Public Information Session on the Erickson Universal Water Metering Program

Regional District of Central Kootenay

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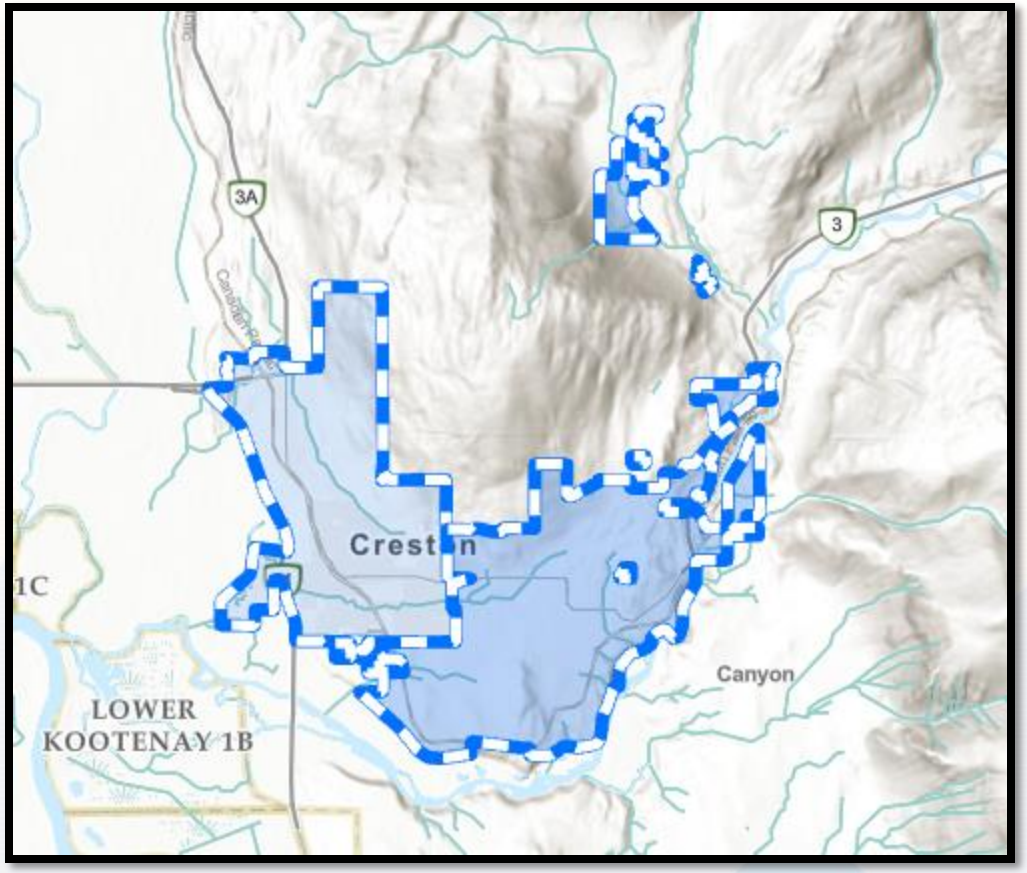
We've heard your questions and concerns over the past several weeks. Tonight's presentation has been designed specifically to answer the questions we've been hearing from residents and agricultural producers.

Outline

1. Project Background
2. Meter Installation
3. Meter Sizing
4. Meter Technology - EyeOnWater
5. Installations under this Program
6. Questions

Project Background



- There are 655 active accounts comprised of mixed agriculture and residential use (became a RDCK system in 2003).
- Source water is Arrow Creek, which in recent years has shown diminishing creek levels in summer months*
- There is currently no “twinned” source for agricultural irrigation, although a feasibility study for an alternate long-term water supply for agriculture was completed in 2025.
- Many water mains cross private property, some with no SRoW’s or easements.

Project Background Cont'd

Universal metering of Erickson is being completed in 2 Phases.

