

Draft Manual Water Conservation Policy for Upstream Oil and Gas Operations (released April 2021)



What We Heard – And Our Response

We thank all those who provided comments. We reviewed each one and consolidated comments covering similar issues. What follows is a summary of the issues raised and our responses.

Comments on grammar, punctuation, and cross-referencing have not been summarized, but changes were made where needed.

A list of the respondents is provided at the end of this document.

Stakeholder Feedback – Issue	AER Response
1. General and Overall Comments	
We recommend adding a reference to <i>Directive 081</i> because it includes key guidance on alternatives to high-quality nonsaline water.	A reference to <i>Directive 081</i> has been added to the manual as the basis of how water is managed for in situ facilities.
We recommend the AER focus on identifying and assessing alternatives that are specific to the project and local site conditions and to incentivize alternative sources rather than limiting high-quality nonsaline water use.	The application requirements are specific to site conditions, and incentives are provided to recognize efforts by the applicant to reduce the use of high-quality nonsaline water. The manual provides the minimum information to clarify the policy intent and achieve the outcomes of the policy: shifting the use of water from high-quality nonsaline to alternative nonsaline. We expect that alternatives be evaluated specific to the project and to the extent specified for its risk tier (see table 1 of the manual); however, it was also seen as important to specify what evaluation criteria should be included.
We recommend the AER collaborate with industry to identify what information is needed for the appropriate application information and how the information will be evaluated.	The manual provides both assessment and application submission guidance as well as identifies incentives for water conservation. Greater emphasis is placed on the assessment and submission guidance, and this is aligned with the WCP. We have engaged with industry and other stakeholders during the development of the manual and taken all suggestions into consideration.

Stakeholder Feedback – Issue	AER Response
<p>This manual only focused on upstream oil and gas operations and did not consider a holistic view of water (and related land) management. We recommend including all resource development operations in one document since there is a lot of overlap between mining and oil and gas operations.</p>	<p>The scope of the manual is set by and aligned with the Water Conservation Policy</p>
<p>This manual does not provide how the AER and Alberta Environment and Parks (AEP) will hold companies liable if they do withdraw excess water above what is needed.</p>	<p>The manual is a recommended practice to support the assessment and submission expectations for a water licence application related to water conservation. Licensee compliance with the <i>Water Act</i>, its regulations, and licences is managed through our compliance assurance program, and noncompliance may result in enforcement action. More information is available on our website, aer.ca > Regulating Development > Compliance > Compliance Assurance Program.</p>
<p>There are multiple points of overlap between the assessment requirements denoted in the manual and the AEP <i>Surface Water Allocation Directive</i> and <i>Directive for Water Licensing of Hydraulic Fracturing Projects</i>. It is not clear how the manual and AEP directives relate, and which documents an applicant adheres to when preparing an application.</p>	<p>The manual has been clarified to reduce ambiguity in regulatory processes. The two AEP directives referenced indicate that other guidelines can be used in conjunction with the directives, though these directives must still be used for assessing the needs for all applicable circumstances. This manual is the applicable guideline for persons to use for licence applications for multistage horizontal hydraulic fracturing operations.</p>
<p>It is unclear how the designations of water short and locally constrained areas overlap with existing water management approaches.</p>	<p>The water-short designations and maps are specific to the 2006 and 2020 versions of the WCP, which deal with water use by upstream oil & gas operations. The factors considered in creating these designations include all sectors and were informed by water management plans and pre-existing water conservation objectives and includes water use across all sectors. The locally constrained areas are determined based on the <i>Surface Water Allocation Directive</i> and acknowledge that industry can undertake additional analysis to identify where local water demand and availability are stressed, thereby increasing the conservation risk. The locally constrained designation tells applicants up front that the area has been internally flagged by AER reviewers as reaching an allocation level that requires closer attention, especially during winter low flows. Any applicable water management plans are considered as part of the licence review and factored into the AER's decisions.</p>

Stakeholder Feedback – Issue	AER Response
It is unclear how the risk tiers defined in the manual relate to the AER decision-making process. We recommend providing higher level risk-based guidance in the manual, with a focus on outcomes.	Similar to the approach used in the 2006 policy, the risk tiers indicate the degree of water conservation risk and outline the information the applicant is expected to provide as rationalization of why an economically viable or technically feasible alternative is not the preferred option.
The decision to approve a specific request based on the future state of a water source should be informed by a robust integrated model and not individual applications or local project factors such as economics. We recommend adopting a system that incorporate the health state of a given water source based on existing users, water use, meteorological forecasts, etc. and setting up triggers based on existing rates of actual diversion and river users currently active in real time.	<p>The manual does not limit the applicant to any particular methodology, and the applicant is able to use other methods. It is recommended that the applicant have a preapplication meeting with the AER to ensure that the proposed methodology and the assumptions are considered reasonable.</p> <p>Applications for a water licence are usually completed by professional members of the Association of Professional Engineers and Geoscientists of Alberta (APEGA), who are familiar with the state of water resources and interact with our staff to continue to understand the changing situation. Any new licence always includes conditions that address potential impacts due to variable flows, in response to actual conditions.</p>
Would a water gauge closer to points of diversion be considered, rather than the watershed approach, to quantify how much water is allocated and how much allocation remain?	Water-short and potentially water-short areas are aligned with the WCP itself. The locally constrained analysis already considers hydrometric station data. While it is possible that a case be made that a particular stream within a HUC 8 should not be considered locally constrained, it is recommended that the applicant have a preapplication meeting with the AER to ensure that the proposed methodology and the assumptions are considered reasonable.
We recommend developing a roadmap for water storage applications and water under this policy so operators know what to expect in consideration with alternative source water storage.	The AER is undergoing separate but coordinated initiatives to improve the regulatory process for the storage (e.g., centralized fluid storage as detailed in <i>Directive 055</i>) and transport (e.g., temporary surface pipeline as detailed in <i>Directive 077</i>) of alternative sources.
We have concerns related to nontransparent data on the water supplies and the current lack of data in northern Alberta. For example, there is a lack of data on the quality and quantity of surface water in the Wabasca/Sandy Lake Sub Basin Watershed.	<p>Northern Alberta has relatively less monitoring data available than in other areas of the province. Water availability and allocation data is made available on our website, aer.ca > Protecting What Matters > Holding Industry Accountable > Industry Performance > Water Use Performance.</p> <p>Where monitoring data is not available, the applicant is required to undertake modelling and use hydrology best practices to estimate water availability. Monitoring conditions are typically included in a licence if issued. In some cases, monitoring is required prior to application.</p> <p>The evaluation approaches used in water licensing are conservative and protective of the environment.</p>

Stakeholder Feedback – Issue	AER Response
<p>The manual provides an opportunity to review and relax the restrictions imposed in 2006 and remove barriers to oil and gas investment, while protecting Alberta’s valuable water resources for current and future generations. We recommend streamlining guidance for <i>Water Act</i> licence applications, improving regulatory transparency and encourage investment in Alberta, and adopting the outcomes-based regulation that has been promoted as a key approach to red-tape reduction.</p>	<p>The manual was written with the intent of focusing the efforts of the applicants and the regulator on the situations that are of most concern. For example, Tier 1 application information (where the risks to water conservation are considered to be low) are streamlined to be as close to standard application information as possible.</p> <p>The category of alternative nonsaline water has been created, with application information that are less restrictive than those required for the use of high-quality nonsaline water, as the risk to the outcome of water conservation is low when using this category of water. Consideration of environmental net effects is meant to address the overall balance of gains and losses with each alternative source water option.</p>
<p><i>Water Act</i> licences are one of the last licences to be acquired by a project (typically during the construction stage) as they require renewal shortly after issuance (i.e., 2-year or 5-year initial terms). At this stage, the project has already acquired AER commercial approval (e.g., <i>Directive 065</i>) for operation. The project is well beyond the stage at which to re-evaluate water source options, economic design decisions have already been made, and the project has been sanctioned. Water has already been evaluated as part of front-end-loading-2 (FEL-2) project development and any Environmental Impact Assessments (EIA). <i>Water Act</i> licence applications should not become a way to delay, redesign, or cancel a project.</p>	<p>While water licensing is often a back-end aspect of the project, evaluation of alternatives that is consistent with achieving water conservation outcomes can and should occur much earlier in the project life cycle. This would include reviewing alternative sources, evaluating the environmental net effects, and determining the economic viability of those options.</p> <p>The process for evaluating environmental impacts is separate from the process described in the manual; the water licence decision will not revisit the public interest decision when covered through the environmental assessment process. The water licensing process will not require a water-conservation-specific assessment under the manual if the issues are already addressed in an environmental impact assessment.</p> <p>The applicant should consider water availability and conservation as early as possible in the overall project planning. The applicant may apply to the AER for a water licence when sufficient information is available to submit a complete application to address impacts to other water users, the aquatic environment, water management, as well as water conservation considerations.</p>
<p>2. Applicability of this Manual</p>	
<p>The manual does not apply to oil sands operations but includes a statement that mine operators may use it. We recommend removing this statement for clarity.</p>	<p>Section 1.1 of the manual has been modified for clarity. Where the manual does not apply, the manual may be used as a point of reference.</p>

