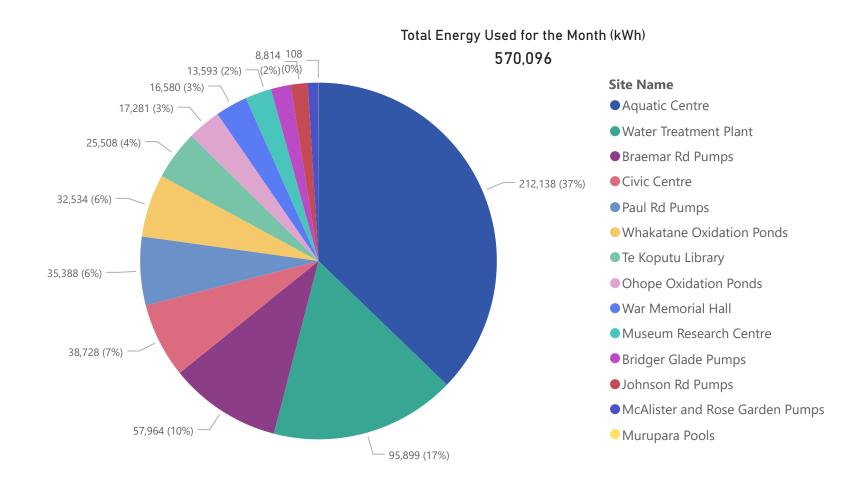


# Summary

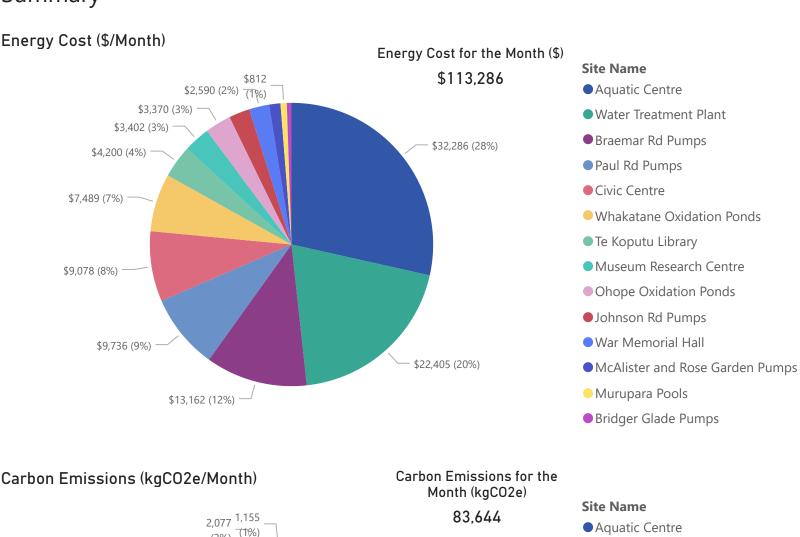
<b>\$9,390</b> Monthly Energy Cost Savings	<b>54,181</b> Elec. Savings (kWh/mo)	11% Elec. Savings (%)	609,090 R12M Electricity Savings (kWh/yr)	<b>4,699</b> CO2e Savings (kg/mo)
\$107,446	-11,587	<b>- 11%</b>	<b>-98,895</b>	<b>59,319</b> R12M CO2e Savings (kg/yr)
R12M Energy Cost Savings	Gas. Savings (kWh/mo)	Gas. Savings (%)	R12M Gas Savings (kWh/yr)	

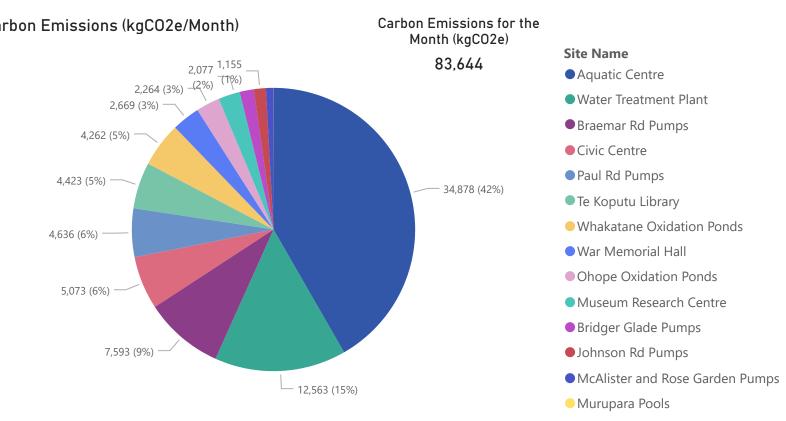
#### Total Energy (kWh/Month)





## Summary

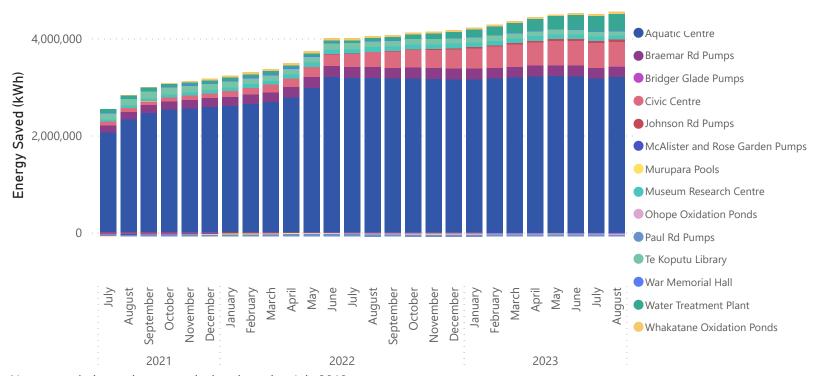






## **Summary**

#### Cumulative Energy Savings (kWh)

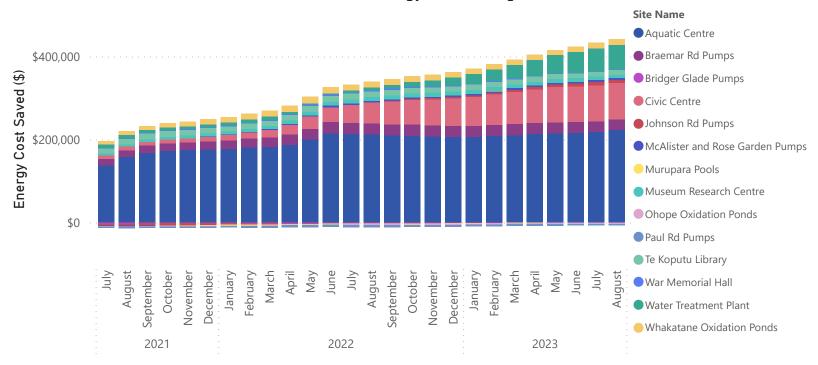


Note, cumulative savings are calculated starting July 2018

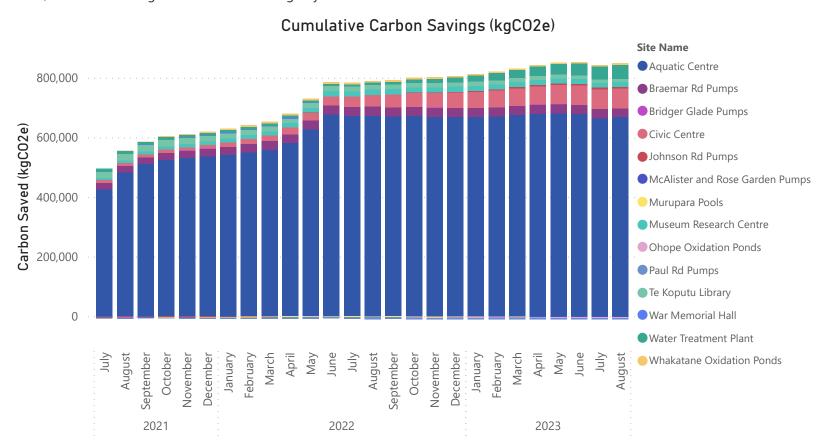


## Summary





Note, cumulative savings are calculated starting July 2018





### Civic Centre

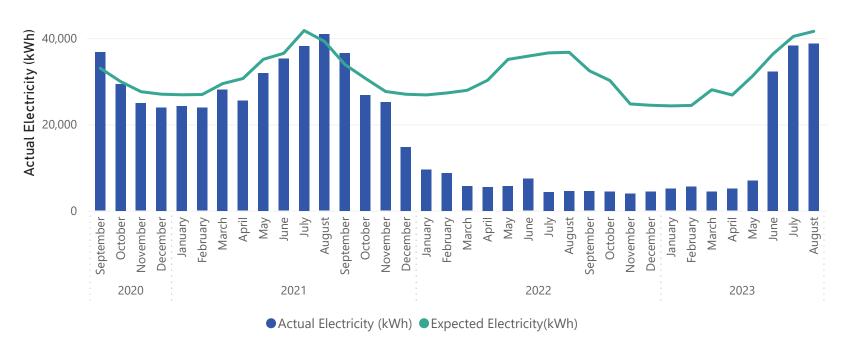
\$539	2,847	7%	211,087	373
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
\$37,272				27,652
R12M Energy Cost Savings				R12M CO2e Savings (kg/yr)

#### **Comments:**

The Civic Centre has returned to normal operation after ongoing refurbishments. The pattern of electricity use has changed when comparing the Civic Centre in August 2023 to August 2021: Average demand during the day has decreased and afterhours demand has increased, particularly in the morning. Demand is also higher than August 2021 on the weekend, until 10:00am. The electricity use profile may be related to re-commissioning of the building and equipment being left on. Overall, electricity use is less than expected.