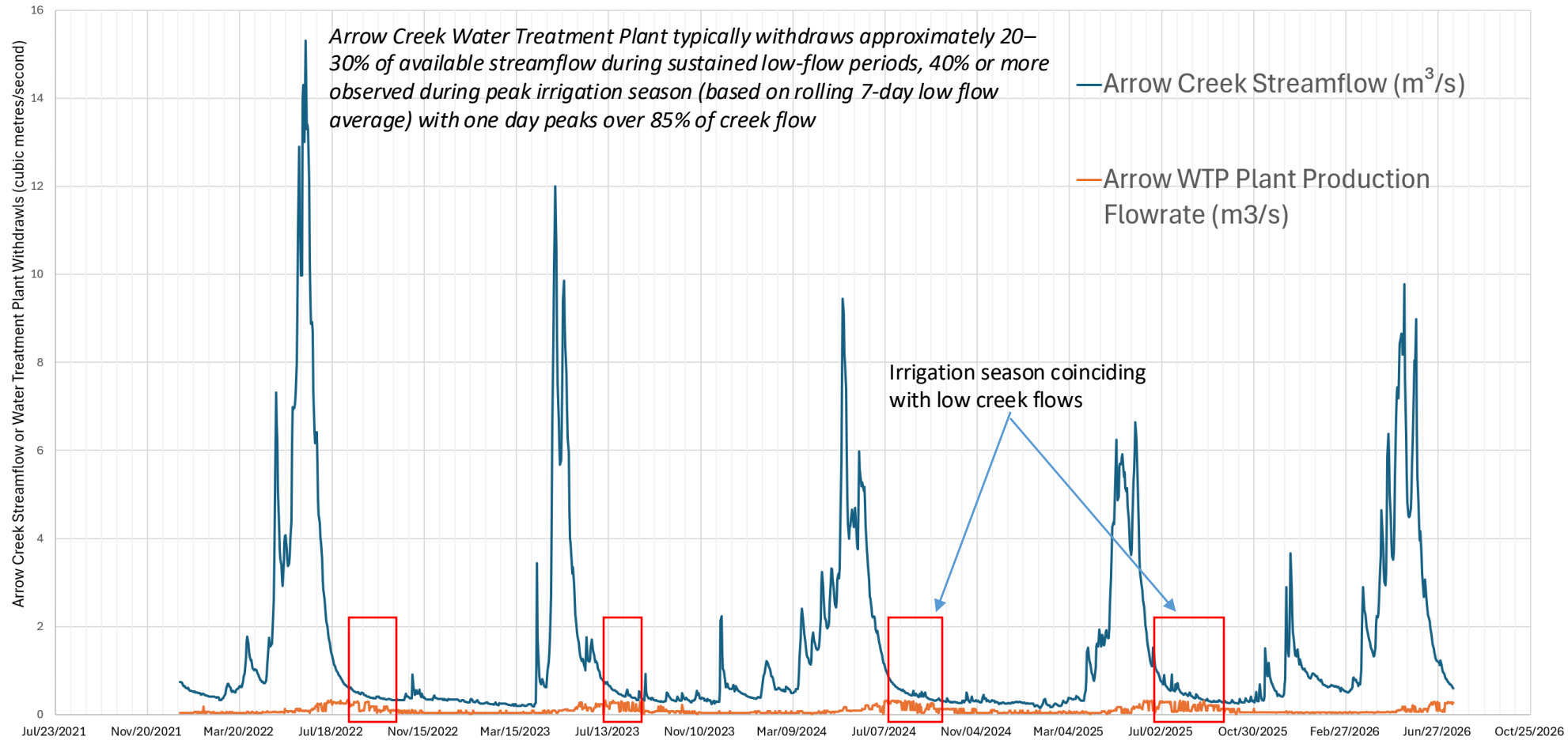
- Phase 1 metering includes approximately 136 installations on ICI and agricultural lands with 5 or more acres of irrigation privilege.
- Phase 2 metering includes 506 residential and small agricultural connections, is happening now and will take approximately two years to complete. The project is fully funded through senior government grants.
- <u>There are no planned changes to the existing flat-rate billing structure in Erickson.</u>

