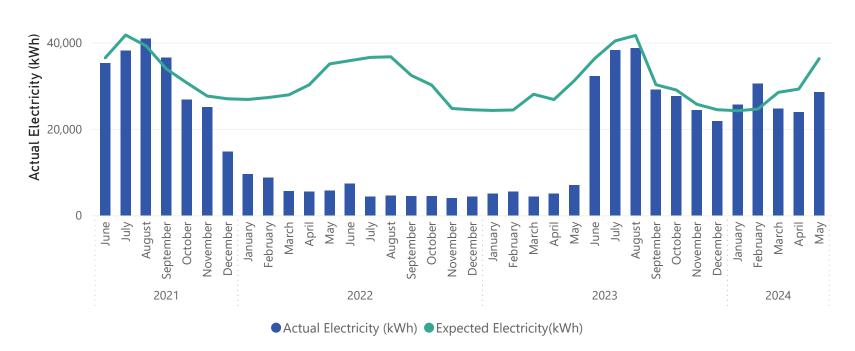
\$1,436	7,750	21%	25,053	642
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
\$4,632				2,074
R12M Energy Cost Savings				R12M CO2e Savings (kg/yr)

Comments:

Electricity use reduced in April compared to March, however increased in May as the ambient temperature reduced. A time of use plot shows demand peaking at approximately 100 kW at around 8am on a number of days in May. Electricity use was 20% or more below baseline in both April and May. This highlights the benefit of the new heating system which uses heat pumps compared to the direct electric heating used pre-upgrade. After hours usage has also improved due to control improvements of the HVAC system.

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

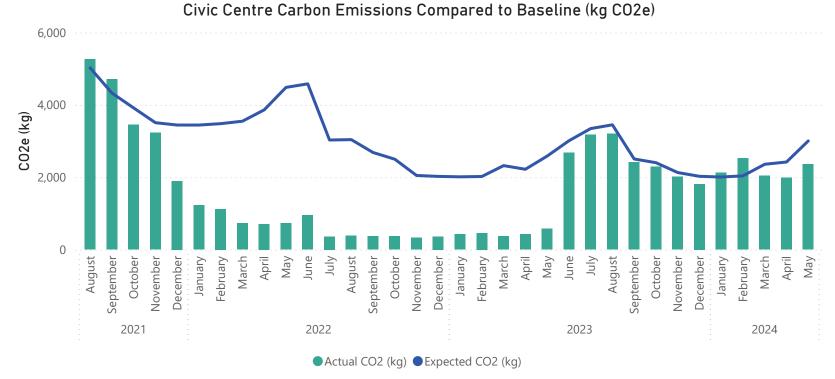
Civic Centre Electricity Use Compared to Baseline (kWh)



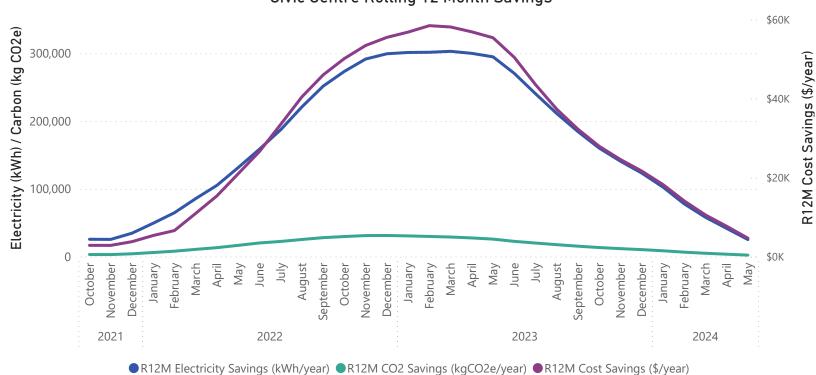


Civic Centre





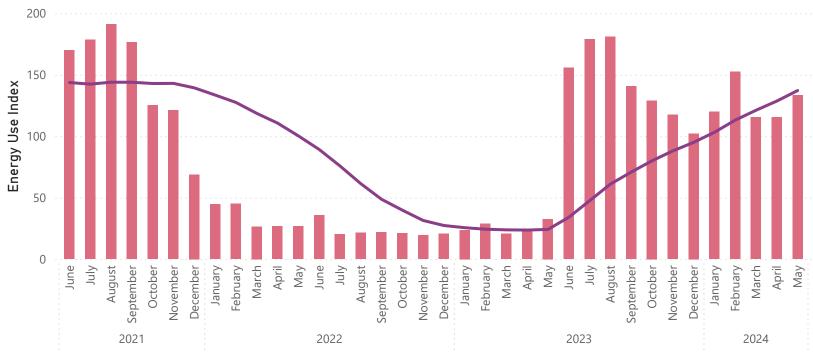






Civic Centre

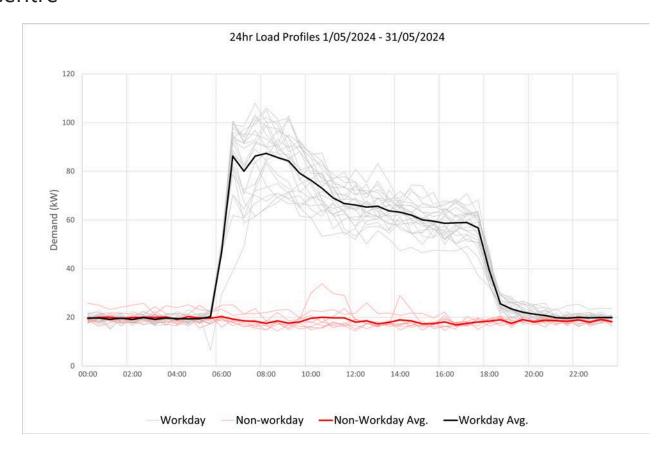




● EUI Monthly (kWh/year/m^2) ● EUI R12M (kWh/year/m^2)



Civic Centre





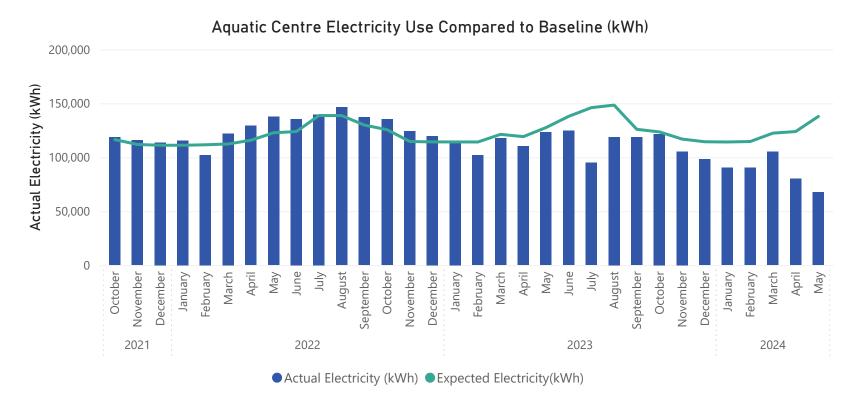
Aquatic Centre

\$4,979 Monthly Energy Cost Savings	70,184 Elec. Savings (kWh/mo)	51% Elec. Savings (%)	310,750 R12M Electricity Savings (kWh/yr)	-11,907 CO2e Savings (kg/mo)
\$10,346 R12M Energy Cost Savings	-88,093 Gas. Savings (kWh/mo)	-141% Gas. Savings (%)	-519,768 R12M Gas Savings (kWh/yr)	-78,811 R12M CO2e Savings (kg/yr)

Comments:

The Aquatic Centre had its first shutdown in three years in April and May, which has had a significant impact on energy use. Electricity use was well below baseline, however this is because pools were empty for a period of time which meant pumps were switched off.

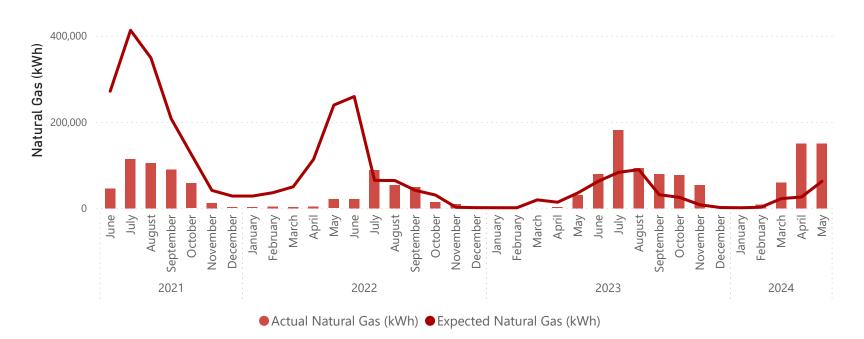
Gas use was well above baseline and much higher than has been used in April and May in recent years. This is the result of having to heat the pools from cold after they have been refilling. The heat pump could do this more efficiently, however it has much lower total heating capacity compared to the boilers and cannot increase the temperature as quickly as the boilers can. The boilers were used to make sure the pools were at temperature ready for re-opening.



