



Alberta Drought Response Plan



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1. Foreword

Drought is a period of critically low water supply caused by below-normal precipitation (snow and rain). It results in decreased surface water and groundwater supplies and soil moisture. There are many different accepted definitions of drought, depending on those who are affected and the factors to which they are exposed such as precipitation, stream flow, lake and reservoir levels, groundwater supplies, soil moisture, crop yields, pasture conditions and economic impacts. There are meteorological, agricultural, hydrological, and socio-economic types of droughts.

Water is used throughout Alberta's economy, across all communities, and is essential for the sustainability of our environment. Water is used for everything from filling small dugouts for agriculture, to use in factories and plants, fire suppression and power generation, growing crops and watering livestock, and by all Albertans for their daily household needs, including drinking, cooking and cleaning. Water use, delivery and the return of wastewater to receiving water bodies is also extremely complex. Water moves from the environment to human use points and back again through a complicated array of rivers and lakes, water storage reservoirs and canals, intakes and outflows. As water use is so pervasive throughout Alberta's society and the actual delivery and discharge mechanisms are interconnected, water management, especially during drought, requires all Albertans to share responsibility, conserve water and work together to achieve the best possible outcomes for all.

The onset, severity, and length of drought is unpredictable due to the inability to forecast precipitation with certainty for time periods greater than a few weeks. As such, the drought response plan needs to be conservative, proactive and flexible to adjust to constantly changing drought conditions.

Alberta Environment and Protected Areas (EPA) is responsible for the protection and management of water resources within the province of Alberta. The Alberta Emergency Plan identifies EPA as the lead organization for drought. As lead organization, EPA is responsible for drought response coordination operations, and this response plan will guide its work and the provincial response.

Summary of Revisions

Version/Date	Summary of Revisions
May 2, 2024	Drought Response Plan published

1.0 Introduction

1.1 Intent of Drought Response Plan

The intent of the Alberta Drought Response Plan is to ensure Alberta is well-prepared for the potential of widespread drought. The plan describes all preparation, planning and response activities that EPA will implement to effectively address the full range of possible drought conditions, which may range from localized impacts to multiple river basins simultaneously. In all cases, as the challenges that occur during drought can be variable and complex, a coordinated provincial response is necessary. The plan compliments the department's existing regional water shortage response plans. Given the dynamic nature of planning for a severe drought and the complexities of Alberta's water management system, the plan is intended to be proactive and flexible enough to address changing drought conditions as they occur.

1.2 Plan Applicability

EPA is the Government of Alberta lead organization for drought. This plan applies to drought response activities across EPA, Alberta Agriculture and Irrigation (AGI), Alberta Municipal Affairs (MA), Alberta Forestry and Parks (FP), the Alberta Energy Regulator (AER), and other partner ministries.

1.3 Alberta Drought Response Plan Objectives

The objectives of the Alberta Drought Response Plan are:

- Protecting the health and safety of Albertans from the impacts of drought.
- Minimizing the impacts of drought on Alberta's communities, economy and the environment.
- Implementing a proactive, risk-based approach to rapidly assess, prepare for and respond to the impacts of a drought.
- Ensuring response to drought conditions is agile and adjusted in real time as information changes.
- Enabling all Albertans to take appropriate action to conserve water and work together.

1.4 Water Management within the Province

South Saskatchewan River Basin (SSRB)

In 2007, the Bow, Oldman and South Saskatchewan River sub-basins within southern Alberta were closed to new allocations of water except under very limited circumstances, and interim allocation limits were placed on the Red Deer River sub-basin. Water license transfers are the primary regulatory mechanism to move existing licensed allocations of water from one user to another under the closure. Several types of statutory decisions under the *Water Act*, including license transfer decisions, are also subject to additional matters and factors set out in the approved Water Management Plan for the SSRB that must be considered in addition to those already specified in the *Water Act*. Many water licenses within the SSRB are also subject to specific water management thresholds, including timing restrictions and low flow restrictions, often referenced as Instream Objectives (IOs) and Water Conservation Objectives (WCOs), under which licensed diversions must cease.

Within the SSRB, the 1969 Master Agreement on Apportionment (MAA) sets out the approach for apportionment and specific commitments between Alberta and Saskatchewan. The parties of the MAA include the governments of Alberta, Manitoba, Saskatchewan, and Canada. The MAA is administered by the Prairie Provinces Water Board (PPWB), of which Alberta is a member. Under the MAA, Alberta is committed to sending 50 per cent of the natural flow from the South Saskatchewan and Red Deer Rivers to Saskatchewan each year. Overall water management within the SSRB is also unique in that it is heavily influenced by large government and privately owned water storage reservoir and canal conveyance infrastructure that is primarily focused on water availability for agricultural irrigation.

Milk River Basin

The Milk River Basin does not form part of the SSRB. The basin is located in the far south of the province and traverses the Canada and United States border. The waters that flow through the basin are augmented by an upstream diversion structure on the St. Mary River Basin in Montana. Water apportionment in the basin is administered under the Boundary Waters Treaty, which governs the sharing of water between Canada (Alberta) and the United States (Montana). The regulatory connection to the treaty is through the terms and conditions of individual *Water Act* licenses issued to Milk River water users, which include conditions to comply with the requirements of the treaty. The treaty does not apply to diversions of water for municipal purposes, such as the Town of Milk River's raw water supply.

Northern Basin

The Northern Basin is comprised of four river basins: the North Saskatchewan River Basin, Peace-Athabasca-Slave River Basin, Hay River Basin and the Beaver River Basin. Although not as intensively managed as the rivers within the SSRB, the three Northern Basins contain almost 90 per cent of the province's water.

The North Saskatchewan River Basin (NSRB) covers approximately 12 per cent of the province. It is drained by one major river, the North Saskatchewan, which originates in the icefields near the British Columbia-Alberta border. The Battle River, which joins the North Saskatchewan River in Saskatchewan, rises in central Alberta. The entire basin has six per cent of the total river flow in the province. Like the SSRB, the NSRB is subject to the 1969 MAA that commits Alberta to send 50 per cent of the natural flow from the North Saskatchewan River to Saskatchewan each year.

