

Meeting Minutes

Annual Board Meeting, International Osoyoos Lake Board of Control (IOLBC)

Tuesday, September 20, 2016

1:00 – 4:30 PM

Oroville Port of Entry/Osoyoos Border Facility – conference room SA225
33643 Highway 97, Oroville, WA 98844

List of Acronyms

IJC	International Joint Commission
IOLBC	International Osoyoos Lake Board of Control
OBWB	Okanagan Basin Water Board
USGS	U.S. Geological Survey
WADOE	Washington State Department of Ecology

Membership

	United States	Canada
Co-Chairs	Cynthia Barton (absent)	Bruno Tassone (acting host)
Members	John Arterburn Col. John Buck Kris Kauffman Ford Waterstrat	Glen Davidson Sue McKortoff Brian Symonds Anna Warwick Sears
Secretaries	Marijke van Heeswijk	Gwyn Graham
IJC representatives	Richard Morgan (Commissioner, Canadian Section), Rich Moy (Commissioner, U.S. Section), David Fay (Engineering Advisor, Canadian Section), Mark Colosimo (Engineering Advisor, U.S. Section), Camille Mageau (Secretary, Canadian Section)	
Guests	Sara Marxen (U.S. Army Corps of Engineers), Al Josephy (Washington State Department of Ecology), Jay O'Brien (Zosel Dam operator), Katherine Rowden (National Weather Service, NOAA), Shaun Reimer (FLNRO, BC), Jiri Bakala (Ascent Films, Inc.)	

1. Welcome and Introductions

Canadian Section Chair, Bruno Tassone opened the meeting with welcoming remarks and introductions of the Board members, IJC Commissioners, Board Secretaries and other attendees on Tuesday September 20, 2016 at 1:00 pm. The attendance list is included at the top of the document.

2. Approval of the Agenda

The meeting agenda was accepted without modification.

3. Implementation of 2013 IJC Supplementary Order of Approval

3.1 Hydrologic conditions in 2016 and compliance with Order

Brian Symonds provided an overview of hydrologic conditions for 2016 (to date) and indicated that the above average snowpack that had developed through the winter period was subject to early/rapid melt

and was well below average by May 2016. Okana(o)gan hydrology was also influenced by significant rain through the June-July period. The net result was that Osoyoos Lake saw close to normal inflow due to ample storage on Okanagan Lake. There was an overall below-average discharge on Similkameen River, despite an above-average peak discharge (freshet), which occurred slightly earlier than normal. Summer period discharge for the Similkameen River was close to record low, despite the benefit of rainfall during the June-July period.

This year did not require a drought declaration according to IJC Order (drought criteria were not met). High natural inflow into Osoyoos Lake during freshet resulted in a rule curve exceedance, but the operators of Zosel dam maintained maximum discharge through the dam and thus, the applicant was in compliance with the terms of the Order. Water level management on Osoyoos Lake was within the upper and lower bounds of the IJC rule curve and thus there have not been any compliance issues to date.

The Board discussed interests in receiving more timely information around Okanagan system operations during the summer period, particularly with regard to storage releases from Okanagan Lake ("fish pulse" discharge events).

3.2 Overview of dam operations in 2016

Al Josephy (Washington State Department of Ecology) provided an overview of Zosel Dam operations for 2016 (to date). The operational goals of the dam were described as managing lake levels for the protection of non-interruptible water rights (and additional adjudicated water rights) and working with fisheries organizations to adjust operations where required and where feasible. The maintenance of facilities on and around Zosel Dam is also part of regular operations. Hydrologic conditions in 2016 resulted in an earlier increase to water levels on Osoyoos Lake, compared to the previous 2 years. Similkameen River discharge followed a similar patten to the previous 2 years, in terms of very low summer period discharge. This was identified as significant, since Similkameen River flow is typically an important water supply source for the Okanogan region during the summer period. Okanogan River discharge conditions, however, were not as bad in 2016 as 2015. The Oroville-Tonasket Irrigation District (OTID) is a major license holder and user in the Oroville and Tonasket areas (operating instream water intakes and pumping plants). The OTID faces water supply concerns when the Okanogan River gage drops below 1000 cfs. In late July of 2015, the gage at Tonasket dropped below 1000 cfs. No such issues were noted in 2016 (although low discharge came close to 1000 cfs in late August).

Special maintenance projects were undertaken at Zosel Dam in 2016. A contractor was hired to repair the gate setting system due to wear, damage and preventative maintenance needs. Some of this work will be ongoing next March (2017). In collaboration with CRIFC, fish (pit tag) counters were installed at the dam using a floating system (Biomark fish counters) which John Arterburn (Colville Tribes) helps to

operate/maintain. This system showed good Sockeye return numbers. Estimated survival (return) rate of 82.6% (215,975 counted at Wells dam and 178,306 counted at Zosel Dam). Fish went quickly up the Okanogan River (an estimated 50,000 were caught by the Osoyoos Lake fishery).

