UNIVERSITY OF CALGARY | THE SCHOOL OF PUBLIC POLICY

MASTER OF PUBLIC POLICY
CAPSTONE PROJECT

Alberta Water Resources, Policies, Legislation and Goals: The Quest to Awaken "Sleeper Rights"

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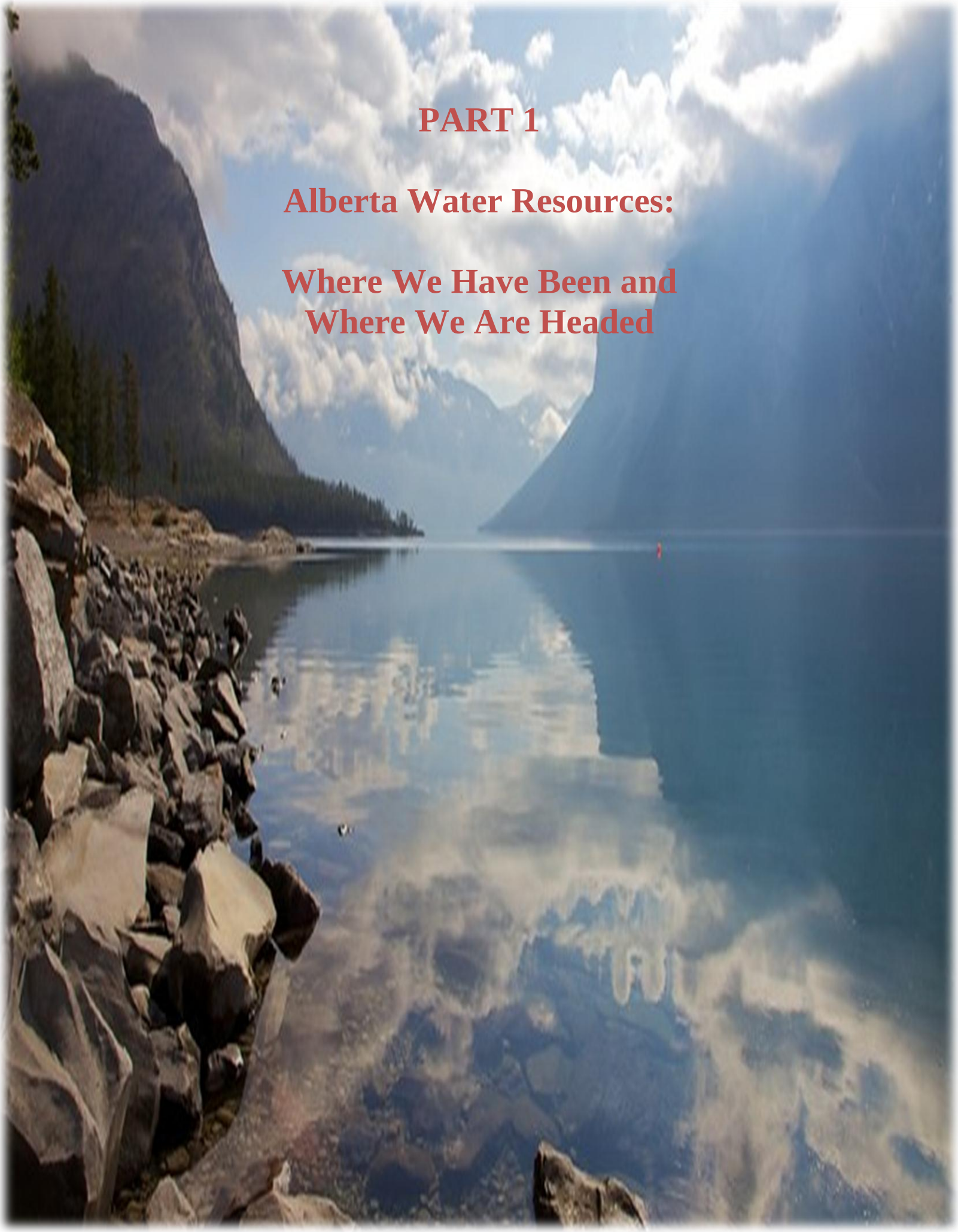
Submitted in fulfillment of the requirements of PPOL 623 and completion of the requirements for the Master of Public Policy degree



PART 1

Alberta Water Resources:

Where We Have Been and Where We Are Headed

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-To God be the Glory-

CAPSTONE APPROVAL PAGE

The undersigned, being the Capstone Project Supervisor, declares that

Student Name: _____

has successfully completed the Capstone Project within the

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TABLE OF CONTENTS

Title Page	**i**
Acknowledgements	**ii**
Capstone Approval Page	**iii**
Table of Contents	**iv**
Executive Summary	**v- vii**
PART 1 **Alberta Water Resources:** **Where We Have Been and Where We Are Headed**	**1- 8**
PART 2 **Alberta Water Policies and Legislations:** **Governing Our Waters**	**9- 24**
PART 3 **FIT-FIR, *Water Act*, the Government of Alberta and *Water for Life*:** **Achieving Our Goals Through Our Policies**	**25- 29**
PART 4 **"Sleeper Rights": An Examination of Alberta's Unused Water**	**30- 46**
PART 5 **"Sleeper Rights": The Management of Alberta's Unused Water**	**47- 58**
PART 6 **Conclusion: Recommendations and Options**	**59- 68**
Bibliography	**69- 72**

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CAPSTONE EXECUTIVE SUMMARY

Water is arguably the most critical natural resource to Alberta's future. The quantity and quality of water will shape the social, economic, and environmental dimensions of Alberta's future. The quality of life in Alberta will depend on our ability to allocate this finite resource in both an efficient and environmentally responsible manner.

The issue addressed in this research is how Alberta's current water policies manage "sleeper rights" and why these policies need to be updated. Sleeper rights describe water licenses that are allocated to a water user but are not fully utilized. This allocated but under-utilized water is important because it helps Alberta's major watersheds to meet its instream flow needs (IFNs). IFNs refer to the amount of water that aquatic ecosystems require to provide Albertans with safe and secure drinking water; healthy aquatic ecosystems; and reliable quality water supplies.

By the end of 2005, the Alberta Environment and Sustainable Resource Development (AESRD) had allocated approximately 9.5 billion cubic metres of water throughout Alberta. By the end of 2010, this had increased to 9.9 billion cubic metres. The three sectors representing the highest water demands and allocations in Alberta are the agricultural sector (44.3%), commercial sector (29.5%), and municipal/ domestic sector (11.3%). However, not all of these allocations are fully utilized. By some estimates, as much as 45 percent of water allocated under license in Alberta remains unused.

The transfer or sale of water licenses that are already being fully utilized does not adversely affect the ability of aquatic ecosystems to meet their IFNs. This is not the case when the water transferred or sold is unused. As current policy does not distinguish between these two, policy reforms are needed to protect and preserve the health of Alberta's aquatic ecosystems, especially those in the over-allocated South Saskatchewan River Basin (SSRB).

The methodology used in this research is a literature review. This research reviewed sources provided by the Government of Alberta.[1] This research also reviewed sources provided by stakeholder organizations that form part of the Alberta water community. These include: Alberta Water Council, Alberta Water Matters, Alberta WaterSmart, Alberta Innovates, Alberta Water Research Institute, Ecojustice, Environmental Law Centre, and Canada West Foundation.[2]

I review six policy recommendations made by committees appointed by the Government of Alberta, as well as policy recommendations made by stakeholder organizations. I organize these six policy recommendations across a spectrum, from the most destructive for existing water licenses but best for meeting IFNs, to the least destructive for existing water licenses but the worst for IFNs. Based on this analysis, I conclude that the optimal balance between these competing goals would be to strike a five-year moratorium on the sale of licensed-but-unused water. The condition of allowing license holders to keep this water is that it must continue to be used to meet IFNs. New demands for water could be met by allowing the sale of licensed water

[1] These include the following publications: *Water for Life* Strategy (2003), the *Water for Life* Renewal (2008), and the *Water for Life* Action Plan (2009). Fact Sheets concerning Alberta's water resources, policies and legislation were also reviewed, including: Alberta's Water Priority System, Alberta *Water Act*, Transferring Water Allocations Under a Licence, and Water Licence Cancellations.

[2] This research was able to find relevant sources from six out of these eight stakeholder organizations, namely: Alberta Water Council, Alberta Water Matters, Alberta WaterSmart, Ecojustice, Environmental Law Centre, and Canada West Foundation.

that is already being utilized. The five year moratorium would allow the government and stake-holders the opportunity to develop a consensus on a longer-term strategy. Ideally, future growth demands for additional water could be met by incentivizing a more efficient use of water by current license holders. A system that allowed license holders to sell water that they are currently using but, by adopting new efficiency measures, no longer need, would create new water supply for growth without damaging IFNs. The 2007 water sale by the Western Irrigation District to Rocky View County could serve as a model and a starting point for such a reformed system.

As the second largest country in the world, Canada is home to approximately 20 per cent of the world's freshwater.[1] Indeed, when it comes to natural resources, the country is not only well known for its fur, timber, fish, wildlife, coal, petroleum, natural gas and minerals, but also for its hydropower created by its abundant waters. From the great lakes of the East to the long rivers of the West, there seems to be absolutely nothing, but an infinite supply of Canada's water resources that serve as the lifeblood of every Canadian province, territory, city and town.

Located in the Prairie region of Canada, the Province of Alberta holds approximately 2.2 per cent of the country's freshwater.[2] Home to 600 lakes and 245 rivers, Alberta's water comes from two major sources, namely: surface water and groundwater.[3] Surface water "refers to water found on the surface of the earth."[4] Examples of surface water are water found on watersheds, glaciers, rivers, lakes, streams, springs, wetlands, and man-made water reservoirs. On the other hand, groundwater refers to water found beneath the surface of the earth.[5] Examples of groundwater are water found on aquifers, underground "geological formation[s] that can provide sufficient water to support a specified use, such as a household well."[6] The expression "out of sight, out of mind" is commonly used to describe groundwater, since we cannot see nor use this water resource, unless a well is drilled to recover it from the ground.[7]

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[1] Government of Alberta. *Facts About Water In Alberta*, 5. http://environment.gov.ab.ca/info/library/6364.pdf (accessed: June 13, 2014).
[2] Ibid., 5.
[3] Alberta Environment and Sustainable Resource Development. *Water Quantity*. http://esrd.alberta.ca/water/programs-and-services/water-quantity.aspx (accessed: June 3, 2014).
[4] Government of Alberta, *Facts About Water In Alberta*, 6.
[5] Alberta Environment and Sustainable Resource Development, *Water Quantity*.
[6] Government of Alberta, *Facts About Water In Alberta*, 23.
[7] Ibid., 24.

According to estimates by the *Alberta Environment and Sustainable Resource Development* (AESRD), there is more groundwater than surface water in Alberta. Indeed, "approximately 40,000 cubic kilometres of groundwater exists in Alberta--- enough to cover the entire province in about 60 meters of water."[8] However, despite a good supply of groundwater, "only about 0.01% of the groundwater in Alberta is thought to be recoverable."[9] Hence, majority of water allocations in Alberta comes from surface water rather than groundwater. Indeed, of the 9.9 billion cubic metres of water allocated by the Province in 2010, only 300 million cubic metres or 3% of that volume came from groundwater.[10]

From surface water to groundwater, whether located on public land or private land, all of Alberta's water resources are owned by the Crown.[11] The Government of Alberta, through the AESRD, in turn allocates this resource to different sectors that need water to operate. Presently, the three sectors representing the highest water demands and allocations are: the agricultural sector, commercial sector, and municipal/ domestic sector.[12] Of these three sectors, irrigation for agriculture represents the highest water demand and allocation in Alberta. Indeed, "74 per cent of the water allocated in Alberta's southern river systems is tied up in less than 20 licenses for irrigation."[13] This is not surprising at all, since irrigation for agriculture has dominated and played a significant

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[8] Alberta Water Portal. *Learn: Alberta Water Facts*. http://albertawater.com/learn/interesting-facts/alberta (accessed: June 3, 2013).
[9] Ibid.
[10] Ibid.
[11] Water Act, RSA 2000, c W-3, 3: Water Vested In Crown. http://www.qp.alberta.ca/documents/Acts/w03.pdf (accessed: July 13, 2014).
[12] Julia Ko and William F. Donahue, *Allocating our Water: Changing to Meet the Public Interest,* July 2012: 4. http://www.water-matters.org/docs/allocatingourwater.pdf (accessed: June 13, 2014).
[13] Randy Christensen and Danielle Droitsch, *Fight to the Last Drop: A Glimpse into Alberta's Water Future,* April 2008: 15. http://www.water-matters.org/docs/fight-to-the-last-drop.pdf (accessed: June 13, 2014).

role in the early stages of the Province's development. Indeed, Alberta is "the capital of irrigation in Canada."[14] The 13 irrigation districts of Alberta, which account for approximately 525,000 hectares of irrigated area, represents 65 per cent of the total irrigation area across Canada alone.[15]

In addition to representing the highest water demand and allocation in Alberta, most of the water allocated to irrigation for agriculture is not returned back to its source, since most of it is used to water crops or evaporates in the atmosphere.[16] Irrigation for agriculture consumes an average of 60- 65% of its entire water allocation.[17] However, in return for the significant amount of water that irrigation for agriculture demands and receives, it allows farmers to grow, harvest, and sell a great variety of crops, which benefits Alberta as a whole.[18] Indeed, "[i]rrigation in Alberta is unquestionably a significant part of the agricultural landscape… contributing more than 19% of the gross primary agricultural production."[19]

While the Province of Alberta has a substantial water supply and has to date been able to meet its water demands, this may no longer be the case. Factors such as geographical distribution of water resources, rapid population and economic growth, and climate change have all pose real threats to Alberta's water security. This is the reality to which most Albertans are unfortunately ignorant.

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[14] Alberta Water Portal. *Learn: Agriculture and Irrigation in Alberta.* http://albertawater.com/what-is-water-used-for-in-alberta/agriculture-in-alberta (accessed: June 12, 2014).
[15] Ibid.
[16] Ibid.
[17] Ibid.
[18] Ibid.
[19] Ibid.

Geographical Distribution of Water Resources

The geographical distribution of its water resources now poses a threat to Alberta's water security. While the Province is home to seven major basins or watersheds--- the Hay, Peace/ Slave, Athabasca, Beaver, North Saskatchewan, South Saskatchewan, and Milk--- most of these watersheds are located at the northern part of the Province, while most of the population resides in areas located at the southern part of the Province.[20] Indeed, "[w]hile 80% of Alberta's water supply lies in the northern part of the province, 80% of Alberta's water demand comes from the southern part of the province."[21]

The uneven geographical distribution of its water resources has resulted to uneven allocation of water among the seven watersheds of Alberta.[22] Watersheds located in the northern part of the Province tend to be under allocated, whereas watersheds located in the southern part of the Province where more people reside tend to be more heavily allocated.[23] An example of this is the case of the South Saskatchewan River Basin (SSRB) and two of its three river tributaries: the Bow and the Oldman. As the primary source of water for majority of Alberta's population, the Government of Alberta, through the AESRD, issued a moratorium for the SSRB including the Bow and the Oldman on August 2006. This effectively closed the over-allocated watershed to further allocations.

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[20] Alberta Water Portal, *Learn: Alberta Water Facts*.
[21] Ibid.
[22] Alberta Water Portal, *Breakdown of Sectoral Water Allocations in each of Alberta's Major River Basin.*
Hay: http://albertawater.com/images/FactsAndInfo/Alberta/alloc/hayalloc.jpg
Peace/ Slave: http://albertawater.com/images/FactsAndInfo/Alberta/alloc/peace-slavealloc.jpg
Athabasca: http://albertawater.com/images/FactsAndInfo/Alberta/alloc/athalloc.jpg
Beaver: http://albertawater.com/images/FactsAndInfo/Alberta/alloc/beaveralloc.jpg
North Saskatchewan: http://albertawater.com/images/FactsAndInfo/Alberta/alloc/nsaskalloc.jpg
South Saskatchewan: http://albertawater.com/images/FactsAndInfo/Alberta/alloc/ssaskalloc.jpg
Milk: http://albertawater.com/images/FactsAndInfo/Alberta/alloc/milkalloc.jpg
(accessed: June 12, 2014).
[23] Ibid.

Anyone interested in acquiring a license to divert and use water from the SSRB including the Bow and the Oldman can now only do so, by acquiring it from those who were able to acquire a license prior to August 2006.[24]

Rapid Population and Economic Growth

In addition to the geographical distribution of its water resources, rapid population and economic growth also threaten Alberta's water security. Currently, Alberta is the fastest growing province in Canada. According to *Statistics Canada's* latest demographic quarterly estimates, "[t]he population of Alberta at the beginning of 2014 was estimated to be 4,082,600… Since the first quarter of 2011, Alberta has continuously led all provinces in terms of population growth rate."[25] This rapid population growth is mostly focused in Calgary and Edmonton; Alberta's two major cities both located at the southern part of the Province.

More people translate to more water users, and more water users translate to more water demand. Indeed, Alberta's overall water demand is projected to increase by 21 per cent by the year 2025.[26] All sectors that need water to operate will increase their water demands, most especially the three sectors representing the highest water demands and allocations. Alberta's overall irrigation for agriculture is expected to increase its water demand by 13 per cent; commercial sector by 50 per cent; and the municipal/ domestic sector by 25 per cent.[27] The rapid population and economic growth occurring in Alberta

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[24] Ko and Donahue, *Allocating our Water: Changing to Meet the Public Interest*, 5-6.
[25] CBC News, *Alberta Leads Country in Population Growth*, March 21, 2014, 2:11 PM MT. http://www.cbc.ca/news/canada/calgary/alberta-leads-country-in-population-growth-1.2582062 (accessed: July 24, 2014).
[26] Danielle Droitsch and Barry Robinson, *Share the Water: Building a Secure Water Future for Alberta.* September 2009. 10. http://www.water-matters.org/docs/share-the-water.pdf (accessed: June 13, 2014).
[27] Ibid.

are problematic, due to the pressures that they put on the already over-allocated SSRB and two of its three river tributaries: the Bow and the Oldman.