The Peace-Athabasca-Slave River Basin occupies 64 per cent of the province and is the largest and most northerly river basin in the province. The large Peace River begins in the B.C. mountains and flows northeast across Alberta to the Peace-Athabasca Delta. The Athabasca River begins at the Athabasca Glacier in Alberta and also flows northeast to the delta. The Slave River carries water from the Peace and Athabasca rivers into the Northwest Territories. The Peace-Athabasca-Slave River Basin is a part of the Mackenzie River Basin, which empties into the Arctic Ocean. Most of Alberta's river flow (86 per cent) follows this route. In 1997, the Mackenzie River Basin Transboundary Water Master Agreement was signed by the provinces of Alberta, Saskatchewan, British Columbia, the Northwest Territories and Yukon as well as the Government of Canada. In signing this agreement, each province committed to transboundary water management and specific cooperative measures for protection of the overall watershed.

The Hay River Basin in the northwest corner of Alberta originates in B.C.'s mountains and eventually empties into the Arctic Ocean. Two lakes within the basin, Zama and Hay, are recognized for their particular importance to wildlife.

The Beaver River Basin (BRB) is a small basin that occupies approximately three percent of Alberta in the Boreal Forest Natural Region. Its major rivers, the Beaver and Sand, originate in northeastern Alberta and are relatively small in volume; the river flow in the basin amounts to less than one percent of the province's total. The Beaver River flows eastward as part of the Churchill River Basin that empties into the Hudson Bay. The BRB is not currently a part of any interprovincial apportionment agreement.

2.0 Government of Alberta Stages of Drought Response

Droughts are complex, can fluctuate in severity, temporarily improve or worsen, and can have different effects depending on their geographical location in the province. As lead agency, EPA will proceed through five stages of drought response depending on the severity, spatial extent and duration of any drought event. Alberta's stages of drought response will be evaluated seasonally and modified as drought conditions change to reflect the provincial response and/or status of an individual river system or basin.

DIAGRAM 1: ENVIRONMENT AND PROTECTED AREAS' STAGES OF DROUGHT RESPONSE

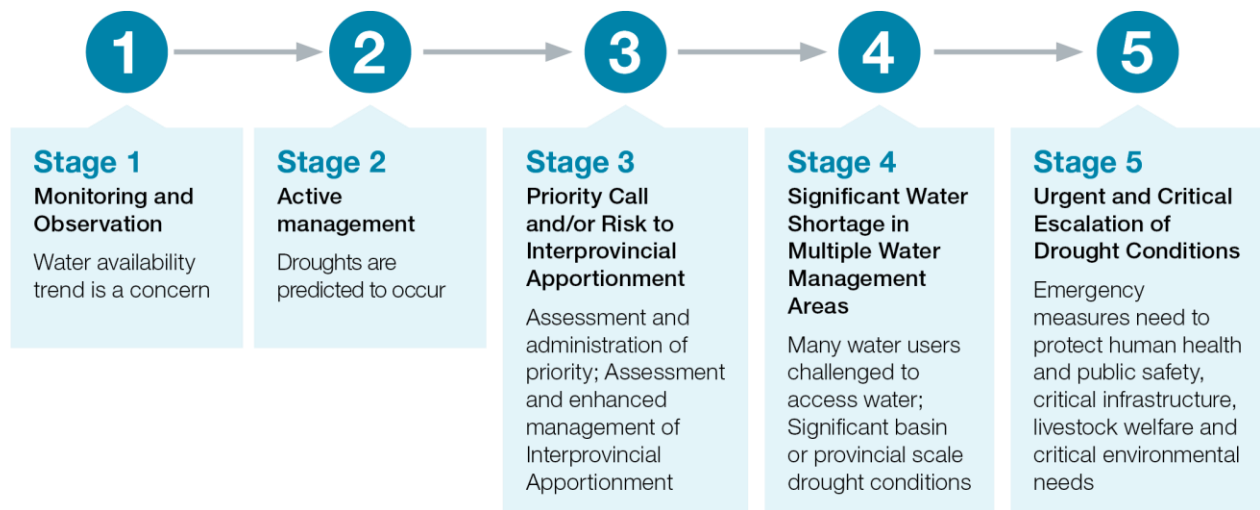


TABLE 1: GOVERNMENT OF ALBERTA STAGES OF DROUGHT RESPONSE

Management Stage	Stage Triggers	Management Actions
Stage 1: Monitoring and Observation	<ul style="list-style-type: none"> The Water Supply Outlook indicates there may be potential water shortages in a water management area. There is an elevated risk of a priority call or risk of failure to meet interprovincial apportionment requirements. Risk of loss to riparian areas, or instream objectives or water conservation objectives not met. 	<ul style="list-style-type: none"> An interdisciplinary Drought Response Team is formed to monitor the developing situation, identify resources, manage communications, and implement the appropriate drought response procedures. Information such as reservoir storage, snowpack, predicted precipitation, current conditions and anticipated water use will be assessed to determine risk to water users and other provincial responsibilities such as interprovincial apportionment. Risks are mitigated using regulatory and non-regulatory tools.

Management Stage	Stage Triggers	Management Actions
Stage 2: Active Management	<ul style="list-style-type: none"> • Stream flows are below Instream Objectives or Water Conservation Objectives and are forecast to not improve. • Impacts to some water users are occurring. • Impacts to the aquatic environment are occurring. 	<ul style="list-style-type: none"> • Public communication of drought conditions and possible measures to alleviate the impacts of drought, including local entities taking action to conserve water where appropriate. • Response activities will consider suspending or cancelling all temporary diversion licenses in the affected water management area(s). • Water shortage advisories on the Alberta River Basins website for the affected water management areas will be posted. • EPA staff work directly with water users to ensure compliance with conditions within water licenses and to support alternative sources of water supply where possible. • Enhanced monitoring of impacts of drought on community, economic and environmental outcomes.
Stage 3: Priority call and/or risk to interprovincial apportionment	<p>Conditions degrade to a point where:</p> <ul style="list-style-type: none"> • EPA receives a priority call from a licensee, registrant and/or household user; or, • Predictive modelling indicates a concern that interprovincial apportionment obligations may not be met; or, • Some water users that normally have access to water are experiencing water shortage (even if a priority call is not received) 	<ul style="list-style-type: none"> • Drought Response Team is replaced by Drought Emergency Operations Center. • Priority calls will be assessed, and where validated, response actions will be undertaken as required, including the potential issuance of water management orders to ensure that water license priority is maintained. • Detailed water supply and use monitoring and modelling are implemented to inform both priority administration and interprovincial apportionment management. • Broad public information dissemination to encourage appropriate water conservation measures. Direct engagement with key water users to collaborate on appropriate water conservation measures. • Field level support for water users that are not receiving enough water occurs. Goal is to obtain alternative sources of water where possible. • Water-sharing agreements may be considered and activated.
Stage 4: Significant water shortage in multiple water management areas	<p>Conditions degrade to a point where:</p> <ul style="list-style-type: none"> • A significant number of water users in multiple water management areas are impacted and are challenged to divert water; or 	<ul style="list-style-type: none"> • Develop and implement water-sharing agreements with large water users (licensees) to conserve water so that water is available for as many water users as possible.

