COLUMBIA BASIN TRUST

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COLUMBIA RIVER CASE STUDY

Columbia Basin Trust Presentation

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EXECUTIVE SUMMARY

The entire Columbia Basin (in Canada and the United States) is 671,000 square kilometres, approximately twice the size of Finland. It crosses one international boundary, and seven state boundaries. It contains an incredible range of ecosystems from interior rain forests to grasslands to deserts. These include a huge diversity of wildlife with over 700 hundred species of reptiles, birds, fish and mammals. Archaeology tells us that humans have inhabited the Columbia River Basin for more than 10,000 years. First Nations used the river system for hunting, gathering, transportation, and cultural purposes. These uses are still an important way of life for First Nations in the Columbia River Basin.

With increased human habitation in the Basin, use of water has increased to include hydropower, industry, agriculture, domestic water supplies, and recreation. This has placed greater demand on the finite water resources of the Basin. There is also an increasing level of regulation on the Columbia River and its tributaries. The great variety of national, provincial, First Nations, and state jurisdictions increase the complexity of managing the system.

The water resources of the Columbia Basin have been harnessed over the past few decades to meet the hydroelectric and water needs of the growing population and resultant economy of the Pacific Northwest. Over 450 dams have been constructed on the main stem and tributaries of the Columbia.

One major agreement dictates the management of the Columbia Water resources in Canada: the Columbia River Treaty. In 1964, Canada and the United States ratified the Columbia River Treaty. The purpose of the Columbia River Treaty is to coordinate flood control and optimize electrical energy production in the Columbia River Basin in the United States and Canada. Under the treaty, Canada agreed to build three storage dams - Duncan (1968), Keenleyside (1969), and Mica (1973)- in the Canadian Columbia Basin.

The Pacific Northwest United States and British Columbia are dependent on the power and revenue generated from the hydroelectric system in the Columbia Basin. The Canadian Columbia Basin region provides 50 per cent of the total hydroelectric power produced in B.C. Power produced, as a result of the Canadian Columbia Basin hydroelectric infrastructure, provides low-cost electricity to all British Columbians and is a keystone to the provincial economy. In addition, the water stored in the Canadian system provides significant power generation to a number of U.S. hydroelectric facilities downstream on the Columbia River.

However these benefits came at a cost that was born solely by the Canadian portion of the Columbia Basin. A large area of highly productive and fertile low elevation land was flooded. Communities were displaced and valuable fish and wildlife habitat and species lost. The communities that currently surround the reservoirs are continually impacted by rapidly fluctuating reservoir levels, and the local economy is hampered due to increased transportation costs and the lost opportunities for use of the areas that were flooded.

The Columbia Basin is now a very different place, with different societal values, from the time that the Columbia River Treaty was created. There are increased values and issues around the use of water and the management of the water resources of the region. The future of water management in the region will always be linked to hydropower production and the challenge is to recognize and manage for a variety of other interests. The Columbia River Treaty allows for a re-negotiation or termination of treaty provisions. The earliest this can be done is in 2024 if notice is given 10 years in advance (2014).

The Columbia Basin Trust and other organizations are now working on trying to understand what may be in store for the Basin should the Columbia River Treaty be terminated or re-negotiated. What would a new treaty look like? What happens if we simply terminate the treaty? What implications does this have to the economy of the Pacific North West and British Columbia? How do we ensure that the process to re-negotiate or renew is inclusive of a wide variety of stakeholders, and inclusive of the current and future values that the people of this region have with respect to water? How do we ensure that the people most directly affected by these decisions have meaningful input and that the decisions are not made solely by lawyers, politicians and engineers in Ottawa and Washington?

ABOUT THE COLUMBIA BASIN TRUST

Water issues are at the core of the Columbia Basin Trust's existence. The Columbia Basin Trust was created in recognition of the impacts associated with the management of water in this region.

In the early 1990s, people of the Columbia Basin became aware that an opportunity for public involvement might present itself. The sale of the first 30 years of B.C.'s share of the downstream benefits, through the Columbia River Treaty, was about to expire. Residents of the region felt local people should be given more say in matters concerning environmental, economic, and social health. The Columbia Basin Trust was created in that spirit.