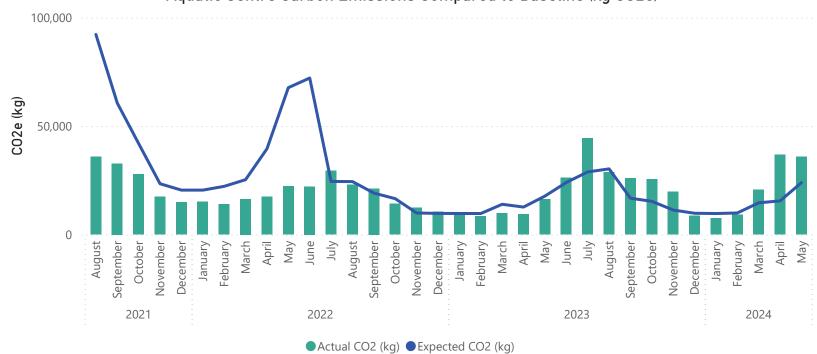


Aquatic Centre

Aquatic Centre Natural Gas Compared to Baseline (kWh)

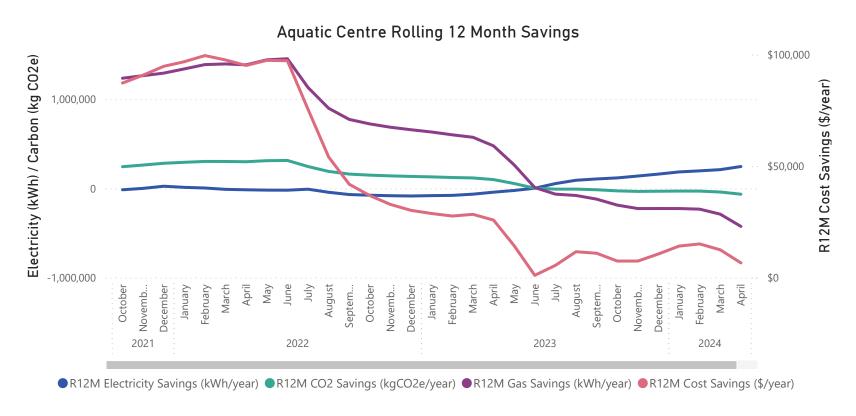




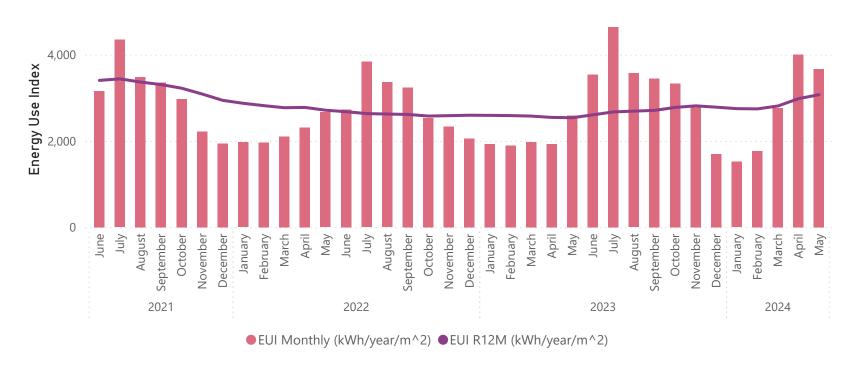




Aquatic Centre



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





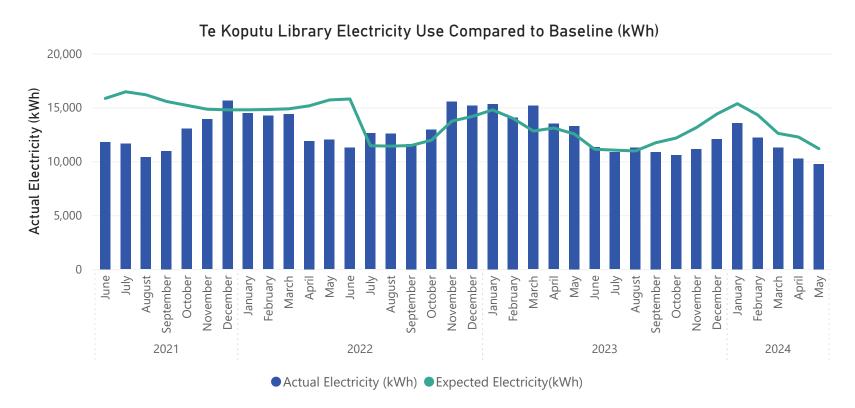
Te Koputu Library

\$361 Monthly Energy Cost Savings	1,419 Elec. Savings (kWh/mo)	13% Elec. Savings (%)	15,191 R12M Electricity Savings (kWh/yr)	360 CO2e Savings (kg/mo)
\$5,238 R12M Energy Cost Savings	1,204 Gas. Savings (kWh/mo)	12% Gas. Savings (%)	32,221 R12M Gas Savings (kWh/yr)	7,738 R12M CO2e Savings (kg/yr)

Comments:

Electricity use was 16% below baseline in April and 13% below baseline in May. These are good results consistent with recent months since control changes were made in Oct 2023.

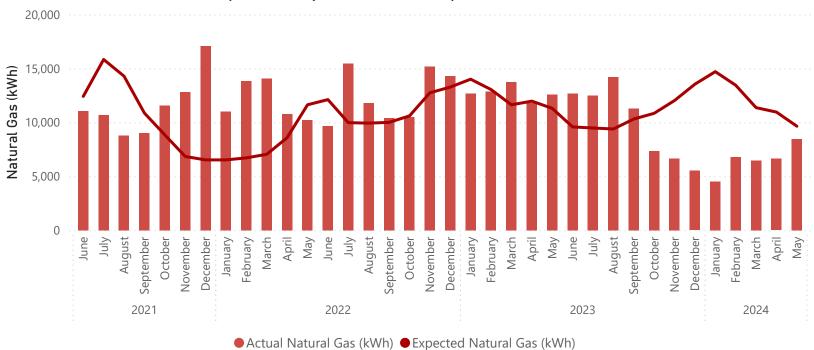
Gas use increased 27% in May compared to April. This is likely the result of increased requirements for heating due to the cold ambient conditions in May. The baseline does not predict this well and even shows a reduction in expected gas use in May. This is due to a poor relationship between temperature and gas use historically when the baseline was set.



