Surface Water Management

Environment and Protected Areas

Report of the Auditor General

July 2024

Auditor General
OF ALBERTA

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Shane Getson, MLA Chair
Standing Committee on Legislative Offices

I am honoured to transmit my report, *Surface Water Management*, to the Members of the Legislative Assembly of Alberta, under Section 20 of the *Auditor General Act*.

W. Doug Wylie FCPA, FCMA, ICD.D
Auditor General

Edmonton, Alberta
July 2024

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Related Reports

- Wetland Replacement Assessment of Implementation (June 2021)
- Managing Water Act Partnerships and Regulatory Activities Followup (October 2015)

Appointed under Alberta's *Auditor General Act*, the Auditor General is the legislated auditor of the *Consolidated Financial Statements of the Province of Alberta* and most provincial agencies, boards, commissions, and regulated funds. The audits conducted by the Office of the Auditor General report on how government is managing its responsibilities and the province's resources. Through our audit reports, we provide independent assurance to the 87 Members of the Legislative Assembly of Alberta, and the people of Alberta, that public money is properly accounted for and provides value.

Report Highlights

Why We Did This Audit

We wanted to know if the Department of Environment and Protected Areas has effective systems to manage water resources in Alberta. Population growth, resource development, land-use changes, and climate change are all increasing pressure on Alberta's water resources.

Water plays a key role in Alberta's economy, supporting major sectors such as agriculture and energy. It is crucial for sustaining economic growth and maintaining a high standard of living for both present and future generations.

What We Looked At

We audited the processes that the department uses to manage surface water allocation[1] and use, and its public reporting on managing surface water.

We Found

The department:

- has no water conservation objectives in most basins
- does not know if existing water conservation objectives are working
- lacks robust processes to monitor water pressures, assess risks, and decide when water conservation objectives are needed
- has ineffective processes to approve licences and monitor compliance, such as not enforcing licensee compliance with conditions

We Recommend

We recommend that the department:

- establish process to identify when to develop, assess, and update water conservation objectives
- improve licensing and compliance-monitoring processes
- publicly report relevant and reliable information on managing surface water

Conclusion

We conclude, based on our audit criteria, that the department lacks effective processes to manage surface water allocation and use. And public reporting on surface water and the outcomes of surface water management is lacking.

Why our Findings Matter to Albertans

Alberta could face more severe and frequent droughts. Water conservation helps the government manage water allocation and control usage, especially during droughts and shortages. Effective licensing and monitoring ensure proper water use and prevent abuse.

[1] Allocation is the volume, rate, and timing of water that the government permits water licence holders to withdraw from a water source in one year.

Background

Surface Water

Surface water is the water on the Earth's surface, including rivers, lakes, and wetlands. It is primarily replenished through precipitation, with snowmelt the largest contributor, followed by rainfall. Surface water is naturally lost through processes such as plant transpiration and subsurface recharge into groundwater.[2]

Alberta's River Basins

Alberta has seven major river basins. The north-flowing river basins contain most of the province's water resources, but the majority of Alberta's population lives in the south. The South Saskatchewan River Basin contains 13 per cent of Alberta's surface water, hosts 37 per cent of Alberta's population, and accounts for 68 per cent of the province's water allocated to users.[3]

Alberta's seven major river basins are:

1. Hay
2. Peace/Slave
3. Athabasca
4. Beaver
5. North Saskatchewan
6. South Saskatchewan
7. Milk

[2] Groundwater is water beneath the Earth's surface in gaps and pores between materials such as sand and gravel. It is recharged when surface water percolates into the ground. Alberta has more groundwater than surface water but only .01 per cent of the groundwater is recoverable.