Climate Change

Last but not least, climate change also poses a threat to Alberta's water security. According to Casey Vander Ploeg of *Canada West Foundation*, the negative effects of climate change on Alberta's water supply are demonstrated by the following. First, climate change leads to warmer temperatures and less precipitation, which both increase the rates of evaporation and moisture deficit in already dry areas such as Alberta.[28] Second, climate change results in drought, which is considered as the biggest risk for Alberta.[29] Overall, "Western Canada has seen at least 40 severe droughts in the past 200 years."[30] The most recent drought that Alberta has experienced was the one of 2001-2003.[31] Third, climate change results to retreating glaciers, on which most Alberta water bodies depend for some of its water supplies. As an example, "[g]laciers in the Rocky Mountains supply about 10% of the base flow for rivers in central and southern Alberta."[32] However, due to climate change, "from 1975- 1998, the size of glaciers decreased by 50% in the South Saskatchewan River Basin and by 23% in the North

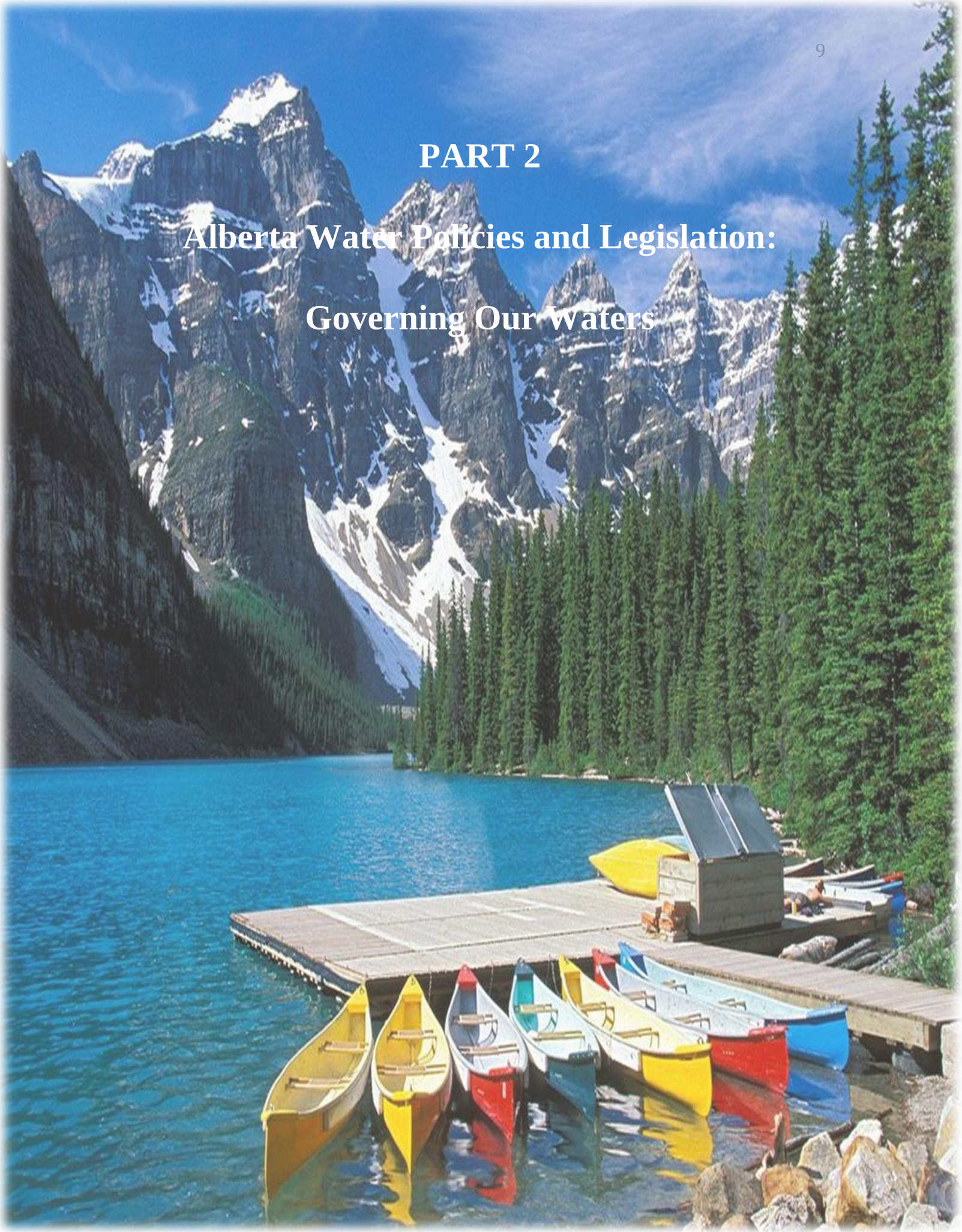
[28] Canada West Foundation. Canada West Foundation Backgrounder. *Climate Change.* 1. http://cwf.ca/pdf-docs/backgrounders/cwf-backgrounder-climate-change-water-3.pdf
According to Canada West Foundation "[t]his backgrounder is part of 'From H20: Turning Alberta's Water Headache to Opportunity,' a forthcoming research paper by Casey Vander Ploeg identifying Alberta's water challenges and opening discussion on possible solutions."
[29] Ibid., 2.
[30] Ibid.
[31] Ibid.
[32] Ibid.

Saskatchewan. Some are [even] predicting that most glaciers may disappear completely within the next 50 to 60 years."[33]

Conclusion

Geographical distribution of water resources, rapid population and economic growth, and climate change now pose real threats to Alberta's water security. In order to meet this new challenge, the Government of Alberta will have to review its existing water policies and legislation. The existing policy regime may not be sufficient, and reforms may be required.

[33] Canada West Foundation. Canada West Foundation Backgrounder. *Climate Change.* 2.



PART 2

Alberta Water Policies and Legislation:

Governing Our Waters

Riparian Rights and the *North West Irrigation Act* (1894)

In 1882, water resources in the Province of Alberta--- which was then a district of the Northwest Territories--- were owned and managed by the Dominion of Canada.[34] For several decades, the Dominion of Canada governed the allocation of water in Alberta by utilizing a system called "riparian rights."[35] Originating from England, this system provides that any landowner whose property is close to a body of water, has the first right to make "reasonable" use of it.[36] The system of riparian rights initially served Alberta well. However, as the railway era and agricultural irrigation began, the system was deemed to be insufficient and impractical. The railway era and agricultural irrigation demanded the need to divert and use water faraway from its source, something that was not possible under the system of riparian rights.[37] As a result, the Dominion of Canada passed the *North West Irrigation Act* (1894), which changed the system by allowing the diversion and usage of water for irrigation purposes.[38]

Natural Resources Transfer Agreement (1930) and *Water Resources Act* (1931)

In 1905, the Province of Alberta joined the Confederation and twenty-five years later, the *Natural Resources Transfer Agreement* (1930) came into effect.[39] This is considered as one of the most significant milestones in the evolution of Alberta's water

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[34] Government of Alberta. *Legislative History of Water Management in Alberta.* http://environment.alberta.ca/02265.html (accessed: July 2, 2014).

Also see Canada West Foundation. Canada West Foundation Backgrounder. *The Evolution of Water Policy in Alberta.* http://cwf.ca/pdf-docs/publications/the-evolution-of-water-policy-in-alberta.pdf (accessed: July 2, 2014).

[35] Ibid.

[36] Ibid.

[37] Ibid.

[38] Ibid.

[39] Ibid.

policy and legislation, since under the Agreement, "the Dominion of Canada transferred [to] Alberta the ownership and ability to manage through legislative means most aspects of [its] natural resources including water."[40] Alberta immediately exercised the powers granted to it by the Agreement, by proclaiming the *Water Resources Act* in 1931.[41] The Act served as the primary statute governing the allocation of water in the Province for the next seven decades.[42]

First-In-Time, First-In-Right (FIT-FIR)

Ever since the system of riparian rights was changed by the passage of the *North West Irrigation Act* in 1894, Alberta's water allocation system has been based on the policy of "prior allocation", also known as *First-in-Time, First-in-Right* (FIT-FIR).[43] This policy also applies in some Australian and United States jurisdictions such as Oregon and Texas.[44] In order to divert and use Alberta's water resources--- both surface water and groundwater--- one must first apply and acquire a water license from the Government of Alberta.[45] FIT-FIR grants the right to use water based on a first-come, first-served basis: where senior (older) licenses bear higher priority than junior (newer) licenses.[46] To illustrate: in times when there is a water shortage caused by a drought, and there is not enough water for all water licensees, those with senior licenses will be granted the first right to divert and use water, before those with junior licenses. One of the purposes of

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[40] Government of Alberta. *Legislative History of Water Management in Alberta.*
[41] Ibid.
[42] Ibid.
[43] Ibid.
[44] Julia Ko and William F. Donahue, *Moving Waters: Water Management Options To Achieve Social, Economic, and Environmental Goals,* September 2012: 11-16. http://www.water-matters.org/docs/water-matters-moving-waters-2012.pdf (accessed: June 13, 2014).
[45] Alberta Environment and Sustainable Resource Development. *Water Management in Alberta*. http://www.waterforlife.alberta.ca/02808.html (accessed: June 11, 2014).
[46] Government of Alberta. *Legislative History of Water Management in Alberta*.

this policy was to encourage settlement of then sparsely populated Alberta.[47] Indeed, a water allocation system based on a policy which ensures a secure and orderly allocation of water, served as a great incentive for people to settle in the Province.[48]

The *Water Act* (1999)

In 1991, new challenges concerning the allocation of water in the Province of Alberta led to an extensive review of its water policies and legislations. The result was *Water Act* (1999) replaced the *Water Resources Act* (1931) as the primary statute governing the allocation of water in the Province.[49] It is a comprehensive piece of legislation that governs the allocation of water in the Province to this very day. The *Water Act* changed the status quo by introducing some significant reforms and innovations that include: statutory preferences, perpetual vs. term licenses, trading water licenses, and inter-basin transfers.[50] However, these reforms and innovations have prospective rather than retroactive effects, which means that as a general rule, they are only applicable to events after 1999 and to water licenses issued after 1999.

> "*Statutory Preferences:* Prior allocation was modified by legislating a 'statutory preference' for domestic and household water use. Household and domestic use of water now has the highest priority over all water allocations, and cannot be superseded by any other user regardless of license seniority."[51]

> "*Perpetual vs. Term Licenses:* Older licenses issued by the province were 'perpetual' licenses held indefinitely. The province now issues only 'term' licenses that expire, or must be renewed, at the end of a specified period. These new 'term' licenses are typically valid for a period of five years."[52]

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[47] Christensen and Droitsch, *Fight to the Last Drop: A Glimpse into Alberta's Water Future*, 13.
[48] Ibid.
[49] Government of Alberta. *Legislative History of Water Management in Alberta*.
[50] Canada West Foundation. Canada West Foundation Backgrounder.
The Evolution of Water Policy in Alberta. 4.
http://cwf.ca/pdf-docs/publications/the-evolution-of-water-policy-in-alberta.pdf (accessed: July 2, 2014).
[51] Ibid.
[52] Ibid.

> "*Trading Water Licenses:* …the province opened the door to temporary and permanent trades of water allocations held under license. Water 'rights' were separated from the land to which they were traditionally attached, and license holders were allowed trade--- sell or buy--- portions of water allocations held by others."[53]

> "*Inter-Basin Transfers:* …Alberta prohibited the 'interbasin' transfer of water--- water moving from one of the province's seven major river basins to another major river basin. Any such transfer in the future will require a special act of the legislature. However, 'intra-basin' transfers--- water moving from one sub-basin (e.g., the Bow) to another sub-basin (e.g., the Oldman) are not expressly prohibited."[54]

The *Water for Life* Strategy (2003)

Only four years later the Government of Alberta introduced the *Water for Life*: *Alberta's Strategy for Sustainability*. *Water for Life* is "the overarching government-wide strategy for water in Alberta."[55] It has served as the roadmap for the Province, every time it seeks to create new water policies and legislations since its introduction a decade ago. Indeed, *Water for Life* is one of the most comprehensive water strategies in North America.[56] At the heart of the Strategy lies the belief that effective water management must be comprehensive, encompassing not only environmental aspects, but economic and social aspects as well.[57] *Water for Life* has three goals: Safe, secure drinking water supply; healthy aquatic ecosystems; and reliable, quality water supplies for a sustainable economy.[58]

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[53] Canada West Foundation. *The Evolution of Water Policy in Alberta.* 4.
[54] Ibid.
[55] Government of Alberta. *Water for Life: Facts at your Fingertips.* http://environment.gov.ab.ca/info/library/8354.pdf (accessed: June 11, 2014).
[56] Alberta.ca. Alberta Environment Sustainable Resource Development. *The Strategy: An Introduction*. http://www.waterforlife.alberta.ca/0889.html (accessed: July 2, 2014).
[57] Ibid.
[58] Government of Alberta. *Water for Life: Alberta's Strategy for Sustainability*. November 2003. http://www.waterforlife.gov.ab.ca/docs/strategyNov03.pdf (accessed: July 2, 2014).

Water for Life Three Goals

Safe and Secure Drinking Water

The first goal of the *Water for Life Strategy* is to provide Albertans with safe and secure drinking water.[59] The Strategy recognizes the significance of safe and secure drinking water to the overall social well-being of Albertans.[60] Under this goal, the Government of Alberta provided five specific outcomes.[61] Each outcome was to be realized within a specific timeframe: *short-term* (2004- 2006); *medium-term* (2007-2009); and *long-term* (2010- 2013).[62] The realization of each outcome, within its specific timeframe, is in turn, carried-out by the three key directions and its actions: *knowledge and research*, *partnerships*, and *water conservation.*[63]

The first outcome, which falls under the *short-term* timeframe (2004- 2006), was to create "[…] a comprehensive strategy to protect Albertans' drinking water."[64] The second and third outcomes, which both fall under the *medium-term* timeframe (2007-2009), were to provide Albertans "[…] full and complete knowledge of drinking water issues [and…] real-time access to information about drinking water quality in their community."[65] Lastly, the fourth and fifth outcomes, which both fall under the *long-term* timeframe (2010- 2013), were to provide Albertans with "[…] drinking water infrastructure [that] meets emerging standards and is managed for long-term

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[59] Alberta.ca. Alberta Environment Sustainable Resource Development. *The Strategy: Three Goals and Three Key Directions.* http://www.waterforlife.alberta.ca/0941.html (accessed: July 2, 2014).
[60] Ibid.
[61] Government of Alberta. *Water for Life: Alberta's Strategy for Sustainability*, 25.
[62] Ibid.
[63] Ibid.
[64] Ibid.
[65] Ibid.

sustainability [and…] knowledge, tools and motivation to implement actions that will maintain or improve the province's water resources."[66]

Healthy Aquatic Ecosystems

The Strategy recognizes the significance of healthy aquatic ecosystems to the overall environmental well-being of Alberta.[67] Healthy aquatic ecosystems also play a significant role in attaining the first goal: safe and secure drinking water supply. Under this second goal, the Government of Alberta provided five specific and desired outcomes.[68] Similar to the first goal, each outcome is to be realized within a specific timeframe.[69]

The first outcome, which falls under the *short-term* timeframe (2004- 2006), was to ensure that "[e]fforts to protect aquatic ecosystems in critical areas are underway."[70] The second outcome, which falls under the *medium-term* timeframe (2007- 2009), was to ensure that "[w]ater management objectives and priorities for sustaining aquatic ecosystems are established through watershed plans."[71] Lastly, the third, fourth, and fifth outcomes, which all fall under the *long-term* timeframe (2010- 2013), were to ensure that "[w]ater is managed and allocated to sustain aquatic ecosystems and ensure their contribution to Alberta's natural capital and quality of life are maintained";[72] to ensure that "Albertans have the knowledge and tools to implement actions to maintain or

[66] Government of Alberta, *Water for Life: Alberta's Strategy for Sustainability*, 25.
[67] Ibid.
[68] Government of Alberta, *Water for Life: Alberta's Strategy for Sustainability*, 26.
[69] Ibid.
[70] Ibid.
[71] Ibid.
[72] Ibid.

improve Alberta's water resources";[73] and lastly, to ensure that "[c]ommunities are demonstrating leadership in watershed management."[74]

Reliable Quality Water Supplies for a Sustainable Economy

The Strategy recognizes the significance of reliable quality water supplies to the overall economic well-being of Alberta.[75] Reliable quality water supplies also play a significant role in attaining the first and second goals: safe and secure drinking water and healthy aquatic ecosystems. Under this third goal, the Government of Alberta provided seven specific and desired outcomes.[76] Similar to the first and second goals, each outcome is to be realized within a specific timeframe.[77]

The first and second outcomes, which both fall under the *short-term* timeframe (2004- 2006), was to ensure that "[a] broad range of water management tools and techniques are implemented [and] Albertans understand the value of water to the economy and quality of life."[78] The third and fourth outcomes, which both fall under the medium-term timeframe (2007- 2009), were to ensure that "[w]ater management objectives and priorities to support sustainable economic development are established through watershed plans";[79] and to ensure that "[a]ll sectors are demonstrating best management practices and improving efficiency and productivity associated with water use."[80]

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[73] Government of Alberta, *Water for Life: Alberta's Strategy for Sustainability*, 26.
[74] Ibid.
[75] Ibid.
[76] Government of Alberta, *Water for Life: Alberta's Strategy for Sustainability*, 27.
[77] Ibid.
[78] Ibid.
[79] Ibid.
[80] Ibid.

Lastly, the fifth, sixth, and seventh outcomes, which all fall under the long-term timeframe (2010- 2013), were to ensure that "[w]ater is managed and allocated to support sustainable economic development and the strategic priorities of the province";[81] to ensure that "[t]he overall efficiency and productivity of water use in Alberta has improved by 30 per cent from 2005 levels by 2015";[82] and to ensure that "Albertans have the knowledge, tools and motivation to implement actions that will maintain or improve the province's water resources."[83]

Water for Life Renewal (2008) and *Water for Life* Action Plan (2009)

In 2007, the *Alberta Water Council* (AWC) reviewed the *Water for Life* Strategy, to ensure that it continues to serve its main purpose: a provincial water strategy, effectively addressing not only water management challenges of the present, but also of the future.[84] In its review of the Strategy, the AWC provided recommendations on how Alberta can achieve its *Water for Life* goals, while taking into consideration the new realities and challenges brought by the past four years since the introduction of the Strategy in 2003.[85] The recommendations of the AWC were adopted in the *Water for Life: A Renewal* (2008), and in the *Water for Life: Action Plan* (2009).[86]

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[81] Government of Alberta, *Water for Life: Alberta's Strategy for Sustainability*, 27.
[82] Ibid.
[83] Ibid.
[84] Alberta.ca. Environment Sustainable Resource Development. *The Strategy: The History*. http://www.waterforlife.alberta.ca/0918.html (accessed: July 25, 2014).
[85] Government of Alberta. *Water for Life: Action Plan*. November 2009: 5. http://environment.gov.ab.ca/info/library/8236.pdf (accessed: July 25, 2014).
[86] Ibid.

The *Water for Life: A Renewal*, adopted the three goals of the *Water for Life* Strategy.[87] Indeed, "[i]n this renewed strategy, the Government of Alberta not only continues to build on the good work already undertaken, but also reaffirms its commitment to the *Water for Life* approach for the wise management of Alberta's water quantity and quality for the benefit of Albertans now and in the future."[88] On the other hand, the *Water for Life: Action Plan* adopted the three goals of the *Water for Life* Strategy; adopted the outcomes of each goal; and extended the timeframes to achieve the outcomes of the three goals. Indeed, the outcomes under the *short-term* timeframe were to be attained by 2012; the outcomes under the *medium-term* timeframe are to be attained by 2015; and the outcomes under the *long-term* timeframe are to be attained by 2019.[89]

Water for Life Achievements

The achievements of the *Water for Life* Strategy are being tracked by the AWC, through its Water for Life Implementation Review projects.[90] According to the AWC, "[t]he Water for Life Implementation Review Committee is responsible for routinely reviewing the implementation progress of the *Water for Life* strategy and providing strategic level advice and recommendations to the Government of Alberta and other stakeholders to help advance the achievement of the strategy's goals."[91]

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[87] Government of Alberta. *Water for Life: A Renewal*. November 2008: 9-11 and 13-15. http://environment.gov.ab.ca/info/library/8035.pdf (accessed: July 25, 2014).
[88] Ibid., 3.
[89] Ibid., 11, 13, 15, 17 and 19.
[90] Alberta Water Council. *Water for Life Implementation Review*. http://www.albertawatercouncil.ca/Projects/WaterforLifeImplementationReview/tabid/102/Default.aspx (accessed: July 25, 2014).
[91] Ibid.

