Suncor Energy Inc. - Water 2018

W0. Introduction

W0.1

(W0.1) Give a general description of and introduction to your organization.
Suncor is an integrated energy company headquartered in Calgary, Alberta, Canada. The company is strategically focused on developing one of the world’s largest petroleum resource basins – Canada’s Athabasca oil sands. In addition, Suncor and its affiliates explore for, acquire, develop, produce and market crude oil and natural gas in Canada and internationally; the company transports and refines crude oil, and markets petroleum and petrochemical products primarily in Canada. The company also conducts energy trading activities focused principally on the marketing and trading of crude oil, natural gas, power and byproducts. Suncor also operates a renewable energy business as part of its overall portfolio of assets.

W-OG0.1a

(W-OG0.1a) Which business divisions in the oil & gas sector apply to your organization?
Upstream
Downstream

W0.2

(W0.2) State the start and end date of the year for which you are reporting data.

<table>
<thead>
<tr>
<th>Reporting year</th>
<th>Start date</th>
<th>End date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>January 1 2017</td>
<td>December 31 2017</td>
</tr>
</tbody>
</table>

W0.3

(W0.3) Select the countries/regions for which you will be supplying data.
Canada
United States of America

W0.4

(W0.4) Select the currency used for all financial information disclosed throughout your response.
(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.
Companies, entities or groups over which operational control is exercised

(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?
No

W1. Current state

W1.1

(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.

<table>
<thead>
<tr>
<th>Sufficient amounts of good quality freshwater available for use</th>
<th>Direct use importance rating</th>
<th>Indirect use importance rating</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vital</td>
<td>Important</td>
<td>Water is an integral component of Suncor's operations to extract, upgrade and refine our oil and gas products. Our operations use fresh water, saline water, recycled wastewater and industrial storm water run-off for water make-up. The primary use of fresh water in Suncor operations is for utilities. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor's goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level. Suncor is currently working to establish a new water goal that builds on our ambition to use water more effectively. We anticipate this to be a multi-year, iterative and collaborative process with indigenous and non-indigenous communities close to our operations.</td>
<td></td>
</tr>
</tbody>
</table>

| Sufficient amounts of recycled, brackish and/or produced water available for use | Vital | Important | In 2017, about 91% of the water used by our Extraction operations was recycled tailings water. Produced water in thermal in situ oil sands facilities primarily consists of condensed steam injected for oil recovery. The hot oil/water emulsion is treated to separate the oil for sales and to reuse the water for steam. Reuse rates at Suncor in situ facilities are in excess of 98%. Our Edmonton refinery's primary water supply is |
reused municipal waste water from the local treatment facility. We anticipate continued monitoring of the watersheds will help us adapt and continue to take appropriate actions to reduce our water footprint. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. The goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level.

### W1.2

(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

<table>
<thead>
<tr>
<th>Water withdrawals – total volumes</th>
<th>% of sites/facilities/operations</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water withdrawals – volumes from water stressed areas</td>
<td>Not relevant</td>
<td>Per the severe water stress index in the World Wildlife Fund (WWF) Water Risk Filter tool, Suncor does not currently operate in water stressed areas. The Water Risk Filter tool uses a risk assessment based on physical risk (ie. scarcity, pollution, impact on ecosystem and supplier’s water risks), regulatory risk and reputational risk. The Commerce City Refinery was evaluated as a level 3 out of 5 on the severe water stress index, which indicates a future potential risk for water stress in the Mississippi River Basin.</td>
</tr>
<tr>
<td>Water withdrawals – volumes by source</td>
<td>100%</td>
<td>Total water withdrawal volumes by source are metered at all of our operating facilities. As a regulatory requirement, we report the volumes we withdraw from each source. We also publicly disclose water performance including annual withdrawal volumes in our Report on Sustainability. This aids with performance tracking and increases transparency with our stakeholders. Suncor complies with provincial and federal regulatory standards for water monitoring which typically requires monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices.</td>
</tr>
<tr>
<td>Produced water associated with your metals &amp; mining sector activities - total volumes</td>
<td>% of sites/facilities/operations</td>
<td>Please explain</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>Produced water in thermal in situ oil sands facilities primarily consists of condensed steam injected for oil recovery. The hot oil/water emulsion is treated to separate the oil for sales and to reuse the water for steam. Reuse rates at Suncor in situ facilities are in excess of 98%. Total produced water volumes are measured and monitored at Suncor In-Situ facilities. As a regulatory requirement, we report the volumes we withdraw to regulatory agencies. Suncor complies with provincial and federal regulatory standards for water monitoring which typically requires monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices.</td>
</tr>
</tbody>
</table>

| Produced water associated with your oil & gas sector activities - total volumes | 100% | Suncor measures and monitors our surface water withdrawal quality. The monitored quality is aligned with water discharge quality effluent parameters. Suncor complies with provincial and federal regulatory standards for water monitoring which typically requires monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices. |

| Water withdrawals quality | 51-75 | The total water discharge volumes are measured and monitored. We are required to report to the regulators the volume of water we discharge (return) back to the environment. Suncor also reports this volume annually to our stakeholders in our Report on Sustainability. Suncor complies with provincial and federal regulatory standards for water monitoring which typically requires monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices. |

| Water discharges – total volumes | 100% | The total water discharge volumes are measured and monitored. We are required to report to the regulators the volume of water we discharge (return) back to the environment and where we discharge the water. Suncor complies with provincial and federal regulatory standards for water monitoring which typically requires monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices. |

| Water discharges – volumes by destination | 100% | The water discharge volumes by destination are measured and monitored. We are required to report this information to the regulators. Suncor complies with provincial and federal regulatory standards for water monitoring which typically requires monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices. |

| Water discharges – volumes by treatment method | 100% | The water discharge volumes by treatment method are both measured and monitored. We are required to report this information to the regulators. Suncor complies with provincial and federal regulatory standards for water monitoring which typically requires monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices. |

| Water discharge quality – by standard effluent parameters | 100% | Suncor measures and monitors our water discharge quality effluent parameters. We are regulated in our operating approvals on the quality of water we discharge back to the environment. This requires that we analyze for specific parameters and report these results to the regulators on a monthly
<table>
<thead>
<tr>
<th>% of sites/facilities/operations</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>and/or annual basis. We also report effluent water quality annually to our stakeholders in Suncor's Report on Sustainability for our Oil Sands Mining and Downstream Refining and Supply operations.</td>
</tr>
<tr>
<td>Water discharge quality – temperature</td>
<td>Not monitored</td>
</tr>
<tr>
<td>Water consumption – total volume</td>
<td>100%</td>
</tr>
<tr>
<td>Water recycled/reused</td>
<td>100%</td>
</tr>
<tr>
<td>The provision of fully-functioning, safely managed WASH services to all workers</td>
<td>100%</td>
</tr>
</tbody>
</table>

**W1.2b**

*(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, and how do these volumes compare to the previous reporting year?*

<table>
<thead>
<tr>
<th>Volume (megaliters/year)</th>
<th>Comparison with previous reporting year</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total withdrawals</td>
<td>105145</td>
<td>Much lower</td>
</tr>
<tr>
<td>Volume (megaliters/year)</td>
<td>Comparison with previous reporting year</td>
<td>Please explain</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------------------------------</td>
<td>----------------</td>
</tr>
</tbody>
</table>
|                         |                                        | performance. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level. The reported figures satisfy the equation: W = D + C Where, W= total withdrawals D= total discharges C= total consumption Total withdrawals does not include produced/processed water in this case. Produced water in thermal in situ oil sands facilities primarily consists of condensed steam injected for oil recovery. The hot oil/water emulsion is treated to separate the oil for sales and to reuse the water for steam. Reuse rates at Suncor in situ facilities are in excess of 98%.

<table>
<thead>
<tr>
<th>Total discharges</th>
<th>65990</th>
<th>Much lower</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In 2017, lower water discharge volumes were mainly due to the sale of the Lubricants business and is no longer included in Suncor reported volumes. In addition, lower runoff volumes collected and discharged in the Fort McMurray area, and lower seawater discharged due to decreased production rates at Terra Nova contributed to lower total water discharge volumes. As per CDP guidance, total water discharges include fresh surface water and seawater. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level. The reported figures satisfy the equation: W = D + C Where, W= total withdrawals D= total discharges C= total consumption</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total consumption</th>
<th>39154</th>
<th>Much lower</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In 2017, lower water consumption volumes were mainly due to the sale of the Lubricants business and is no longer included in Suncor reported volumes. Consumed volumes are attributed primarily to tailings and deep well disposal of boiler blowdown. There was a significant decrease in water consumption at Oil Sands as a result of higher production rates and more efficient water usage in operations (2017 Oil Sands production recovered to the level before 2016 wild fire). In 2017, water consumption at the Terra Nova offshore production facility was lower due to decreased production rates. In 2017, water consumption for the Montreal Refinery was higher than 2016 due to the increase in fire water network consumption related events and fire training. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level. The reported figures satisfy the equation: W = D + C Where, W= total withdrawals D= total discharges C= total consumption</td>
<td></td>
</tr>
</tbody>
</table>

**W-OG1.2c**

(W-OG1.2c) In your oil & gas sector operations, what are the total volumes of water withdrawn, discharged, and consumed – by business division – and what are the trends compared to the previous reporting year?
<table>
<thead>
<tr>
<th></th>
<th>Volume (megaliters/year)</th>
<th>Comparison with previous reporting year %</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total withdrawals - Upstream</td>
<td>57401</td>
<td>Lower</td>
<td>In 2017, precipitation at Suncor upstream oil sands facilities was lower than 2016. This resulted in a significant difference in the amount of runoff water discharged from the industrial runoff outfalls.</td>
</tr>
<tr>
<td>Total discharges – Upstream</td>
<td>24297</td>
<td>Lower</td>
<td>In 2017, lower water discharge volumes are due to reduced runoff volumes collected and discharged in the Fort McMurray area. In addition, there was reduced seawater discharge due to decreased production rates at Terra Nova offshore production facility.</td>
</tr>
<tr>
<td>Total consumption – Upstream</td>
<td>33104</td>
<td>Much Lower</td>
<td>A significant decrease in Oil Sands Base Plant water consumption was due to a higher extraction recycle rate in 2017. In 2017, Upstream oil sands facilities recovered from the 2016 wild fire and production and water use efficiency returned to the levels seen prior to fire. In 2017, water consumption at the Terra Nova offshore production facility was lower due to decreased production rates.</td>
</tr>
<tr>
<td>Total withdrawals - Downstream</td>
<td>47743</td>
<td>Much Lower</td>
<td>Suncor previously operated a lubricants business in Mississauga, Ontario, which was sold on February 1, 2017. The 2017 performance data reflects this sale. In 2017, the Sarnia Refinery withdrew less water than 2016 due to the following: 1. Less cooling water required in operations with cooler than typical ambient temperatures in 2017. 2. Lower annual precipitation than previous years and thus less storm water collecting in the process units resulting in reduced volumes sent to the wastewater treatment plant. 3. There were no large maintenance events requiring additional water to clean out the units. In 2017, the Montreal Refinery water withdrawals were slightly higher than 2016 due to the increase in fire water network consumption related events and fire training.</td>
</tr>
<tr>
<td>Total discharges – Downstream</td>
<td>41693</td>
<td>Much Lower</td>
<td>Suncor previously operated a lubricants business in Mississauga, Ontario, which was sold on February 1, 2017. The 2017 performance data reflects this sale. In 2017, the refineries had steady water discharge compared with 2016.</td>
</tr>
<tr>
<td>Total consumption – Downstream</td>
<td>6050</td>
<td>Much Lower</td>
<td>Suncor previously operated a lubricants business in Mississauga, Ontario, which was sold on February 1, 2017. The 2017 performance data reflects this sale. In 2017, the Sarnia Refinery water consumption was lower than 2016 due to the following: 1. Less cooling water required in operations with cooler than typical ambient temperatures in 2017; 2. Lower annual precipitation than previous years and thus less storm water collecting in the process units resulting in reduced volumes sent to the wastewater treatment plant. 3. There were no large maintenance events requiring additional water to clean out the units. In 2017, the Montreal Refinery water withdrawals were slightly higher than 2016 due to the increase in fire water network consumption related events and fire training.</td>
</tr>
<tr>
<td>Total withdrawals – Chemicals</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>Total discharges – Chemicals</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
</tbody>
</table>
### W1.2h

(\textit{W1.2h}) Provide total water withdrawal data by source.

