

Data Centres in Alberta

Environment and Protected Areas (EPA) regulatory role and environmental requirements

Purpose

Guided by the AI Data Centre Strategy, Alberta is welcoming data centres and EPA is focused on providing required environmental oversight. This fact sheet describes EPA's regulatory role and environmental requirements.

General

Data centres, housing computer servers, networking equipment, and related infrastructure used to support the digital services, may require significant electricity, cooling systems, backup equipment and utility infrastructure. EPA's focus is to ensure these requirements are met within the capacity of the environment.

A Government of Alberta approach

Depending on project design and location, proposed data centres can require provincial, municipal and/or federal reviews.

EPA's approach is to regulate specific components of data centres under long-standing provincial environmental legislation, namely the *Environmental Protection and Enhancement Act (EPEA)* and the *Water Act*.

Beyond EPA's environmental role a proponent may also need to collaborate with:

- Technology and Innovation's AI Data Centre Concierge Service, the single Government of Alberta point of contact for AI Data centre proponents.
- The Alberta Electric System Operator (AESO) on transmission system access and grid connection
- The Alberta Utilities Commission (AUC) on associated electricity generation and utility-related requirements
- The Alberta Energy Regulator (AER) on natural gas supply, wells, pipelines and gathering lines

associated with on-site (bring-your-own) power generation

- Forestry and Parks where public land dispositions or land-use authorizations are required
- Indigenous Relation where First Nations consultation maybe required
- Transportation and Economic Corridors on highway access and roadway approaches where a site connects to provincial roads
- Arts, Culture and Status of Women on *Historical Resources Act* clearance for ground disturbance
- Other provincial ministries or regulators (for example, safety, worker health or sector-specific requirements) where their authorizations apply
- Municipalities on land-use planning, zoning, development permits, roads, emergency services, noise and light considerations
- Other regulators or federal departments where federal requirements apply.

EPA role

EPA's role is focused on environmental protection, regulatory assurance and water management. EPA may review or regulate the following components of a data centre project:

- water diversion from surface water or groundwater;
- waterbody, wetland or drainage impacts;
- air emissions from power generation, boilers, heaters, emergency backup generators or other combustion sources;
- wastewater, stormwater, cooling-water blowdown or other releases to the environment including chemical or fuel storage and regulated waste (batteries);
- greenhouse gas reporting or emissions-management requirements where thresholds are met.

Water use

Water requirements vary by data centre design and are influenced by factors such as computing demand, cooling technology, site conditions, water availability, reliability and cost.

Some facilities may use air cooling, closed-loop cooling, recycled water, other water-efficient approaches or a combination of systems, where feasible. Others may require surface water,

groundwater or municipal water. EPA does not prescribe a specific data centre design or cooling technology, rather we review the proposed water source, water demand, potential impacts on other users and the aquatic environment, and whether applicable *Water Act* and EPEA requirements are met.

Our reviews for water requests include assessing the water source, availability, any existing allocations, potential impacts on other users and the aquatic environment.

In some parts of Alberta, like southern Alberta, new surface-water allocations are not available. In these cases, we work closely with proponents who may acquire water through an authorized *Water Act* licence transfer from an existing willing licensee. Requests for transfers are subject to review and we consider applicable water management plans, potential adverse impacts, required holdbacks, conditions, or public notice.

Where a project proposes to use municipal water, we ensure the municipality has sufficient licensed allocation and has agreed to provide the water. Use of municipal water does not remove the need to meet applicable regulatory requirements.

When an EPEA approval may be required

An EPEA approval is required when a specific activity associated with the data centre project is a regulated activity. For example, an EPEA approval is required for a larger combustion-based electricity generation power plant, or a backup power generation system over 50 megawatts.

A facility may require an EPEA approval if it includes regulated wastewater, waste-management or air-emission activities under the Activities Designation Regulation or other applicable regulations. In these cases, the approval may include conditions for wastewater management, waste handling, emission limits, monitoring, reporting and other environmental activities under specific regulations.

Environmental Impact Assessment

A data centre is not listed as a mandatory activity that requires an Environmental Impact Assessment (EIA) under the Environmental Assessment (Mandatory and Exempted Activities) Regulation. However, an EIA may be required if a component or supporting activity associated with the project is listed under that

regulation, or where further assessment is required because potential environmental effects are uncertain, unproven technologies are involved, or cumulative effects may significantly impact the environment.