Since the introduction of the Strategy in 2003, the AWC has already released four Water for Life Implementation Reviews.[92] The latest of these is the Water for Life Implementation Review for 2009- 2011.[93] The one for 2012- 2014 is yet to be published by the AWC on the first quarter of 2015. In its presentation of the *Water for Life* achievements, the Water for Life Implementation Review for 2009- 2011 noted that, "[t]he target outcomes and actions listed below are from the 2008 renewed *Water for Life* strategy. Timeframes for action completion are short-term (by 2012), medium-term (by 2015) and long-term (by 2019). The Council has used the following Progress Indicators:"[94]

Currently being re-evaluated: Implementation of this action has been halted while the action is re-evaluated in light of new information, new direction, relevancy, dependence on the completion of other actions, etc.[95]

Limited Progress: A minimum amount of work has been undertaken towards completing this action (usually due to extenuating circumstances, dependence on the completion of other actions, etc.) and the action will not be completed within the timeframe given.[96]

Some Progress: Some work has been done towards completing the action; however it is uncertain whether the action will be completed within the timeframe given.[97]

Progressing-on-track: On track and likely to be completed within the timeframe given.[98]

Completed: The action has been completed.[99]

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[92] Alberta Water Council. *Water for Life Implementation Review*.
[93] Ibid.
Note: The first three Water for Life Implementation Reviews are for the following years: 2004-2005; 2005-2006; and 2006-2008.
[94] Alberta Water Council. *Review of Implementation Progress of Water for Life, 2009-2011*. 8.
[95] Ibid.
[96] Ibid.
[97] Ibid.
[98] Ibid.
[99] Ibid.

Safe and Secure Drinking Water[100]

Actions:	Time Frame	Status	Rationale
1.1 Provide and maintain the availability and accessibility of information to Albertans on private water systems.	Short-term	Progressing-on-track	Information and programs like the Working Well Program are available to Albertans operating private systems.
1.2 Review and improve the management of small public drinking water systems.	Short -term	Progressing-on-track	Alberta Health has undertaken several initiatives including a new voluntary operator training program; operating standards for small systems; information resources available through a volunteer operator training program; and an inventory and initial audit of small systems.
1.3 Work co-operatively with First Nations, Métis and the Federal Government to ensure safe drinking water in Aboriginal communities.	Medium-term	Progressing-on-track	Work is ongoing. Treatment plants are being upgraded in small communities like Paddle Prairie Métis Settlement. Some First Nations are conducting needs assessments.
1.4 Develop a waterborne disease surveillance system and undertake waterborne contaminant research.	Medium-term	Some Progress	The Alberta Centre for Toxicology continues to provide water testing for private well owners. Research is continuing on virus testing, arsenic, cytotoxicity detection, etc.

[100] Alberta Water Council. *Review of Implementation Progress of Water for Life, 2009-2011*. October 2012: 9-10. http://www.albertawatercouncil.ca/LinkClick.aspx?fileticket=9oSr0gmfWjQ%3d&tabid=102 (accessed: July 25, 2014).

Actions:	Time Frame	Status	Rationale
1.5 Design and implement regional drinking water and wastewater solutions.	Long-term	Some Progress	Between 2007 and 2011, 28 new regional water supply systems and four new regional wastewater systems were developed.
1.6 Develop innovative approaches to build and ensure long-term operational capacity in smaller Alberta communities.	Long-term	Some Progress	A facility operator training program coordinated at the provincial level ensures that operators are meeting accepted standards.
1.7 Update water quality programs to support source protection information and planning.	Long-term	Some Progress	Some stewardship groups (e.g., Moose Lake, Elbow River) are addressing source protection in management plans or by supplementing GOA water quality testing.
1.8 Facilitate upgrades to drinking water and wastewater facilities to meet standards and, where possible, integrate with regional systems.	Medium-term	Progressing-on-track	The GOA spent $180 million in 2012 on the development of regional systems.
1.9 Facilitate upgrades to drinking water quality in provincial parks and recreation areas.	Long-term	Progressing-on-track	Upgrades in provincial parks and recreation areas are ongoing.

Healthy Aquatic Ecosystems[101]

Actions	Time frame	Status	Rationale
2.1 Finalize and implement a new wetlands policy for Alberta.	Short-term	Some progress	Progress on tools (e.g., inventories, indicators) has been made but a provincial policy is still lacking.
2.2 Protect critical aquatic ecosystems and develop a provincial action plan.	Short-term	Some progress	Various initiatives have been carried out (e.g., Provincial Ecological Aquatic Criteria for Health report; Significant aquatic areas map, etc.).
2.3 Establish science-based methods and tools to determine ecological requirements for HAE.	Short-term	Complete	Some tools have been developed (Instream Flow Needs (IFN) desktop, Fish index tool, etc.); however, it is unknown if these alone are sufficient to determine HAE ecological requirements.
2.4 Establish the Bow Habitat Station.	Short-term	Complete	For information about this facility, see www.srd.alberta.ca/RecreationPublicUse/BowHabitatStation/Default.aspx.
2.5 Set Water Conservation Objectives (WCO) on all major basins.	Medium-term	Limited progress	One of Alberta's seven major basins, the South Saskatchewan, has WCOs. The remainder are to be completed by 2015.

[101] Alberta Water Council. *Review of Implementation Progress of Water for Life, 2009-2011*. 12.

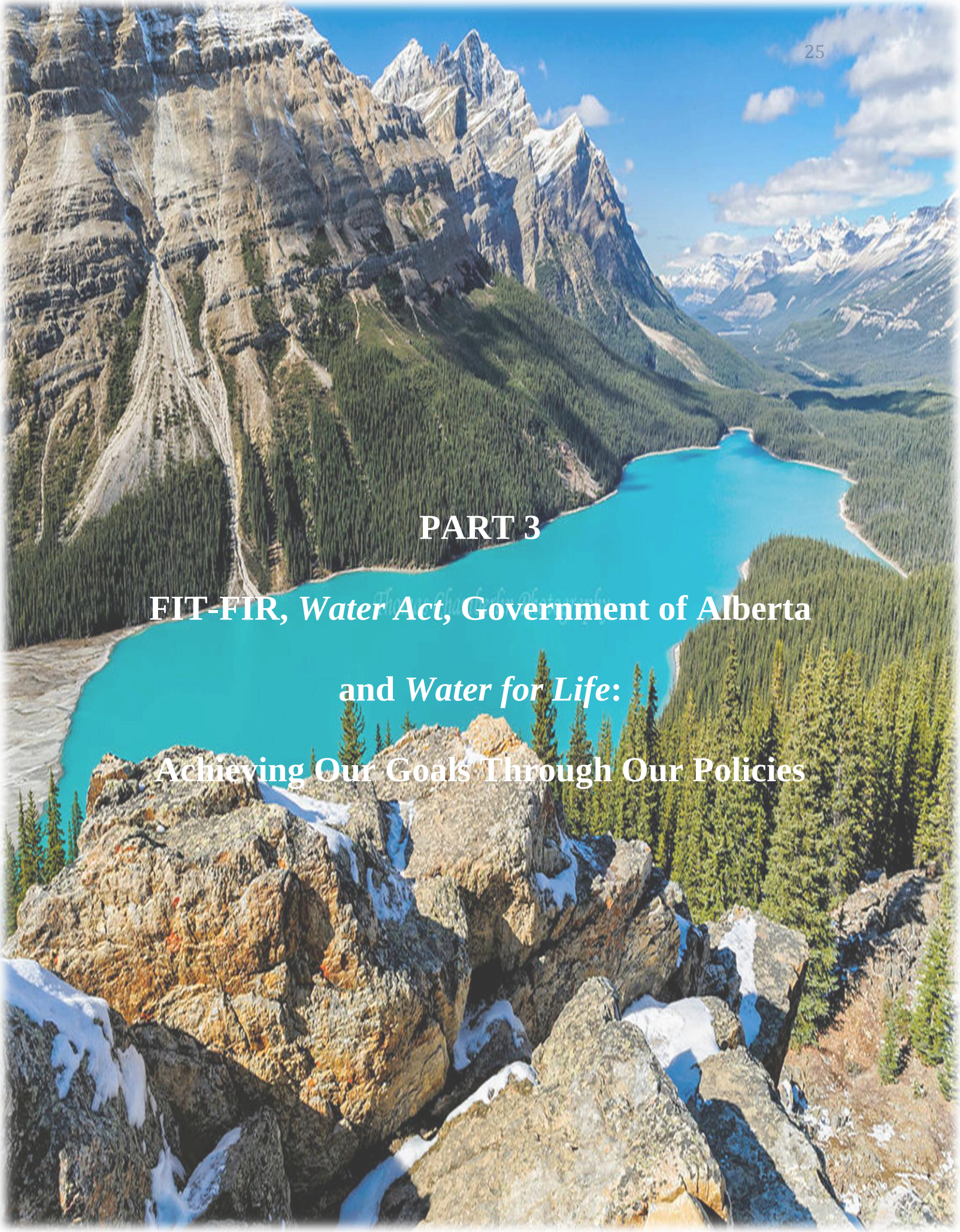
Reliable Quality Water Supplies for a Sustainable Economy[102]

Actions	Timeframe	Status	Rationale
3.1 Develop and implement a viable governance system that supports sustainable management of water.	Short-term	Progressing-on-track	A body of literature on Alberta's water allocation system has been developed but the GOA has yet to finalize this review.
3.2 Address the water management and policy risks associated with a changing future water supply resulting from the impacts of challenging climate regimes.	Short-term	Progressing-on-track	Several academic and research initiatives such as hydro-climate modelling have been conducted but it is difficult to say how this work informs policy and decision making.
3.3 Institute mandatory water use public reporting for water licences.	Short-term	Progressing-on-track	Mandatory water use reporting has become a licence condition for many licensees.
3.4 Assess future water supply demands and management options within watershed management planning. Options could include conservation, storage (based on provincial inventory) and water allocation transfers.	Long-term	Some Progress	Progress on this action will become easier as other actions are achieved, however it is important to address this issue sooner rather than later.

[102] Alberta Water Council. *Review of Implementation Progress of Water for Life, 2009-2011*. 14.

Conclusion

To agree with the *Water for Life* goals has proven easy. There is little doubt that Albertans want safe, secure drinking water; healthy aquatic ecosystems; and reliable quality water supplies for a sustainable economy. However, to ensure that its existing water policies and legislation operate in a way that supports Alberta in achieving its *Water for Life* goals has proven difficult. The FIT-FIR water allocation system, the *Water Act*, and the way that the Government of Alberta manage its water resources may not be sufficient, and reforms may be required.



PART 3

FIT-FIR, *Water Act*, Government of Alberta and *Water for Life*: Achieving Our Goals Through Our Policies

Alberta's success or failure in achieving its *Water for Life* goals will be significantly affected by its water policies, represented by its FIT-FIR water allocation system. However, as water resources of Alberta have become unpredictable, FIT-FIR has been criticized for failing to protect the health of aquatic ecosystems, because "the assessment of environmental impacts of proposed new allocations are not based on scientific assessments of instream flow needs [IFNs]."[103] A second criticism is that FIT-FIR sows the seeds of conflict among water users, and creates winners and losers, because of the absence of mechanism to share water between senior and junior water licensees in times of water scarcity.[104] A third criticism is that FIT-FIR leaves many small communities at risk, because it does not prioritizes water use for basic human water needs, and because it entrenches particular types of water usages at the expense of others.[105]

Due to the shortcomings of Alberta's water policies, some argue that it will be hard for the Province to achieve its *Water for Life* goals, particularly the second one: healthy aquatic ecosystems. According to a working definition provided by the AWC, a healthy aquatic ecosystem is "an aquatic environment that sustains its ecological structure, processes, functions, and resilience within its range of natural variability."[106] In other words, an aquatic environment is considered to be healthy if it is sustainable, in the sense that "it has the ability to meet the needs of the present without compromising the ability to meet the needs of the future."[107] It is important to understand that a healthy

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[103] Ko and Donahue, *Allocating our Water: Changing to Meet the Public Interest*, 2.
[104] Ibid.
[105] Droitsch and Robinson, *Share the Water: Building a Secure Water Future for Alberta*, 13.
[106] Alberta Water Council. *Healthy Aquatic Ecosystems--- A Working Definition*. December 2008: 1. http://www.awchome.ca/Portals/0/pdfs/HAE_Working_Definition.pdf (accessed: June 11, 2014).
[107] Alberta Water Council. *Healthy Aquatic Ecosystems--- A Working Definition*. December 2008: 2.

aquatic ecosystem is the key to achieve the two other *Water for Life* goals. It will be impossible for Albertans to enjoy safe and secure drinking water, and have a reliable quality water supplies for a sustainable economy, without healthy aquatic ecosystems. Hence, if Alberta is to successfully achieve its three *Water for Life* goals, the Province must ensure that its FIT-FIR water allocation system operates in a way that supports healthy aquatic ecosystems.

In order for aquatic ecosystems to be healthy they must meet or exceed "instream flow needs [IFNs]."[108] IFNs pertain to "the amount of water necessary to protect all the benefits provided to us by healthy rivers."[109] The concept of IFNs basically argues that all aquatic ecosystems--- may it be a river, lake, stream, spring, or wetland--- have their respective thresholds that must be met. Alberta's water policies will be able to better protect the health of the Province's aquatic ecosystems if the concept of IFNs is added as an additional criterion for new water allocations. This can be achieved by amending the *Water Act*. A number of non-governmental organizations such as *Water Matters Society of Alberta*, *Ecojustice*, and *Environmental Law Centre* have repeatedly recommended the Government of Alberta to take such an action. However, while it may be simple in theory, it is complicated in practice.

To simply add the concept of IFNs as an additional criterion for new water allocations is not enough to protect the health of the Province's aquatic ecosystems. If this provision is to be effective, it must have a retroactive effect. Most of the water allocated is tied to old water allocations held by senior water licensees, specifically the

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[108] Ko and Donahue, *Allocating our Water: Changing to Meet the Public Interest*, 2.
[109] Ibid., 1.

ones for agricultural irrigation. Hence, the provision will likely fail to achieve any significant results, if it only applies to new water allocations. However, to amend the *Water Act* in a way that will negatively affect the vested rights of major actors has always been politically difficult.

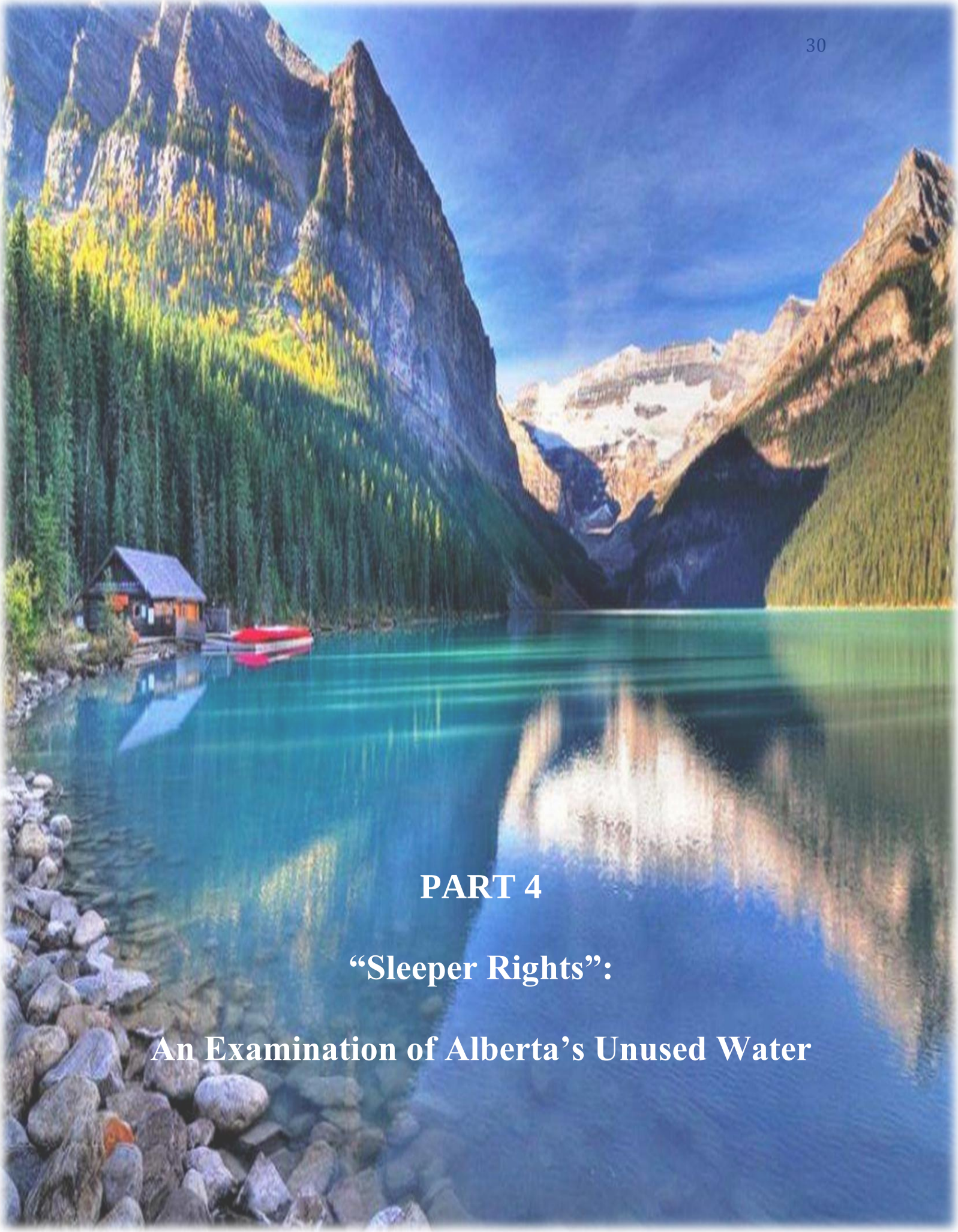
While Alberta's current water policies do not recognize the concept of IFNs, the Government of Alberta has other ways to ensure that water will be present to maintain the health of aquatic ecosystems. An example of this is the 10 per cent Water Conservation Holdback provided by Section 83(1) of the *Water Act*.[110] This provision authorizes the Director of the AESRD to withhold up to 10 per cent of the volume of water being transferred, for the purpose of protecting the health of aquatic ecosystem from which the water would be diverted away.[111]

[110] Water Act, RSA 2000, c W-3, s. 83(1). http://www.qp.alberta.ca/documents/Acts/w03.pdf (accessed: July 2, 2014).

