

The story of the Windsor Aboiteau

Originally constructed in 1968-1970, the Windsor causeway spans from Windsor to Falmouth in Hants County, Nova Scotia and has been a long debated and contentious issue in the region. The initial purpose of the project was to both alleviate traffic congestion in downtown Windsor and to reduce the costs of maintaining the dykes upstream of this new causeway.

The causeway spans over 800m and includes a gated structure maintained and operated by the Nova Scotia Department of Agriculture (NSDA), which has the ability to release water on the outgoing tide and limit the extent of tidal entry on the incoming tide. It can be operated to achieve a variety of objectives that range from natural river state (no impoundment of water upstream on the outgoing tides and allowing some tidal flow upstream on the incoming tide) all the way to fully closing the gates for long periods of time to establish a freshwater reservoir upstream. After construction, this gated structure was initially operated to allow maximum drainage between tides, or essentially natural river state. This occurred until the 1980s when the gate operations system was updated to enable finer scale operation of the structure after the local agricultural community lobbied government to establish a freshwater reservoir.

At least a decade or two prior to 2017, the commercial fishery and the Department of Fisheries and Oceans (DFO) worked with the NSDA to develop a plan for fish passage during the spring gaspereau migration. Thereafter, the NSDA dropped the reservoir level in the spring each year to provide fish passage opportunity for gaspereau, enabling them to reach their spawning habitat and complete their lifecycle. This practice clearly shows that it was well understood for many years that the reservoir had to be lowered in order to pass fish.

As concerns grew over this accident-prone section of Highway 101, plans were made to twin the highway. Being a small provincial department, the NSDA took this as an opportunity to partner on the project in hopes of securing funds to also update the gated structure. On May 8, 2017, a notice of registration was posted for the projects environmental assessment, which also included an invitation to submit public comments. The project description included twinning a section of the highway and to “upgrade an existing tidal gate structure (aboiteau) at the Avon River causeway”¹. A detailed design was expected to be completed in 2018 with the hope that construction could be initiated in the fall of 2017. It was anticipated that the project would take five years to complete and would provide several benefits including improving highway safety, and protecting “communities, infrastructure, and agricultural land from anticipated climate-related changes in sea level, precipitation, and storm surge”. The EA was approved on June 27, 2017².

¹ <https://novascotia.ca/nse/ea/highway-101-twinning-three-mile-plains-to-falmouth/Notice.pdf>

² <https://novascotia.ca/nse/ea/highway-101-twinning-three-mile-plains-to-falmouth.asp>

One of the hurdles identified for the project early on was how to get a *Fisheries Act* authorization (approval to proceed from DFO). At this point, the project was being carried out through an evidence-based decision making process, and as such, based on the recommendations provided by DFO during the EA commenting period. A panel of experts was established to come up with a fish passage design concept for the updated gated structure that would be able to meet the requirements of the *Fisheries Act*. This panel included representation from the Mi'kmaq, commercial fisheries, academics and both the provincial and federal governments. Collectively, it was determined that at least partial tidal flow would be an essential component of any design in order to pass fish and meet the laws of Canada. The panel recommended the use of passive flap gates to help facilitate this partial tidal flow, which would also serve to limit the extent of tidal entry and prevent tidal flooding during large storm events.

The design consultant, CBCL, further developed this design concept, which was presented at periodic project update meetings held with the projects' Community Liaison Committee (CLC), including a meeting on September 19, 2018. During this particular meeting, the presentation focused on the operational scenarios, which were options A (freshwater reservoir where the water level is prioritized over fishway), B (freshwater reservoir where the fishway is prioritized over the water level), and C (partial tidal exchange). It was flagged in the provincial slide deck for that meeting that the water available in the watershed was insufficient to run fish ladders throughout the summer months (wouldn't meet the Fisheries Act) and that maintaining a reservoir required use of more complex gates with a higher associated flood risk, would continue upstream sedimentation issues and continue to degrade the water quality³. The recommendation was to pursue option C, partial tidal flow, for reasons described as including significantly greater fish passage and habitat potential, provide cooler water, restore natural flushing and improve water quality (important for algae control and fish habitat/health).