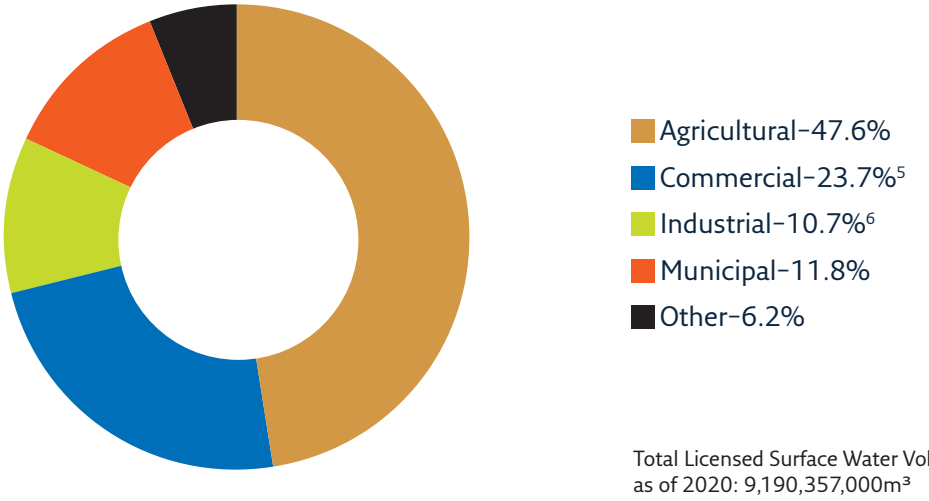
[3] The total water allocated to users in Alberta refers to the volume of water permitted for diversion under all existing water licences. Actual water use is often less than the allocated amount because licensees apply for allocations based on reasonable estimates of maximum requirements.

Surface Water Allocation

Most of Alberta's population and industries rely on surface water sources for their water supply.

Alberta has several major water-using sectors: the largest is agricultural irrigation (Figure 1). As of 2022, 25,000 water licences have been issued in Alberta, totalling 9.5 billion cubic metres of water.[4]

Figure 1:
Surface Water Allocations in Alberta by Specified Use (2020)



Source: Alberta Environment and Protected Areas, Water and Waste Policy Branch (based on data extracted March 5, 2021)

4 https://www.alberta.ca/system/files/epa-letter-from-minister-re-drought-negotiations.pdf

5 Commercial allocations include cooling (17.4 per cent) and other commercial industries (6.3 per cent).

6 Industrial allocations are related to the energy sector and include oil and gas (9.4 per cent), injection (1.1 per cent), and drilling and fracturing (0.2 per cent). The Alberta Energy Regulator is responsible for licensing related to the energy sector.

Detailed Findings and Recommendations

Surface Water Management Planning

Context

Legislation

Water Act

The *Water Act*[7] establishes water management plans and water conservation objectives as key tools for long-term water management. The *Water Act* also requires the department to develop a framework for water management planning, which was completed in 2001.

Water management plans

Water management plans provide guidance and strategies to the government and Albertans for effective water management. The government, or any stakeholders such as basin or stewardship organizations, can initiate and develop a water management plan.[8]

Once developed, plans can be approved by the Lieutenant Governor. Plans approved by the Lieutenant Governor become part of the regulatory framework and must be considered in the department's licensing decisions. Plans authorized by the director,[9] in accordance with the framework established by the minister,[10] are sometimes considered, as a matter of policy, in licensing decisions.

Water conservation objectives

Water conservation objectives define the quantity and quality of water required to protect the natural water body and its aquatic environment,[11] and to support other uses of water and the management of fish and wildlife. They can be recommended within a water management plan or independently established by the designated director under the *Water Act*.

The process of developing water management plans and objectives takes time, involving extensive data collection, technical studies, and stakeholder engagement.[12]

Presently, Alberta has five water management plans covering the Lesser Slave Lake and River sub-basin, Wapiti River sub-basin, Cold Lake-Beaver River sub-basin, Battle River sub-basin, and South Saskatchewan River Basin.[13] Four plans include water conservation objectives; two are implemented, and two are yet to be implemented. One plan, Lesser Slave Lake and River, has a minimum flow requirement.

Non-legislated standards

Instream objectives

Instream objectives, although not defined in the *Water Act*, are another water management tool. Instream objectives have a narrower focus and primarily aim to protect water sources and their aquatic environments, without considering a wide range of water-related activities and regional goals.[14]

Currently, instream objectives are set for specific water sources in the South Saskatchewan River Basin, Peace/Slave River Basin, and Battle River sub-basin.

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7 *Water Act*, RSA 2000, c W-3.

8 Anyone developing a water management plan must follow the *Framework for Water Management Planning*. The framework outlines the process for water management planning and the required components for water management plans.

9 Director means an individual designated as a director by the minister for the purposes of the *Water Act*.

10 Framework for Water Management Planning, 2001, Alberta Environment

11 Generally speaking, the aquatic environment, as defined by the *Water Act*, includes all living and non-living components of the environment, in or adjacent to water bodies. This includes fish, aquatic plants, invertebrates, soils, and other plants and animals that depend on water.