Stakeholder Feedback – Issue	AER Response
<p>Why are temporary diversion licences (TDLs) excluded? We recommend including TDLs for hydraulic fracturing to ensure alternative sources have been evaluated.</p>	<p>TDLs are not in scope of the manual as they are short term and represent a relatively low risk to overall water conservation. Therefore, TDLs are not required to undergo an assessment similar to term licences with respect to water conservation. However, TDLs are still evaluated for the potential impacts during their term. Furthermore, TDL water usage is included in the water demand assessments to determine locally constrained areas in addition to the other licensed water users for cumulative allocation as part of a cumulative effects analysis.</p>
<p>Section 1.1 of the draft manual states, “this manual only applies to licence amendments if the purpose is being changed to one that is covered under the policy.” Why does it apply only to amendments?</p>	<p>The manual applies to new licence and renewal applications under the scope of the WCP. The referenced section also clarifies that some amendments (that is, ones that are changing the purpose to those falling under the WCP scope) should also follow the manual. The purpose of capturing these specific licence amendments (and not others) is to ensure there is no regulatory gap to apply for a water licence for a different purpose to avoid the WCP.</p>
<p>What is the reasoning for including horizontal wells but excluding vertical wells?</p>	<p>The WCP provides the scope of the manual and does not include vertical wells. It focuses on industrial activity that has or is projected to have high water use.</p>
<p>The 2020 version of the WCP recognizes that certain supplementary activities (e.g., drilling above the base of groundwater protection, dust control, and camp water supply) will continue to require high-quality nonsaline water and are therefore exempt from the provisions of the policy. However, this is not stated in the manual.</p>	<p>The manual assumes that readers are familiar with the terms and outcomes defined in the WCP. Please reference section 1 of the manual for details.</p>
<p>3. Important Definitions – General</p>	
<p>New interpretations of water category definitions are introduced, which do not align with existing guidance documents. We recommend using definitions included in the <i>Water Act</i> and <i>Directive 81</i> for consistency.</p>	<p>The manual uses definitions that are aligned with <i>Directive 081</i> and the <i>Water Act</i> and provides examples of the different water types consistent with the described water type. The definitions for high-quality nonsaline and alternative nonsaline are based on <i>Directive 081</i> with the additional criteria of non-industrial water users within 1.6 km radius and industrial runoff in water short areas. These modifications were necessary to ensure that the manual addresses water conservation across the entire province, whereas <i>Directive 081</i> focuses on the northeast.</p>

Stakeholder Feedback – Issue	AER Response
<p>The definitions here need some clarity as some of these already exist in other policy documents including the <i>Alberta Government Code of Practice for Water Works Systems using High Quality Groundwater</i> (June 1, 2012)</p>	<p>The <i>Code of Practice for Waterworks Systems using High Quality Groundwater</i> under the <i>Environmental Protection and Enhancement Act (EPEA)</i> is a different use of groundwater and is based on different parameters to determine suitability for its intended use.</p> <p>The addition of alternative nonsaline category is new to the WCP and is specifically defined to promote these, albeit nonsaline, water options over high-quality nonsaline sources.</p>
<p>4. Important Definitions – High-Quality Nonsaline Water</p>	
<p>We recommend the AER provide context on what treatment technologies are considered standard.</p>	<p>Each water source and type of water use has different considerations as to what reasonably could be used as standard treatment technologies, which are constantly evolving. What is economically achievable today may not have been 20 years ago.</p>
<p>Reclaimed water bodies and end-pit lakes are typically required by other regulatory conditions. Identifying them as preferred to natural sources could contradict those conditions.</p>	<p>Section 1.3.1.1 has been modified to address this comment.</p>
<p>Dugouts, reservoirs, and borrow pits are considered high-quality surface water. Diversions from these anthropogenic water bodies contribute to the proposed locally constrained areas. However, diversions from these water bodies have much lower environmental impact and should not be weighted the same as withdrawal from more sensitive sources.</p>	<p>A blanket approach to treat these types of sources differently could oversimplify the situation. Some of these sources may be hydraulically connected. The applicant can undertake an analysis to determine if the particular source is not locally constrained or otherwise should be considered different from the HUC 8 subwatershed.</p>
<p>High-quality nonsaline groundwater definition includes “...usable with standard treatment” with no qualifiers. Clarify that it is not unusable for other industrial uses.</p>	<p>The manual provides definitions of high-quality nonsaline and alternative nonsaline rather than precise measurement categories. This is to allow advancement in treatment technologies, evolution of the best available technology that is economically achievable (BATEA), and recognition that water of different qualities (e.g., high-quality nonsaline water) may be the only water source for other uses such as municipalities, household users, and agricultural purposes.</p>
<p>Could you provide rationale on how 1.6 km was selected and clarity on nonindustrial users?</p>	<p>The <i>Alberta Environment Guide to Groundwater Authorization</i> (2011) is based on 1.6 km. This document was used as a point of reference. Non-industrial users within 1.6 km of the source well is a practical indicator that the particular water source is used for purposes that normally require high-quality nonsaline water.</p>

Stakeholder Feedback – Issue	AER Response
<p>We recommend allowing exceptions for industrial-use bedrock aquifers less than 150 metres deep that do not support instream and aquatic ecosystem needs, and meet all other criteria, where the depth to the top of the same bedrock aquifer is more than 150 metres off lease.</p>	<p>Typically, wells shallower than 150 metres are more accessible to non-industrial users, and this was chosen as a reasonable criterion to define alternative nonsaline and high-quality nonsaline water sources.</p>
<p>5. Important Definition – Alternative Nonsaline Water</p>	
<p>Typically, industrial wastewater does not include oil and gas operations. Expand examples to encompass more sources and state “AER-licensed facilities.”</p>	<p>The manual was written to consider other similar types of water sources and not meant as an exhaustive list. Wastewater sourced from oil and gas operations is captured under section 1.3.3.</p>
<p>Clarify the underlined wording: “Alternative nonsaline water includes surface water and nonsaline groundwater that has <u>already been used</u> or are naturally highly mineralized due to the geological setting or has been adversely impacted resulting from an industrial, commercial, or municipal activity or use.”</p>	<p>The term “already been used” refers to having been previously licensed under the <i>Water Act</i> or otherwise used for anthropogenic purposes. It is not necessarily water that is of poor quality, but it is considered a potential alternative to high-quality nonsaline water.</p>
<p>We believe industrial runoff should be considered an alternative source in all areas, as this is not a source that would be considered to support aquatic ecosystem needs. Definitions should remain consistent across all areas.</p>	<p>Using anthropogenically disturbed water is preferred; however, water-short areas are at high risk from a water conservation point of view, and any reduction of surface water is important to the aquatic environment and other water users. Water-short areas have the greatest water conservation risk, so industrial runoff may be important for the aquatic environment and may also be relied upon by other users.</p>
<p>We recommend including and strongly encourage use of captured or condensed steam from stack or flue gas heat recovery as a preferred water source.</p>	<p>The list in section 1.3.2.1 of the manual is not exclusive. We will include captured or condensed steam from stack or flue gas heat recovery as a potential alternative source.</p>
<p>Remove “Nonsaline groundwater in contact with bitumen deposits, regardless of depth” from the list of “alternative” waters.</p>	<p>This potential water source is preferred over the other high-quality nonsaline water sources. An authorization under the <i>Water Act</i> is still required to dewater or divert and use this source of water. As part of the application review, impacts to other water users, the aquatic environment, and water management will continue to be made. Using this water source is preferred to offset other high-quality nonsaline sources such as rivers.</p>