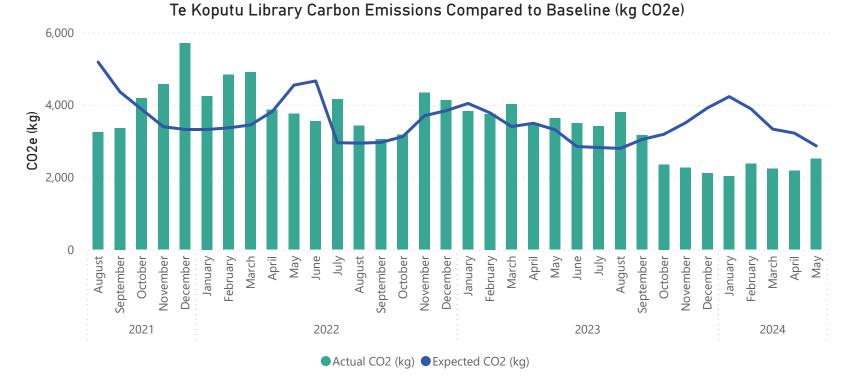


Te Koputu Library





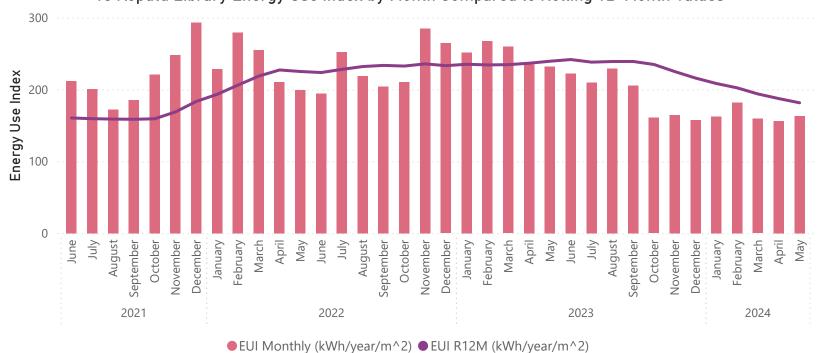




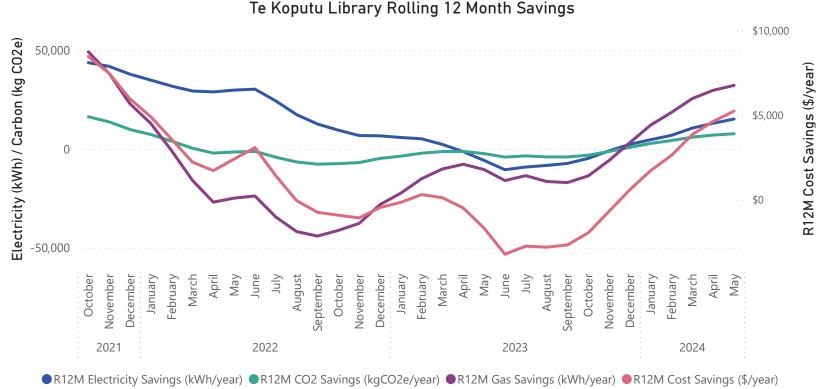


Te Koputu Library











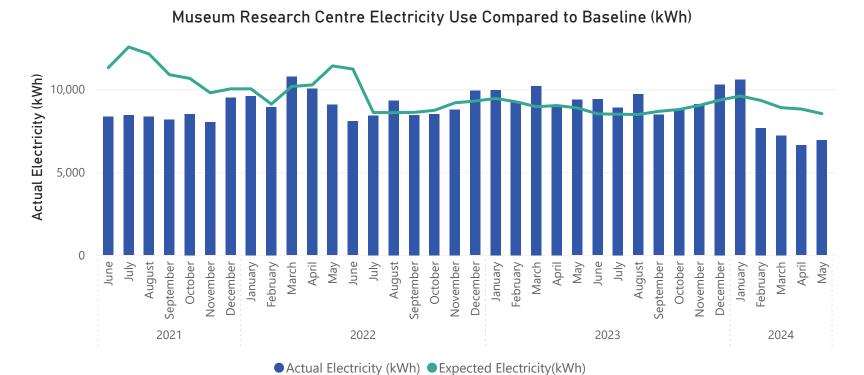
Museum and Research Centre

\$297 Monthly Energy Cost Savings	1,609 Elec. Savings (kWh/mo)	19% Elec. Savings (%)	2,801 R12M Electricity Savings (kWh/yr)	144 CO2e Savings (kg/mo)
\$227 R12M Energy Cost Savings	55 Gas. Savings (kWh/mo)	2% Gas. Savings (%)	-2,489 R12M Gas Savings (kWh/yr)	-269 R12M CO2e Savings (kg/yr)

Comments:

Electricity use was around 20% below baseline in both April and May. This continues a trend of significantly lower electricity use which began in February this year.

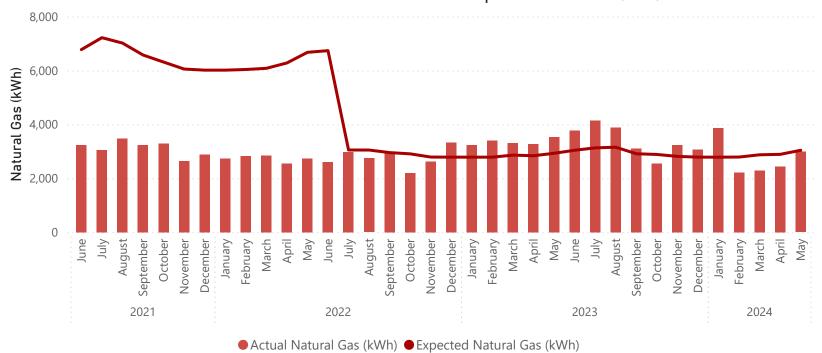
Gas use was below baseline in April, however it increased in May to be similar to baseline use. This will be in part due to colder ambient temperature in May requiring more gas for heating, however the baseline should account for this to a certain extent. Gas use will need to be monitored closely moving forward to ensure there is not a trend of increasing usage.



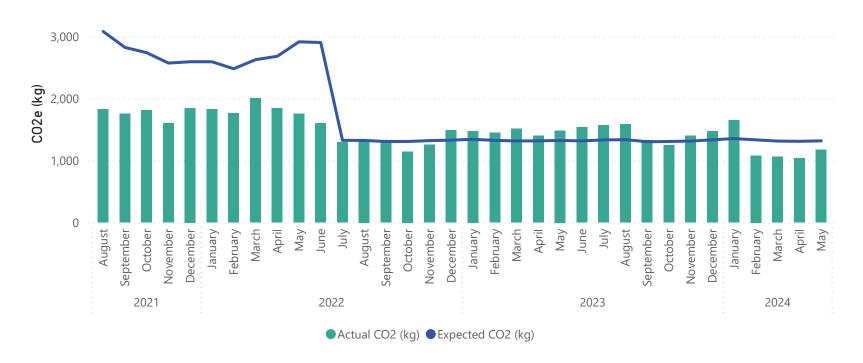


Museum and Research Centre

Museum Research Centre Natural Gas Compared to Baseline (kWh)



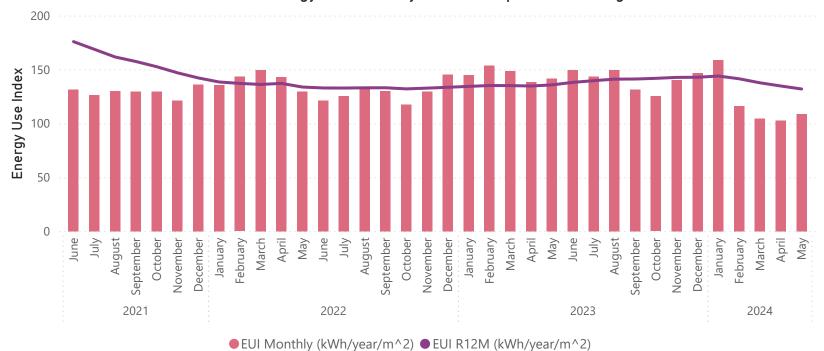
Museum Research Centre Carbon Emissions Compared to Baseline (kg CO2e)



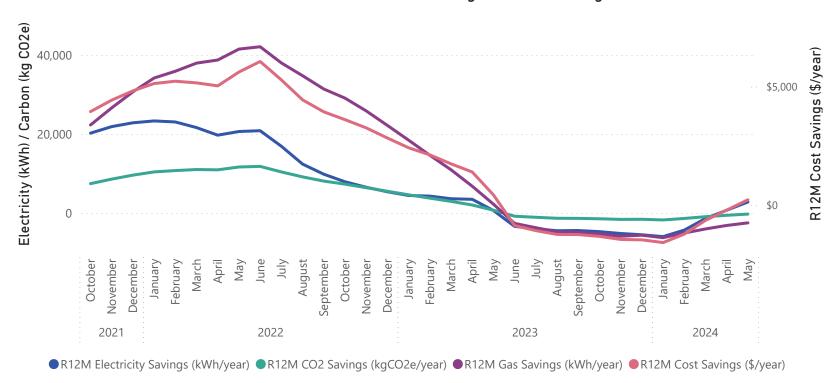


Museum and Research Centre

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



Museum Research Centre Rolling 12 Month Savings





War Memorial Hall

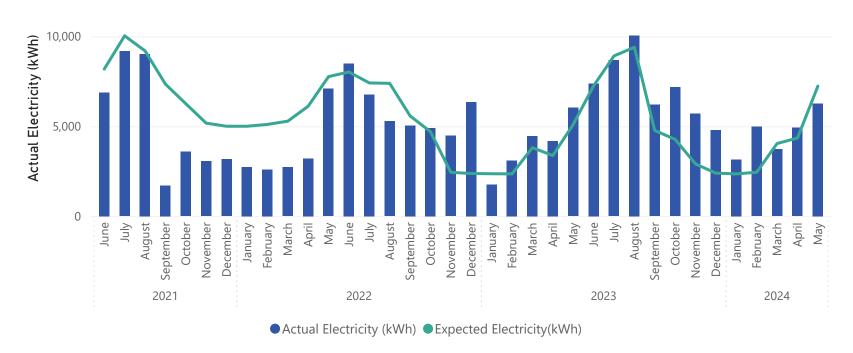
\$306 Monthly Energy Cost Savings	969 Elec. Savings (kWh/mo)	13% Elec. Savings (%)	-12,642 R12M Electricity Savings (kWh/yr)	386 CO2e Savings (kg/mo)
-\$1,675 R12M Energy Cost Savings	1,519 Gas. Savings (kWh/mo)	42% Gas. Savings (%)	3,079 R12M Gas Savings (kWh/yr)	-427 R12M CO2e Savings (kg/yr)

Comments:

Electricity use was slightly higher than baseline in April, however it was 13% below baseline in May. Some unders and overs are expected given this site is a non-half-hour meter which requires manual reading.

Gas use has been below baseline since September last year. Winter is when gas use is at its peak, however this also depends on the types of activity the hall is used for.