Leaders from First Nations, local communities, and the Province of B.C. worked together on an agreement that recognized the impacts to this region as a result of the creation of the Columbia River Treaty Dams. In 1995, the Columbia Basin Trust was formed with a unique mandate to support the efforts of the people of the Basin to create a legacy of social, economic, and environmental well being and to achieve greater self-sufficiency for present and future generations in the region most affected by the Columbia River Treaty.

The Columbia Basin Trust was endowed with $295 million from the Province of B.C. (approximately five per cent of the downstream benefits owned by the Province of B.C.).

During the creation of the Columbia Basin Trust, there was extensive public consultation with Basin residents that resulted in the creation of the Columbia Basin Trust Management Plan. This plan is the guiding document for the principles of investing the initial endowment and creation of programs to support the social, economic and environmental well being for the residents of the Canadian Columbia Basin.

Using this plan as a guiding document, the Columbia Basin Trust, along with our power partner, Columbia Power Corporation, made investments into upgrading existing hydroelectric facilities on the Columbia River system, as well as building new generating stations on existing dams.

Basin residents have identified a broad range of concerns regarding water quality and quantity, from both human use and natural ecosystem perspectives. Basin residents want to ensure their values and views are incorporated into any water initiatives in the Basin. Currently there is neither a comprehensive vision nor a strategic plan that incorporates a wide range of values regarding water issues in the Basin. The Columbia Basin Trust wants to involve Basin residents in building a network of organizations to address water issues in the Basin. In order to carry out this mandate, the Columbia Basin Trust has allocated staff and financial resources to its Water Initiatives Program, and is currently involved in a number of water education and planning initiatives across the Columbia Basin.

The Columbia Basin Trust recognizes that one of the most significant water issues in the Columbia Basin is the opportunity to renew, terminate, or re-negotiate the Columbia River Treaty. This process will commence in 2014. Part of the public consultation that was carried out with Basin residents in the creation of the Columbia Basin Trust clearly pointed out that one of the priorities of the organization should be to "prepare" the residents of the Columbia Basin for the potential renewal, or renegotiation of the Columbia River Treaty, when that opportunity arose. The Columbia Basin Trust is committed to ensuring that the values and views of Basin residents are a key part of the process from start to finish.

As part of this commitment, the Columbia Basin Trust is working in partnership with a variety of community groups, local governments, first nations, provincial organizations and federal organizations to increase the understanding of water and water issues in the Columbia Basin and cooperatively work towards a common agreement for the future management of our shared water resources.

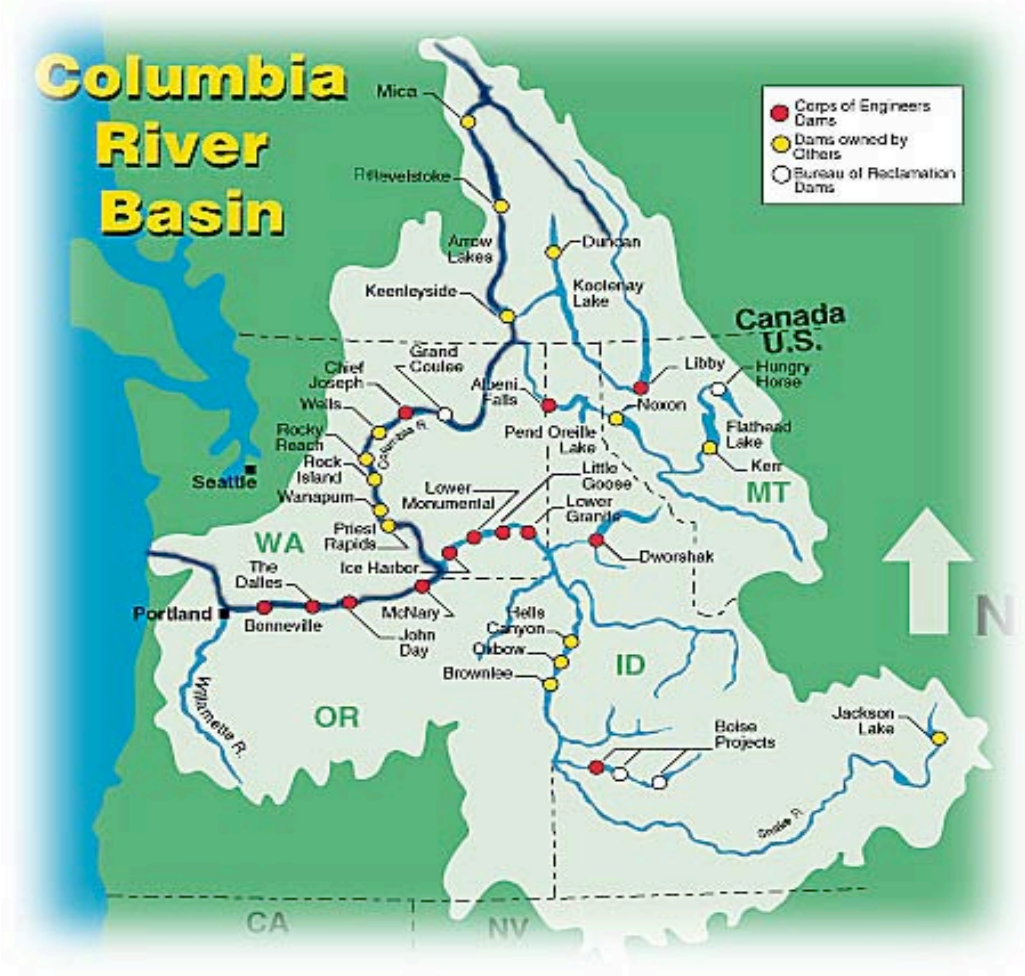
Please see our website at www.cbt.org.