[111] Ibid. Section 83(1) of the Water Act provides: If the Director is of the opinion that withholding water is in the public interest to protect the aquatic environment or to implement a Water Conservation Objective, and the ability to withhold water has been authorized in an applicable approved water management plan or by order of the Lieutenant Governor in Council, the Director may withhold up to 10% of an allocation of water under a licence that is being transferred.

Conclusion

Aside from the 10 per cent Water Conservation Holdback, there are other areas within Alberta's water allocation system that could provide opportunities to ensure that water will be present to meet IFNs, which are necessary to protect and preserve the health of aquatic ecosystems, and achieve the *Water for Life* goals. The concept of "sleeper rights" is an example. What are "sleeper rights"? How do Alberta's water policies manage "sleeper rights"? Does the management of "sleeper rights" support Alberta in achieving its *Water for Life* goals or not? These are the three main questions that the next half of this paper seeks to address.



PART 4

"Sleeper Rights":

An Examination of Alberta's Unused Water

What are "Sleeper Rights"?

In order to divert and use Alberta's water resources--- both surface water and groundwater--- the *Water Act* provides that one must first apply and acquire a water license from the Government of Alberta.[112] Before a water license is issued, the Government of Alberta, through the AESRD considers the following:

(1) Water source
(2) Location of the diversion site
(3) Volume, rate and timing of the water to be diverted
(4) Priority of the water right established by the license
(5) Purpose (specified use) of the water
(6) Any conditions the diversion must adhere to
(7) Natural water supply
(8) Needs of the environment
(9) Existing licenses
(10) Apportionment agreements[113]

If the application for a water license is approved and issued to the applicant, he/she is granted a "water right" for the water allocation specified in the water license. A water right "refers to the authority of a water user to take water from a water body, aquifer or reservoir for their own use."[114] However, in some cases, there is no need to apply and acquire a water license from the Government of Alberta. These cases include:

(1) Statutory household use
(2) Traditional agriculture use
(3) Fire-fighting
(4) Wells equipped with hand pumps
(5) Alternate watering systems that use surface water for grazing livestock and/or certain types of dugouts.[115]

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[112] Alberta Environment and Sustainable Resource Development. *Water Management in Alberta*. http://www.waterforlife.alberta.ca/02808.html (accessed: June 11, 2014).
[113] Ibid.
[114] Droitsch and Robinson, *Share the Water: Building a Secure Water Future for Alberta*, 8.
[115] Alberta Water Portal. *Learn: Water Licences, Transfers, and Allocation*. http://albertawater.com/learn/how-is-our-water-governed/water-licenses-and-transfers (accessed: June 12, 2014).

By the end of 2005, the AESRD has allocated approximately 9.5 billion cubic meters of water throughout Alberta.[116] By the end of 2010, this has increased to 9.9 billion cubic meters.[117] As discussed on Part 1 of this paper, the AESRD allocates water to different sectors that need water to operate. Presently, the three sectors representing the highest water demands and allocations are: the agricultural sector, commercial sector, and municipal/ domestic sector.[118]

As the overall water demand of Alberta is projected to increase, the amount of water allocated by the AESRD is also projected to increase. However, the sectors to which significant amounts of water have been allocated to, do not actually use all of their water allocations. The result is what we refer to as "sleeper rights."[119] Indeed, sleeper rights are defined as "water rights that were set out in a licence but were not actually used."[120] According to a report by *Water Matters Society of Alberta*, "approximately 45 percent of water allocated under license in Alberta is unused."[121]

Why do "sleeper rights" exist?

Before a water license is issued, the Government of Alberta, through the AESRD, considers a number of factors enumerated by the *Water Act*, two of which are the "volume, rate and timing of the water to be diverted" and "purpose (specified use) of the water." [122] When applying for a water license, every applicant is required to provide

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[116] Alberta Environment and Sustainable Resource Development. *Water Allocation*. http://esrd.alberta.ca/water/programs-and-services/water-allocation.aspx (accessed: June 3, 2014).
[117] Christensen and Droitsch, *Fight to the Last Drop: A Glimpse Into Alberta's Water Future,* 19.
[118] Ko and Donahue, *Allocating Our Water: Changing to Meet the Public Interest*, 4.
[119] Christensen and Droitsch, *Fight to the Last Drop: A Glimpse Into Alberta's Water Future,* 19.
[120] Ibid.
[121] Ko and Donahue, *Allocating Our Water: Changing to Meet the Public Interest*, 4.
[122] Alberta Environment and Sustainable Resource Development. *Water Management in Alberta*.

information concerning the amount of water to be diverted on an annual basis and where the water would be used.[123]

One of the reasons behind this requirement is to provide the AESRD with the information that it needs, in order to allocate an amount of water proportional to the needs of the applicant. While this may be true, in Alberta's FIT-FIR water allocation system, "allocation is generally based on the maximum amount of water that an applicant expects will be required over the licensing period, meaning that the amount that is actually diverted… in any particular year may be less than the full allocation."[124] This results in unused water or "sleeper rights." To illustrate: A farmer applying for a water license indicates that he needs x amount of water to be diverted annually from a watershed to his crops. On the first year, which was hot and dry, the farmer diverted the maximum amount of water allocated by his water license. However, on the second year, which was rainy and wet, the farmer only diverted half of the maximum amount of water allocated by his water license. This scenario leaves the farmer with unused water or "sleeper rights."[125]

There are also other reasons why unused water or "sleeper rights" exist: First, the supply of water allocated to a water right holder maybe simply beyond his/her water demand. Second, the water right holder may make a conscious effort to conserve part of his/her water allocation, for it to serve as a form of insurance or security against future risks. Third, the water right holder may change the original purpose (specified use) of the water, which results to less water demand originally specified in the application. Finally,

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[123] Alberta Environment and Sustainable Resource Development. *Water Allocation*.
[124] Ibid.
[125] Ibid.

the water right holder may temporarily or permanently stop business operations which results in the entire water allocation left unused for the time being.

"Sleeper Rights" in Alberta

Tracking down the exact amount of unused water or "sleeper rights" in Alberta is complicated. While the AESRD requires water rights holders to provide information concerning their annual water usages, such requirement only applies to major water rights holders such as the agricultural, commercial, and municipal/ domestic sectors. To track down the exact amount of unused water or "sleeper rights" in Alberta, one can visit the *State of the Environment* website, where the annual water usage reports of major water rights holders are available to the public.

For the purposes of Part 4 of this paper, the information from a government document entitled: "Water for Life: Reliable, Quality Water Supplies for a Sustainable Economy (Current and Future Water Use in Alberta)", will be used.[126] This document was prepared by *AMEC Earth and Environmental* for *Alberta Environment* (AENV), and was completed in November 2007, "to provide a baseline; a starting point; [and] a frame of reference"[127] concerning water allocations, licensed use, and actual use of water in Alberta. [128] The government document provided information concerning water

[126] Alberta Government. *Water for Life: Reliable, Quality Water Supplies for a Sustainable Economy (Current and Future Water Use in Alberta)*. Prepared for Alberta Environment. Prepared by AMEC Earth and Environmental. November 2007. http://www.assembly.ab.ca/lao/library/egovdocs/2007/alen/164708.pdf (accessed: July 8, 2014).
[127] Ibid., i.
[128] Ibid., i.

allocations, licensed use, and actual use of water by six major sectors and twelve major river basins of Alberta.[129]

(1) Municipal and Residential Sector
(2) Agricultural Sector
(3) Commercial Sector
(4) Petroleum Sector
(5) Industrial Sector
(6) Other Sector

(1) Milk River Basin
(2) Oldman River Basin
(3) Bow River Basin
(4) South Saskatchewan River Basin
(5) Red Deer River Basin
(6) Battle River Basin
(7) North Saskatchewan River Basin
(8) Beaver River Basin
(9) Athabasca River Basin
(10) Peace/ Slave River Basin
(11) Hay River Basin
(12) Liard River Basin

Figure 1 on page 36 provides the summary of "Allocations, Licensed Use and Actual Use by Sector in Alberta [in] 2005."[130] For more specific information, Figure 1 is followed by tables that illustrate the allocation, licensed use and actual use by each of the six sectors. On the other hand, Figure 8 on page 40 provides the summary of "Allocations, Licensed Use and Actual Use by River Basin in Alberta [in] 2005."[131] For more specific information, Figure 8 is also followed by tables that illustrate the allocation, licensed use and actual use by each of the twelve river basins.

Allocation refers to the entire amount of water allocated to a water right holder by a water license. **Licensed Use** refers to the amount of water that a water right holder can actually consume (Allocation – Return Flow= Licensed Use). And **Actual Use** refers to the amount of water that a water right holder actually uses. While the tables do not directly provide any information concerning unused water or "sleeper rights", the

[129] Alberta Government. *Water for Life: Reliable, Quality Water Supplies for a Sustainable Economy (Current and Future Water Use in Alberta)*, page iv.
[130] Ibid., iv.
[131] Ibid., vi.

difference between each **Allocation** and each **Actual Use** indirectly provides the amount of water that a water right holder does not actually use (Allocation – Actual Use= Unused Water or "Sleeper Rights").

Figure 1. Allocations, Licensed Use and Actual Use by Sector in Alberta, 2005[132]

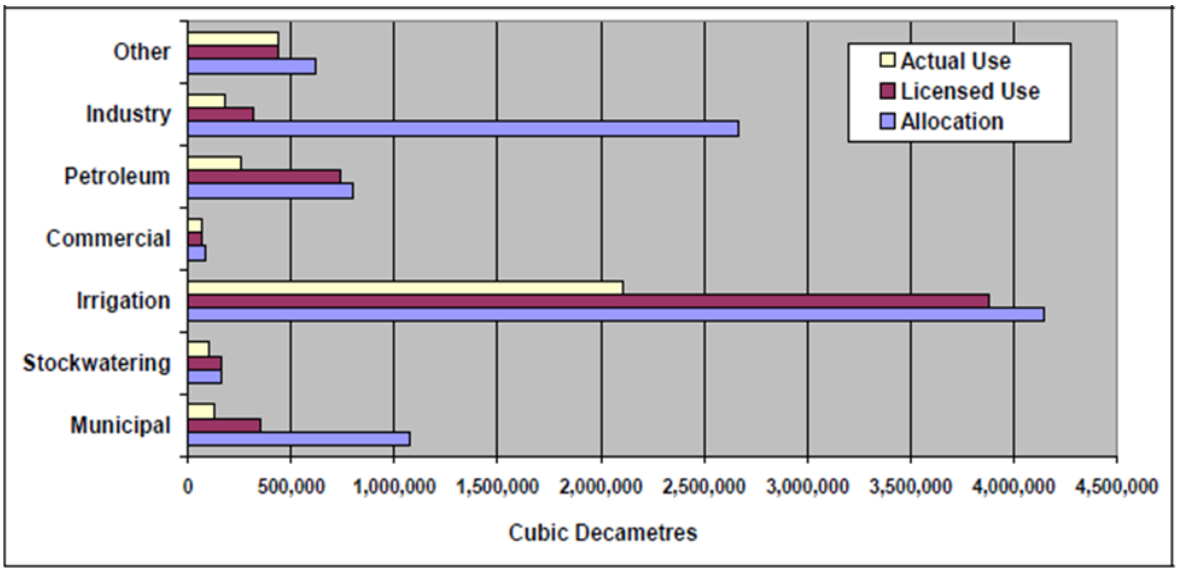
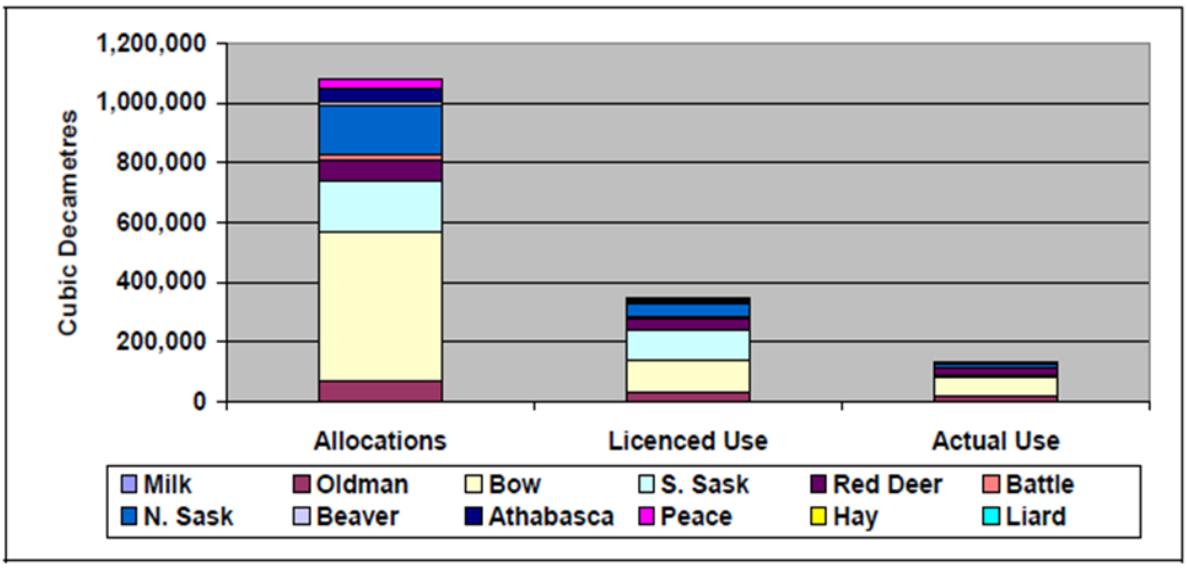


Figure 2. Municipal Allocations, Licensed Use and Actual Use, Alberta[133]



[132] Alberta Government. *Water for Life: Reliable, Quality Water Supplies for a Sustainable Economy (Current and Future Water Use in Alberta)*, iv.
[133] Ibid., 576.

Figure 3. Agricultural Allocations, Licensed Use and Actual Use, Alberta[134]

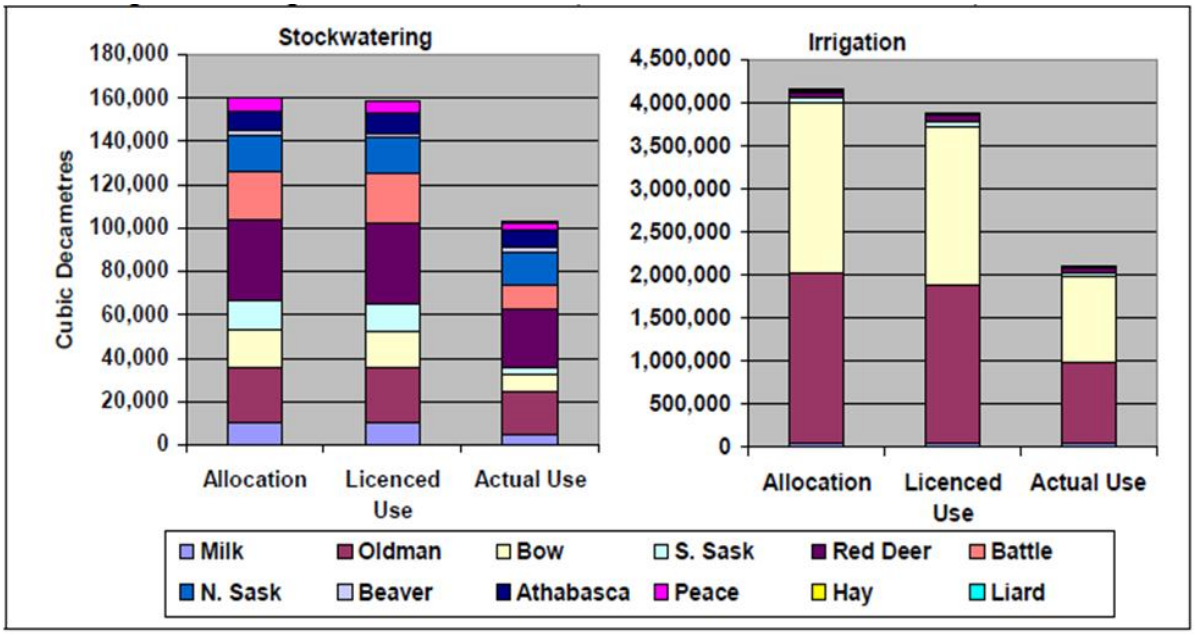
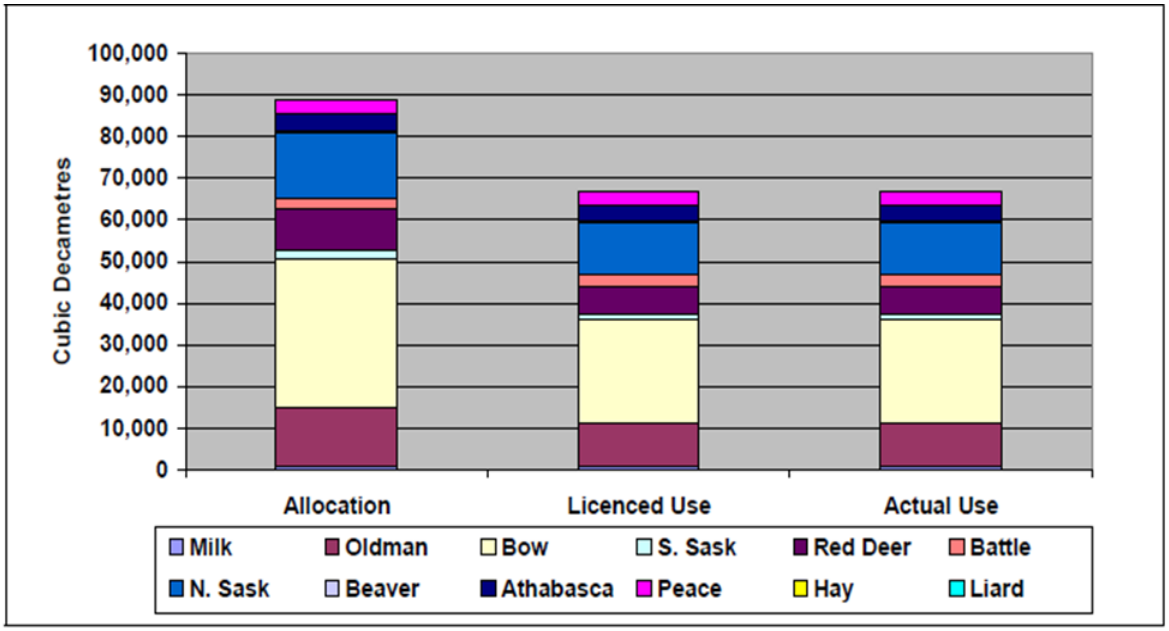


Figure 4. Commercial Allocations, Licensed Use and Actual Use, Alberta[135]



[134] Alberta Government. *Water for Life: Reliable, Quality Water Supplies for a Sustainable Economy (Current and Future Water Use in Alberta)*, 584.
[135] Ibid., 590.

