



EFFICIENT WATERING: OUTDOOR WATERING AND IRRIGATION SYSTEM TIPS AND TRICKS

About Green Calgary

Since 1978
we've been a
leading local
urban
environmental
charity.



About CPCIA



We Are the Voice of the Irrigation Industry

Since 2001, the CPCIA has been the leading local membership organization as part of the North American Irrigation Association, for public and private irrigation professionals and companies in AB, SK, MB, and NWT, providing education and certification.

CPCIA Board of Directors consist of professional Certified passionate volunteers elected yearly through the membership

Focus

CPCIA targets four key areas in supporting the irrigation industry

Deliver

We strive to increase public awareness of local water management issues by being an overarching organization for outreach, communication and coordination for our members and the public.

Awareness

We offer educational programs to provide professional certifications for irrigation practitioners (including those in irrigation related disciplines)

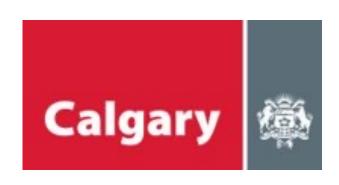
Represent

We aim to be representative of the diverse parties and interests involved in irrigation issues and topics on the Canadian Prairies.

Recommend

We always recommend internationally recognized standards and guidelines related to irrigation products, engineering applications and practices. **@CPCIrrigationAssociation**

Thanks for the Support!





This presentation is part of the Summer Sustainability Series and was funded in part by the City of Calgary Water Services and through the Watershed Stewardship Grant, a program of the Land Stewardship Centre financed by Alberta Environment and Parks.

What is Efficient Watering?

Simple Definition: To apply just enough water, only when necessary, and with minimal water waste to maintain a healthy landscape and conserve water resources.







What is Efficient Watering?

Comprehensive Definition: The ratio of the volume of water available to the landscape to the volume of water supplied from the source. This includes efficiency of water conveyance, water application, water use, and consumptive use



Water application Efficiency (η_a)

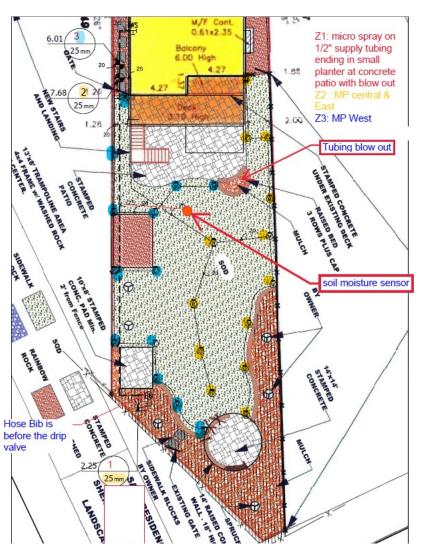
It is the ratio of the quantity of water stored into the root zone of the crops to the quantity of water delivered into the field. It may also be termed as farm efficiency, as it takes into account the water lost in the farm.

$$\begin{split} & \eta_a = \frac{\text{Water stored in the root zone during irrrigation}}{\text{Water delivered to the farm}} \\ & = \frac{W_s}{W_f} = \frac{W_f - \left(R_f + D_f\right)}{W_f} \end{split}$$

where

 $R_f = \text{Surface runoff}; D_f = \text{Deep percolation}$

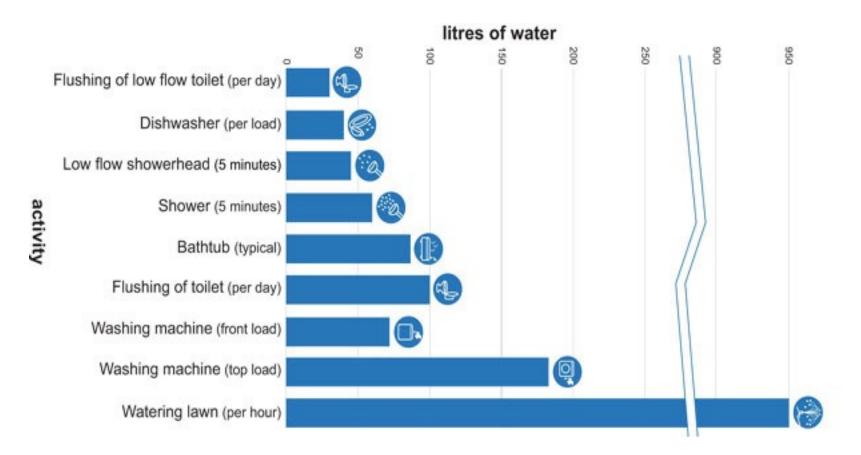
What is Efficient Watering?