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

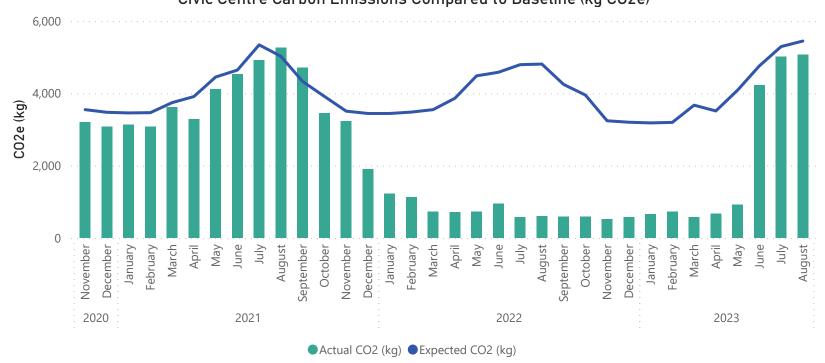
#### Civic Centre Electricity Use Compared to Baseline (kWh)



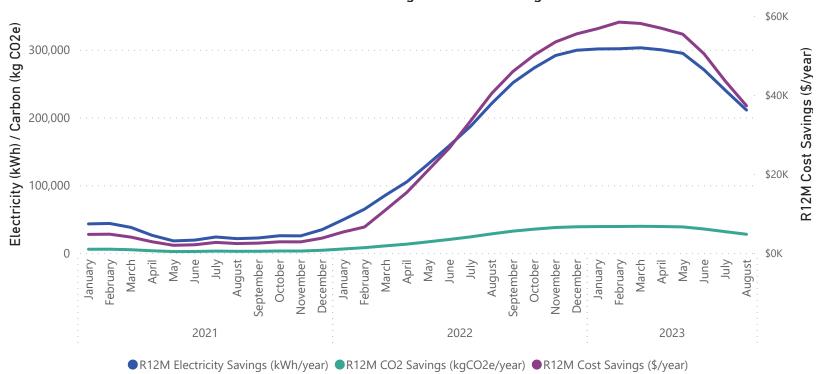


## Civic Centre



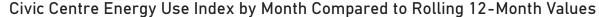


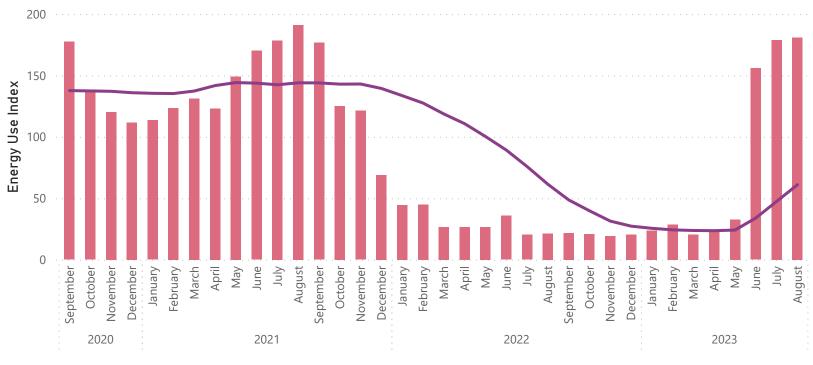






## Civic Centre

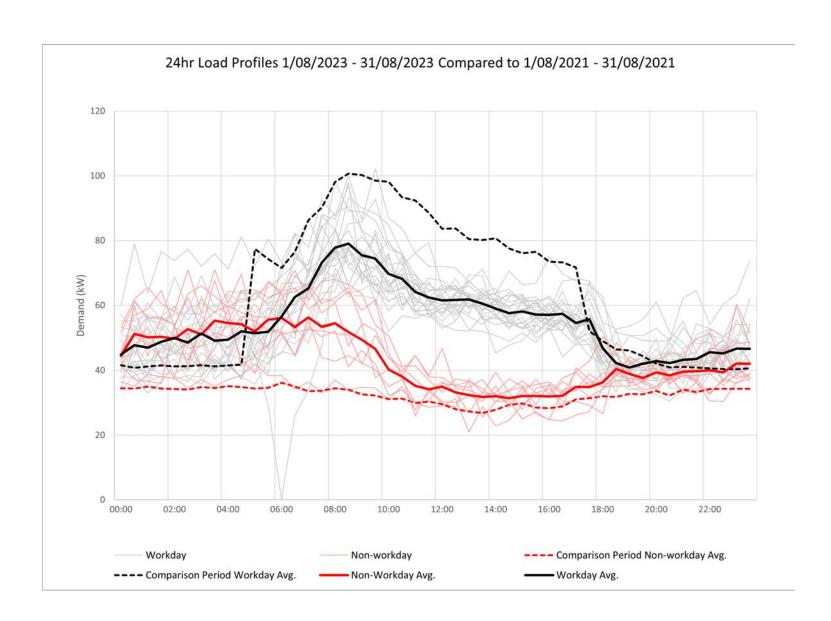




● EUI Monthly (kWh/year/m^2) ● EUI R12M (kWh/year/m^2)



## Civic Centre





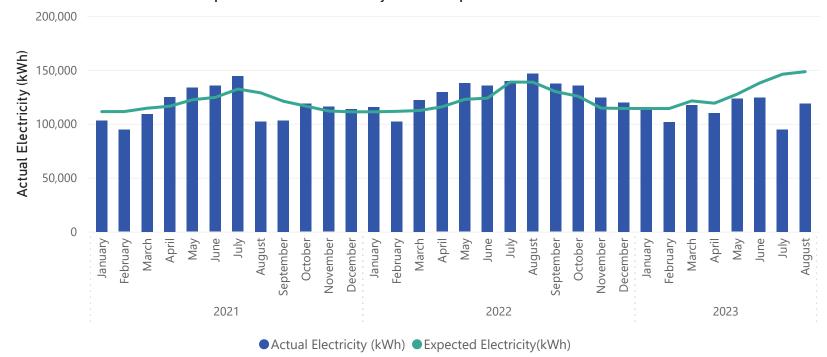
## **Aquatic Centre**

\$5,222 Monthly Energy Cost Savings	29,485 Elec. Savings (kWh/mo)	<b>20%</b> Elec. Savings (%)	90,951 R12M Electricity Savings (kWh/yr)	<b>3,056</b> CO2e Savings (kg/mo)
<b>\$11,590</b> R12M Energy Cost Savings	<b>-3,898</b> Gas. Savings (kWh/mo)	<b>-4%</b> Gas. Savings (%)	<b>-79,641</b> R12M Gas Savings (kWh/yr)	<b>-4,571</b> R12M CO2e Savings (kg/yr)

#### **Comments:**

Electricity use was significantly less than baseline in August 2023 and gas was marginally higher than expected. The Aquatic Centre has been using the gas boilers as a temporary solution for six weeks while heat pump and plant equipment are being repaired and redeveloped. Previously gas was switched off from 17 December 2022 to 6 May 2023. The EUI for the month has increased, as would be expected with more use of the gas boilers, heat pumps use energy more efficiently.

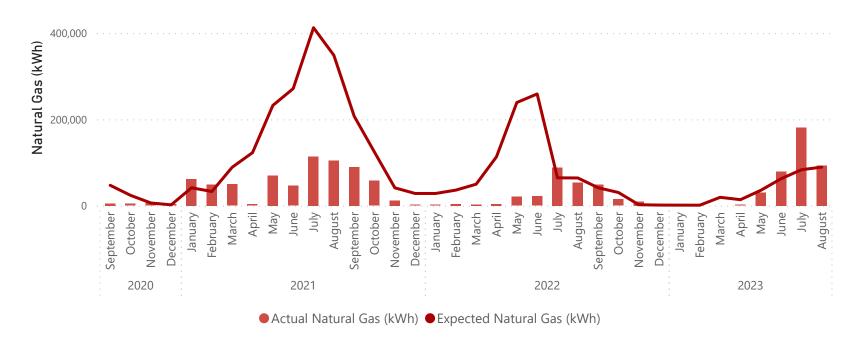
#### Aquatic Centre Electricity Use Compared to Baseline (kWh)



