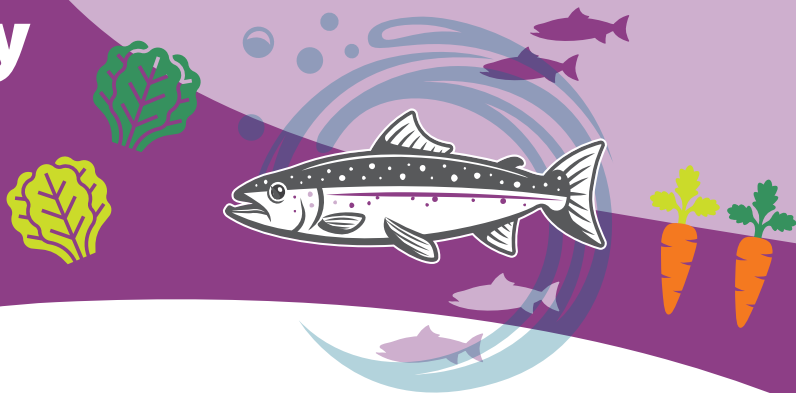


Sammamish Valley Recycled Water Project

A sustainable water source to benefit rivers and salmon



August 2024

About the Project

The goal of this project was to determine if recycled water can be a reliable, sustainable source for irrigating crops, reducing freshwater agricultural use, and improving stream flows for salmon. We found out that it can!

Using recycled water instead of river water can have environmental benefits. Recycled water adds beneficial nutrients to the soil that can help food and other crops grow bigger while reducing the need for synthetic fertilizers.

When we use recycled water, we leave more water in the river for salmon and become more climate change resilient by being less reliant on snowpack and rainfall. The more sources of water we have, the more resilient we can be to climate change impacts.

LEAVING WATER IN THE RIVER MEANS BETTER HABITAT FOR FISH

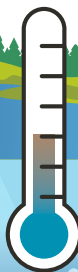
River water irrigation

warmer water



Recycled water irrigation

cooler water



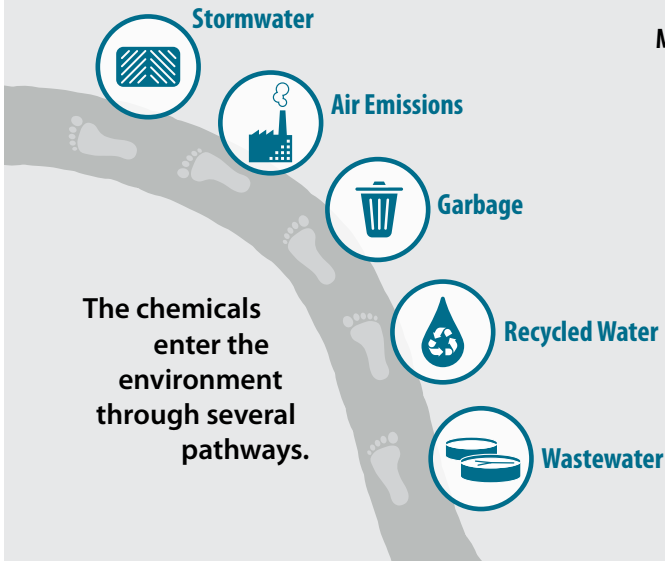
Recycled Water Treatment Plant

More than 90% of King County residents surveyed said they would eat crops grown with recycled water.

Between 2020 and 2021, researchers looked extensively at what Contaminants of Emerging Concern (CECs)—unregulated chemicals—were present in vegetable crops (kale and carrots) irrigated with recycled water and compared them to vegetables irrigated with river water.

WHAT ARE CECs?

CECs are unregulated chemicals that come from everyday household items that end up in our water systems.