Stakeholder Feedback – Issue	AER Response
6. Important Definition – Other Alternatives	
<p>We recommend removing “Efforts to use new or overlooked alternatives or non-water options are encouraged” and replacing with “Efforts to use new or overlooked alternatives or non-water options will be considered and will require appropriate environmental and risk assessment.”</p>	<p>The manual has been modified. In terms of water conservation, the policy outlines the preferred water use in figure 1. It is not the intention to promote technologies that have a large environmental footprint, and this is the purpose of the environmental net effects assessment to identify and eliminate alternatives that have other consequences. Where other technologies are used, the AER will continue to have oversight under the <i>Oil Sands Conservation Act</i>, the <i>Oil and Gas Conservation Act</i>, and the <i>Environmental Protection Enhancement Act</i>.</p>
7. Important Definition – Locally Constrained Areas	
<p>The inclusion of the term “locally constrained area” increases the oil and gas sectors risk, reduces regulatory certainty, and puts our sector at a competitive disadvantage relative to other water users in Alberta. We recommend all aspects related to locally constrained areas should be deleted from the draft manual.</p>	<p>The locally constrained areas are part of the operationalization of the WCP and the <i>Surface Water Allocation Directive</i>. Specifically, site-specific circumstances (i.e., local water availability conditions, demand on the water resource) will elevate the water conservation risk and, consequently, the assessment and application submission expectations.</p> <p>The determination of locally constrained areas is on a relatively local scale (HUC 8) but also based on the <i>Surface Water Allocation Directive</i> requirements, which recognize that low winter flow rates are the most critical times for surface water diversions. Locally constrained areas for groundwater incorporates consideration of cumulative impact to the recharge rate.</p> <p>This information is already used during the application review, and providing applicants with advance awareness should reduce the application review timelines, number of supplemental information requests, and raises issues that will need to be assessed. Including locally constrained area is viewed as increasing regulatory certainty as the application is consistent with the standard expectations and proactively addresses known issues.</p>
<p>Water-short and potentially water-short areas should be updated annually if this is not already done.</p>	<p>AEP determines what areas are water short or potentially water short.</p>

Stakeholder Feedback – Issue	AER Response
<p>We recommend adding flexibility to the locally constrained designation by applying this designation at a certain point in the year if/when there is an anticipated shortage for the upcoming winter season. Consider mirroring the way term licence conditions are currently set up: limiting withdraw when flows/levels are below a certain point. Refer to the <i>Surface Water Allocation Directive</i> rather than creating a new area classification.</p>	<p>Where local variation occurs, the applicant can undertake the analysis to determine operational mitigations. The locally constrained designation does not mean a licence will not be issued; it simply means more evaluation and information is needed for the particular HUC 8 subwatershed. Having the applicant consider how their water needs could be met while avoiding withdrawals during the low winter flows is part of the intent of the designation.</p> <p>Providing advance notice of areas of the province that require more careful attention to water withdrawals is intended to reduce risk and increase regulatory certainty. The locally constrained mapping will be updated annually to reflect the most current water use information for the HUC 8 subwatersheds.</p>
<p>Provide clarity on how a locally constrained area classification change would impact the licence.</p>	<p>The licence conditions will apply for the duration of its term. A newly designated locally constrained area would affect the information needed for a renewal application.</p>
<p>High-resolution version of map on AER website is a static file type, and its scale makes it difficult to see exactly where water diversions fall within the defined areas.</p>	<p>The intention is to show the water-short designations on an online map which will address this.</p>
<p>We recommend requiring an impact assessment and detailed linked hydrologic-hydrogeologic model for basins in the Green Zone prior to authorizing surface or groundwater use in these areas.</p>	<p>The locally constrained designation is intended to be precautionary and does not incorporate a detailed linked hydrologic-hydrogeologic model for some basins in the Green Zone.</p>
<p>8. Applying for a Water Licence: Risk-Based Assessment</p>	
<p>“A less rigorous requirement may be considered at the discretion of the AER.” Such language does not lend confidence in the AER’s commitment to implement high standards for water protection.</p>	<p>The manual provides guidance as to what information is needed in support of an application; it does not include requirements. The language was changed to clarify that the AER is not imposing less rigorous requirements, but rather the information that would need to be provided in support of an application may be less where the risk to the outcome of water conservation is lower.</p>
<p>Insufficient guidance regarding how a specific water source can be demonstrated to not be water short or that seasonal variation is not a significant factor.</p>	<p>The manual indicates that the applicant should contact the AER. It must be considered on a case-by-case basis recognizing that avoiding or minimizing winter withdrawals is a key mitigating factor in the locally constrained areas.</p>
<p>Could you clarify the classification of large-scale projects within risk ranking?</p>	<p>The manual was updated to clarify that the project scale criteria is the volume taken over the full year, recognizing that the instantaneous use rate may be higher.</p>

Stakeholder Feedback – Issue	AER Response
Could you clarify how designation is determined for applications? How to apply risk-based assessments with water short designation criteria?	The manual was updated to clarify that the water-short designation refers to the point of diversion.
Project Scale: Unclear about what defines a project area. We recommend defining projects clearly based on water source.	The project itself is where the high-quality nonsaline water is used. It is also considered to be a specific site where the water infrastructure for diversion or use is interconnected. The WCP manual has been clarified accordingly.
The surface water criterion does not take into account source water bodies that are not flowing (i.e., lakes, reservoirs, etc.)	The WCP manual was modified to clarify that the large project criterion applies to flowing water bodies. This includes rivers and surface water bodies with outflows (such as lakes and reservoirs with outflows). The project is considered large scale if it removes greater than 0.7 per cent of the outflow.
Please clarify that “total project allocation of 600 m ³ /day” is for the same source and not all sources related to a project. Similar clarification for surface water projects with allocation of 2700 m ³ /day.	The project scale is for all high-quality nonsaline water sources contributing to the project. The water diversion may be from different points of diversion that make up the total allocation, which is possibly administered through separate licences. Because of the different types of infrastructure involved and differing opportunities for water conservation, “all sources” refers to all surface water and groundwater sources.
Industry welcomes the longer initial licence terms and renewals for up to 10 years.	Comment noted.
Could you define the terms “conjunctive use” and “plan for conjunctive use prepared?”	The terminology has been changed to “combined use.” A definition has been provided in the manual. Combined use, in the context of the manual, consists of combining the use of both high-quality nonsaline water sources and alternative sources to increase the conservation of high-quality nonsaline water supplies.
The thresholds based on size are static. To drive continuous improvement, these thresholds should decline over time. This will drive true water conservation. We recommend a schedule of declining thresholds.	The intention is to periodically review water conservation outcomes achieved, and there will be an opportunity to modify the large-volume threshold in the manual as appropriate. The manual provides incentives for significant reductions in allocation, and continual improvement occurs during application renewals.

Stakeholder Feedback – Issue	AER Response
For large projects, we recommend requiring a detailed alternative source assessment, environmental net effects assessment, and economic analysis of alternates. Make these assessments available for public and stakeholder review and comment.	<p>The policy requires escalating water conservation assessment requirements consistent with the need for conservation. It is based on the scale and the context of the location. Large projects also include cumulative effects assessment and a plan for combined use.</p> <p>All information submitted with applications is publicly available, although the applicant may request that certain sensitive information be deemed confidential.</p>
9. Applying for a Water Licence: Water conservation incentives	
Could you define “significant allocation reduction” or provide evaluation criteria or benchmarking for applicants to better understand evaluation requirements?	<p>The term “significant” is intentionally left undefined as it is preferred to allow discretion for different circumstances. For example, some water conservation efforts may be applicable over the life of the project whereas others over the span of the licence term. Applicants are encouraged to meet with the AER to determine how the water conservation efforts qualify for incentives. The manual has been updated to allow incentives to span multiple renewal periods where significant upfront conservation efforts have been implemented with ongoing benefit.</p>
In our opinion, the incentive of falling back to a lower tier is not an incentive. We recommend adopting a credit program similar to that of carbon credits.	<p>A credit program is beyond the scope of this manual. The incentives provided are intended to help reduce the use of high-quality nonsaline water without introducing significant program administration. Where water use data do not indicate substantive movement towards water conservation, the overall program can be revisited to determine additional controls and incentives.</p>
Could you clarify that the Alberta Water Tool is an acceptable report to determine natural variability, supply constraints of the source, and the existing use of the water source?	<p>The Alberta Water Tool is a third-party tool (built on separate assumptions). It provides some information related to allocation and may be suitable for planning purposes but is not currently used as a basis for licence decisions. The AER does not provide third-party endorsement. Credible information will be accepted.</p>
Water conservation actions can lower an application’s risk tier. This is positive. Confirm the AER will make themselves available for preconsultation meetings with the applicant to determine if the project qualifies for a lower tier.	<p>The last paragraph in section 2.2 recommends that applicants should have a preapplication consultation meeting with the AER to determine if the project potentially qualifies for a lower tier assessment. The AER encourages these meetings when there are questions around application expectations.</p>
What constitutes final years of operation – 2 years, 5 years, 15 years?	<p>The manual has been clarified. The final years of operation is when it is expected to see the operation no longer needing water by the time the licence term expires. The licence duration (term) depends on the tier that the application falls within.</p>