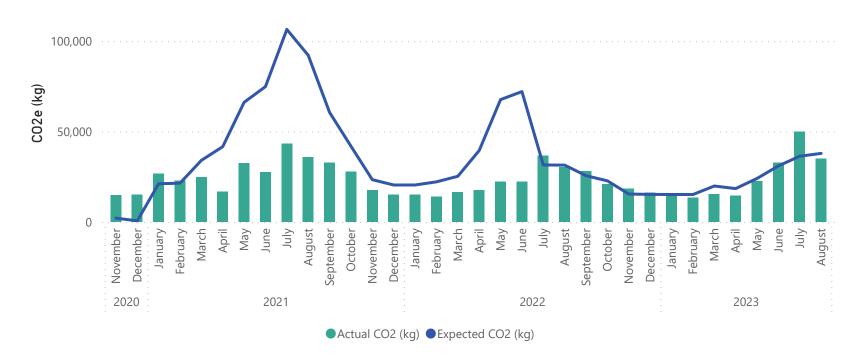


## **Aquatic Centre**

#### Aquatic Centre Natural Gas Compared to Baseline (kWh)

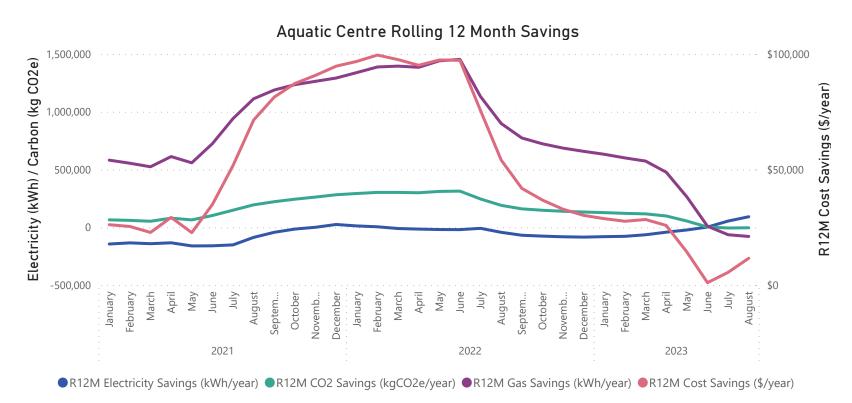


#### Aquatic Centre Carbon Emissions Compared to Baseline (kg CO2e)

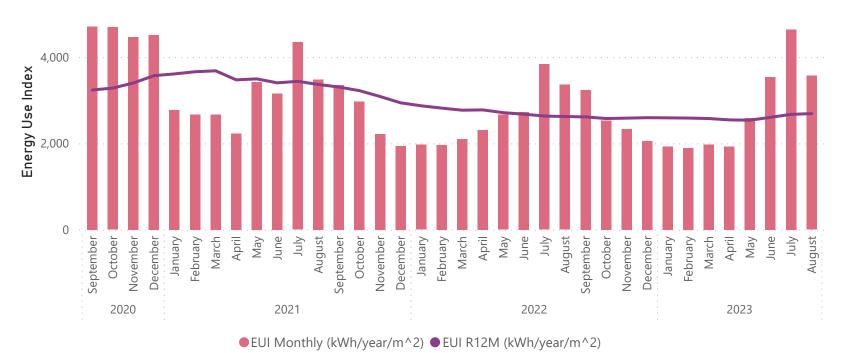




## **Aquatic Centre**



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





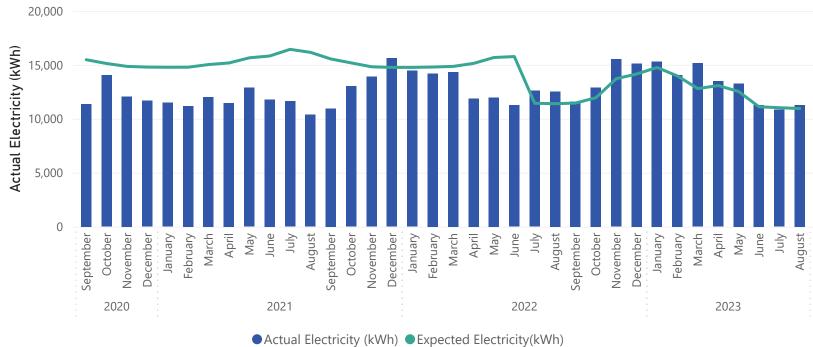
## Te Koputu Library

-\$450 Monthly Energy Cost Savings	-328 Elec. Savings (kWh/mo)	-3% Elec. Savings (%)	-8,303 R12M Electricity Savings (kWh/yr)	-1,044 CO2e Savings (kg/mo)
<b>-\$2,797</b> R12M Energy Cost Savings	-4,835 Gas. Savings (kWh/mo)	<b>- 51%</b> Gas. Savings (%)	-16,435 R12M Gas Savings (kWh/yr)	<b>-4,490</b> R12M CO2e Savings (kg/yr)

#### **Comments:**

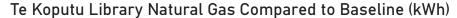
Electricity use was slightly more than expected for the month, natural gas use was significantly more than expected. Natural gas use has increased in August and is higher above baseline compared to the past 3 months.

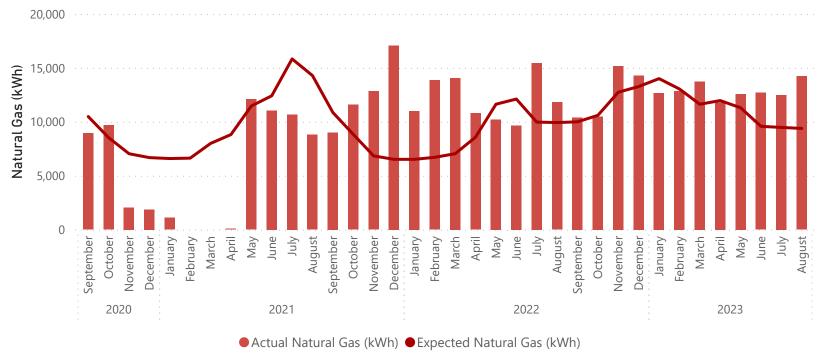
## Te Koputu Library Electricity Use Compared to Baseline (kWh)

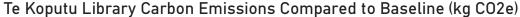


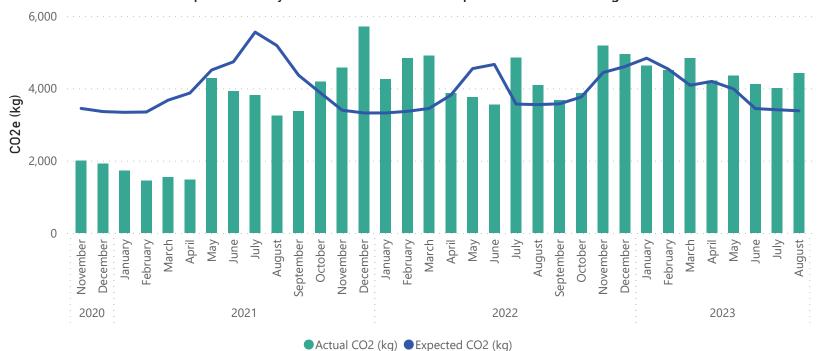


## Te Koputu Library



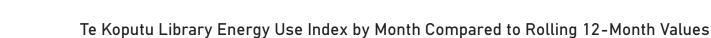


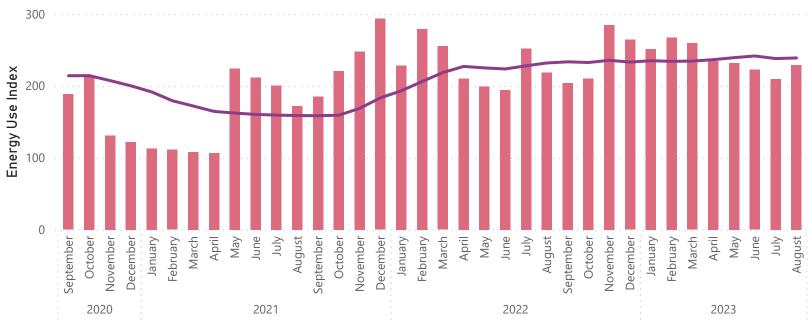






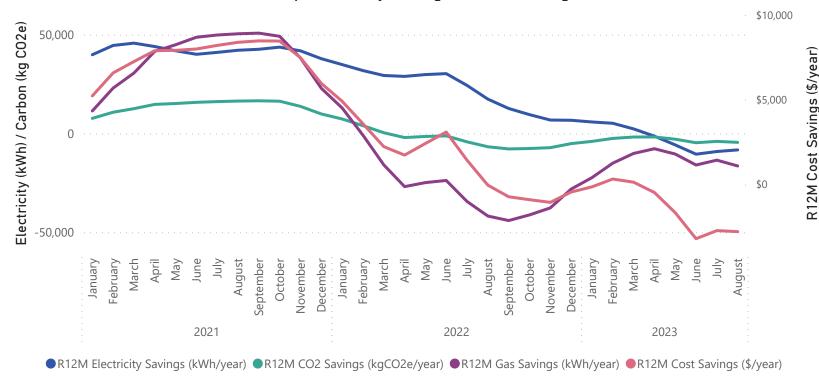
## Te Koputu Library





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





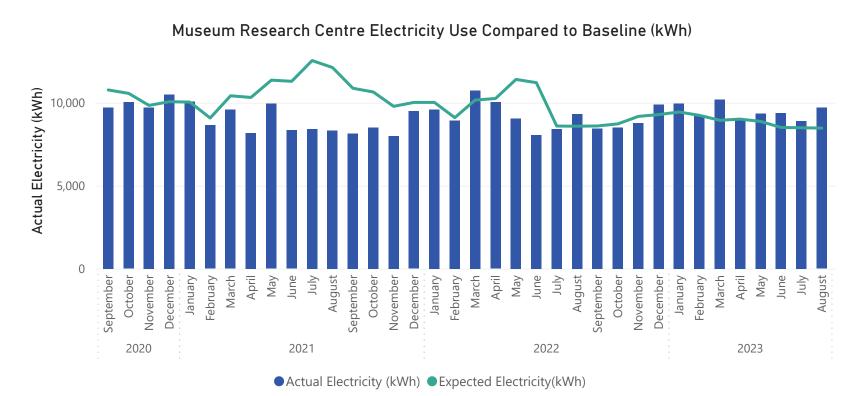


### Museum and Research Centre

-\$296 Monthly Energy Cost Savings	-1,228 Elec. Savings (kWh/mo)	-14% Elec. Savings (%)	-4,483 R12M Electricity Savings (kWh/yr)	-314 CO2e Savings (kg/mo)
-\$1,235	-738	<b>-23%</b>	<b>-4,759</b>	-1,572
R12M Energy Cost Savings	Gas. Savings (kWh/mo)	Gas. Savings (%)	R12M Gas Savings (kWh/yr)	R12M CO2e Savings (kg/yr)

#### **Comments:**

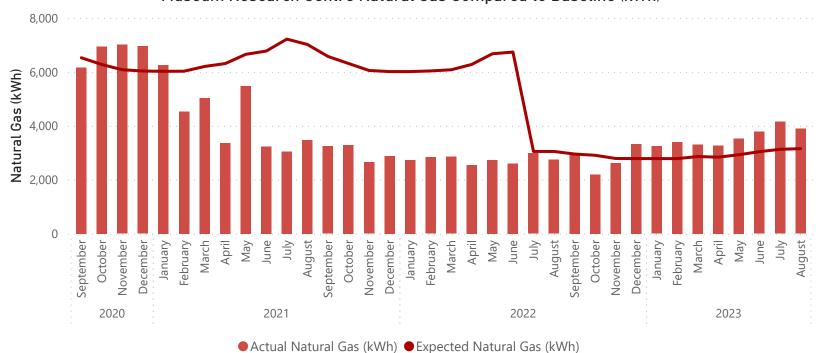
Natural gas use was 23% higher than expected and electricity use was 14% higher than expected. Natural gas use has increased in recent months; August 2023 used 42% more natural gas compared to August 2022. Rolling 12 month energy use has been trending upwards in recent months.