12 The average development time for the current plans exceeds six years.

13 The Milk River Basin water management plan was approved in June 2024. The plan does not include water conservation objectives.

14 For example, an instream objective might specify maintaining 50 per cent of the natural flow in the water body, whereas a water conservation objective might set a higher threshold if there is a need to enhance water quality for recreational purposes.

Surface Water Allocation Directive

In areas without water management plans or conservation objectives, the Surface Water Allocation Directive serves as an interim measure to assess water available for licence applications, ensuring maintenance of natural flows above 85 per cent. The department uses this approach in areas of the province considered low risk in terms of water supply, meaning that total water allocated is low relative to water available in the source.

Other aspects of planning

Water allocation

In Alberta, obtaining a water licence is mandatory for diverting water, with exceptions such as household and traditional agriculture use. Licences, granted by the department under the *Water Act*, specify water allocation details like maximum rate, quantity per year, location, and purpose.

The allocation system follows the "First in Time, First in Right" principle, giving precedence to older licences during water scarcity.[15] For instance, a golf course with a 1950s' licence has priority over a municipal water system with an 1980s' licence in times of shortage. During severe shortages, the government negotiates water sharing agreements with senior licence holders to ensure equitable reductions in usage. The *Water Act* grants powers to the government to declare emergencies and determine water allocation and priority during droughts.[16]

Licensing

When assessing licence applications, the department evaluates water availability by considering existing allocations, current restrictions, such as water conservation and instream objectives, and Surface Water Allocation Directive guidelines.

In basins where conservation or instream objectives exist, they are included in new licences as conditions. This permits diversion only when the water level is above these thresholds. However, in basins without such objectives, the directive establishes a threshold water availability, but it is not a withdrawal condition in licences.

Water for Life strategy

The 2003 Alberta water strategy, Water for Life,[17] along with its 2009 action plan,[18] aim to ensure water sustainability. This strategy, still active, includes key actions like establishing water conservation objectives for major river basins.

Roles and responsibilities

All water resources in Alberta are owned by the Crown,[19] and managed by the department. The department's responsibilities include water management planning, developing necessary conservation measures, monitoring, and allocating water through licensing.

Surface water management planning involves multiple divisions within the department, including policy, lands, regulatory assurance, resource stewardship, and strategy and governance.

The department assesses the need for water management plans, conservation objectives or other measures to protect water bodies by considering scientific data, existing or emerging pressures, and input from stakeholders, Indigenous communities, and municipalities.

Criteria

The department should have effective processes for surface water management planning. The department should have processes to:

- estimate water supply and demand
- determine when water management measures are needed
- use relevant, and reliable data and methods for planning

The department should have effective processes for evaluating and updating water management measures.

15 Household use of water in Alberta is a statutory right and highest priority under legislation.

16 Alberta has five water shortage management stages, ranging from stage 1, indicating a minor drought, to stage 5, which represents a province-wide emergency with significant risks to human health, safety, and aquatic environments due to insufficient water supply. Since fall 2023, the province has been in stage 4, signifying large-scale basin or provincial drought conditions. Alberta has never reached stage 5.

17 Water for Life: A Renewal (alberta.ca)

18 Water for Life: Action Plan (alberta.ca)

19 The provincial Crown ownership of water resources does not extend to water within National Parks.

Our findings

Key findings

- No process to decide when to develop or update water conservation objectives
- No water conservation objectives in most major river basins
- Effectiveness of existing water conservation objectives unknown

No process to decide when to develop or update water conservation objectives

Lack of systematic approach to planning

The department lacks a systematic process for deciding when new or revised water management plans, conservation objectives, or other measures are necessary. As a result, there are no procedures for collecting relevant data, evaluating water availability using licensing and other information, assessing risks, implementing required measures, or evaluating the effectiveness of existing measures.

The current water management plans and conservation objectives were created to respond to issues like nearing allocation limits or seasonal challenges. However, developing and implementing these plans and objectives takes time, often taking over 10 years from identification of the need to implementation.

For example, in the South Saskatchewan River Basin, water management plan and conservation objectives were established in 2006 following multiple droughts. However, by the time these objectives were implemented, the basin was almost fully allocated. Because the water management plan prohibits retroactive application of current objectives, and new licence issuance is limited in the basin, most licences have no or less stringent diversion conditions compared to current standards. This situation allows many licensees to divert water regardless of water levels, leading to significant challenges during shortages and droughts.

