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

Meeting Minutes

Wednesday October 4, 2023
6:30 – 8:00 PM (PDT)

In-Person (Sonora Center Gymnasium, Osoyoos, BC)
Virtual Attendance (Zoom Webinar)

BOARD MEMBERS

Dave Hutchinson	Co-Chair, Canadian Section
Cindi Barton	Co-Chair, U.S. Section
Ted White	Board Member, Canadian Section
Sue McKortoff	Board Member, Canadian Section
Brian Symonds	Board Member, Canadian Section
Anna Warwick Sears	Board Member, Canadian Section
John Arterburn	Board Member, U.S. Section
Col. Kathryn Sanborn	Board Member, U.S. Section
Kris Kauffman	Board Member, U.S. Section
Arnie Marchand	Board Member, U.S. Section

BOARD STAFF and ASSISTANTS

Andy Long	Secretary, U.S. Section
Martin Suchy	Secretary, Canadian Section
Sonja Michelsen	Technical Advisor to Colonel Kathryn Sanborn
Sarah Dunn (virtual)	Assistant to Andy Long
Katie Slimmon	Assistant to Martin Suchy

IJC REPRESENTATIVES

Robert Sisson	Commissioner, U.S. Section
Christopher Wilkie (virtual)	Secretary to the IJC, Canadian Section
John Allis	US Engineering Advisor
Rob Caldwell (virtual)	Engineering Advisor, Canadian Section
Adam Greeley	Science Advisor, U.S. Section
Catherine Lee-Johnston	Science Advisor, Canadian Section
Paul Allen (virtual)	Communications Manager, Canadian Section
Jeff Kart (virtual)	Communications Advisor, U.S. Section
Tia Dumoulin (virtual)	Communications Advisor, Canadian Section

GUESTS

Craig Jordan	Washington State Department of Ecology
Felicia Minotti (virtual)	Global Affairs Canada

ACRONYMS

IJC	International Joint Commission
IOLBC	International Osoyoos Lake Board of Control
IWB	International Watershed Board
IWI	International Watershed Initiative
OBWB	Okanagan Basin Water Board

Welcome, Introductions, and Review of Agenda

The meeting was opened at 6:30 p.m. by Mr. Dave Hutchinson (Board Co-Chair, Canadian Section) with welcoming remarks, land acknowledgement, and introductions of the board members and IJC Commissioners. He then reviewed public meeting protocols and the agenda for the meeting. The meeting followed a hybrid model with participants both in-person at the Oroville High School library and online using Zoom. Ten (10) people were present in-person, while eleven (11) public members participated online.

IJC Order of Approval

Mr. Hutchinson presented an overview of the IJC, IOLBC, and the IJC Orders of Approval for Osoyoos Lake. He summarized the history and purpose of the IJC beginning with the Boundary Waters Treaty and the subsequent IJC Orders for Osoyoos Lake and the establishment of the International Osoyoos Lake Board of Control in 1946. He reviewed the history of Zosel Dam from its initial construction in 1927 to the construction of the present control structure in 1988. He discussed the history of its regulation of Osoyoos Lake levels under the IJC Orders that were initially established in 1946 and subsequently revised in 1978, 1982, 1985, and most recently in 2013 under IJC Supplementary Orders of Approval. The 2013 Supplementary Orders of Approval redefined the rule curve of allowable lake levels for Osoyoos Lake, updated drought criteria, considered ramping rates, and directed the Board to consider adaptive management with flexibility in renewing the orders that must be revisited every 25 years. He discussed that this is the 10th year anniversary of the 2013 Supplemental Order and noted that there have been many extreme hydrologic years since then. He described the activities of the IOLBC including ensuring compliance of the Applicant with the Orders, monitoring drought criteria outlined within the Orders, meeting quarterly for Board conference calls, communicating hydrologic conditions and Zosel Dam operations to the IJC and the public, and developing special projects to develop technical understanding of the Okanagan/Okanogan and Similkameen watersheds and communicate Board activities.

Hydrologic Conditions Overview and Compliance with IJC Order in 2023

Mr. Martin Suchy (Board Secretary, Canadian Section) presented a review of the hydrologic conditions of Osoyoos Lake, the Okanagan/Okanogan River, and the Similkameen River during 2023. He discussed that there was very low snowpack compared to average at the Blackwall Peak snow pillow station in the Similkameen Basin. Conversely, Mission Creek in the Okanagan Basin was above normal (though some data was missing due to the station being down for the beginning of the year). There was a significant warming event in April-May which caused rapid snowmelt and decreased snowpack in the area.

Mr. Suchy then discussed 2023 Drought Criteria for lake level operations. Drought Condition 8a (Similkameen flow volume) was met, however, neither of the two Okanagan conditions were met. Therefore, a drought was not declared and the Zosel dam had to operate under Normal Conditions (Condition 7).