<table>
<thead>
<tr>
<th>Source Description</th>
<th>Relevance</th>
<th>Volume (megaliters/year)</th>
<th>Comparison with previous reporting year</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh surface water, including rainwater, water from wetlands, rivers, and lakes</td>
<td>Relevant</td>
<td>74682</td>
<td>Much lower</td>
<td>Suncor previously operated a lubricants business in Mississauga, Ontario, which was sold on February 1, 2017 and the data reflects this sale. In 2017, precipitation at Suncor upstream oil sands facilities was much lower than 2016, which resulted in a significant difference in the amount of runoff discharged from the industrial runoff outfalls. In 2017, the Sarnia Refinery withdrew less water than 2016 due to reduced cooling water requirements, lower precipitation and no large-scale maintenance events. In 2017, the Montreal Refinery water withdrawal was slightly higher than 2016 due to an increase in fire water network consumption related events and fire training. Suncor has developed models and tools used to anticipate future trends in areas such as water consumption. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level.</td>
</tr>
<tr>
<td>Source Type</td>
<td>Relevance</td>
<td>Volume (megaliters/year)</td>
<td>Comparison with previous reporting year</td>
<td>Please explain</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------</td>
<td>--------------------------</td>
<td>----------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Brackish surface water/sea water</td>
<td>Relevant</td>
<td>22324</td>
<td>Lower</td>
<td>There was a decrease in seawater withdrawal for injection at the Terra Nova site, due to lower production in 2017. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level.</td>
</tr>
<tr>
<td>Groundwater – renewable</td>
<td>Not relevant</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>Suncor does not use renewable groundwater in operations. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level.</td>
</tr>
<tr>
<td>Groundwater – non-renewable</td>
<td>Relevant</td>
<td>2262</td>
<td>About the same</td>
<td>Groundwater withdrawals remained about the same. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level.</td>
</tr>
<tr>
<td>Produced water</td>
<td>Not relevant</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>Produced water in thermal in situ oil sands facilities primarily consists of condensed steam injected for oil recovery. The hot oil/water emulsion is treated to separate the oil for sales and to reuse the water for steam. As a result of high recycle rates (&gt;98%), the produced water volume of 38 million m³ is not a new withdrawal from a surface or groundwater source. Suncor upstream Firebag and MacKay River In-Situ operations were steady in 2017 and the performance had no significant change from 2016. In 2017, produced water recycling rate was 96.1% at our Firebag in-situ operations and 99.6% at our MacKay River in-situ operations. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook.</td>
</tr>
<tr>
<td>Third party sources</td>
<td>Relevant</td>
<td>5877</td>
<td>About the same</td>
<td>Suncor’s water withdrawal from municipal and other organizations was steady for 2017 compared with 2016. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental</td>
</tr>
</tbody>
</table>
Please explain performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level.

(W1.2i) Provide total water discharge data by destination.

<table>
<thead>
<tr>
<th>Destination</th>
<th>Relevance</th>
<th>Volume (megaliters/year)</th>
<th>Comparison with previous reporting year</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh surface water</td>
<td>Relevant</td>
<td>50205</td>
<td>Much lower</td>
<td>In 2017, lower water discharge volumes were mainly due to the sale of the Lubricants business and are no longer included in Suncor reported volumes. Additionally, the decrease in fresh surface water discharge was due to decreased discharges at the Oil Sands Base, Firebag and MacKay River sites, with lower rainfall volumes (i.e. surface runoff) collected. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level.</td>
</tr>
<tr>
<td>Brackish surface water/seawater</td>
<td>Relevant</td>
<td>15785</td>
<td>Lower</td>
<td>In 2017, decreased brackish seawater discharge was due to lower production rates at the Terra Nova site located on the east coast of Canada. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level.</td>
</tr>
<tr>
<td>Groundwater</td>
<td>Not relevant</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>Suncor does not discharge groundwater in operations. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level.</td>
</tr>
<tr>
<td>Third-party destinations</td>
<td>Not relevant</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>Suncor does not discharge water to third-party destinations in operations. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level.</td>
</tr>
</tbody>
</table>
In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level.

### W1.2j

(W1.2j) What proportion of your total water use do you recycle or reuse?

<table>
<thead>
<tr>
<th>Row</th>
<th>% recycled and reused</th>
<th>Comparison with previous reporting year</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2-10</td>
<td>Higher</td>
<td>In 2017, Suncor’s upstream recycled and reused water rate was slightly higher than 2016. The higher recycle rate was due to the increased Oil Sands production rates. The plant operated more efficiently and extraction had higher water recycle rates. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level.</td>
</tr>
</tbody>
</table>

### W-OG1.2j

(W-OG1.2j) What proportion of your total water use do you recycle or reuse in your operations associated with the oil & gas sector?

<table>
<thead>
<tr>
<th>% recycled and reused</th>
<th>Comparison with previous reporting year</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upstream 51-75</td>
<td>Higher</td>
<td>In 2017, Suncor’s upstream recycled and reused water rate was slightly higher than 2016. The higher recycle rate was due to the increased Oil Sands production rates. The plant operated more efficiently and extraction had higher water recycle rates. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level.</td>
</tr>
</tbody>
</table>
In 2017, lower water discharge volumes were mainly due to the sale of the Lubricants business and are no longer included in Suncor reported volumes. The performance at Suncor refineries was about the same as 2016. Suncor has developed models and tools used to anticipate future trends in areas such as energy efficiency, water consumption, air emissions and land disturbance. In furtherance of Suncor’s goal to continue to improve environmental performance, Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level.

### Table: Water Intensity

<table>
<thead>
<tr>
<th>Business division</th>
<th>% recycled and reused</th>
<th>Comparison with previous reporting year</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downstream 1-25</td>
<td>About the same</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemicals</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>Other business division</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
</tbody>
</table>

**W-OG1.3**

(W-OG1.3) Do you calculate water intensity for your activities associated with the oil & gas sector?  
Yes  

**W-OG1.3a**

(W-OG1.3a) Provide water intensity information associated with your activities in the oil & gas sector.  
**Business division**  
Upstream  
**Water intensity value**  
2.1  
**Numerator:** water aspect  
Total withdrawals  
**Denominator:** unit of production  
Barrel of oil equivalent  
**Comparison with previous reporting year**
In 2017, precipitation at Suncor’s upstream oil sands facilities was much lower than 2016, which resulted in a significant difference in the amount of runoff discharged from the industrial runoff outfalls. This metric is used to monitor our water use and success of process optimization strategies (ie. recycling, reuse, return strategies).

**Business division**

**Upstream**

**Water intensity value**

1.72

**Numerator: water aspect**

Total water consumed

**Denominator: unit of production**

Barrel of oil equivalent

**Comparison with previous reporting year**

Much lower

**Please explain**

There was a significant decrease in Oil Sands Base Plant water consumption due to higher extraction recyle rates in 2017. Upstream oil sands facilities recovered from 2016 wild fire impact and the production returned to the level before fire. The plant operated more efficiently with higher production. This metric is used to monitor our water use and success of process optimization strategies (ie. recycling, reuse, return strategies).

**Business division**

**Downstream**

**Water intensity value**

1.37

**Numerator: water aspect**

Total withdrawals

**Denominator: unit of production**

Barrel of oil equivalent

**Comparison with previous reporting year**

Much lower

**Please explain**
Suncor previously operated a lubricants business in Mississauga, Ontario, which was sold on February 1, 2017. The 2017 performance data reflects this sale. The water withdrawal intensity for Lubricants was 29.2 m3 water/m3 product for 2016. This metric is used to monitor our water use and success of process optimization strategies (ie. recycling, reuse, return strategies).

### Business division
Downstream

### Water intensity value
0.22

**Numerator: water aspect**
Total water consumed

**Denominator: unit of production**
Barrel of oil equivalent

**Comparison with previous reporting year**
Much lower

**Please explain**
Suncor previously operated a lubricants business in Mississauga, Ontario, which was sold on February 1, 2017. 2017 performance data reflects this sale. The water consumption intensity for Lubricants was 7.6 m3 water/m3 product for 2016. This metric is used to monitor our water use and success of process optimization strategies (ie. recycling, reuse, return strategies).

**W1.4**

(W1.4) Do you engage with your value chain on water-related issues?
No, we do not engage on water with our value chain

**W1.4d**

(W1.4d) Why do you not engage with any stages of your value chain on water-related issues and what are your plans?
Important but not an immediate business priority

Suncor has prioritized water risk assessments with the goal of capturing the largest issues early and launching appropriate mitigation. Suncor is working on a pilot project to assess our supply chain risks and opportunities with a focus on policies, targets, management systems and risk management. Including water related risks.

W2. Business impacts

W2.1

(W2.1) Has your organization experienced any detrimental water-related impacts?
Yes

W2.1a

(W2.1a) Describe the water-related detrimental impacts experienced by your organization, your response, and total financial impact.

Country/Region
Canada

River basin
Mackenzie River

Type of impact driver
Regulatory

Primary impact driver
Regulatory uncertainty

Primary impact
Other, please specify (Future long-term financial liability)

Description of impact
Provincial and Federal governments have not yet developed comprehensive guidance or regulations to effectively support sustainable operation or final closure of tailings management facilities within the Athabasca watershed. This uncertainty has not allowed operators to fully develop sustainable water management plans. Suncor’s water strategy for oil sands operations is based around reducing water use and reusing water optimized against a deterioration of circulating water quality.

Primary response
Engage with regulators/policymakers
Adopt water efficiency, water re-use, recycling and conservation practices Engage with local communities Engage with NGOs/special interest groups Engage with regulators/policymakers Improve alignment of our public policy influencing activity with our water stewardship commitments Increase investment in new technology Establish site-specific targets Other - Promote best practice and awareness

Total financial impact

Description of response
Suncor, in coordination with other major operators in the watershed, has ongoing technical and policy discussions on integrated water and tailings management at the provincial and federal levels. Regulatory uncertainty on sustainable water management and reclamation and closure planning for major operators remains challenging.

Country/Region
Canada

River basin
Mackenzie River

Type of impact driver
Reputation & markets

Primary impact driver
Increased stakeholder concern or negative stakeholder feedback

Primary impact
Brand damage

Description of impact
Several of our stakeholder groups remain concerned about our water allocation from the Athabasca River during low flow periods. The Government of Alberta released the Lower Athabasca Regional Plan (LARP) Surface Water Quantity Management Framework (SWQMF) in 2015 (to manage and restrict industry water withdraw from the river during low flow events). Suncor’s water license for the Oil Sands Base facility (and three other operators) is grandfathered under the new regulation due to the design and age of our facilities Irrespective Suncor publicly agreed if a low flow event occurred, Suncor would reduce water withdrawal rates at our Base facility by 50%. At the newer Fort Hills facility Suncor will manage water as determined by the LARP SWQMF and will reduce withdrawals to zero, if required.

Primary response
Other, please specify (Promote best practice and awareness)

Adopt water efficiency, water re-use, recycling and conservation practices Engage with local communities Engage with NGOs/special interest groups Improve alignment of our public policy influencing activity with our water stewardship commitments Other - Promote best practice and awareness
Total financial impact
Description of response
In meeting the requirements under the LARP Surface Water Quantity Management Framework Suncor, in coordination with other major Oil Sands Mining operators in the Lower Athabasca watershed committed to an Oil Sands Water Sharing Agreement which is developed annually. Our OS Base Facility is allowed water under the SWQMF to meet its operational needs and the Fort Hills project was designed to incorporate operational needs if water withdrawal was limited by the framework. There are no ongoing cost requirements to meet the SWQMF.

W2.2

(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?
No

W3. Procedures

W-OG3.1

(W-OG3.1) How does your organization identify and classify potential water pollutants associated with its activities in the oil & gas sector that may have a detrimental impact on water ecosystems or human health?

Potential pollutants of concern are identified and monitored as per our approval conditions (Ie. Alberta’s Environmental Protection and Enforcement Act or the US Environmental Protection Agency). Suncor also identifies and classifies potential water pollutants through Environmental Impact Assessments (EIAs) that are completed for projects, along with regional monitoring and reporting requirements. During an EIA, all potentially detrimental pollutants are identified and managed throughout the life of the project. Additionally, Suncor follows the Canadian Council of Ministers of the Environment (CCME) Environmental Quality Guidelines for all upstream authorizations. The method used to identify potential water pollutants is based on established reporting and monitoring standards, along with published research on baseline and/or natural levels of pollutants in the regions where we operate. Potentially impacted parties could include:

- Communities in the region of operation
- Municipalities
- Employees
Wildlife and aquatic species

The potential water-related impacts on ecosystems and human health caused by potential pollutants are managed through risk assessments along with established monitoring and reporting requirements. Impacts are assessed in terms published toxicity levels or baseline metrics. Water sources/water supplies in regions of operations are monitored regularly to test for various metrics (pollution). Suncor is continuing work on a pilot project to assess our supply chain sustainability risk and opportunity with a focus on policy, targets, management systems and risk management covering environmental, social and human rights.