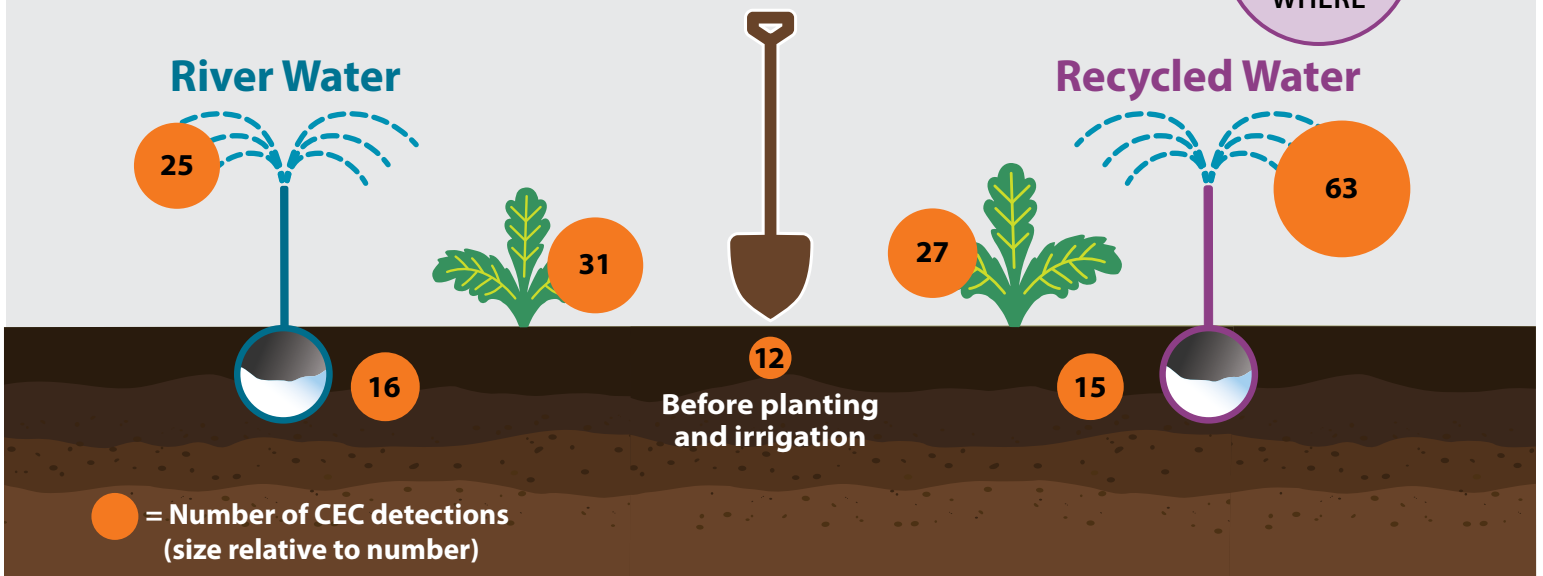


We did find very small amounts of Chemicals of Emerging Concern (CECs) in both river and recycled water. However, just because there are some CECs present in the water does not mean that all those chemicals will transfer to the soil or vegetables. We tested the soil and vegetables after irrigation to check. Although recycled water had a wider variety of CECs than river water, we found that once the water was in the soil and plants, the CEC concentration was similar.