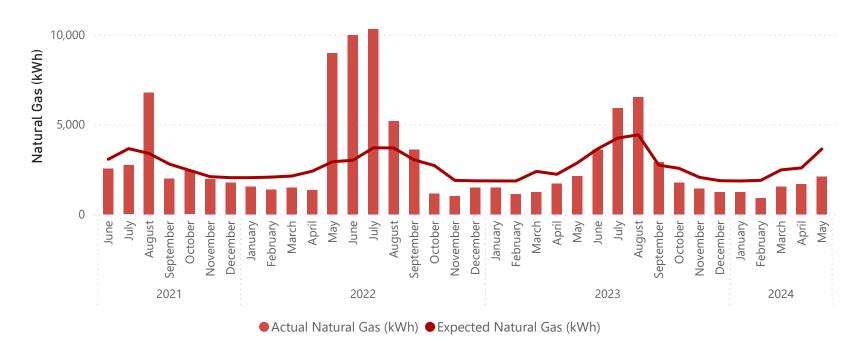
War Memorial Hall Electricity Use Compared to Baseline (kWh)



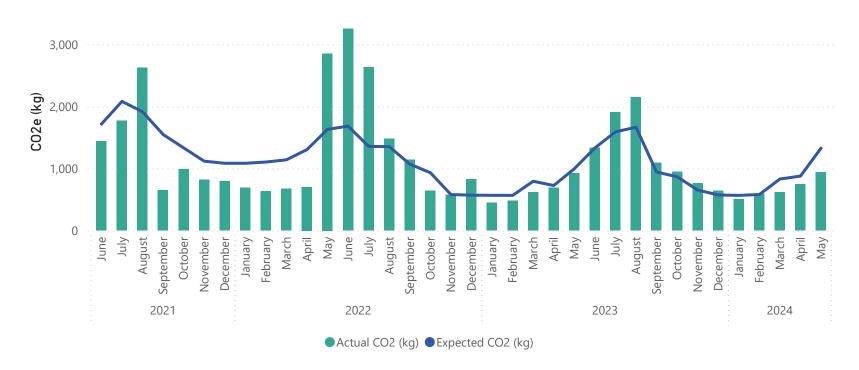


War Memorial Hall

War Memorial Hall Natural Gas Compared to Baseline (kWh)



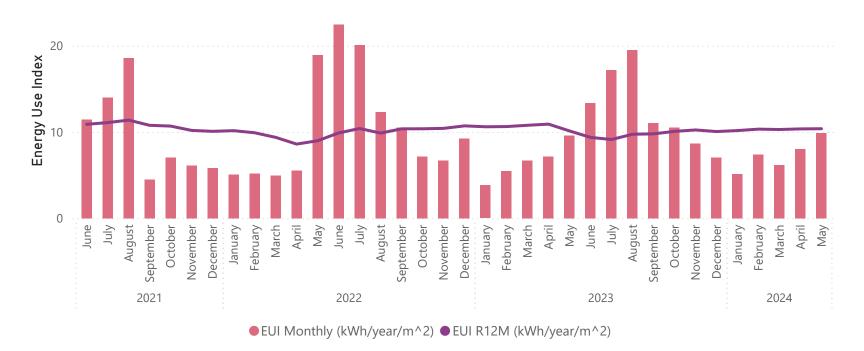
War Memorial Hall Carbon Emissions Compared to Baseline (kg CO2e)

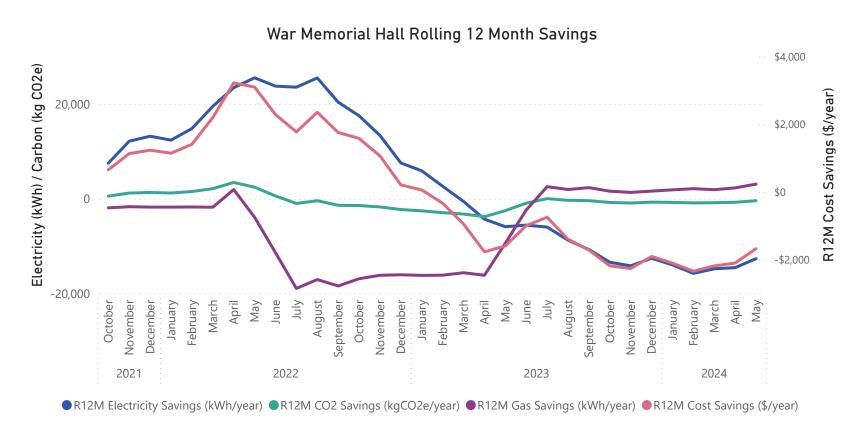




War Memorial Hall

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







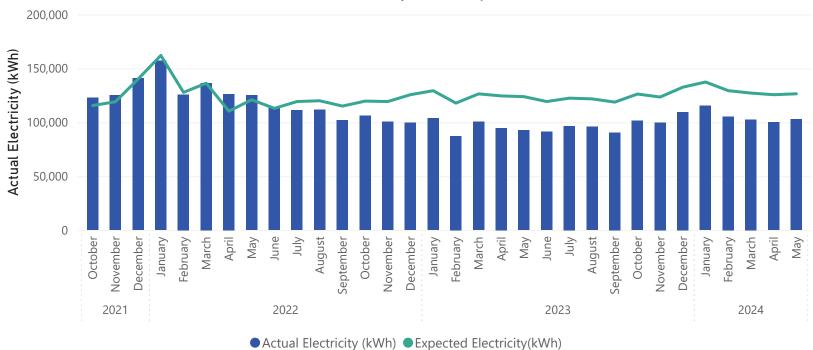
Water Treatment Plant

\$4,138	23,619	19%	298,631	1,956
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
\$49,445				24,727
R12M Energy Cost Savings				R12M CO2e Savings (kg/yr)

Comments:

The water treatment plan continues to achieve savings in the order of 20% each month. This is the result of upgrading high lift pumps in 2022. April savings were 20% and May savings were 19%.

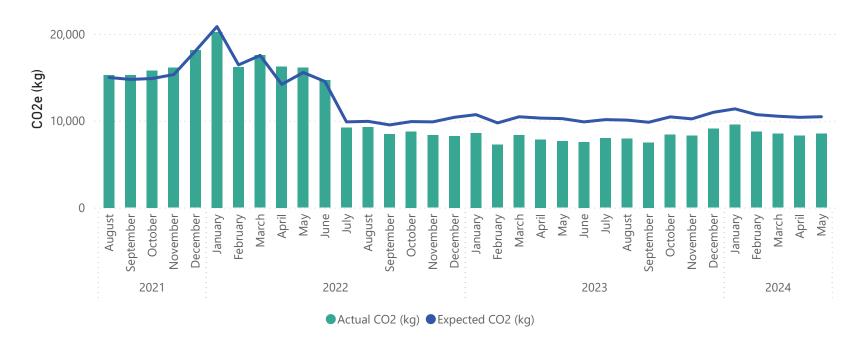
Water Treatment Plant Electricity Use Compared to Baseline (kWh)

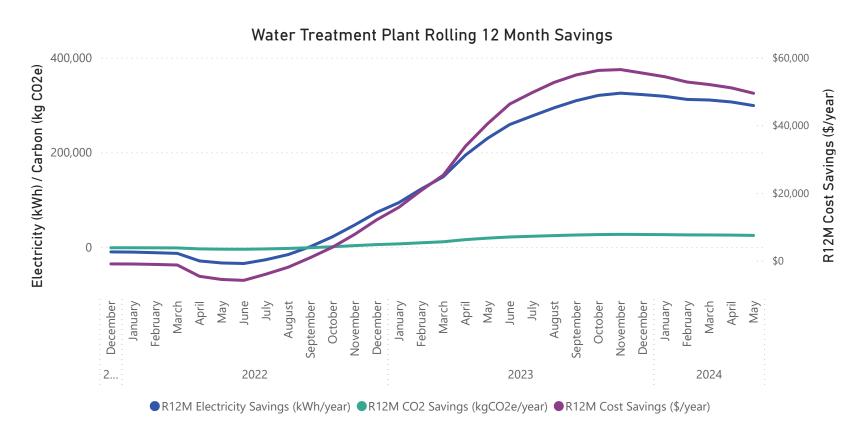




Water Treatment Plant

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



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

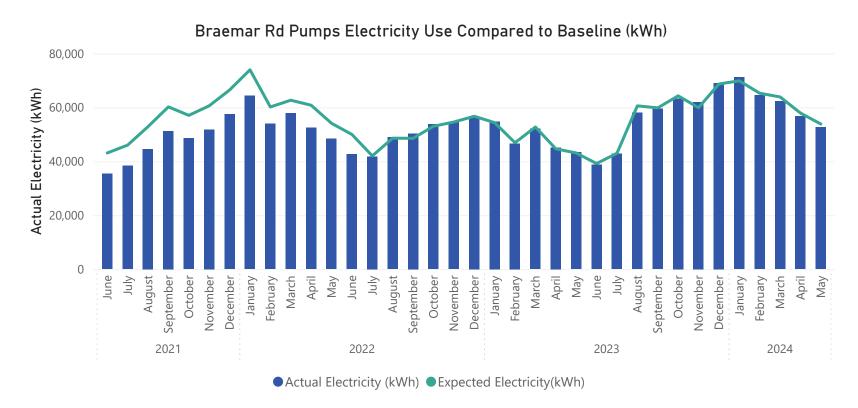


Braemar Road Pump Station

\$206	1,141	2%	5,358	94
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
\$1,041				444
R12M Energy Cost Savings				R12M CO2e Savings (kg/yr)

Comments:

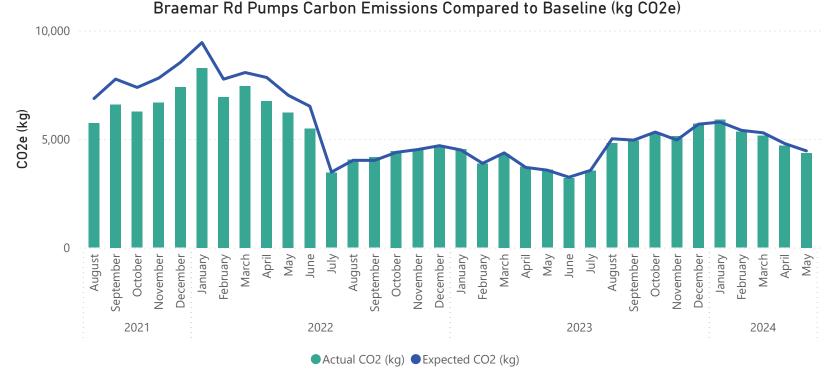
Braemar Rd pump station has been re-baselined in January 2024, the baseline period is Jul 2023 to Jan 2024 and has an R2 value of 0.99. The new baseline is required to account for arsenic screening and additional pumps. Usage in April and May was 2% below this new baseline.