Management Stage	Stage Triggers	Management Actions
	<ul style="list-style-type: none"> The drought persists or is projected to persist with potential provincial or regional scale community, economic and environmental impacts. 	<ul style="list-style-type: none"> Broad public information dissemination to encourage appropriate water conservation measures. Engagement with all water users to collaborate on appropriate water conservation measures directly. Significant field level support for water users that are not receiving enough water occurs. Goal is to obtain alternative sources of water where possible. Weekly water supply and use assessments are conducted and communicated to water users.
<p>Stage 5: Urgent and critical escalation of drought conditions</p>	<p>Existing management actions cannot ensure drinking water for humans, protect public safety, critical infrastructure, livestock welfare or critical environmental needs.</p>	<ul style="list-style-type: none"> Activities and resources deployed through Stages 1-4 are applied for maximum emergency response. When all options have been exhausted and drought conditions are so severe that impacts to human health and public safety, critical infrastructure, livestock welfare or critical environmental needs could occur, a local, regional or provincial-scale emergency can be declared under Section 107 of the <i>Water Act</i> to prevent those impacts from occurring.

3.0 Non-Regulatory Approaches and Regulatory Tools

3.1 Introduction

Previous drought management experiences have demonstrated that responses to drought are most effective when multiple management approaches are applied in unison. Given that EPA is the primary regulator and overall administrator of Alberta's water management system, the department can apply both non-regulatory approaches and regulatory tools during a drought response as necessary.

3.2 Legislative Context

EPA utilizes two primary pieces of legislation to address drought, those being the *Water Act* and the *Environmental Protection and Enhancement Act* (EPEA). EPA and the AER have shared authorities under the *Water Act* and EPEA that are applied within their distinct jurisdictions.

Water Act

The *Water Act* supports the conservation and management of water through the allocation of water in Alberta. The Act sets out the legislative framework for the priority of water diversions amongst users, instruments available for the diversion and use of water, and a variety of compliance measures available to ensure the objectives of the Act are met. The Act has both authorization and compliance components that support drought response.

Environmental Protection and Enhancement Act

The *Environmental Protection and Enhancement Act* sets out the legislative requirements of how air, water, land and biodiversity are managed in Alberta. EPEA supports the protection, enhancement and wise use of the environment by designating activities for which authorizations are required under the Act. The Act has both authorization and compliance components that support drought response.

3.3 Non-Regulatory Approaches

Non-regulatory approaches are voluntary and not required by any Government of Alberta legislation. However, all non-regulatory approaches must not conflict with any provincial legislation or regulation. While EPA plays an important support role, some non-regulatory approaches rely heavily on stakeholder leadership, participation, and collaboration to achieve success. The non-legislative approaches that will be utilized in drought response include outreach and education, voluntary water restrictions, and voluntary water-sharing agreements between water users.

3.4 Outreach and Education

Outreach and education activities include proactive initiated information sharing and discussions with licensees related to the:

- current and predicted future status of drought conditions;
- actions EPA is implementing to address predicted conditions; and
- complimentary strategies that licensees may consider to mitigate the impacts of drought on their water use.

Outreach and education activities may be targeted and scaled as needed to have the greatest impact. For example, focused outreach and education will be implemented with influential water users or water user groups to leverage a greater impact on the overall water management system through things like water-sharing agreements.

Role of EPA

EPA plays an important role as the key technical knowledge holder, primary regulator and manager of Alberta's water system. As part of drought response EPA is both an initiator and facilitator of pre-planned outreach and communications activities, as well as a source for reactive outreach and education activities based on stakeholder enquiries.

Outreach and Education for Drought Response

EPA will execute an Outreach and Education Implementation Plan to support effective drought response. The implementation plan describes tasks, timing and leads for five major areas of work including:

1. Sharing information publicly on the current drought conditions, future drought scenarios, and drought response actions being undertaken or considered.
2. Conducting public awareness campaign before severe drought occurs, to ensure that all Albertans have the information that they need to conserve water appropriately.
3. Direct engagement with water users (water license holders) and other partners with interests in water management.
4. Ensuring that other Government of Alberta departments and elected officials are kept informed.
5. The effective implementation of regulatory tools where education and awareness of regulated parties is a key component of regulatory and non-regulatory approaches to drought conditions.

3.5 Voluntary Water Restrictions

Voluntary water restrictions are self-imposed actions that limit the use of water for certain purposes to preserve water supply. Voluntary water restrictions are often referenced in the context drought response plans administered by local authorities or commercial and industrial entities; however, these authorities and entities may decide to enact such measures at any time. The decision to enact voluntary water restrictions is often informed by EPA data sources or by the individual circumstances of the licensee. EPA encourages and supports voluntary water restriction approaches as they contribute to the overall mitigation of drought impacts, and in many cases early voluntary restrictions help ensure communities and commercial entities avoid increasingly stringent restrictions, mandatory regulatory actions, or loss of water access.

Voluntary water restrictions include water conservation measures by water users and more overt self-imposed rules that licensee may place on themselves or the users they supply. Water conservation measures can range in scope and scale and include measures to minimize non-essential water use at their homes or businesses.

Water license holders may also choose to self-impose rules for their authorized water use. This is mostly seen in the municipal context, where communities that hold water licenses may implement bylaws and drought response plans requiring themselves and their water users to restrict certain uses of water. Restrictions may escalate as drought conditions worsen. For example, the initial stages of water restrictions typically include restrictions on things like municipal and household lawn watering but may progress as drought conditions worsen to restricting all non-critical municipal and household water uses.