### W-OG3.1a

**W-OG3.1a**

*(W-OG3.1a) For each business division of your organization, describe how your organization minimizes the adverse impacts on water ecosystems or human health of potential water pollutants associated with your oil & gas sector activities.*

<table>
<thead>
<tr>
<th>Potential water pollutant</th>
<th>Business division</th>
<th>Description of water pollutant and potential impacts</th>
<th>Management procedures</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrocarbons</td>
<td>Upstream</td>
<td>Ie. Natural gas and fuels / petroleum products Upstream impacts: the potential for spills into water bodies near the operation where hydrocarbons are used and/or extracted/produced/refined. Downstream impacts: water contamination (groundwater) from pump malfunction or underground storage of hydrocarbons The scale and magnitude is dependent upon various factors, such as the size, location, concentration, etc. of the pollutant (hydrocarbon).</td>
<td>Compliance with effluent quality standards Measures to prevent spillage, leaching and leakages Community/stakeholder engagement Emergency preparedness Other, please specify (monitoring)</td>
<td>Suncor complies with effluent quality standards in each region of operation established by the regulator. We are required to report all spills as per approval conditions. The Environmental Health and Safety department has Spill Response Plans and Policies in place for each business unit, where applicable. The Stakeholder relations group is required to contact and inform key stakeholders that are relevant in situations where they may be or are potentially impacted. Crisis management and communications preparedness is controlled by the Environmental Health and Safety Group. They maintain a risk registry, which is part of the Suncor’s Operational Excellence Management System. The management team is made up of members from the executive leadership team with various roles that tie different business areas together. Each functional business area also has a response team with defined roles and responsibilities.</td>
</tr>
<tr>
<td>Potential water pollutant</td>
<td>Business division</td>
<td>Description of water pollutant and potential impacts</td>
<td>Management procedures</td>
<td>Please explain</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Chemicals                | Upstream Downstream | Ie. Metals Upstream and Downstream: chemical pollutants from each business unit would have similar impacts on water ecosystems and human health. The scale and magnitude is dependent upon various factors, such as the size, location, concentration, etc. of the pollutant (chemical). | Compliance with effluent quality standards  
Measures to prevent spillage, leaching and leakages  
Community/stakeholder engagement  
Emergency preparedness | Suncor complies with National Pollutant Release Inventory Reporting (NPRI) Standards. The Stakeholder relations group is required to contact and inform key stakeholders that are relevant in situations where they may be or are potentially impacted. The Environmental Health and Safety department has Spill Response Plans and Policies in place for each business unit where applicable. Crisis management and communications preparedness is controlled by the Environmental health and Safety Group of Suncor. They maintain a risk registry, which is part of the Operation Excellence Management System. The management team is made up of members from the executive leadership team with various roles that tie different business areas together. Each functional business area also has a response team with defined roles and responsibilities. |
| Drilling fluids          | Upstream         | Ie. Synthetic-based fluid Upstream: potential leaching into groundwater/aquifer and contaminating water The scale and magnitude is dependent upon various factors, such as the size, location, concentration, etc. of the pollutant (chemical). | Compliance with effluent quality standards  
Measures to prevent spillage, leaching and leakages  
Community/stakeholder engagement  
Emergency preparedness | Suncor is required to describe drilling fluids in project applications (i.e. Environmental Protection and Enhancement Act under the Provincial Regulator). The regulation also requires an operator to describe drilling fluid, waste disposal and surface runoff management. The Environmental Health and Safety department has Spill Response Plans and Policies in place for each business unit where applicable. Crisis management and communications preparedness is controlled by the Environmental health and Safety Group of Suncor. They maintain a risk registry, which is part of the Operational Excellence Management System. The management team is made up of members from the executive leadership team with various roles that tie different business areas together. Each functional business area also has a response team with defined roles and responsibilities. |
<table>
<thead>
<tr>
<th>Potential water pollutant</th>
<th>Business division</th>
<th>Description of water pollutant and potential impacts</th>
<th>Management procedures</th>
<th>Please explain</th>
</tr>
</thead>
</table>

**W3.3**

*(W3.3) Does your organization undertake a water-related risk assessment?*

Yes, water-related risks are assessed

**W3.3a**

*(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.*

**Direct operations**

**Coverage**

Full

**Risk assessment procedure**

Water risks are assessed as part of other company-wide risk assessment system

**Frequency of assessment**

Annually

**How far into the future are risks considered?**

>10 years

**Type of tools and methods used**

Tools on the market

Enterprise Risk Management

Other

**Tools and methods used**

WWF-DEG Water Risk Filter

ISO 31000 Risk Management Standard

Internal company methods

**Comment**

Suncor completed a comprehensive water risk assessment for all operations to assess risks such as stakeholder expectations, watershed issues and operational water use. Suncor’s tools and methods include Strategic Issues
Management Process, Enterprise Risk Management, Materiality Review and the WWF Water Risk Filter. We also participate in regional watershed initiatives to understand long-term watershed risks around water use and quality to inform our own corporate water strategy.

**Supply chain**

**Coverage**
Partial

**Risk assessment procedure**
Other, please specify (Water/sustainability supplier risks)

**Frequency of assessment**
Not defined

**How far into the future are risks considered?**
Unknown

**Type of tools and methods used**
Other

**Tools and methods used**
Other, please specify (supplier sustainability supplemental/RFP)

**Comment**
Suncor is working on a pilot project to assess our supply chain risks and opportunities with a focus on policies, targets, management systems and risk management. Including water related risks.

**Other stages of the value chain**

**Coverage**
None

**Risk assessment procedure**
<Not Applicable>

**Frequency of assessment**
<Not Applicable>

**How far into the future are risks considered?**
<Not Applicable>

**Type of tools and methods used**
<Not Applicable>

**Tools and methods used**
<Not Applicable>

**Comment**
### W3.3b

**(W3.3b) Which of the following contextual issues are considered in your organization’s water-related risk assessments?**

<table>
<thead>
<tr>
<th>Contextual Issue</th>
<th>Relevance &amp; Inclusion</th>
<th>Please Explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water availability at a basin/catchment level</td>
<td>Relevant, always included</td>
<td>Suncor has developed models and tools that allow us to understand available water quantity and quality at the local level. This analysis involves risk assessment, sustainability forecasting and some business unit/regional level scenario analysis, which helps inform future business planning. However; these models/tools are being developed to capture basin level projections that would better inform local water risks. Suncor has evaluated water availability (total water withdrawal per capita) using the WWF Water Risk Filter. Suncor participated in the Athabasca River Basin initiative that is a basin wide collaborative effort to create a common understanding of the water management system, issues and opportunities across the Athabasca River Basin.</td>
</tr>
<tr>
<td>Water quality at a basin/catchment level</td>
<td>Relevant, always included</td>
<td>Suncor has developed models and tools that allow us to understand available water quantity and quality at the local level. This analysis involves risk assessment, sustainability forecasting and some business unit/regional level scenario analysis, which helps inform future business planning. However; these models/tools are being developed to capture basin level projections that would better inform local water risks. Suncor has evaluated water quality (water quality index) using the WWF Water Risk Filter.</td>
</tr>
<tr>
<td>Stakeholder conflicts concerning water resources at a basin/catchment level</td>
<td>Relevant, always included</td>
<td>Suncor actively engages with stakeholders with regards to water resources and these issues/risks are part of identified risks. Operational changes to water systems at sites which trigger regulatory applications require stakeholder consultation as part of the review. Suncor includes stakeholder assessment and forecasting with regards to water resources at the local level in the ERM process. Suncor participated in the Athabasca River Basin initiative that is a basin wide collaborative effort to create a common understanding of the water management system, issues and opportunities across the Athabasca River Basin.</td>
</tr>
<tr>
<td>Implications of water on your key commodities/raw materials</td>
<td>Not relevant, included</td>
<td>We recognize that some of our material commodity inputs (e.g. natural gas, hydrogen) and agricultural feedstock (e.g. corn for ethanol production) may benefit from being further assessed for their water risks – we expect to further evaluate those as part of our next phase of sustainability integration into our business. Future scenario planning is being, however current information/tools have limitations for long term predictions. Suncor is working on a pilot project to assess our supply chain risks and opportunities with a focus on policies, targets, management systems and risk management. Including water related risks.</td>
</tr>
<tr>
<td>Water-related regulatory frameworks</td>
<td>Relevant, always included</td>
<td>All of Suncor’s operational sites have an operating regulatory approval with limits which typically require monthly and annual reporting to regulatory agencies. Our enterprise risk management system (ERM) and strategic issues management process (SIMP) identify changes to water policy and regulations that are further evaluated for operational / business impacts. Suncor monitors future potential regulatory changes at the federal, provincial/state, and municipal level to understand how these changes could impact operations. Suncor also monitors regulations in other jurisdictions and evaluates potential impacts, timing and risk.</td>
</tr>
<tr>
<td>Status of ecosystems and habitats</td>
<td>Relevant, always included</td>
<td>Suncor monitors and assesses ecosystem impacts in the watersheds in which it operates in on a local level. Our enterprise risk management system (ERM) and strategic issues management process (SIMP) identify and helps manage ecosystem and habitat water related risks. For some operational sites there is greater and more extensive basin impact monitoring. In the Athabasca watershed, Suncor contributed to a regional monitoring of cumulative effects program that spends $50M dollars per year monitoring impact on the ecosystem. Suncor is a member of a number of watershed planning and advisory committees (WPACs) that evaluate long term changes to the watershed and advises on potential management actions. Within the Athabasca watershed, Suncor is currently participating in a long-term Athabasca Watershed Basin Initiatives led by WaterSMART Solutions Ltd.</td>
</tr>
<tr>
<td>Access to fully-functioning, safely managed WASH services for all employees</td>
<td>Relevant, always included</td>
<td>For all of Suncor’s sites we have WASH services for all employees. Suncor’s operations are in developed countries which all have requirements for worker health and safety as well as water and sanitation provision. Monitoring is required at both the global/national level and at the facility level as per national policies and standards for WASH. The standards cover: water quality, water quantity, water facilities and access to water, wastewater treatment and disposal and other environmental issues.</td>
</tr>
<tr>
<td>Other contextual issues, please specify</td>
<td>Please select</td>
<td></td>
</tr>
</tbody>
</table>

**W3.3c**

(W3.3c) Which of the following stakeholders are considered in your organization’s water-related risk assessments?

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Relevance &amp; inclusion</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers</td>
<td>Relevant, always included</td>
<td>As part of Suncor’s Water Management-Stakeholder Engagement Plans, customers are considered as a component of overall water risk assessment. A potential risk that has been considered in this assessment is reputational risk (part of the Enterprise Risk Management process) on Suncor’s brand with regards to water has been evaluated as a component of the overall water risk assessment file. Customers are informed of water-related risks through the annual Report on Sustainability and various third-party Environmental Social and Governance (ESG) disclosure platforms.</td>
</tr>
<tr>
<td>Employees</td>
<td>Relevant, always included</td>
<td>As part of Suncor’s Water Management-Stakeholder Engagement Plans, the evaluation includes employee impact on execution of water management on-site. This included aspects of roles and accountability, complexity and experience. Employees are informed of water-related risks through the annual Report on Sustainability and various third-party Environmental Social and Governance (ESG) disclosure platforms.</td>
</tr>
<tr>
<td>Investors</td>
<td>Relevant, always included</td>
<td>As part of Suncor’s Water Management-Stakeholder Engagement Plans, investors or investment organizations have been identified as stakeholders as part of our risk assessment framework. Investors are informed of water-related risks through the annual Report on Sustainability and various third-party Environmental Social and Governance (ESG) disclosure platforms.</td>
</tr>
<tr>
<td>Stakeholder Group</td>
<td>Relevance &amp; Inclusion</td>
<td>Please explain</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>----------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Local communities</td>
<td>Relevant, always included</td>
<td>As part of Suncor’s Water Management-Stakeholder Engagement Plans, local communities have been identified and included in Suncor’s water risk assessment for the majority of our operational sites. Local communities located in regions where we operate are consulted prior to and throughout a project. Consultation covers a broad set of issues, water-related issues and risks included. We aim to inform local communities of the water-related risks and the processes we have in place to mitigate these. Communities are also informed of water-related risks through the annual Report on Sustainability and various third-party Environmental Social and Governance (ESG) disclosure platforms.</td>
</tr>
<tr>
<td>NGOs</td>
<td>Relevant, always included</td>
<td>NGOs have been identified and included in Suncor’s water risk assessment for the majority of our operational sites. Primary areas of focus are related to cumulative impacts of industrial development, with emphasis on low flow water withdrawal of the Athabasca River and water issues as they relate to tailings management. Suncor continues to discuss opportunities with NGOs related to priority areas.</td>
</tr>
<tr>
<td>Other water users at a basin/catchment level</td>
<td>Relevant, always included</td>
<td>Some other local water users have been identified as stakeholders that do not fall into the major categories. These would include parties who depend on the same basin/catchment from where we withdraw water for our operations.</td>
</tr>
<tr>
<td>Regulators</td>
<td>Relevant, always included</td>
<td>Regulators have been identified and included in Suncor’s water risk assessment for the majority of our major operational sites. Outside of water risk assessment, Suncor has extensive contact with regulators about all our operations. Environmental data typically requires monthly and annual reporting to regulatory agencies.</td>
</tr>
<tr>
<td>River basin management authorities</td>
<td>Relevant, always included</td>
<td>Suncor collaborates with river basin management authorities, our operations in North America have to follow government jurisdictions for the specific basins. They are not authorities, but what we term as a council of all watershed users.</td>
</tr>
<tr>
<td>Statutory special interest groups at a local level</td>
<td>Relevant, always included</td>
<td>Indigenous communities have been identified as key stakeholders and included in Suncor's overall water risk assessment. In some cases, concerns with fossil fuel development amongst Indigenous communities stems from the value attributed to natural water sources, and the cumulative impacts on industry on local watersheds. Suncor is building ongoing relationships with Indigenous communities through a corporate Social Goal. Suncor is also part of the Athabasca Watershed Council, which is a multi-stakeholder working group to bring together management plans and strategies for the Athabasca specifically.</td>
</tr>
<tr>
<td>Suppliers</td>
<td>Relevant, sometimes included</td>
<td>Suncor is working on a pilot project to assess our supply chain risks and opportunities with a focus on policies, targets, management systems and risk management. Including water related risks.</td>
</tr>
<tr>
<td>Water utilities at a local level</td>
<td>Relevant, sometimes included</td>
<td>Water utilities at a local level are evaluated as part of water risk assessments at this time as part of each projects Environmental Impact Assessment (EIA). Anticipated effects on the environment of a proposed development or project are measured and design measures or other relevant mitigation measures are used to reduce or avoid those effects (ie. resource use, water quality/availability and environmental setting).</td>
</tr>
<tr>
<td>Other stakeholder, please specify</td>
<td>Relevant, sometimes included</td>
<td>Multi-stakeholder organizations such as Ceres, have been identified as stakeholders as part of our risk assessment framework. Suncor has had workshops with multiple stakeholders on the development of our post-2015 Sustainability Goals including future water goal development.</td>
</tr>
</tbody>
</table>
W3.3d

(W3.3d) Describe your organization’s process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.