Figure 5. Allocations, Licensed Use and Actual Use for the Petroleum Sector[136]

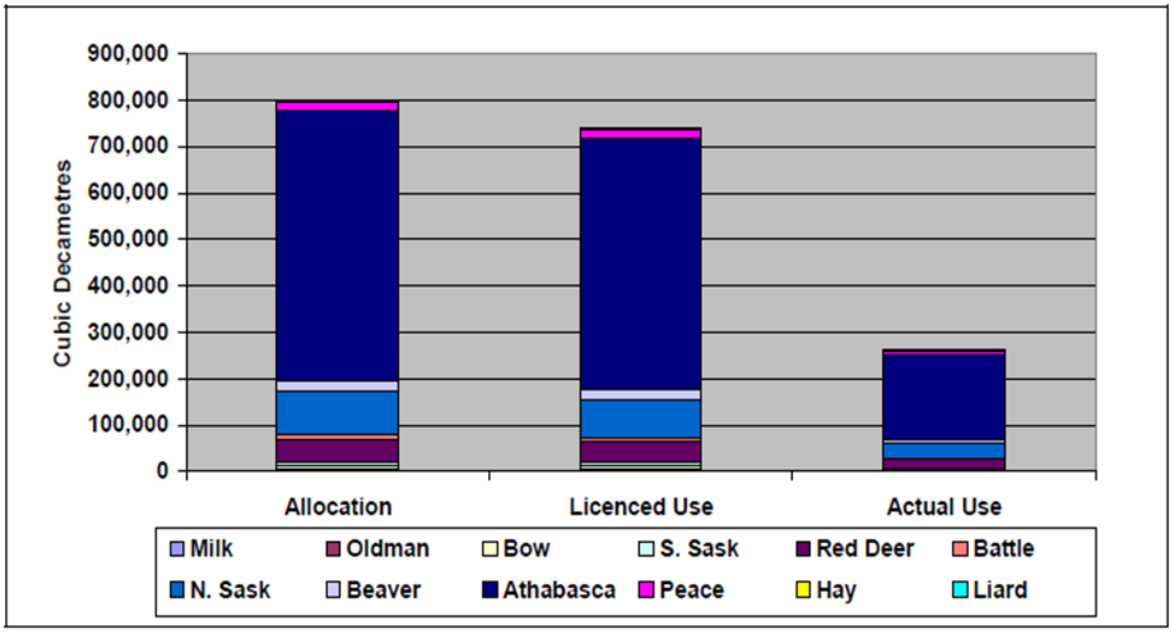
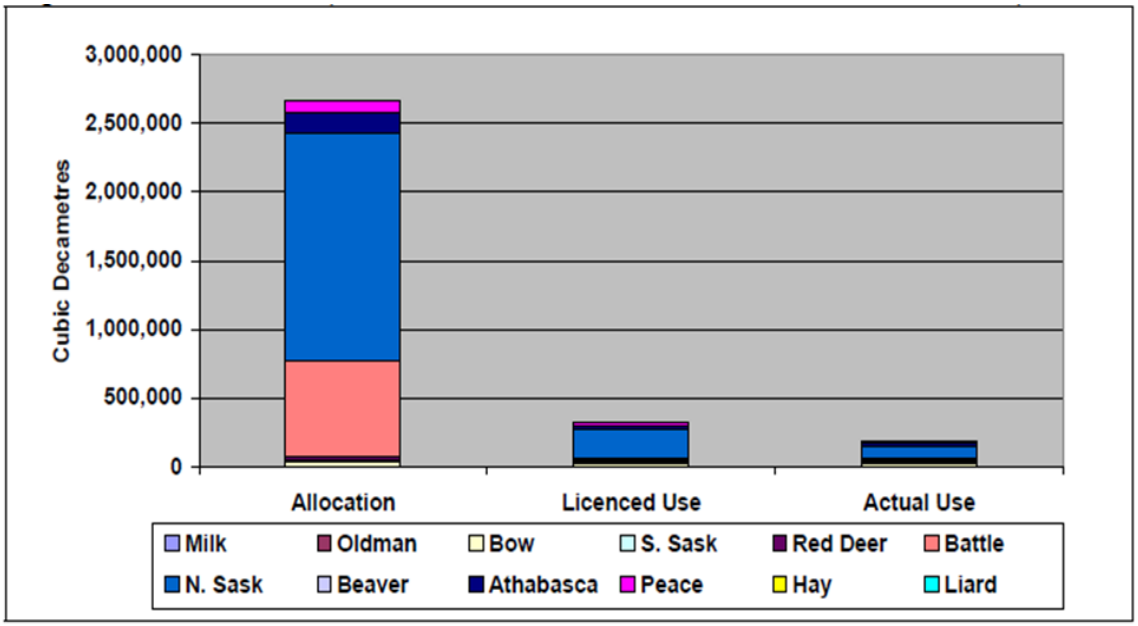
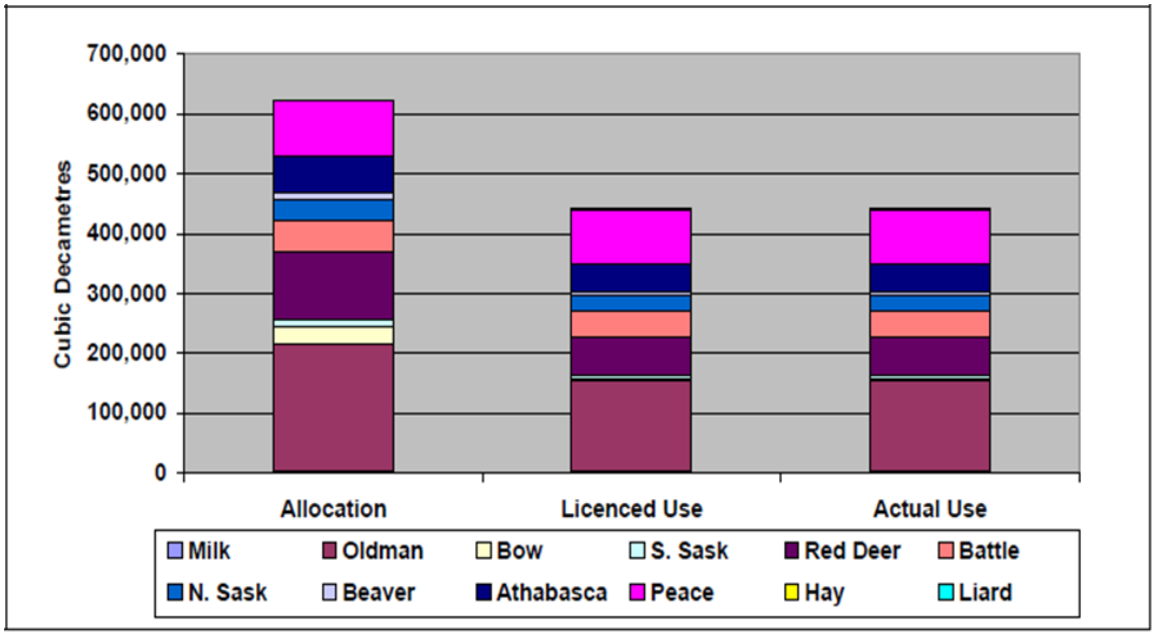


Figure 6. Allocations, Licensed Use and Actual Use for the Industrial Sector[137]



[136] Alberta Government. *Water for Life: Reliable, Quality Water Supplies for a Sustainable Economy (Current and Future Water Use in Alberta)*, 596.
[137] Ibid., 602.

Figure 7. Allocations, Licensed Use and Actual Use for the Other Sector[138]



[138] Alberta Government. *Water for Life: Reliable, Quality Water Supplies for a Sustainable Economy (Current and Future Water Use in Alberta)*, 605.

Figure 8. Allocations, Licensed Use and Actual Use by River Basin in Alberta, 2005[139]

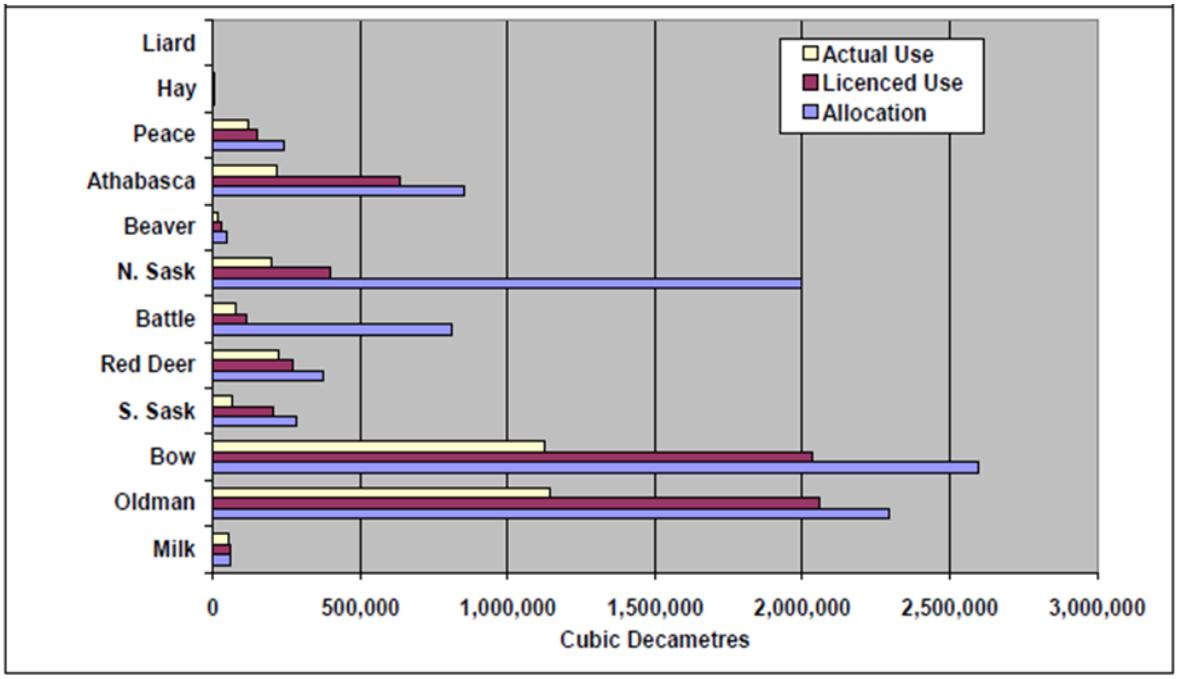
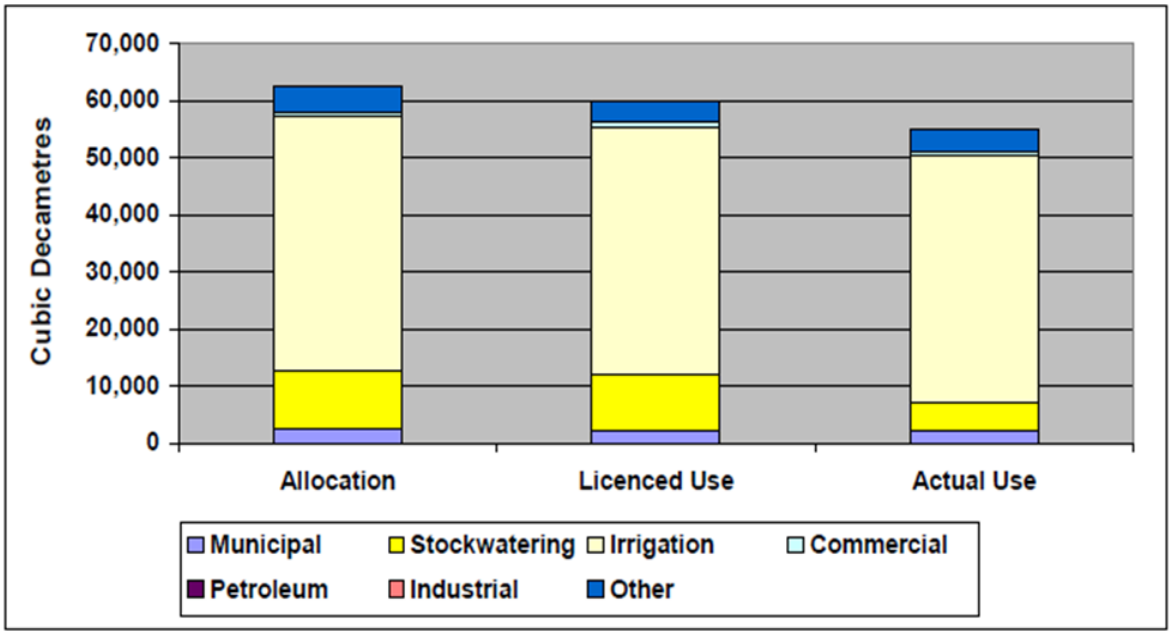


Figure 9. Allocations, Licensed Use and Actual Use, by Sector, Milk River Basin[140]



[139] Alberta Government. *Water for Life: Reliable, Quality Water Supplies for a Sustainable Economy (Current and Future Water Use in Alberta)* vi.
[140] Ibid., 53.

Figure 10. Allocations, Licensed Use and Actual Use, by Sector, Oldman River Basin[141]

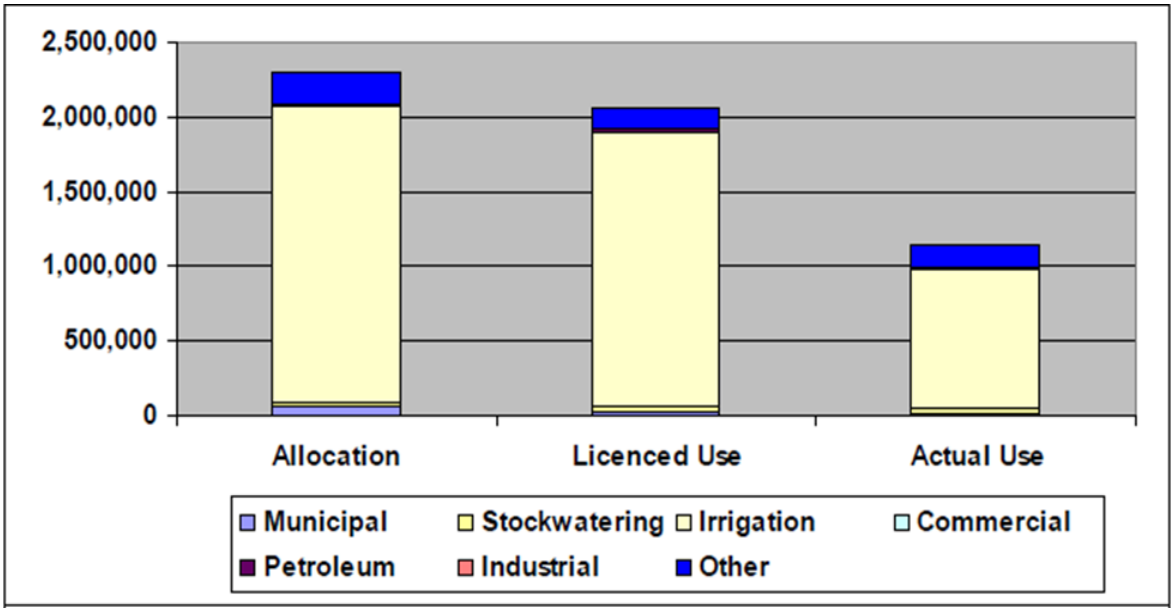
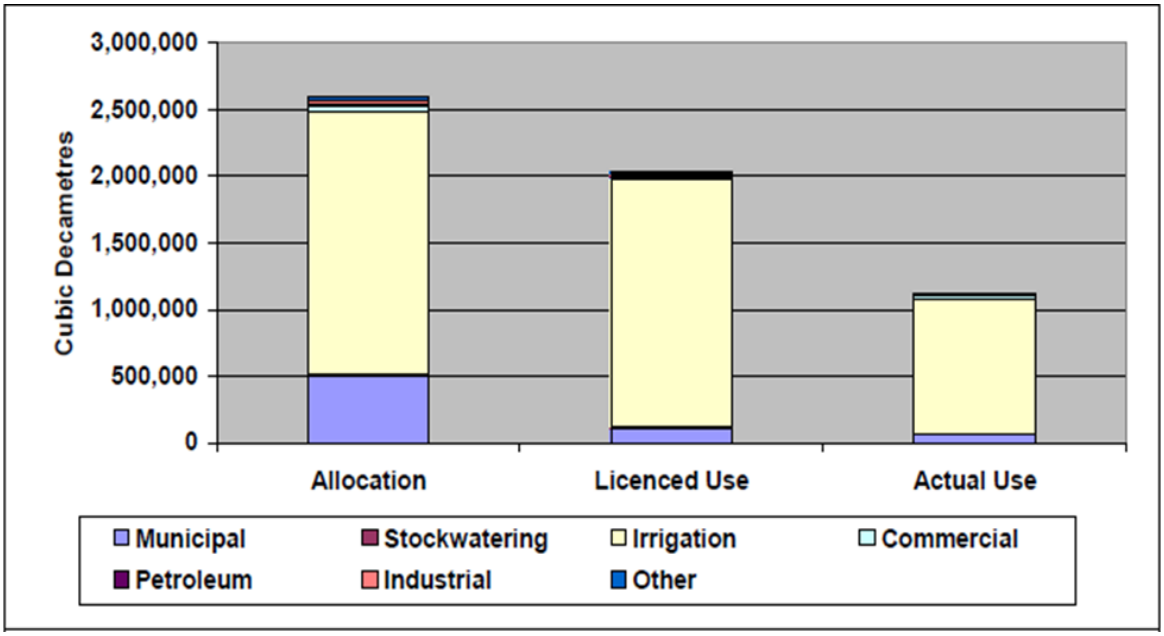


Figure 11. Allocations, Licensed Use and Actual Use, by Sector, Bow River Basin[142]



[141] Alberta Government. *Water for Life: Reliable, Quality Water Supplies for a Sustainable Economy (Current and Future Water Use in Alberta)*, 103.
[142] Ibid., 158.