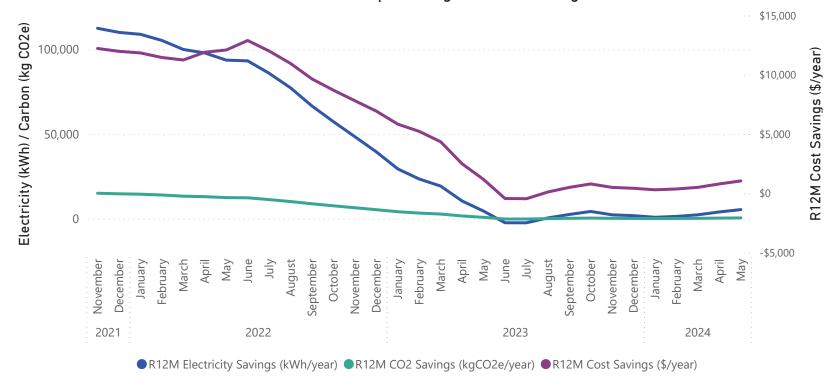


Braemar Road Pump Station











Braemar Road Pump Station

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



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

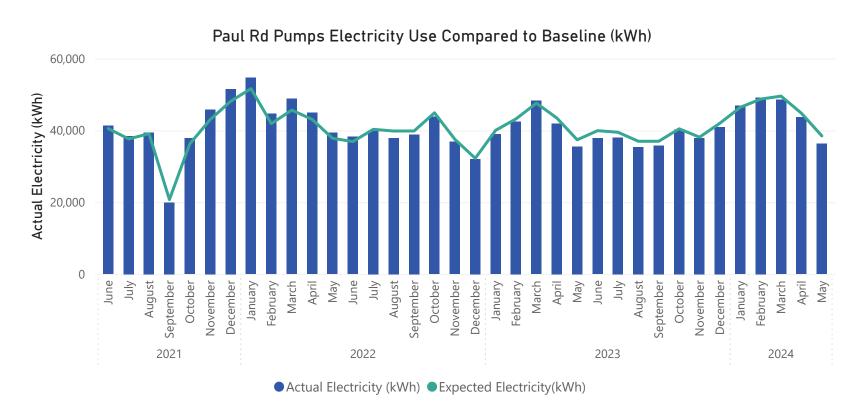


Paul Road Pump Station

\$391 Monthly Energy Cost Savings	2,186 Elec. Savings (kWh/mo)	6% Elec. Savings (%)	11,227 R12M Electricity Savings (kWh/yr)	181 CO2e Savings (kg/mo)
\$2,034 R12M Energy Cost Savings				930 R12M CO2e Savings (kg/yr)

Comments:

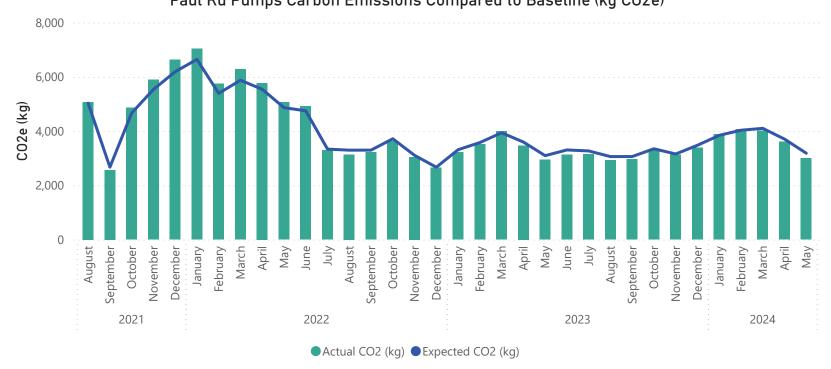
Paul Rd pumps have not had any significant changes for the past few years and have operated with consistent efficiency. Electricity use was similar to baseline in April, however electricity savings were 6% in May. This is a similar result to last May.



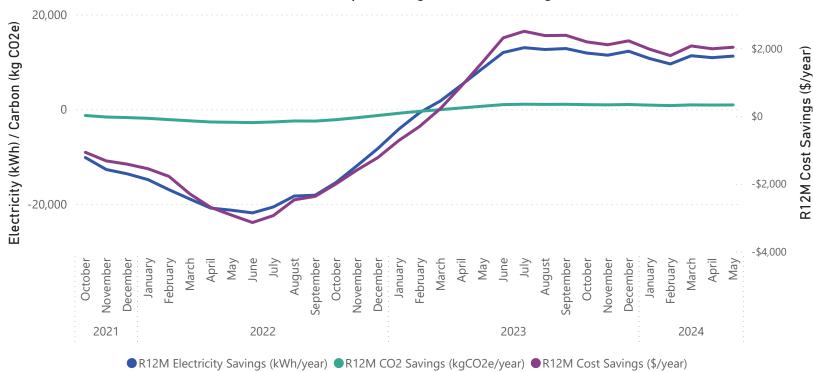


Paul Road Pump Station





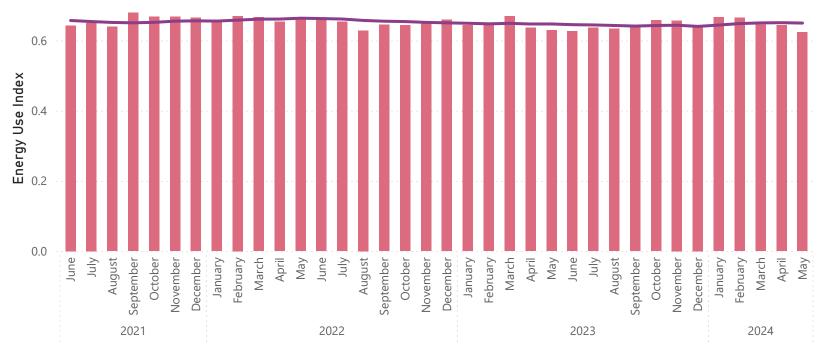






Paul Road Pump Station

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



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



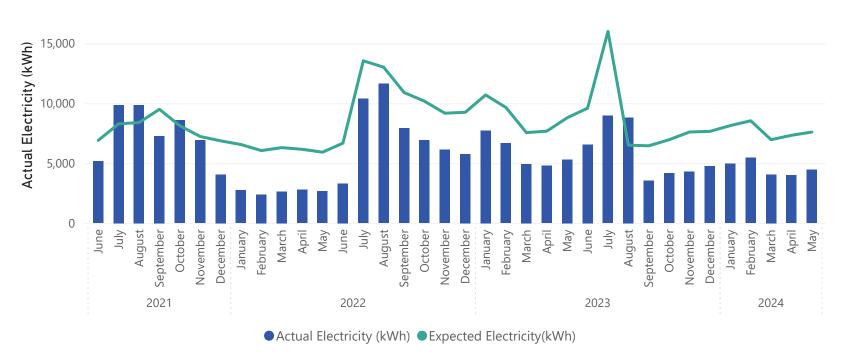
Johnson Road Pump Station

\$699 Monthly Energy Cost Savings	3,146 Elec. Savings (kWh/mo)	41% Elec. Savings (%)	35,343 R12M Electricity Savings (kWh/yr)	261 CO2e Savings (kg/mo)
\$7,802 R12M Energy Cost Savings				2,926 R12M CO2e Savings (kg/yr)

Comments:

Johnson Rd pump operates as part of a system that includes Braemar Rd. Because the Braemar Rd pumps are more efficient than Johnson Rd, an effort has been made to minimise the use of Johnson Rd. Johnson Rd's electricity use vs volume of water supplied appears non-linear at low flow volumes, which is why actual electricity use has been routinely below baseline over the last couple of years.