Suncor has an established Enterprise Risk Management Program and an Operational Excellence Management System both of which support effective and efficient risk management across the organization. This requires ongoing identification, assessment, treatment and monitoring of risks inherent to our assets, activities and operations. Our risk management program is aligned with the ISO 31000 Risk management. The guidelines provide principles, a framework and a process for managing risk. Our risk management practice is governed by our Risk Management Policy, and supported through tools such as Risk Management Standards and a Risk Matrix to effectively identify and assess risk across the enterprise. Principal risks are generally considered those that have the potential to materially impact our ability to meet or support our business strategy, which can be assessed on a short-term (1-3 years) or long-term (> 10 years) horizon. Once identified, risks are assessed and evaluated in terms of magnitude of impact and likelihood using a risk-matrix tool. This allows employees to consistently assess risks and evaluate the consequence and likelihood of risk events. It also helps assign different levels of residual risk based on the following health and safety, environment, regulatory, reputational and financial impact. To ensure holistic development and sustainment of physical assets, we incorporate environmental and social aspects such as water use, air emissions, energy use, human rights, stakeholder and Aboriginal relations into new projects. Screening assessments help translate relevant social or environmental impacts as potential project risks. For example, climate change implications are considered early in the asset development process, which ensures climate change risks and opportunities are well understood. From a decision-making perspective, this process allows asset development options to be analyzed from both a technical and sustainability perspective.

W4. Risks and opportunities

W4.1

(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes, only within our direct operations

W4.1a

(W4.1a) How does your organization define substantive financial or strategic impact on your business?
Suncor uses an enterprise-wide risk management system (ERM) to assess and define risk. Like most ERM systems it uses a matrix that determines the consequence of a risk and the likelihood of it occurring. There are six (6) consequence and likelihood categories. The ERM assign risks a ranking from I to IV for economic, environmental and social. Social is further broken down into Health & Safety, Reputation and Regulatory with guidance. Suncor defines substantive risks that are risked rank at II or I; To define substantive change for the purpose of this assessment; an economic value of $10M was used. This includes direct financial costs and lost opportunity value (LOV).

**W4.1b**

(W4.1b) What is the total number of facilities exposed to water risks with the potential to have a substantive financial or strategic impact on your business, and what proportion of your company-wide facilities does this represent?

<table>
<thead>
<tr>
<th>Total number of facilities exposed to water risk</th>
<th>% company-wide facilities this represents</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row 1</td>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

**W4.1c**

(W4.1c) By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive impact on your business, and what is the potential business impact associated with those facilities?

**Country/Region**
Canada

**River basin**
Mackenzie River

**Number of facilities exposed to water risk**
3

**% company-wide facilities this represents**
26-50

**Production value for the metals & mining activities associated with these facilities**
<Not Applicable>

**% company’s annual electricity generation that could be affected by these facilities**
<Not Applicable>

**% company’s global oil & gas production volume that could be affected by these facilities**
<table>
<thead>
<tr>
<th>Percentage of Company's Total Revenue Affected</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>26-50%</td>
<td>These facilities make up our primary oil sands operations and include our oil sands base plant and mine, as well as our In Situ operations; Firebag and MacKay River.</td>
</tr>
</tbody>
</table>

**Country/Region**
Canada

**River basin**
St. Lawrence

**Number of facilities exposed to water risk**
4

**Percentage of Company-wide Facilities this Represents**
1-25

**Production Value for the Metals & Mining Activities Associated with these Facilities**
<Not Applicable>

**Percentage of Company's Annual Electricity Generation that could be affected by these facilities**
<Not Applicable>

**Percentage of Company's Global Oil & Gas Production Volume that could be Affected by these facilities**
26-50

**Company's Total Global Revenue that could be Affected**
Please select

**Comment**
These facilities make up the majority of our Refining & Marketing operations and include our Sarnia Refinery, Montreal Refinery, Montreal Sulphur Plant and Ethanol Plant.

**Country/Region**
Canada

**River basin**
Nelson River

**Number of facilities exposed to water risk**
1
<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>River basin</td>
<td>Other, please specify (Atlantic Ocean)</td>
</tr>
<tr>
<td>Number of facilities exposed to water risk</td>
<td>1</td>
</tr>
<tr>
<td>% company-wide facilities this represents</td>
<td>1-25</td>
</tr>
<tr>
<td>Production value for the metals &amp; mining activities associated with these facilities</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>% company’s annual electricity generation that could be affected by these facilities</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>% company’s global oil &amp; gas production volume that could be affected by these facilities</td>
<td>1-25</td>
</tr>
<tr>
<td>% company’s total global revenue that could be affected</td>
<td>Please select</td>
</tr>
</tbody>
</table>

**Comment**

This facility is one of the refineries included in our Refining & Marketing operations; Edmonton Refinery.

This facility is our offshore operation; situated off the east coast of Canada, we operate the Terra Nova Floating Production Storage and Offloading vessel.
**Country/Region**
United States of America

**River basin**
Mississippi River

**Number of facilities exposed to water risk**
1

**% company-wide facilities this represents**
1-25

**Production value for the metals & mining activities associated with these facilities**
<Not Applicable>

**% company’s annual electricity generation that could be affected by these facilities**
<Not Applicable>

**% company’s global oil & gas production volume that could be affected by these facilities**
1-25

**% company’s total global revenue that could be affected**
Please select

**Comment**
This facility is one of the refineries included in our Refining & Marketing operations; Commerce City Refinery.

---

**W4.2**

(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

**Country/Region**
Canada

**River basin**
Mackenzie River

**Type of risk**
Regulatory

**Primary risk driver**
Regulatory uncertainty

**Primary potential impact**
Increased operating costs
**Company-specific description**
There is currently a lack of clarity around regulatory requirements governing the return of oil sands process affected water (OSPW) back to the watershed during both operations and final closure. The lack of certainty increases risk to the accuracy of long-term closure plans and the ability to manage both quantity and quality of water during the operational phase of a project.

**Timeframe**
More than 6 years

**Magnitude of potential impact**
High

**Likelihood**
Unlikely

**Potential financial impact**
1000000000

**Explanation of financial impact**
There could be increased costs associated with the potential for additional water containment facilities and water treatment processes.

**Primary response to risk**
Engage with regulators/policymakers

*Engage with regulators/policymakers Increased investment in new technology Improve monitoring*

**Description of response**
Work with the provincial and federal governments to ensure policy and regulation tools and mechanisms are in place to allow for the release of treated tailings water and help identify and fill gaps as required. Suncor along with 6 other operators has been engaging both Federal and Provincial technical and policy leaders for years to drive discussion towards certainty of regulatory tools for water return to the Athabasca River. Suncor and the other operators through Canada’s Oil Sands Innovation Alliance have also been operating projects that will provide technical input into the development of a policy framework.

**Cost of response**

**Explanation of cost of response**
There is significant ongoing investment focused on optimizing water reduction and recycling opportunities, reducing the amount of water retained in tailings and confirming technical understanding and managing all water related impacts.

**Country/Region**
Canada
River basin
Mackenzie River
Type of risk
Regulatory
Primary risk driver
Regulatory uncertainty
Primary potential impact
Increased operating costs
Company-specific description
Suncor’s oil sands base plant has to reduce excess water contained in tailings ponds without the option to be able to return the water back to the watershed.
Timeframe
More than 6 years
Magnitude of potential impact
High
Likelihood
Very unlikely
Potential financial impact
1000000000
Explanation of financial impact
There could be increased costs associated with the potential for additional water containment facilities and for extending the timeframe reclamation activities.
Primary response to risk
Other, please specify (Infrastructure investment)
Description of response
Suncor planned and developed a tactical water containment strategy that includes 3 phases of projects to reduce on site water in tailings ponds by 2018. There are roughly 18 projects covered by the 3 phases that are expected to achieve the required reduction in water.
Cost of response
400000000
Explanation of cost of response
These projects reduce or reuse water on site. The cost for the containment strategy is ~$400M of infrastructure investment. The execution of this strategy has resulted in a reduction of oil sands water withdrawal by 58% since 2007.
There is significant ongoing investment focused on optimizing water reduction and recycling opportunities, reducing the amount of water retained in tailings and confirming technical understanding and managing all water related impacts.

**Country/Region**
United States of America

**River basin**
Mississippi River

**Type of risk**
Regulatory

**Primary risk driver**
Regulation of discharge quality/volumes

*Increased water stress Regulation of discharge quality/volumes*

**Primary potential impact**
Increased operating costs

**Company-specific description**
There is a potential for water related stress at the Commerce City Refinery. The potential impact of these risks will likely lead to higher operating costs in the long term. The site is also making improvements to the wastewater treatment system to meet incoming regulations for specific contaminants.

**Timeframe**
1 - 3 years

**Magnitude of potential impact**
High

**Likelihood**
More likely than not

**Potential financial impact**
500000000

**Explanation of financial impact**
There could be increased costs associated with water regulations in the area of operation.

**Primary response to risk**
Other, please specify (Infrastructure investment)

*Establish site-specific targets Infrastructure investment*

**Description of response**
Suncor’s Commerce City Refinery would have to build a new treatment facility and update water permits in the area of operations.

**Cost of response**
6000000

**Explanation of cost of response**
Suncor is undertaking a process that provides correct definition-assessment of this water risk. As this process progresses understanding of the potential issues, the impact and mitigation will be determined. Costs associated with definition have been estimated at $6M for the facility.

**W4.2c**

*(W4.2c) Why does your organization not consider itself exposed to water risks in its value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact?*

<table>
<thead>
<tr>
<th>Primary reason</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row 1 Evaluation in progress</td>
<td>Water risks are considered as a part of supplier sustainability risk in Suncor's supplier sustainability supplemental associated with RFP’s. Sustainability of our supply chain is under evaluation overall and we are working on a pilot project to assess our supply chain risks and opportunities with a focus on policies, targets, management systems and risk management.</td>
</tr>
</tbody>
</table>

**W4.3**

*(W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?*
Yes, we have identified opportunities, and some/all are being realized

**W4.3a**

*(W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.*

<table>
<thead>
<tr>
<th>Type of opportunity</th>
<th>Company-specific description &amp; strategy to realize opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency</td>
<td>Improved water efficiency in operations</td>
</tr>
</tbody>
</table>
Suncor’s tactical water strategy for oil sands and in situ has resulted in a major improvement in water efficiency. All the projects executed reduced water use or make large quantities of water available for reuse. There is a Water Strategy Leadership Team that focuses on an integrated water management strategy for the site that addresses excess water stored in tailings and establishes water management principles and guidelines for water management. Ongoing collaboration with CanmetENERGY and Alberta Innovates to evaluate the Direct Contact Steam Generation (DCSG) pilot project at MacKay River to co-inject CO2 with steam. This process has the potential to reduce greenhouse gas emissions and water requirements as well as reduce the required equipment and land requirement by removing the need for an OTSG.

**Estimated timeframe for realization**  
>6 years

**Magnitude of potential financial impact**  
Low-medium

**Potential financial impact**

**Explanation of financial impact**

The improvement in water efficiency essentially allows Suncor to consistently use less than half of our annual water license allotment from the Athabasca River. Continuous improvement measures leverage an economic incentive to use less water.