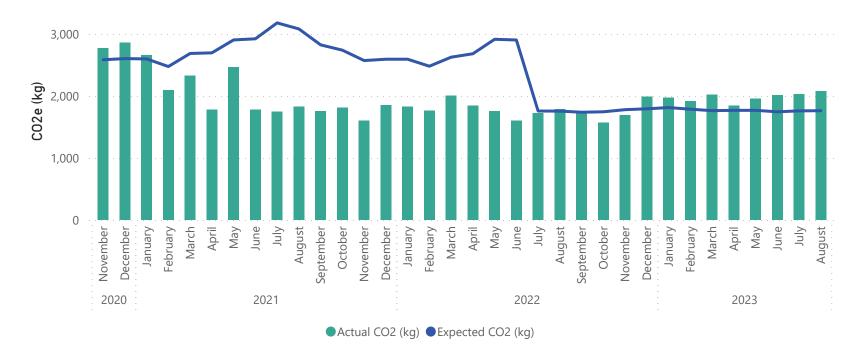


### Museum and Research Centre



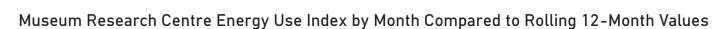


#### Museum Research Centre Carbon Emissions Compared to Baseline (kg CO2e)





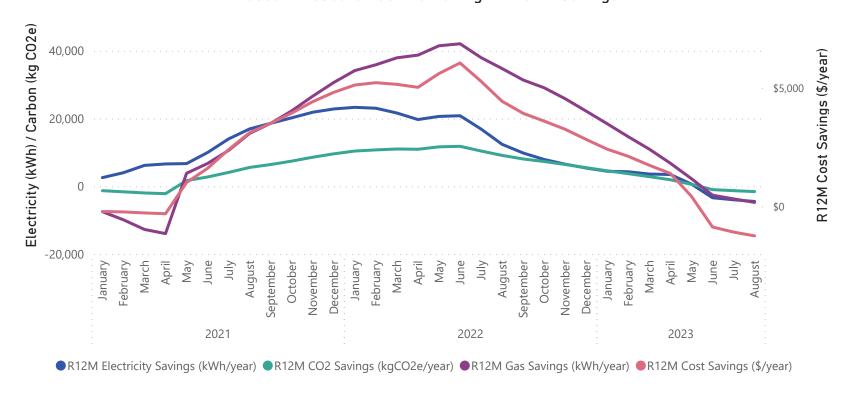
### Museum and Research Centre





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

#### Museum Research Centre Rolling 12 Month Savings





### War Memorial Hall

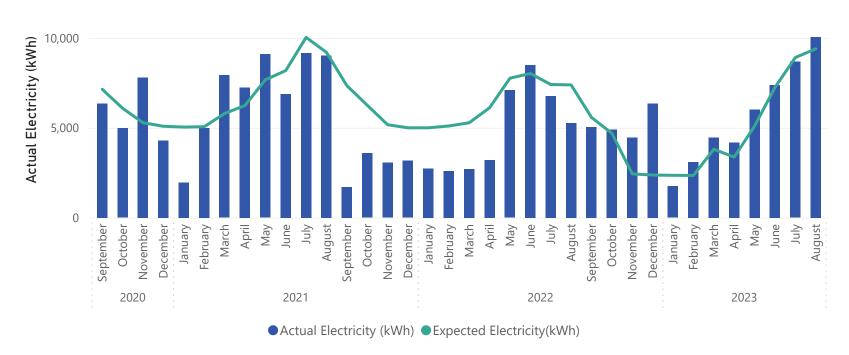
-\$295 Monthly Energy Cost Savings	-651 Elec. Savings (kWh/mo)	<b>-7%</b> Elec. Savings (%)	-8,749 R12M Electricity Savings (kWh/yr)	<b>- 523</b> CO2e Savings (kg/mo)
<b>-\$1,396</b> R12M Energy Cost Savings	-2,116 Gas. Savings (kWh/mo)	<b>-48%</b> Gas. Savings (%)	<b>1,939</b> R12M Gas Savings (kWh/yr)	-745 R12M CO2e Savings (kg/yr)

#### **Comments:**

The War Memorial Hall used 7% more electricity than expected. Nine of the past 12 months have used more electricity than expected.

The hall has used more natural gas than expected in August, the second month in a row where natural gas was significantly higher than expected. Previously less gas has been used than expected since October 2022, which was excellent.

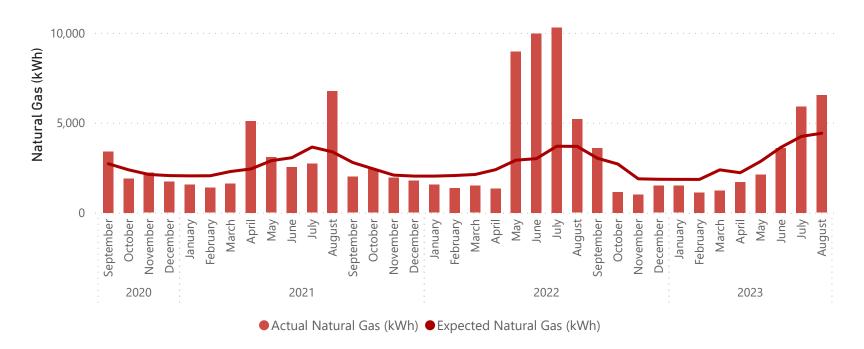
#### War Memorial Hall Electricity Use Compared to Baseline (kWh)



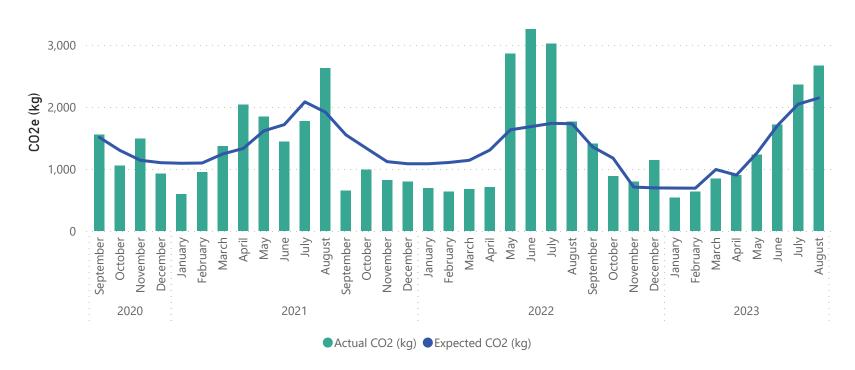


### War Memorial Hall

#### War Memorial Hall Natural Gas Compared to Baseline (kWh)



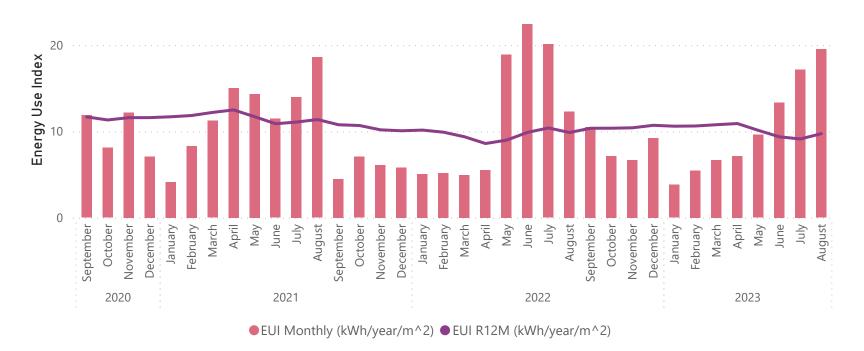
#### War Memorial Hall Carbon Emissions Compared to Baseline (kg CO2e)

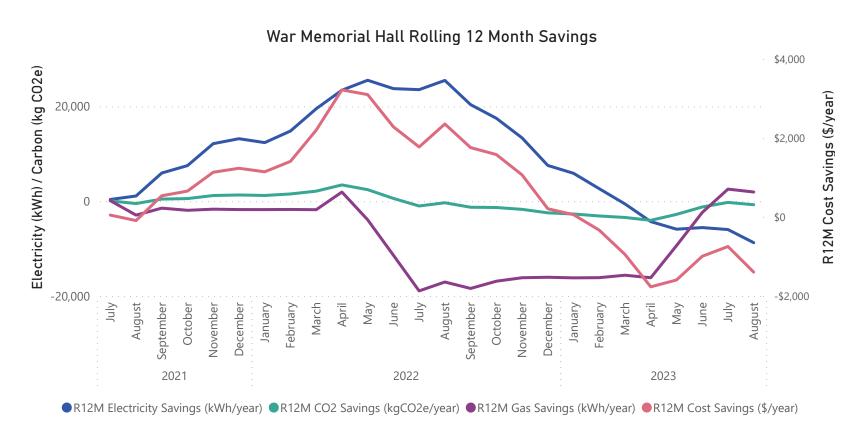




### War Memorial Hall

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







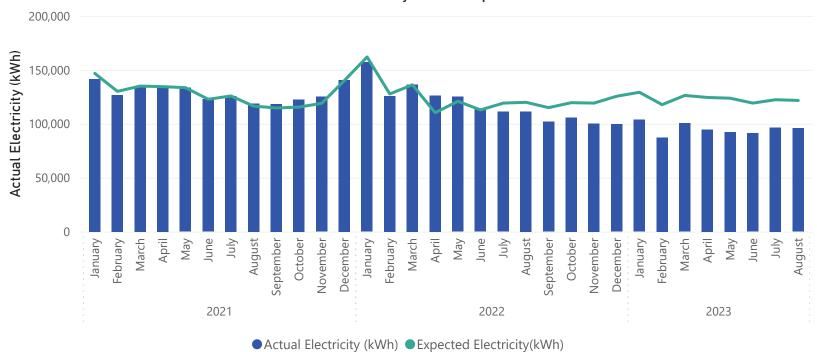
### Water Treatment Plant

\$4,826	25,790	21%	293,887	3,379
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
\$52,649				38,499
R12M Energy Cost Savings				R12M CO2e Savings (kg/yr)

#### **Comments:**

Another month of savings has been achieved at the WTP in August 2023. Consistent savings between 15-25% have been observed since November 2022. Rolling 12 month savings have been increasing, with approximately \$52,650, 294,000 kWh, and 38,500 kgCO2e saved in the past 12 months, which is excellent.