WHAT WE FOUND IN RIVER AND RECYCLED WATER

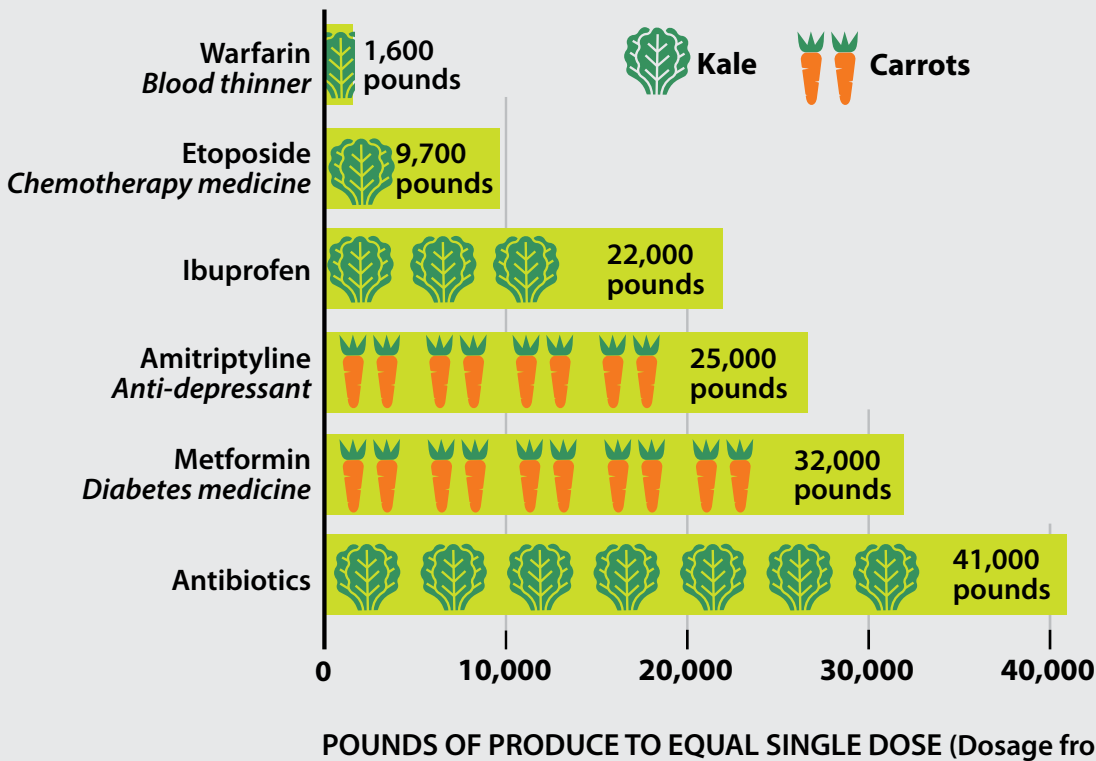
Number of CECs detected locally in the water, kale, and soil.

CECS ARE FOUND EVERYWHERE



KING COUNTY RECYCLED WATER CONTAINS EXTREMELY SMALL AMOUNTS OF PHARMACEUTICALS.

You would need to eat this much kale or carrots to be exposed to a single dose of medicine.



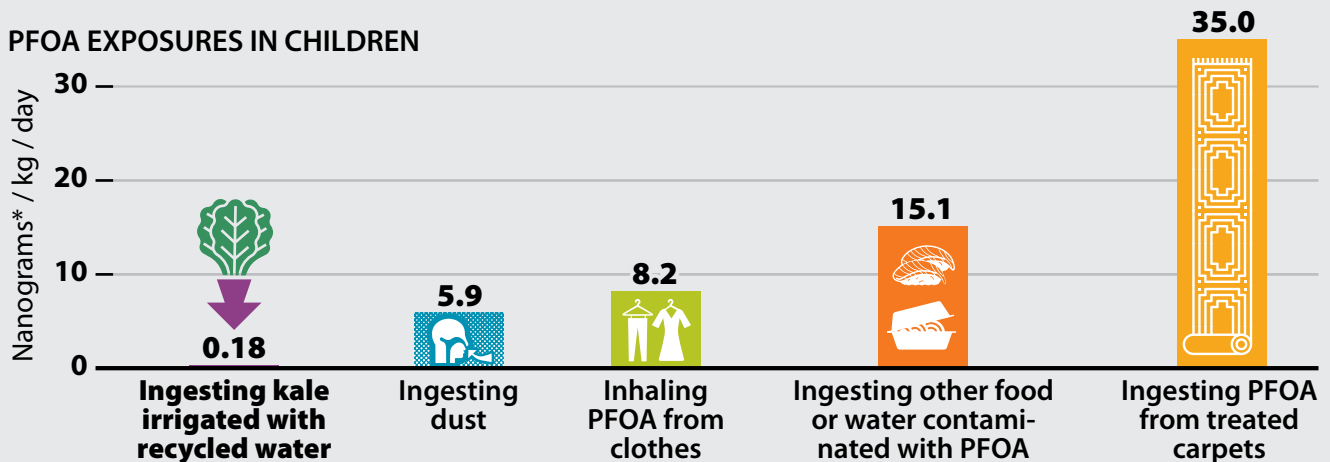
HOW HUNGRY ARE YOU TODAY?

