Non-Treaty Storage Agreement Update

Public Open Houses May-June 2011

Status of Non-Treaty Storage Agreement

- BPA and BC Hydro have agreed to non-binding terms for a new long-term non-Treaty storage agreement.
- BPA is holding public meetings around the region to share the proposed terms, explain the expected benefits and answer questions about a potential new agreement.
- BPA and BC Hydro plan to begin negotiations of a new contract this summer.
- If negotiations are successful, a new agreement could be completed by year's end.

Map of the Columbia River Basin

What is Non-Treaty Storage?

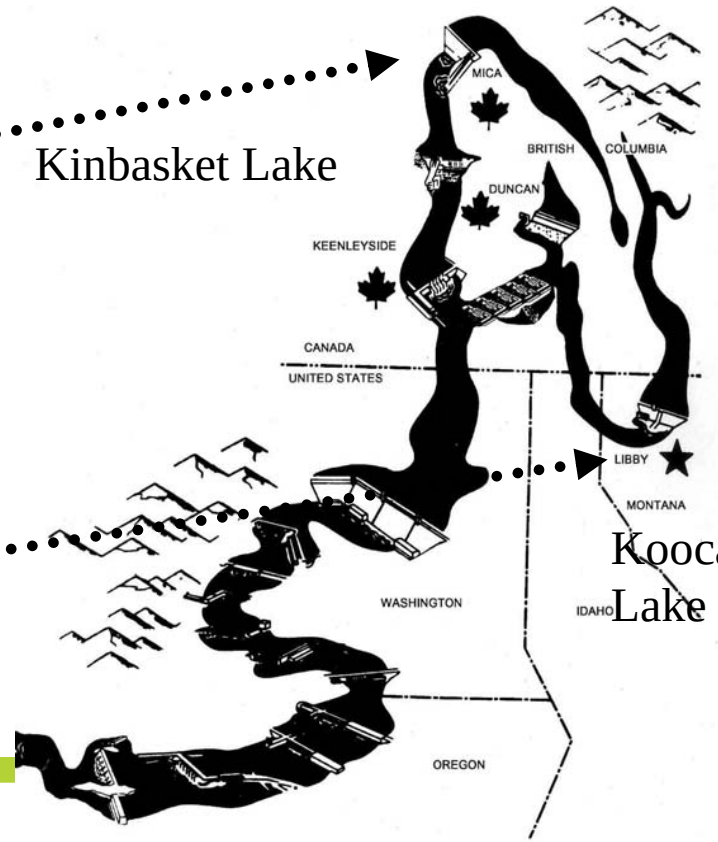
- The Columbia River Treaty required Canada to build and operate 15.5 million acre feet (Maf) of storage in Canada for flood control and power benefits downstream in Canada and the United States. Canada constructed three large reservoirs (Mica, Arrow, and Duncan) to fulfill this obligation.
- Canada also built storage in excess of the Treaty requirement, including 5 Maf of useable storage at Mica.
- Storage constructed by Canada beyond that required by the Treaty is referred to as non-Treaty storage.
- Absent an agreement, BC Hydro uses the storage space for flexibility in Canada, but there is no change in flow across the U.S.-Canada border.
- Additional benefits for BPA and BC Hydro require negotiation of mutually beneficial agreements.
- Treaty Article IV(5) prohibits any operation of Canadian non-Treaty storage that would degrade the power and flood control benefits resulting from the operation of Treaty storage.

Duncan and Arrow

	Completed	Treaty Storage	Non-Treaty Storage	Generator Capacity	Dam Height
DUNCAN	1967	1.4 Maf	None	None	130 ft.
ARROW	1968	7.1 Maf	0.25 Maf	185 MW	170 ft.

Mica and Libby

	Completed	Treaty Storage	Non-Treaty Storage	Installed Capacity	Hydraulic Capacity	Dam Height
MICA	1973	7.0 Maf	5.0 Maf	1740 MW	40 KCFS	650 ft.
LIBBY	1973	5.0 Maf	None	604 MW	25 KCFS	370 ft.