COLUMBIA RIVER TREATY – HISTORIC AND FUTURE OPPORTUNITIES

1. A hydrologic and geographic overview of the Columbia River Basin

The Columbia River Basin is the fourth largest river basin in North America (only the Mississippi, Mackenzie and St. Lawrence River basins are larger). It encompasses an area of 671,000 sq km/268,000 sq miles, or about twice the area of Finland. It crosses one international boundary and 7 state boundaries (Washington, Oregon, Idaho, Montana, Wyoming, Nevada, Utah).

Figure 1: Map of the Columbia River Basin



85% of the Basin area is in the U.S. (570,000 sq kms or 228,000 sq miles). Approximately 3.2 million people live in the US region.

15% of the Basin is in Canada (101,000 sq km, or 40,000 sq miles). The Canadian portion of the basin provides approximately 40% of the annual run-off for the entire system. Approximately 500,000 people live in this portion of the basin.

The Columbia Main Stem is approximately 2,000 kms (1,250 miles) in length; 800 kms (495 miles) of this is in Canada. Through its entire length, the Columbia River Falls 2,650 ft.; about half of this decent is in Canada.

The annual average run-off measured at the Dalles (in the US) is about 105.6 Million Acre Feet (MaF) (130 km3). The year-to-year variation in run-off can be as much as +/- 50% at the Dalles. The Columbia River has a very large seasonal variation in flow. At the US/Canadian border, flow records show a seasonal variation ratio of 1:40. The St. Lawrence has a 1:2 ratio and the Mississippi a 1:25 ratio.

The Columbia River is the most “powerful” river in North America in more ways than one. Hydropower capability is measured by river flow multiplied by the “Head” (change in elevation). The St. Lawrence and Mississippi have more flow, but less head. These hydrologic and geographic features made the Columbia system very attractive from a Hydro Power perspective

The Columbia is the most hydroelectrically developed river system in the world, with over 450 dams on the system (includes main stem and tributaries)

2. Historical information on the management of Transboundary Water resources between Canada and the US.

"*Water is an integral part of Canada's boundaries. More than 300 rivers and lakes form and run along or across this boundary. Over time, Canada and the United States together have developed a structure to manage these common resources. The 1909 Boundary Waters Treaty is a cornerstone of this cooperative relationship. Through the Treaty, Canada and the US are mutually obliged to protect natural levels or flows of waters shared by the two countries. The Treaty established principles and procedures to prevent and resolve disputes, especially those dealing with the quantity and quality of boundary waters between Canada and the United States. The Act to implement the Treaty, the International Boundary Waters Treaty Act, was passed on May 19, 1911. Its main object was to establish the International Joint Commission, (IJC) a binational organization."*

This is a quote from the IJC web site. The IJC has played a major role in water management in the Columbia River basin. In November 1938, the IJC issued an order to West Kootenay Power as part of the authorization to West Kootenay for the widening of the outlet to Kootenay Lake and the operation of the Corra Linn project regulating Kootenay Lake outflows. This order is governed by the Boundary Waters Treaty, and is overseen by the Kootenay Lake Board of Control.