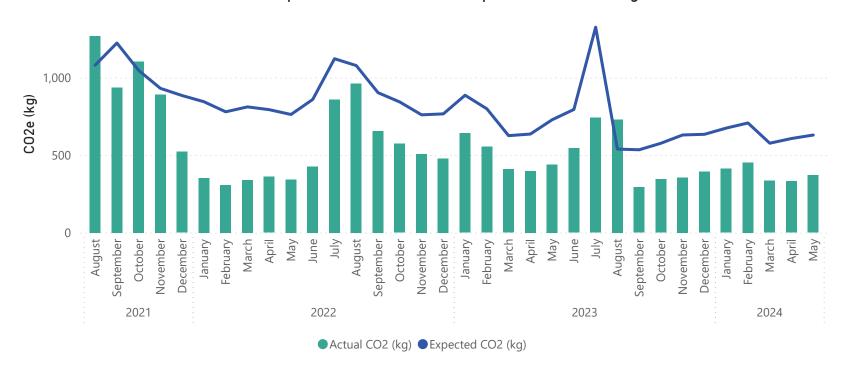
Johnson Rd Pumps Electricity Use Compared to Baseline (kWh)

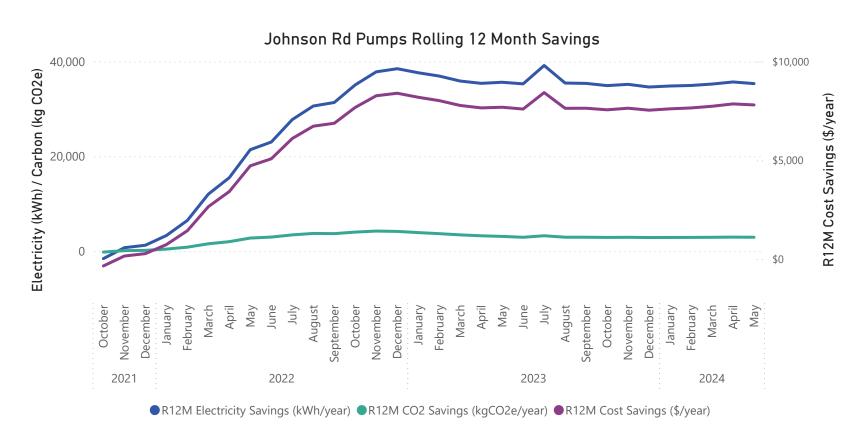




Johnson Road Pump Station

Johnson Rd Pumps Carbon Emissions Compared to Baseline (kg CO2e)







Johnson Road Pump Station





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



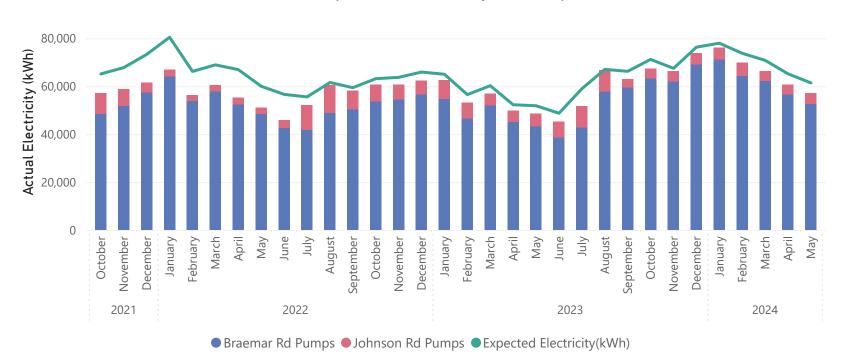
Johnson and Braemar Rd Pump Stations

\$905 Monthly Energy Cost Savings	4,287 Elec. Savings (kWh/mo)	7%	40,701	355
\$8,844	Elec. Savings (kwn/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	3,370
R12M Energy Cost Savings				R12M CO2e Savings (kg/yr)

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%.

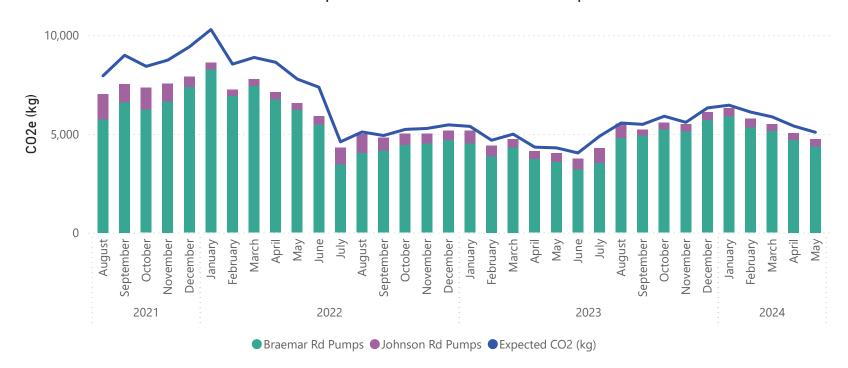
Johnson and Braemar Rd Pump Stations Electricity Use Compared to Baseline (kWh)

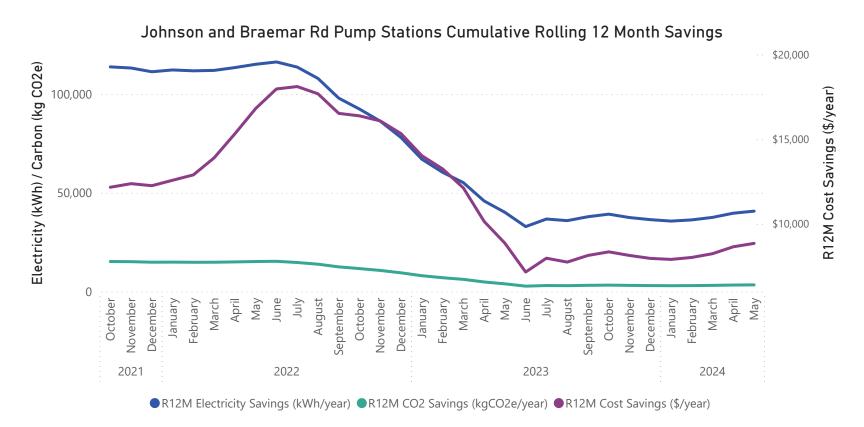




Johnson and Braemar Rd Pump Stations

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

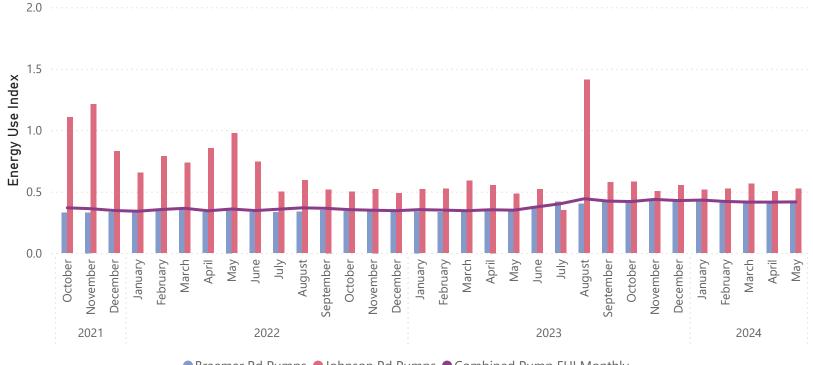






Johnson and Braemar Rd Pump Stations







Bridger Glade Pump Station

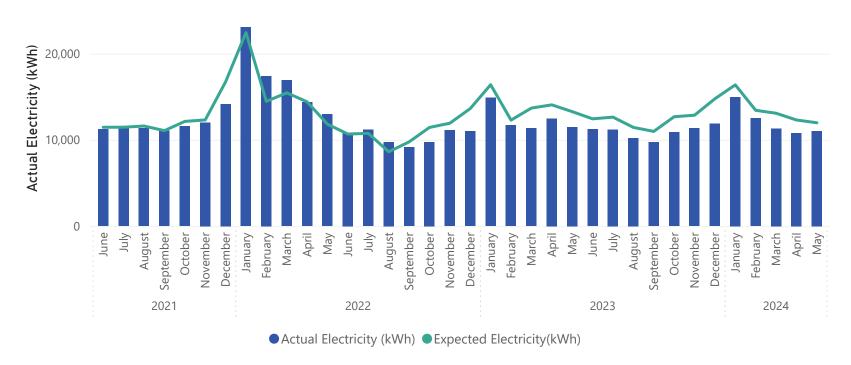
\$167 Monthly Energy Cost Savings	943 Elec. Savings (kWh/mo)	8% Elec. Savings (%)	17,837 R12M Electricity Savings (kWh/yr)	78 CO2e Savings (kg/mo)
\$3,156 R12M Energy Cost Savings				1,477 R12M CO2e Savings (kg/yr)

Comments:

Bridger Glade Pump Station has shown savings of 10-15% each month since new pumps were installed late in 2022. The overall efficiency of the pumps is poorer than would be expected. Further work is needed to determine if the pumps are operating near their Best Efficiency Point (BEP).

Electricity savings in May were 8%, which is lower than average. April savings were 12%.