Kinbasket Lake

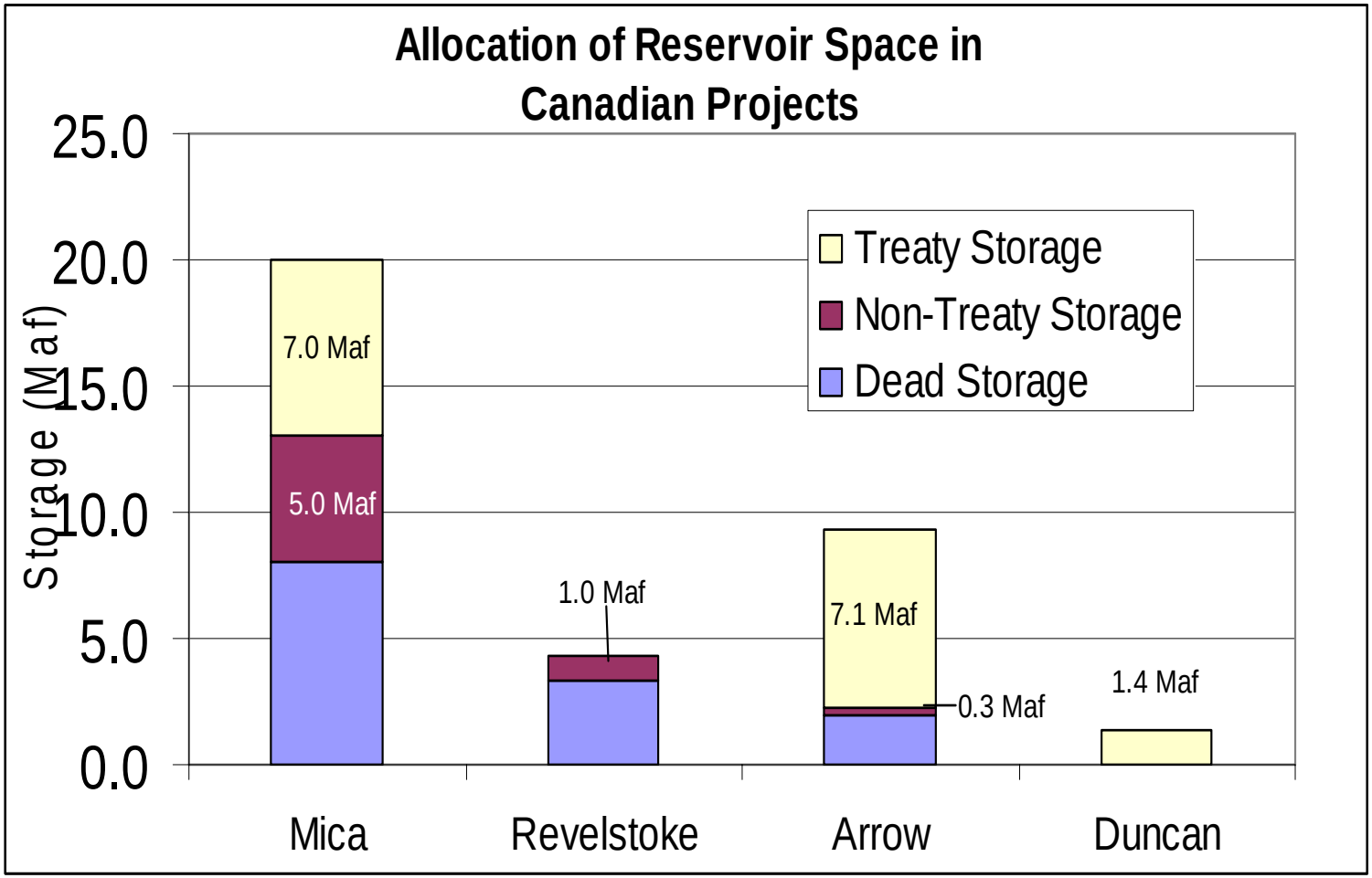
Koocanusa Lake

Brief History of Non-Treaty Storage Agreements

- After the initial fill of Mica, BPA and BC Hydro entered into several short-term agreements to use non-Treaty storage in Mica, however a long-term agreement remained elusive.
- BC Hydro's 1984 threat to not compensate U.S. power losses from initial filling of Revelstoke reservoir, and BPA counter threat to sue, led to negotiations for a long term solution.
- In April 1984 a 10-year agreement between BPA, BC Hydro, and Canadian and U.S. Entities was reached relating to the initial filling of non-Treaty reservoirs, the use of Columbia River non-Treaty storage, and Mica and Arrow refill enhancement.