On September 24, 2017 a note was added to the posted slide deck stating "we heard the strong community interest in keeping the lake high in the summer, and we are now in the process of exploring a new option "D" to maintain the lake as well as fish passage". This was the initial transition from an evidence-based approach to a decision-based evidence-manufacturing approach. A few days later on September 27, 2018, a Joint Council meeting was held between the Windsor and Falmouth municipalities (before amalgamation) and was attended by Paul LaFleche, deputy minister of Transportation and Infrastructure Renewal at the time. An hour and 32 minute video recording exists from this meeting, which includes several important statements from the deputy minister. In summary, the minister made it clear that there were really only two options on the table – this new option D, and just flying over with new highway bridges while leaving the existing structure in place. The deputy minister made it abundantly clear that he's heard from his staff that the existing structure could be maintained for another 50 years but that funding for the project was potentially available now and may not be available in the future. He also reiterated several times that he was not "ramming a new aboiteau down

³ <http://hwy101windsor.ca/wp-content/uploads/2018/09/AvonRiverAboiteauSept19-Presentation-CLC.pdf>

your throats”. The deputy minister also referred to the new option D, stating that “this design allows us to do whatever we would like to do... if you would like to keep the lake, if you’re legally allowed to do it... you might be able to keep it there... but on the other hand if there is someone goes to a judge and says no, no, no the constitution or charter of rights says there has to be fish passage above lake level then the judge may order Kevin (NSDA) to lower the lake or open the gates...”. The province was well aware a structure designed to “save the lake” was a violation of the laws of Canada. Ultimately, the province gave the municipality and the room that was full of lake supporters the decision to remove option C, and to pursue this new option D during this meeting, and of course the applause from the audience that night set the path in motion to where we are today.

Since 2018, the province has essentially ignored all evidence and has been ramming a new gated structure down the throats of the citizens of West Hants. The current scope of the project includes a brand new gated structure downstream of the existing structure, new highway bridges, and leaving the existing structure in place – which collectively establishes two barriers to fish passage as well as requires 20 additional hectares of habitat destruction within an internationally recognized RAMSAR wetland. This is well beyond the scope of the EA registration documents that went through public consultation and were approved in 2017, yet no revisions or new EA has been ordered. The EA process is simply an illusion of protection and gives the minister the option to make decisions on projects based on evidence, or the limitless ability to follow the political whims of the day with effectively zero repercussions.

During the spring of 2017 and 2018, the NSDA voluntarily extended the spring fish passage gate operation protocol to in attempt to prove to regulators that a gated structure could provide fish passage. In 2019 the reservoir was maintained for nearly the entire season – the EA was already approved and the province felt they needed to increase the public interest in “saving the lake”. However, monitoring of fish passage has continued through a team comprised of representation from the Mi’kmaq, commercial fishers and academics since 2017. This team presented evidence that maintaining a reservoir of any kind directly impeded fish passage, which triggered DFO to issue a ministerial order in May 2020 to ensure fish passage was provided. The order required that the gates be opened on the outgoing tide so that no water was impounded above the causeway. Near the end of May 2020, the NSDA staged a significant fish kill upstream of the causeway where during the peak gaspereau run they allowed enough water upstream to fill up and let fish into the side channels and pools that existed at that time. On the next tide, the NSDA ensured the water levels were low enough to prevent fish from escaping from these side pools, while Nova Scotia Power also reduced or withheld downstream flows from their Avon 1 hydropower facility upstream of the causeway. Over the next few days, the stagnant and disconnected pools of fish warmed up and oxygen levels dropped causing the deaths of thousands of fish. The NSDA blamed the fish kill on the gate operations and forced DFO to allow them to reinstate the reservoir. After landmark consultation with the Mi’kmaq in the fall of 2020, a new DFO order was finally implemented in March 2021, which required the reservoir be again returned to natural river state with the added requirement of a minimum of 10 minutes of saltwater entry on every incoming tide. The province fought the order, putting

forward any excuse they could identify to have it revoked. For every legitimate concern raised, various levels of government stepped up to find an effective solution that worked for all parties involved. Riffles were installed to ensure Ski Martock could draw water for snowmaking⁴, seed was planted on the now exposed sand bars (from before the causeway was built and the river was fully tidal) to mitigate dust storms after the NSDA refused to allow any more saltwater entry⁵, and the Pisiquid Canoe Club was relocated to a lake upstream⁶.