Figure 12. Allocations, Licensed Use and Actual Use, by Sector, SSRB[143]

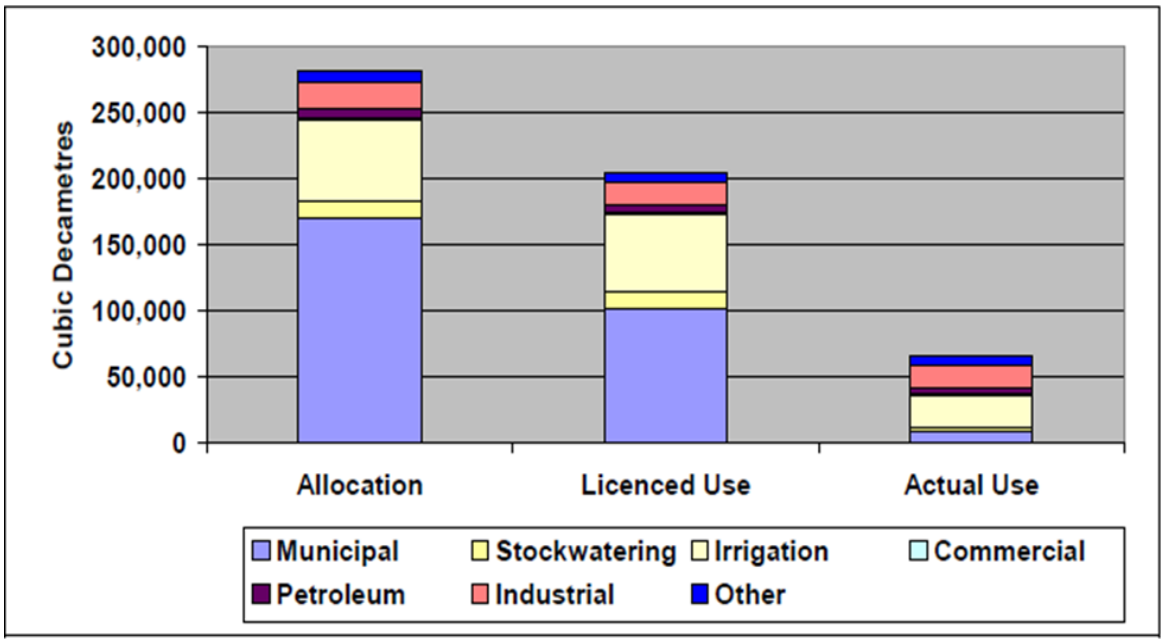
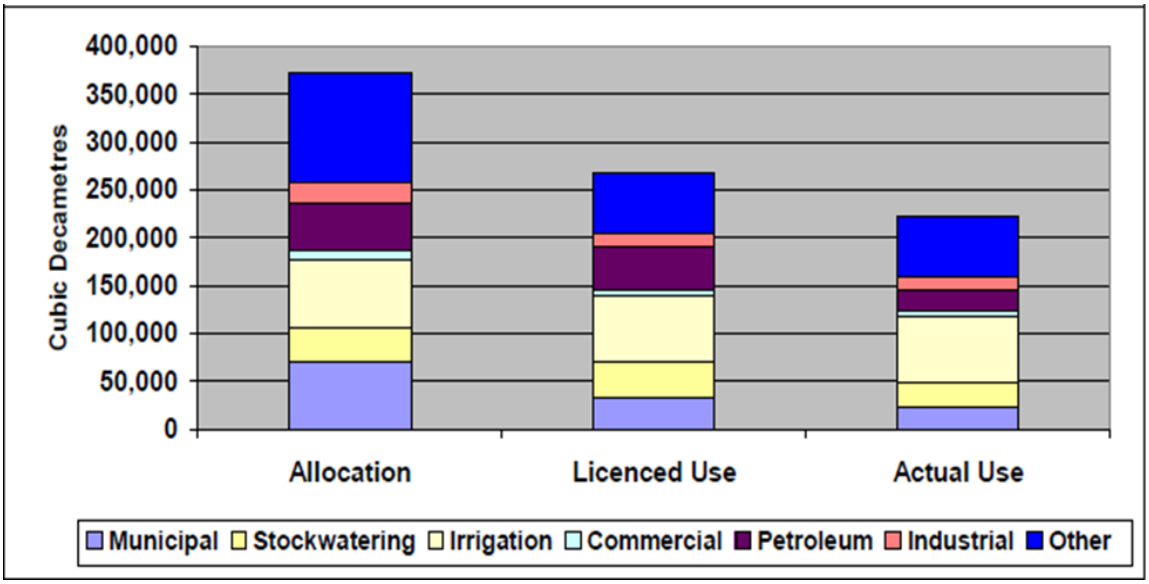


Figure 13. Allocations, Licensed Use and Actual Use, by Sector, Red Deer[144]



[143] Alberta Government. *Water for Life: Reliable, Quality Water Supplies for a Sustainable Economy (Current and Future Water Use in Alberta)*, 206.
[144] Ibid., 259.

Figure 14. Allocations, Licensed Use and Actual Use, by Sector, Battle[145]

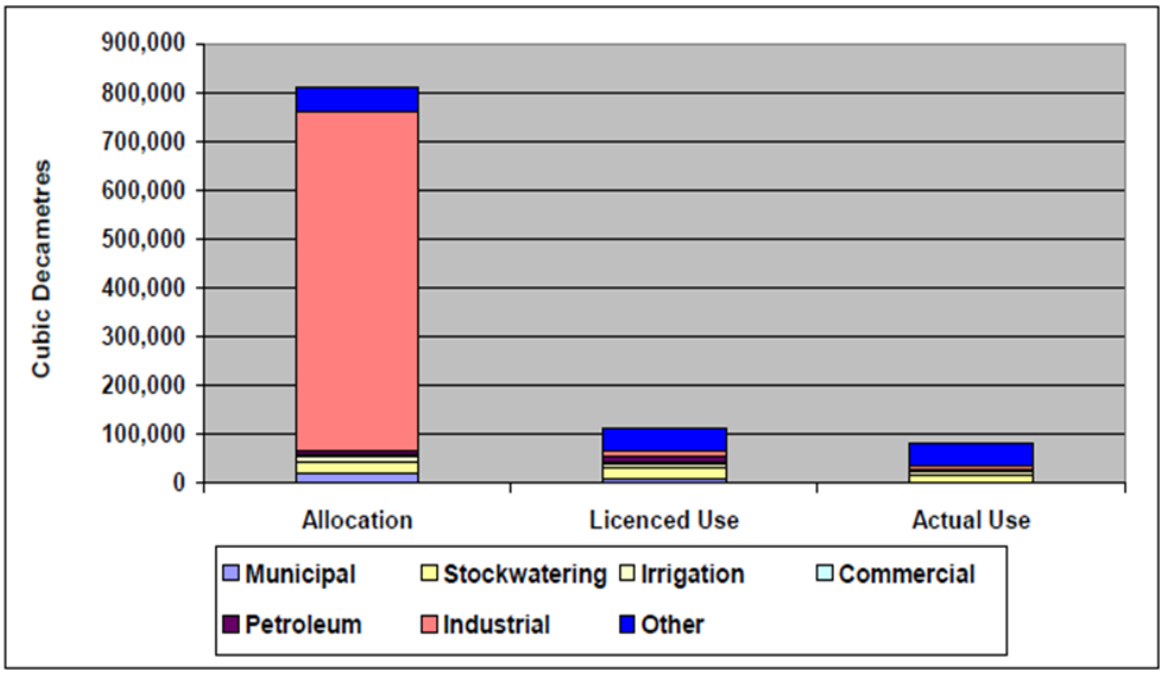
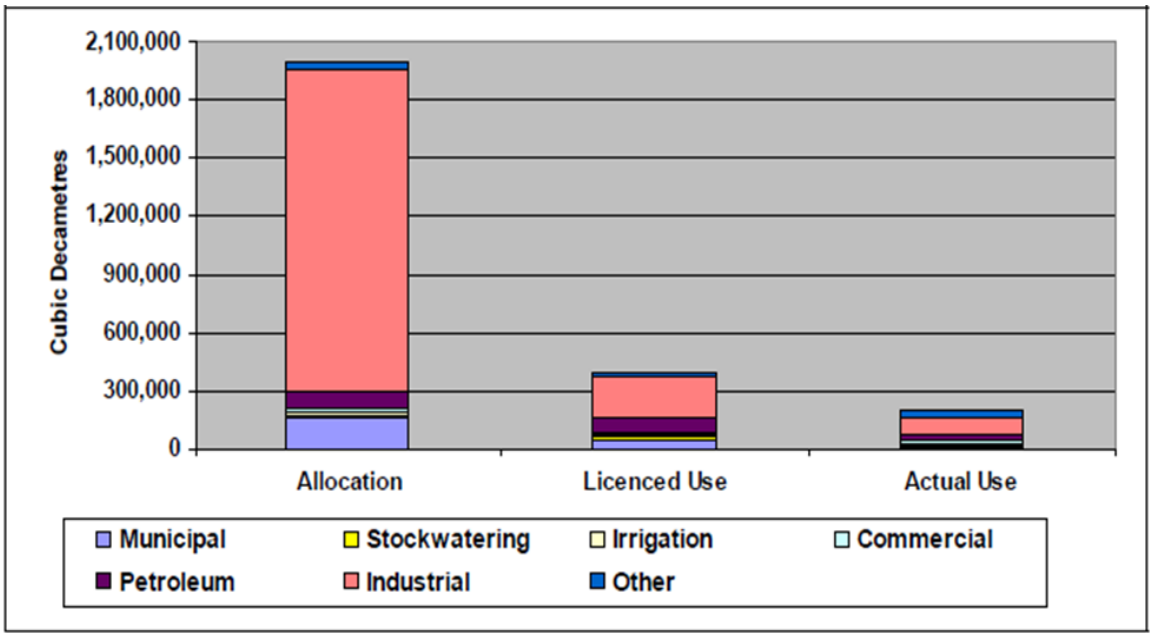


Figure 15. Allocations, Licensed Use and Actual Use, by Sector, NSRB[146]



[145] Alberta Government. *Water for Life: Reliable, Quality Water Supplies for a Sustainable Economy (Current and Future Water Use in Alberta)*, 310.
[146] Ibid., 375.

Figure 16. Allocations, Licensed Use and Actual Use, by Sector, Beaver[147]

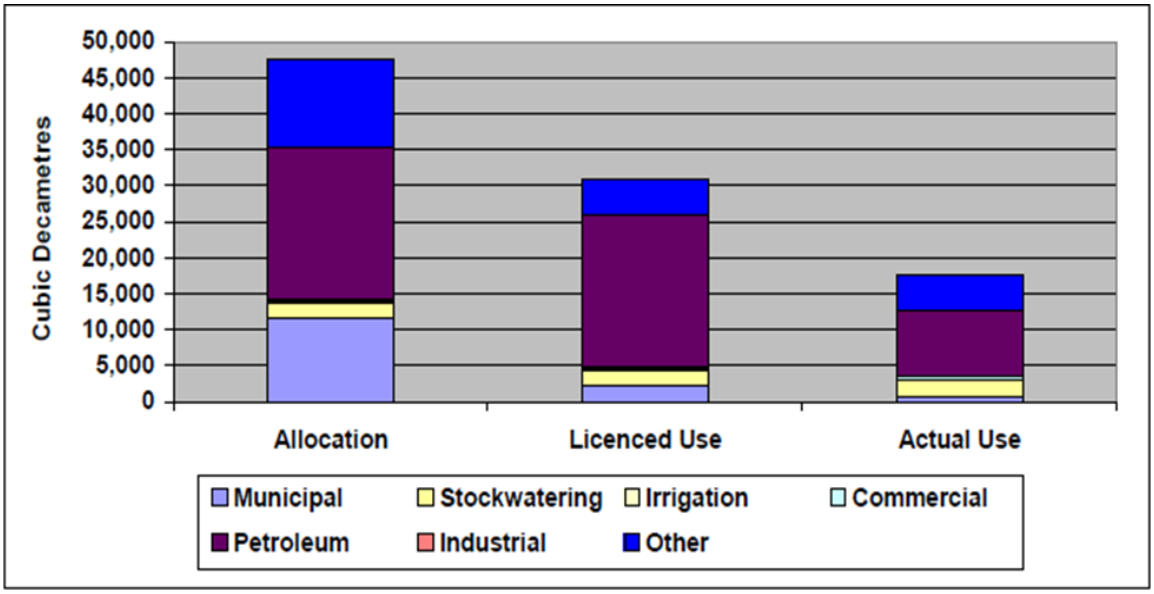
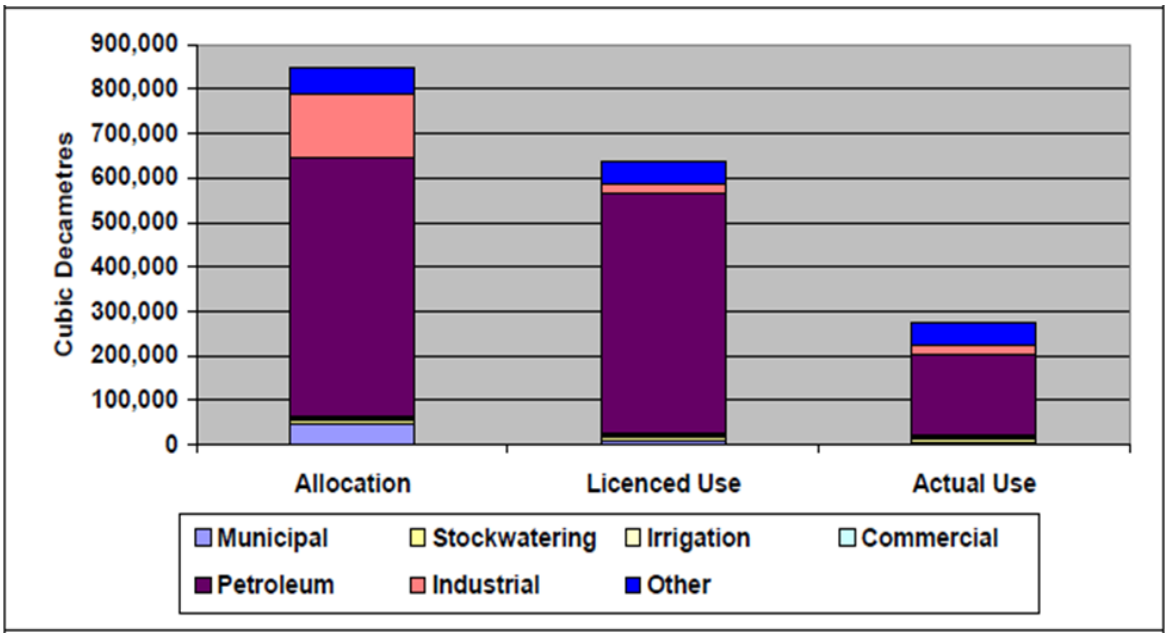


Figure 17. Allocations, Licensed Use and Actual Use, by Sector, Athabasca[148]



[147] Alberta Government. *Water for Life: Reliable, Quality Water Supplies for a Sustainable Economy (Current and Future Water Use in Alberta)*, 417.
[148] Ibid., 475.

Figure 18. Allocations, Licensed Use and Actual Use, by Sector, Peace/ Slave[149]

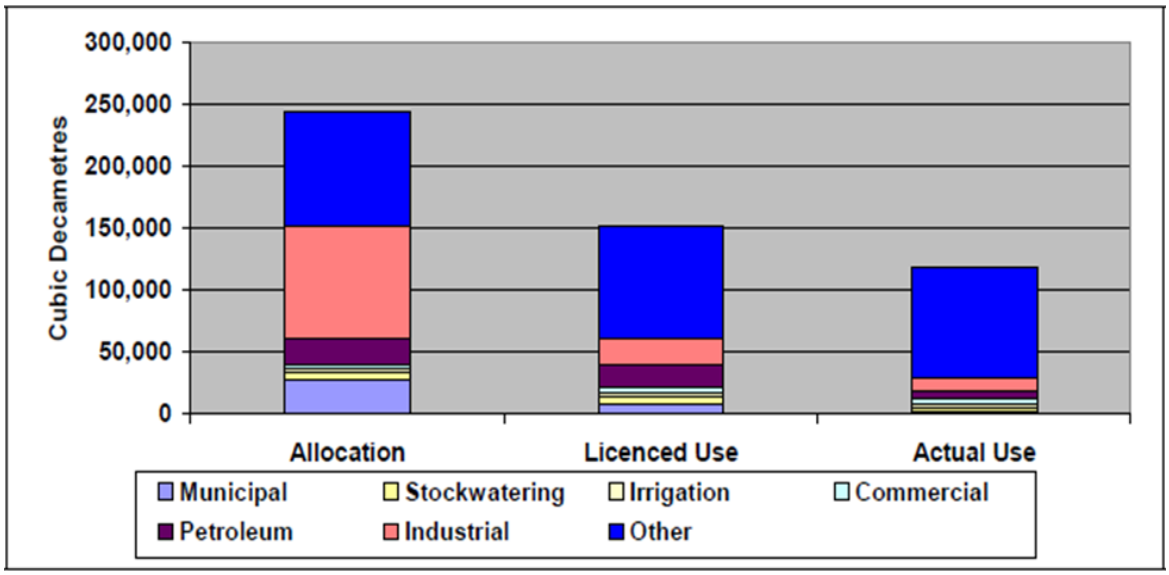
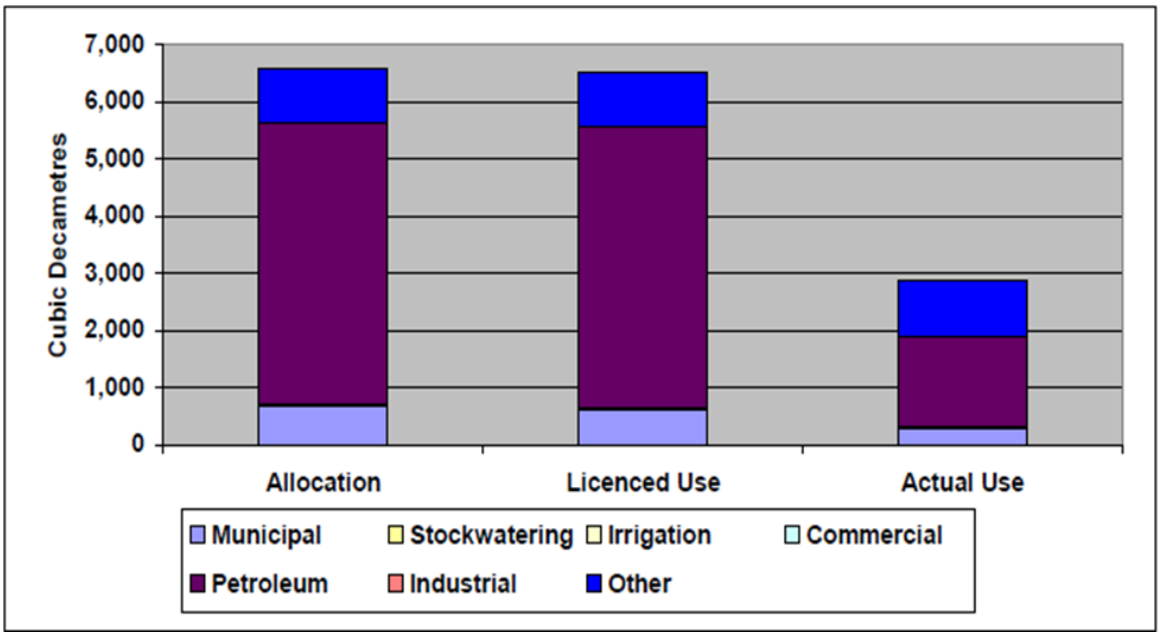