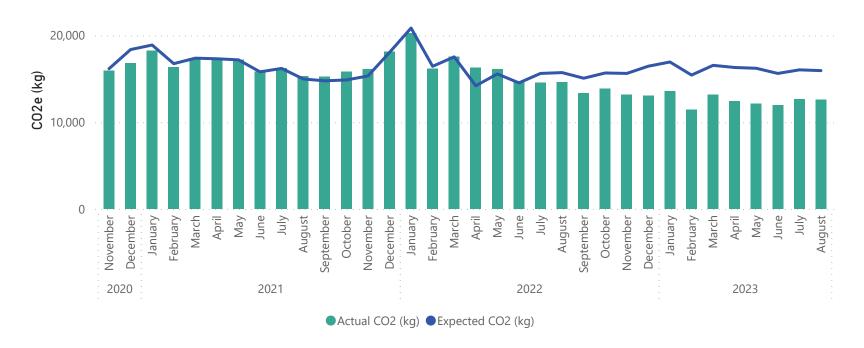
#### Water Treatment Plant Electricity Use Compared to Baseline (kWh)

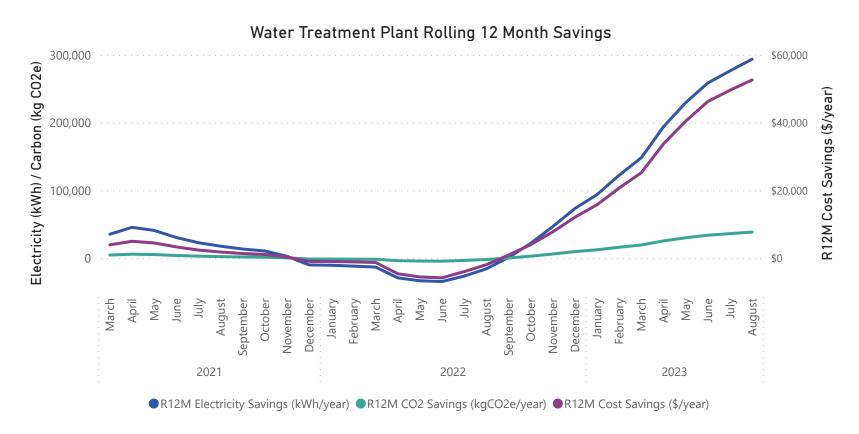




### Water Treatment Plant

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

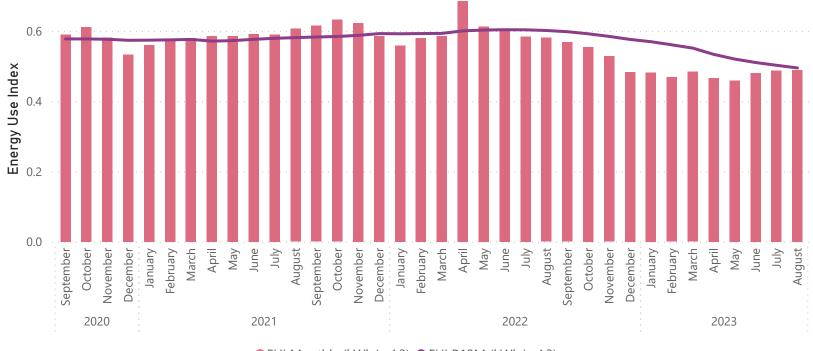






### Water Treatment Plant

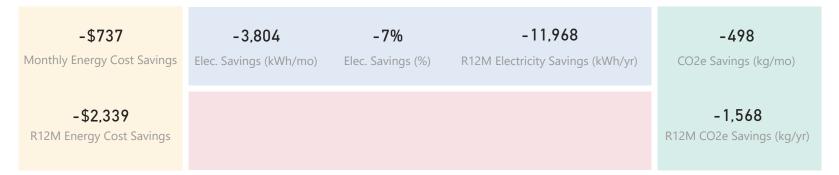
Water Treatment Plant Energy Use Index by Month Compared to Rolling 12-Month Values



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



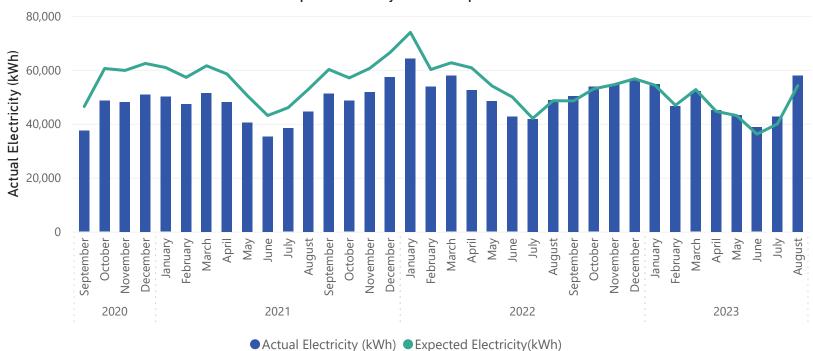
## **Braemar Road Pump Station**



#### **Comments:**

Work has been completed at Braemar Rd which added filters and new low lift pumps. Water data has been unreliable, water production is estimated for July and August based on recent months' electricity use. New tags will be added to SCADA in future which will capture water metering. When data becomes available, estimated months will be updated.

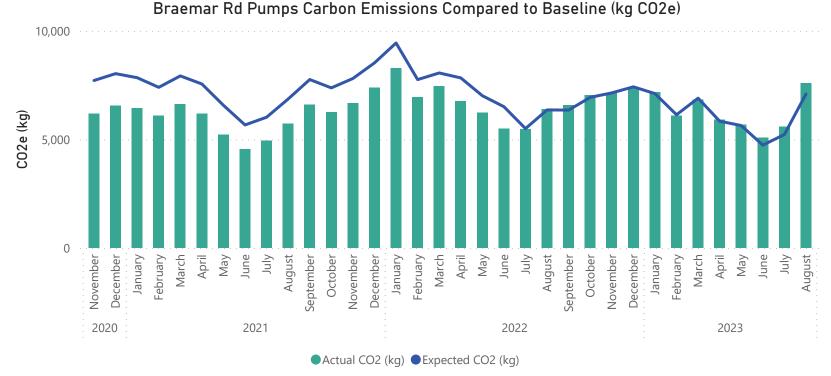
#### Braemar Rd Pumps Electricity Use Compared to Baseline (kWh)

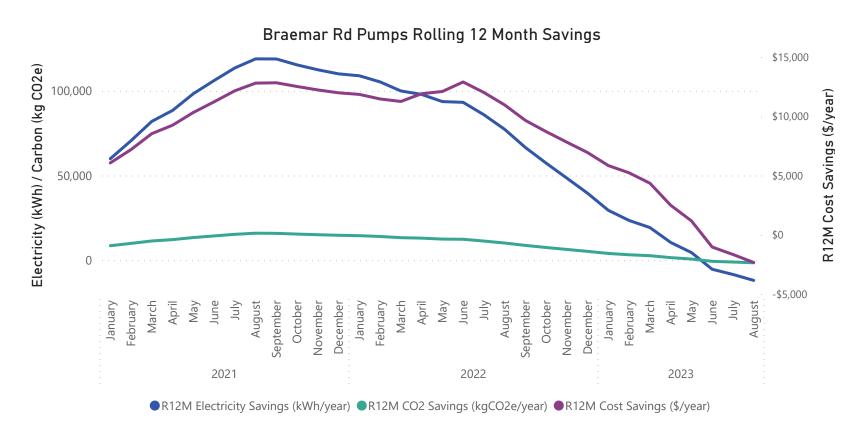




## Braemar Road Pump Station









## Braemar Road Pump Station





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



## Paul Road Pump Station

<b>\$295</b> Monthly Energy Cost Savings	1,560 Elec. Savings (kWh/mo)	<b>4%</b> Elec. Savings (%)	12,624 R12M Electricity Savings (kWh/yr)	<b>204</b> CO2e Savings (kg/mo)
<b>\$2,378</b> R12M Energy Cost Savings				<b>1,654</b> R12M CO2e Savings (kg/yr)

#### **Comments:**

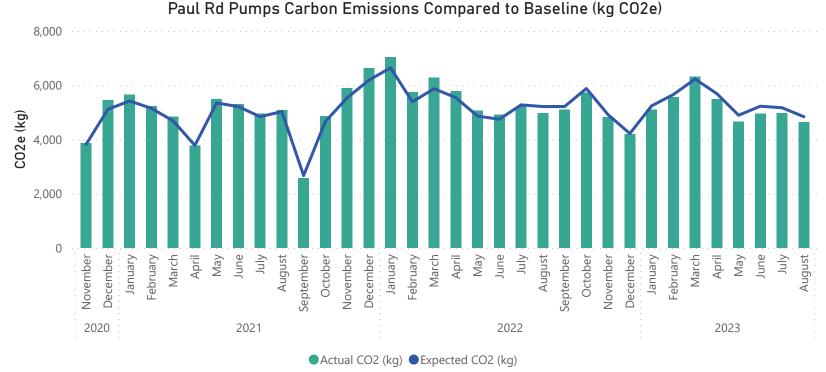
Electricity use was less than expected at Paul Road Pump Station. The monthly EUI is below average over the past 12 months. Energy performance has been consistent, with savings each month from April 2023.