With the basin currently experiencing a drought, the government has been negotiating with licensees to forfeit their full diversion rights and share water with other users.

Lack of key information for planning

The department claims it uses information such as stakeholder concerns and water supply risks identified during licensing to decide whether water conservation measures are needed. However, there is no process to track, evaluate, and communicate such information for decision-making.

The department has not conducted province-wide supply and demand estimates in over 16 years, nor regularly modeled climate change impacts on hydrology, despite expert recommendations emphasizing the importance of such data for effective water management.[20,21]

The department lacks support for its claims that certain basins have low water supply risks. For example, despite identified water supply pressures, such as significant decreases in summer water yield in some rivers of the North Saskatchewan River Basin since 2017, and current water shortage advisories, the department maintains that the basin has low water supply risk. We have not seen a documented assessment supporting this claim, nor evidence of water availability checks for individual applications in the basin.

Lack of clear responsibilities and coordination

The roles and responsibilities of different program areas within the department are not documented, leading to uncertainty about who is responsible for tasks such as assessing water supply and demand, and collecting stakeholder concerns. Additionally, how these areas coordinate efforts and share information is unclear.

A 2018 external review pointed out inadequate coordination among operational, regulatory, and other program areas in implementing the South Saskatchewan River Basin water management plan.[22] Based on our findings, this issue persists at the time of writing this report.

[20] PAWF Final report-March 22, 2017 (albertainnovates.ca)

[21] The 2009 *Water for Life* action plan includes actions like developing hydroclimate scenarios for watersheds.

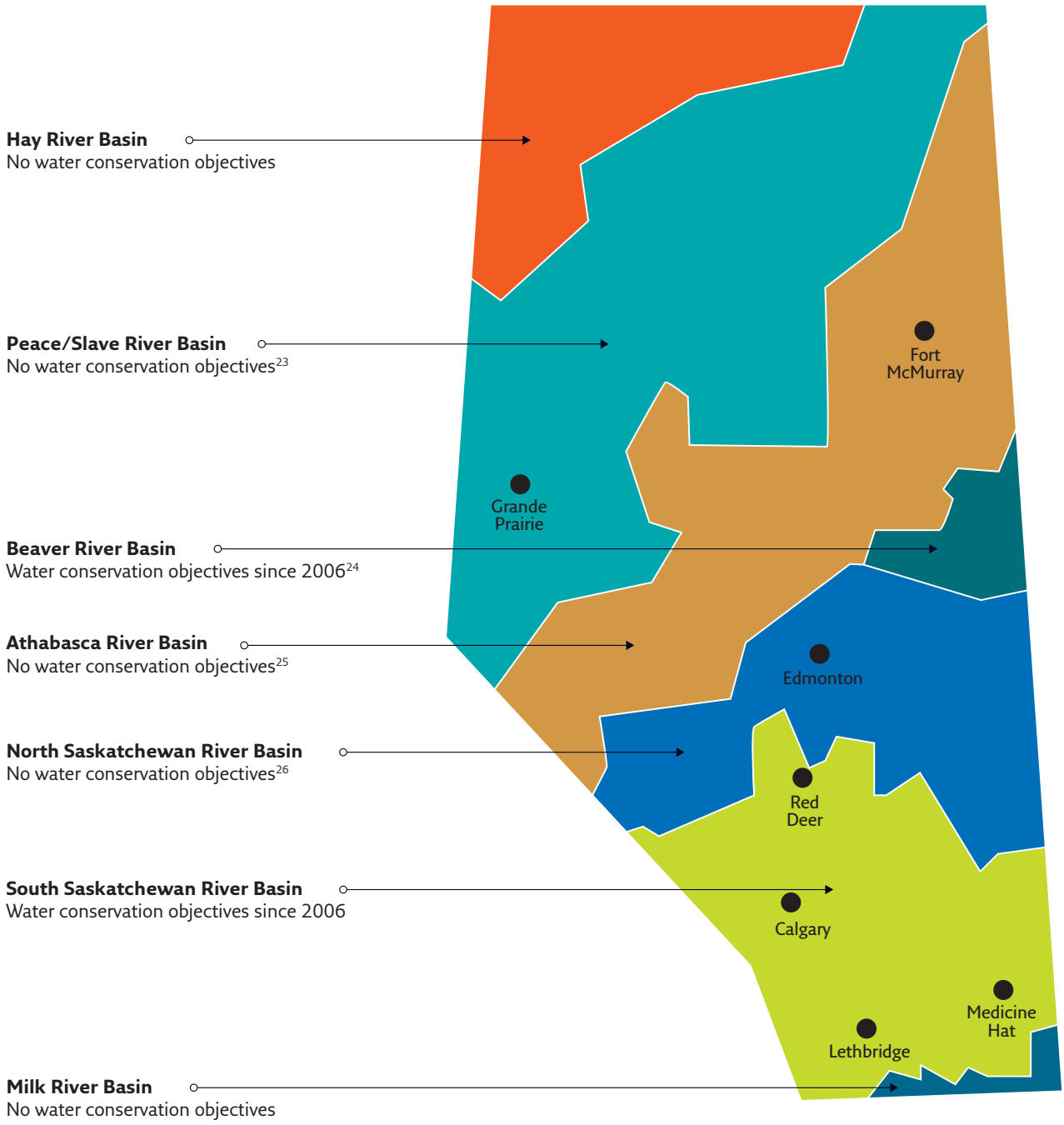
[22] 2018 Review of the Implementation of the Approved Plan for the SSRB, prepared for the Government of Alberta by the Basin Advisory Committee.