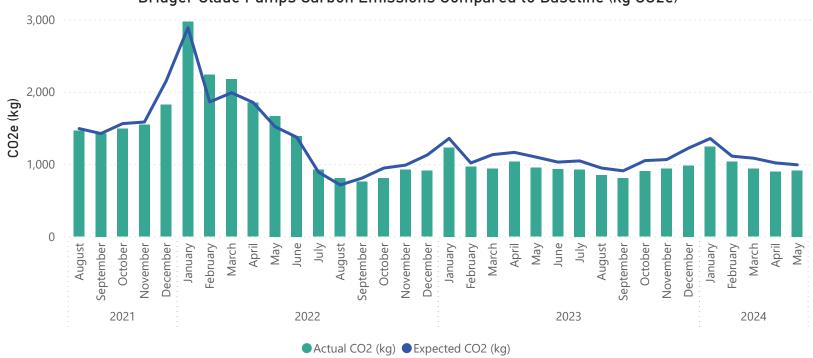
Bridger Glade Pumps Electricity Use Compared to Baseline (kWh)

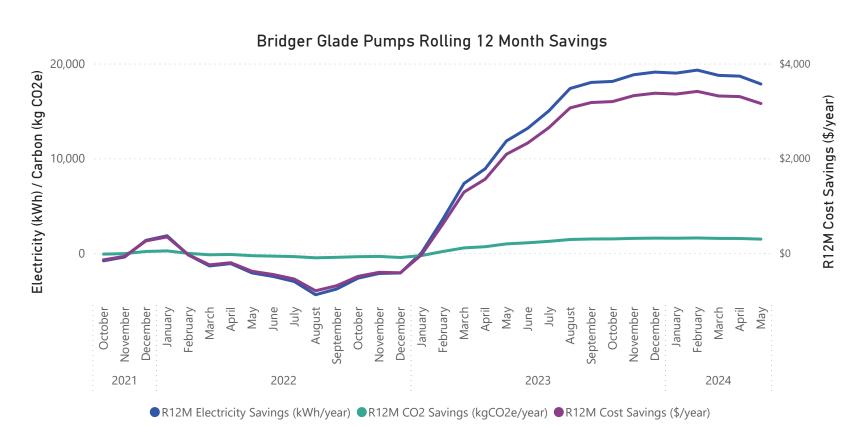




Bridger Glade Pump Station









Bridger Glade Pump Station





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



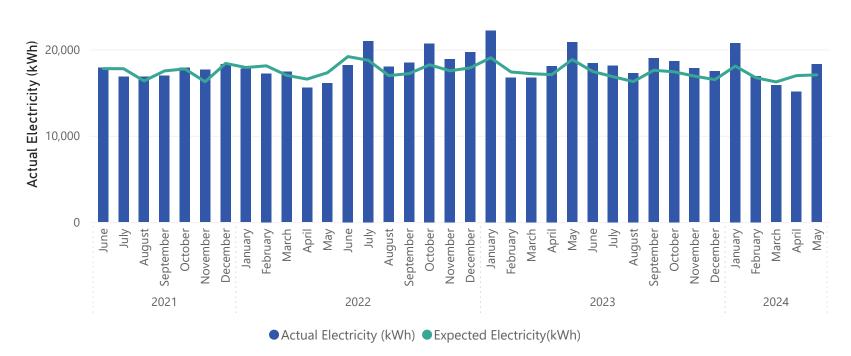
Ohope Oxidation Ponds

-\$222	-1,225	-7%	-9,627	-101
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
-\$1,726				-797
R12M Energy Cost Savings				R12M CO2e Savings (kg/yr)

Comments:

Electricity used by the Ohope oxidation ponds April was below baseline, however this increased in May. Demand for electricity is relatively constant month to month at the Ohope oxidation ponds, however electricity use can increase during severe wet weather events, as well as the summer peak when the population increases.

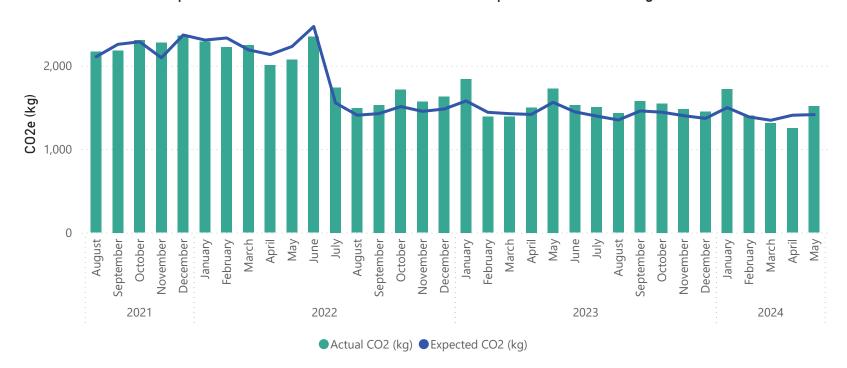
Ohope Oxidation Ponds Electricity Use Compared to Baseline (kWh)

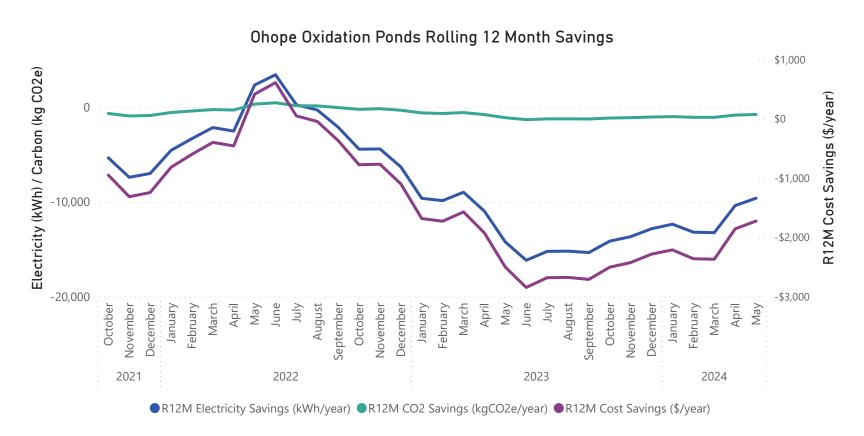




Ohope Oxidation Ponds

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







Ohope Oxidation Ponds





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

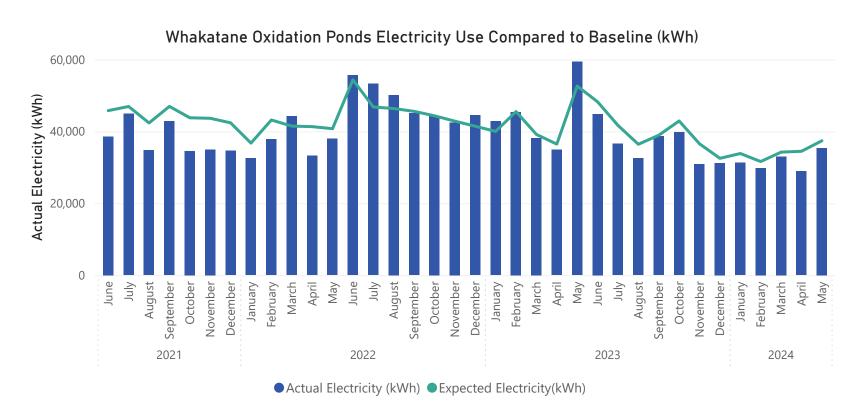


Whakatane Oxidation Ponds

2,006	5%	35,866	166
Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
			2,970
			R12M CO2e Savings (kg/yr)
E		****	_,

Comments:

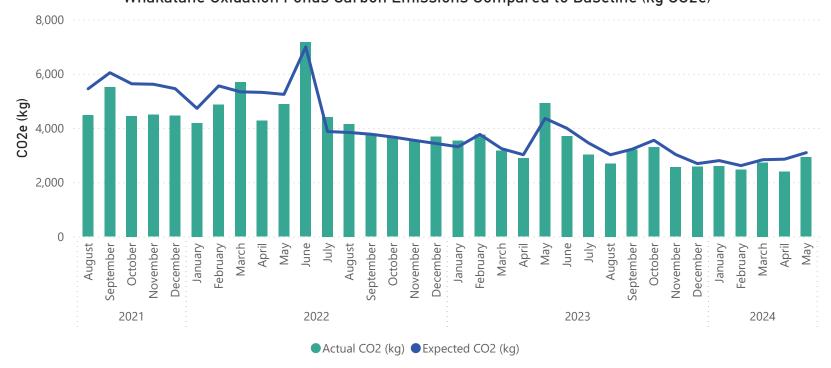
Electricity used and effluent treated by the Whakatane Oxidation Ponds has been trending down on average for the past 18 months. Electricity use has been below baseline for each of the past 12 months, including a 5% saving compared to baseline in May. April electricity use was 16% below baseline and was the lowest usage for a month since April 2018.