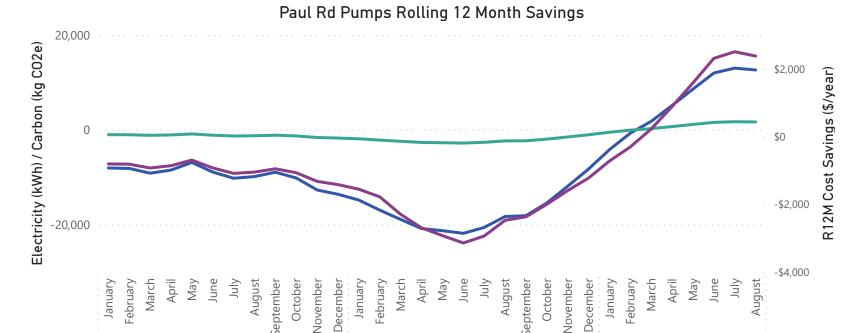
#### Paul Rd Pumps Electricity Use Compared to Baseline (kWh) 60,000 Actual Electricity (kWh) 40,000 20,000 August August June January March April July March June September November May July September November March October December February October December January February October December January February 2020 2022 2023 ◆Actual Electricity (kWh)◆Expected Electricity(kWh)



## Paul Road Pump Station







**Note:** New Zealand was in Covid-19 alert levels 3 and 4 from 23 March until 12 May, 2020. Energy use may have been impacted during this time *Baselines were updated for all sites from July 2022.* 

●R12M Electricity Savings (kWh/year) ●R12M CO2 Savings (kgCO2e/year) ●R12M Cost Savings (\$/year)

2022

2023

2021



## 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)



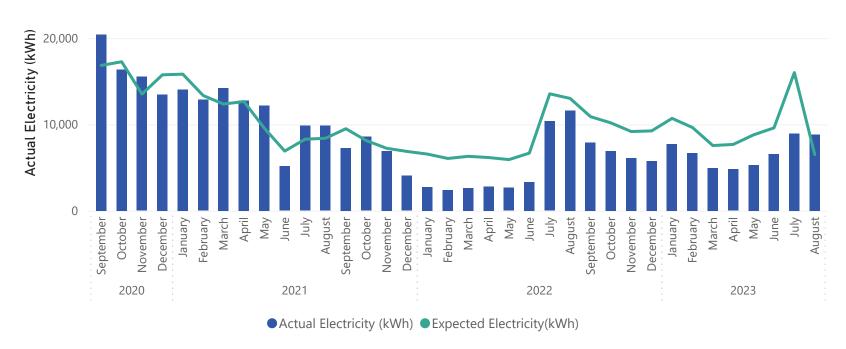
## Johnson Road Pump Station

-\$497	-2,310	-36%	35,458	-303
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
\$7,631				4,645
R12M Energy Cost Savings				R12M CO2e Savings (kg/yr)

#### **Comments:**

Johnson Rd Pump used significantly more electricity than expected in August. Daily water production has decreased from 25 July, however, electricity use remains high. Previously the pump has been operating more than typical to compensate for work being done at Braemar Rd. It is possible that increased electricity use may be due to some interactive effects between the two pump stations.

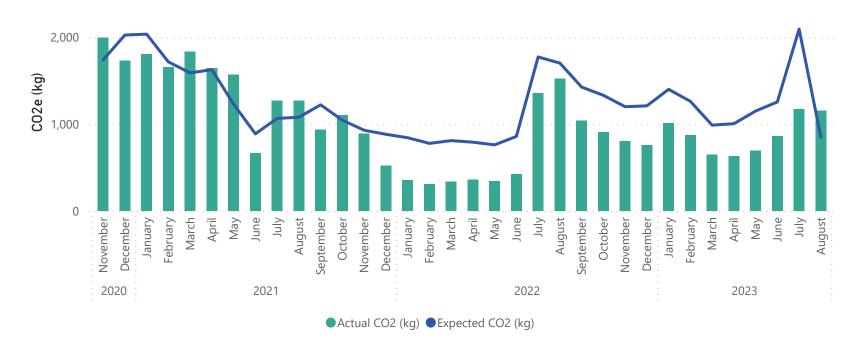
#### Johnson Rd Pumps Electricity Use Compared to Baseline (kWh)

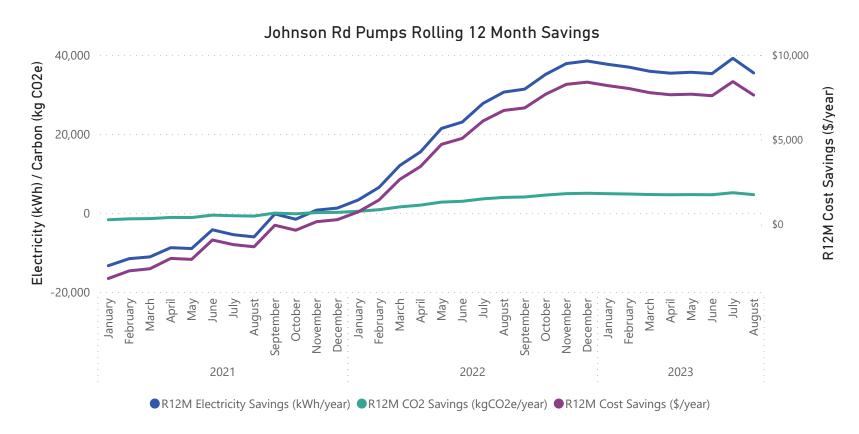




## Johnson Road Pump Station

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







## Johnson Road Pump Station

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





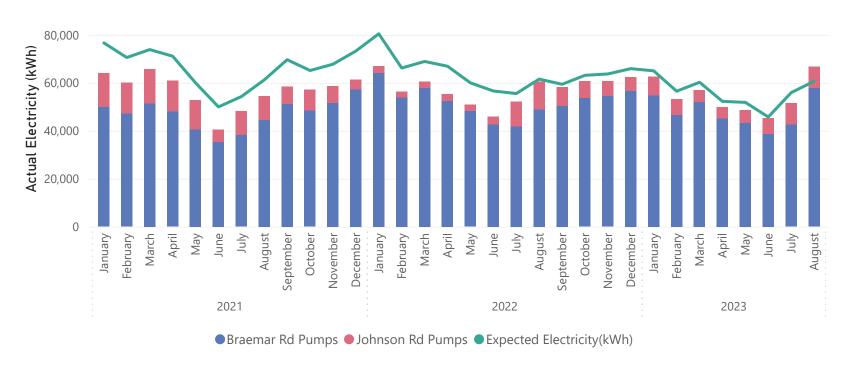
## Johnson and Braemar Rd Pump Stations

-\$1,234	-6,114	-10%	23,491	-801
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
<b>\$5,292</b> R12M Energy Cost Savings				<b>3,077</b> R12M CO2e Savings (kg/yr)

#### **Comments:**

Both Johnson Rd and Braemar Rd pump stations have used more electricity than expected in August 2023. This is likely due to work being completed at Braemar Road which added additional screening. Water production at Braemar Rd has been estimated in the interim, as data becomes available the energy performance of the network will become apparent.

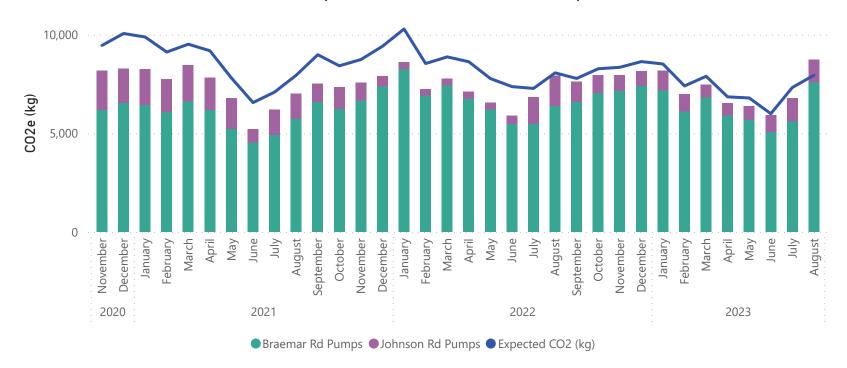
#### Johnson and Braemar Rd Pump Stations Electricity Use Compared to Baseline (kWh)

