


Calgary 

Integrated Watershed Management
C2019-0648
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MORNING SESSION

Strategic Meeting of Council
13 May 2019

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**Welcome: Council Strategic Session on
Integrated Watershed Management**

Objectives for today's discussion

1. Build Council's awareness of Calgary's most pressing watershed management issues.
2. Hear what is important to Council as our city-builders.

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Welcome: Council Strategic Session on Integrated Watershed Management



<https://youtu.be/y8EGpzuCCP8>

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Agenda for May 13 Strategic Session

	Time	Topic
10:00 -11:30	15 mins	Welcome and introduction
	15 mins	Theme #1: Water supply and security
	30 mins	Panelist presentations Dr. David Sauchyn, Prairie Adaptation Research Collaborative (15 mins) Josh Ellis, Chicago Metropolitan Planning Council (15 mins)
	30 mins	Q & A with panelists
11:30-12:30	60 mins	Interactive exercise on water supply and security (Calgary Power Reception Hall)
12:30-1:30	60 mins	Networking Lunch break (CPRH)
	10 mins	Rise and report
1:40-3:15	15 mins	Theme #2: Stormwater and city-building
	50 mins	Panelist presentations - Dr. David Sauchyn, Prairie Adaptation Research Collaborative (10 mins) - Josh Ellis, Chicago Metropolitan Planning Council (20 mins) - Francois Bouchart, City of Calgary Water Resources (20 mins)
	30 mins	Q & A with panelists
3:15-3:45	30 mins	Afternoon break
3:45-4:45	60 mins	Interactive exercise on stormwater and city-building (Calgary Power Reception Hall)
4:45-5:00	10 mins	Rise and report (Mayor & Council)
5:00-5:10	10 mins	Closing

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Significant water milestones in Calgary's city-building

Through its history, Calgary has seen significant water milestones in its city-building. Councils have grappled with water issues and opportunities as the city has grown.