Efficient Watering is achieved through several tools defined by Smart Irrigation, those include but are not limited to:

- Design
- Installs
- Products and Hardware
- Management and Maintenance

Why should we conserve water?



Watershed and Climate Change



Irrigation Systems

MANUAL



VS



AUTOMATIC





Backflow Prevention

Every irrigation system is required to have backflow prevention. It's a health and safety system that is designed to keep you, your family, neighbours, and community safe from bad water getting into the drinking supply and causing harmful illness or death.

Is it a real thing?

 YES! During 2013 to 2014, a total of 42 drinking water associated outbreaks were reported to the CDC resulting in 1,006 cases of illness, 124 hospitalizations, and 13 deaths.





Spray Heads



Distance: 5 to 15 feet
Variable angle to full circle
Precipitation Rate: 2.1 inches per hour
Watering Length: 8 to 14 minutes

Rotor Heads



Distance: 25 to 40 feet Variable angle to full circle

Precipitation Rate: 0.6 inches per hour Watering Length: 24 to 32 minutes

Rotator Heads



Distance: 10 to 30 feet

Variable angle to full circle

Precipitation Rate: 0.4 inches per hour

Watering Length: 40 to 50 minutes

Drip Irrigation



Point Source Drip, Flower Pots



Line Source Drip, Gardens/Shrubs

Distance: Within 6 inches of plants
Very Low Flow
Flow is Gallons Per Minute, 0.4 to 1.0 gph
Watering Length: 60 to 120 minutes

Micro Irrigation



Distance: 1 to 6 feet
Precipitation Rate: Variable
Flow is Gallons Per Hour, 0 to 35 gph
Watering Length: 5 to 15 Minutes

Maintenance – Save Water!

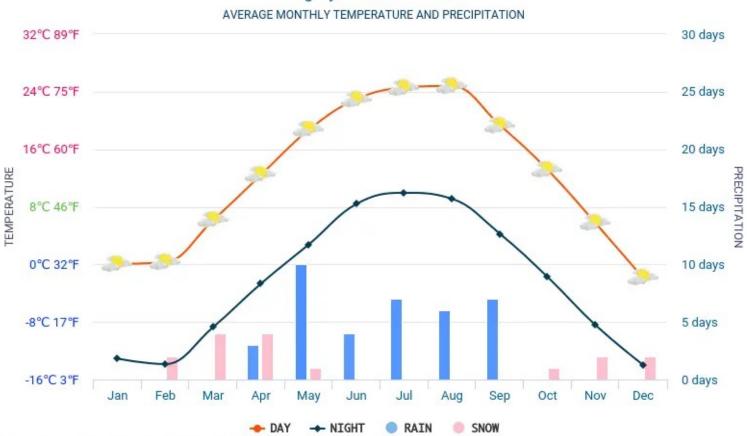
- Annual Backflow Certification, May 1st
- Spring Start-up, May 1st to June 30th
- Mid-season Inspections and Adjustments
- Fall Winterization, September 15th to October 15th

Spring Start-up



Tip 1 – Target 1" in the Hot Months (July, August)





hikersbay.com/climate/canada/calgary

Tip 2 – Water at the "Right Time"

- Water outside the high heat times of the day (10:00 am and 4:00 pm)
 - The heat encourages evaporation
- Water before 10:00 pm at night
 - Late night water promotes disease as plant material stays wet during the coolest part of the day
- Water in the early morning (2:00 am to 8:00 am)
 - Statistically the lowest wind period of the day
 - The highest water pressure available
 - No one's using the landscape and getting 'wet' or damaging the system
- Pick an irrigation start time that works with your life:
 - Figure out the total minutes required to water
 - Figure out the earliest your household showers
 - Work the math back to start your system so it completes before you wake.