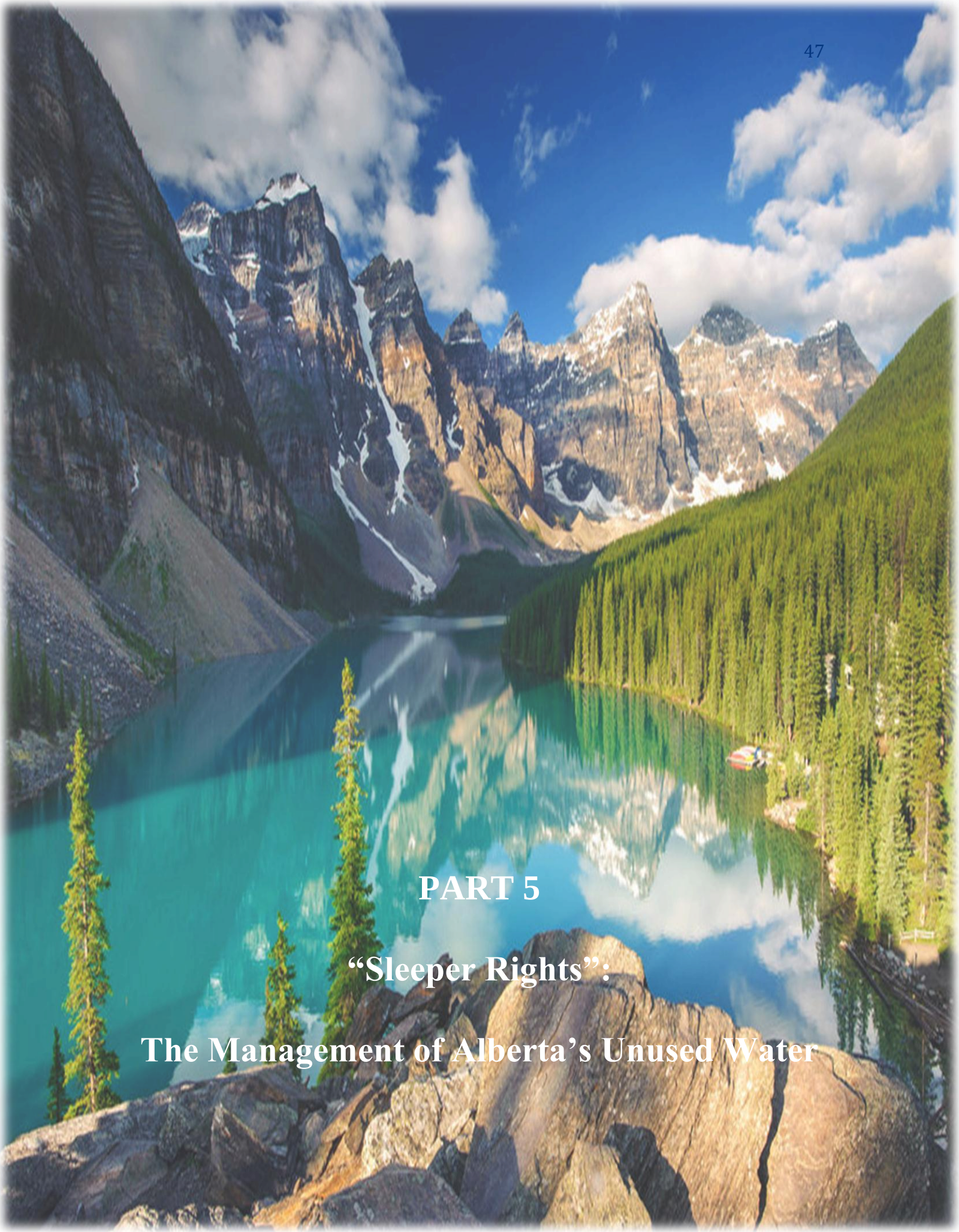
Figure 19. Allocations, Licensed Use and Actual Use, by Sector, Hay[150]



[149] Alberta Government. *Water for Life: Reliable, Quality Water Supplies for a Sustainable Economy (Current and Future Water Use in Alberta)*, 525.
[150] Ibid., 559.

Conclusion

The tables illustrate that approximately 45% of water allocations are unused in Alberta. This unused water plays a crucial role in being able to meet IFNs, especially in the SSRB, Bow and Oldman. IFNs are necessary to protect and preserve the health of aquatic ecosystems and to achieve the *Water for Life* goals. Hence, the Government of Alberta is under pressure to take more control of its unused water. However, the way that Alberta's water policies allow water rights holders to transfer or sell their unused water have created issues, because IFNs may not be met if unused water is allowed to be transferred or sold.



PART 5

"Sleeper Rights":

The Management of Alberta's Unused Water

The Management of Alberta's Unused Water: The Basics

What happens to unused water or "sleeper rights" in Alberta? As a general rule, the AESRD may take back unused water or "sleeper rights". Indeed, Section 55 (1)(f) of the *Water Act* provides:

> The Director **may** suspend or cancel a licence if, subject to the regulations, the Director is of the opinion that
>
> (i) there has been no diversion of any of the water allocated in the licence, or there has been a failure or ceasing to exercise the rights granted under the licence, over a period of 3 years, **and**
>
> (ii) there is no reasonable prospect that the licensee will resume diversion of all or part of the water specified in the licence or resume the exercise of the rights granted under the licence.[151]

Under the two circumstances provided by Section 55 (1)(f) of the *Water Act*--- both of which must be met--- the AESRD may take back unused water. In practice, however, this rarely happens. Water rights holders with unused water simply retain these parts of their water allocations most of the time. It seems that the general rule has become the exception, where the AESRD has chosen to transfer the management of unused water to the hands of water rights holders instead. According to the AESRD, reasons for not cancelling water licenses for non-use include:

(1) Weather conditions prevented the licensee from using a license allocation
(2) Federal, provincial, or local laws, rules or regulations temporarily prevented or restricted water use
(3) A water conservation objective, minimum flow, instream need or instream objective restricted water use for a period of time
(4) An order "prohibited" water use (e.g. court order, administration tribunal decision, ministerial order/ direction or a water moratorium)
(5) The licensee submitted a plan accepted by the Director indicating a reasonable prospect that diversion will resume

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[151] Water Act, RSA 2000, c W-3, s. 55(1)(f). http://www.qp.alberta.ca/documents/Acts/w03.pdf (accessed: July 2, 2014).

(6) Extenuating circumstances that are not likely to reoccur.[152]

What happens to unused water in Alberta if it is not taken back by the AESRD depends on water rights holders. According to an interview with senior water rights holders, conducted by *Water Matters Society of Alberta*, there are three main things that senior water rights holders prefer to do with their unused water.[153] These three main things, in turn, significantly define the current state of these resources in Alberta.

First, some senior water rights holders prefer to retain their unused water in order for these resources to serve as their insurance or security against future risks.[154] These future risks include shortage of water supplies caused by factors such as geographical distribution of water, rapid population and economic growth, and climate change.[155] The ability to mitigate losses caused by these future risks proved to be highly desirable, as majority of the senior water rights holders who participated in the interview gave this answer.[156]

Second, some senior water rights holders prefer to retain their unused water in order for these resources to benefit the environment.[157] If water remains unused, then it remains instream. Water that remains instream, in turn, helps the water source to meet or exceed its IFNs. As discussed in Part 3 of this paper, IFNs are the key to protecting and preserving the health of aquatic ecosystems, which provide us with social, economic, and

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[152] Government of Alberta. *Water Licence Cancellations For Non-Use Of Water Allocated By A Licence.* http://esrd.alberta.ca/water/education-guidelines/documents/8451.pdf (accessed: June 11, 2014).
[153] Ko and Donahue, *Allocating Our Water: Changing to Meet the Public Interest,* 12.
[154] Ibid.
[155] See Part 1 of this Paper.
[156] Ko and Donahue, *Allocating Our Water: Changing to Meet the Public Interest,* 12.
[157] Ibid.

environmental benefits. Some senior water rights holders understand this and demonstrate their support by keeping their unused water unused and instream.[158]

Third, some senior water rights holders prefer to retain their unused water in order for these resources to bring them profit by transferring or selling them to those who seek to acquire a water license or add their existing water allocations.[159] In Alberta, there are four different ways in order to acquire a right to divert and use water:

(1) Apply for a licence for an allocation of surface water or groundwater.
(2) Agree to assign part or all of an allocation of water to resolve a water shortage due to priority being called.
(3) Amend a licence to reflect a name change or change of purpose when a licensed water allocation remains in its current location.
(4) Apply to transfer part or all of an allocation of water under a licence to a new location.[160]

The transfer or selling of water allocations was prohibited in Alberta until the *Water Act* repealed the *Water Resources Act* in 1999.[161] Sections 81 and 82 of the *Water Act* provide information concerning transfer application and transfer approval, respectively.[162] In Alberta, "[a] transfer can only be considered where water is allocated under a licence and where either an approved water management plan is in place that allows transfers, or by

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[158] Ko and Donahue, *Allocating Our Water: Changing to Meet the Public Interest,* 12.
[159] Ibid.
[160] Alberta Government. *Water Act: Administrative Guideline for Transfer of Water Allocations,* ESRD, Water Quantity, Volume 2.0, No. 4, May 2014, 4. http://esrd.alberta.ca/water/legislation-guidelines/documents/GuidelineTransferWaterAllocation-May14-2014.pdf (accessed: August 1, 2014).
[161] Christensen and Droitsch, *Fight to the Last Drop: A Glimpse into Alberta's Water Future*, 18.
[162] Water Act, RSA 2000, c W-3, s. 81 and s. 82. http://www.qp.alberta.ca/documents/Acts/w03.pdf (accessed: July 2, 2014).
Water Allocation Transfer or Transfer occurs when the holder of an existing water licence agrees to sell all or part of the amount they are allocated to another person or organization or the holder decides to change the point of diversion or point of use of his own licence. The Director must approve a transfer. When this occurs, the allocation is separated from the original land, and a new licence, with the seniority of the transferred allocation, is issued and attached to the new location. Under the Act, the Director may place conditions on the new licence. Water allocation transfers may occur only if authorized under an approved water management plan, or by the Lieutenant Governor in Council. See Sections 81, 82 and 83 of the Act.
Alberta Government. *Water Act: Administrative Guideline for Transfer of Water Allocations,* ESRD, Water Quantity, Volume 2.0, No. 4, May 2014, 7.

an order of the Lieutenant Governor in Council that authorizes a specific transfer application to be considered."[163] In 2002, the *Approved Water Management Plan for the South Saskatchewan River Basin (Alberta)* was introduced.[164] It "authorizes transfers of water allocations in the Bow, Oldman and South Saskatchewan River Sub-basins."[165] Hence, while the *Water Act* came into force in 1999, actual transfer or selling of water allocations most likely did not begin before the *Approved Water Management Plan for the SSRB* was introduced. Actual transfer or selling of water allocations most likely accelerated during the years following August 30, 2006, after the Government of Alberta closed the SSRB, Oldman and Bow to further water license allocations.[166]

Transfers of water allocation can either be permanent or temporary.[167] Permanent transfer means "part or all of the allocation of water is transferred and does not revert back to the original licensee (the transferor)."[168] On the other hand, temporary transfer means "part or all of the allocation of water is transferred for a specified period of time. The allocation of water will be returned to the original licensee after the agreed period of time has lapsed."[169] However, the following water allocations may not be transferred, permanently or temporarily:

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[163] Alberta Government. *Water Act: Administrative Guideline for Transfer of Water Allocations,* ESRD, Water Quantity, Volume 2.0, No. 4, May 2014, 4.
[164] Ibid., 9.
[165] Ibid., 9.
"In areas of the province where there is no approved water management plan that authorizes transfers, a request for a transfer first requires a request to Cabinet to obtain an order of the Lieutenant Governor in Council; this order is required before the Director can make any decision on a transfer."
Alberta Government. *Water Act: Administrative Guideline for Transfer of Water Allocations,* ESRD, Water Quantity, Volume 2.0, No. 4, May 2014, 9.
[166] Droitsch and Robinson, *Share the Water: Building a Secure Water Future for Alberta*, 15.
[167] Alberta Government. *Water Act: Administrative Guideline for Transfer of Water Allocations,* ESRD, Water Quantity, Volume 2.0, No. 4, May 2014, 4.
[168] Ibid., 6.
[169] Ibid., 6.

(1) A licence for a temporary diversion of water;
(2) A licence issued as a result of a previous transfer if the transferred allocation is to revert back to the original licence after a specified period of time;
(3) A right to divert water for household purposes;
(4) A right to divert water pursuant to a registration;
(5) A right to divert water pursuant to an approval;
(6) An anticipated right to divert water pursuant to a preliminary certificate.[170]

Once a water right holder decides to transfer all or part of his/her water allocation, he/she must complete an application for transfer of allocation. This application will be subject to a lengthy review which may include the following steps:

(1) Determination whether license is in "good standing"[171]
(2) Public Notice[172]
(3) Public Review[173]
(4) Referral "to other agencies who may be affected by the transfer for comment"[174]
(5) Review Statements of Concern[175]
(6) Decision on Application[176]
(7) Appeal Process via the Environmental Appeals Board[177]

While transfers of water allocations in Alberta are subject to a lengthy review and numerous requirements, the Government of Alberta does not have any control on the price of the transfer agreed to by the transferor and the transferee.[178] Other information concerning transfers of water allocations are hard to collect, because aside from the information required by the application, everything remains between the transferor and the transferee. According to a January 2013 report by Randy Poon of the AESRD, as of

[170] Alberta Government. *Water Act: Administrative Guideline for Transfer of Water Allocations*, ESRD, Water Quantity, Volume 2.0, No. 4, May 2014, 9. Also see the *Water Act* Section 82 (4).
[171] Ibid.,12.
[172] Ibid., 12. Also see the *Water Act* Section 108 (1)(e).
[173] Ibid., 12. Also see the *Water Act* Section 81(6).
[174] Ibid., 12.
[175] Ibid., 13.
[176] Ibid., 13.
[177] Ibid., 14.
[178] Ibid., 20.

November 2012, there have been a total of 72 transfers of water allocations in the Oldman River Basin and South Saskatchewan Sub-Basin (Lethbridge); and 30 in the Bow River Basin (Calgary).[179] Of the 102 transfers of water allocations, 97 are permanent and 5 are temporary.[180] Of the 102 transfers of water allocations, holdback was taken from 70.[181] Furthermore, according to Poon, there are a total of 48 pending applications for transfer of allocation in the Lethbridge Office and approximately 6 in the Calgary Office.[182] The above transactions paved the way to Alberta's "water market", the first of its kind in Canada.[183]

To recap the findings of the interview conducted by *Water Matters Society of Alberta*, Alberta's water policies allows water rights holders to retain these unused water as a security against future risks; as a contribution to protect and preserve the health of aquatic ecosystems; or as a property that can be transferred or sold and capitalize from. Of these three, none has attracted more attention and criticism than the third one. Some argue that to allow water rights holders to transfer or sell unused water will hinder Alberta's ability to achieve healthy aquatic ecosystems. If water remains unused, then it remains instream. Water that remains instream, in turn, helps the water source to meet its IFNs. To allow water rights holders to transfer or sell unused water will normally result to these resources being used. If water is used, then it does not remain instream and IFNs cannot be met. This poses a serious threat to some of Alberta's major watersheds, especially the SSRB, Oldman and Bow. Closed since 2006 due to over-allocation, the

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[179] Randy Poon, Water Transfers under the *Water Act*, January 17, 2013, Edmonton. http://www.asga.ab.ca/ckfinder/userfiles/files/2013%20Sand%20and%20Gravel%20Assoc-%20Water%20Transfers%20-%20Randy%20Poon.pdf (accessed: August 1, 2014).
[180] Ibid.
[181] Ibid.
[182] Ibid.
[183] Droitsch and Robinson, *Share the Water: Building a Secure Water Future for Alberta*, 15.

health of this major watershed and its two river tributaries significantly depend on unused water remaining unused and instream.

The Market for Unused Water or "Sleeper Rights": Pros

Some argue that to allow water rights holders to transfer or sell their unused water allows for the creation of a water market which has its own benefits.

First, a water market provides water rights holders the incentive to use their water allocations in the most efficient way possible, in order to conserve as much water as they possibly can. At the end of the day, the more unused water these water rights holders end-up with, the more they can transfer or sell. And the more they can transfer or sell, the more profit they can earn. The incentive to capitalize on their unused water promotes a more responsible water use among water rights holders.[184]

Second, a water market provides those who want to acquire water licenses or add their existing water allocations an opportunity to do so. This is especially significant in cases where one wants to acquire a water license to be able to divert and use water from a watershed that has already been closed to further water license allocations such as the SSRB, Oldman and Bow. A water market allows for the economy to grow and change by allowing water to move from economically low value uses to higher value uses.[185]

Third, a water market minimizes conflict between the government and water rights holders, since water rights holders are not mandated to return their unused water to

[184] Christensen and Droitsch, *Fight to the Last Drop: A Glimpse into Alberta's Water Future*, 18-19.
[185] Ibid.

the government. Nor are they mandated to share these resources to those who are in need unless they themselves voluntarily do so.[186]

The Market for Unused Water or "Sleeper Rights": Cons

Some argue that to allow water rights holders to transfer or sell their unused water, allows the creation of a water market which has environmental costs that negatively affect Alberta's ability to achieve healthy aquatic ecosystems. Nigel Bankes, professor at the *University of Calgary Faculty of Law* and Chairman of *Natural Resources Law*, explains the environmental costs of allowing the transfer or selling of unused water. According to Bankes:

> Environmental concerns with water transfers frequently emphasize the problem of so-called sleeper and dozer rights. These are rights that are not used up to the full level of the licensed amount. The creation of a market provides an incentive for the licensee to transfer its entitlement with the transferee inevitably making more intensive use of the water right with the necessary implication that there will be less water left for the aquatic environment.[187]

To allow water rights holders to transfer or sell their unused water unfortunately has environmental costs, since water that were once unused and thus left instream for IFNs will now be diverted and used by new water rights holders. A water market, specifically for unused water, risks degrading the health of aquatic ecosystems, especially the SSRB, Oldman and Bow. The Government of Alberta must ensure that its water market is primarily designed to protect and preserve the health of aquatic ecosystems, rather than to benefit water rights holders from something that is supposed to be a public resource.

In addition to environmental costs, the creation of a water market also has economic and social costs that also negatively affect Alberta's ability to achieve its *Water*

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[186] Christensen and Droitsch, *Fight to the Last Drop: A Glimpse into Alberta's Water Future*, 19.
[187] Ibid., 19-20.

for Life goals. Jason Unger, staff-counsel at the *Environmental Law Centre* and Chairman of the Board of Directors of *Water Matters Society of Alberta*, explains the social and economic costs of allowing the transfer or selling of unused water. According to Unger: "Perversely, the public may end up paying license holders significant amounts of money for historical use of a public resource, even though this public resource has already provided license holders with substantial private gains over time."[188] What Unger meant can be illustrated by the experience of Australia from one of its major watersheds: the Murray-Darling Basin. According to a report by *Water Matters Society of Alberta*:

> Transfers of water are not new to Australia and have been occurring since 1983, when a market for water entitlements (the equivalent of Alberta's water licenses) and allocations was first introduced in South Australia. Two severe droughts, from 1982 to 1983 and 1991 to 1995, led to a cap on 1995 on water extractions in the Murray-Darling River Basin in the southeastern part of the country, and development of Australia's water market. This cap on new water entitlements was intended to limit growth in water use. However, the introduction of the cap instead stimulated an increase in the volumes of water traded and intensified the use of previously unused allocated water. Rather than limiting environmental harm, as desired, the capping of water use after establishment of a water market substantially increased pressures in the Murray-Darling Basin. To facilitate the recovery and protection of river health, the Australian Government has since been forced to participate in the water market, budgeting $8.9 billion to purchase water rights to meet instream flow needs.[189]

To allow water rights holders to transfer or sell their unused water unfortunately has economic costs, since the public now has to pay significant amounts of money in order to acquire water licenses from water rights holders. According to Unger: "[In Alberta] water

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[188] Jason Unger, "Who's it 'FIT-FIR'?: Provincial Allocation Review Looms Large for Water Users and the Environment," *News Brief* Vol. 24 No. 4 (Edmonton, AB: Environmental Law Centre, 2009) http://www.elc.ab.ca/Content_Files/Files/NewsBriefs/FITFIR.pdf (accessed: July 15, 2014).

