

WATER-ENERGY NEXUS



The Carbon Impact of Water

The production, treatment, and distribution of water requires substantial energy, contributing significantly to greenhouse gas emissions. A report found that more than 13% of the nation's energy consumption comes from water related energy use, resulting in 290 million metric tons of carbon dioxide annually – the equivalent of 5% of the nation's overall emissions at the time of the report.

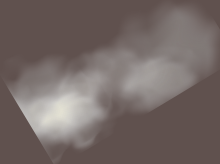
Across the U.S., water and wastewater typically accounts for 30-40% of total municipal energy consumption. Emissions in this sector make water conservation not only a resiliency solution, but a greenhouse gas reduction solution that is vital to achieving Eagle County's goal of an 80% emission reduction by 2050.

ERWSD by the Numbers

Eagle River Water and Sanitation District (ERWSD) provides drinking water and wastewater treatment services for Eagle County residents from Vail to Cordillera. The water treatment processes for wastewater and drinking water requires large quantities of electricity, making ERWSD one of the top energy users in the Holy Cross service area. In 2023, ERWSD calculated the greenhouse gas emissions associated with their water treatment and distribution system, including their fleet. They found:

1 kilogallon (1,000 gallons) of water = 2.61 lbs of CO₂.

The average household in Eagle County uses 5 kgals of water a month, equivalent to:



13.05 lbs
CO₂



x 100



15 Gasoline Miles Driven

Visualizing Water

In 2023, service territory needs required that ERWSD:

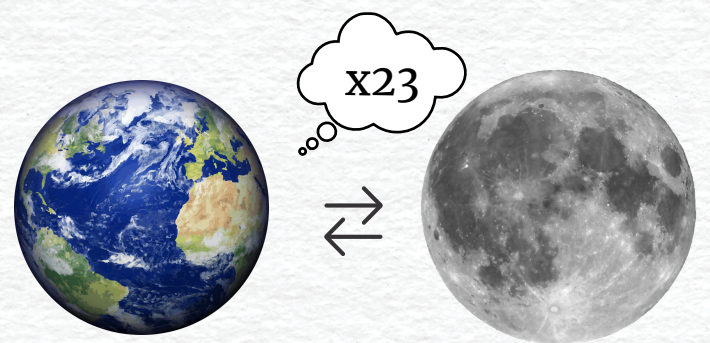
- produce 2,085,000 kilogallons of potable water
- treat a total of 1,540,000 kilogallons of wastewater

**This is equivalent to the water in 111.2
Nottingham Lakes**



and emitting 4,291.55 metric tons CO₂

**Which is the same as roughly 11 million
gasoline miles driven, or roughly 23
trips to the moon and back in a gas-
powered vehicle**



Nottingham Source

Things to keep in mind...

- These numbers are specific to the ERWSD system and operations, which run from East Vail to West Edwards
- This is likely a high estimate for the Eagle River Valley given the amount of elevation in the ERWSD system
- ERWSD pays for 100% renewable energy through the Holy Cross Energy PuRE program, which explains the relatively low kgal:lbs CO₂ ratio