

MEMORANDUM



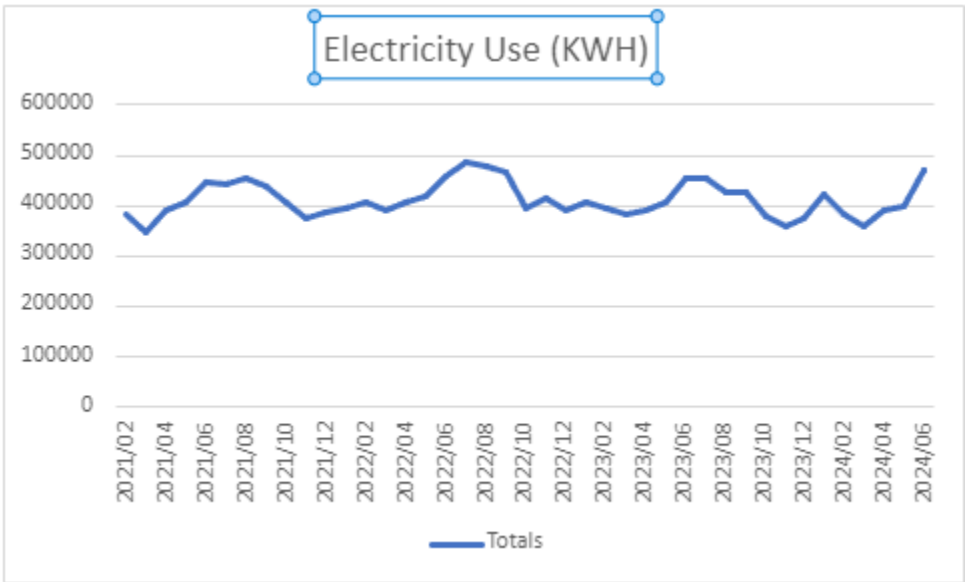
TO: ENVIRONMENTAL SUSTAINABILITY COMMITTEE
FROM: EZEKIEL CHOJNACKI, GRADUATE MANAGEMENT ANALYST
SUBJECT: ENERGY AND WATER USE
DATE: JULY 18, 2024

EXECUTIVE SUMMARY

This memo provides an analysis of energy and water use by the City of Novi, highlighting key consumption patterns, areas for improvement, and the integration of electric vehicle (EV) charging infrastructure. The aim is to offer data-driven insights to inform policy decisions and promote sustainable practices in our community. This memorandum was produced in response to the sustainability committee's desire to better understand Novi's current consumption patterns.

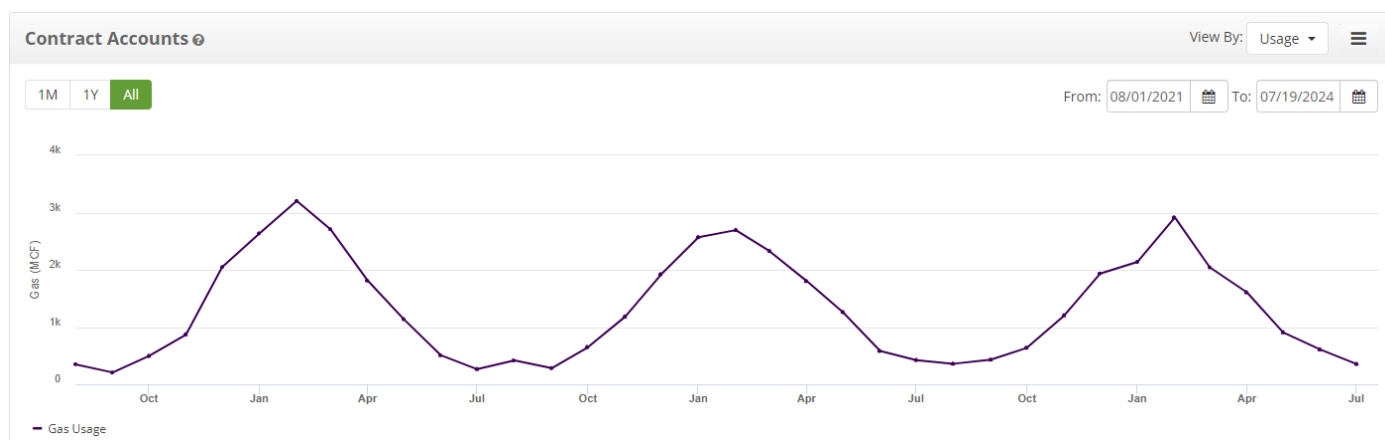
ENERGY USE OVERVIEW

Electricity



Electricity use in the city has remained relatively constant. Over the past three years, there has been no apparent change; however, there are consistent fluctuations based on the time of year, with increases during summer months (likely due to AC).