**Type of opportunity**  
Other

**Primary water-related opportunity**  
Other, please specify (Collective active innovation)

**Company-specific description & strategy to realize opportunity**

Suncor has been a leader in improving collaboration among industry peers through organizations such as COSIA. The SAGD produced water treatment pilot project with COSIA involves testing new water treatment technologies at Suncor’s MacKay River steam assisted gravity drainage facility. There is a potential to improve the reliability and efficiency of in situ water treatment operations in an effort to reduce water usage and GHG emissions.

**Estimated timeframe for realization**  
>6 years

**Magnitude of potential financial impact**  
Medium-high

**Potential financial impact**

**Explanation of financial impact**
Suncor’s own water R&D as well as the technology sharing by 13 oil sands companies on water R&D is laying the foundation for further breakthroughs for the region on environmental performance. For water alone there have been 237 technology contributions with an estimated value of $217 million.

**W5. Facility-level water accounting**

**W5.1**

(W5.1) For each facility referenced in W4.1c, provide coordinates, total water accounting data and comparisons with the previous reporting year.

<table>
<thead>
<tr>
<th>Facility reference number</th>
<th>Facility name (optional)</th>
<th>Country/Region</th>
<th>River basin</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Primary power generation source for your electricity generation at this facility</th>
<th>Oil &amp; gas sector business division</th>
<th>Total water withdrawals at this facility (megaliters/year)</th>
<th>Comparison of withdrawals with previous reporting year</th>
<th>Total water discharges at this facility (megaliters/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility 1</td>
<td>Oil Sands Base Plant</td>
<td>Canada</td>
<td>Mackenzie River</td>
<td>57.0033</td>
<td>-111.4661</td>
<td>&lt;Not Applicable&gt;</td>
<td>Upstream</td>
<td>32984</td>
<td>Lower</td>
<td>7599</td>
</tr>
</tbody>
</table>
Comparison of discharges with previous reporting year
Lower

Total water consumption at this facility (megaliters/year)
25384

Comparison of consumption with previous reporting year
Lower

Please explain
In 2017, the extraction recycle rate at the Oil Sands Base Plant was higher than 2016. In 2017, Upstream oil sands facilities recovered from the 2016 wild fire impact and production returned to levels seen prior to the fire. The plant operates more efficiently with higher production rates. In 2017, precipitation at Suncor upstream oil sands facilities was much lower than 2016, which resulted in a significant difference in the amount of runoff discharged from the industrial runoff outfalls.

Facility reference number
Facility 2

Facility name (optional)
In Situ Firebag

Country/Region
Canada

River basin
Mackenzie River

Latitude
57.2297

Longitude
-110.8325

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
Upstream

Total water withdrawals at this facility (megaliters/year)
1820

Comparison of withdrawals with previous reporting year
Lower
Total water discharges at this facility (megaliters/year)
912
Comparison of discharges with previous reporting year
Lower
Total water consumption at this facility (megaliters/year)
908
Comparison of consumption with previous reporting year
About the same
Please explain
Suncor upstream Firebag In-Situ operations water withdrawals and discharges were slightly lower, overall performance in 2017 did not have a significant change compared to 2016.

Facility reference number
Facility 3
Facility name (optional)
In Situ MacKay River
Country/Region
Canada
River basin
Mackenzie River
Latitude
57.03347
Longitude
-111.88712
Primary power generation source for your electricity generation at this facility
<Not Applicable>
Oil & gas sector business division
Upstream
Total water withdrawals at this facility (megaliters/year)
266
Comparison of withdrawals with previous reporting year
Lower
Total water discharges at this facility (megaliters/year)
Comparison of discharges with previous reporting year
Much lower

Total water consumption at this facility (megaliters/year)
266

Comparison of consumption with previous reporting year
Lower

Please explain
Suncor upstream MacKay River In-Situ operations water withdrawals, discharges and consumption were slightly lower, but overall performance in 2017 did not have a significant change compared to 2016.

<table>
<thead>
<tr>
<th>Facility reference number</th>
<th>Facility 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility name (optional)</td>
<td>Montreal Refinery</td>
</tr>
<tr>
<td>Country/Region</td>
<td>Canada</td>
</tr>
<tr>
<td>River basin</td>
<td>St. Lawrence</td>
</tr>
<tr>
<td>Latitude</td>
<td>45.50806</td>
</tr>
<tr>
<td>Longitude</td>
<td>-73.57111</td>
</tr>
<tr>
<td>Primary power generation source for your electricity generation at this facility</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>Oil &amp; gas sector business division</td>
<td>Downstream</td>
</tr>
<tr>
<td>Total water withdrawals at this facility (megaliters/year)</td>
<td>6171</td>
</tr>
<tr>
<td>Comparison of withdrawals with previous reporting year</td>
<td>Higher</td>
</tr>
<tr>
<td>Total water discharges at this facility (megaliters/year)</td>
<td>5060</td>
</tr>
<tr>
<td>Comparison of discharges with previous reporting year</td>
<td>About the same</td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Total water consumption at this facility (megaliters/year)</td>
<td>1111</td>
</tr>
<tr>
<td>Comparison of consumption with previous reporting year</td>
<td>Much higher</td>
</tr>
<tr>
<td>Please explain</td>
<td>In 2017, the Montreal Refinery water withdrawal was slightly higher than 2016 due to an increase in fire water network consumption related events and fire training.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facility reference number</th>
<th>Facility 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility name (optional)</td>
<td>Sarnia Refinery</td>
</tr>
<tr>
<td>Country/Region</td>
<td>Canada</td>
</tr>
<tr>
<td>River basin</td>
<td>St. Lawrence</td>
</tr>
<tr>
<td>Latitude</td>
<td>42.9306</td>
</tr>
<tr>
<td>Longitude</td>
<td>-82.4433</td>
</tr>
<tr>
<td>Primary power generation source for your electricity generation at this facility</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>Oil &amp; gas sector business division</td>
<td>Downstream</td>
</tr>
<tr>
<td>Total water withdrawals at this facility (megaliters/year)</td>
<td>32735</td>
</tr>
<tr>
<td>Comparison of withdrawals with previous reporting year</td>
<td>Lower</td>
</tr>
<tr>
<td>Total water discharges at this facility (megaliters/year)</td>
<td>32735</td>
</tr>
<tr>
<td>Comparison of discharges with previous reporting year</td>
<td></td>
</tr>
</tbody>
</table>
Lower

**Total water consumption at this facility (megaliters/year)**
0

**Comparison of consumption with previous reporting year**
About the same

Please explain
In 2017, the Sarnia Refinery withdrew less water than 2016 due to:
1. Less cooling water required in operations with cooler than typical ambient temperatures in 2017.
2. Lower annual precipitation than previous years and thus less storm water collecting in the process units resulting in reduced volumes sent to the wastewater treatment plant.
3. There were no large maintenance events requiring additional water to clean out the units.

---

**Facility reference number**
Facility 6

**Facility name (optional)**
Renewables - St. Clair Ethanol Plant

**Country/Region**
Canada

**River basin**
St. Lawrence

**Latitude**
42.9294

**Longitude**
-82.4381

**Primary power generation source for your electricity generation at this facility**
<Not Applicable>

**Oil & gas sector business division**
Downstream

**Total water withdrawals at this facility (megaliters/year)**
1069

**Comparison of withdrawals with previous reporting year**
About the same

**Total water discharges at this facility (megaliters/year)**
122
Comparison of discharges with previous reporting year
About the same

**Total water consumption at this facility (megaliters/year)**
946

**Comparison of consumption with previous reporting year**
About the same

**Please explain**
Suncor’s downstream St. Clair Ethanol Plant operations overall performance in 2017 did not have a significant change compared to 2016.

<table>
<thead>
<tr>
<th><strong>Facility reference number</strong></th>
<th>Facility 7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facility name (optional)</strong></td>
<td>Edmonton Refinery</td>
</tr>
<tr>
<td><strong>Country/Region</strong></td>
<td>Canada</td>
</tr>
<tr>
<td><strong>River basin</strong></td>
<td>Nelson River</td>
</tr>
<tr>
<td><strong>Latitude</strong></td>
<td>53.55558</td>
</tr>
<tr>
<td><strong>Longitude</strong></td>
<td>-113.33275</td>
</tr>
<tr>
<td><strong>Primary power generation source for your electricity generation at this facility</strong></td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td><strong>Oil &amp; gas sector business division</strong></td>
<td>Downstream</td>
</tr>
<tr>
<td><strong>Total water withdrawals at this facility (megaliters/year)</strong></td>
<td>3968</td>
</tr>
<tr>
<td><strong>Comparison of withdrawals with previous reporting year</strong></td>
<td>About the same</td>
</tr>
<tr>
<td><strong>Total water discharges at this facility (megaliters/year)</strong></td>
<td>1285</td>
</tr>
<tr>
<td><strong>Comparison of discharges with previous reporting year</strong></td>
<td>1285</td>
</tr>
<tr>
<td><strong>Total water consumption at this facility (megaliters/year)</strong></td>
<td>2683</td>
</tr>
<tr>
<td><strong>Comparison of consumption with previous reporting year</strong></td>
<td>About the same</td>
</tr>
</tbody>
</table>

**Please explain**
Suncor’s downstream Edmonton Refinery operations overall performance in 2017 did not have a significant change compared to 2016.

| **Facility reference number** | Facility 8 |
| **Facility name (optional)** | Terra Nova FPSO |
| **Country/Region** | Canada |
| **River basin** | Other, please specify (Atlantic Ocean) |
| **Latitude** | 46.2831 |
| **Longitude** | -48.2851 |
| **Primary power generation source for your electricity generation at this facility** | <Not Applicable> |
| **Oil & gas sector business division** | Upstream |

| **Total water withdrawals at this facility (megaliters/year)** | 22332 |
| **Comparison of withdrawals with previous reporting year** | Lower |

| **Total water discharges at this facility (megaliters/year)** | 15785 |
| **Comparison of discharges with previous reporting year** | Lower |
Total water consumption at this facility (megaliters/year)  
6546  

Comparison of consumption with previous reporting year  
Lower  

Please explain  
In 2017, water consumption and discharge volumes at the Terra Nova offshore production facility were lower due to decreased production rates. 

<table>
<thead>
<tr>
<th>Facility reference number</th>
<th>Facility 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility name (optional)</td>
<td>Commerce City Refinery</td>
</tr>
<tr>
<td>Country/Region</td>
<td>United States of America</td>
</tr>
<tr>
<td>River basin</td>
<td>Mississippi River</td>
</tr>
<tr>
<td>Latitude</td>
<td>39.80168</td>
</tr>
<tr>
<td>Longitude</td>
<td>-104.94698</td>
</tr>
</tbody>
</table>

Primary power generation source for your electricity generation at this facility  
<Not Applicable>  

Oil & gas sector business division  
Downstream  

Total water withdrawals at this facility (megaliters/year)  
2870  

Comparison of withdrawals with previous reporting year  
About the same  

Total water discharges at this facility (megaliters/year)  
1720  

Comparison of discharges with previous reporting year  
About the same  

Total water consumption at this facility (megaliters/year)
Comparison of consumption with previous reporting year

Higher

Please explain
Cooling towers in Plant 1 were shut down in 2016 for over a month for a turnaround, resulting in reduced water use during this period. There was also an increase in water consumption in early 2017 due to a faulty valve lineup. In addition, the average temperature in the Denver area in 2017 was higher than in 2016, presumably resulting in higher rates of evaporation from the cooling towers, thereby increasing water consumption.

Facility reference number
Facility 10

Facility name (optional)
Montreal Sulphur Plant

Country/Region
Canada

River basin
St. Lawrence

Latitude
45.639381

Longitude
-73.515457

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
Downstream

Total water withdrawals at this facility (megaliters/year)
160

Comparison of withdrawals with previous reporting year
About the same

Total water discharges at this facility (megaliters/year)
0

Comparison of discharges with previous reporting year
About the same
Total water consumption at this facility (megaliters/year)
160

Comparison of consumption with previous reporting year
About the same

Please explain
Suncor’s downstream Montreal Sulphur Plant operations overall performance in 2017 did not have a significant change compared to 2016.

W5.1a

(W5.1a) For each facility referenced in W5.1, provide withdrawal data by water source.

