SSRB WMP 10 Year Review
Draft Outline v6

8 May 2017

Purpose

It has been 10 years since the approval of the South Saskatchewan River Basin Water Management Plan (WMP, Plan). As with all plans, it is prudent that its effectiveness be periodically reviewed. The purpose of this Review is to assess the implementation of the Plan in the Bow River Basin since its inception in 2006 using available data and information.

- Assess progress against WMP recommendations and intended outcomes based on best available data, including baseline comparison (prior to the implementation of the Plan).
- Identify information gaps and opportunities.
- Summarize what the Plan has accomplished since it was implemented in achieving its anticipated outcomes, and what further can be done.

This is not a required or approvals related review. This is a WPAC conducted review foreseen, in fact called for, in the original Plan. This is a transparent effort that is within the WPAC responsibilities intended to inform and improve water management in the basin.

The Review does not intend to recommend opening up the SSRB WMP nor the *Water Act* to revision. Rather, it intends to identify where further attention or effort is required to achieve the intended outcomes of the Plan, within the current regulatory framework.

The Review is closely linked with issues that have been identified as key priorities for Alberta:

- Climate change - The WMP provides the regulatory context within which water users and managers must balance supply and demand both now and for the future. Understanding how the regulatory context may evolve is vital for water planners, infrastructure operators, and water users. Water challenges will be compounded as climate change comes to ground in water. The basin's regulations, policy and infrastructure all define the extent to which the basin and its communities will be able to adapt to highly variable and shifting water supply.
- Economic growth - Water security is a necessity to municipalities, industry, agriculture, and tourism. The Plan and its associated regulations define how these drivers of Alberta's economy can access a reliable water supply. Having been in place for 10 years, it is prudent to review whether the regulations and market mechanisms have been effective in limiting the draw on the watershed while still enabling high value use of the basin's water resource.
- Land use planning – Water and land are inextricably linked. Alberta's Land-use Framework (LUF) guides its approach for managing the province's land and natural resources to achieve Alberta's long-term economic, environmental and social goals. The South Saskatchewan Regional Plan relies on the WMP to appropriately guide water quantity management. A thoughtful review of the Plan should inform land use planning in other basins by highlighting where the Plan has been effective and where it can be doing more.

Process

Target launch: April 2017.

- One year to complete review and corresponding communication.
- Workshops with WPACs membership and/or committees akin to the Basin Advisory Councils that provided advice to GoA on the original development of the Plan. This would not be public consultation.
- A 10 year data set (where available) for the SSRB following implementation of the Plan, and in some cases, for 10 years prior to implementation as a baseline (data can be reused by WPACs).
- A summary assessment report to the WPAC membership (this will be a public document), including a water use summary report by sector.
- An advisory report from the SSRB WPACs to GoA for consideration.

Communication

- The data and reports will be made publicly available, perhaps with a comment period for input beyond WPAC membership.
- The report will be made available province-wide through web-based communication platforms, e.g. WPAC websites, the Alberta WaterPortal.

In Scope

<u>Recommendation 2.1 Establish a Limit on Water Allocations from the Bow, Oldman, South Saskatchewan River Sub-Basins</u>

"Alberta Environment no longer accept applications for new water allocations in the Bow, Oldman and South Saskatchewan River Sub-basins until the Minister of Environment specifies, through a Crown Reservation, how water not currently allocated is to be used.

Water be allocated from the Crown Reservation only for:….."[1]

Data required:

- Licence approvals since 2006 including number, volume, location, purpose, terms etc.
- Number of applications still "in the queue" and pending decision.
- Temporary Diversion Licenses (TDL) issued by sub basin including number, volume, location, purpose, terms etc.
- Groundwater licences that have been approved by sub basin including number, volume, location, purpose, terms etc.
- Amount of reserved water issued through Crown reservations issued for: WCOs, storage of peak flows, First Nations.
- WCO licenses issued by sub basin including number, volume, location, purpose, terms etc.

[1] "Highlights: Approved Water Management Plan for the South Saskatchewan River Basin", Alberta Environment, 2006

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- Licence transfers that have been approved including number, volume, location, purpose, terms etc.
- Total water allocations by sub-basin year over year (prior and since 2006)
- Water withdrawals/use data collected through the AEP water reporting system and any other use water use data available from AEP, by sub-basin and by sector year over year from 1995-2015.)