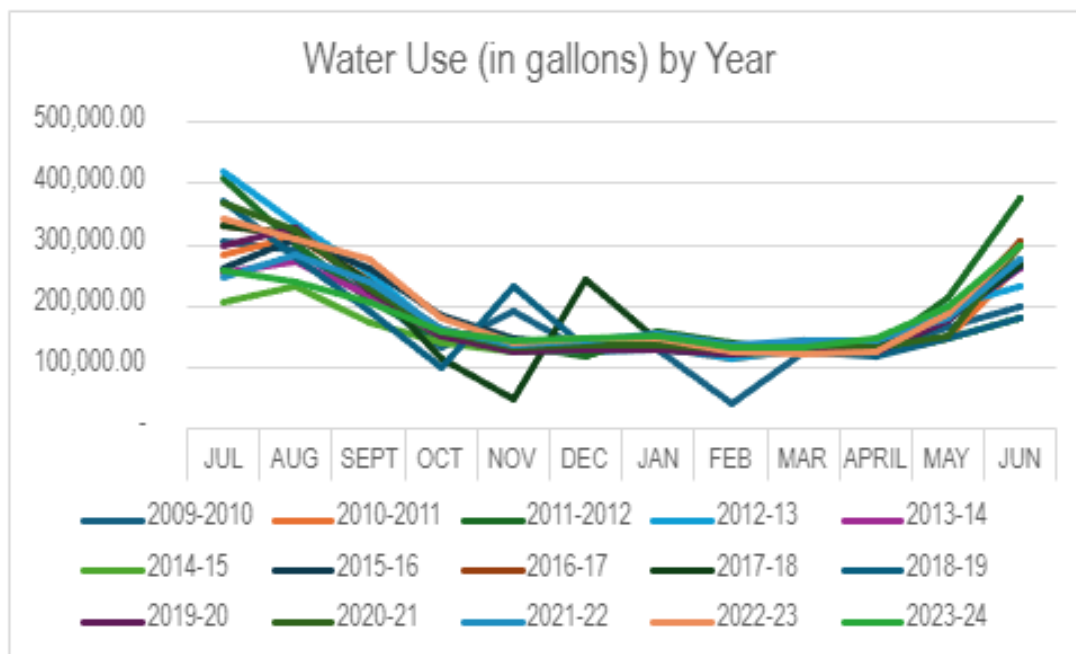
Gas

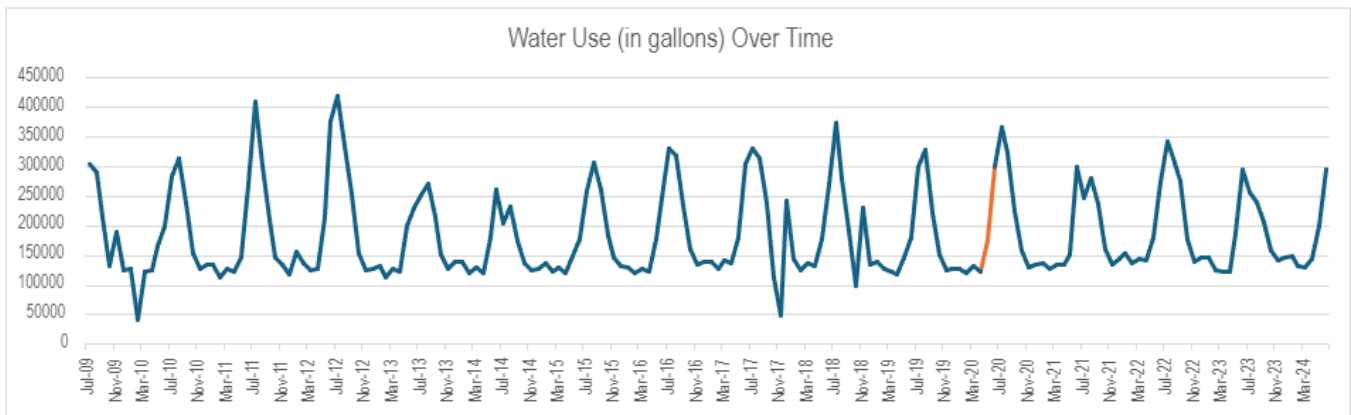


Gas use is inversely related to outdoor temperatures (and thus also inversely related to electricity). Gas use has remained relatively consistent over the past three years, with possibly a small decline in use during the winter.

Based on the data above, if the city is interested in reducing energy use, efforts should focus on temperature regulation. Heat pumps are a far more efficient method of temperature regulation in the winter. When used in conjunction with geothermal ground loops or cooling tubes, they can drastically reduce energy use.

WATER USE OVERVIEW





By examining the charts above it should be clear that the primary variable in water use is time of year. Even over the span of 15 years, the city government's water use remains relatively constant. The city can take two approaches toward reducing water use. First, by planting less water demanding foliage, the city could work to shorten the peaks seen in summer months. Second, by using low flow infrastructure, the city can shift the graph down, reducing use across the board, but not effecting the fluctuation.

ELECTRIC VEHICLE (EV) CHARGING INFRASTRUCTURE

City Owned

- The city has two EV charging locations. The first is publicly available at the library, and the Novi Police Department uses the second for its hybrid fleet.

City Wide

- There are approximately 15 public EV Charging stations in the City of Novi. Residents can find these charging locations using:
 - https://afdc.energy.gov/fuels/electricity-locations#/find/nearest?fuel=ELEC&ev_levels=all
 - <https://www.plugshare.com/>
 - https://ev.dteenergy.com/charging-stations? gl=1*1o8dpnk* ga*MjEzODY4OTExMC4xNjg1NjIzNTA2* ga_J2R5W9DWE4*MTY4NTY0ODI4Ny4xODEuMS4xNjg1NjQ4NTE4LjAuMC4w

The city can aid future EV Charging infrastructure by adding it to additional city buildings, incentivizing its use in new construction, and continuing to electrify its fleet.

CONCLUSION

The City of Novi is committed to promoting sustainable energy and water use practices while supporting the transition to a greener future. As seen in the data, Novi's energy and water use has remained unchanged for many years. With a new sustainability committee and interest in green solutions, we can enhance our community's resilience, reduce environmental impact, and provide our residents with modern, efficient infrastructure.