No water conservation objectives in most major river basins

Among the seven major river basins (see Figure 2) only two—South Saskatchewan River Basin and Beaver River Basin—have fully operationalized water conservation objectives. For the Battle River and Wapiti River sub-basins, water conservation measures were developed in 2014 and 2020, respectively. However, the absence of a model to calculate water flows and the lack of a hydrometric station to gather required data have hindered their implementation. There is a plan to install a hydrometric station in 2024, indicating progress in resolving one of these issues.

The remaining basins lack water conservation objectives. Consequently, new licences in these areas may lack withdrawal restrictions or may have less stringent aquatic protection conditions compared to water conservation objectives. Additionally, when the objectives are operationalized, existing water management plans do not allow them to be added to current licences.

Figure 2:
Alberta's Major River Basins and Water Conservation Objectives



[23] Water conservation objectives for the Wapiti River sub-basin were developed in 2020 but are not yet implemented.

[24] Water conservation objectives apply to Cold Lake-Beaver River sub-basin but not to Moose, Muriel, Ethel, and Wolf lakes.

[25] Lesser Slave Lake and River sub-basins have minimum flow requirement since 2009. Lower Athabasca River has surface water quantity management framework since 2015.

[26] Water conservation objectives for the Battle River sub-basin were developed in 2014 but are not yet implemented.

Effectiveness of existing water conservation objectives unknown

It is unclear if the implemented water conservation objectives are effective. In the Cold Lake-Beaver River sub-basin, objectives have not been evaluated since their implementation 18 years ago. Similarly, despite reviews conducted for the South Saskatchewan River Basin, we have not seen a comprehensive assessment of the effectiveness of its water conservation objectives.

These objectives were established many years ago. However, with factors like climate change, population growth, and economic expansion, water resource pressures could be significantly changing. This highlights the need to evaluate if these objectives are still effective and sufficiently protective based on new information.

NEW Recommendation:
Establish process to identify when to develop, assess, and update water conservation objectives

We recommend that the Department of Environment and Protected Areas establish a process to identify the need for water conservation objectives, regularly assess their effectiveness, and update them to ensure sustainable water supplies.

CONSEQUENCES OF NOT TAKING ACTION:

Failing to proactively identify the need for water conservation objectives, or to evaluate and update existing ones, increases the risk of water shortages. That could lead to higher costs, shortages of goods, and an inability to meet future water needs for people, businesses, and the economy.

Licensing and Compliance Monitoring

Context

Licence types

The department issues new licences, amendments, renewals, and transfers.