<table>
<thead>
<tr>
<th>Facility reference number</th>
<th>Facility name</th>
<th>Water source</th>
<th>Withdrawal (megaliters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility 1</td>
<td>Oil Sands Base Plant</td>
<td>Fresh surface water, including rainwater, water from wetlands, rivers and lakes</td>
<td>32134</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brackish surface water/seawater</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Groundwater - renewable</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Groundwater - non-renewable</td>
<td>850</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Produced water</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Third party sources</td>
<td>0</td>
</tr>
<tr>
<td>Facility 2</td>
<td>In Situ Firebag</td>
<td>Fresh surface water, including rainwater, water from wetlands, rivers and lakes</td>
<td>32134</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brackish surface water/seawater</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Groundwater - renewable</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Groundwater - non-renewable</td>
<td>850</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Produced water</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Third party sources</td>
<td>0</td>
</tr>
<tr>
<td>Source Type</td>
<td>Quantity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td>----------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fresh surface water, including rainwater, water from wetlands, rivers and lakes</td>
<td>981</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brackish surface water/seawater</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groundwater - renewable</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groundwater - non-renewable</td>
<td>764</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Produced water</td>
<td>74.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third party sources</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comment**
Produced water in thermal in situ oil sands facilities primarily consists of condensed steam injected for oil recovery. The hot oil/water emulsion is treated to separate the oil for sales and to reuse the water for steam. As a result of high recycle rates (>98%), the produced water volume of 38 million m³ is not a new withdrawal from a surface or groundwater source.

**Facility reference number**
Facility 3

**Facility name**
In Situ MacKay River

<table>
<thead>
<tr>
<th>Source Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh surface water, including rainwater, water from wetlands, rivers and lakes</td>
<td>2</td>
</tr>
<tr>
<td>Brackish surface water/seawater</td>
<td>0</td>
</tr>
<tr>
<td>Groundwater - renewable</td>
<td>0</td>
</tr>
<tr>
<td>Groundwater - non-renewable</td>
<td>264</td>
</tr>
<tr>
<td>Produced water</td>
<td></td>
</tr>
<tr>
<td>Third party sources</td>
<td></td>
</tr>
</tbody>
</table>

**Comment**
Produced water in thermal in situ oil sands facilities primarily consists of condensed steam injected for oil recovery. The hot oil/water emulsion is treated to separate the oil for sales and to reuse the water for steam. As a result of high recycle rates (>98%), the produced water volume of 38 million m³ is not a new withdrawal from a surface or groundwater source.

<table>
<thead>
<tr>
<th>Facility reference number</th>
<th>Facility name</th>
<th>Fresh surface water, including rainwater, water from wetlands, rivers and lakes</th>
<th>Brackish surface water/seawater</th>
<th>Groundwater - renewable</th>
<th>Groundwater - non-renewable</th>
<th>Produced water</th>
<th>Third party sources</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility 4</td>
<td>Montreal Refinery</td>
<td>5989</td>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
<td>182</td>
<td></td>
</tr>
<tr>
<td>Facility 5</td>
<td>Sarnia Refinery</td>
<td>32504</td>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
<td>182</td>
<td></td>
</tr>
<tr>
<td>Groundwater - non-renewable</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>----------------------------</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Produced water</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third party sources</td>
<td>227</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Comment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facility reference number</th>
<th>Facility 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facility name</strong></td>
<td>Renewables - St. Clair Ethanol Plant</td>
</tr>
<tr>
<td><strong>Fresh surface water, including rainwater, water from wetlands, rivers and lakes</strong></td>
<td>0</td>
</tr>
<tr>
<td>Brackish surface water/seawater</td>
<td>0</td>
</tr>
<tr>
<td>Groundwater - renewable</td>
<td>0</td>
</tr>
<tr>
<td>Groundwater - non-renewable</td>
<td>0</td>
</tr>
<tr>
<td>Produced water</td>
<td>0</td>
</tr>
<tr>
<td>Third party sources</td>
<td>1069</td>
</tr>
<tr>
<td><strong>Comment</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facility reference number</th>
<th>Facility 7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facility name</strong></td>
<td>Edmonton Refinery</td>
</tr>
<tr>
<td><strong>Fresh surface water, including rainwater, water from wetlands, rivers and lakes</strong></td>
<td>2332</td>
</tr>
<tr>
<td>Brackish surface water/seawater</td>
<td></td>
</tr>
<tr>
<td>Source Type</td>
<td>Volume (m³)</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Groundwater - renewable</td>
<td>0</td>
</tr>
<tr>
<td>Groundwater - non-renewable</td>
<td>0</td>
</tr>
<tr>
<td>Produced water</td>
<td>0</td>
</tr>
<tr>
<td>Third party sources</td>
<td>1636</td>
</tr>
</tbody>
</table>

**Comment**

**Facility reference number**
Facility 8

**Facility name**
Terra Nova FPSO

**Fresh surface water, including rainwater, water from wetlands, rivers and lakes**

<table>
<thead>
<tr>
<th>Source Type</th>
<th>Volume (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groundwater - renewable</td>
<td>0</td>
</tr>
<tr>
<td>Groundwater - non-renewable</td>
<td>0</td>
</tr>
<tr>
<td>Produced water</td>
<td>0</td>
</tr>
<tr>
<td>Third party sources</td>
<td>8</td>
</tr>
</tbody>
</table>

**Comment**

**Facility reference number**
Facility 9

**Facility name**
Commerce City Refinery
<table>
<thead>
<tr>
<th>Source of Water</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh surface water, including rainwater, water from wetlands, rivers and lakes</td>
<td>80</td>
</tr>
<tr>
<td>Brackish surface water/seawater</td>
<td>0</td>
</tr>
<tr>
<td>Groundwater - renewable</td>
<td>0</td>
</tr>
<tr>
<td>Groundwater - non-renewable</td>
<td>380</td>
</tr>
<tr>
<td>Produced water</td>
<td>0</td>
</tr>
<tr>
<td>Third party sources</td>
<td>2410</td>
</tr>
</tbody>
</table>

**Facility reference number**
Facility 10

**Facility name**
Montreal Sulphur Plant

**Fresh surface water, including rainwater, water from wetlands, rivers and lakes**
131

**Brackish surface water/seawater**
0

**Groundwater - renewable**
0

**Groundwater - non-renewable**
0

**Produced water**
0

**Third party sources**
29

**Comment**

W5.1b
(W5.1b) For each facility referenced in W5.1, provide discharge data by destination.

<table>
<thead>
<tr>
<th>Facility reference number</th>
<th>Facility name</th>
<th>Fresh surface water</th>
<th>Brackish surface water/Seawater</th>
<th>Groundwater</th>
<th>Third party destinations</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility 1</td>
<td>Oil Sands Base Plant</td>
<td>7599</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Facility 2</td>
<td>In Situ Firebag</td>
<td>912</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Facility 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility reference number</td>
<td>Facility name</td>
<td>Fresh surface water</td>
<td>Brackish surface water/Seawater</td>
<td>Groundwater</td>
<td>Third party destinations</td>
<td>Comment</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------</td>
<td>---------------------</td>
<td>-------------------------------</td>
<td>-------------</td>
<td>------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Facility 4</td>
<td>Montreal Refinery</td>
<td>5060</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Facility 5</td>
<td>Sarnia Refinery</td>
<td>32735</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Groundwater</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third party destinations</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Facility reference number**
Facility 6

**Facility name**
Renewables - St. Clair Ethanol Plant

**Fresh surface water**
122

**Brackish surface water/Seawater**
0

**Groundwater**
0

**Third party destinations**
0

**Comment**

| Groundwater | 0 |
| Third party destinations | 0 |
| Comment | |

**Facility reference number**
Facility 7

**Facility name**
Edmonton Refinery

**Fresh surface water**
1285

**Brackish surface water/Seawater**
0

**Groundwater**
0

**Third party destinations**
0

**Comment**
<table>
<thead>
<tr>
<th>Facility reference number</th>
<th>Facility name</th>
<th>Fresh surface water</th>
<th>Brackish surface water/Seawater</th>
<th>Groundwater</th>
<th>Third party destinations</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility 8</td>
<td>Terra Nova FPSO</td>
<td>0</td>
<td>15785</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Facility 9</td>
<td>Commerce City Refinery</td>
<td>1720</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Facility 10</td>
<td>Montreal Sulphur Plant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource Type</td>
<td>Use</td>
<td>2018 Use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-----</td>
<td>----------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fresh surface water</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brackish surface water/Seawater</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groundwater</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third party destinations</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comment**

(W5.1c) For each facility referenced in W5.1, provide the proportion of your total water use that is recycled or reused, and give the comparison with the previous reporting year.

<table>
<thead>
<tr>
<th>Facility reference number</th>
<th>Facility name</th>
<th>% recycled or reused</th>
<th>Comparison with previous reporting year</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility 1</td>
<td>Oil Sands Base Plant</td>
<td>51-75%</td>
<td>Higher</td>
<td>In 2017, the extraction recycle rate at the Oil Sands Base Plant was higher than 2016 (2017 91.7% vs. 2016 85.9%). In 2017, Upstream oil sands facilities recovered from the 2016 wild fire impact and production returned to levels seen prior to the fire. The plant operates more efficiently with higher production rates.</td>
</tr>
<tr>
<td>Facility 2</td>
<td>In Situ Firebag</td>
<td>76-99%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Comparison with previous reporting year
About the same
Please explain
Operations remained consistent with last year.

Facility reference number
Facility 3
Facility name
In Situ MacKay River
% recycled or reused
76-99%
Comparison with previous reporting year
About the same
Please explain
Operations remained consistent with last year.

Facility reference number
Facility 4
Facility name
Montreal Refinery
% recycled or reused
2-10%
Comparison with previous reporting year
About the same
Please explain
Operations remained consistent with last year.

Facility reference number
Please select
Facility name
Sarnia Refinery
% recycled or reused
2-10%
<table>
<thead>
<tr>
<th>Facility reference number</th>
<th>Facility name</th>
<th>% recycled or reused</th>
<th>Comparison with previous reporting year</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility 6</td>
<td>Renewables - St. Clair Ethanol Plant</td>
<td>2-10%</td>
<td>About the same</td>
<td>Operations remained consistent with last year.</td>
</tr>
<tr>
<td>Facility 7</td>
<td>Edmonton Refinery</td>
<td>2-10%</td>
<td>About the same</td>
<td>Operations remained consistent with last year.</td>
</tr>
<tr>
<td>Facility 8</td>
<td>Terra Nova FPSO</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility reference number</td>
<td>Facility name</td>
<td>% recycled or reused</td>
<td>Comparison with previous reporting year</td>
<td>Please explain</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------------------</td>
<td>----------------------</td>
<td>------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Facility 9</td>
<td>Commerce City Refinery</td>
<td>2-10%</td>
<td>About the same</td>
<td>Please explain</td>
</tr>
<tr>
<td>Facility 10</td>
<td>Montreal Sulphur Plant</td>
<td>None</td>
<td>About the same</td>
<td>Please explain</td>
</tr>
</tbody>
</table>

**W5.1d**

(W5.1d) For the facilities referenced in W5.1, what proportion of water accounting data has been externally verified?

<table>
<thead>
<tr>
<th>Water withdrawals – total volumes</th>
<th>% verified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What standard and methodology was used?
This data is assured by Ernst & Young LLP as part of the publication of Suncor's 2018 Report on Sustainability. Their limited assurance procedures were planned and performed in accordance with the ISAE 3000. Suncor complies with provincial and federal regulatory standards for water monitoring which typically require monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices.

**Water withdrawals – volume by source**

*% verified*
Not verified

What standard and methodology was used?
This data is not subject to assurance by a third-party independent assurer but does undergo internal review as part of our quality assurance for publication in our Report on Sustainability. Suncor complies with provincial and federal regulatory standards for water monitoring which typically require monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices.

**Water withdrawals – quality**

*% verified*
Not verified

What standard and methodology was used?
This data isn't subject to assurance by a third-party independent assurer, but does undergo internal review as part of quality assurance. Suncor monitors water withdrawal quality, which is aligned with water discharge effluent parameters. Suncor complies with provincial and federal regulatory standards for water monitoring which typically require monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and boundaries consistent with best practices.

**Water discharges – total volumes**

*% verified*
Not verified

What standard and methodology was used?
This data is not subject to assurance by a third-party independent assurer but does undergo internal review as part of our quality assurance for publication in our Report on Sustainability. Suncor complies with provincial and federal regulatory standards for water monitoring which typically require monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices.

**Water discharges – volume by destination**
What standard and methodology was used?
This data is not subject to assurance by a third-party independent assurer but does undergo internal review as part of our quality assurance for publication in our Report on Sustainability. Suncor complies with provincial and federal regulatory standards for water monitoring which typically require monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices.

**Water discharges – volume by treatment method**

What standard and methodology was used?
This data is not subject to assurance by a third-party independent assurer but does undergo internal review as part of our quality assurance for publication in our Report on Sustainability. Suncor complies with provincial and federal regulatory standards for water monitoring which typically require monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices.

**Water discharge quality – quality by standard effluent parameters**

What standard and methodology was used?
This data is not subject to assurance by a third-party independent assurer but does undergo internal review as part of our quality assurance for publication in our Report on Sustainability. Suncor complies with provincial and federal regulatory standards for water monitoring which typically require monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices.

**Water discharge quality – temperature**

What standard and methodology was used?
Water discharge quality temperature is monitored at certain facilities, but is not subject to assurance by a third-party independent assurer.