Role of EPA

EPA's primary role in supporting voluntary water restrictions is by providing data, such as real-time flow data, as well as general information related how to prepare water shortage response plans.

Voluntary water restrictions are enacted and enforced (where applicable) at the discretion of the licensee.

Voluntary Water Restrictions for Drought Response

EPA takes an active role in advocating that stakeholders draft and maintain voluntary water shortage response plans through the Outreach and Education Implementation Plan noted in Section 3.2.1 of this plan. EPA has a comprehensive online document that licensees and other water users can access to support the drafting of plans. The document is intended to inform the licensee regarding drought risks related to their water supply, assist in the analysis of potential options for addressing drought risks, and to support sustainable plan implementation.

It should be noted that some licensees within the SSRB have a regulatory requirement to submit a water shortage response plan under the terms and conditions of their water license.

3.6 Water-Sharing Agreements

Water-sharing agreements are the most important tool that Alberta has to manage significant drought (Stages 3 to 5). The central premise is that the largest and most senior licensees agree to take less water, which leaves water in the system for other water users. These agreements are collaborative and voluntary and are between licensees within a river basin or sub-basin. They must be regulatorily compliant (they need to be consistent with the *Water Act*), but they are not regulated, and the Government of Alberta is not a party in the agreement(s).

Water-sharing agreements come with a direct economic cost to the senior water license holders. They are agreeing to take less water to benefit others. This is why it is vital for all water users (senior or junior) to conserve water during significant drought.

Role of EPA

EPA's role in supporting water-sharing agreements is to initiate and facilitate the agreement development process, to provide technical and regulatory information to inform the agreement, and to monitor the outcomes of the agreements to ensure that sufficient water is being maintained in the system to provide access to water by as many water users as possible.

How Water-Sharing Agreements Work

Although water-sharing agreements can occur between any licensees, agreements that involve licensees with large volume water allocations and senior license priorities most likely to provide the greatest benefit to the overall water management system. Such agreements are predicated on the idea of large/consequential water users taking the initiative to voluntarily reduce diversions (take less water) so that there is more water in the overall system for smaller and more junior licensees to have access to their own existing allocations.

Water-sharing agreements do not allow senior licensees to direct who may receive the water they did not divert. Agreements do not change the priorities or increase the allocations of junior licensees. The agreements are formalized through a voluntary, non-binding Memorandum of Understanding (MOU) signed by the parties to the agreement. The MOU is typically a public document but does not have to be. EPA monitors the outcome of the agreement, meaning the availability of water for all water users, but does not monitor the actions of individual parties to the agreement.

Water-Sharing Agreements for Emergency Response

Water-sharing agreements take time to develop, often several months. EPA will initiate water-sharing agreement discussion amongst senior license holders early enough that the agreements are complete and ready for implementation before drought conditions warrant their implementation.

Once the agreement is complete, EPA will conduct regular meetings with the parties to the agreement to collectively determine when the agreement should be implemented and how the water use of the participants should change as drought conditions change. Once drought conditions have passed, the water-sharing agreements will be discontinued.

3.7 Regulatory Tools – Authorizations

Authorization Introduction

This section of the plan focuses on authorizations under the *Water Act* to support drought response. It is recognized that there may be secondary authorizations under other pieces of provincial legislation that may be important to address the far-reaching impacts of drought, including the *Environmental Protection and Enhancement Act* and *Public Lands Act*. In general, *Water Act* authorizations are legal instruments of the legislation that contain terms and conditions for the authorized diversion of water or approval for carrying out activities in or near waterbodies.

The authorization activities under the *Water Act* that support drought response include the issuance of new authorizations or the amendment of existing authorizations. Examples of authorization types pertinent to drought management include:

- approved water shortage response plans;
- temporary diversion licenses;
- short-term (temporary) water license transfers; and
- agreements to assign water and approvals under the *Water Act*.

Under authorization scenarios, the party impacted by drought plays the role of initiating the formal regulatory process via an application to the department. EPA plays the role of the statutory decision maker with respect to the application, as well as a regulatory assurance verification role with respect to the authorization holder's compliance with requirements of their authorizations.

EPA can support authorized parties/members of the public throughout the authorization process, but they themselves must submit a complete application to the department which can be considered for approval. EPA will be applying an enhanced level of pre-application support and implementing expedited authorization processes to actively assist those impacted by drought. The AER provides a similar role for oil, gas and coal exploration and development projects.

Approved Water Shortage Response Plans

Some water licenses within the SSRB contain terms and conditions requiring the licensee follow an approved water shortage response plan. The plan is submitted by the licensee along with the transfer application, and eventually forms part of final license.

Applicability in Drought Response

Instream flow restrictions are common within water licenses issued within the SSRB. The requirement for a licensee to comply with an approved water shortage plan is a proactive regulatory mechanism to ensure that licensees have adequate plans in place should flow restrictions within their license obligate them to cease license diversions. In some cases, approved plans align with regional or provincial response plan escalation criteria.

Use in Drought Response

Licensees with approved water shortage response plans are obligated to implement the plan during drought conditions. EPA will conduct compliance verification activities with respect to licensee compliance with approved water shortage response plans in alignment with operational drought response objectives.

3.8 Temporary Diversion Licenses (Section 62 of the *Water Act*)

A Temporary Diversion License (TDL) grants a temporary authorization for the diversion of water from a surface or groundwater sources. TDLs are issued for a short-term (one year or less) and may be issued for a variety of purposes. TDLs can be issued in a relatively rapid fashion, and TDL approval decisions are subject to notice and appeal provisions of the Act. TDLs can also be issued within basins that are closed to new permanent allocations of water such as the SSRB. However, TDLs do not receive a priority number and are often subject to instream flow restrictions, which means they are one of the first types of authorized diversions that must cease when EPA administers a priority, or when instream flow restrictions are not met.

Applicability in Drought Response

TDLs can be considered to temporarily authorize diversions of water from alternative sources for either existing or new licensees. In some cases, TDLs can also be used as a 'bridging authorization' to allow for temporary water use while a more permanent or appropriate water source is authorized.