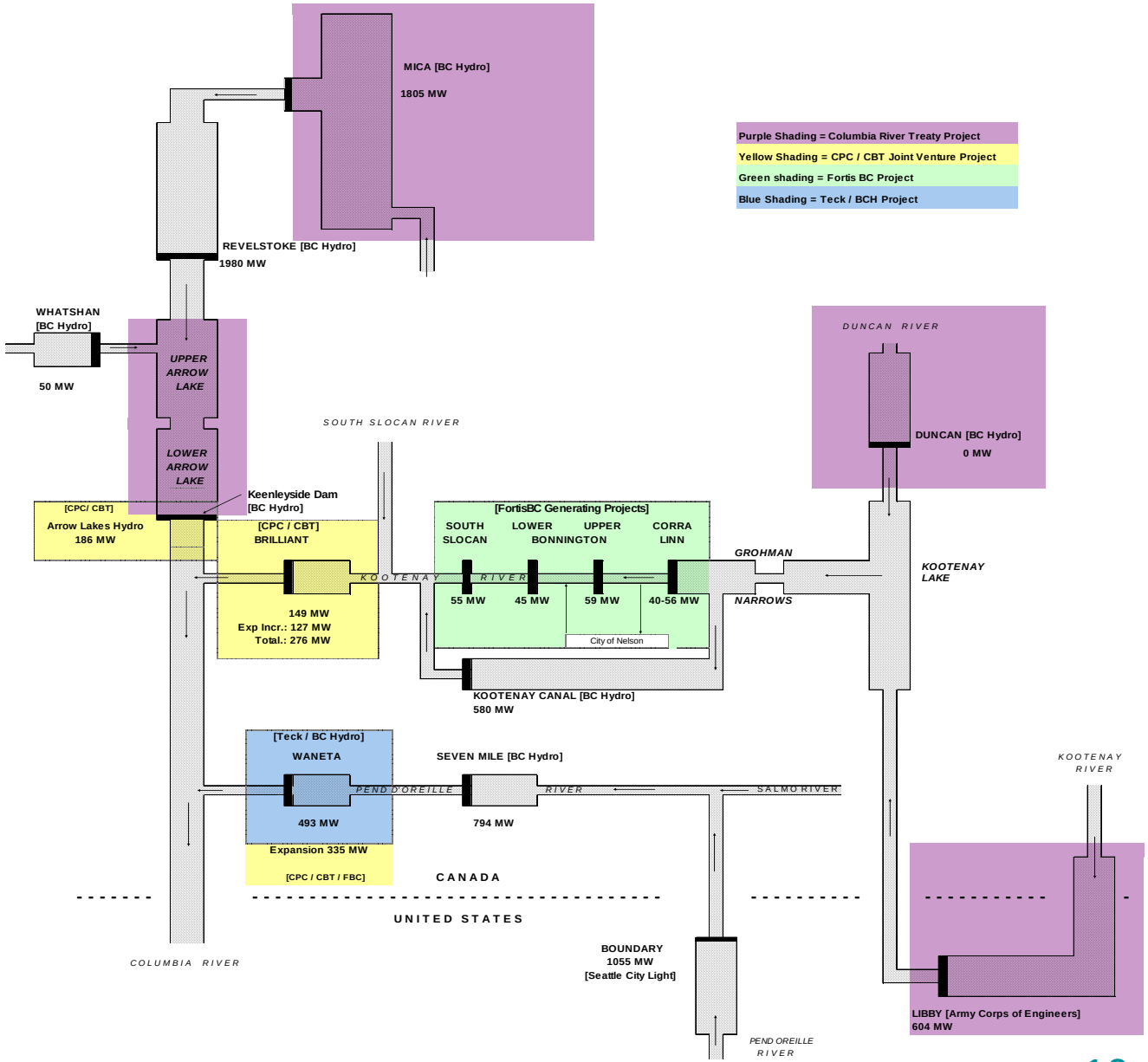
1990 Non-Treaty Storage Agreement

- A second agreement, signed July 1990, expanded the storage amount and extended the agreement through June 2003.
- The agreement was further extended through June 2004.
- Release provisions expired on 30 June 2004, with seven years allowed for the parties to refill the storage space.
- Refill under the 1990 NTSA was completed in January 2011.