**Water consumption – total volume**

What standard and methodology was used?
This data is not subject to assurance by a third-party independent assurer but does undergo internal review as part of our quality assurance for publication in our Report on Sustainability. Suncor complies with provincial and federal regulatory standards for water monitoring which typically require monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices.

**Water recycled/reused**

% verified

Not verified

**What standard and methodology was used?**

Water recycled/reused volumes are not subject to assurance by a third-party independent assurer, but do undergo internal review as part of our quality assurance for publication in our Report on Sustainability. Suncor complies with provincial and federal regulatory standards for water monitoring which typically require monthly and/or annual reporting to regulatory agencies. The standards mandate specific technical methods and monitoring boundaries consistent with best practices.

**W6. Governance**

**W6.1**

(W6.1) **Does your organization have a water policy?**

Yes, we have a documented water policy that is publicly available

**W6.1a**

(W6.1a) **Select the options that best describe the scope and content of your water policy.**

<table>
<thead>
<tr>
<th>Scope</th>
<th>Content</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company-wide</td>
<td>Description of water-related performance standards for direct operations</td>
<td>In 2007 Suncor established a publicly disclosed sustainability water goal for the corporation. Publicly stated goals are intended to drive changes in work place culture and behaviors when combined with processes for goal translation, goal stewardship, development of water risk assessments and tools; and asset development execution models that include environmental net effect evaluation prior to concept selection. Suncor is currently working to establish a new water goal that builds on our ambition to use water more effectively. We anticipate this to be a multi-year, iterative and collaborative process with indigenous and non-indigenous communities close to our operations. Suncor has a publicly available Environment, Health and Safety policy statement. Suncor also uses four principles to guide our integrated water management approach: 1. Shared value of water 2. Watershed management 3. Reduce-Reuse-Return 4. Integrated options analysis</td>
</tr>
<tr>
<td>Scope</td>
<td>Content</td>
<td>Please explain</td>
</tr>
<tr>
<td>-------</td>
<td>---------</td>
<td>---------------</td>
</tr>
<tr>
<td></td>
<td>Commitment to water stewardship and/or collective action Other, please specify (Principles/EHS policy)</td>
<td></td>
</tr>
</tbody>
</table>

**W6.2**

(W6.2) Is there board level oversight of water-related issues within your organization?

Yes

**W6.2a**

(W6.2a) Identify the position(s) of the individual(s) on the board with responsibility for water-related issues.

<table>
<thead>
<tr>
<th>Position of individual</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other, please specify</td>
<td>One of the Board’s major duties is to review with management Suncor’s mission, objectives and goals and the strategies and plans for achieving them. The Board also monitors Suncor’s progress toward its strategic goals and plans, and revises Suncor’s direction where warranted. The Board oversees Suncor’s Enterprise Risk Management Program (the “ERM Program”). In accordance with this program, the CEO and senior management undertake an entity-wide process to identify, assess and mitigate significant risks. The Board undertakes an annual review of those risks identified by the ERM program as principal environmental risk. The Board monitors risk management actions for these risks throughout the year. In addition to Board oversight of risk management efforts, each principal risk is mapped to a Board Committee. Environmental issues are mapped to the Environment, Health, Safety and Sustainable Development Committee of the Board, and this committee receives quarterly reports from management.</td>
</tr>
</tbody>
</table>

**W6.2b**

(W6.2b) Provide further details on the board’s oversight of water-related issues.

<table>
<thead>
<tr>
<th>Frequency that water-related issues are a scheduled agenda item</th>
<th>Governance mechanisms into which water-related issues are integrated</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduled - some meetings</td>
<td>Monitoring implementation and performance</td>
<td>One of the Board’s major duties is to review with management Suncor’s mission, objectives and goals and the strategies and plans for achieving them. The Board also monitors Suncor’s progress toward its strategic goals and plans, and revises Suncor’s direction where warranted. The Board oversees Suncor’s Enterprise Risk Management Program (the “ERM Program”). In accordance with this program, the CEO and senior management undertake an entity-wide process to identify, assess and mitigate significant risks. The Board undertakes an annual review of those risks identified by the ERM program as principal environmental risk. The Board monitors risk management actions for these risks throughout the year. In addition to Board oversight of risk management efforts, each principal risk is mapped to a Board Committee. Environmental issues are mapped to the Environment, Health, Safety and Sustainable Development Committee of the Board, and this committee receives quarterly reports from management.</td>
</tr>
</tbody>
</table>
Frequency that water-related issues are a scheduled agenda item

Governance mechanisms into which water-related issues are integrated

Please explain

Overseeing acquisitions and divestiture
Overseeing major capital expenditures
Reviewing and guiding annual budgets
Reviewing and guiding business plans
Reviewing and guiding major plans of action
Reviewing and guiding risk management policies
Reviewing and guiding strategy
Reviewing and guiding corporate responsibility strategy
Reviewing innovation/R&D priorities
Setting performance objectives

Management Program (the “ERM Program”). In accordance with this program, the CEO and senior management undertake an entity-wide process to identify, assess and mitigate significant risks. The Board undertakes an annual review of those risks identified by the ERM program as principal environmental risk. The Board monitors risk management actions for these risks throughout the year. In addition to Board oversight of risk management efforts, each principal risk is mapped to a Board Committee. Environmental issues are mapped to the Environment, Health, Safety and Sustainable Development Committee of the Board, and this committee receives quarterly reports from management. The board is also responsible for ensuring Suncor has an effective strategic planning process, and on an annual basis reviews Suncor’s annual business plan (including Suncor’s annual capital budget) and in doing so endorses the strategies reflected in Suncor’s long range plan. The Governance Committee provides assistance to the Board by annually assessing Suncor’s planning and budgeting process.

W6.3

(W6.3) Below board level, provide the highest-level management position(s) or committee(s) with responsibility for water-related issues.

Name of the position(s) and/or committee(s)
Chief Sustainability Officer (CSO)

Responsibility
Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues
More frequently than quarterly
The Chief Sustainability Officer (CSO) reports directly to the CEO and President of Suncor. They have a direct link to the Environmental, Health, and Safety and Sustainable Development (EHS&SD) Committee of the Board of Directors. The CSO is the highest-level management position below the board level where the most significant water-related issues ultimately are managed. He has a direct link to the EHS&SD Committee, which is a committee of the Board of Directors. The EHS&SD Committee is in place to monitor the effectiveness and integrity of Suncor’s internal controls as they related to operational risks of the corporations physical assets, including water related risk, and other matters of the environment, health, safety and sustainable development. The Committee is also responsible for the review of the policies and practices of the Corporation respecting operational risks.

**Name of the position(s) and/or committee(s)**

Chief Operating Officer (COO)

**Responsibility**

Both assessing and managing water-related risks and opportunities

**Frequency of reporting to the board on water-related issues**

More frequently than quarterly

**Please explain**

The Chief Operating Officer (COO) reports directly to the CEO and President of Suncor. He has a direct link to the Environmental, Health, and Safety and Sustainable Development (EHS&SD) Committee of the Board of Directors. The COO is the highest-level management position below the board level where the most significant water-related issues ultimately are managed. The COO would include all water-related issues in operational assessment. He has a direct link to the EHS&SD Committee, which reports to the Board of Directors. The EHS&SD Committee is in place to monitor the effectiveness and integrity of Suncor’s internal controls as they related to operational risks of the corporations physical assets, including water related risk, and other matters of the environment, health, safety and sustainable development. The Committee is also responsible for the review of the policies and practices of the Corporation respecting operational risks.

**W-FB6.4/W-CH6.4/W-EU6.4/W-OG6.4/W-MM6.4**

(W-FB6.4/W-CH6.4/W-EU6.4/W-OG6.4/W-MM6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

Yes
(W-FB6.4a/W-CH6.4a/W-EU6.4a/W-OG6.4a/W-MM6.4a) What incentives are provided to C-suite employees or board members for the management of water-related issues?

<table>
<thead>
<tr>
<th>Monetary reward</th>
<th>Who is entitled to benefit from these incentives?</th>
<th>Indicator for incentivized performance</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chief Sustainability Officer (CSO)</td>
<td>Reduction of water withdrawals</td>
<td>All employees eligible for our annual incentive program are linked to overall corporate and business performance targets including sustainability and environmental metrics. These provide a clear line of sight to Suncor’s overall environmental performance. A portion of the total direct compensation of management is provided in variable performance contingent pay designed to reward business performance and increasing shareholder return. Annual incentives are linked to overall corporate and Business Unit performance. An example of this would include Suncor’s Oil Sands Base plant set an operational goal to reduce fresh river water withdrawal, which was achieved in 2017. The CSO has also set an annual goal to develop a new enterprise-wide water goal. Suncor is currently working to establish a new water goal that builds on our ambition to use water more effectively. We anticipate this to be a multi-year, iterative and collaborative process with indigenous and non-indigenous communities close to our operations.</td>
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<td>Other, Corporate Executive Team</td>
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<tr>
<th>Recognition (non-monetary)</th>
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<th>Indicator for incentivized performance</th>
<th>Please explain</th>
</tr>
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<td>Other, Corporate Executive Team</td>
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</table>
Who is entitled to benefit from these incentives?

Indicator for incentivized performance

Please explain withdrawal, which was achieved in 2017. The CSO has also set an annual goal to develop a new enterprise-wide water goal. Suncor is currently working to establish a new water goal that builds on our ambition to use water more effectively. We anticipate this to be a multi-year, iterative and collaborative process with indigenous and non-indigenous communities close to our operations.

W6.5

(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?

Yes, direct engagement with policy makers
Yes, funding research organizations
Yes, other

W6.5a

(W6.5a) What processes do you have in place to ensure that all of your direct and indirect activities seeking to influence policy are consistent with your water policy/water commitments?

Suncor uses a process called Strategic Issues Management Process (SIMP) to manage direct and indirect activities seeking to influence policies to ensure they are consistent with our water policy and/or commitments. SIMP is a coordinated, anticipatory approach for identifying, monitoring and managing the key environmental, economic, and social issues considered most critical to Suncor and its external stakeholders.

Suncor’s production currently requires water use, and there is global concern about how water is used and managed. The current water focus is on integrated water management (water use, water withdrawal and water return).

SIMP is comprised of subject matter experts, including representation from engineering/scientific knowledge, government relations, Stakeholder and Aboriginal Relations, Policy advisors and Communications experts. Through this forum the SIMP group is able to effectively communicate priority issues and consistently approach them from a policy perspective, while aligning with our internal water policies/commitments. The SIMP Water group meets regularly (bi-monthly), or as needed when water issues emerge.

W7. Business strategy
<table>
<thead>
<tr>
<th><strong>Long-term business objectives</strong></th>
<th><strong>Are water-related issues integrated?</strong></th>
<th><strong>Long-term time horizon (years)</strong></th>
<th><strong>Please explain</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, water-related issues are integrated</td>
<td>21-30</td>
<td>Suncor has developed models/ tools used to anticipate future trends in areas such as energy efficiency, water consumption and recycle, air emissions and land disturbance. Suncor uses a Sustainability Planning Forecast that estimates performance metrics over a 10 year outlook on a corporate and facility level. Suncor also uses an annual price planning assumption (PPA) process, which summarizes Suncor's rationale for long-run pricing assumptions and is used in the business plan and all economic evaluations. Outlooks for water prices and other economic related factors inform long term business objectives. Our water management focus includes: 1.Optimising water reduction and recycling opportunities while balancing the net environmental impact and associated costs of both 2.Ongoing management of our water from tailings/ management of water in closure activities Suncor's Operational Excellence strategic goals are implemented through the goal setting and business planning processes, through which the organization confirms, adjusts and aligns its business direction. Those processes include review of long term business plans, establishment of capital and operating budgets, and goals translation. The intent is to establish the requirements for setting goals or targets and to develop associated business plans. Implementation of these requirements is intended to assist in ensuring expected contributions, priorities and deliverables are understood and followed throughout the organization.</td>
<td></td>
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</tbody>
</table>

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<table>
<thead>
<tr>
<th><strong>Strategy for achieving long-term objectives</strong></th>
<th><strong>Are water-related issues integrated?</strong></th>
<th><strong>Long-term time horizon (years)</strong></th>
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Are water-related issues integrated? | Long-term time horizon (years) | Please explain
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W7.2

(W7.2) What is the trend in your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

| Water-related CAPEX (+/- % change) | Anticipated forward trend for CAPEX (+/- % change) | Water-related OPEX (+/- % change) | Anticipated forward trend for OPEX (+/- % change) | Please explain
--- | --- | --- | --- | ---
Row 1 |  |  |  | Suncor’s accounting system is not setup organizationally to attribute CAPEX and OPEX figures to water from across the company that meets the definitions provided by CDP in the guidance document. As such, any numbers Suncor would produce would be an estimate subject to significant error and not useful for a year over year comparison.