It was through a joint reference to the IJC under the Boundary Waters Treaty that the investigation into potential reservoir development on the Columbia River was launched in the 1940's and it was the IJC that developed the principles on which the Columbia River Treaty was based. While the CRT is in force, it replaces the Boundary Waters Treaty with respect to diversions and flows, but once the CRT is terminated, the Boundary Waters Treaty is again in force, except for any residual effects such as ongoing flood control and the operation of Libby. The CRT uses the IJC as one of the options that Canada and the US can use to resolve disputes under the treaty. This provision has not been used to date.

The CRT also requires that Libby be operated in a manner that allows compliance with the IJC order on Kootenay Lake.

The IJC still operates with respect to water quality and trans-boundary consumptive uses of water in the Columbia River Basin.

3. The history and structure of the Columbia River Treaty

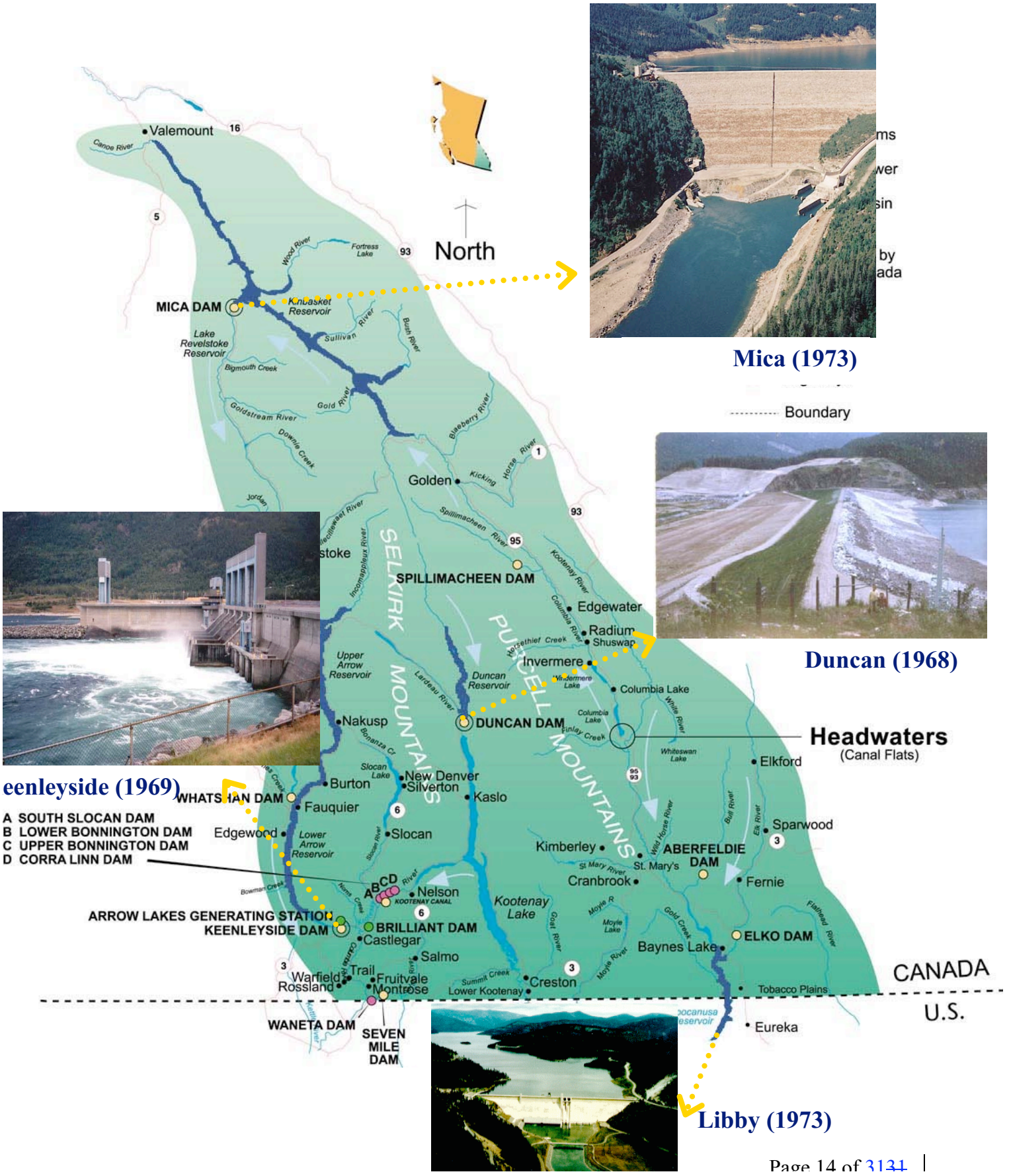
Columbia River Treaty History

Canada and the United States were facing two major challenges in the Columbia Basin after the Second World War: firstly, the "untamed" Columbia River was causing periodic, and sometimes devastating flooding. Secondly, an upswing in the economy increased the need for more energy. New communities were created and existing communities grew onto low elevation areas of the Columbia Basin.

Massive flooding in 1948 lead to huge loss of life and property in the US and Canada. The City of Vanport Oregon (population 35,000) was destroyed and 50-60 people lost their lives. This singular event galvanized efforts on both sides of the border to address flood control issues on the Columbia.

In 1964, Canada and the United States ratified the Columbia River Treaty (CRT). The purpose of the CRT was, and is, to coordinate flood control and optimize electrical energy production in the Columbia River Basin of both the United States and Canada. Under the CRT, Canada agreed to build three storage dams - Duncan (1968), Keenleyside (1969), and Mica (1973) - in the Canadian Columbia Basin. The CRT allowed for a fourth dam - Libby Dam (1974) - to be built in the United States although operations of this facility are not covered under CRT Operations.

Figure 2: Columbia River Treaty Dams



Columbia River Treaty Structure

The Columbia River Treaty is a bi-national Transboundary water agreement between Canada and the United States. It allows for the cooperative development of the Columbia River water resources.

The treaty was signed in 1961, and ratified by both federal governments in 1964. Its primary objectives are flood control, and optimization of power generation. Other water-related "values" are not explicitly dealt with in the CRT

An interesting aspect of the treaty is that, although this is a bi-national agreement, the Canadian Federal Government transferred all its rights and obligations under the Columbia River Treaty to the province of BC.