Stakeholder Feedback – Issue	AER Response
<p>Under the current proposal operators may offer to “give back” overly large allocations that were never actually required to gain regulatory expediency. This should not be rewarded. Also, the current proposal is unspecified and open to subjective assessment.</p>	<p>The licence application process authorizes the water allocation for the overall project needs. In some cases, the initial water needs are higher than future water needs, resulting in the licensee holding a greater allocation than currently needed. The incentive is intended for industry to return the unused portion in the interest of water conservation, in particular where the licence does not contain a condition to claw-back unused allocation. This condition is typically included in current term licences.</p>
<p>10. Applying for a Water Licence: Preparing an Application</p>	
<p>The references “justifiable” and “needed” come from views that are becoming increasingly outdated, given our need to transition to clean sources of energy</p>	<p>The purpose of the manual is to outline the assessment and submission needs to support a water licence application. The clean energy transition is a higher-level government policy that is outside the scope of the manual.</p>
<p>We recommend the AER revise the second bullet of the step 5 in section 2.5 of the manual as it leaves too much of the reassessment open to interpretation. The two sentences appear to convey that this is optional.</p>	<p>The manual has been adjusted as recommended.</p>
<p>In bullet 2 of the step 6 in section 2.3 of the manual, the use of the word “normally” appears to imply that the assessment of the availability of nonsaline water and the potential impacts is not always included in the application.</p>	<p>The AER agrees these assessments are a critical component of water licensing applications.</p>
<p>Step 4 of section 2.3 of the manual indicates the economic viability of the options should be included for all options involving high-quality nonsaline water. All producers have different cost structure or cost expectations. This could unfairly penalize producers with lower costs for transporting water.</p>	<p>The economic assessment informs a decision from a water conservation perspective. This information is coupled with the alternative source assessment and the environmental net effects to determine if an alternative source is economically, environmentally, and technically feasible. Application decisions are not based solely on economic viability; however, the applicant is expected to provide the rationalization of why an economically viable water alternative is not the preferred option.</p>
<p>Step 1 of section 2.3 of the manual – Alternative sources can be readily processed for in situ steam generation but is undesirable for utility unless treated. The need for high-quality nonsaline water use for utility should be acknowledged.</p>	<p>The intention of the WCP is to encourage the use of alternatives to high-quality nonsaline water. It is also recognized that some uses of water rely on high-quality nonsaline as the only reasonable source, and it is not the intention of the manual to limit high-quality nonsaline use where this is the only source that can be used. The manual has been updated accordingly.</p>

Stakeholder Feedback – Issue	AER Response
Step 2 - Points of diversion and where are they located are the same thing.	The manual has been modified accordingly.
Step 4 -The alternative source assessment description in step 4 does not match that in sections 3.1 and 3.4	Step 4 description has been revised in the manual.
Step 6 - Notes that the proponent will need to include all other information under applicable regulatory instruments, including the <i>Guide to Groundwater Authorization and Surface Water Allocation Directive</i> . It is noted in the document that these submissions normally include the assessment of the availability of nonsaline water and impacts of proposed water use and evaluation of existing water supply. These requirements appear to be redundant to some of the requirements of the manual.	The comment is describing supplementary information for <i>Water Act</i> licence applications; these are expected to be submitted together with the standard application information. It is not the AER’s practice to repeat what is already in other regulatory instruments.
11. Application Content – Alternative Source Assessments	
It is unclear how far reaching the expectation is for industry to investigate these alternative sources.	The risk evaluation (table 1) and description for environmental net effects assessment provides the level of analysis expected and radius (from the point of use) where alternatives should be considered.
Clarity required for whether this assessment should be focused on the point of diversion or the point of use.	The alternative source assessment should be evaluated at the point of use as the alternative sources are all tied to the point of use. The points of diversion would be unique to each alternative source. The manual has been clarified to reflect this.
To what degree will the amount of collaboration be measured? The current regulatory framework doesn’t provide much support for collaboration.	The WCP has described the policy outcomes for collaborative approaches specifically in the section “Multi-Operator Water Plans” (MOWPs). The manual does not currently provide any guidance regarding MOWPs, but we expect to add this guidance at a later date.
Section 3.1.1 - “Applicants should do the following” reads as if this information is optional and may not be required.	Section 1.1 of the manual states that the process described in the manual is recommended as a best practice. Applicants may, at their discretion, follow alternative processes, which may result in delays in processing the application.

Stakeholder Feedback – Issue	AER Response
<p>To support the applicant in using multiple water sources to minimize or reduce the reliance on high-quality nonsaline water, perhaps an incentive from the AER that the sources will be combined under a single licence application would be valuable.</p>	<p>It is recognized that combined use of water increases the number of concurrent sources as well as management requirements of alternative sources. As the risk to water conservation increases, the efforts to conserve high-quality nonsaline water increases as well. The need to identify and use alternative sources increases even if it is for a partial supply recognizing that the level of analysis and potential licensing increases depending on the water sources.</p> <p>The reliability of the source and the potential need for a reliable back-up supply are considered in the overall evaluation and may also be reflected in the technical feasibility of the alternative source. Multiple sources can be included within the same licence document, where this makes sense.</p>
<p>“Applicants are expected to identify and assess alternative sources and non-water technologies.” It is unclear how far-reaching the expectation is for industry to investigate these alternative sources.</p>	<p>The intention is that only reasonable alternatives should be assessed. The manual has been adjusted accordingly.</p>
<p>Quality of the alternative sources is not included as a consideration in the operational suitability. In addition, considering supplemental water sources or conjunctive use is cost prohibitive in nature as you will require duplicative water management infrastructure.</p>	<p>Compatibility of the water source is a reasonable technical consideration; however, it is principally a capital and operation and maintenance cost input into the economic evaluation. For the most part, the technology exists to treat water of various qualities to be able to be used in industrial settings, recognizing that some may be cost prohibitive.</p> <p>The feasibility of combined use should be considered. While some duplication of infrastructure may be involved, this is not necessarily cost prohibitive in every case.</p>

Stakeholder Feedback – Issue	AER Response
<p>We recommend deleting the statement that “economic feasibility of a project is not a factor in determining the technical feasibility of the water source.” Section 3.4 Economic Evaluation contradicts this statement, as it recognizes that economics can determine if an alternative source is feasible.</p>	<p>The statement referenced in this feedback is consistent with section 3.4 of the manual, which specifies that the economic evaluation is a separate evaluation from the technical assessment. A technically viable alternative source of water may not be economically viable, but the manual expects the analysis to demonstrate this.</p> <p>For the purposes of water conservation, the economic evaluation is separate from technical feasibility mainly to ensure it does not become a comparison to the lowest cost alternative, which is usually a high-quality nonsaline source; the point is to determine if the technically feasible alternative source is also economically viable. It is not expected to evaluate alternatives that are not economically viable options; however, some level of technical assessment is needed to determine the capital and operation and maintenance cost inputs to the economic evaluation.</p> <p>It is recognized that the technical assessment and economic evaluation are intrinsically linked and that clearly uneconomic options are screened out prior to undertaking a full technical assessment on a particular option. Typically, the technical assessment is completed prior to the economic evaluation being completed. Best available technology economically achievable (BATEA) links the economic evaluation to the technical assessment and is consistent with the manual.</p>
<p>The requirement “how you will collaborate with other water users in efforts to reduce overall reliance on high-quality nonsaline water” in section 3.1.3 is unrealistic and impractical.</p>	<p>There are notable examples where licensees have collaborated with other water users (both energy and non-energy) in both water use and infrastructure. The concept of collaboration, which is intrinsic with the WCP, should be considered in how it fits in the specific water needs.</p>
<p>AER is requiring “how the nonsaline water use intensity of the project can be improved over time.” While necessary, improving water intensity is not sufficient. Water conservation must be measured and evaluated on a gross basis (total cubic metres), not on an intensity basis (e.g., cubic metres per barrel), which can mask absolute water use growth. Additionally, the word “can” is conditional and not indicative of strong management or robust plans.</p>	<p>AER uses intensity as a measure of productivity, and improvements in nonsaline water use intensity are also considered a success in water conservation.</p>

