



Integrated Water Monitoring System: *Eco-Flow*

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How might we help Canadian homeowners make good choices to reduce their use of freshwater?

With growing water shortages, limits, and regulations on usage as a result of the growing climate crisis, homeowners need a way to constantly adjust and control their water usage. Unfortunately, Canada performs quite poorly in the water conservation sector. In a study examining 8 G7 countries and Australia, Canada was the second highest consumer of water after the U.S. Unfortunately, of the 9 countries, Canada is the 3rd smallest... Canada has work to do to improve its water conservation. This study indicates that Canadians need to learn to treat water with respect and make smarter decisions regarding their water consumption. Keeping track of household water consumption can be a difficult task and while water bills provide monthly total usage data, homeowners are left without specific details such as where the water is being allocated, along with micro and macro trends. Water meters alone leave homeowners in the dark on where they can save water, and in turn, reduce their environmental impact. Moreover, homeowners are not always conscious of their water use. Canadian homeowners make up approximately 64% of the population, and the typical Canadian household uses over 1100 litres of water per day. Much of this is unnecessary use, as less than 10% is for cooking and consumption. All systems created to solve this problem are typically used in much larger buildings, for companies or apartment buildings, leaving out many homeowners.

Our solution to initiating sustainable habits is a non-invasive ultrasonic sensor water tracking system that is connected to a mobile app that enables homeowners to improve their water consumption rates. The sensor is clamped onto the outside of a pipe to provide homeowners information on specific areas of their homes. Users can track and assess their water consumption data in real time via the software, a mobile app, allowing them to focus on reducing specific habits and water sources that are costly and wasteful. Unlike water bills, the app provides live data from select appliances rather than total monthly consumption, which enables homeowners to track specific water usage. Discerning specific water habits empowers users to develop sustainable, environmentally conscious habits tailored to their own behaviours. Eco-flow, an app connected to an integrated water sensor, empowers homeowners to track and assess their water consumption habits with precision. With this integrated water monitoring system, homeowners are provided with the micro trends and macro trends of their water habits. Traditional water meters leave homeowners in the dark in terms of sustainable water management. The IWMS empowers homeowners to save water, and in turn, help the environment.

Live data allows users to see the progress they have made over a certain period of time and to receive personalized suggestions enabling them to improve their water consumption. A cost-effective and convenient solution is provided that is significantly more inexpensive than existing systems. Not only does the solution enable people to be increasingly environmentally conscious, but it also helps those who do not know about their water usage to correct their overuse. Freshwater waste is a preventable and manageable issue that can be addressed. With Eco Flow, homeowners can make better decisions about their water consumption.

Millennials, who make up 27% of Canada's population, are predicted to best receive the solution because many are homeowners and they are often interested in new ideas. As the product becomes more popular, an increased number of Canadians will take initiative in their homes to save water. The product will help homeowners reduce unnecessary water use, thus giving them the opportunity to take actions to respect water and help reduce freshwater wastage. This phenomenon will have cascading effects that cross communities. As homeowners become more mindful of their water use, there will be an increased awareness of sustainable water conservation. Encouraging responsible water usage in homeowners has a huge potential to grow into a positive environmental movement, with a large impact on plants, animals and people in Canada.