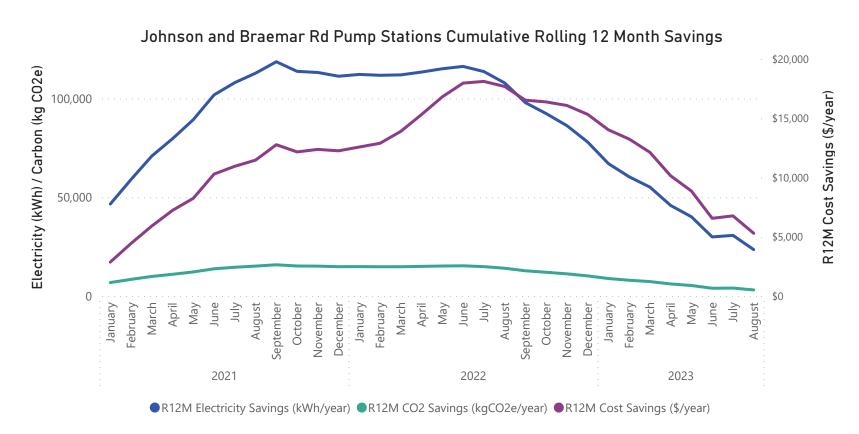




## Johnson and Braemar Rd Pump Stations

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

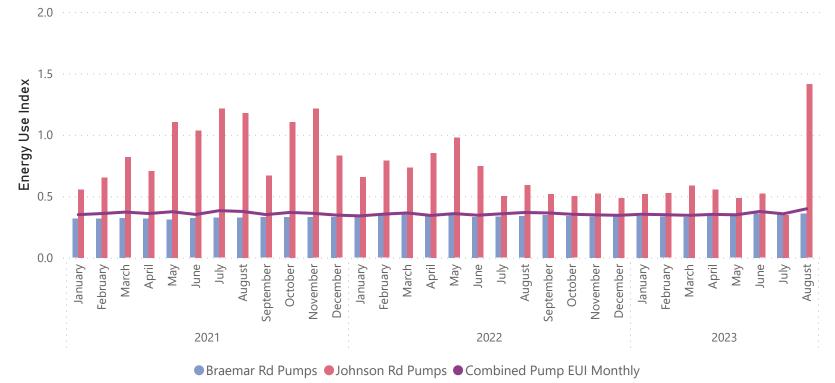






## Johnson and Braemar Rd Pump Stations







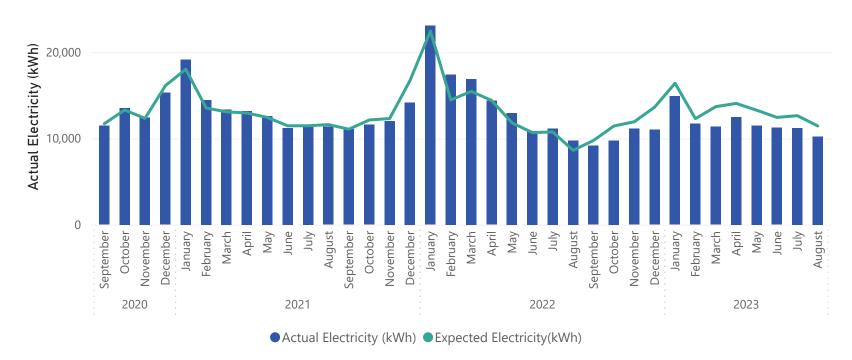
## Bridger Glade Pump Station

<b>\$216</b> Monthly Energy Cost Savings	1,222 Elec. Savings (kWh/mo)	11% Elec. Savings (%)	17,368 R12M Electricity Savings (kWh/yr)	<b>160</b> CO2e Savings (kg/mo)
\$3,064 R12M Energy Cost Savings				<b>2,275</b> R12M CO2e Savings (kg/yr)

#### **Comments:**

August 2023 is the 12th month in a row that the Bridger Glade Pump Station has used less electricity than expected, this is due to new supply pumps that were installed in late August 2022. Savings over the past year are \$3,000, 17,400 kWh, and 2,300 kg CO2e.

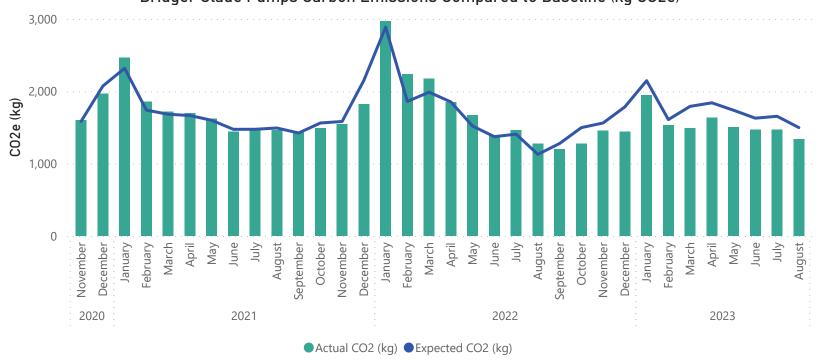
#### Bridger Glade Pumps Electricity Use Compared to Baseline (kWh)





# Bridger Glade Pump Station











# Bridger Glade Pump Station





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



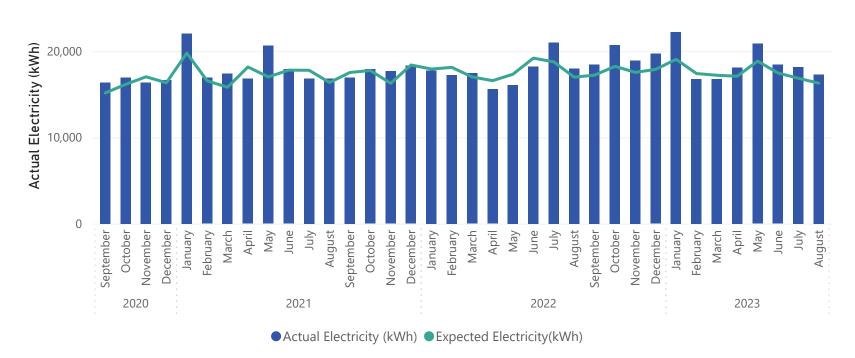
# **Ohope Oxidation Ponds**

-\$174	-990	-6%	-15,213	-130
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
-\$2,677				-1,993
R12M Energy Cost Savings				R12M CO2e Savings (kg/yr)

#### **Comments:**

Ohope Oxidation Ponds have used more electricity than expected in 10 of the last 12 months. Rainfall has generally been higher than usual, which may contribute to higher electricity usage. The monthly EUI in August is higher than average for the past 12 months, which is expected due to a high baseload and lower production.

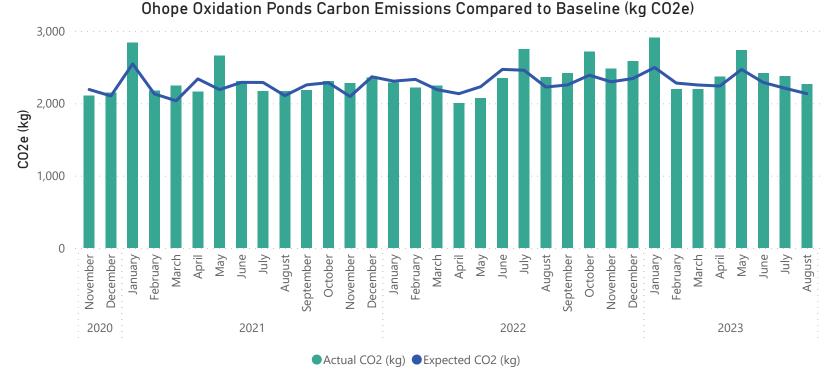
#### Ohope Oxidation Ponds Electricity Use Compared to Baseline (kWh)

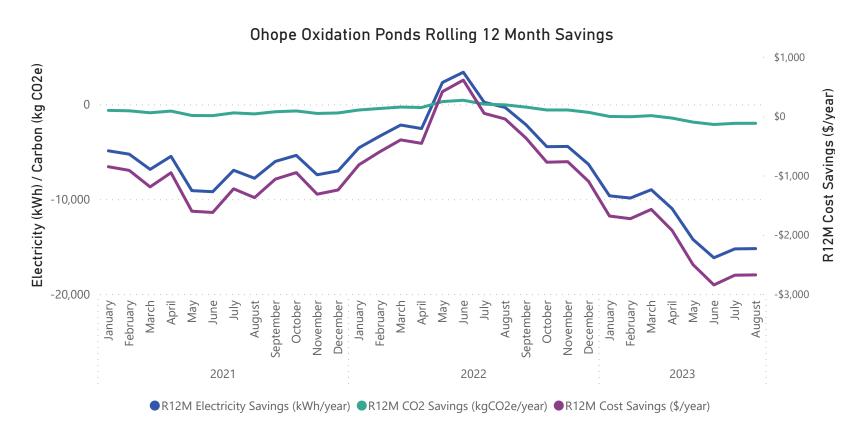




# **Ohope Oxidation Ponds**



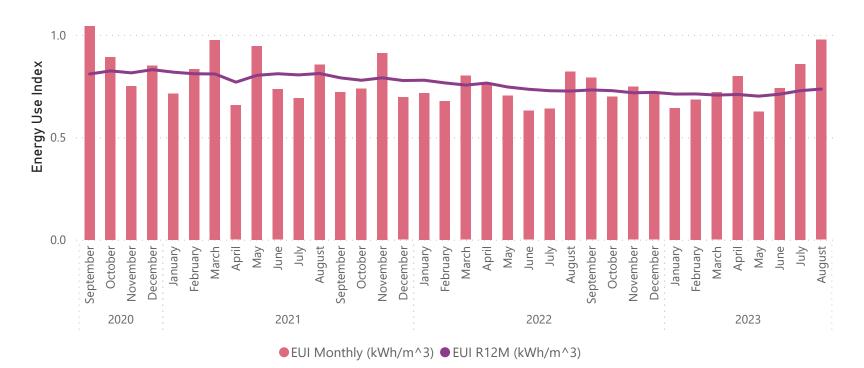






# **Ohope Oxidation Ponds**

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



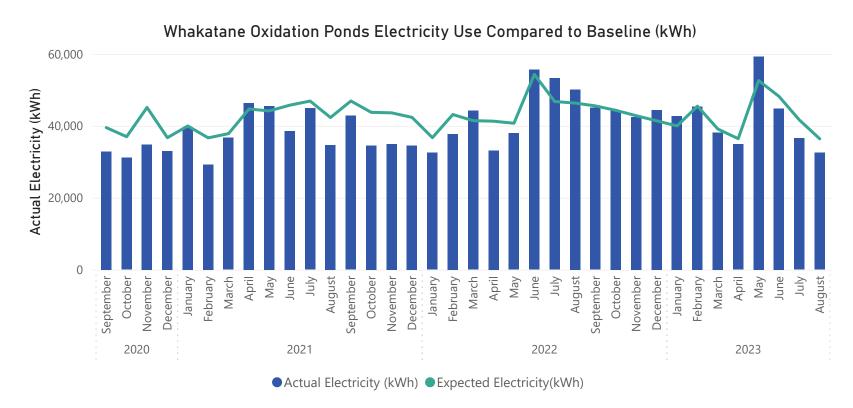


## Whakatane Oxidation Ponds

\$759	3,866	11%	3,482	506
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
<b>\$863</b> R12M Energy Cost Savings				456 R12M CO2e Savings (kg/yr)