Stakeholder Feedback – Issue	AER Response
12. Application Content – Environmental Net Effects (ENE) Assessment	
<p>The detail level indicates potential impacts to other users will be monitored. We are requesting further information on the methods that will be utilized to inform other users as industry themselves would fall into that category.</p>	<p>Monitoring potential impacts to other users of alternative sources is not appropriate for water licences, and monitoring the impacts on the applied-for source of high-quality nonsaline water is a normal consideration in all water licences (not only those issued pursuant to the WCP). The bullet indicating how potential impacts to other users will be monitored has been removed from the manual.</p>
<p>We support assessing all reasonable alternative sources for environmental net effects. However, environmental net effects assessments should comprise four elements – water use, energy use (e.g., emissions), land footprint, and waste generation.</p>	<p>The purpose of the environmental net effects assessment is to provide a high-level identification of common aspects to consider. The environmental net effects has consideration for each of these areas, with additional considerations for impacts to the environment, historical resources, and nuisance conditions, and it could be informed by Indigenous knowledge.</p>
<p>Confirmation-level evaluation thresholds exceed those of qualitative level.</p>	<p>Qualitative-level environmental net effects assessments include everything listed in a confirmation-level assessment. It does not replace the confirmation-level environmental net effects assessment but adds to it. All tiers must include an environmental net effects assessment. The confirmation-level environmental net effects assessment will be clarified to ensure the context of this environmental net effects level is better understood.</p>
<p>The level of detail required to complete the environmental net effects assessment is similar to that required for a full EIA application submission.</p>	<p>The level of detail expected for the environmental net effects is commensurate with the risk to water conservation.</p>
<p>Certainly, energy or air emissions may increase (or decrease) depending upon water sourcing options. However, a simplistic response of “energy increased so this is not viable” is not a response that can be supported. The materiality of any increase must be considered, especially within the context of an energy and GHG intensive industry (oil and gas).</p>	<p>The intent of the ENE assessment is not to absolutely quantify differences between sources but to gain an understanding of the differences. The level of detail increases as the risk tier increases. A combination of factors must be considered, rather than individual factors.</p>

Stakeholder Feedback – Issue	AER Response
13. Application Content – Cumulative Effects	
<p>The cumulative effects component is a significant addition to the requirements for <i>Water Act</i> applications. Sufficient information on the allocation and use of other water users is not easily accessible to be applied consistently by applicants. We suggest this should not be the responsibility of a water licence applicant.</p>	<p>The cumulative effects approach in the manual is aligned with the <i>Water Conservation Policy</i>. It is normally the applicant who undertakes the assessment to include cumulative effects.</p> <p>The cumulative effects section provides detail as to the assessment approach and is consistent with the prior <i>Water Conservation and Allocation Guideline for Oilfield Injection</i>, the <i>Water Act</i>, and general cumulative effects approaches.</p> <p>Information on existing licences and traditional agriculture registrations may be found using the Alberta Flow Estimation Tool for Ungauged Watersheds (AFETUW), the Approvals Viewer, or by contacting AEP or the AER directly:</p> <ul style="list-style-type: none"> • https://afetuw.alberta.ca/ • https://avw.alberta.ca/ApprovalViewer.aspx <p>For water use based on reasonably foreseeable projects:</p> <ul style="list-style-type: none"> • https://www.alberta.ca/environmental-impact-assessments-current-projects.aspx
<p>Please clarify “other users.” Does this include recreational users? What about municipalities?</p>	<p>Other users are those having the right to divert and use water. This includes household users, traditional agriculture users, permanent licensees, and term licensees.</p>
<p>The minimum size recommendation for the cumulative effects assessment (at the HUC 8) is too large – potentially larger than the provincial EIA study area requirements for some projects.</p>	<p>We removed “The area should, at a minimum, be on a subwatershed basis from where the diversion is occurring as well as the surrounding subwatersheds (minimum scale of hydrologic unit code 8)” from section 3.3 of the manual to add flexibility to determine the appropriate scale. The assessment still needs to determine (on a case by case basis) the appropriate scale of the assessment and may be smaller or larger than the HUC 8 scale as appropriate.</p>
<p>Examples of quantitative metrics used in cumulative effects evaluation may be helpful for applicants as an initial guidance.</p>	<p>The manual specifically does not prescribe the exact methodology for a cumulative effects analysis. It is recognized that there is reference information on cumulative effects in available literature to help guide the applicant.</p>

Stakeholder Feedback – Issue	AER Response
Description of cumulative effects assessment requirements are only included in reference to Step 7 - Water Act Licence Application Submission (page 11) but not in the process steps in section 2.3.	<p>The description of the cumulative effects assessment is provided in section 3.3 of the manual. The applicant should base the evaluation and application submission according to the detailed description and, as such, should be referring to the more detailed description in section 3 of the manual.</p> <p>The manual was further clarified in section 1.2 that the assessment should be completed using section 3 as a point of reference.</p>
This evaluation should also state if information is publicly available, as it did in the 2006 Guideline. Meaningful evaluations may not be able to be performed if information is not publicly available.	We clarified section 3.3 of the manual.
Quantitative evaluation should be limited to direct impacts relating to the planned option, e.g., as it relates to the groundwater resource to be used, including groundwater and surface disturbance. For indirect impacts, qualitative evaluation is more appropriate.	Section 3.3 of the manual has been adjusted accordingly.
Clarify meaning of “...aquatic ecosystem (both surface and subsurface)...”	Section 3.3 of the manual has been adjusted to clarify that the cumulative effects assessment should focus on the impacts to the aquatic environment overall.
Reword “...a decision on issuing the Water Act licence will not be made if the AER believes that the environmental assessment process is applicable and has not been complied with.” to “...a decision on issuing the Water Act licence will not be made if the AER believes that an applicant should have conducted an EIA, but one was not completed.	Section 3.3 of the manual has been adjusted to “For proposed projects that require an environmental impact assessment (Part 2, Division 1, of the <i>Environmental Protection and Enhancement Act</i>), a decision on issuing the <i>Water Act</i> licence will not be made if the AER believes that the environmental assessment process is applicable and has not been completed. The process of evaluating environmental impact assessments is separate from the process described in this manual.”
14. Application Content – Economic Evaluation	
APEGA professionals often do not have final signoff on an economic model.	The application requires professional sign-off for the economic assessment. Members of APEGA are often tasked with the determination of capital and O&M costs and the AER wants to ensure these have a sound basis when submitted.