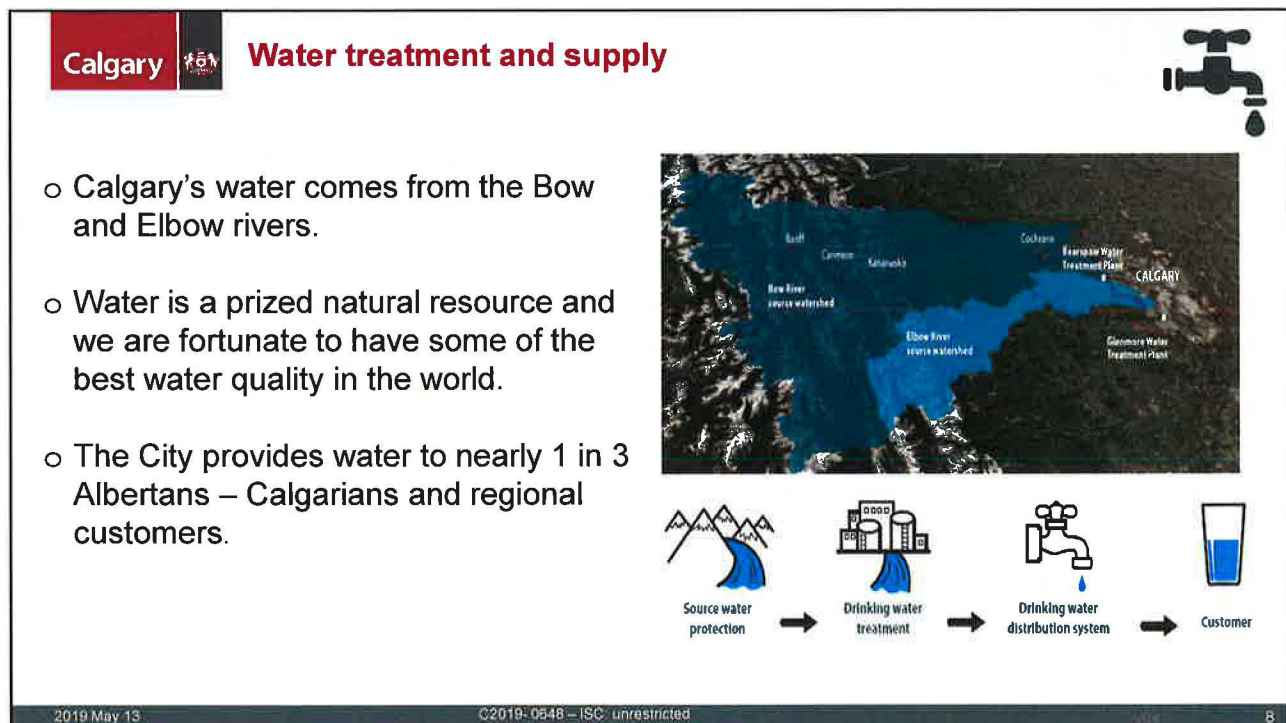
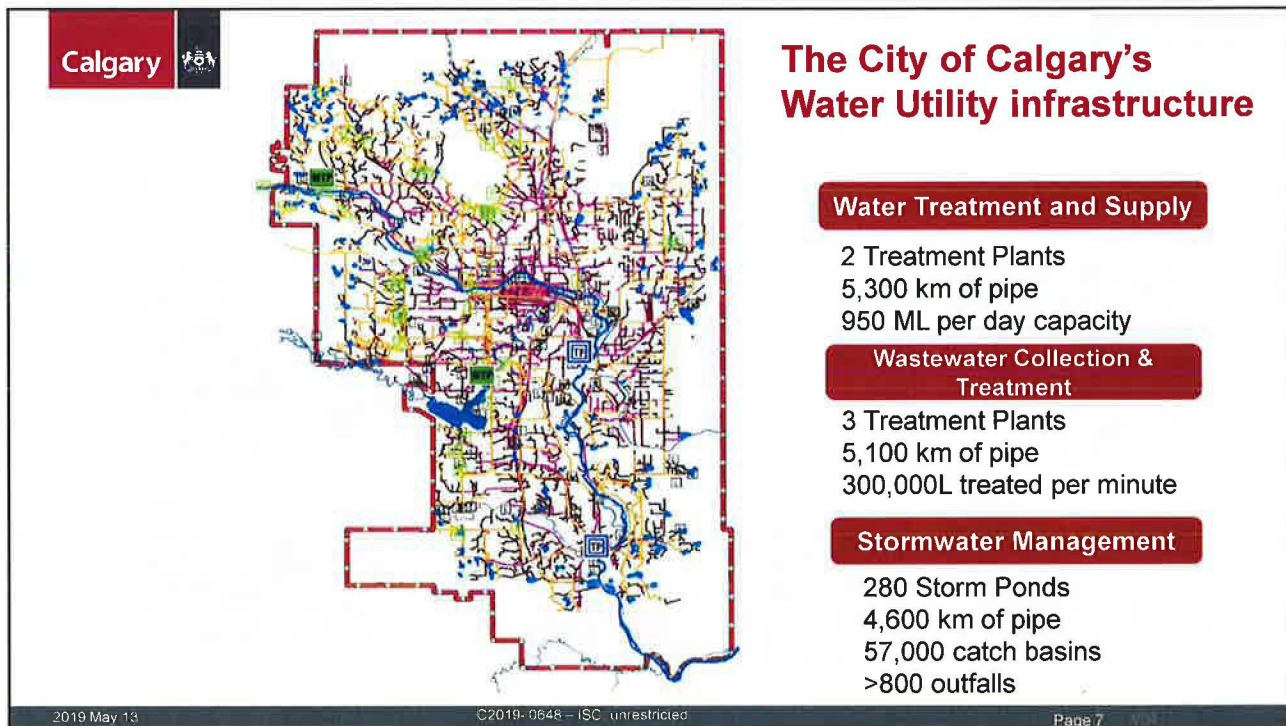


One Calgary Council Directive

Integrated watershed management is essential to **protect public health and the environment**, while strengthening our **resiliency to a changing climate**.

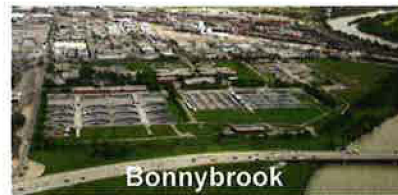
Calgary must develop our communities with a focus on achieving future **water security and a sustainable water supply**. Accordingly, watershed management must be **integrated into our land use policies, plans and decisions**.

Accomplishing sustainable, effective watershed management within Calgary and the region will also require **working collaboratively** with other orders of government, adjacent municipalities, residents, landowners, developers, businesses and the First Nations.





Wastewater collection and treatment



Stormwater management

- We collect and manage stormwater - water from rain or snow/ice melt, by moving it through storm drains, pipes and ponds.
- This service reduces flood risk, ensures public safety, and limits pollution from water run-off from entering rivers.
- We operate and maintain thousands of storm drains, stormwater pipes and outfalls along Calgary's rivers and creeks.
- Wet and dry ponds, and stormwater retrofits help remove pollutants, releasing cleaner stormwater to the river.