There is no "official expiry date" to the CRT, but it may be terminated after 60 years, provided 10 years notice is given. This means the earliest date of termination is 2024, provided notice is given by the year 2014. These are "key" trigger points for the CRT.

The main provision of the treaty is that Canada must provide 15.5 million-acre feet (19.1 km3) of water storage annually. To meet this obligation Canada constructed the 3 treaty dams: Keenlyside, Mica and Duncan.

Flood Control Provisions:

There are two types of flood control specified in the CRT: annual flood control, and, for severe flood conditions, "on-call" flood control.

The US paid Canada $64.4 Million US for the annual flood control for the first 60 years of the CRT. After this date the US must pay Canada operating costs and power losses for providing this flood control.

There is an additional payment of $1.875 Million US for each of the first 4 on-call flood operations. There have been no on-call operations to date.

Canada must provide on-call flood control operation for the US as long as the need exists and the projects exist. US must pay Canada's operating costs and power losses.

Treaty Operations

To ensure that the provisions of the CRT are met, entities from both Canada and the United States were appointed. The BC Government appointed BC Hydro as the Canadian Entity, and the US Government appointed the Bonneville Power Administration (BPA), and the Army Corps of Engineers, Pacific Northwest Division (USACE).

BPA is responsible for marketing the generation from a number of federally owned projects, which are owned and operated by other departments, such as USACE, or the Bureau of Reclamation, but BPA sells the power. To do this, BPA has constructed a major electrical transmission network, and is the major marketing agency in the Pacific Northwest. USACE is responsible for flood control and other major civil engineering works on the Columbia.

BC Hydro is a Province of BC Crown Corporation that is the major power generation, transmission and marketing player in the Province of BC.

The CRT set out provisions for the appointment of a Permanent Engineering Board (PEB) consisting of two Canadian (one federal and one Provincial), and two American members. The PEB is responsible for reviewing the plan and operations by the entities and reporting whether the intent of the Treaty is being met.

One of the main duties of the Entities is to prepare operating plans. The flood control operating plan was prepared in advance of any operation, and applies to any year in which there might be a flood. The plan ensures that sufficient space has been emptied of water ahead of when the flood is expected, and then sees that the best use of this space is made to reduce flood damage. The amount of water released from the projects is calculated each day during the peak run-off period.