Analysis & discussion:

- How has the trend in water allocation and/or use changed in the years before and since the implementation? I.e. has the limit stopped the increasing use of the river over what was already planned within existing licenses?
- Have there been any operational adaptations or options that may have had the unintended consequence of negating overall intended planned outcomes?
  - Change in TDL use?
  - Use of licence amendments and assignments? (including change of water rate, timing, purpose(e.g. irrigation to municipal)).
  - Has there been more of a draw on [unlicensed] groundwater?
- Is adaptation happening without transparent identified performance monitoring / assessment or partner (WPAC) consultation? This has implications for the "application public review process" where the public is not aware of adaptive changes that may influence the Director's interpretation of the Plan.
- How many Crown licences have been issued and for what use?
- What information is missing (data gaps, legal mechanisms?)
- Who (AEP vs. AER) is making regulatory decisions on water allocations? Are both agencies using the same approval criteria?
- Have the Environmental Appeal Board decisions influenced any decisions made by AEP since the SSRB was enacted?

<u>Recommendation 2.2 Future Water Allocation Limit in the Red Deer River Sub-Basin</u>

"When allocations in the Red Deer River Sub-basin reach 550,000 cubic decameters, a thorough review will be conducted to identify the maximum allocation limit."[2]

Data required: TBD

Analysis & discussion: TBD

<u>Recommendation 2.3: Recommended Water Conservation Objectives (WCOs)</u>

[2] "Highlights: Approved Water Management Plan for the South Saskatchewan River Basin", Alberta Environment, 2006

"Alberta Environment establish Water Conservation Objectives (WCOs) for the Bow, Oldman, and South Saskatchewan River Sub-basins. Any licenses issued for applications received after May 1, 2005 be subject to the following water conservation objective:" [3]
"Alberta Environment establish Water Conservation Objectives (WCOs) for the Red Deer River Sub-basin. Any licenses issued for applications received after May 1, 2005 be subject to the following water conservation objective:" [4]

Data required:

- List of where and when WCOs have been implemented throughout the SSRB including any details specific to each WCO: it's priority, whether it is interim or long-term, specific purpose or concern it is addressing.
- Indication of what performance monitoring is done towards determining WCO status (interim or long term).
- For each reach, the licences and corresponding volume that is and is not subject to the WCO.
- If available, the natural flow data set (either the formally released data or the data used by operations) to use as a baseline to estimate, how often and by what percentage WCOs have or have not been met since installation.
- Information on what triggers the installation of a new WCO.
- Information confirming how WCOs would be applied to new storage.

Analysis & discussion:

- The WCOs are intended to stop further degradation of the basin. Do we have evidence of this?
- In a heavily allocated closed basin, how often is a WCO relevant (because it is junior to most allocations)?
- Therefore, are they effective in restoring the aquatic environment?
- Is there a more effective alternative?
- How might WCOs need to be relaxed or revised to enable new storage to offer potential benefit to the basin?
- Are WCOs needed on more reaches, for example, some of the upper tributaries as mentioned in the SSRP?
- How much of a role does unused allocation within existing licences play in the river for healthy aquatic ecosystems?

<u>Recommendation 2.5: Establishment of an Interbasin Water Coordinating Committee</u>

[3] "Highlights: Approved Water Management Plan for the South Saskatchewan River Basin", Alberta Environment, 2006
[4] same

"Form a committee to promote coordination of water management across the SSRB. The membership should include representation from the Watershed Planning and Advisory Councils…."[5]

Data required:

- Confirmation of how often this committee meets.
- The committee's Terms of Reference and Operating Plan.
- Any advice it has produced and shared with GoA, WPACs.

Analysis & discussion:

- Refresh the narrative on why the committee exists and whether it is effective.
- Does it have the right membership, mandate and accountability?
- Is it providing useful information to GoA? Could it be more useful to GoA?
- Is it representing the WPACs?