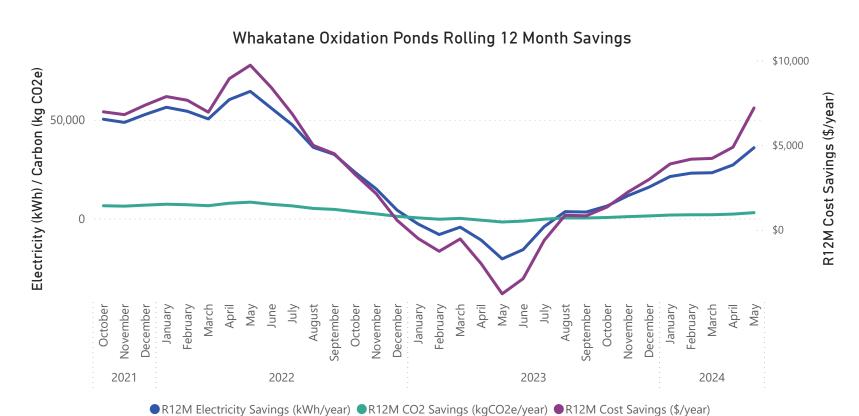




Whakatane Oxidation Ponds

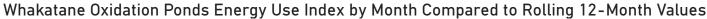


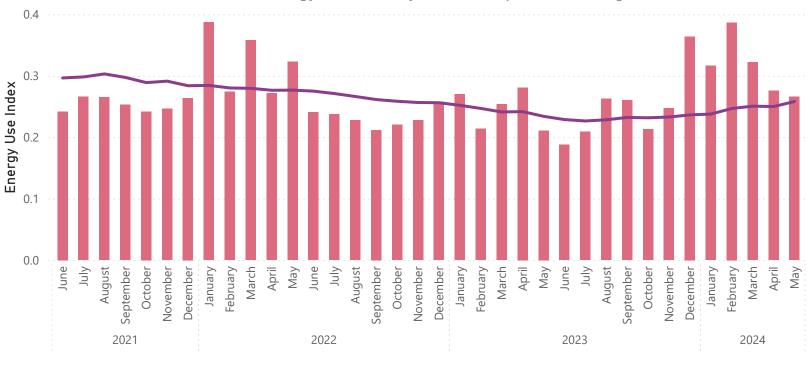






Whakatane Oxidation Ponds





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



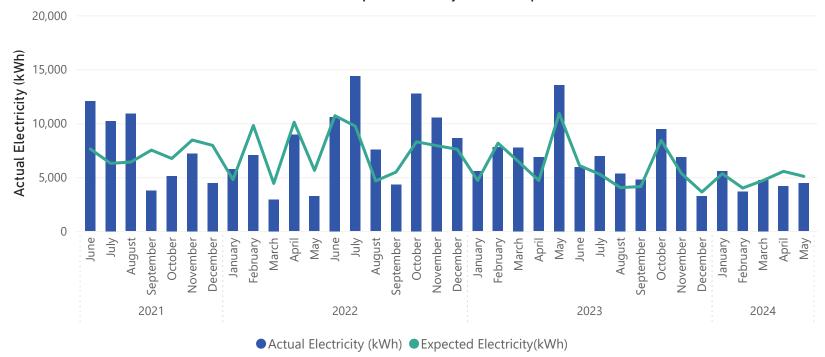
McAlister Street and Rose Garden Pump Stations

\$286 Monthly Energy Cost Savings	643 Elec. Savings (kWh/mo)	13% Elec. Savings (%)	-3,524 R12M Electricity Savings (kWh/yr)	53 CO2e Savings (kg/mo)
\$1,903 R12M Energy Cost Savings				-292 R12M CO2e Savings (kg/yr)

Comments:

McAlister Street and Rose Garden pump stations are part of a common system and are combined for energy monitoring. Electricity use is compared to a baseline using rainfall for the billing period. Electricity use was 13% below baseline overall in May. The saving in April was larger, approximately 25%. Rainfall this year has been much lower than it was last year.

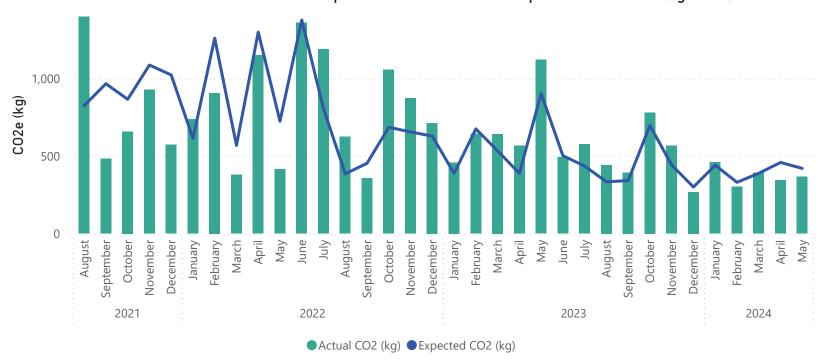
McAlister and Rose Garden Pumps Electricity Use Compared to Baseline (kWh)

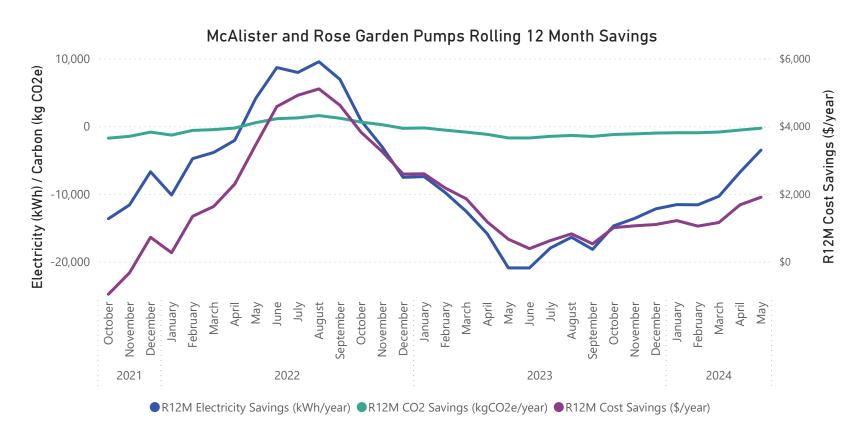




McAlister Street and Rose Garden Pump Stations

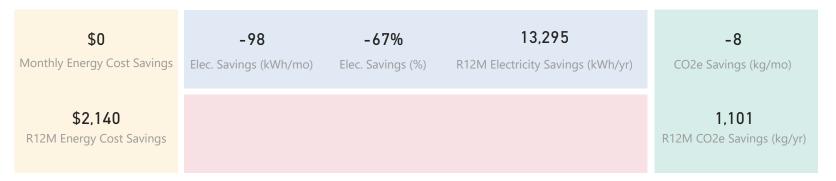
McAlister and Rose Garden Pumps Carbon Emissions Compared to Baseline (kg CO2e)





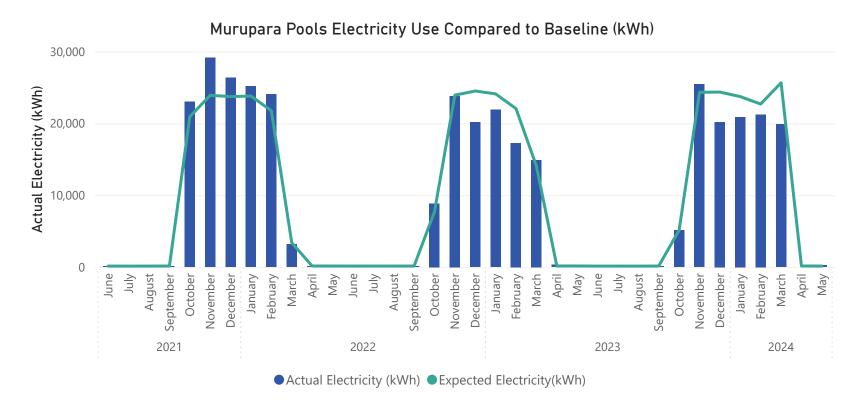


Murupara Pools



Comments:

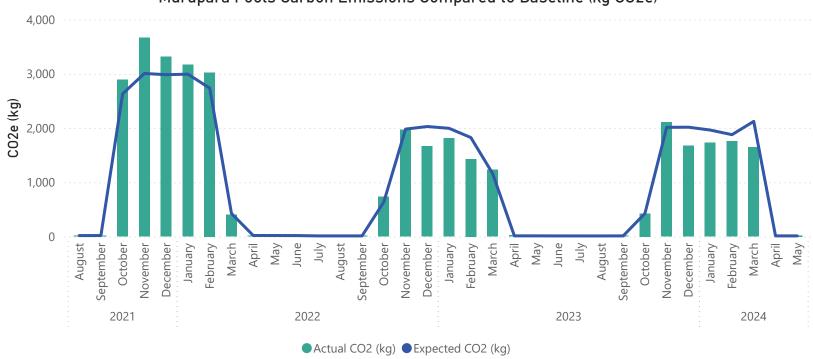
Murupara Pools were closed to the public at the end of March. Electricity use data was not available from the retailer for the month of April, however this use will have been minimal given the pool was closed. Actual electricity used for the month of May was 246 kWh.





Murupara Pools





Murupara Pools Rolling 12 Month Savings