This DFO order remained in place until the end of May 2023 at which time major forest fires were burning in the Halifax and Barrington regions of the province. The province utilized this wildfire crisis as justification for the use of extraordinary ministerial powers to declare a state of emergency for the Pisiquid area citing concerns over dry hydrants that were not functioning as a result of the DFO order. Using this state of emergency, the province then issued a directive to close the gates and reinstate a freshwater reservoir, overruling the DFO order that had provided fish passage for just over two years. Again, there was zero evidence to support the province's decision to declare a state of emergency, but it doesn't matter as the laws are written to allow ministerial discretion, which effectively allows the minister to do more or less whatever is in their best political interest. In short, Windsor Fire Chief Jamie Juteau was contacted by MLA Melissa Sheehy-Richard and was directly asked if two specific dry hydrants were functioning, to which he responded no. That is effectively the extent of the evidence used by the province to overrule the federal *Fisheries Act* and *Constitution of Canada* (section 35 protection of Indigenous Rights) in order to get their reservoir back. A report from the West Hants Regional Municipality includes a statement that speaks to their ability and confidence to fight fire under the DFO order: "it goes without saying that a secured freshwater supply is added support for fire protection. If the [provincial emergency] declaration is discontinued, then WFD [Windsor Fire Department] will revert back to the operational plan that was in place for the past two years utilizing treated water and alternative raw water sources (fresh and salt water if needed). WFD is confident in operating under both scenarios"⁷.

This state of emergency has been renewed very two weeks since June 2023 and it was made clear by the premier during a media question period on July 13, 2023 that they intend to keep the reservoir filled, even insinuating negligence on behalf of the West Hants Regional Municipal

⁴ <https://www.canada.ca/en/atlantic-canada-opportunities/news/2021/11/ski-martock-is-back-in-the-business-of-snow.html>

⁵ <https://www.saltwire.com/atlantic-canada/news/hants-county-ns-residents-ecstatic-if-seeding-solves-avon-river-sandstorm-issue-mayor-100743584/>

⁶ <https://search.open.canada.ca/grants/record/acoa-apeca,276-2022-2023-Q1-00134,current>

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<https://www.westhants.ca/committee-of-the-whole/committee-of-the-whole-packages-april-2020-march-2021/2023-cotw-agenda-packages/4515-2023-06-13-committee-of-the-whole-package-amended-june-16-2023-pdf/file.html>

Council and Windsor Fire department for not requesting the reservoir be filled.⁸ On July 13, 2023 the local MLA shared the video recording of that media question period with the caption “Next step is to apply pressure on the Federal Government to approve the aboiteau so we can install the bridges and complete the twinning project. The design that has been sitting before them since last November will provide improved fish passage and protect our fresh water resource. It is not impossible to achieve both!⁹”

This clearly outlines the province’s plan to perpetually renew the state of emergency as an interim solution as they mount pressure on the federal government to approve the new gated structure. A state of emergency is a legislative tool intended to be used to quickly put in place mitigation measures that allow the state of emergency to be lifted and a state of emergency should be issued for as short a time as possible. The facts are that Nova Scotian’s already paid \$1,105,000 to ensure Ski Martock could withdraw water from the Avon under natural river state – which includes an ability to pump water for firefighting purposes all the way to the top of Ski Martock if need be. A fire truck could also drive to within inches of the river thanks to the gravel riffle installed at this site, which is located a mere ~750m downstream of one of the two dry hydrants that triggered this state of emergency. The other dry hydrant is located in downtown Windsor where a boat ramp exists on the other side of the River, a 1km drive away. This boat ramp could be easily extended the additional 50m to allow a fire truck to drive right down to the main river channel if so desired. Plenty of freshwater exists in this river naturally at low tide, and the minimum flows are in far excess of what the “go to” water pumper truck is capable of utilizing. There are plenty of solutions to the alleged dry hydrant issue that are either already in place or are easily obtainable, but the province has chosen to ignore those so they can instill fear of not having a reservoir into the public, and to put additional pressure on the federal government to approve the project and allow a freshwater operational scenario.