Many components commonly associated with data centre projects, such as power generation, water infrastructure and utility servicing, use established technologies that are already well understood and regulated in Alberta. As a result, a data centre project may not require an EIA solely because it includes those components.

The Environmental Assessment Director determines whether an EIA is required. The absence of an EIA does not mean the project is unregulated. Projects may still require review and authorization under EPEA, the *Water Act*, Alberta Utilities Commission requirements, municipal processes, and other applicable legislation.

Typical review process

Our focus is to make the authorization process as straightforward as possible. Here is what to expect:

1. Proponent confirms the proposed project, site, technology, power supply, water source and environmental components and checks with us to see if an EIA is required.
2. Proponent submits the required application information under the applicable legislation, regulations, and guidance.
3. We review the application for administrative completeness and request additional information, if needed.
4. Public notice and any required Indigenous consultation is completed.
5. Following our technical review and consideration of all relevant information, potential impacts, mitigation measures and concerns received, the director makes a decision on the authorization. This may include issuing it with conditions or rejecting the application.

Note: Regulated components cannot proceed until the required authorization is issued.

Common Misconceptions

Misconception: EPA approves or rejects all data centres.

Fact: EPA reviews the specific environmental components of these projects. Other regulatory partners may review municipal zoning and development permits, building and safety codes, road access, utility connections, grid interconnection, public land dispositions, and federal requirements where applicable.

Misconception: Every data centre uses large volumes of freshwater.

Fact: Many facilities use air cooling, closed-loop systems, recycled water, municipal water or a combination of approaches that can reduce water needs.

Misconception: A data centre can obtain water anywhere in Alberta if it is willing to pay.

Fact: Water access is carefully managed to protect the basins across Alberta. In closed basins, new allocations are not available for new uses; access to water is generally through an authorized licence transfer from an existing willing licensee, or through municipal water supply where the municipality has sufficient licensed allocation and agrees to provide the water.

Misconception: A large data centre automatically requires an environmental impact assessment.

Fact: EIAs are not required simply because a project is large or because it is called a data centre but rather depends on whether the project meets a prescribed trigger, involves uncertain environmental effects, uses unproven technologies or may contribute to significant cumulative environmental effects.

Misconception: When an EIA is not required, the project is not environmentally reviewed.

Fact: Projects still require detailed review under EPEA, the *Water Act*, Alberta Utilities Commission requirements, municipal processes and other applicable legislation.

Misconception: A municipal development permit replaces provincial environmental approvals.

Fact: Municipal permits and provincial environmental authorizations address different requirements. A project may need both. For example: light, noise and visual impacts are often addressed through municipal

planning, development permits, bylaws or utility approval processes. We may consider related environmental effects where they are connected to a regulated activity or approval condition.

Information proponents should be prepared to provide

To help us review proposed projects efficiently, key information is needed such as:

- project location, land status and municipal approvals required
- power source, generation equipment and expected emissions
- cooling technology, water demand and water source
- wastewater, stormwater and chemical-management plans
- fuel storage, backup generation, regulated waste streams and used or spent battery management, where applicable
- anticipated construction and operating timelines
- environmental receptors, including nearby water bodies, wetlands, residences and sensitive lands
- proposed mitigation, monitoring and emergency-response measures.

Resources

Alberta AI Data Centre Strategy:

<https://www.alberta.ca/artificial-intelligence-data-centres-strategy>

Environmental Protection and Enhancement Act approvals: <https://www.alberta.ca/apply-for-environmental-protection-and-enhancement-act-approvals>

Environmental Protection and Enhancement Act: <https://open.alberta.ca/publications/e12>

Environmental Assessment Process:

<https://www.alberta.ca/environmental-assessment-process>

Activities Designation Regulation:

https://open.alberta.ca/publications/2003_276

Approvals and Registrations Procedure Regulation:

https://open.alberta.ca/publications/1993_113

Water Act: water allocation and transfers:

<https://www.alberta.ca/water-legislation-and-guidelines>

Guide to Content for Industrial Approval Applications:

<https://open.alberta.ca/publications/9781460112557>