Amendments involve modifying licence conditions, such as water diversion timing or purpose (for example, from agricultural to residential). Licensees must apply for renewal before expiration, with typical terms lasting 10 or 25 years for municipal purposes. Licences issued before the *Water Act* do not expire.[27]

Transfers allow people to acquire water licences from current holders.[28] Under the *Water Act*, authorization for a transfer must be enabled by either a water management plan (which authorizes the director to approve transfers in that water basin) or by the Lieutenant Governor, who can authorize and approve transfers in any water basin, including those without an approved water management plan. Presently, transfers are permitted only in the South Saskatchewan River Basin[29] and Battle River sub-basin.[30]

Licence approval process

Licence applications are reviewed by department reviewers and approved by the director. Key assessments are made during this process, including:

- Water availability: This determines if water is available in the proposed area for the application, based on factors such as historical water flow, water conservation objectives, or instream objectives, and existing allocations.[31] The assessments are typically completed for large volume applications where a formal hydrological report is provided by the applicant or prepared by department experts.
- Compliance standing: This assesses if applicants comply with regulations and licence conditions. The assessments are required by the *Water Act* for water transfers and by guidelines for licence renewals.

27 RSA 1980, c W-5 | Water Resources Act | CanLII

28 In highly allocated basins, transfers allow a dependable (high priority) allocation to be acquired from a party who wants to transfer all or part of theirs. This helps new businesses start up in these basins and benefits the economy. And it gives existing licence holders an incentive to improve water use efficiency.

29 Excluding Red Deer River sub-basin.

30 With the June 2024 approval of the Milk River Basin water management plan, transfers are now also permitted in the Milk River Basin.

31 For basins lacking water conservation measures, the department relies on the Surface Water Allocation Directive, which employs a standardized method to assess water availability.

- Water use efficiency: This evaluates the effectiveness of water usage, with indicators such as crop yield per unit of water applied in the agricultural sector. The South Saskatchewan River and Battle River water management plans mandate water use efficiency checks against industry standards and best practices for new and transfer licences.
- Holdback for transfers: To protect the aquatic environment, the *Water Act* enables the director to withhold up to 10 per cent of a water allocation for transfer applications.[32] The department's 2015 guide provides further direction on when the director can waive the holdback requirement for water transfers in the South Saskatchewan River Basin.

Monitoring licensee compliance

When reviewing applications for licence renewal and transfer, the department evaluates licensee compliance. The department does not normally deny applications due to non-compliance. Instead, it tries to work with licensees to resolve the non-compliance.

The department is implementing a new system to streamline the licensing process. The new system will merge licensing data with information provided by licensees, such as their water usage, which was previously stored separately. Additionally, the system will automatically verify if licence holders are complying with rules, such as reporting their water usage.

Criteria

The department should have effective surface water licensing processes. The department should:

- have clear and sufficient guidelines for licence approval
- have processes to ensure licences are approved in accordance with legislative and internal requirements, and licensing decisions are supported

The department should effectively monitor surface water use and licensee compliance. The department should have processes to:

- ensure compliance with licence conditions
- monitor surface water use and evaluate impact on water availability

Our findings

Key findings

- Licence applications approved without support for key decisions
- Licensing guidelines unclear on use of discretion
- Insufficient monitoring of licensee compliance with requirements such as allocation and withdrawal limits
- No assurance licensee-submitted water usage is accurate and complete

Licence applications approved without support for key decisions

Department reviewers often failed to document key assessments and decisions they made during the licence approval process, including how the applications complied with legislative and internal requirements. Problems we identified include:

- Insufficient records to verify completion of mandated compliance assessments for over half of tested transfer and renewal applications. Some renewal applications lacked compliance assessments because staff were unaware of the requirement.
- Lack of evidence to show department actions to assess and resolve non-compliance before granting approval. Examples include approving applications despite licensees' failing to report water usage or exceeding allocation limits. One transfer was approved although the licensee diverted three times their allocated volume and operated outside permitted seasons in the past three years. This raises doubts about whether the mandated compliance check was conducted and the rationale for approving the transfer.
- Approvals for renewal applications for the full 10 years despite guidelines suggesting shorter renewal periods until compliance is shown.
- Lack of evidence of water availability assessments for most new licence applications tested. Reviewers often provided vague justifications, such as "given the location of the project, there should be sufficient water," without support for these statements.
- Missing water use efficiency assessments for over half of the transfer and new licence applications tested in the South Saskatchewan River Basin, where they are required by the water management plan.

[32] For example, if an application requests a transfer of 10,000 m^3 of water, the director can approve only 9,000 m^3, withholding 1,000 m^3 to be returned to the water source.