Lots of chemicals we use every day end up down the drain. We tested for over 200 chemical compounds, including Per- and Polyfluoroalkyl Substances (PFAS). Both river and recycled water had PFAS, but again, only in low amounts.

MORE PFAS ARE IN OUR HOMES THAN IN KALE GROWN WITH RECYCLED WATER.

PFOA IN KALE GROWN IN RECYCLED WATER IS SIGNIFICANTLY LESS THAN EXPOSURE FROM OTHER COMMON SOURCES.

Wastewater treatment plants are not sources of Per- and Polyfluoroalkyl substances (PFAS). However PFAS, because of their frequent use in our homes and communities, are present in wastewater and recycled water. Even the highest amount of PFOA, a common PFAS, found in recycled water was a fraction of the amount of PFOA we interact with every day.



*A single grain of sugar weighs approximately 625,000 nanograms.

To determine risks to human health, researchers partnered with toxicologists to conduct a human-health risk assessment. Human-health risk assessments are conservative, meaning that they assume someone would be exposed to higher than average amounts of CECs.

THE HEALTH RISKS POSED BY EATING KALE AND CARROTS GROWN WITH RECYCLED WATER ARE MINIMAL.

Toxicologists evaluated the data and assessed the risks of exposure to Chemicals of Emerging Concern (CECs) associated with eating food irrigated with recycled water.

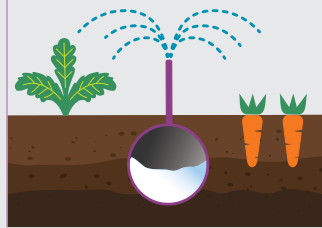
VEGGIES GROWN WITH RECYCLED WATER MAKE HEALTHY SNACKS!

This risk assessment took many factors, such as age and weight, into account and made the following assumptions:

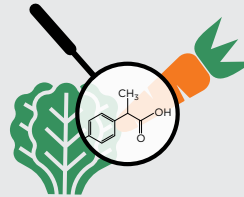
People would eat more kale and carrots than 90% of Americans.



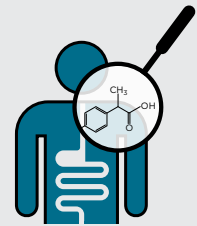
50% of those would be grown with recycled water.



The kale and carrots would have the highest quantity of CECs seen in the study.



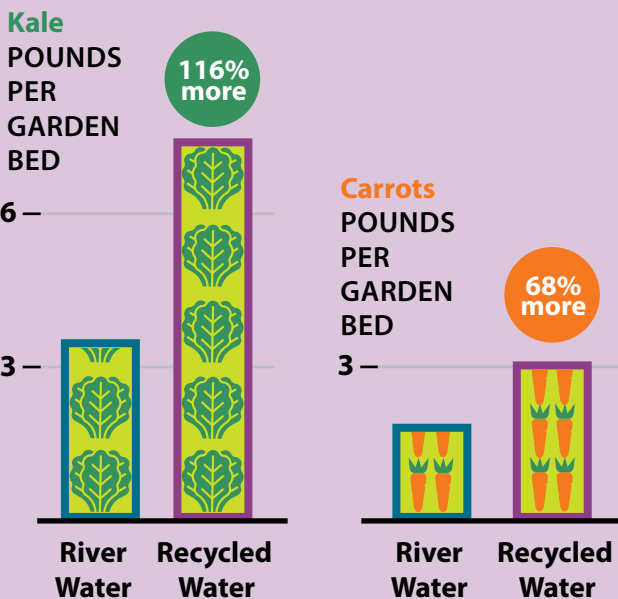
100% of those CECs would stay within the body.



Benefits of Recycled Water

USING RECYCLED WATER = GREATER CROP YIELD

Average of two years of crop yields and soil health results



RECYCLED WATER SUPPORTS HEALTHY SOIL AND PLANTS

- ✓ Soil pH
- ✓ Salts
- ✓ Conductivity



Want more information?
 ← Select or scan the QR code or visit the [King County Recycled Water website](#)

This project was generously funded by