Project Goals

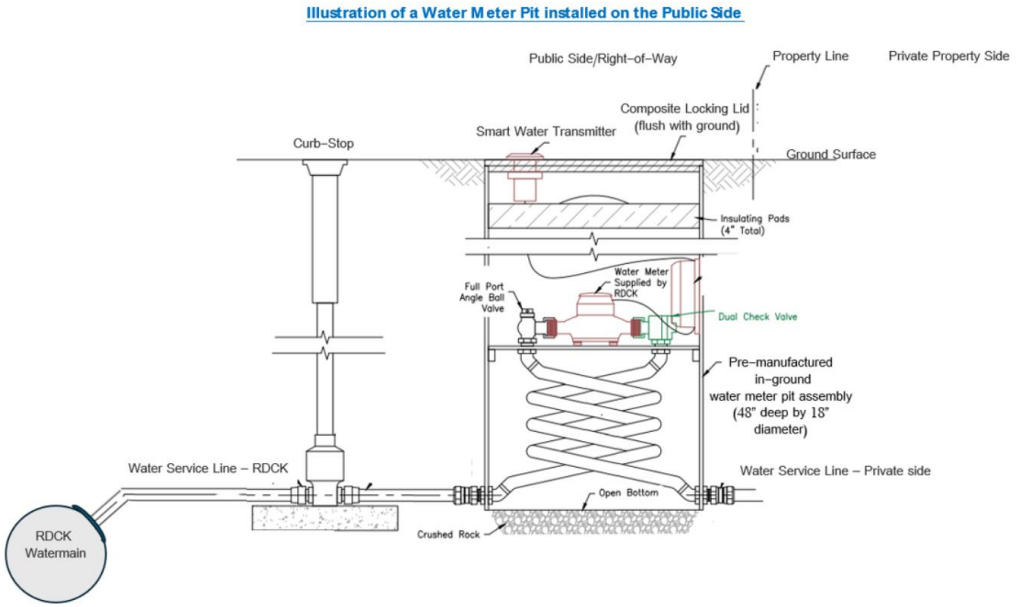
The goals of metering in Erickson are to:

- Identify and reduce system leakage and optimize capital replacement planning by leveraging system data.
- Encourage conservation through greater awareness of water use.
- Improve competition for future senior government infrastructure grant funding.
- Better understand how water is used across sectors.
- Protect the Arrow Creek watershed, which continues to face environmental pressures and supply challenges.
- Understand peak water demand and fix leakage to reduce wear and tear and extend the lifespan of critical water infrastructure.

Arrow Creek Flows v.s. Water Treatment Plant Withdrawls



Meter Installation



- Preferred location of meter pits is in the public right-of-way but this is often not achievable
- Private property installations – Letters sent to residents that may be impacted – includes consent/waiver and customers notified beforehand and given opportunity to review location with contractor.
- Existing Statutory Right-of-Way or new SRW for meter pits deep into private property.
- Public communication via portals (i.e. website, Voyent, public meeting, mailings)

Meter Installation – What Will Happen on My Property?

- Utility Locates
- Daylighting of water service/curb-stop
- Excavation of meter pit
- Installation of meter
- Site restoration

Project Planning – Meter Selection

- Irrigation meter sizing: bylaw-driven metric 4.5 gal/min/acre flow for properties with irrigation privileges (plus 1 acre included for each parcel).

Example: 10 acres irrigation privilege + 1 acre included x 4.5 gal/min/acre = 49.5 gpm MINIMUM requirement for max. continuous operating flow rate

- Residential meter sizing: typical ¾” meter unless also supporting some irrigation or multiple dwellings.

Parameter	3/4"		1"		1.5"		2"	
	Pos. Displace	Ultrasonic	Pos. Displace	Ultrasonic	Pos. Displace	Ultrasonic	Pos. Displace	Ultrasonic
Typ. Operating Range (gpm)	0.75 - 35	0.1 - 32	1.25 -70	0.4 - 55	2.5 - 120	1.25 - 100	2.5 - 170	1.5 - 160
Min. Flow (gpm)	0.375	0.05	0.75	0.25	1.25	0.4	1.5	0.5
Max. Continous Operating Flow (gpm)	25	32	50	55	80	100	100	160
Pressure Loss (PSI/gpm)	5/25	2/15	6.5/50	1.8/25	4.8/80	3.8/100	3.3/100	5.2/160
Max. Operation Pressure (PSI)	150	175	150	175	150	175	150	175

Other considerations for sizing include pressure losses across backflow device, bends and appurtenances in piping, known low-pressure areas of the distribution system and water use in the ICI sector (i.e. motel).