The operating plans for power are made each year. The Assured Operating Plan (AOP) is so named, as it provides an assurance to both parties that a particular operation will take place. It is prepared 6 years in advance – this length of time was considered sufficient to build a plant at the time the CRT was negotiated. For example, in 2002, the Entities began work on the 2007/2008 Assured Operating Plan.

When the actual year approaches the Entities have much better information on which to base a plan. They have a better idea of the actual load they might expect, they have a better idea of which projects will be in service, and they have a better idea of how full the reservoirs are at the start of the operating year.

The Columbia River Treaty provides for an update of the AOP, called the Detailed Operating Plan (DOP), which is based on the Assured Operating Plan, but can include any changes that both Entities can agree. The Detailed Operating Plan is prepared each year to cover the period August to July. This usually means the reservoirs start full, are drawn down to serve load, and then refill with the spring run off. Since the DOP requires agreement, either Entity can insist that the AOP rules be used.

Both operating plans consist of a number of rules on how to operate each project. Most importantly, however, they relate each project to the system as a whole, so that in a dry period each reservoir is drawn down in such a way that it makes the best use of the water available in the whole basin.

It is through the DOP process that BC can negotiate with the US entities for potential fish operations and operations that recognize other values on the system. These operations may impact CRT operations. This is a somewhat unpredictable process and the results not always conducive to Canadian interests.

Treaty Term

Although there is no official "expiry date" for the CRT, there are provisions for renewal, termination, or re-negotiation after 60 years (2024), if 10 years notice is given (in 2014).

It is with this time frame in mind that the CBT and other organizations have initiated the preliminary planning process to identify questions surrounding the process and issues around the termination or re-negotiation of the CRT.

Regardless of termination of the CRT, Canada is obligated to continue to provide flood control, when called upon, as long as the three CRT dams are in operation.

4. Review of the benefits derived by both nations through the Columbia River Treaty

Downstream Benefits

The water stored in BC generates additional power in the 11 downstream dams in the United States. In return for the storage of water, Canada is entitled to one half of the additional power generated at the American power plants on the Columbia River. This additional power generated downstream as a result of storing water in Canada during the spring and releasing it in the winter is referred to as “Downstream Benefits”. This feature of the CRT, in that upstream states are compensated for storage of water by downstream entitlements is a unique feature of the CRT in comparison to other trans-boundary agreements on water.

Downstream benefits are not calculated by actual generation at the US facilities, rather the Benefits are calculated on optimal power operation of the US facilities. This means the downstream benefits (which are calculated in Megawatts of electricity generated) are based on a theoretical system, and are the average of how that system would behave if it had had the same rain and snow that we experienced in the years 1928 to 1958. They are a calculated value - they cannot be actually measured in any particular year.

In Canada, Columbia River Treaty operations dictate the management of water on the main stem of the Columbia River. In the US, however, once the water required by the treaty flows into the US, the US Dam operators and state and federal agencies can utilize the water according to the priorities they set. Canada/British Columbia is obligated to operate their part of the system according to the operations set out under the Columbia River Treaty, which are negotiated with the US entities.

The Province of B.C., which owns this "Canadian Entitlement of Downstream Benefits", sold the first 30 years of these benefits to a group of U.S. utilities for $254 million US. The 30-year sales agreements expire on the 30-year anniversary date of the commissioning of each CRT Dam (1998, 1999 and 2003) at which point the US has an obligation to return the Canadian entitlement to the BC/USA border (fall back provision)

The Province is now receiving the Canadian Entitlement for the remaining 30 years of the CRT. This entitlement is estimated to be worth $250 million Canadian per year, or $6-8 Billion Canadian over the 30-year term.

Flood Control Benefits

As noted earlier, the two main priorities of the Columbia River Treaty are optimization of power generation, and downstream flood control. While flood control provisions are "built in" to the Columbia River Treaty, the actual value of flood control is still highly debated. It was noted earlier that BC was paid $64.9 million US for the first 60 years of flood control operations. It can be safely stated that most estimates of flood avoidance is significantly less than the actual financial benefits produced. For example a single flood operation in November 1995 was estimated to save $ 2 billion when the City of Portland came within 6 inches of being flooded, and the operation of Canadian storage reduced the flood level by 18 inches. This is not surprising given the tendency of people to move into a flood plain, when there are no recent reports of flooding. The Columbia River Treaty and other flood storage projects on the Columbia have given residents down stream an increased sense of security, so that the potential flood damage during a flood event is now much greater than before.