- Failure to document reasons for not withholding 10 per cent of water allocations for over half of the samples tested in the South Saskatchewan River Basin, despite guidelines recommending holdbacks unless compelling reasons to waive them exist.

Licensing guidelines unclear on use of discretion

The *Water Act* grants the director broad discretion. However, the department's guidelines do not provide clear direction on aspects of licence application review that involve the director's discretion, such as assessing water availability. These aspects were inconsistently evaluated and many of the sample applications lacked evidence of review, preventing us from confirming that the review met requirements. Further, the department claims certain checks are required, but these requirements are not included in the guidelines.

Specific examples where guidelines are lacking include:

- The guidelines lack explicit criteria indicating when water availability assessments are mandatory versus discretionary and how to document decisions on these assessments. Additionally, the department lacks procedures for completing the assessments, reviewing licensee-submitted assessments, and involving hydrology experts.
- Management states that water use efficiency checks are required for licence applications in all basins and compliance standing checks are required for significant, high-risk licence amendments. However, the guidelines do not reflect these requirements.

A 2018 external review of the South Saskatchewan River Basis water management plan[33] highlighted areas for improvement, including the establishment of written policies and procedures for good standing checks to enhance efficiency and consistency in decision making. The guideline deficiencies indicate that this issue remains unresolved at the time of writing this report.

Insufficient monitoring of licensee compliance

The department mainly relies on public complaints and self-reporting by licensees to monitor compliance. It has a process to follow up on reported instances. Our audit did not cover how the department follows up on complaints. However, self-reporting by licensees is clearly ineffective, as evidenced by only three self-reported incidents compared to numerous deviations found in our testing. We found many instances of licensees not reporting water usage and exceeding allocation limits.

While the department completes compliance checks during infrequent events like licence renewal, amendments, and transfers, the checks were not consistently completed, and they were poorly documented, leading to uncertainty about their adequacy. The department did not always detect instances of non-compliance, and it approved applications despite unresolved compliance problems.

The department does not monitor licence conditions like water diversion timing and maintaining measuring devices and records through proactive inspections. There is a lack of consequences for non-compliance such as denying applications with unresolved compliance matters. So, there is minimal incentive for licence holders to comply with requirements, potentially increasing the risk of non-compliance.

During the development of the Battle River water management plan, a review of all licences identified non-compliance with water usage reporting, resulting in cancelations of licences. While this is an example of good practice in monitoring licensee compliance, it was a one-time effort and critical licence conditions like water diversion remain unmonitored.

The department's implementation of the new system with its ability to automatically detect some non-compliance should improve the department's ability to identify compliance issues. However, since the implementation is ongoing, we could not fully evaluate the system design or functioning.

[33] 2018 Review of the Implementation of the Approved Plan for the SSRB, prepared for the Government of Alberta by the Basin Advisory Committee.

No assurance licensee-submitted water usage is accurate and complete

Licensees must report their water usage, yet the department does not verify the accuracy and completeness of the data.

A 2007 water use report[34] highlighted incomplete and unreliable data, stressing the significance of collecting actual water usage information for accurate water availability assessments. This issue remains unresolved. The department's plan to use advanced modeling in 2024 to manage ongoing drought conditions in the South Saskatchewan River Basin[35] further highlights the need for reliable water usage data to facilitate effective modeling.

NEW Recommendation:
Improve licensing and compliance-monitoring processes

We recommend that the Department of Environment and Protected Areas improve its licensing and compliance-monitoring processes to ensure that:

- approved licences meet requirements
- approval decisions are made consistently and comply with requirements
- key decisions are documented
- licensee compliance is effectively monitored

CONSEQUENCES OF NOT TAKING ACTION:

Water licences could be granted to people and businesses who should not receive them, enabling unsustainable practices.

Inadequate compliance monitoring can result in overuse or misuse of water, undermining efforts to manage water sustainably. It can also erode public trust in regulatory authorities and undermine accountability in water resource management.

Public Reporting on Surface Water

Context

The department collects water usage data through self-reporting by licensees.

Information on approved licences and their water allocations is available through the Licence Authorization website.[36]

The Rivers Alberta website[37] provides information on near real-time water flows. This data is sourced from nearly 400 hydrometric stations located across water bodies in Alberta. The department reviews the data to ensure it is complete and accurate. The department also periodically visits stations and takes manual flow measurements to maintain equipment integrity and validate data.