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Delivering services to Utility customers



Water Treatment and Supply

Treatment and delivery of your drinking water, ensuring public health and long-term sustainability of a precious resource



Wastewater Collection and Treatment

Capture and treatment of Calgary's wastewater; protects public health, property, and the environment



Stormwater Management

Collection and management of rain and snow/ice melt, protecting you, your property and our environment

One Calgary: A Healthy & Green City A City of Safe & Inspiring Neighbourhoods

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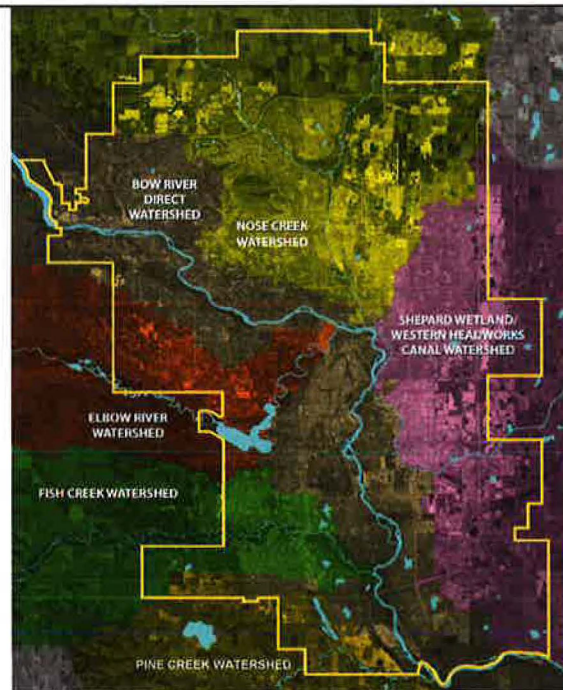
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Water Utility operates in diverse watersheds

Our watersheds are natural systems interacting with our built environment

We work internally and with others to balance needs of the watersheds

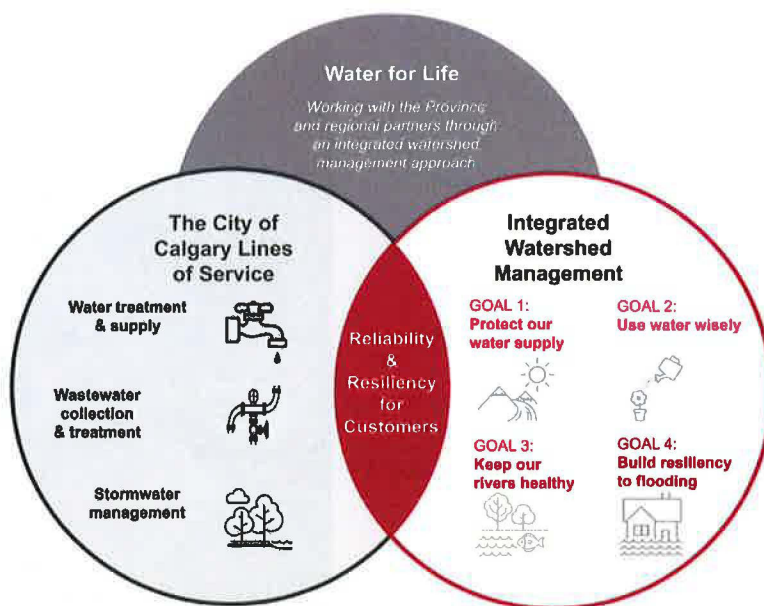


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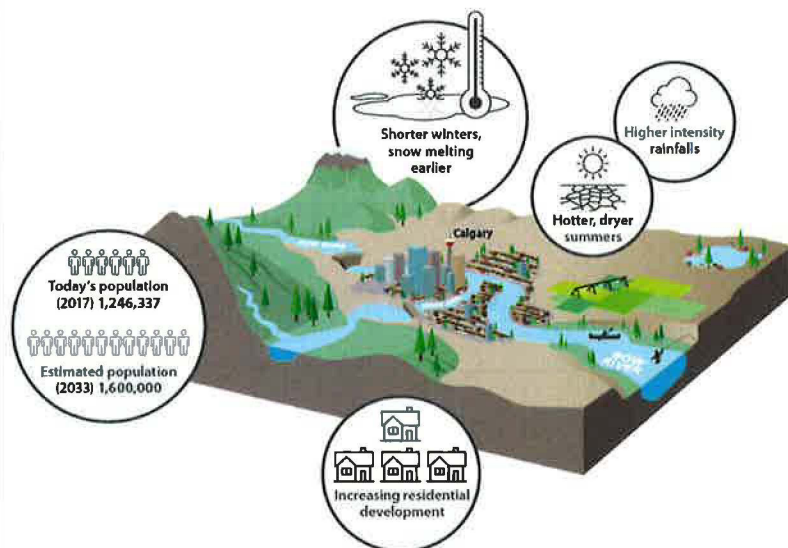
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The Utility has four Integrated Watershed Management goals