Due to the warm spring temperatures, freshet peaked earlier than usual, followed by discharge dropping to below the historical average. The Okanagan Lake level at Kelowna was lower-than-average through the winter due to the dry fall in 2022, resulting in Okanagan Lake not reaching its target full pool levels in 2023. Osoyoos Lake near Oroville levels briefly went above the rule curve in May, but the dam was in compliance with the Order because gates were open at that time. For the rest of the summer, the lake levels were within the rule curve, and remained below average for much of the year.

The IJC Order mandates that the channel and Zosel Dam outflow have sufficient conveyance capacity to pass 2500 cfs at 913 ft lake elevation. However, it was not tested in 2023 because the appropriate lake level was not reached.

Finally, drought conditions for the basin were discussed. Based on the BC Government Drought Advisory Levels and the US Drought Monitor, the area ranges from severe to exceptionally dry, and moderate to exceptional drought conditions, respectively. Warmer than normal seasonal temperatures are expected for fall, while a strong El Nino is forecast, which changes the jet stream, temperature, and precipitation patterns in the region. This typically results in a smaller snowpack, especially at lower elevations.

Special Projects and Initiatives

Mr. Suchy then discussed the climate change vulnerability project. The project will examine climate change impacts on the IJC Orders for Osoyoos Lake. So far in the project, Okanagan and Similkameen hydraulic modelling and data collection, scope preparation, contracting, and OBWB subcontracting have been completed. The remaining work in the project is the integrated modelling.

Dr. Andy Long (Board Secretary, U.S. Section) summarized the USGS contracted IWI project to study ice jam occurrences on Osoyoos Lake. Ice jams appear to be becoming more frequent with negative consequences for lake-level management and discharge into the Okanogan River. The USGS is looking at satellite imagery and hydrologic records to identify ice jams and working to correlate ice jams with conditions that may cause them.

IJC Science Advisors Dr. Adam Greeley (U.S) and Ms. Catherine Lee-Johnston (Canada), discussed the Pilot International Watershed Initiative (IWI) and International Watershed Board (IWB) that the IJC is considering implementing in the Osoyoos Basin. Ms. Lee-Johnston discussed that these approaches are holistic, include local membership and indigenous participation, and have a broader mandate and project. Dr. Greeley then discussed the differences between the control board, which monitors water quantity, and a watershed board, which monitors water quantity, water quality, and aquatic ecosystem health issues. A Watershed Board has wide-ranging activities, which can include planning the usage of water resources, sharing data and research, coordinating conservation efforts, and reporting on water quality.

Mr. Suchy then presented the IOLBC website and encouraged attendees to subscribe to the push notification feature to receive news releases.

Questions and Comments

Mr. Hutchinson then opened the floor to questions from participants.
Q1a: The first participant is wondering if the Board will answer questions provided in a letter.

> A1a: Will try.

Q1b: Participant stated that in 1989, scientists told us that an increase of CO_2 in the atmosphere, will result in an increase of ground temperature on the planet. Nobody listened to the scientists; how can we get governments to listen? We need the government to meet the standard in the political-economic system, and they do not. Organizations like this one must discuss with universities how funding is allocated. Natural science gets all the funding, and social science gets nothing.

> A1b: We may not be able to address the changes needed as they are outside the Board's scope.

Q2: The participant has lived in the area for many years and remembers the floods and the dry years. Going into July, he observed the lowest levels that he remembers on Osoyoos Lake. The issue is on the North and Northeast ends of Osoyoos Lake, where the lake is shallow and sandy. The marinas struggled to get boats off lifts this year. The highest point was 911.8 ft. 911.6 ft is the lowest point that boats can still be in the marina. He would like us to learn from conditions this past year. 912 ft would be great to see.

> A2: 912 ft is the maximum summer lake level under Condition 7 of the Order. The Similkameen River peaked a month earlier than in 2021; this accounts for 4x the mean annual runoff to the Okanogan system. The remaining water in the system had to be conserved. After spring freshet passed, most of the lake inflow comes from the Okanagan system. This year there were limited controls to manage lake levels and meet all needs throughout the Okanagan/Okanogan system. The Board appreciates the knowledge of 911.6 ft elevation as a desired target for marinas in the northern end of the lake.

Q3: The complex that the participant lives in have between 4-5 million dollars' worth of lifts, and another many millions in boats and other pleasure craft vehicles. In the next 5-10 years, we are not expecting to see water levels get any better. Are there any suggestions on how to make the usage of pleasure craft any easier?

> A3: There are a lot of challenges in trying to anticipate what will happen from May to August. Lake levels going up and down may benefit one party but hurt another. Operators do the best they can based on the information they have. Despite the best forecasts, operators do not know exactly what is going to happen. They try to do the best they can given all interests, and they are learning from previous years.

Q4: Why do we build houses where we should not build houses?

A4.1: Sometimes parts of properties are developed on that were never meant for habitation or storage of goods that can be damaged by flood waters. Complaints then come from these properties when the lake level goes up too high. Dropping the controlled upper limit of the rule curve from 913 to 912.5 was in response to these concerns.