#### **Comments:**

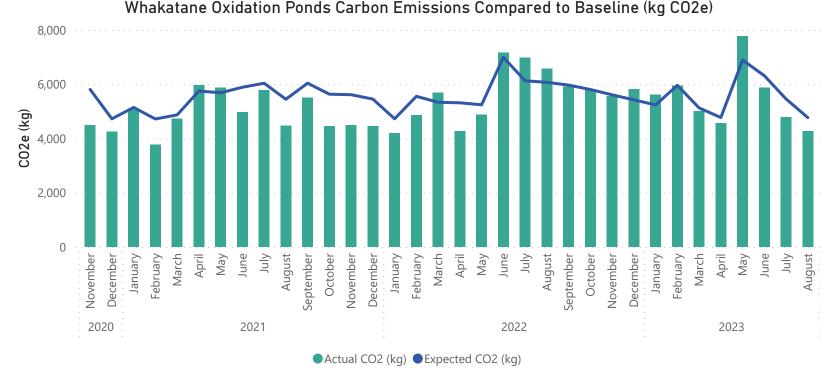
The oxidation ponds used 11% less electricity than expected in August 2023. August 2023 was a month of lower than average rainfall, approximately 44mm of rain was recorded for the month. Rolling 12 month EUI is trending downwards, which is good.

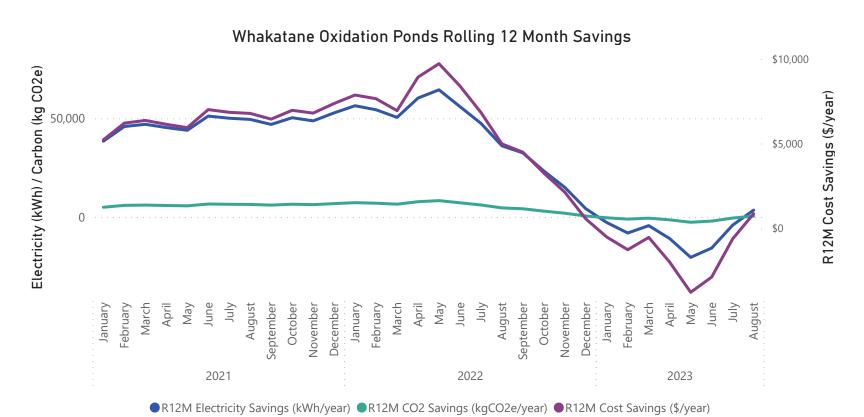




## Whakatane Oxidation Ponds

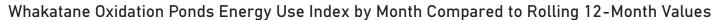








# Whakatane Oxidation Ponds





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



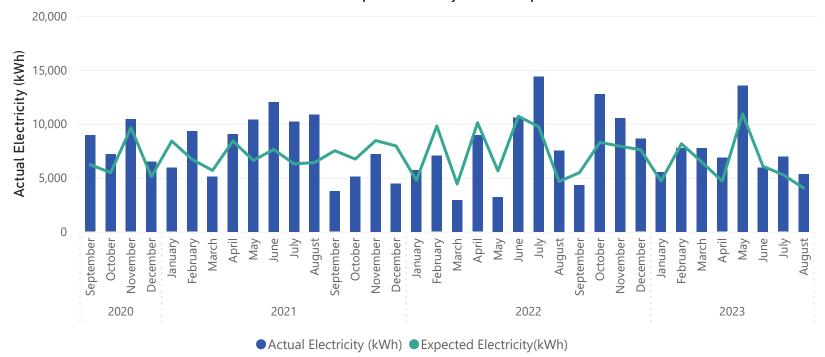
# McAlister Street and Rose Garden Pump Stations

-\$23 Monthly Energy Cost Savings	-1,310 Elec. Savings (kWh/mo)	-33% Elec. Savings (%)	-16,399 R12M Electricity Savings (kWh/yr)	<b>- 172</b> CO2e Savings (kg/mo)
<b>\$822</b> R12M Energy Cost Savings				<b>-2,148</b> R12M CO2e Savings (kg/yr)

#### **Comments:**

The pump stations used 33% more electricity than expected this month. August 2023 was a month of below average rainfall, approximately 45mm of rain coincided within the billing period. Rainfall over the past 12 months averaged 150mm per month.

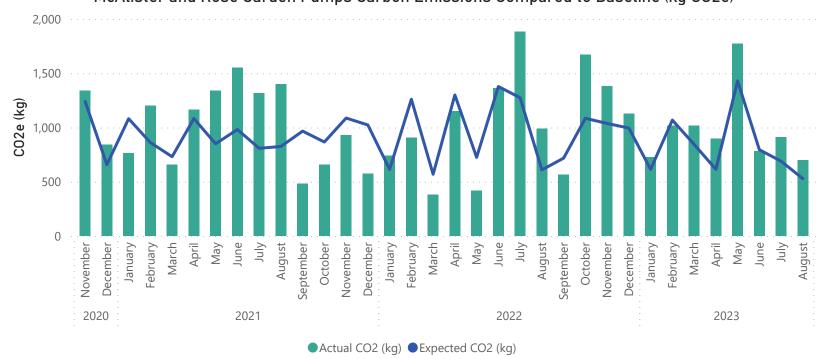
#### McAlister and Rose Garden Pumps Electricity Use Compared to Baseline (kWh)



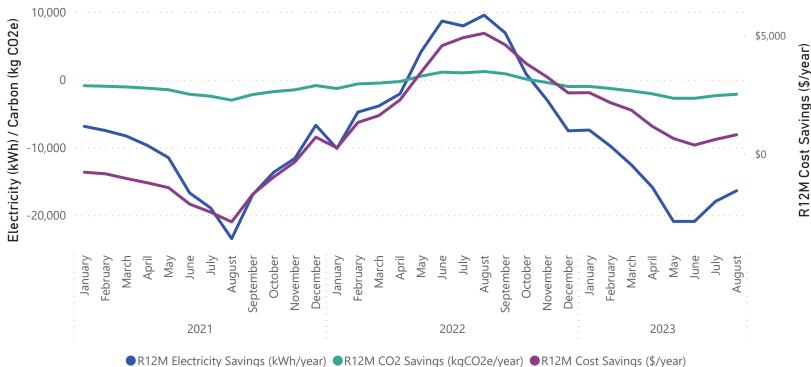


# McAlister Street and Rose Garden Pump Stations



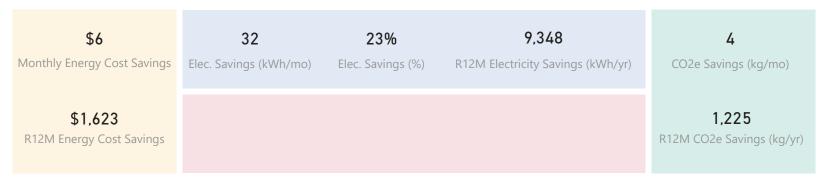








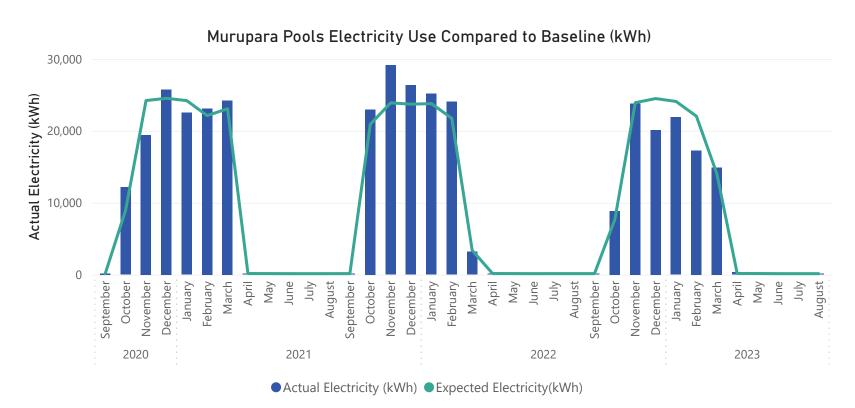
## Murupara Pools



#### **Comments:**

Murupara Pools have been added to reporting in December 2022. The baseline period uses data from July 2021 to June 2022 and adjusts for ambient temperature as well as how many days in the month the pool is open or closed.

The pools are now closed for the season and are using a few kWh per day.



2023

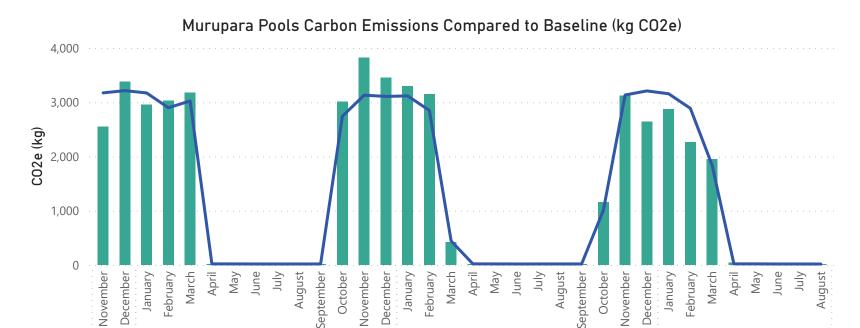


## Whakatane District Council

# Murupara Pools

2020

2021



● Actual CO2 (kg) ■ Expected CO2 (kg)

2022