Tip 3 – Water the "Right Way"

- Split your watering over 2 or 3 days
 - Reduces run off
 - Allows mother nature to 'skip' one of your water days





Don't Water 10 minutes every 2nd day

- Determine the base water by sprinkler type
- Increase or decrease based on Sun/Shade and soil moisture

Tip 4 – Smarten Up!

Leverage Water Sensing Technologies

- Rain Sensors
- Freeze Sensors
- Moisture Sensors

Use Weather Enabled Controllers

- Water less on cool days
- Skip water when 80% chance of Rain
- Water more on hot days



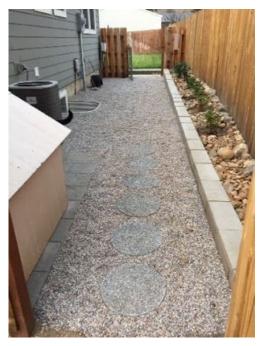




Landscape Design Tips 1

Don't install grass in narrow shady areas like between houses and fences where the distance is less than 5 feet. Choose other options.







Landscape Design Tips 2

On south facing properties consider installing a heat buffer layer along the side of the house. To reduce double reflection of heat. For example, add a 2 foot band of decorative rocks or mulch along the house.





Landscape Design Tips 3









https://www.calgary.ca/water/programs/yard-smart-water-wise-plants.html

July Smart Irrigation Month - SIM



PROCLAMATION

Smart Irrigation Month increases awareness of the value of efficient wateruse and water-saving products, practices and services. There are various ways that businesses and residents can keep their lawns and gardens healthy while minimizing the likelihood of overwatering those landscapes.

Whereas: Adopting water smart habits is essential to protecting and

extending our community's water supply, especially during

the warm summer months;

Whereas: The City of Calgary's Water Efficiency Plan identifies

actions that everyone can take to ensure we're always

choosing solutions that use and waste less water;

Whereas: Calgarians are encouraged to support the efficient use of our

precious water resources and contribute to our city's

resiliency to climate change.

On behalf of City Council and the citizens of Calgary, I hereby proclaim July 2022 as:

SMART IRRIGATION MONTH

JYOTI GONDEK MAYOR







Province of British Columbia

A Proclamation

ELIZABETH THE SECOND, by the Grace of God, of the United Kingdom, Canada and Her other Realms and Territorics, Queen, Head of the Commonwealth, Defender of the Faith

To all to whom these presents shall come - Greeting

WHEREAS the province of Behich Columbia recognizes that water is a finite resource that is vital to the physical welljoing of all hiring contains in the province, and

WHEREAS well-maintained green spaces are important to the health and social well-being of communities and individuals, and

WHEREAS appropriate inigation technology, combined with best practices, can significantly improve mater-use efficiency and reduce reacts, while achieving greater results in the agriculture, system-field and residential irrigation

WHEREAS Inhois a peak month for the use of water for the purpose of irrigation in the province, and

WHEREAS this meant serves to recognize the advancements in irrigation technology and practices that help raise healthy landscapes, increase crep yields and support a metaliable active perfore lifestyle while using our water resource of the highest level of officiency, and

WHEREAS the residents of British Culturation are encouraged to arispt sensor irrigation practices to further improve wateruse officiency in againstirent, residented and commercial irrigation orbitation;

NOW KNOW YE THAT, We to by those presents practain, and declare that July 2019 shall be known as

"Smart Irrigation Month"

in the Province of British Columbia.

IN TESTIMONY WHICKNEY, We have caused these Our Letters to be made Passon and the Great Seal of Our Province of British Columnia to be because of fixed.

WITNESS, The Househit, best Annie, Liesterum Covernet of Ott Province of Intrish Culturin, in Our City of Victoria, in Our Province, this adjectorist day of Inst., too thousand stretten and in the story-slightly year of Our Belga.

BY CUMMAND.

Thank You!

Find resources attached to this presentation at:

www.greencalgary.com/water

You can find Green Calgary online at www.greencalgary.org You can find CPCIA online at www.cpcia.ca

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