W7.3

(W7.3) Does your organization use climate-related scenario analysis to inform its business strategy?
We used three scenarios defined by IHS Markit as the basis for the development of the Suncor corporate wide climate related scenarios. The IHS Markit Autonomy, Rivalry and Vertigo scenarios have been modified to fit our unique circumstances/needs. Suncor has developed models and tools that allow us to understand available water quantity and quality at the local level. This analysis involves risk assessment, sustainability forecasting and some business unit/regional level scenario analysis, which helps inform future business planning. However, these models/tools are being developed to capture basin level projections that would better inform local water risks. Suncor is actively working on understanding and integrating water related scenario analysis in our corporate climate-related scenario analysis, which will help inform business strategy.

(W7.3a) Has your organization identified any water-related outcomes from your climate-related scenario analysis?
No

(W7.4) Does your company use an internal price on water?
Yes

Please explain
Suncor’s Operational Excellence strategic goals are implemented through the goal setting and business planning processes, through which the organization confirms, adjusts and aligns its business direction. Those processes include review of long term business plans, establishment of capital and operating budgets, and goals translation. The intent is to establish the requirements for setting goals and targets and to develop associated business plans. Implementation of these requirements is intended to assist in ensuring expected contributions, priorities and deliverables are understood and followed throughout the organization. Suncor uses an annual Price Planning Assumption (PPA) process, which summarizes Suncor’s rationale for long-run pricing assumptions and is used in the business plan and all economic evaluations. Suncor is also developing tools that look specifically at the trade-off between water and other environmental issues.

W8. Targets
W8.1

(W8.1) Describe your approach to setting and monitoring water-related targets and/or goals.

<table>
<thead>
<tr>
<th>Levels for targets and/or goals</th>
<th>Monitoring at corporate level</th>
<th>Approach to setting and monitoring targets and/or goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company-wide targets and goals</td>
<td>Targets are monitored at the corporate level</td>
<td>Suncor is currently in the process of developing a new water goal. We met our target for the previous corporate Water Goal. Site and/or facility level targets/goals are influenced by Canada's oil Sands Innovation Alliance (COSIA) for Oil Sands and In Situ projects. Technologies and innovative ideas are generated through COSIA that are specific to water to increase efficiency across the oil and gas industry. (<a href="https://www.cosia.ca/initiatives/water">https://www.cosia.ca/initiatives/water</a>) Basin specific targets and goals are addressed through multi-stakeholder working groups that Suncor is a part of the Lower Athabasca Regional Plan (LARP), including the Athabasca Watershed Council.</td>
</tr>
<tr>
<td>Business level specific targets and/or goals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site/facility specific targets and/or goals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basin specific targets and/or goals</td>
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<td></td>
</tr>
</tbody>
</table>

W8.1a

(W8.1a) Provide details of your water targets that are monitored at the corporate level, and the progress made.

**Target reference number**

Target 1

**Category of target**

Water withdrawals

**Level**

Site/facility

**Primary motivation**

Water stewardship

**Description of target**

Suncor’s Oil Sands Base plant set an operational goal to reduce fresh river water withdrawal. River Water import to the site is very influential to overall tailings containment and the business objective to reduce fresh water withdrawal, which was achieved in 2017.

**Quantitative metric**

% reduction of water withdrawals from surface water

**Baseline year**
Please explain
Suncor Oil Sands Base plant set out two key areas of opportunity for reducing fresh river water intake in the reporting year. Both projects were completed and are delivering full benefit. Fresh water consumption at Oil Sands Base Plant reduction in 2017 is due to a focus on optimizing our wastewater recycle. This included modifications and improvements to our industrial wastewater system that were implemented in 2017. The fresh water consumption in 2016 increased due to the forest fires impacting the industrial recycle rates and the unplanned Upgrader 2 turn around 2016 was also extended by more than one month due to the forest fires.

W8.1b

(W8.1b) Provide details of your water goal(s) that are monitored at the corporate level and the progress made.

Goal
Other, please specify (Reducing fresh water consumption)

Level
Company-wide

Motivation
Water stewardship

Description of goal
We committed to reducing our company-wide fresh water consumption by 12% by 2015 (as compared to 2007).

Baseline year

Start year

End year

Progress
Suncor strives to continuously improve our water performance. We successfully met that goal with fresh water consumption 27% lower than our 2007 usage in 2015.
**Goal**  
Other, please specify (Improving water use efficiency)  

**Level**  
Business activity  

**Motivation**  
Water stewardship  

**Description of goal**  
Suncor is working with Canadian Oil Sands Innovation Alliance (COSIA) to achieve the COSIA water goals. The first goal is to reduce freshwater use intensity by 50 per cent by 2022 for in situ projects.  

**Baseline year**  
2012  

**Start year**  
2012  

**End year**  
2022  

**Progress**  
There are a number of areas COSIA members are focusing on to deliver this 50% reduction: 1. Improving water treatment processes. 2. Improving steam generation efficiency. 3. Reducing boiler blowdown waste and improving disposal techniques.

---

**Goal**  
Other, please specify (Improving water use efficiency)  

**Level**  
Business activity  

**Motivation**  
Water stewardship  

**Description of goal**  
Suncor is working with Canadian Oil Sands Innovation Alliance (COSIA) to achieve the COSIA water goals. The second goal is to reduce the net water use intensity from the Athabasca River and its tributaries by 30 per cent by 2022 for mining projects. This 30 per cent reduction is intended to be achieved while adhering to sustainable water management principles of ‘reduce-reuse-return’ for all mine sites.  

**Baseline year**  
2012
Start year
2012
End year
2022
Progress
This 30\% reduction is intended to be achieved while adhering to sustainable water management principles of ‘reduce-reuse-return’ for all mine sites, more specifically: 1. Optimising water reduction and recycling opportunities while balancing the net environmental impact and associated costs of both. 2. Reducing the amount of water retained in tailings. 3. Confirming the technical basis for returning treated water to the Athabasca River while meeting all environmental and regulatory requirements. 4. Understanding and managing the cumulative effects on the Athabasca River watershed. 5. Further improving the knowledge and understanding of pit lakes. 6. Specific challenges and opportunities – Salts.

W9. Linkages and trade-offs

W9.1

(W9.1) Has your organization identified any linkages or tradeoffs between water and other environmental issues in its direct operations and/or other parts of its value chain?
Yes

W9.1a

(W9.1a) Describe the linkages or tradeoffs and the related management policy or action.

Linkage or tradeoff
Tradeoff
Type of linkage/tradeoff
Increased GHG emissions
Description of linkage/tradeoff
Increased water recycling and a smaller water footprint could lead to more complex water treatment unit processes, which would cause higher energy usage and increased GHG emissions. These could be quantified via emissions reporting.
Policy or action
Suncor includes requirements as part of its asset development execution model to consider net environmental effects as well as potential social impact of development options. The objective is to have environment, social and economics considered prior to concept selection. Water quality/quantity, energy/GHG, air emissions, waste, land impacts/risks are part of the evaluation. There has not been a change in the measured impact of the trade-off in the reporting year.

<table>
<thead>
<tr>
<th>Linkage or tradeoff</th>
<th>Tradeoff</th>
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</thead>
<tbody>
<tr>
<td><strong>Type of linkage/tradeoff</strong></td>
<td>Other, please specify (Increased maintenance/reliability costs)</td>
</tr>
<tr>
<td><strong>Description of linkage/tradeoff</strong></td>
<td>Increased water recycling could degrade circulating water quality leading to increased scaling and corrosion rates and potentially operating performance, and increased maintenance and reliability costs.</td>
</tr>
</tbody>
</table>

**Policy or action**

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<tbody>
<tr>
<td><strong>Type of linkage/tradeoff</strong></td>
<td>Increased energy use</td>
</tr>
<tr>
<td><strong>Description of linkage/tradeoff</strong></td>
<td>Using saline water for oil sands and in situ water makeup requirement could result in reduced water efficiency, increased volume of wastewater disposal, overall higher energy use and increased land disturbance for well and pipeline infrastructure.</td>
</tr>
</tbody>
</table>

**Policy or action**

Suncor includes requirements as part of its asset development execution model to consider net environmental effects as well as potential social impact of development options. The objective is to have environment, social and economics considered prior to concept selection. Water quality/quantity, energy/GHG, air emissions, waste, land impacts/risks are part of the evaluation. There has not been a change in the measured impact of the trade-off in the reporting year.
Tradeoff

**Type of linkage/tradeoff**
Increased wastewater treatment

**Description of linkage/tradeoff**
The need for water return leads to an increase in wastewater treatment. Wastewater treatment allows for water to be returned to the source, but requires a significant amount of energy.

**Policy or action**
Suncor includes requirements as part of its asset development execution model to consider net environmental effects as well as potential social impact of development options. The objective is to have environment, social and economics considered prior to concept selection. Water quality/quantity, energy/GHG, Air emissions, waste, land impacts/risks are part of the evaluation. There has not been a change in the measured impact of the trade-off in the reporting year.

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**W10. Verification**

**W10.1**

*(W10.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1d)*?

No, we do not currently verify any other water information reported in our CDP disclosure

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**W11. Sign off**

**W-FI**

*(W-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.*

[Advisories] Forward-Looking Statements: These responses contain certain forward-looking statements and forward-looking information (collectively, forward-looking statements) based on Suncor’s current expectations, estimates, projections and assumptions that were made by Suncor in light of information available at the time these responses were prepared. Some of the forward-looking statements may be identified by words like “expected”, “will”, “estimated”, “could”, “anticipates”, “intended”, “may”, “forecast”, “potential”, “strategy”, “goal”, “objective”, “outlook”, “target” and similar expressions. Forward-looking statements in these responses include references to: Suncor’s models and tools to anticipate future trends and sustainability planning forecast; Suncor’s goal to improve environmental performance;
Suncor’s work to establish a new water goal and the timing thereof, and Suncor’s ambition to use water more effectively; the expectation that continued monitoring of the watersheds in which Suncor operates will help the company adapt and continue to take appropriate actions to reduce its water footprint; Suncor’s goal of capturing the largest water-related issues early and launching appropriate mitigation; Suncor’s pilot project to assess supply chain risks and opportunities; the next phase of sustainability integration into Suncor’s business; potential impacts of regulations; potential impact of water risks to the company’s business, including the potential timing, financial impact and cost to respond; Suncor’s strategies, plans and focuses relating to water; expectations relating to technologies, including potential benefits; Suncor’s water management focus; Suncor striving to continuously improve water performance; and COSIA’s water goals and focus. Forward-looking statements are not guarantees of future performance and involve a number of risks and uncertainties, some that are similar to other oil and gas companies and some that are unique to our company. Suncor’s actual results may differ materially from those expressed or implied by our forward-looking statements and you are cautioned not to place undue reliance on them. Suncor’s Management’s Discussion & Analysis for the second quarter of 2018 and its most recently filed Annual Information Form/Form 40-F, Annual Report to Shareholders and other documents it files from time to time with securities regulatory authorities describe the risks, uncertainties, material assumptions and other factors that could influence actual results and such factors are incorporated herein by reference. Copies of these documents are available without charge from Suncor or by referring to the company’s profile on SEDAR at sedar.com or EDGAR at sec.gov. Except as required by applicable securities laws, Suncor disclaims any intention or obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. BOEs: Certain natural gas volumes have been converted to barrels of oil equivalent (boe) on the basis of one barrel to six thousand cubic feet. Any figure presented in boe may be misleading, particularly if used in isolation. A conversion ratio of one barrel of crude oil or natural gas liquids to six thousand cubic feet of natural gas is based on an energy equivalency conversion method primarily applicable at the burner tip and does not necessarily represent a value equivalency at the wellhead. Given that the value ratio based on the current price of crude oil as compared to natural gas is significantly different from the energy equivalency of 6:1, utilizing a conversion on a 6:1 basis may be misleading as an indication of value.

**W11.1**

(W11.1) Provide details for the person that has signed off (approved) your CDP water response.

<table>
<thead>
<tr>
<th>Job title</th>
<th>Corresponding job category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director in Outreach and Disclosure at Suncor Energy.</td>
<td>Environment/Sustainability manager</td>
</tr>
</tbody>
</table>

**W11.2**
(W11.2) Please indicate whether your organization agrees for CDP to transfer your publicly disclosed data on your impact and risk response strategies to the CEO Water Mandate’s Water Action Hub [applies only to W2.1a (response to impacts), W4.2 and W4.2a (response to risks)].

No

Submit your response

In which language are you submitting your response?
English

Please confirm how your response should be handled by CDP

<table>
<thead>
<tr>
<th>I am submitting my response</th>
<th>Public or Non-Public Submission</th>
<th>I am submitting to</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public</td>
<td>Investors</td>
</tr>
</tbody>
</table>

Please confirm below
I have read and accept the applicable Terms

- W0. Introduction
- W1. Current state
- W2. Business impacts
- W3. Procedures
- W4. Risks and opportunities
- W5. Facility-level water accounting
- W6. Governance
- W7. Business strategy
- W8. Targets
- W9. Linkages and trade-offs
- W10. Verification
- W11. Sign off
- Submit your response