Use in Drought Response

EPA will utilize TDLs as one of the regulatory tools to support drought response. EPA will provide enhanced support to licensees who require a TDL to access alternative water supplies. EPA has developed a temporary livestock watering program to provide this support to agricultural producers.

3.9 Water License Transfers (Section 81 of the Water Act)

A water transfer is a transfer of all or part of licensed water allocation from an existing license to another licensee or new water user. Transfers are the primary method a new or existing water user to new or additional water supplies within the SSRB which is closed to new allocations of water.

A license transfer can be made either permanently or for a specified period of time, and result in the issuance of a new license with the same terms, conditions and priority number as the license from which the allocation was transferred. Short-term or 'temporary' transfers are the most practical form of transfer authorization to support drought response within the SSRB due to the closure of the basin and the numerous instream flow restrictions on watercourses within the basin. Short-term transfers are subject to the applicable notice and appeal provisions of the *Water Act*.

Regardless of the transfer type, a 30-day public notice of the transfer application is required under the *Water Act*.

Applicability to Drought Response

Short-term transfers can be considered in situations where an existing licensee has terms and conditions that prevent them from continuing to undertake authorized diversions of water (e.g., instream flow restrictions, timing restrictions, junior priority, etc.), or where water supply is insufficient to support a water user's need due to drought conditions. A short-term transfer results in a short-term amendment to the transferers license, and a new short-term license issued to the transferee.

Use in Drought Response

EPA will support the utilization of short-term transfers as one of the regulatory tools to respond to drought conditions. EPA will implement an expedited transfer process to support short-term transfer applicants. EPA may consider TDLs as a bridging authorization until the short-term transfer authorization process is completed.

3.10 Agreements to Assign Water (Section 33 of the Water Act)

An assignment of water is an agreement between two parties to assign an amount of water that the assigner is authorized to divert to another license or registrant. All or part of the assignor's water allocation can be assigned, the assignment may vary in duration, and the assigned allocation retains the priority number specified in the assigning license. EPA does not formally 'approve' these agreements; however, the agreement must be carried under a specific set of requirements described in the *Water Act*.

EPA may also revoke an agreement where the assignment causes or may cause certain impacts to other water users or the aquatic environment. A significant consideration for agreements to assign water is the requirement that the assigned water allocation (and associated priority) must be diverted under the existing terms and conditions of the authorization that water is being assigned to. For example, this means if an assignee's water license has terms and conditions restricting diversions (flow restrictions, timing restrictions, etc.), those restrictions remain in effect and may prohibit the use of any assigned water. Agreements to assign water are not subject to the notice or appeal provisions of the *Water Act*.

Applicability in Drought Response

Agreements to assign water have limited utility in the context of managing impacts of drought conditions within the SSRB given the number of existing license authorizations which are subject to diversion restrictions. Diversion restrictions within existing licenses are often a primary reason for an existing licensee to seek an alternative source of water, and therefore any agreement to assign water to such a licensee would not remedy the issue.

However, in the circumstances where an agreement to assign water is a viable consideration, close attention must be given to the requirements for the agreement set out in Section 33 of the *Water Act*. Agreements to assign water would likely have greater applicability in Alberta's northern basins during drought conditions.

Use in Drought Response

EPA will support Agreements to Assign Water under Section 33 of the *Water Act* as one of the regulatory tools to mitigate drought conditions. EPA will provide enhanced support through educational materials and regulatory guidance to licensees seeking to utilize Section 33.

3.11 Water License Amendments (Section 54 of the Water Act)

The terms and conditions of water licenses may be amended on the initiative of either EPA or more commonly through application to EPA by the licensee. The *Water Act* specifies that, on application by the licensee, amendments to licenses can include changing or adding diversion rates, changing the timing of diversion, and adding or changing points of water diversion or use. Most types of water license amendment decisions are subject to the applicable notice and appeal provisions of the *Water Act*.

Applicability to Drought Response

Water license amendments can be used as a regulatory support tool to make changes in the terms and conditions of an existing water license to facilitate new or enhanced access to water supplies. Examples of amendments to support emergency response include but are not limited to the following:

- changing or adding a new point of diversion where a river channel has moved away from the original point of diversion due to low or changing water levels;
- changing the purpose of a license to allow for expanded use of an existing water license allocation; or,
- adding a storage reservoir to the works of an existing license to enable use of stored water at times when water levels are low.

Use in Drought Response

EPA will support water license amendments as one of the regulatory tools to mitigate drought conditions by implementing an expedited amendment process under the *Water Act*.

3.12 Water Act Approvals (Section 36 of the Water Act)

Water Act Approvals are time-bound authorizations to conduct activities in or near waterbodies, including but not limited to lakes, rivers and wetlands. Activities requiring an approval are numerous and varied. They include, but are not limited to, construction activities that disturb ground and vegetation on land or in a waterbody in such a way that may result in impacts to water flow, cause siltation or potentially impact the aquatic environment.

Applicability in Drought Response

Water Act Approvals can be used as a regulatory support tool to authorize continued access to water for either regulated or non-regulated purposes. Examples of activities that may be approved to support emergency response include but are not limited to the following:

- construction or alteration a water diversion intake in or near a river;
- excavating a channel within a river to direct water toward an existing water diversion point; or,
- construction of a water storage reservoir within a drainage or waterbody to enable use of stored water at times when water levels are low.

Use in Drought Response

EPA will support approvals as one of the regulatory tools to mitigate drought conditions by implementing an expedited approval process under the *Water Act*.

3.13 Regulatory Tools – Compliance Actions

Compliance Actions Introduction

Compliance actions for drought response include activities undertaken to support EPA's formal administration of the priority right to divert water under the *Water Act*, as well as orders issued under the *Water Act* and EPEA. Compliance actions are initiated by EPA in response to non-compliance with an authorization or the general provisions of the legislation. Orders issued as part of a compliance response are typically directive in nature and may legally compel the order recipient to undertake certain actions to avoid or mitigate adverse impacts to the environment.

Examples of compliance actions pertinent to drought management include:

- water management orders under the *Water Act*,
- environmental and emergency environmental protection orders under EPEA; and

- enforcement orders under both acts.