The following table provides information on Columbia River system-wide flood control. Bank full at Portland is 16 feet. Major flooding occurs at 26 feet. The first column represents the height of the Columbia River at Portland under an "unregulated" condition (Columbia without Dams) the second Column represents the

Columbia with its existing system wide flood control. As we can see there are many instances where the flood control afforded the communities on the Columbia saves life and property. The question is what is this flood control worth? Other scenarios in the table show that the amount of water contained in the flood years exceeded the capacity of the reservoirs to contain floods (such as the 1948 scenario)

Table 1: Columbia River at Portland – Flood Control Scenarios

Portland levels
Bank full = 16',
Major flood = 26'

UnReg.	Reg.
1997= 28.4'	19'
1996= 29'	27.2'
1974= 30.6'	21.1'
1972= 31.5'	21.5'
1964= 32.5'	27.7'
1948= 31'	31'
1894= 35.6'	35.6'

Although there have been many studies on the value of flood control all over the world, a report on flood control for the World Commission on Large Dams concluded that there was no benefit in applying the results from one study directly to other rivers, given the radical differences from one region to another. The report concludes that in most cases the benefits from flood control were over-stated, as economic analyses tend to neglect some of the benefits that flooding produced in terms of sustainable development. The Commission also concluded that what was transferable was what made a particular flood strategy appropriate:

> *"Rather than simply transposing the approach to flood hazard management that is appropriate for one country to another, we need to transfer the knowledge about what made that approach appropriate. Simply proposing to adopt the approach that is appropriate in one area to another area is parochial at best and neo-colonialist at worst."*

The value of "annual" flood control to the US will be a major issue in any "New Treaty", especially as the conflict between flood control and endangered fish species reduces the historic safety margin in flood control operations in the US. On the other hand there has been considerable encroachment on the flood plain in Canada as well – around Kootenay Lake and below Castlegar being two that come to mind, so that the US might get some spin-off benefits from an operation designed for local residents.

The debate in the US over flood control appears to be the best example of how trade-offs might be made between flood control and other values, in this case endangered fish. The report for the World Commission on Large Dams puts great emphasis on preserving human life, but points out that this can be achieved by

methods such as developing safe areas and early warning schemes, rather than building dams. In most cases the analysis in other areas involves evaluating a new dam, rather than whether to discontinue using an existing dam.

Generally reservoir flood control is consistent with power, irrigation, agriculture and water transportation, but has adverse effects on resident and downstream fish and recreation on the reservoir.

Additional Power generation

By creating a situation whereby the Columbia system is operated to optimize power generation, the Columbia River Treaty has opened up the possibility of developing additional power generation facilities in Canada.

The treaty permitted the development of 4,700 mega watts of economic hydropower in B.C. at Mica, Kootenay Canal and Revelstoke. The Columbia River Treaty also made possible additional generation at Keenleyside, and possible other sites.

5. Social, economic and environmental impacts associated with the Columbia River Treaty

The Columbia River Treaty is the single most important agreement covering water management in the Columbia River Basin in Canada. Its implementation caused considerable stress in the region, and considerable political debate in Canada. This controversial start has haunted the Columbia River Treaty, and to a large degree has detracted from any successes it has enjoyed. Although many complicated and contentious issues have arisen, these have all been settled within the structure established by the treaty.

The lasting historical legacy for the people of the Canadian Columbia Basin from the creation of the CRT is that of absence of local input, drastic social upheaval and permanent environmental and economic losses.

During the creation of the Columbia River Treaty, there was a complete lack of consultation and public involvement of the residents of the Canadian Columbia Basin, even though they were the ones most directly impacted.

Major impacts caused by the treaty include:

- The displacement (sometimes forcible) of 2,300 people along the Arrow Lakes, and the Koocanusa, Duncan, and Kinbasket reservoirs
- The flooding of sixty thousand hectares (500 square kilometres) of high-value, valley-bottom land. The three Canadian Columbia River Treaty projects created reservoirs that extend over about 256,000 acres in total, 180,000 acres more than the original lake surface area.
- The submergence or burial of numerous First Nations archaeological sites.

Areas that were critical to the cultural, economic and environmental well-being of the region were submerged.

The region is still dealing with the on-going impacts from the rise and fall of water levels:

- Recreation on reservoirs is limited because of the large seasonal water level fluctuations. These reservoirs fluctuate over a greater range than natural

lakes, and fluctuate according to the need for power and flood control, rather than snow accumulation and snow melt seasons.

