# Managing Water Resources Peace River Regional District Board Meeting

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#### MANAGING WATER RESOURCES



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### Outline

#### **Water Strategy**

- o Vision, Objectives and Accountabilities
- o Key Partners

#### **Water Sustainability**

o Drought Preparedness

#### **Water Management**

- o Challenges and Opportunities
- o Water Demand and Forecasts
- o Stakeholder Engagement

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## MANAGING WATER RESOURCES

# Water Management Strategy



A leader in **sustainable water management**, ensuring **safe and efficient access to water resources** for the Canadian Operations Area

#### **OBJECTIVES**

Environment, Health and Safety Production Optimization († Oil bbls & Gas m³)

 $Water \ Sustainability \ (\uparrow \ Recycled \ Water \downarrow \ Fresh \ Water) \\ Capital \ Efficiency \ (\downarrow \ Water \ \$/m^3)$ 

Stakeholder Communication and Engagement Well and Infrastructure Reliability

Regulatory Compliance Innovation

ACCOUNTABILITIES

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Water Supply Management

Water Flowback Management

Water Volume/ Cost Tracking, Reporting & Forecasting

Regulatory Compliance (Testing & Reporting)

Disposal/ Source Well Oversight & Maintenance

Infrastructure Modelling
Water Supply Licensina

Concurrent Operations/ Competitor Activity

Innovation

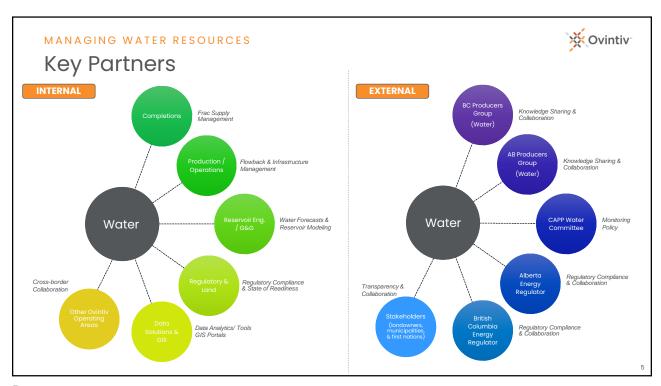
Industry Collaboration

Water Supply and Handling Planning (2Y to 5Y+)

Acid Gas Disposal

Development Growth Strategy

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# **Drought Preparedness**





- Increasing reuse of recycled water
- Actively increasing use of alternative water sources
- Timing operations schedules to maximize water reuse
- Using **groundwater resources** for well drilling and completions
- Optimizing **water storage** and use within operating areas
- Investigating treatment of sour water for reuse
- Sharing recycled water with other operators
- Advocating for *regulatory pathways to enable sharing* of water between operators

<u>Drought Preparedness - CAPP | A Unified Voice for Canada's Upstream Oil and Gas Industry</u>

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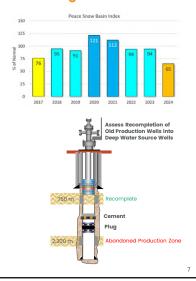


### **Drought Preparedness**

#### How is Ovintiv taking actions internally to prepare for water shortages?

#### **Internal Initiatives**

- Monitoring multiple datasets relative to snowpack, potential runoff, hydrometric station flows, and climate
  - Communicating potential drought conditions increasing internal awareness and water management planning initiatives.
- · Review of water requirements and planning for the year
  - · Assessing timing, locations, water sources, and available options.
- Set corporate sustainability water metrics
  - Annual review of water sourcing and sustainability, helps assess water sources and set targets for increased sustainable water management.
- Cross-border knowledge sharing across Ovintiv's assets in Canada and the USA
  - enhanced sharing of water recycling knowledge and technology.
- Assessment of water source options with a reduced risk to surface water sources



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### **Drought Preparedness**

#### How is Ovintiv taking actions externally to prepare for water shortages?

#### **External Initiatives**

- Communications with BC Energy Regulator water usage data and planned water needs and sources for 2024
  - Supports BCER in assessing short-term water demand beyond the volumes listed in the license terms.
  - Supports BCER in assessing sustainable water use development and areas of improvement.

