

Meeting Topic - Hydrology assessment and associated impacts on fish and fish habitat

Participants -

Proponent Team	Federal Team	Provincial Team
Cathryn Moffet	Laura Phalen	Brooke Campbell-Patterson
Sheldon Smith	Adam St. Clair-Hughes	Jacinth Gilliam-Price
Brian Fraser	Ian Lindsay	Carolyn Lee
Jeremy Dart	Vikash Narine	Todd Kondrat
Dale Klodnicki	Jennifer Pellerin	
Mark Ruthven	Wesley Plant	
	Trish Ralph-Coffey	

Date - December 17th, 2021

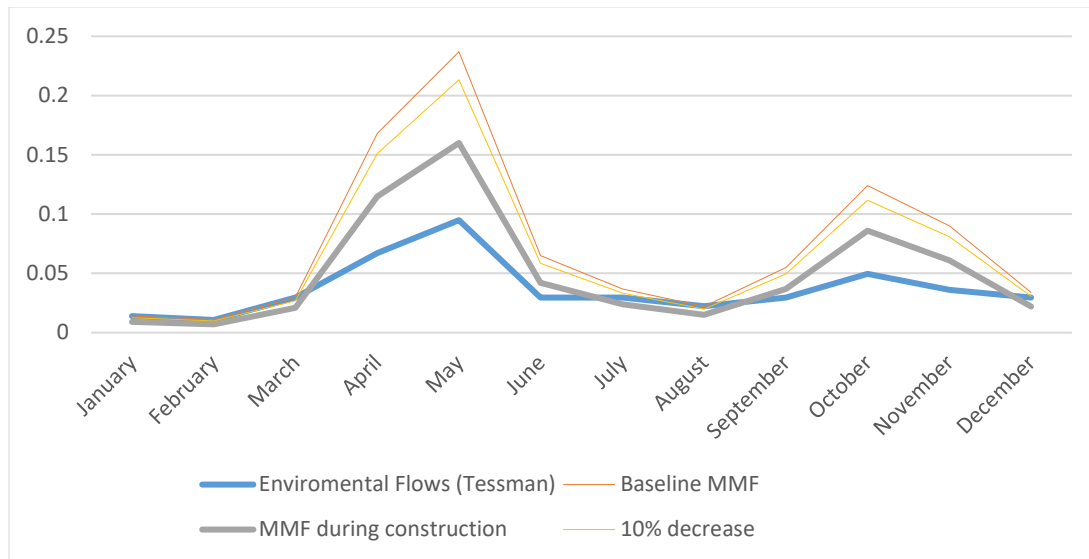
Meeting Summary -

Upon review of the most recent information request responses (namely IR 5-5 and 5-14), it became apparent to DFO that there was a gap in understanding between DFO and the proponent as it relates to the type of assessment that is required when a change in flow of 10% or greater is predicted as a result of the project. A meeting was scheduled to address this gap, and what follows is a summary of the shared understanding that was developed, and the outcomes that were decided upon. Multiple participants as listed above contributed and shared views on what information was needed to help various parties make recommendations related to their mandate.

At the outset of the meeting, DFO clarified the assessment that had been undertaken to date – the proponent had concluded where predicted flows do not fall below environmental flows as determined using the Tessman method (i.e.: only where the grey line falls below the blue line in the graph below), no impacts on fish were expected. The proponent confirmed this understanding through discussion with consultants that worked both on the hydrological assessment, and the assessment of impacts to fish and fish habitat.

DFO confirmed during the meeting that utilizing instantaneous flow instead of mean monthly flow is not desirable in this case because the resolution of the data does not support that level of analysis. However, understanding there are assumptions and therefore risks built into the modelling, the monitoring program should be designed to ensure impacts are not greater than expected.

Through discussion, DFO clarified that the environmental flows threshold represented an incomplete assessment of potential impacts to fish and fish habitat. This figure provides a single example to help demonstrate a mutual understanding of the threshold set by the proponent, and the threshold required to be considered by DFO (date taken from tables provided by the proponent for Stream 1).



The orange line represents the predicted baseline flow in an un-impacted scenario. The grey line represents the predicted flows as modelled by the proponent during the construction phase. The blue line represents flows that are needed to maintain fish and fish habitat, as defined by the Tessman method and chosen by the proponent. The yellow line represents a decrease of 10% in flow, which is the threshold after which the probability that detectable impacts to fish and fish habitat may occur, as described in the Canadian Science Advisory Secretariat publication titled [“Framework for Assessing the Ecological Flow Requirements to Support Fisheries in Canada \(dfo-mpo.gc.ca\)”](https://www.dfo-mpo.gc.ca/science/assessment/flows/flows_e.html) (DFO, 2013).

Through discussion during the meeting, DFO clarified that where predicted changes fall between the blue line and the yellow line for any given subwatershed or watercourse, a combination of biological assessment, mitigation (including potential offsetting), and/or monitoring are required. This will affect the quantification of habitat that should be offset for, and therefore DFO’s confidence in the proponent’s ability to appropriately mitigate impacts to fish and fish habitat.

It was decided during the meeting that the proponent should confer internally and update their quantification of impacts to conservatively reflect these potential impacts from changes to flow in their updated offsetting plan due to the Joint Review Panel on January 14th, 2021.

It was also noted during the meeting that areas where the proponent ultimately deems there to be no impacts to fish through an updated assessment, a monitoring program to validate the hydrological predictions will be required. The proponent was advised that they could expect to see recommendations related to the development of more appropriate (i.e.: biologically/ecologically derived) trigger thresholds for adaptive monitoring plans related to hydrological prediction monitoring. This would apply both to areas where fish are present and not, to ensure maintenance of ecological functions of un-impacted areas.

DFO clarified that the difference in quantification of impacts between these two thresholds is not likely to represent the difference between a “significant adverse environmental effect” and a not significant effect, in our view. Impacts on fish that may not constitute a “significant adverse effect” still require offsetting, which is considered mitigation during the environmental assessment process. As such, the

gap identified here relates to DFO's confidence in the ability of the proponent to appropriately mitigate for impacts to fish, and our ability to advise the panel on this topic.

During the meeting, issues related to water quality, particularly existing phosphorous concentrations downstream of the project, was brought up. It was decided that further discussion on this topic could occur during a follow up discussion.

DFO indicated to the proponent that they can continue to communicate with DFO about expectations for the offsetting plan between now and the due date of January 14th, to ensure they produce a document that is aligned with DFO's policy and that ultimately increases confidence in their ability to mitigate for the impacts to fish and fish habitat related to the project.