EPA's compliance approach is founded on the three primary pillars of *education, prevention* and where necessary, *enforcement*. The AER provides a similar role for oil, gas and coal exploration and development projects in Alberta.

3.14 Water Act

Priority Administration (Section 32 of the *Water Act*)

The order in which licensed water users may divert water in Alberta is governed under the *Water Act* via the First in Time; First in Right (FIT FIR) system of prior allocation. Under FIT FIR the licensee with a senior water license priority number has a priority right to divert water over a licensee with a junior water license priority number.

Where there is a dispute with respect to the order in which water is to be diverted (i.e., a 'priority call'), the *Water Act* sets out the framework under which EPA may administer water license priorities, including the issuance of water management orders as a remedy. Priority administration is a fundamental regulatory mechanism by which senior licensees may access their priority right to water before junior licensees during a drought.

Applicability to Drought Response

EPA takes an active role in priority administration. Where junior licensees do not voluntarily comply with EPA's priority administration directions, EPA may issue Water Management Orders compelling junior licensees to cease diversions until the senior licensee's priority is fulfilled. Priority calls do not occur on a regular basis and EPA has administered only three in the past 10 years, all of which occurred in the southern SSRB during drought conditions.

Use in Drought Response

EPA will implement a standardized response protocol for the administration of priority calls that includes a written priority call administration procedure and a GIS-based Priority Tool. The priority call administration procedure is based on four distinct steps which include: 1. Receipt; 2. Assessment; 3. Validation; and 4. Administration.

The Priority Tool provides critical assessment information by displaying all potentially impacted authorizations within the assessment area and providing an electronic database of impacted authorizations that can be used by field staff to administer the call. The validation and administration of a priority call requires a highly integrated approach between staff from EPA's Regulatory Assurance Division (e.g., approvals and compliance) and Resource Stewardship Division (e.g., watershed science and water monitoring).

3.15 Environmental and Enforcement Orders

Water Management Orders (Section 97 of the *Water Act*)

The *Water Act* sets out the specific circumstances under which Water Management Orders may be considered, and the specific terms that orders may contain. Where the requisite legislative requirements to issue a Water Management Order are met, orders may be issued to a wide variety of persons, authorized parties, landowners, household users and other unregulated water users.

Orders may contain terms requiring the submission of specific information and reporting, the requirement to conduct or cease certain actions, and the specific provisions under which the requirements of the order must be carried out. Order decisions are subject to the appeal provisions of the Act, and there are potential enforcement consequences for failing to comply with order conditions.

Applicability to Drought Response

Water Management Orders are the regulatory backstop to priority administration process under the *Water Act*. Where voluntary compliance by junior licensees cannot be achieved in the administration of priority, and the requisite legislative requirements to issue a Water Management Order are met, orders can be used by EPA to remedy the priority call. A key element of these orders is the requirement for junior licensees to either cease diversions or conduct diversions in a specific way to satisfy the priority call.

Use in Drought Response

EPA will implement an expedited approach where Water Management Orders have been identified as the appropriate regulatory tool to address a priority call or other matter related to the drought response. Draft Water Management Order templates have been generated with input from the Alberta Justice, Environmental Law Team for consistent delivery of the approach.

Environmental and Emergency Environmental Protection Orders (Parts 5, 6, 7, 8, and 9 of EPEA)

Sections within Parts 5, 6, 7, 8 and 9 of the *EPEA* set out the specific circumstances under which both Environmental Protection Orders and Emergency Environmental Protection Orders may be considered, and the specific terms they may contain. Where the requisite legislative requirements to issue either of these order types are met, the Act further sets out to whom and under what terms an order may be issued. Both types of orders can be issued to regulated or non-regulated parties.

The objectives of Environmental Protection Orders are focused on preventing the potential or continued occurrence of environmental impacts or broader adverse effects. Emergency Environmental Protection Orders are rarely required and are only considered for the most serious of issues that pose an elevated risk of immediate and significant adverse effects. Order decisions are subject to appeal to the Alberta Environmental Appeal Board by the party who receives the order.

Applicability to Drought Response

Environmental and Emergency Environmental Protection Orders under EPEA are regulatory support tools that may be considered to help address secondary environmental issues related to drought. Secondary issues might include things like water quality concerns related to regulated releases of wastewater to waterbodies with reduced assimilative capacity or impacts to the operations of municipal drinking water systems due to low water levels. In some cases, standard Environmental Protection Orders could be utilized to manage preventive remedial activities to avoid or mitigate the secondary environmental issue. Emergency Environmental Protection Orders will be considered for the most serious and urgent secondary environmental issues should they arise.

Use in Drought Response

EPA has a well-established existing process for the consideration and issuance of Environmental and Emergency Environmental Protection Orders under EPEA. EPEA will implement this process where an Environmental or Emergency Environmental Protection Order are determined to be the most appropriate regulatory tool.

Enforcement Orders (Section 135 of the *Water Act*; Section 210 of EPEA)

The *Water Act* and the *Environmental Protection and Enhancement Act* both set out provisions for the issuance of enforcement orders. Enforcement Orders are specifically related to contraventions of a piece of legislation, regulations, or terms and conditions on an authorization. The *Water Act* and the *Environmental Protection and Enhancement Act* set out broad terms and conditions that can be contained in an Enforcement Order, up to and including the suspension or cancellation of an authorization.

Applicability to Drought Response

Enforcement Orders under the *Water Act* and the *Environmental Protection and Enhancement Act* are regulatory support tools that may be considered where voluntary compliance with authorized parties cannot be achieved, or actions to compel compliance by authorized parties is required to meet an operational drought management objective.

Use in Drought Response

EPA has a well-established process for the consideration and issuance of Enforcement Orders under the *Water Act* and the *Environmental Protection and Enhancement Act*. EPEA will implement this process where an Environmental or Emergency Environmental Protection Order have been determined to be the most appropriate regulatory tool.

3.16 Declaration of Emergency under Section 107 of the Water Act

Section 107 of the *Water Act* sets out the framework under which an emergency may be declared under the Act. The section states that the Lieutenant Governor in Council may declare an emergency and its geographic extent, what additional authorities are granted after an emergency declaration, which authorized water users may be subject to compensation, and that the Lieutenant Governor in Council decides if and what compensation is appropriate.