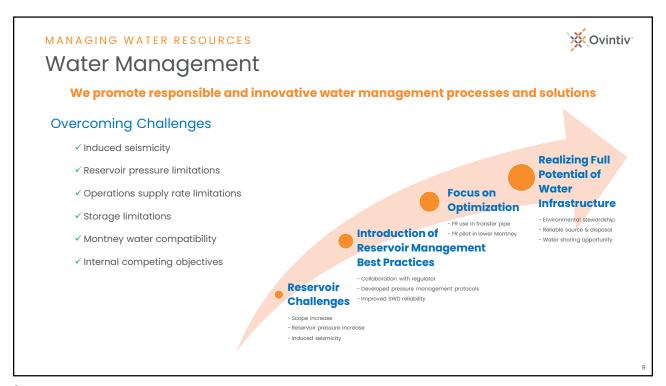


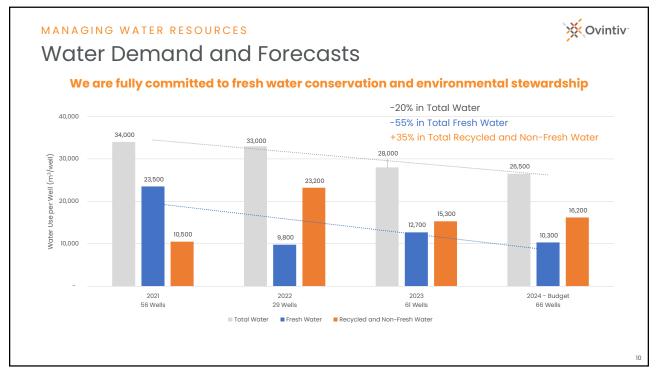
- Member of BC Montney Operators Group
  - Operators meet regularly to coordinate on water sharing opportunities and possible scheduling.
- Member of CAPP Water Committee
- Member of CAPP Drought Task Group
  - Providing industry awareness of drought conditions and possible water management requirements
- Petroleum Technology Alliance Canada
  - Alberta Upstream Petroleum Research Fund
  - Water Innovation Planning Committee (Energy Regulator, Environmental Regulator, Operators)





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### Multi-Basin Advantage

#### We leverage cross-border water management processes, technologies and learnings



**Feb-2024 Ovintiv Water Teams Cross-Border Strategy Session and Field Tour** 3-day strategy session and field tour

35+ attendees from five offices including office and field

#### Topics Discussed

EH&S | Integrity Management | Spills Prevention, Detection and Response

Capital and Production Efficiency | Drought Management | Water Supply and Handling
Innovation | New Ideas and Technologies

Data Management | Tools and Workflows



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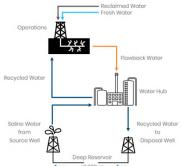
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### Water Resource Hubs

#### We invest in industry-leading water management and handling infrastructure



Our water hubs in British Columbia operate as a **closed-loop water handling and recycling system** that runs on hydroelectric power.



Definitions:

Fresh Water: natural water from water bodies and ground water aquifers

Sallne Water: naturally occurring non-potable water in deep formatio

Recycled Water: re-usable water delivered to our operations by our facilities

Source Well: recovers non-potable saline water from deep geological reservoirs

1.5 Billion Gallons of Water Recycled 450+ Wells Completed with 65%+ Recycled Water O Ponds with Saline Water

Since starting operation of the hubs in 2016, we have conserved approximately **1.5 billion gallons** of fresh water, equivalent to the average annual water use of approximately **10,500 households**.

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### Water Friction Reducer

#### Trusted downhole fluids provide significant advantages for recycled water supply rates at surface



Through our continued *focus on innovation* and *fresh water conservation*, we recently upgraded one of our water hubs with a friction reducer injection vessel. This upgrade allowed us to deliver *up to 50% higher rates of recycled water* to our operations, conserving an additional *40 million gallons* of fresh water in 2023 alone, equivalent to the average annual water use of *280 households*.

Turbulent Flow

I friction (energy loss)
Pressure
Flow Rate

| Friction (energy loss)
Pressures
Pressures
Pressures
Pressures
Pressures
Pressures

Friction reducers, also referred to as drag reducing agents (DRA), are introduced to **reduce the friction drag experienced by fluids** as they flow in or over surfaces (like pipes or
conduits). This allows fluids to glide more easily along the walls of the pipe which results in **less energy loss** due to friction, **lower pipe pressures** and **higher flow rates**.

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# Stakeholder Engagement

We firmly believe in increasing transparency and awareness around responsible water management



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