A4.2: One of the reasons the Board embarked on developing hydrologic and climate change models of the basin is because of the extreme conditions that are being experienced.

A4.3: The Board looks at the Okanagan Basin as an annual system, but there is the possibility of back-to-back drought years which could impact meeting the conditions.

Q5: Why are there two different management strategies for dealing with milfoil in Canada versus the US?

A5.1: The herbicide used on the south side of Osoyoos Lake (US) is approved for use in Canada, however, there is no social acceptance for using herbicides in mainstem lakes. In Canada, the mechanical approach is the only tool available outside of herbicides.

A5.2: Currently the Board of Control does not look at this issue, which is why we are looking at creating a watershed board.

Q6: Some projections are showing that we may get 35% more snowpack on average with climate change. If there is more snowpack, can we act faster to contain it rather than have it go out to the Ocean?

A61: Having more snowpack is only one part of the system. Spring precipitation and temperature regimes greatly impact the snow melt and is very difficult to predict and balance. Weather services give about a 10-day lead time, beyond which we are rolling the dice. It is very difficult to manage the temperature and precipitation in spring. Snowpack is only one part of the equation.

A62: This problem existed for boat owners further up in the system as well. If we had all the information we have now, we may have made different decisions, but we had to make the decisions with what we knew at the time.

A63: We deal with runoff in terms of a curve; either the curve is very high and in a short time period, or the curve is shallow and over a longer period of time. This year the curve was very tall and was for a short period of time, only a few weeks. The dam operators see that as a lot of water coming at them and preparing the system by releasing water. If the water is held back at a time like this, it cannot be released fast enough if more water does come. Just because we are projected to have 35% more snow does not mean we can keep more of it; it is the shape of the hydrographs that dictates what we can do with water storage.

Q7a: It is very exciting news that the IJC is now considering water quality. Is the herbicide being used anywhere else in Canada?

A7a: It is believed to be used in at least one other place, though it is not used locally. This will be more acceptable in some communities than others. It is a much more cost-effective option than mechanical rototilling.

Q7b: Has a cost analysis between herbicide and harvesting been done?

> A7b: Analysis unnecessary as herbicides are known to be a fraction of the cost of rototilling, but it is not socially acceptable and there would be a huge public outcry to use this in the Okanagan Lake system in Canada. People do not like chemicals in the water.

Q8: If Osoyoos Lake levels were maintained at 912, 912.5; what is the detriment south of the border? Is it agriculture, farming, or livestock? What are the ramifications of Osoyoos Lake having a higher level.

> A8.1: The issue is that when we could have gotten to these lake levels was in early May; there is a lot more time left in the year for potentially high inflows. The risk is that there could be high inflows that are unable to be released in a timely manner. If the rain did come, there is only a certain amount of water that can pass through the dam, even with gates fully open. What risk are the operators exposing themselves to if they hold back water in May, and the hydrologic year is more normal?

> A8.2: in May, we have to watch for the Similkameen River rising and backing water into Osoyoos Lake. If too much water is left in the lake and we get backwater effects, we will get flooding. This year, the Similkameen was low, and we did not have backwater. Another thing to worry about is the ability for fish eggs to incubate in the gravel; we must provide enough water for them. There is a balance of many issues. They are doing the best they can to balance issues across the board. With the new rule curve, there is the ability to rise it up slowly over time.

Q9a: was the Similkameen backing up the issue in 2018?

> A9a: yes.

Q9b: is there a level where it overtops the dam? What level?

> A9b.1: 913 ft is the elevation of the spillway top. This is not a regulated thing. If the Similkameen is running high, the overtopping could be running north instead of south. Turbid water from Similkameen can be seen overtopping the dam, and nothing can be done to let the water out; nature has taken control of the situation.

> A9b.2: There is a channel south of Oroville. If this channel is closed, backing up will not be an issue anymore because the mouth of the Similkameen is ½ mile south of this. These participants are talking about controlling the lake level in the middle of the system; there are three dams in the system. The entire system cannot be controlled based on Osoyoos Lake.

Q10: Why did we allow building so close to the lake?

> A10: Good question, but it is not for this group here.

Q11: One participant commented that he has witnessed shoreline erosion from the huge wake boats operating on the lake. At 912 ft or lower it does not cause damage, but quite a bit of shoreline erosion happens at higher levels due to more traffic on the lake and bigger wakes.

> A11: Craig Jordan (Washington Department of Ecology Dam Operator) explained that as dam owner/operator, they have a band (rule curve) of water levels that they are shooting for. This

year, they were right in the middle of that band. There are conflicting views on what the lake level should be. From a dam management perspective, they did a good job hitting the curve. The issue might be with the curve itself; this might have to be revisited on why the band was lowered in the 2013 Supplemental Order. If he sees a level of 912 ft, he sees that some water should be released to be able to have a buffer for if more water does come, so they are not out of compliance.

Co-Chair Hutchinson noted that the Public Meeting has gone 15 minutes over time and invited participants to ask more questions offline after the meeting.

Meeting was adjourned at 8:15 pm.