A declaration of emergency does not replace the regulatory requirements of the *Water Act*, but rather grants additional authorities related to how water may be managed using Water Management Orders. An emergency under Section 107 of the *Water Act* has never been declared in Alberta.

Applicability to Drought Response

Use of Section 107 of the *Water Act* is a measure of last resort. EPA’s goal is to use all non-regulatory and regulatory tools outlined above to ensure human health and public safety are maintained during drought conditions, and that the impacts of drought on our communities, economy and our environment are minimized.

Declaration of a water emergency will be situated around priority uses as outlined in the table below.

Human health and public safety		
<ul style="list-style-type: none"> • Drinking Water • Potable Water for cleaning, bathing and cooking • Water for health care facilities • Maintaining adequate pressure in municipal distribution and wastewater collection systems 		
Critical Infrastructure	Critical Environmental Needs	Livestock Welfare
<ul style="list-style-type: none"> • Power plant operations essential to maintain core service levels and electricity grid stability. • Emergency services (e.g., maintaining fire flow pressure within municipalities) 	<ul style="list-style-type: none"> • Prevent the loss of a species at risk or associated critical habitat. • Flow to dilute wastewater releases 	<ul style="list-style-type: none"> • Livestock watering • Disease prevention and containment.

Human health and safety are the highest priority water use category. Critical infrastructure, critical environmental needs and livestock welfare are equal importance to each other, but secondary to human health and public safety. The table above is not exhaustive and is subject to local needs and circumstances.

Use of the emergency provisions of the *Water Act* will be considered if the following triggers are reached:

1. Drought management actions cannot ensure protection of human health and public safety; critical infrastructure, livestock welfare or critical environmental needs.
2. There is increasing distress among local authorities (e.g., city, town, municipal district, Indigenous communities) in a basin.
3. Alberta’s water management system can no longer support the number of requests for water.

Determining when a trigger may have been reached will be based on indicators (see Appendix 1). It is not expected or recommended that reaching a single indicator may trigger a declaration of an emergency as there may be other management options including regulatory actions that may ease or mitigate the circumstances.

Further, additional factors, such as duration, overlapping priorities or emergencies, or feasibility may also need to be considered within real-time and forecasted drought conditions. Examples of the indicators include:

- Water levels or flow dropping below municipal water intake structures.
- Power plant capacity or operations affected by inadequate water access.
- Livestock producers are affected by inadequate water access.
- Potential impact to species at risk.
- Escalation of a local authority’s (i.e., municipality) drought response.
- Priority calls within an area.

Use in Drought Response

An emergency declaration pursuant to section 107 of the *Water Act* can be specified for any spatial scale, from a small stretch of river, to an entire basin, or to the entire province. Declarations of emergency under section 107 of the *Water Act* grant extra authorities to designated directors under the *Water Act* which are given effect via Water Management Orders issued by the Director under the Act, as authorized by the Lieutenant Governor in Council. The Water Management Orders issued under section 107 must be consistent with the direction provided by the Lieutenant Governor in Council through an Order in Council.

4.0 Organizational Response Structures and Coordination

4.1 Introduction

EPA has implemented organizational response structure to plan and respond to drought based on the principles of the Incident Command System (ICS). The response by EPA escalates based on predicted drought conditions and impacts. The two primary planning and operational organizational structures are the Drought Response Team and the Drought Emergency Operations Center (DEOC). These two structures do not operate at the same time but instead run in series, with the Drought Response Team structure escalating to the DEOC structure at Stage 3 of the five drought management stages (Table 1).

The DEOC integrates with broader departmental and government-wide coordination supports including EPA's Department Coordination Center (DCC) and the Provincial Emergency Coordination Center (PECC) should these structures be activated if drought severity increases.

4.2 Drought Emergency Operations Centre (DEOC)

Beginning at Stage 3, a Drought Emergency Operation Center (DEOC) will be activated to lead and coordinate drought response within EPA, utilizing an Incident Command Structure. The DEOC will support local entities and initiate any required water management activities, regulatory and non-regulatory, to manage water supply and use with the objective of minimizing impacts to Alberta's communities, economy and environment. The DEOC will incorporate into its organizational structure any required Government of Alberta ministry and agency needed to manage water supply and use appropriately. Further, the DEOC will integrate with other coordination and response structures as outlined with 4.1.2. as needed.

4.3 Other Coordination and Response Structures

EPA Department Coordination Center (DCC)

The EPA Department Coordination Center (DCC) activation may occur for several reasons, and support different types of emergencies. Activation could occur to support concurrent events, such as drought, flood, wildfire, pollution spills and releases, and aquatic invasive species. The DCC provides broader-scale emergency coordination and response capability when complexities and significance of an emergency event overwhelm existing organization structures.

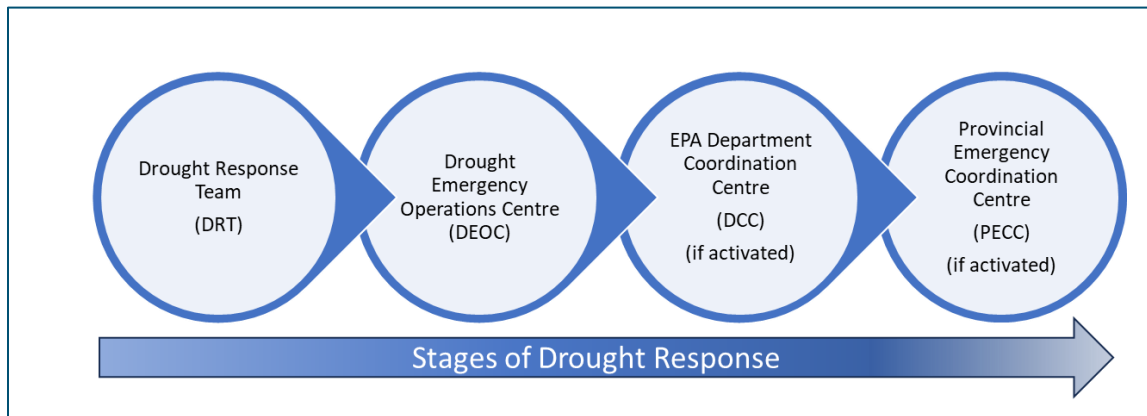
AEMA Provincial Emergency Coordination Centre

The Alberta Emergency Management Agency (AEMA) leads the coordination and cooperation of all organizations involved in emergencies and disasters as described in the *Emergency Management Act*. The Provincial Emergency Coordination Centre (PECC) is the overall Alberta of Government (GoA) communication and response coordination centre operated by AEMA to fulfill this role. It is staffed 24/7 and serves as a central point for the collection, evaluation and dissemination of information concerning single or multiple incidents across the province. It is responsible for coordinating the initial response and maintaining support for a response to large scale provincially significant natural or human-induced disasters. The PECC is typically activated where a very significant incident has occurred that is causing a full disruption of community functioning and has caused significant harm to Albertans, their property, the environment, or the economy.