Information on the Rivers Alberta website is used by licensees to determine water availability for diversion, and by the department in assessing water available for licence applications.

Criteria

The department should publicly report on the effectiveness of water management measures and on surface water available, allocated, and used.

Our findings

Key findings

- Lack of reporting on water allocation
- Water usage not publicly reported
- Water levels publicly available, but processes for accuracy and completeness are deficient

Lack of reporting on water allocation

Water allocation information is publicly available at the individual licence level. However, allocation information at broader levels, such as basin and sub-basin, is not accessible. It requires manipulation of data and may therefore be inaccessible to the average person.

Until 2010, the department published more complete information on allocations by river basin compared to natural flow.[38]

34 2007 Current and Future Water Use in Alberta, AMEC Earth and Environmental.

35 Contract awarded for drought model - OkotoksOnline.com

36 https://avw.alberta.ca/ApprovalViewer.aspx

37 https://rivers.alberta.ca/

38 Alberta WaterPortal | Water Licences, Transfers, and Allocation - Alberta WaterPortal

Water usage not publicly reported

Despite the department collecting water usage data and past recommendations from external stakeholder groups for public reporting, this information remains inaccessible to the public. And the data is incomplete and inaccurate. With the implementation of the new licensing system, the department plans to make water usage data publicly available in fall 2024.

Water levels publicly available but processes are deficient

Department has processes to ensure public water levels are accurate and complete

The department's processes involve reviewing daily data from hydrometric stations to identify and correct anomalies, applying automated checks to calculate water flow levels, and then posting this information on the Rivers Alberta website. Water conservation and instream objectives are automatically derived from these water flow levels. Both water levels and conservation or instream objectives are then displayed on the website.

We found that these processes are appropriately designed.

Errors undetected by department's processes

We identified that some of the 2023 water flow data across 22 stations displayed on the Rivers Alberta website was incorrect. The department attributes these inaccuracies to errors in the code used for daily natural flow calculations, starting in April 2021. While the department has corrected the error, it is concerning that its processes did not detect these inaccuracies.

NEW Recommendation:
Publicly report relevant and reliable information on managing surface water

We recommend that the Department of Environment and Protected Areas publicly report relevant and reliable information on surface water, including water usage.

CONSEQUENCES OF NOT TAKING ACTION:

The lack of public information on key aspects of surface water management, such as water usage and allocation at broader basin and sub-basin levels, hinders accountability, transparency, and informed decision-making.

About This Audit

Objective and Scope

The objective of our audit was to determine if the Department of Environment and Protected Areas (the department) has effective processes to manage surface water allocation and use, and has adequate public reporting on the outcomes of surface water management.

Our audit covered the department's processes for surface water management planning, licensing and compliance monitoring, and publicly available information on surface water management. We examined processes in place from January 1, 2019 to November 30, 2022.

We:

- examined policies, procedures, and other relevant documentation
- interviewed staff involved in managing surface water, including those handling the licensing process
- examined documents and conducted walkthroughs of relevant processes
- examined public reporting on surface water management
- performed analytics on data from the department's licensing and water use systems, as well as public water level and flow data

Excluded from the audit scope are the department's processes for groundwater management, licensing related to the energy sector (overseen by the Alberta Energy Regulator), processes to implement the Water for Life strategy, Alberta Wetland Policy, and regional planning.

Criteria

We established the criteria based on legislative requirements, the department's policies and guidelines, and best practice used in other jurisdictions.

Management of Environment and Protected Areas acknowledged the suitability of the audit criteria on December 21, 2022.

Audit Responsibilities and Quality Assurance Statement

Management of Environment and Protected Areas is responsible for managing and public reporting on surface water allocation and use.

> **Our responsibility is to express an independent conclusion on whether the department has those processes.**

All work in this audit was performed to a reasonable level of assurance in accordance with the Canadian Standard on Assurance Engagements (CSAE) 3001—Direct Engagements, set out in the CPA Canada Handbook—Assurance. The Office of the Auditor General applies Canadian Standard on Quality Management 1, which requires the office to design, implement, and operate a system of quality management, including policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements. The office complies with the independence and other ethical requirements of the Chartered Professional Accountants of Alberta Rules of Professional Conduct, which are founded on fundamental principles of integrity and due care, objectivity, professional competence, confidentiality, and professional behaviour.

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