<u>Recommendation 2.7: Use of Water Allocation Transfers, Water Conservation Holdbacks and Factors that Must be Considered When Making Decisions</u>

"The Director is authorized to consider applications for transfers of water allocations.
The Director is authorized to withhold up to 10% of the volume of water being transferred, if it is considered to the in the public interest to protect the aquatic environment or to implement a water conservation objective.
The Director consider the Matters and Factors provided in this plan in making decisions on applications for licenses, preliminary certificates, approvals, or transfers of an allocation of water."[6]

Data required:

- Repeated from Rec. 2.1: Licence amendments that have been approved including number, volume, location, purpose, terms etc. by AEP and AER.
- Repeated from Rec. 2.1: Licence transfers that have been approved including number, volume, location, purpose, terms etc. by AEP and AER.
- Holdback associated with each transfer and total holdback volume by sub basin. Any cases where the holdback has not been fully applied.
- An update/explanation from AEP of the scope of the water license transfer system and how it has have evolved over time (this should help refine the scope of this section's data analysis & discussion).
- Information on any changes or additions made to the Matters & Factors tables pertaining to amendments and transfers.
- As a comparison, what volume of water was requested in applications each year from ~1995-2005, by sub basin? What volume of water was requested in applications each year

[5] same
[6] "Highlights: Approved Water Management Plan for the South Saskatchewan River Basin", Alberta Environment, 2006

from ~2005-2015 in the Red Deer basin. These data points may be used in comparison with the transfer volumes applied for since the Plan was implemented.

Analysis & discussion:

- How many times has the Transfer system been used? How many times has it been abandoned? Expected vs actual uptake of mechanism? Have there been excessive barriers raised?
- How onerous is the Transfer system? Should it be simplified or is it appropriately rigorous?
- How long does a typical transfer take from application to approval?
- What form of public notice is provided for each application?
- Does AEP offer a public list of water allocation licenses and transfers?
- Is the application and approval process transparent and consistent?
- How often have transfers involved a change in purpose/timing/location? (including movement between tributaries and main stem, change from seasonal to year round use)
- Are the 10% holdbacks being used? Is it actually putting water back into the river? Is there an alternate mechanism to the holdback that would be more beneficial to developers and the aquatic ecosystem?
- There are water licence sharing assignments originally proposed as short term water shortage solutions between parties that do not go through approval process. Some of these are now becoming long term and should be looked at as permitted temporary transfer but this is not happening until someone complains. Allowing these long term assignments also raises some questions about the criteria for licences held in'good standing'.
- Is the Matters and Factors table useful in guiding decision making. Should the Matters & Factors tables pertaining to amendments and transfers be revisited?
- What information is missing (data gaps, legal mechanisms?)
- Should all Transfers be managed in the same manner, or is there an opportunity to designate different types of transfers (as per the Water Allocation Transfer System Upgrade Project WATSUP 2009 Report)?
- Does there need to more clarity on the different between an Amendment and a Transfer?

<u>Recommendation 2.8: Water Management Strategies</u>

"AENV and water users will pursue broad water management strategies to ensure water availability for economic development and the aquatic environment in the SSRB.

2.8.1 Water Demand and Consumption

2.8.2 Improved Dam Management to Protect the Aquatic Environment

2.8.3 Protection and Management of Riparian Vegetation

2.8.4 Flow Restoration in the Bow, Oldman and South Saskatchewan River Sub-basins

2.8.5 Water Quality

2.8.6 Maintenance of the Red Deer River Sub-basins Aquatic Environment"[7]

Data required:

- Is actual water use (not allocation) being tracked? (including: are water users providing water use reports? Is data provided and accessible real time?)

Analysis & discussion:

2.8.1 Water Demand and Consumption

- Have modeling capabilities been upgraded?
- Have innovations and improvements in water licensing and legislation to better match allocations with needs been explored?
- Has the development of water markets and transfers been supported?
- Have improvements in water conservation methods been encouraged?

2.8.2 Improved dam management to protect the aquatic environment

- Are post flood functional flows being released on GoA reservoirs?

2.8.3 Protection and management of riparian vegetation

- The intent of the Aquatic and Riparian Condition Assessment for the main stem rivers of the SSRB (ARCA 2007) is to assist Alberta Environment and its partners in determining where to focus management efforts. To what extent has this been happening particularly from the perspective of effectively managing reach specific flow and water quality?
- Review how AEP has worked in partnership with the WPACs to prepare watershed management plans to encourage healthy riparian environments?