Climate change and urban growth stress the importance of an integrated approach



Calgary's Climate Resilience Strategy

Every drop counts: preparing for increasing risks of flooding, drought and declining water quality.

Key actions in:

- River flood management
- Stormwater management
- Long term water supply

Corporate Resilience Strategy alignment



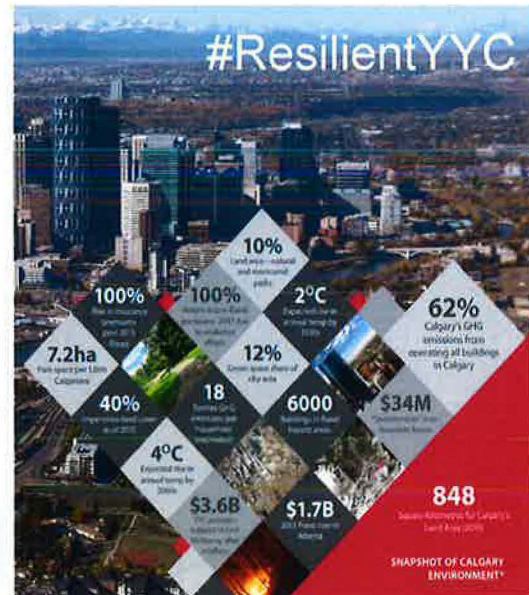
INFRASTRUCTURE RESILIENCE



ENVIRONMENT RESILIENCE

- Resilient water infrastructure
- Balancing growth demand with existing and future water service capacity
- Integrating natural assets with urban development – stormwater as a resource

**Reflected in the Utility's
IWM Goals and customer commitments**



Focus themes for today's strategic discussion

One Calgary Council Directive

... focus on achieving future
**water security and a
sustainable water supply.**

... watershed management must
be **integrated into our land
use policies, plans and
decisions**

1. Water supply and security
2. Stormwater and city-building

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Water supply and security: Calgary is a big city on a small river



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Water Security for Calgary

Understand supply



Protect
our water
supply

**What we deliver to
customers**

Customers receive high-
quality, safe drinking
water and a protected
water supply for the
future.



Understand demand



Use water
wisely

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Water supply

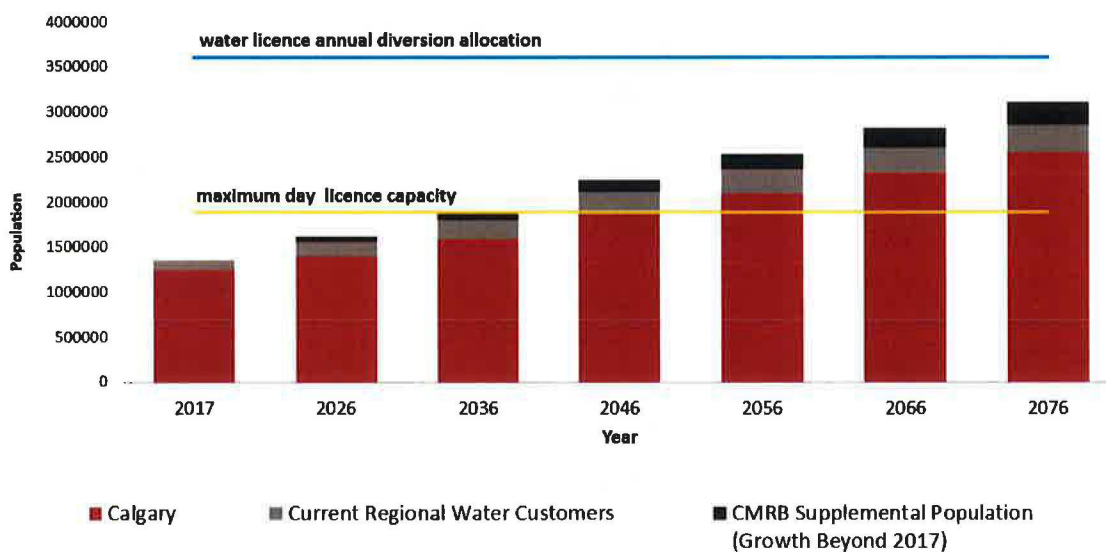
- Climate change and variability shifting the volume, timing and quality of river flows.
- Potential major wildfires in the forested headwaters causing contamination.
- Land development with increased stormwater runoff resulting in higher contamination risks.
- Infrastructure required to access, treat and move the water we would like to take from the river.
- Closure of the South Saskatchewan River Basin to new provincial water license applications.