The IJC Order requires maintenance of a channel capacity of 2500 cfs when Osoyoos Lake is at 913 ft. Al Josephy identified 36 days, since 2006 (4 out of 10 yrs) where this condition has been observed. WADOE is planning a channel survey (bathymetry) this Fall. In 2013, high flows through Tonasket Creek (tributary to the Okanogan River, above the dam) created a sediment fan at the confluence with the Okanogan River, prompting the need for an updated survey.

USACE is currently providing assistance in the development of a simplified model of dam operations and work to date has indicated a need for lake bathymetry and water level measurements for the Zosel Dam forebay and tailrace areas.

4. Board Activities

4.1 Overview of newly developed internal guidance documents

The Board reviewed communications protocols and consensus-based decision-making procedures.

The Board conducted an overview of the work plan, including core activities, noting the importance of ensuring that information on Okanogan lake operations is reaching key stakeholders and the related aspects of coordination with First Nations/Tribes and key stakeholders. Board discussion pointed to the importance of explaining abnormal hydrologic trends to the public to help offset expectation of normal seasonal water level conditions on the lake.

With regard to previous Board communication to the applicant, Mr. Josephy indicated that Washington State Department of Ecology was satisfaction with the Board's letter on the issue of ramping rates (rate of water level changes) on Osoyoos Lake and indicated that the new IJC rule curve (introduced in 2013) had already removed some of the ramping rate challenges by prescribing a more gradual rise and fall of water levels on Osoyoos Lake.

The Board briefly discussed a potential project for a webcam at Zosel Dam and indicated that objectives would need to be better defined as well as potential funding sources. The Board also discussed the potential for additional water level monitoring (gauge stations) at Zosel Dam (forebay and tailrace) to provide data toward further development of an operational model for Zosel dam (with assistance of US Army Corps of Engineers).

The Board briefly potential plans by the Okanogan Public Utility District (OPUD) to renovate and reactivate the Enloe Dam site, a run-of-river hydro-electric project, located on the Similkameen River in

Washington State, above the confluence with the Okanogan River. While it's still not clear at this time if this proposal will prove to be economically feasible enough to proceed, the Board agreed that there would be no effect of the project on Zosel Dam or the Conditions of the IJC Order.

The Board discussed interests on the U.S. side of the watershed with regard to sediment transport processes and concerns along Tonasket Creek. Al Josephy (WADOE) offered to provide the Board with additional information.

5 Update on Special Projects

5.1 Introductions and next steps for the documentary

An overview of documentary film was presented by Al Josephy (Washington State Department of Ecology). The Board was introduced to the production team from Ascent Films (Kelowna, BC) and received an update on the project status and planned activities. A introduction to the film was provided, and the Board viewed a Trailer, based on footage collected in early spring , focusing on snowpack measurements (w/ Tony Litke BC MoE – snow survey coordinator). Ascent is planning to film through Fall, Spring and early Summer of next year. The project will begin editing next January to build structure.

6 Presentation on Water Supply Forecast Methodology

Katherine Rowden (Service Hydrologist for the National Weather Service – Spokane,WA) presented on the water supply forecast methodology employed by the National Weather Service, with a focus on the Okanogan region of Washington State. Short-term deterministic (10-day) forecasts are used for flood watch and flood warning purposes (some low-flow forecasting as well), while seasonal ensemble forecasts are used to provide seasonal probabilistic water supply forecasts, using a data record that extends back to 1948. The outcome distribution represents uncertainty and the Apr-Sept forecast period (period of interest) is presented for ranges of 50%, 30/70%, and 10/90%.

Shaun Reimer (BC FLNRO) provided an overview of the water supply forecast methodology in British Columbia, with a focus on the Okanogan. The BC River Forecast Centre provides Shaun with the volumetric river forecast that he uses for operational planning. The system is currently in transition to a new model/methodology. There is a 15x relationship in water levels between Okanogan Lake and Osoyoos (1 cm storage on OK lake translates to 15 cm storage on Osoyoos Lake). The forecasted inflows trigger variable lake targets; the months of April to July are a critical period. There can be poor comparison of forecasts to actuals due to limitations of the current method to account for the early snowmelt effect (using the Principle Component Analysis- Statistical model developed 1984 and updated

by Summit Environmental in 1999). The weakness is in antecedent conditions, meaning that early snowmelt equals higher lake levels, which skews the forecast with an abnormally high lake level. The system will be transitioning to an ensemble streamflow prediction model (ESP) – probabilistic method (developed by Watersmith research –Kelowna, BC) known as RAVEN (already in use by BCHydro).

4:30 **Meeting Adjourned**