2.8.4 Flow restoration on the Bow, Oldman and South Sask.

- Are licence holders taking voluntary flow restoration actions, particularly during critical periods?
- Are discussions with senior priority licence holders held?
- Has research been conducted to determine how flow restoration benefits the aquatic environment?
- Have operating licenses for government dams and WCO conditions been on diversion licenses been assessed?

2.8.5 Water Quality

- Has water quality been studied in more detail throughout the SSRB to assess land use impacts and develop beneficial management practices to mitigate these impacts?

[7] "Approved Water Management Plan for the South Saskatchewan River Basin (Alberta)", Alberta Environment, August 2006

2.8.6 Maintenance of the Red Deer River Sub-basins Aquatic Environment

- TBD

Not In Scope

Recommendation 2.6 Master Agreement on Apportionment (1969)

"Alberta Environment continue to manage the SSRB as a whole, in order to meet the Master Agreement on Apportionment requirements."[8]

Recommendation 2.9: Suggested changes to the *Water Act*

"The following are possible amendments to the Water Act for which there is public support or which were suggested as a result of insights during work on this plan. Inclusion of these suggestions in this plan does not imply that the legislature will make any of these amendments.

- *Allow private parties to hold licences for Water Conservation Objectives when obtained under the transfer provision of the Water Act……*
- *Allow part of a licence to be cancelled…..*
- *Allow water that becomes unallocated in the future to become part of a Crown Reservation…."*[9]

Roles & Resourcing

AEP:

- Provides requested data and information.
- Participates on the Steering Committee.
- Participates in the work through the WPAC meetings, Steering Committee meetings and 1-2 additional working sessions to review data and findings.
- Formally receives the report from the WPACs.
- Provides guidance what other departments/agencies should be involved.
- Does not run the Review process.

WPACs:

- Provide leadership to the work within their mandate and as per the Plan.
- Coordinate project funding.
- Conduct the Secretariat function for the Review, either through in-house staff or contractor.
- Host events or committees to garner membership input, with contract support as needed.
- Create a report of the Review for their membership either through in-house staff or contractor.
- Create and submit an advisory report to GoA either through in-house staff or contractor.

[8] same

[9] "Approved Water Management Plan for the South Saskatchewan River Basin (Alberta)", Alberta Environment, August 2006

Contract support:

Can be engaged as needed by the WPACs to provide specific resources and skill sets e.g. data analysis, meeting facilitation, report writing, steering committee support, project secretariat.

The Review would benefit from a Steering Committee that would include:

- Representation from AEP
- Representation from each participating WPAC (suggestion is the Ed plus 1-3 Board members)

Preliminary Workplan

Pre-Launch: Preparation *January - March*	WPACs and AEP confirm final scope and funding WPACs align/engage project resources WPACs and AEP form Steering Committee AEP compile requested data AEP and WPACs execute necessary data sharing agreements
Step 1: Preliminary data analysis *April - May*	AEP provides requested data WPACs access additional studies and reference material WPACs conduct preliminary data analysis WPACs compile initial findings for discussion
Step 2: Initial WPAC review *June - August*	Review preliminary data analysis with WPAC membership (via Quarterly Forum or Committee) WPACs complete data analysis and research WPACs compile draft findings for discussion
Step 3: Secondary WPAC review *September - October*	Review draft findings with AEP Review preliminary data analysis with WPAC membership (via Quarterly Forum or Committee)
Step 4: Completion of findings *November - January*	WPACs complete final analysis and research WPACs document findings in report to membership WPACs prepare advisory report to GoA AEP receives report from WPACs
Post Project: Further communication	WPACs, WPAC members, and AEP share findings and reports as they see fit

Note: this timeline is contingent on the availability of data from AEP and their resource requirements to make the data available

Option: Pilot the Review in the Bow River Basin

It is recognized that all parties involved in this potential Review (WPACs, AEP) have many priorities and limited resources. Given that, there could be an option to "pilot" the Review in the Bow River Basin with the BRBC. If the Pilot has good outcomes, it could then be rolled out to include all 4 WPACs and basins in the SSRB.

The Pilot could follow the same workplan and process as proposed in this document, however the Scope would be limited to the Plan Recommendations and data relevant to the Bow River Basin.