Integrated watershed management considers water quality and quantity
Today's discussion focuses on quantity



Part of supply: Calgary's water licence



Water Demand

- Continuing population and economic growth in Calgary
- Maintaining infrastructure and reducing water loss
- Policy changes like water metering
- Water efficiency and conservation: 30% reduction in water use by 2033
- The Calgary Metropolitan Region Board is developing a Growth Plan for the Region



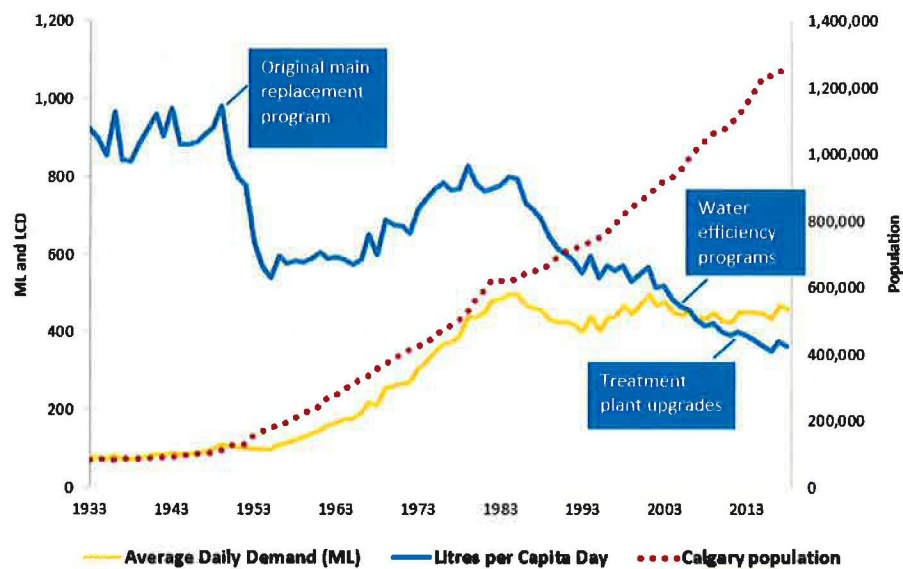
Let's look at the story...

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Water demand



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Water Security: Balancing long term water supply and demand

Understand supply

The flows in the Bow and Elbow are variable

Climate change is creating flow and quality uncertainty

The South Saskatchewan River Basin is closed to new water licence applications

What we deliver to customers

Customers receive high-quality, safe drinking water and a protected water supply for the future.



Protect our water supply



Use water wisely

Understand demand

The city of Calgary is growing

The Calgary Metropolitan Region Board is developing a Growth Plan for the Region

30% reduction in water use by 2033



Water Supply Outlook 2019

- Above normal temperatures & precipitation through June
- Mountain snowpack is below average
- Water Supply Outlook is below average to near average for April – September
- Expect earlier runoff, lower than average snowmelt volumes and high agricultural irrigation demands.

Canadian Drought Monitor

The Canadian Drought Monitor (CDM) is Canada's official source for the monitoring and reporting of drought in Canada. From this page you can access a variety of products and information about current drought conditions across the country.

Drought conditions as of March 31, 2019



Legend:
 D0 - Abnormally dry
 D1 - Moderate drought
 D2 - Severe drought
 D3 - Extreme drought
 D4 - Exceptional drought
 Drought first analyzed



Panelist presentations: Water supply and security

Dr. David Sauchyn, Director, Prairie Adaptation Research Collaborative

- Historic variability in volume of water in Bow and Elbow rivers
- How climate change may further the variability in water supply

Josh Ellis, VP, Chicago Metropolitan Planning Council

- How Chicago balances water supply and demand
- What solutions is Chicago investing in for long term water security



Interactive exercise : Water supply and security

Exercise is set up in the Power Reception Hall

4 tables, each working through the same exercise

3-4 Council members, 1-2 ALT, 1 facilitator at each table

Instructions will be provided in the room before you begin

Please move to the Power Reception Hall