Project Planning – Meter Selection - Does a Smaller Meter Restrict Flow?

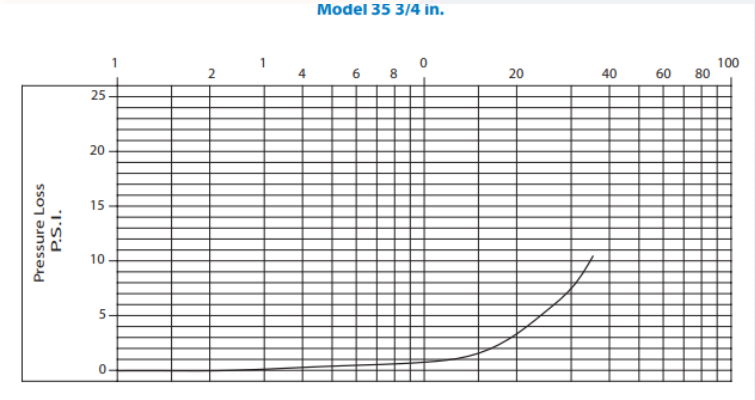
Does a smaller meter reduce flow?

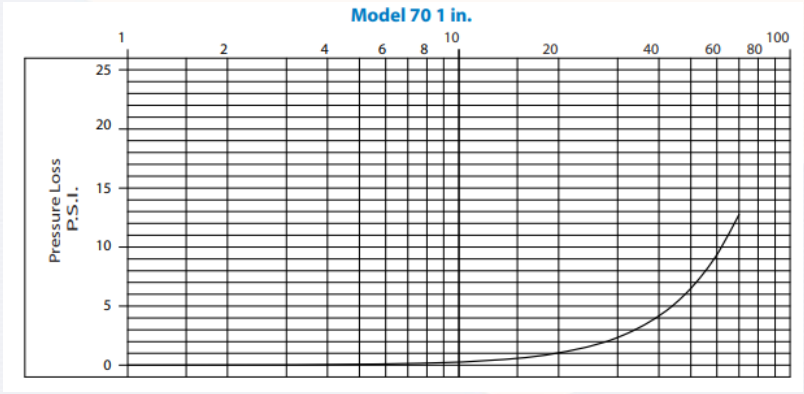
- Pressure loss charts on following pages .
- For example ¾” Ultrasonic E- Series Meter results in 2 psi loss at 15 gpm and 4 psi at 20 gpm
- Every Appurtenance: valve, elbow, meter causes some minor pressure loss and this is accounted for in meter selection for each property.
- Each meter is selected so it still supplies the property's expected maximum demand.

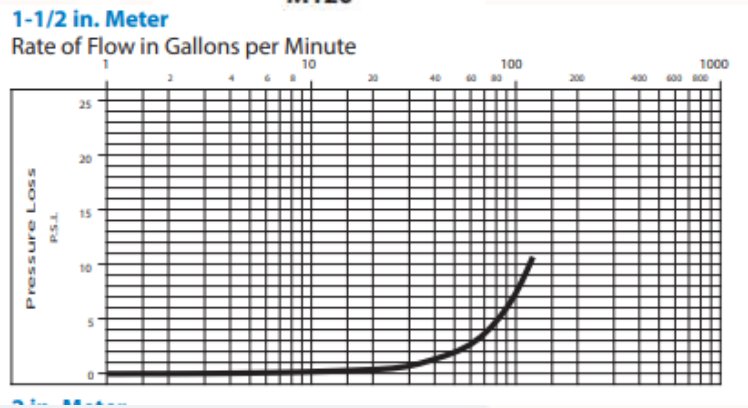
Model 35—3/4 in.

Model 70—1 in.