Stakeholder Feedback – Issue	AER Response
<p>The approach laid out in this section (economic viability of the project as a function of water source) is impractical as experienced with the 2006 Guideline.</p>	<p>A decision tree was considered; however, this concept is already included in the manual: “It [the economic evaluation] should be completed on at least two feasible water alternatives.” If there are no feasible alternatives from an alternative source assessment or environmental net effects point of view, the economic assessment is not needed.</p>
<p>Change “should be completed on all feasible water alternatives ...” to “should be completed on at least two of the most operationally feasible alternatives” to align with section 3.1.2</p>	<p>The manual has been changed accordingly.</p>
<p>Provide a reference to the Class 5 cost estimate.</p>	<p>A reference to the Class 5 cost estimate has been provided in the manual.</p>
<p>The last two points of the detailed economic assessment request information that could present possible financial disclosure and forward-looking statements protected under the <i>Competition Act</i>. It is unclear how the information will be used or how this detailed information will be evaluated. This level of detailed financial assessment is not required for well, pipeline or facility applications; why is it required for water? Would an uneconomical project be rejected despite employing best practices for water conservation?</p>	<p>The economic assessment informs the decision on a water conservation perspective. This information is coupled with the alternative source assessment and the environmental net effects to determine if an alternative source is economically, environmentally, and technically feasible.</p> <p>Water is not allocated solely on the basis of economic viability; however, the applicant is expected to provide the rationalization of why an economically viable alternative is not the preferred option.</p> <p>A supplemental information request may be sent where the application information is not sufficiently comprehensive or where an alternative source is deemed viable. The manual has been modified to clarify that specific application information may be requested to be held in confidence.</p>
<p>15. Locally Constrained Watersheds & Large-Project Threshold Estimation</p>	
<p>The need to conserve water should always be a high priority. Comparing stress between regions does not negate this imperative.</p>	<p>The analysis underpinning the locally constrained areas is conservative. When the area is considered locally constrained, there is a need for additional analysis in support of a water licence application. If the additional analysis indicates that the particular water source is sufficient (even though the surrounding HUC 8 watershed is locally constrained), the water conservation risk can be considered as though the water source is not locally constrained. A preapplication meeting is recommended to confirm that the methodology and assumptions are acceptable to the AER.</p>

Stakeholder Feedback – Issue	AER Response
<p>Determination of locally constrained watersheds is based on a winter demand/supply ratio of 12%, but this doesn't appear to follow the <i>Surface Water Allocation Directive</i> approach for calculating instantaneous cumulative diversion limits.</p>	<p>The manual takes a conservative approach in determining protective flows and available allocation. It is based on the <i>Surface Water Allocation Directive (SWAD)</i> and accounting for winter low flows which represents the most protective case. The 12% allocation and supply ratio indicator comes directly from the <i>SWAD</i>. The methodology for using annual data to ensure it can be met during the key winter flow period is described in appendix 2. Detailed operational withdrawal rates compared to instream objectives will be identified within the specific licensee's conditions based on the <i>SWAD</i>.</p>
<p>The manual used a median of 11% winter flow contribution to mean annual flow as a starting point for its analysis, which represents an overestimate of proportionate winter flow for 20% of the assessed watersheds. The AER should choose a lower proportion of watersheds for which this manual will be non-protective (less than the current amount of 20% of assessed watersheds).</p>	<p>The locally constrained analysis is a high-level indicator to guide application assessment and submission expectations, in particular to address low flow winter conditions.</p>
<p>The manual shows that the “project scale” risk threshold has been determined using a metric that has no connection to environmental risk or effects or economic or cumulative effects considerations</p>	<p>The project scale approach is based on the previous <i>Water Conservation and Allocation Guideline for Oilfield Injection (2006)</i> for continuity reasons but with an improved analysis of the total project water use and based on allocation. The intent is to focus the attention of applicants, regulators, and stakeholders on the projects that have the greatest ability to assess and implement water conservation measures.</p> <p>Two criteria are included for scale: total volume of water used and water availability based on an analysis of the local scale of the source (that is, where the application exceeds 0.7% of the water availability of the source). The project is considered large scale if either of the criteria thresholds are exceeded. For large rivers such as the Athabasca River, 0.7% would be a very large volume, so a total volume limit has been also included.</p> <p>The volume criterion will kick in for high-availability water sources such as the Athabasca River or the North Saskatchewan River, whereas the per cent availability criteria would kick in for lower-availability water sources. Higher volume typically means a larger project and implies a higher ability and need to conserve.</p>

Stakeholder Feedback – Issue	AER Response
<p>“Licensed allocation data broken up by year and by purpose...” shows a level of preference. Is one use/purpose more valuable than another, or is purpose only those for oil and gas licences?</p>	<p>The appendix described that the intention is to determine whether the diversion included winter use (not all diversions operate year-round).</p>
<p>Large-volume project designation statistics do not consider the allocations vs. project type (SAGD, CSS, conventional, secondary recovery, hydraulic fracturing).</p>	<p>The manual had considered water allocations from across the energy sectors. For understandability and applicability reasons, all energy sectors are combined into a single value for surface water and for groundwater.</p>
<p>Is this showing overall volume needs (m³) for the project, or is it based on a daily requirement? There is no time specified.</p>	<p>Clarification has been provided that the volume shown is the annual allocation projected to a daily amount.</p>
<p>The paragraph about percentage of annual discharge limit includes detail on oil sands projects withdrawing water from the Athabasca River. This document does not apply to oil sands mining, so any detail not specific to in situ oil sands should be removed.</p>	<p>The paragraph about percentage of annual discharge limit has been removed from the manual.</p>
<p>AER is proposing water management for “constrained” watersheds. The AER analysis is dependent upon two key assumptions: 1) that there is hydrometric data for the watershed and 2) that winter demand is only 40% of the annual rate. Where these criteria are invalid, a precautionary approach should be used.</p>	<p>Runoff calculations (informed by gauged watersheds) were used for all watersheds in the locally constrained identification process. The solution proposed is less protective than the conditions that are now typically applied. Avoidance of any winter withdrawals would be preferred.</p>
<p>We recommend that AER include language in the manual stating explicitly that local hydrogeological and geological data from industry may be used to re-assess the locally constrained designation of a HUC 8 as determined by the screening level assessment.</p>	<p>The locally constrained designation is a “signal” to do more careful analysis in such areas to justify that their application would be sustainable. Wording has been added to allow for an applicant to evaluate if a specific source should not be “locally constrained.” A preapplication meeting is recommended to confirm that the methodology and assumptions are acceptable to the AER.</p>

Stakeholder Feedback – Issue	AER Response
<p>The AER should focus WCP implementation efforts on developing an enabling regulatory framework that supports alternative source use and water reuse, rather than introducing new barriers to water access for energy developments. The manual should provide guidance for <i>Water Act</i> applications that align with the objectives of the WCP and the Government of Alberta’s commitments to red tape reduction, outcomes-based regulation, and stimulating economic recovery.</p>	<p>The AER has worked with AEP on this manual, and both parties consider it to align with the objectives of the WCP.</p>
<p>The premise for introducing “locally constrained areas” in the manual is not apparent. It is a term that does not exist within the WCP and is described as theoretical within the manual. Remove the concept from the manual. At a minimum, the proposed areas should be interim until fully substantiated. The regulatory system should be transparent, predictable, and appropriate to conditions as measured in existing, long-term monitoring programs.</p>	<p>Locally constrained area designations are transparent, predictable, and appropriate to conditions as measured in existing, long-term monitoring programs, and are a “signal” to do a more careful analysis within the application to make the case that it is sustainable. The same considerations have already been in use in reviewing applications.</p>
<p>Provide more explanation on how the 10% limit was determined, with examples to validate. If maintained, introduce the “locally constrained” concept through a more detailed engagement process with impacted stakeholders.</p>	<p>Appendix 2 describes the methodology to arrive at the locally constrained levels.</p>
<p>In the absence of reviewing the report and model inputs, we are concerned with the applicability of this integrated model (i.e., Gleeson and Richter (2018)), developed for west-central Alberta, to all other areas of the province. The integrated surface water-groundwater report should be made publicly available.</p>	<p>Locally constrained areas are a “signal” to do a more careful evaluation, as outlined in the suggested solution in the manual. The locally constrained areas were based on existing research in literatures and were confirmed by the AER’s modelling work (the modelling work confirmed what others have found). The 10% limit is a trigger to identify a watershed as locally constrained based on groundwater allocation; the impact to surface is not in the same magnitude unless all the wells are in a gravel seam beside the river, and even then, the licence will be issued as surface water rather than groundwater.</p>