Funding and Funding Options

A very preliminary estimate for the funding required for the Pilot in the Bow River Basin was set at $75,000 - $100,000. This would vary depending on data availability and complexity, the approach selected for engaging WPAC membership, and the extent of the secretariat role that would be required. This funding requirement would be significantly higher for a Review including all 4 WPACs and basins instead of 1.

In terms of accessing funding for this Review, three options have been identified so far:

1. WPACs submit request to GoA through their annual grant cycle
2. WPACs and AEP explore alternate mechanism to fund this Review.
3. Other potential funders will be identified and approached

Frequently Asked Questions

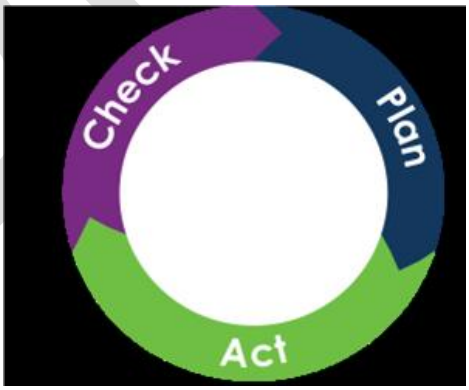
Note: All quotes, with page references, are from the Approved Water Management Plan for the South Saskatchewan River Basin (Alberta), Alberta Environment, August 2006.

<u>FAQ – Why is it important or necessary to review this Plan?</u>

"The plan will provide guidance to decision makers and act as a foundation for future watershed management planning" (page v)

"This plan is the senior plan within the SSRB and all other water management plans in the SSRB must be consistent with it. However, it is recognized that improvements to this plan may be made as research results and other data become available. Section 12 of the *Water Act* describes the legal process for plan revisions." (page 18)

This diagram is taken from the GOA's Phosphorous Management Plan for the Bow River. The review is the "Check" phase, and the time is now.



<u>FAQ – Why should the BRBC be leading this review process?</u>

"Watershed Planning and Advisory Councils (WPACs) are encouraged to consider the planning priorities in their watersheds and undertake future watershed management planning with this water management plan serving as a foundation." (page 17)
"Future watershed planning will be led by the Watershed Planning and Advisory Councils. The Councils will work together to ensure their individual planning is aligned with the SSRB Plan. Together they will decide when sufficient new information has been obtained or situations have sufficiently changed to warrant review of any aspect of the SSRB plan." (page 18)

FAQ – Does this review support recent modeling efforts, for example the Bow River Project?
Yes.
"Storage of peak flows to mitigate impacts on the aquatic environment and to support existing licences. (Alberta Environment will assist the Watershed Planning and Advisory Councils in evaluations of the potential for on-stream and off-stream storage.)" (page 6)
"It is also recommended that AENV hold discussions with Government and other dam owners to investigate opportunities to optimize operation of the facilities, to benefit water supply and the aquatic and riparian environment." (page 16)
"Research be conducted to determine how flow restoration benefits the aquatic environment." (page 16)

FAQ – What are the Important Considerations or "Givens" to keep in mind for a review?

1. "Given this understanding of the water supply, allocations and condition of the aquatic environment, it is recognized that the Bow, Oldman and South Saskatchewan River Sub-basins have reached their limit of allocations
2. "[The Plan] recognizes and accepts that limits for water allocations have been reached or exceeded in the Bow, Oldman, and South Saskatchewan River Sub-basins." (page5)
3. "As more water was allocated and as each allocation was more fully utilized, impacts on the aquatic environment became apparent." (page 4)
4. "water should be respected now and into the future." (page 1)
5. "Greater emphasis will also be placed on ensuring environmental considerations are taken into account." (page 1)
6. "changes to the direction of water management in the SSRB must take place." (page 4)

FAQ – Does the SSRB Plan give any direction on Triple Bottom Line (TBL) Considerations?
Yes.
The very first line of the Plan reads..." This plan reflects a balance between protecting the aquatic environment and water allocation of rivers in the South Saskatchewan River Basin (SSRB)."
"The intent of this plan is to accelerate the steps the citizens of the SSRB have already taken on the path towards a sustainable economy and environment." (page 1) Note: recommend reverse order.
" In Alberta, our quality of life – and life itself – depends on having a safe and sustainable water supply for the environment, our communities, and our economic well-being." (page 4)

Guiding Principle for this Review