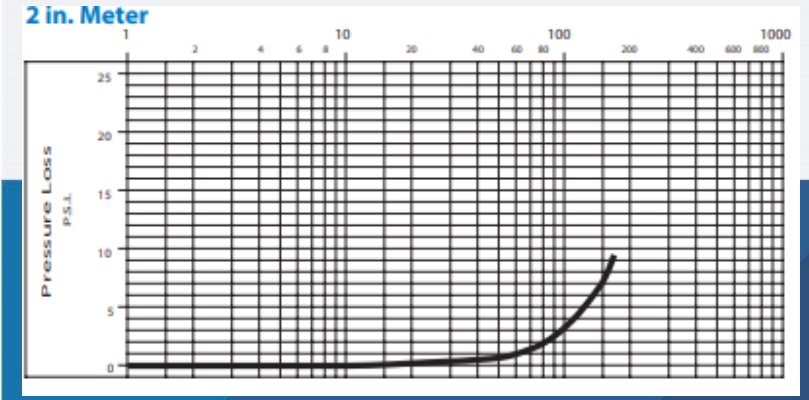
M120







M170



Meter Installation – Phase 1 Meter Types – Badger Positive Displacement ¾” to 2” (Mfg pressure loss vs gpm curves)

Qty	Unit	Water Meter Description
12	EA	3/4" M35 PD LL HRE LCD 5/4 9D TT
25	EA	1" M70 PD LL HRE LCD 5/4 9D TT
54	EA	1.5" M120 PD LL HRE LCD 6/3 9D TT
55	EA	2" M170 PD LL HRE LCD 6/3 9D TT

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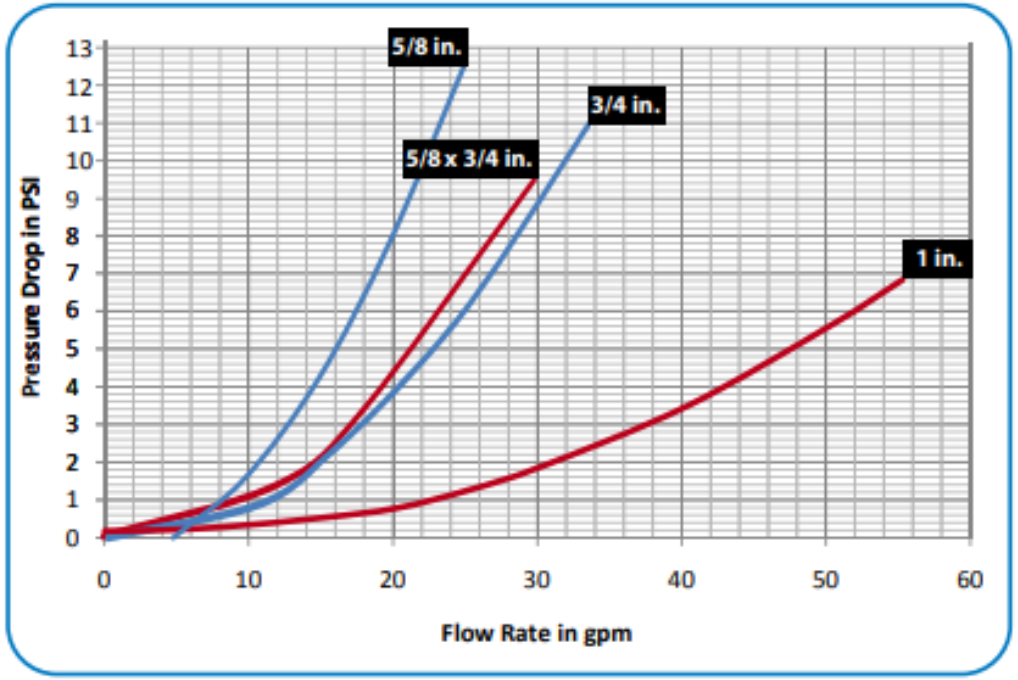
Meter Installation – Phase 2 Meter Types – Badger Ultrasonic E-Series ¾” to 2” (Mfg pressure loss vs gpm curves)

E-Series® Ultrasonic Meter

PRESSURE LOSS CHART

Rate of Flow in gallons per minute (gpm)



1" meter with DC	47	(based on properties with = to or greater than 3 acres irrigation privelage or active Ag account types)
1.5" meter with DCVA	2	
3/4" meter with DC	457	
Total meters	506	

Example of losses associated with meter installation:

Example Property

- Single-family home
- 1 acre
- Existing 2" private service
- New ¾" ultrasonic water meter
- ¾" dual check valve
- Approx. 8 ft of insulated ¾" Therma-Coil in the meter pit
- Pressure at curb stop: 80 psi

The **calculated maximum demand** for this property is approx:

- Household use
- Irrigation
- Peak demand
- Engineering contingency

Total design flow = approximately 15 US gpm

Example cont'd:

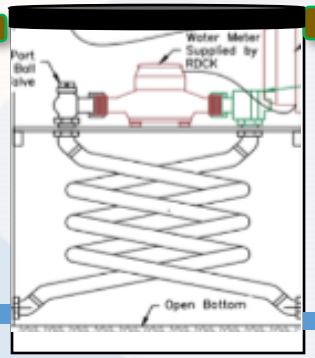
- Single-family home on 1 acre with max demand calculated at 15 gpm
- Existing 2" private service
- New ¾" ultrasonic water meter
- ¾" dual check valve
- Approx. 8 ft of insulated ¾" Therma-Coil in the meter pit
- Pressure at curb stop: 80 psi

Property line

80 psi @ curb stop

curb-stop

Road



67 psi after meter and 15 gpm water demand is still met

2" water service line
Private Side

RDCK watermain

2" water service line
RDCK

- ¾" water meter
- ~8' insulated 3/4" Therma-coil in pit
- Dual Check Valve Backflow Preventer

Example cont'd

Engineering calculation for friction losses of the ¾" meter and all fittings using established "equivalent length" methodology:

- 8' of ¾" PVC
- + 0.9' + 0.9' + 0.9'+ 0.9' (4 elbows to simulate the 45 degree fittings of the Therma-coil)
- +15' (3/4" angle valve)
- +8.8' (3/4" check valve)