Stakeholder Feedback – Issue	AER Response
<p>Provide a boundary of areas that may see a potential impact, based on a distance that aligns with the draft manual. Suggest modification to “...groundwater withdrawals that are hydraulically connected within 1.6 km of a surface water body must be...”</p>	<p>A boundary is not appropriate in all cases as this depends on site-specific geology parameters and duration of pumping.</p>
<p>Can you please provide the full references of the following studies? The recharge values were quantified in the groundwater availability studies of five regions of Alberta: central Alberta (Klassen and Smerdon, 2018), southern Alberta (Klassen et al., 2018), upper Peace (Klassen and Liggett, 2019), lower Athabasca (Klassen, 2021), and Cold Lake-Beaver River Basin (Klassen, 2021).</p>	<p>References are provided in the manual.</p>
<p>16. Miscellaneous</p>	
<p>It would be good to have water conservation policies that mention the possibility and need to further transition away from water-intensive resource extraction methods. Working within the mandate may keep the rate of fresh water being used lower than it would have been, but the premise remains that a high-intensity freshwater usage will still be required.</p>	<p>The WCP recognizes that water is needed to continue the development of energy resources in Alberta. The manual is aligned with this policy direction.</p>
<p>The manual neglects large-scale operations in water sensitive areas since open-pit oil sands mines are not in a water-scarce area.</p>	<p>While the licensing approach for large-scale operations is not specifically described in the manual, it is part of the WCP itself. The manual incorporates water use and demand information in the locally constrained areas and escalates the assessment and application submission information needed where the water source is determined to be potentially stressed. Oil sands mines are addressed by the highly protective <i>Surface Water Quantity Management Framework for the Lower Athabasca River</i>.</p>
<p>How will development of other resources affect water use for oil and gas operations in water-short areas?</p>	<p>Water-short areas are determined using all water users. High demand in non-industrial uses may still result in a water-short determination. The primary focus of the policy is to conserve high-quality nonsaline water so that it is available for other users and the aquatic environment that rely on high quality nonsaline water.</p>

Stakeholder Feedback – Issue	AER Response
<p>How will water withdrawal change when provincial policy changes? Currently the Government of Alberta is working to change water licensing in southern Alberta, which is already maxed out water licences to accommodate coal mining in the region.</p>	<p>If the Government of Alberta changes water licensing policy, it will need to address whether the WCP and its implementation will need to be modified. The AER’s Water Use Performance website indicates continued downward trends in water use, in particular for thermal in situ, enhanced oil recovery, and hydraulic fracturing operations.</p>
<p>How will the AEP or AER hold companies liable and accountable for overusing water resources?</p>	<p>The manual is a recommended practice to support the assessment and submission expectations for a water licence application. The licensee is subject to the requirements of the <i>Water Act</i>, its regulations, and any <i>Water Act</i> licences issued, including specified limits on the volume and rate of withdrawal. The compliance assurance program applies to water licences and uses a range of tools across the program pillars of education, prevention, and enforcement. <i>Manual 013</i> describes how the AER implements this framework.</p>
<p>The AER uses mean annual historical river flow, a statistic that hides variability and the potential for water scarcity in years, or successive years, of hydrological drought. Historical gauge records from recent decades are misleading.</p>	<p>The AER’s analysis was based on median annual natural runoff, which is the normally used indicator by which long-term water availability is determined. All available flow records are included in the analysis.</p>
<p>Why was climate change not mentioned in the manual? It is impacting our watersheds, and thus the historical hydrometric records are probably no longer representative of near future watershed hydrology. Historically the lowest water levels are winter, which is the basis of the analysis in this report. However, as our study shows, runoff in western Canadian watersheds is shifting towards late summer and fall minimum flows.</p>	<p>The historic record is incorporating changing weather pattern information over time and covers a range of conditions, from extremely dry to extremely wet. Depending on the location and the modelling used, climate change would be expected to make the extreme dry or wet events occur more frequently, over a long period. Within the five to ten years’ term of a water licence, the historical record provides reasonable guidance on the range of flows that can be expected. The locally constrained mapping is updated annually and factors in changing water availability from the median annual flow historic record. The locally constrained analysis is focused on the winter low flows, which is normally considered the most conservative situation. The manual may be updated when AEP updates the water-short and potentially water-short areas mapping or if the methodology to determine locally constrained areas is modified at a future date.</p>
<p>How would you reduce reliance on high-quality nonsaline water? The options to store and transport lower quality water are not possible under the current legislation. Storing and transporting options that satisfy the water licence requirements are not economically feasible.</p>	<p>The application should account for the technical feasibility and cost difference where regulatory or technical options may not be readily available. Separate but coordinated initiatives are underway to improve the regulatory process for the storage (centralized fluid storage) and transport (temporary surface pipelines) of alternative sources.</p>

Stakeholder Feedback – Issue	AER Response
<p>Figure 2 map in the manual is not the same map in the policy. Potentially water-short areas are not indicated in the figure 2 of the policy.</p>	<p>The map in the manual is based on the water-short and potentially water-short areas plus the areas that are determined to be locally constrained. Figure 2 of the WCP shows the potentially water-short areas in yellow. The concept behind locally constrained is enabled through the WCP.</p>
<p>Tiers 3 and 4 in table 1 refer to a 10 km and 20 km radius. How were these values determined?</p>	<p>The distances identified in table 1 are based on the distances in the <i>Water Conservation and Allocation Guideline for Oilfield Injection</i> (2006) with a slight adjustment for Tier 4 by increasing the distance from 15 km to 20 km.</p>
<p>Table 1: Monitoring requirements should not be monthly; continuous flow and water level monitoring is relatively simple and low-cost and is a reasonable request.</p>	<p>In terms of water conservation, monthly monitoring is all that is needed for most water conservation instances. Increased frequency will not significantly improve the results, recognizing that technology can result in instantaneous monitoring. The licensee has the option of increasing the monitoring and reporting frequency if desired. The licence conditions may include greater frequency where risks to other users, the aquatic environment, or water management warrants. The draft manual has been modified to clarify that monitoring and reporting would be determined on an application-specific basis. Typical standard licence conditions have higher frequency.</p>
<p>The manual does not explain how lakes or wetlands should be assessed as water sources. The only reference is to discharge, presumably in streams and rivers.</p>	<p>All applications submitted pursuant to the WCP will still have to meet the requirements of <i>Surface Water Allocation Directive</i>, which addresses how lakes or wetlands should be assessed as water sources. Water management plans have been developed and limit the ability to withdraw allocations from lakes (e.g., Cold Lake-Beaver River WMP).</p>
<p>Tier 2 and Tier 3 high-quality nonsaline water use initial licences are only granted for 5-year term with a 10-year term on renewals, which makes it extremely difficult for an applicant to determine a longer-term development plan and to implement alternatives.</p>	<p>The shorter terms for the higher-risk tiers require that licence holders continually undertake an assessment of alternatives in the interest of continual improvement and water conservation.</p>

Stakeholder Feedback – Issue	AER Response
A maximum of 5-year term for renewals should be implemented where provincial data does not exist on local water-short and potentially water-short areas.	The term potentially water-short is used in areas where the water availability or demand is expected to continue to be stressed in the foreseeable future. It is not intended to imply an unavailability of water data. The licence terms are set as a balance providing regulatory certainty in licence term length and how frequently assessments are completed. Licences in potentially water-short areas have initial terms of 5 years and up to 10 years on renewals considering these situations are of medium conservation risk and it would be appropriate to revisit the original licence assessment within 5 years to scale back water allocations or promote further water conservation where possible.
There are no drawdown limits on groundwater licences for Tier 1 and Tier 2 in table 1.	The drawdown limits were not carried over from the <i>Water Conservation and Allocation Policy for Oilfield Injection</i> for Tier 1 and Tier 2 projects (where the water source is not within a locally constrained area) because their relatively low conservation risk does not warrant drawdown limits. Standard licensing approaches and conditions, however, manage the general risk of excessive drawdown for all tiers. Groundwater drawdown limits are still in place for areas that have higher water conservation risks.
Please define what is required for confirmation-level, screening-level, and detailed-level assessments in table 1.	Clarification is provided in section 3 of the manual.
We recommend the AER allow licensees to hold unused allocations in reserve for a period (e.g., two years) before reducing approved allocations in term licences.	Returning unused allocation is an expectation of all water licensees, and a condition allowing for allocation reduction is normally built into current licences and renewals where the full licence allocation is no longer needed.
Establish firm timelines to which these stakeholders may solicit concerns and rank or categorize concerns in order to prevent application approvals in a timely manner.	The implementation of the WCP includes consideration of information in the AERs Water Use Performance webpages , which provides water use and availability information for the province. Water licences will continue to require public notice of application. Anyone who believes they are directly and adversely affected by the proposed diversion has an opportunity to have input on the project.
What application process will be required for term licence renewals? Or is it just for new <i>Water Act</i> licence applications (TDLs and term licences)?	The manual applies to new licences, renewals, and licence amendments where there is a change of purpose to a use that is covered under the scope of the WCP. TDLs cannot be renewed, as they are for temporary uses of a duration of one year or less and are not included in the scope of the WCP manual at this time.