Allocation of Reservoir Space in Canadian Projects
Storage (Maf)
25.0
20.0
15.0
10.0
5.0
0.0
Treaty Storage
Non-Treaty Storage
Dead Storage
7.0 Maf
5.0 Maf
1.0 Maf
7.1 Maf
0.3 Maf
1.4 Maf
Mica
Revelstoke
Arrow
Duncan

Schematic Map of Columbia Basin Projects in Canada

Courtesy of BC Hydro



Non-Treaty Storage Benefits

- Coordinated use of non-Treaty storage allows access to additional reservoir space that can be used to shape flows for multiple purposes, providing both power and non-power benefits.

- Power benefits are created by:
  - storing water when it has less economic value and releasing it when it has more economic value ($ gain)
  - shaping water so that energy is produced from water that would otherwise be spilled (beyond that needed for fish) (MW gain as well as $)

- Non-power benefits include the ability to shape flows for fisheries. Flows are typically shaped from spring when flows are high into the summer when flows are lower.

Non-Treaty Storage and Fisheries

- Since the mid-1990s Biological Opinions have included an objective for BPA to negotiate agreements with BC Hydro to use non-Treaty storage space to shape water for fisheries. Typically, water has been shaped from high flow periods in the spring into the summer period which has lower flows.
- Such agreements provided both power and non-power benefits and were initially negotiated under the umbrella of the 1990 NTSA. The agreements allowed BPA and BC Hydro to store water in May/June for release in July/August.
- Following expiry of release terms in the 1990 Agreement there was no mechanism for these short-term agreements.
- Seasonal agreements have been reached annually since 2006 allowing BPA amd BC Hydro to develop both power and non-power benefits.
- The 2010 Biological Opinion includes an objective for BPA to seek to negotiate a new long-term NTSA to provide benefits to ESA-listed fish.

New long-term NTSA Objectives

- Following initial coordination with federal agencies, states, and Tribes, BPA began discussions with BC Hydro on terms for a new long-term non-Treaty storage agreement.

- BPA objectives of a new agreement include:
  - Support for Biological Opinion objectives to shape flows within the year for fish and to shape water into dry water years to improve flows for fish, consistent with the Treaty.
  - Flexibility to derive additional power and non-power benefits for BPA, BC Hydro, U.S. and Canadian interests.
  - Ability to address changing social/environmental needs and values
  - Terms that minimize costs including transmission costs and administrative burdens.

- The proposed terms are the result of tradeoffs made to develop an agreement that will provide significant benefits to BPA, BC Hydro and Canadian and U.S. interests.

Summary of Proposed New NTSA Terms

Term	Effective upon signature of parties through September 2024.
Early termination provisions	Yes
Storage Volume	● Total Storage addressed: 5.0 Maf ● Active Storage 1.5 Maf/each
Release rights	● BPA Dry Year release right of 0.5 Maf in May/June - lowest 20% of water yrs based on May Final Forecast - cannot exercise in 2 consecutive years, BC Hydro will consider request 2nd yr - BC Hydro option to share portion of BPA release (not additional water) ● BC Hydro dry period release right of 2 kcfs Oct-Apr - approx 88% of ave inflow based previous system inflow (BC critical water) - BPA concurrent and equivalent release right, if exercised by BCH - energy delivered by BPA to BC Hydro based on US incremental generation, no capacity - BC Hydro pays transmission and losses both for release and storage - Return of water/energy designed to hold BPA harmless
Other Storage/Release	● By mutual agreement - either party can decline transaction, if flow change unacceptable
Time Step	● Weekly - both water and energy schedules are agreed in a weekly timestep
Energy Calculations	● BPA water transactions have no energy component ● BC Hydro transactions will be accounted for in a transaction benefits account in $ - The generation change associated with storage and release will be calculated for the federal projects - The generation will be valued at an agreed market price. A cumulative value is maintained. - The account may be trued up through either energy deliveries or settled financially
Transmission	● All energy may be delivered over nonfirm transmission ● Except for BC Hydro dry period release right, each party pays transmission in their own country. ● Requires less transmission than the 1990 NTSA