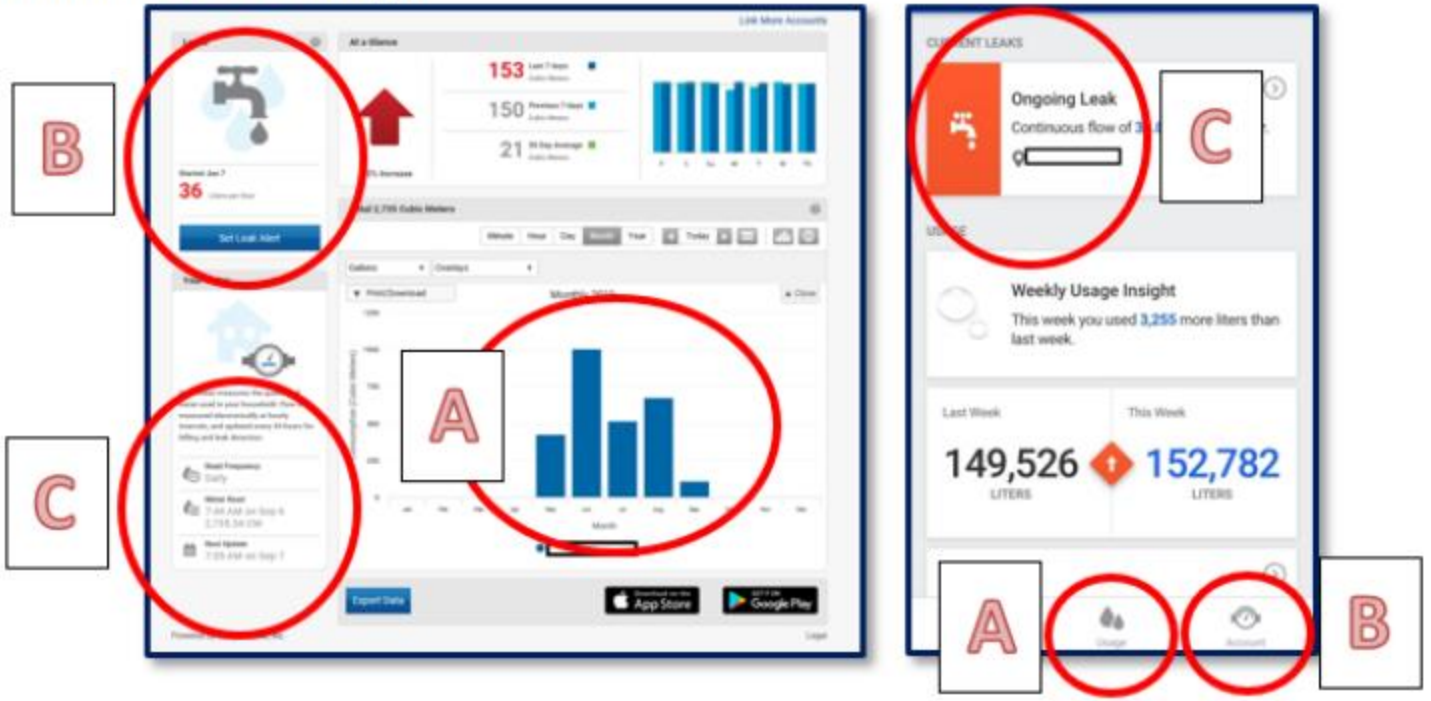
= **35.4'**

At 14 GPM pressure drop from the 35.4' would be about 10.62 psi. + 2 psi drop through the meter (at 15 gpm) = 12.62 psi total pressure loss due to friction leaving 67.38 PSI pressure after the meter

Water Usage – Data and EyeOnWater Platform

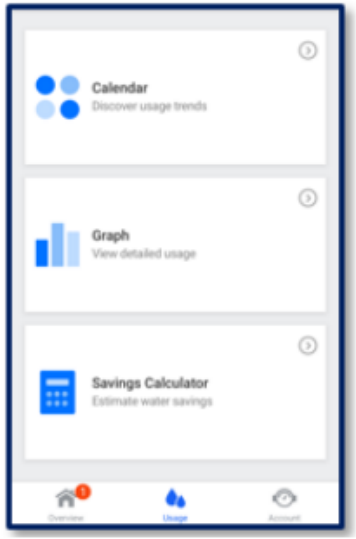
What are some of the features of EOW?

From the **home page,** users will see information on **water consumption (A), leaks (B),** and **meter activity (C)** on both the Web Browser and App:

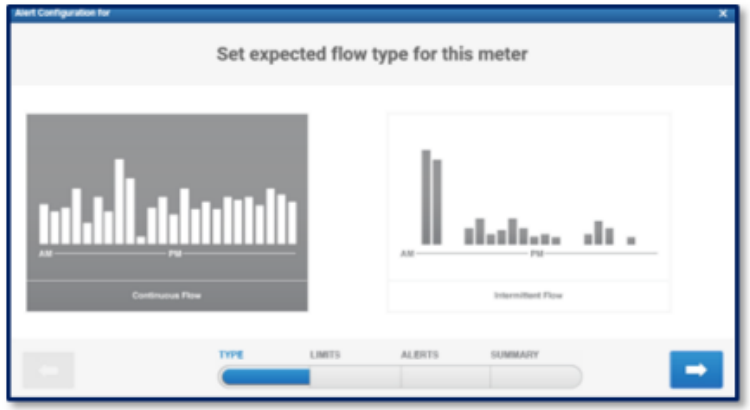


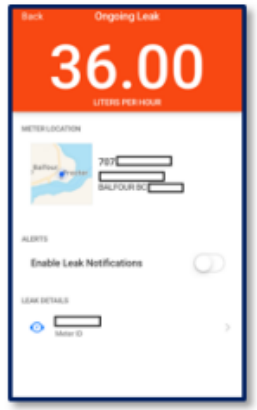
Water Usage – Data and EyeOnWater Platform Cont'd

EOW allows you to see your **water usage** over periods of minutes to years. You can change the settings to show volumes in various units. The Web Browser allows you to overlay temperature and precipitation trends on the usage graph, and the App includes a calendar usage trends and savings calculator:



EOW also allows you to set **Leak Alerts**, which can be configured on the Web Browser and turned on in the App:





What if I refuse to have a water meter installed under this program?

- Our goal is to work with every property owner to determine the most appropriate location for each water meter.
- RDCK Water Bylaw 3078 requires a water meter to be installed on all connections in select water systems, including Erickson
- If installation on private property is required, RDCK staff will discuss the proposed location before construction begins.
- The RDCK has authority under the **Local Government Act** to install and maintain waterworks where required.
- **The current metering program is fully grant funded and there is no charge to property owners when installations proceed as scheduled. If a scheduled installation cannot proceed because access is refused, a resolution cannot be reached and the meter cannot be installed under the current grant funding - installation costs may then become the responsibility of the property owner.**

Questions?

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