Other Emergency Operations Centers

Depending on the nature and severity of drought conditions there is potential that other government agencies, local authorities or private municipal or industrial facility owners may activate local EOCs as per their individual emergency response plans. EOCs of this nature are also typically activated using the ICS model, and both the Drought Response Team and DEOC are structured to efficiently coordinate with these types of EOCs. In the context of drought, the activation of a local EOC may be related to an emergency associated with the operation of critical infrastructure posing a risk to things like human health, safety or the environment. Where the emergency relates to matters overseen by EPA such as municipal drinking water or wastewater, the department may play a regulatory or technical support role. Depending on the situation EAPs support can range from technical advice to embedding EPA staff within the local EOC to ensure coordination.

RESPONSE STRUCTURES AND COORDINATION



4.4 Water Monitoring and Reporting

Water Monitoring for Drought Response

EPA works collaboratively with various partner agencies to monitor Alberta’s water resources through its province-wide networks of monitoring stations. These networks provide the data required to understand baseline conditions, natural variability, and quantify cumulative effects. Monitoring information, including water quantity, groundwater, snowpack, climate, water quality and fisheries data provides the necessary situational awareness and escalation indicators as drought progress.

Water quantity is monitored in partnership with the Water Survey of Canada (WSC) with a network of over 400 hydrometric stations, providing continuous and near real-time information on water level and flow. The water quantity-monitoring network includes stations that operate annually and those that operate seasonally (April to October).

Groundwater levels are monitored hourly at more than 300 wells in the Groundwater Observation Well Network (GOWN) using digital water level loggers. Near real-time information on groundwater levels is available for approximately 50 of these wells.

Snowpack data is actively collected from over 100 alpine and plains sites as part of the Provincial Snow Survey Network. This includes a network of snow pillows reporting continuous snowpack data year-round, and a network of snow survey sites where snow depth is measured at monthly intervals throughout the winter and spring.

Water quality monitoring consists primarily of the Long-term River Network (LTRN) and Tributary Monitoring Network (TMN). The LTRN is a collection of sites located in several of Alberta’s major river systems. Water is collected monthly at over 30 stations along 13 major rivers and is analyzed for over 100 parameters at analytical laboratories. Under the TMN, water is also collected and analyzed monthly at over 70 tributaries that contribute water to many of Alberta’s major rivers.

Water Reporting For Drought Response

Near real time information on surface water levels in Alberta’s rivers and water storage reservoirs, along with snowpack monitoring data are available on the Alberta River Basins website. This enables all water users to monitor surface water availability in near real time and make decisions about water conservation measures that they can take, as needed. This information is also vital for EPA to assess current and near future water supply levels, which informs progression through the five stages of drought response outlined in Section 2.0 of this plan.

4.5 Post Incident Assessment

The DEOC Incident Commander will initiate a Post Incident Assessment (PIA) after the emergency response phase has ended, or after key response initiatives. The intent of the PIA is to evaluate the effectiveness of the DEOC response and inform the continuous improvement of approaches, procedures and plans.

A “hot wash” during the event may be used to solicit input from staff and stakeholders on response activity effectiveness so that adjustments and improvements can be made immediately to improve response. PIAs will be inclusive of all groups of people involved in and impacted by the emergency to promote information sharing and community- based learning. The PIA

results will be shared to enable people to make informed choices and incorporate findings into their own response measures. The DEOC will be responsible for ensuring actions identified during the PIA are acted upon.

Appendix 1: Declaration of a water emergency – indicators

Management of drought conditions is complex, and the Drought Response Plan outlines a multitude of management actions that may be occurring concurrently (e.g., voluntary water-sharing, increased communications and outreach, regulatory options).

To assist in determining if triggers as outlined in Section 3.5 have been reached, indicators have been developed to inform decision making by EPA and the Lieutenant Governor in Council. It is not expected or recommended that reaching a single indicator may trigger a declaration of an emergency as there may be other management options including regulatory actions that may ease or mitigate the circumstances. Further, additional factors, such as duration, overlapping priorities or emergencies, or feasibility may also need to be considered within real-time and forecasted drought conditions.

The indicators, in no order or relevance are:

- Risk of water levels or flows dropping below municipal water intake infrastructure.
- Water pressure or availability required for municipal/industrial fire suppression is at risk.
- Wastewater releases may exceed water quality limits because of insufficient flow in the receiving water body.
- River flow thresholds may be too low to maintain aquatic life.
- Potential impact to a species at risk.
- Other jurisdictions (e.g., Saskatchewan or Canada) raise concerns regarding transboundary water impacts or other water-related impacts (e.g., hydroelectricity production, species at risk).
- Power plant capacity or operations affected by inadequate water access.
- Critical infrastructure/industries are escalating water conservation activities and/or emergency operations.
- Confined feeding operations are affected by inadequate water access.
- Livestock producers are affected by inadequate water access.
- Escalation in local authorities' drought response/water shortage response plans (e.g., voluntary to imposed water reduction measures).
- Local authorities have stood up emergency advisory committees.
- Local authorities/ have declared a state of local emergency under Emergency Management Act.
- An area's population is at risk of losing access to water for essential uses.
- Activation of the Provincial Emergency Coordination Centre (Level 3 or higher).
- Water-sharing agreements are no longer in use.
- Priority calls with a geographical area.
- Requests for new water sources (e.g., temporary diversion licenses, groundwater wells, alternative water for livestock, trucking).
- Amendments to licenses or temporary diversion licenses to avoid a critical license from being cutoff.
- Processing timelines by EPA for drought related applications are not being met.