[189] Ko and Donahue, *Moving Waters: Water Management Options To Achieve Social, Economic, and Environmental Goals*, 11-12.

allocations are worth money, in the realm of $2,000- $5,000 per acre-foot by some estimation."[190]

Lastly, in addition to the environmental, economic and social costs mentioned above, to allow water rights holders to transfer their unused water has the potential for other negative impacts such as:

(1) Transfers of seasonal rights (may change the timing of diversions to a high demand period and may also change the total amount diverted);
(2) Stream conveyance losses (a change in the point of diversion may increase channel losses);
(3) Changes in the point of diversion (a downstream transfer of a senior right may have an impact on a junior right located between the original diversion point and the new diversion point);
(4) Temporary storage problems (noting that, while most uses provide return flows, the timing of these flows may be an important asset since delays in returns may produce benefits by potentially providing storage and therefore deliveries in later, low-flow periods);
(5) Changes in water quality; and
(6) Harm to those not taking water from the river (social and economic impacts on communities).[191]

Conclusion

To allow water rights holders to transfer or sell their unused water or "sleeper rights" has both benefits and costs. Alberta's water market provides water rights holders an incentive to use their water allocations efficiently; makes water available to those who are in need; and allows water to move from low value uses to high value uses. On the other hand, Alberta's water market comes with environmental, economic, and social costs that adversely affect the Province's ability to achieve its *Water for Life* goals. The last

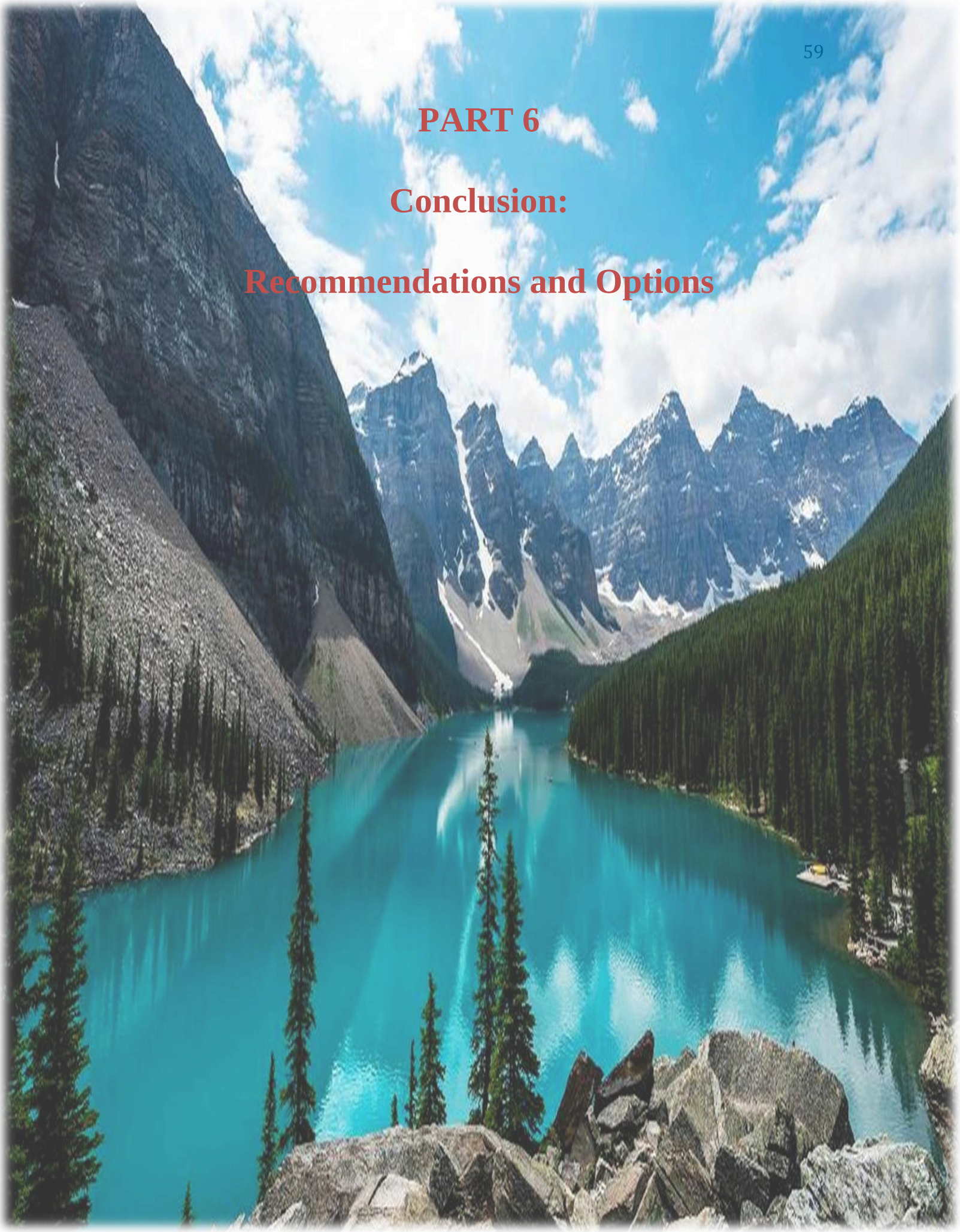
[190] Jason Unger, "Equity and the *Water Act:* First in Time, First in Right and Water Transfers Raise Questions of Public Interest," *News Brief* Vol. 23 No. 3 (Edmonton, AB: Environmental Law Centre, 2008) http://www.elc.ab.ca/Content_Files/Files/NewsBriefs/EquityandWaterAct.pdf (accessed: July 15, 2014).
[191] Christensen and Droitsch, *Fight to the Last Drop: A Glimpse into Alberta's Water Future*, 19.

part of this paper analyzes policy recommendations that seek to improve the management of unused water in Alberta.

PART 6

Conclusion:

Recommendations and Options



In Fall 2008, Environment Minister Rob Renner announced that the Government of Alberta would review the Province's FIT-FIR water allocation system and the *Water Act*. This review produced three policy documents prepared by three committees appointed by the Government of Alberta.[192] Although these three policy documents did not specifically focus on sleeper rights--- the policy recommendations included improving the management of unused water. I have analyzed these policy recommendations and in addition, I have also analyzed the policy recommendations provided by Julia Ko and William Donahue's *Allocating Our Water: Changing to Meet the Public Interest.* Prepared by a non-governmental organization, this document ensures that policy recommendations from both governmental and non-governmental sources are included in my analysis.

While the transfer or sale of water that is already being used does not adversely affect the ability of aquatic ecosystems to meet its IFNs--- this is not the case when the water transferred or sold is unused. As current policy does not distinguish between these two, new policy reforms are needed to protect and preserve the health of Alberta's aquatic ecosystems, most especially those in the Central and Southern parts of the Province. Healthy aquatic ecosystems will help Alberta achieve its *Water for Life* goals, which seek to benefit Albertans today and in the future.

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[192] The Minister's Advisory Group's *Recommendations for Improving Alberta's Water Management and Allocation;* the Alberta Water Council's *Recommendations for Improving Alberta's Water Allocation Transfer System;* and Alberta Water Research Institute's *Towards Sustainability: Phase 1; Ideas and Opportunities for Improving Water Allocation and Management in Alberta.*
Our Water is Not for Sale: Water for the Public Good, Water for Alberta's Future, *History of the Water Review*. http://ourwaterisnotforsale.com/resources/history-of-the-water-review/
(accessed: August 27, 2014).

These six policy recommendations can be organized along a spectrum--- from the most destructive for existing water licenses but best for IFNs (left side), to the least destructive for existing water licenses but worst for IFNs (right side). The six policy recommendations are represented by the letters A, B, C, D, E and F.

THE SPECTRUM

LEFT SIDE:
The most destructive for existing water licenses but best for IFNs.

RIGHT SIDE:
The least destructive for existing water licenses but worst for IFNs.

> **Recommendation A.** "The Minister must clarify the amount of water the licencee is entitled to transfer. The *Water Act* does not deal clearly with this and it must ultimately be resolved for the transfer system to achieve its full potential."[193]

This recommendation is policy neutral, and so falls in the middle of the spectrum. It is essentially a call for clarification and communication of government policy, without specifying what the policy should be. Unused water plays a significant role in meeting IFNs and achieving the *Water for Life* goals. These resources deserve to be managed efficiently and responsibly. Efficient and responsible management begin with clear policies and regulations. Accordingly, I support this recommendation.

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[193] Minister's Advisory Group, *Recommendations for Improving Alberta's Water Management and Allocation*, August 2009: 4. http://environment.gov.ab.ca/info/library/8239.pdf (accessed: June 11, 2014).

> **Recommendation B.** "Add provisions to the *Water Act* to permit partial cancellation of unused water allocated under licence and "sleeper" licences, which will enhance the amounts of water reclaimed for environmental purposes. There should also be some mechanism by which pre-1999 licences are captured by these provisions. As a critical first step, all water rights transfers should be assessed to ensure that water rights being traded are already in use, and transfers are not simply a means by which licencees are capitalizing on unused rights for their own economic benefit."[194]

This recommendation clearly favours IFNs and is destructive of existing water licenses. It would prohibit the transfer or selling of unused water. It calls for partial or full cancellations of unused water allocations to protect and preserve the health of aquatic ecosystems. This recommendation is applicable to all water licenses, and would ensure fairness and equity between senior and junior water rights holders. However, it would allow the transfer or sale of water, provided that the water is already in use.

This recommendation would be strongly opposed water license holders, because they would not be able to retain their unused water. Even if some of them actually prefer to retain their unused water as a contribution to protect and preserve the health of aquatic ecosystems--- to lose control over these resources still puts them at a disadvantage. This recommendation has other negative consequences. It would weaken if not destroy the incentive for water rights holders to use their water allocations more efficiently. It would reduce the amount of water available to meet the province's growth needs. Finally it would be inefficient, as it would not allow unused water to be transferred from lower to higher value uses.

[194] Ko and Donahue, *Allocating Our Water: Changing to Meet the Public Interest*, 16.

> **Recommendation C.** "Where portions of water rights allocated under license are unused, amend the *Water Act* to permit licensees to retain the unused rights and avoid cancellations of licenses by entering into short-term agreements that commit unused water to instream use or improving river health for a period of no more than five years."[195]

This recommendation also favours IFNs over the right of license holders, but is less destructive of the latter. It would basically impose a five-year moratorium on the sale of licensed-but-unused water. The condition of allowing license holders to keep this water is that it must continue to be used to meet IFNs. New demands for water could be met by allowing the sale of licensed water that is already being utilized. It is not clear what would happen after the five year period.

This recommendation runs the risk of degrading the health of aquatic ecosystems once the short-term agreements between water rights holders and the Government of Alberta had expired. Once this occurs, water rights holders regain full control over their unused water again, and may prefer not to continue committing these resources to IFNs. This will adversely affect the protection and preservation of the health of aquatic ecosystems, especially if water rights holders prefer to transfer or sell their unused water. However, on balance, I believe that the benefits of the recommendation outweigh its risks.

> **Recommendation D.** "Although some transfers of water allocations have occurred over the last eight years under the *Water Act*, the transfer mechanism must now be made to work in all parts of Alberta. In those basins where no new water licences are being issued, it is critical that the transfer mechanism operated without unreasonable cost or delay in order to enable water to move to more highly valued uses. In other basins, the transfer mechanism should be made available to allow users to obtain higher priority allocations and better manage risk."[196]

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[195] Ko and Donahue, *Allocating Our Water: Changing to Meet the Public Interest*, 17.
[196] Minister's Advisory Group, *Recommendations for Improving Alberta's Water Management and Allocation*, August 2009: 4.

This recommendation clearly favours existing license holders over meeting IFNs. It would allow water rights holders to transfer or sell their unused water throughout Alberta, effectively expanding the Province's water market. This policy would have the benefits identified above—new water to meet the provinces growth needs, the efficient transfer of water from lower to higher uses, and incentives for license holders to use water more efficiently.

The downside of this recommendation is the risk of degrading the health of aquatic ecosystems; making the public pay a significant amount of money for something which is supposed to be a public resource; and raising issues concerning fairness and equity between water rights holders and non-water rights holders. On balance, I believe that the risks of this recommendation outweigh its benefits.

> **Recommendation E.** "To improve its understanding of the amount of unused licensed volume in each major basin, the Government of Alberta, in consultation with stakeholders, develop a decision tree to review existing licences to clarify if they are "in good standing" and are tradable, and:"[197]
>
> 1) "To determine the water that would be available for transfer, the Government of Alberta broaden the existing definition of 'in good standing' to the following four categories of licences: Licences that are **fully active** (water has been diverted within the previous three years). If there is no water use record, the licence would be subject to an 'in good standing' review. If the licence was 'in good standing' it would be eligible for transfer and would proceed through the application process. A transfer would be subject to a 10% holdback, where the [Water Conservation Objective] WCO has not yet been met."[198]
>
> 2) "Licences that are **'in good standing'** (have been inspected). These licences would be eligible for transfer and the 10% holdback would apply in instances where the basin WCO has not been met."[199]

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[197] Alberta Water Council, *Recommendations for Improving Alberta's Water Allocation Transfer System*, August 2009: 28. http://www.awchome.ca/Portals/0/pdfs/WATSUP_web_FINAL.pdf (accessed: June 11, 2014).
[198] Ibid.
[199] Ibid.

> 3) "Licences that were active up to a certain date **but not used within the previous three years.** The licence would be subject to an 'in good standing' review. The Director would apply the 'reasons for wanting to hold water' policy, referred to below. A transfer would be subject to either a 10% or 25% holdback."[200]
>
> 4) "Licences where all or a portion of the allocation was **never diverted.** Licence would be subject to an 'in good standing' review, and the 'reasons for wanting to hold water' policy. The 25% holdback would apply to a transfer or the licence could be cancelled."[201]

This recommendation falls on the right side of the spectrum following Recommendation D. It would require the Government of Alberta to "improve its understanding of the amount of unused [water] in each major basin, [by developing] a decision tree to review existing licences to clarify if they are 'in good standing' and are tradable."[202] It would also try to meet IFNs by utilizing conservation holdbacks: 10 per cent for water licenses under Categories 1 and 2; 10 per cent or 25 per cent for water licenses under Category 3; and 25 per cent for water licenses under Category 4. However, these water conservation holdbacks may not be sufficient to meet IFNs. Mandatory and higher water conservation holdbacks may also create a conflict between the Government of Alberta and water rights holders.

This recommendation runs the risks similar to Recommendation D. While being able to improve its understanding of the amount of unused water in each major basin, to allow water rights holders to transfer or sell their unused water--- regardless of water conservation holdbacks--- runs the risks of degrading the health of aquatic ecosystems; making the public pay a significant amount of money for something which is supposed to

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[200] Alberta Water Council, *Recommendations for Improving Alberta's Water Allocation Transfer System*, August 2009.
[201] Ibid.
[202] Ibid.

be a public resource; and raising issues concerning fairness and equity between water rights holders and non-water rights holders. On balance, I believe that the benefits of this recommendation do not outweigh the risks.

> **Recommendation F.** "That the Government of Alberta establish a five-year amnesty program to facilitate the movement of unused water with no reasonable prospect of use to the water allocation transfer system. The program starts from the date of an Approved Water Management Plan, or from the date of an approved interim WCO in basins that have yet to develop a water management plan, or from the date set by the Minister, and is subject to the following:"[203]
>
> 1) "The Director will apply a 25% holdback on transfers of unused water until the WCO is met after which the Director may use his discretion as to whether a holdback is required."[204]
>
> 2) "Transfers of unused water will be subject to the 'does no significant harm' criteria."[205]
>
> 3) "If an application for unused water to be transferred is not made within five years and approved within 10 years, the licence will be cancelled and, depending on the Director's discretion, be applied to the WCO until it is met and then held by the Crown for future allocation."[206]

This recommendation falls on the right side of the spectrum following Recommendations D and E. If the Government of Alberta spends time and resources in establishing "a five-year amnesty program to facilitate the movement of unused water with no reasonable prospect of use to the water allocation transfer system,"[207] this will be least destructive for existing water licenses but worst for IFNs. "Unused water with no reasonable prospect of use" should be cancelled, and be left unused to meet IFNs, to protect and preserve the health of aquatic ecosystems, and achieve the *Water for Life* goals.

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[203] Alberta Water Council, *Recommendations for Improving Alberta's Water Allocation Transfer System*, August 2009: 30.
[204] Ibid., 30.
[205] Ibid., 30.
[206] Ibid., 30.
[207] Ibid., 30.

Two group members of the *Alberta Water Council*, which provided the recommendation itself, also do not support the amnesty program. Instead, the two group members proposed the following: "That the Government of Alberta cancel the unused water portion of licenses and prioritize the reallocation of this water to meet Protected Water objectives."[208]

Regardless of the three conditions enumerated above, this recommendation runs all the risks found in Recommendations D and E. On balance, I believe that the benefits of this recommendation do not outweigh the risks.

Conclusion

While the transfer or sale of water that is already being used does not adversely affect the ability of aquatic ecosystems to meet its IFNs--- this is not the case when the water transferred or sold is unused. As current policy does not distinguish between these two, new policy reforms are needed to protect and preserve the health of Alberta's aquatic ecosystems, most especially those in the Central and Southern parts of the Province.

I conclude that the optimal balance between these competing goals would be a policy similar to Recommendation C. The practical effect of this policy would be to strike a five-year moratorium on the sale of licensed-but-unused water. The condition of allowing license holders to keep this water is that it must continue to be used to meet IFNs. New demands for water could be met by allowing the sale of licensed water that is

[208] Alberta Water Council, *Recommendations for Improving Alberta's Water Allocation Transfer System*, August 2009:30.

already being utilized. The five-year moratorium would allow the government and stake-holders the opportunity to develop a consensus on a longer-term strategy. Ideally, future growth demands for additional water could be met by incentivizing a more efficient use of water by current license holders. A system that allowed license holders to sell water that they are currently using but, by adopting new efficiency measures, no longer need, would create new water supply for growth without damaging IFNs. The 2007 water sale by the Western Irrigation District to Rocky View County could serve as a model and a starting point for such a reformed system.

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