Stakeholder Feedback – Issue	AER Response
Enforcing a <i>Water Act</i> licence onto the user is not required if the water source provider has a licence and tracking system. Adding a licence requirement into each user’s project planning will take more time and cost more than if the water source holder owns the licence and tracks the water as it is provided.	Tracking water use through third-party providers is outside the scope of the manual. It may also be considered speculation if the water diversion cannot be tied to a specific point of use.
Alternative sources within the prescribed radius may not be viable due to road or topographical restrictions.	Actual hauling or conveyance routes may be significantly longer than straight line to the point of use. These should be included as consideration for technical feasibility or economic viability of the alternative source. To be consistent, the specified distance needs to be simple to apply. Logistical difficulties with particular sources can be highlighted and explained in applications.
The definition of water-short areas seems to be based on human use and demand and not on environmental or aquatic ecosystem needs. How will the AER ensure that ecosystem needs are not impacted?	The consideration of impacts to the aquatic environment is a normal part of the water licensing process. Many years of studies have established the relationships between water withdrawals and their impacts to aquatic ecosystems through reduced flows and water levels. These provide the basis for the Alberta Desktop Method, supplemented by the <i>Surface Water Allocation Directive</i> . This method is designed to provide a link within the water licensing system to ensuring the protection of the aquatic environment.
Reference to traditional ecological knowledge (TEK) in section 3.2 of the manual is out of the blue, and it isn’t clear how proponents would obtain TEK relevant to their assessment of alternative sources	Indigenous knowledge is a recognized and valued source of information that can inform decision making. The manual is aligned with the policy in this respect. The manual does not intend to define the specific methodology for obtaining this information.
Omission of traditional land use from cumulative effects assessment.	Changes have been made to section 3.2 and 3.3 of the manual to address this comment. The WCP manual considers the importance of Indigenous community use of surface and groundwater and the consideration of Indigenous knowledge and includes the ecological impacts of the aquatic environment.

Stakeholder Feedback – Issue	AER Response
<p>We recommend the AER communicate with or notify Indigenous groups on current projects that may have indirect potential adverse impacts, credibly asserted impacts extending beyond project boundary on Section 35 rights that may require mitigative or accommodative measures, and to consider outlining or identifying appropriate lines of communication for consultation between MNA and AER.</p>	<p>The WCP manual outlines the additional information requirements needed to support a water licence application. The application must include all standard application requirements plus the water conservation considerations.</p> <p>The scope of Indigenous consultation is determined by the Aboriginal Consultation Office (ACO). All licence applications and renewals require a public notice of application where directly and adversely affected parties may submit a statement of concern to the AER. These will be considered as part of the application review.</p>
<p>No reference to potential Indigenous water rights, whether from treaty or otherwise.</p>	<p>While the manual considers the <i>use</i> of water, it does not look specifically at Aboriginal and treaty rights.</p>
<p>The manual indicates “Identification of potential water sources may include a review of published or otherwise pre-existing information.” This does not obligate applicants to consult and accommodate indigenous water use and the potential impact on aboriginal/treaty rights.</p>	<p>Section 3.2 of the manual has been clarified to include impacts that can be informed by Indigenous knowledge that should be considered and evaluated through engagement with indigenous peoples.</p> <p>The ACO assesses consultation for land or natural resource management decisions, including the <i>Water Act</i>, that may have the potential to adversely impact Aboriginal and treaty rights.</p>
<p>In section 2.1 of the manual, the risk assessment does not reflect an assessment of whether the application will impact Indigenous water use or rights.</p>	<p>The risk assessment in section 2.1 is focused specifically on the risk to water conservation to identify the risk tier for each unique application. Impacts to existing water users is a consideration in the water application review process, including water used for household purposes, livestock watering, community use, and other licensed water use.</p>
<p>When identifying sources of water, the licence applicant has to identify sources of water, including “where they are located.” This does not include a requirement that the licence applicant consider whether the water source would impact water use on a reserve or water use by Indigenous people.</p>	<p>The consideration of impacts to municipal and Indigenous communities has been added to Step 2 – Preliminary Assessment in section 2.4 of the manual.</p> <p>Impacts to existing water users, the aquatic environment, and water management (e.g., apportionment) are addressed through the standard application process. The manual outlines the additional steps needed for the consideration of water conservation.</p> <p>The consideration of impacts includes all those holding statutory rights identified in the <i>Water Act</i> (i.e., household users – water use for human consumption, sanitation, fire prevention, and watering animals, gardens, lawns, and trees), licensed water users, and registered water users. Water needs by Indigenous peoples and communities would fall within household users and community water supplies.</p>

Stakeholder Feedback – Issue	AER Response
<p>Consider conducting early engagements to communicate project scope or consider holding preapplication dialogue and early exchange of information to be more transparent with potentially impacted land users, landowners, occupants, Indigenous communities, etc.</p>	<p>Industry is encouraged to undertake early engagement. Step 2 – Preliminary Assessment in section 2.4 of the manual has been updated to include this statement.</p> <p>The standard application process includes public notice of application on water licence applications. Anyone who feels that they are adversely and directly impacted by the AER’s decision can submit a statement of concern to the AER which will be considered as part of the application review.</p>
<p>Consider user-based and traditional knowledge in parallel with scientific and technical information to inform application requirements</p>	<p>The environmental net effects and the cumulative effects evaluation must be informed by Indigenous knowledge along with scientific and technical information.</p>
<p>We recommend organizing workshops for interested Indigenous stakeholders to foster collaboration and build relationships in identification of issues and potential mitigations and considering establishment of an Indigenous Advisory Committee, if one does not currently exist, to support application review that identifies impacts to Indigenous rights, claims, and interests at an earlier stage.</p>	<p>The manual is intended to provide guidance on a specific application submission under the existing policy. Therefore, the AER is not able to address this recommendation in the manual.</p>
<p>We recommend conducting preliminary site assessments, if the project deems it necessary or if the scope of work presents adverse impacts.</p>	<p>The manual focuses on the water conservation considerations that need to be made and submitted with the water licence application. The majority of the evaluation is desktop; however, in some cases the water source viability must be determined only through a field visit, including a field-verified survey of existing water users in the area.</p> <p>The works to divert and use the water will normally include a site visit. Where the site is on public lands, a public lands disposition will be required and may include provisions for additional assessments.</p>
<p>We recommend ensuring adequate capacity for Indigenous communities to participate as well as provide feedback on project applications that may require additional knowledge.</p>	<p>Capacity funding is outside the scope of the manual. Capacity funding on specific applications for consultation is available through the Indigenous Consultation Capacity Program (ICCP).</p>

Stakeholder Feedback – Issue	AER Response
<p>We recommend the AER build the criteria where Indigenous peoples can be incorporated into the project scope or if, where a project has potential for additional off-site environmental impacts, that Indigenous peoples could provide recommendations and invite other impacted Indigenous groups, such as Métis, to share their traditional knowledge to inform applications that involve land and natural resource use.</p>	<p>The manual identifies when Indigenous knowledge should be included as part of the information provided for environmental net effects and cumulative effects submissions.</p>

Stakeholders Who Submitted Feedback (in alphabetical order)

Athabasca Region First Nations (ARFN)

ARC Resources

Alberta Chamber of Resources

Bigstone Cree Nation

Birchcliff Energy

Canadian Association of Petroleum Producers (CAPP)

Catapult Environmental Inc.

Cenovus

Clearwater County on the West Central Synergy group

CNOOC International

Fort McMurray Industry & Government Relations Corporation (IGRC)

Hammerhead Resources

Imperial Oil Ltd.

Lac Ste. Anne Métis Community

Métis Nation of Alberta (MNA)

Municipal District of Smoky River

Ovintiv Canada ULC

Strathcona County

Tourmaline Oil Corp.

Tri-point

Waterline resources Inc.

WaterSMART Solutions Ltd.