- Fish and wildlife species and populations are impacted by the loss of key valley-bottom habitat, and this increases pressures on residual low elevation areas. For fish species, the reservoirs can lead to lack of nutrients, loss of spawning and rearing habitat, increased levels of total gas pressure (TGP), increased predation, both by other species and by humans. For land-based species the reservoirs have flooded animal habitat during the winter, when valley bottom habitat is most needed, and does not regularly flood other areas during the periods required by waterfowl. The details of these impacts have been examined
- Dust storms around reservoirs detrimentally impact human health. At times the dust has been so severe that motorists have traveled during day light hours with headlights on as if through a fog.
- Transportation infrastructure in the region is complex, expensive and difficult to maintain.
- Agriculture and forestry activities are limited due to the loss of fertile, low-elevation land. While originally expropriated by from the local residents some land was later sold back to them at increased market prices.
- A current issue is the provision of drinking water. With increasing costs and liabilities, no one wishes to take responsibility for continuing the supply of potable water, and BC Hydro is attempting to pass the responsibility to local communities.

The Columbia River Treaty also altered the flow in the United States. However, the Columbia River had already been extensively developed in the United States, so the effects of the treaty tended to add to pressures that were already in existence, unlike the Columbia River Treaty's effect in Canada, where such pressures were often new.

The economic effects in the US were positive, with the exception of fishing, which was already in decline before the Columbia River Treaty, but the treaty added to this decline. It should be pointed out that irrigation farming did not benefit from, nor suffer from the treaty. What are considered more important are the effect of Columbia River Treaty, and other storage, operations on endangered salmon species on the Columbia River, particularly in making ocean-bound passage for smolts more difficult. The US has approached Canada regularly for additional water to be kept in storage during the winter for release during the fish passage period.

6. Conclusion

Current situation:

a. So far, there is a lack of consensus among competing interest groups regarding management objectives for the Columbia River main stem and tributaries (power, fisheries, recreation, domestic water use, other industry, culture and heritage etc.).

b. Conflicts exist between various uses:

   i. Recreation objectives and fish objectives

   ii. Power and fisheries objectives

iii. Power and recreation objectives

iv. Domestic water use and industrial water use

v. U.S. resident fish and salmon-recovery objectives

vi. Canadian reservoir fish and downstream fish objectives

vii. Canadian and U.S. fishery objectives

viii. Federal, provincial/state, and conflicting laws.

c. The science of understanding the management implications for accommodating various interests is poorly understood (trade-offs and management implications for fish vs. power vs. recreation vs. other industry)

d. There is jurisdictional fragmentation throughout the Columbia Basin because of the fact that the Columbia River and its tributaries cross international borders, state borders, regional borders and first nation borders.

e. Because of this jurisdictional fragmentation there are a number of management processes in place that are not linked or do not take into account interests in other jurisdictions.

Such uncertainty and complexity make planning difficult.

The Negotiating Environment:

f. Given uncertainties in the environmental, economic and political arenas and the marketplace, there is probably no single way to address future long-term needs in the Columbia River.

g. The modification of any international treaty would be very difficult, and risks involvement of many other issues. There is significant risk that the regional spirit of cooperation and stewardship could be supplanted in any diplomatic, legal, or political negotiations.

h. Trust needs to built up amongst various organizations, levels of government and communities in order to ensure that a collaborative and inclusive approach is created to manage the water resources of the Columbia Basin.

i. It will take sophisticated and persistent diplomacy to ensure that economic, social, environmental and First Nations issues not considered in the terms of the original treaty, and are meaningfully represented at the treaty table during further discussions of options for the future

j. The next true milestone is September 16th, 2014 - the earliest date on which either the U.S. or Canada can give 10 years' notice of Columbia River Treaty termination in 2024.

Future Opportunities

a. More holistic management of the Columbia Basin that recognizes economic, social and environmental values.

b. Managing the Basin without “Borders”. Breaking down the jurisdictional fragmentation that plagues the Columbia system now.

c. Our success in ensuring that the broader interests of a wider constituency are represented in this process will be the central test of our ability to craft international treaties that are fair, equitable and adaptable to the needs of the people who live in our basin, as well as meeting the economic interests of our region during a period of huge social and environmental change.