DFO has responded to several of the province’s multiple attempts of receiving approvals for a *Fisheries Act* authorization, stating in March 2021 that the proposed design for option D “did not allow sufficient fish passage”¹⁰ and again in October 2022 when DFO requested additional technical information from the province to “better understand the proposed design and operations, fish passage structures, contingency plans and information on further measures that could be implemented to improve fish passage”¹¹. Even with two attempts to pass this structure through DFO, the fish passage component remains a sticking point, simply because the science clearly shows that maintaining any kind of reservoir in an estuarine ecosystem is a blockage to fish passage.

⁸ <https://www.facebook.com/nsgov/videos/291149466928125>

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<https://www.facebook.com/MelissaHantsWestMLA/posts/pfbid0wCQ21QTrsfYX6XBE2ve7f2Bq7sEa4DZw9LwBrEviPD6cPqrSXo9aDG5BHkmyqJdNI>

¹⁰ <https://www.cbc.ca/news/canada/nova-scotia/windsor-aboiteau-construction-design-1.6130506>

¹¹ <https://www.cbc.ca/news/canada/nova-scotia/highway-twinning-construction-1.6672611>

This “save the lake” torch has been passed between three premiers representing two political parties, but for what reason? In 2018, the MP for the area was Scott Brison, whose brother, Mitch Brison is the owner of Glooscap Developments, which owns several properties totalling about 900 acres on the western side of Highway 101, not far from Falmouth and Lake Pisiqid¹². Essentially the entire situation stems from the politically connected looking to get rich by developing the marshland currently “protected” by the Windsor causeway.

Focusing back on the highway twinning project, the true public safety risks are two-fold, traffic collisions on this dangerous section of highway, and a freshwater flood risk from upstream sources. The current scope of the project includes new highway bridges over the Avon River, but the design of these bridges is allegedly substandard to tidal flow (supposedly as a cost savings and/or issues with substrate...) and requires the new gated structure to be constructed before these bridges can be built¹³. Those bridges are needed to twin the highway and alleviate the public safety risk. The province refuses to redesign the bridges to handle full tidal flow, which would allow them to be installed before the gated structure is built. But the politicians need the gated structure in order to ensure development of the marshlands upstream that were once productive saltmarshes. This highway 101 twinning project was initially anticipated to be completed in 2022-2023, yet today, as a direct result of the provincial government’s “save the lake” campaign they can’t even get an approval to start construction. As such, the politicians are now literally leveraging the lives of motorists to put pressure on the DFO minister to approve a new gated structure, which would ensure their developer friends can get rich.

As evidenced in the tragic flooding event on July 21, 2023, maintaining a reservoir reduces the capacity to handle flood waters coming downstream. With a gated structure in place, water can only be released downstream during certain portions of the tide, and so there is an automatic delay in the ability to release water in the event of a flood. Further, the gated structure restricts the width of the river to the size of the culverts. The capacity to discharge water is also directly related to the dimensions of those culverts, meaning the bigger the hole, the faster the flood waters can be dissipated. Look back to the evidence-based approach that was occurring in 2018 – the question was raised regarding what happens if power is lost to the gate and it can’t open, or if the gates got stuck? How is flood water released then? There are dams on three of the four major branches above the Windsor causeway, which poses another layer of flood risk in the event something happened at any one of those facilities.

Until the province reverts back to an evidence-based approach or decides to abuse ministerial powers to somehow override the DFO authorization process, this project will remain in political gridlock. At this point, the stakes include not only the ability for Mi’kmaq to exercise their

¹² <https://www.halifaxexaminer.ca/economy/natural-resources/fishery/its-about-to-erupt-into-violence-hants-county-at-war-with-itself-over-lake-pisiqid/>

¹³ <http://hwy101windsor.ca/wp-content/uploads/2022/12/2022-11-30-CLC-Meeting-Presentation-all-slides.pdf>

Constitutionally protected rights (access to fishing) and public safety (highway collisions and freshwater flood risk), but also democracy (abuse of political power). Nova Scotian's need to remind these politicians that they work for us, the people, and we must hold them accountable for their actions.