

TECHNICAL MEMO

To	From
Clint Carl - Biologist, Fish and Fish Habitat Protection Program Fisheries and Oceans Canada Clint.Carl@dfo-mpo.gc.ca	Patty Burt, RP Bio, QEP pburt@mcelhanney.com
Re	Date
Dewdney Bridge Replacement Project Letter Of Advice: 22-HPAC-01175 Reduced Risk Timing Window Extension Request	June 2023
	ML File Number
	2110-00001-11

1. Introduction

This Technical Memorandum is a *request for consideration* in response to the conditions on the Letter of Advice (LoA) obtained from Fisheries and Oceans Canada (DFO) on May 15, 2023 from Clint Carl, Senior Biologist for the Fish and Fish Habitat Protection Program. The LoA: 22-HPAC-01175 '*Dewdney Bridge Replacement Project, Nicomen Slough, Dewdney, BC*' and the stated reduced risk timing window for fish is insufficient in order to get the instream works completed in the estimated 2-year time frame for the replacement of this bridge. Therefore the team is requesting a variance for the timing window as detailed in the original Request for Project Review.

2. Rational for the Variance in the LoA Timing Window.

2.1. EXISTING INFORMATION THAT WAS SUPPLIED UNDER THE REQUEST FOR PROJECT REVIEW

- 1) Under *Section 10.1.3* of the environmental assessment that was submitted as supporting documentation for the DFO Request for Project Review the Provincial Least Risk Timing Window for fish was stated as **August 1 to September 15** of any year. But in the DFO LoA the first bullet on Page 3 has a Least Risk Timing Window for the Lower Mainland of **August 1 to September 1**, shortening that window by 2 weeks.
- 2) Under the same section at Number 1 above, there was a request for the hydrological optimum timing window of **February 1 to April 1** based on historical water level data (Government of Canada) within the Fraser River (and by association, Nicomen Slough). There was a recommendation that this period be available to the project based on the winter low flow and stated in DFO's LoA bullet 1 on page 3: '*All in-water construction activities should be carried out during low water and low current conditions.....*'

Area 29-Steveston/Surrey (British Columbia Marine/Estuarine Timing Windows for the Protection of Fish and Fish Habitat - South Coast and Lower Fraser Areas: <https://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/bc-s-eng.html#area-29>) does allow for a work window for the Fraser River Estuary (from Oak Street Bridge and George Massey Tunnel to Mission Bridge) of **June 16 to February 28**. Recognizing that the Mission Bridge is downstream of the project area but that the Fraser River and by association the Nicomen Slough is tidal, the team would request **August 1 to February 28**.

2.2. CONSTRUCTABILITY REVIEW AND PHASING TO SUPPORT THIS REQUEST

The following table breaks down the project's current status and the required time in order to complete this project in the 1.5-2 year schedule. The instream works, conservatively will require 4-5 months to complete and aligns well with the August 1 to February 28 window.

Activity	Required Time
Contracts: review of documents and preparing for upload to BC Bid	June 2023-four weeks
Tender: review of submissions,	July 1 to August 15, 2023
Award and preconstruction meeting: contact signing and kickoff and orientations	July 1 to 31, 2023
Mobilize to site	September 1 to 15, 2023
Instream work activities: temporary trestle installation, new bridge piers, and removal of the existing bridge*	Ready to start October 1, 2023 -Construction of the trestle: 1-2 months -Piles: 2 months -Bank armouring: 1 month
Completion of Instream works	February 28, 2024

*None of the instream works can occur concurrently as the trestle has to be installed before any other works can happen.

2.3. NATURE OF THE WORKS

Works associated with the installation of the temporary trestle include: setting piles in sequence working from the west bank and setting the driving platform, repeating this activity till the optimal structure is completed. Driving/drilling for the piles for the new bridge, reapplication of the bank armouring and the removal of the existing bridge structure, cutting off the piles just below the mud line and removal of the temporary trestle once the new bridge is completed.

2.4. ENVIRONMENTAL VALUES PRESENT

Please see the environmental assessment submitted to DFO for the Request for Project Review. Photos provided as reference of the water level in the fall and winter, depicting the low water level and current.



February 2019



March 2019



September 2019



September 2022



March 2023

2.5. RISKS ASSOCIATED WITH THE PROJECT/ACTIVITIES

The risks of working in this extended fish window include sediment transport, oil/fuel spills, and turbidity. The work area has been defined as a travel corridor/migration area; devoid of spawning, rearing or overwintering habitat that would have been impacted by the 4-5 months of instream works. The works will be isolated from flowing water to prevent any entry of fish prior to works, so impacts to fish are not expected. The work area will be isolated from flowing water, so any spills would be cleaned

up without the risk of loss downstream contamination. An environmental monitor from the successful contractor will be present daily throughout works in or near the stream during these sensitive works.

2.6. MITIGATION MEASURES WHILE WORKING OUTSIDE THE LOA TIMING WINDOW AUG 1 TO SEPT 1

Risks will be avoided by working in the dry due to low water seasonally, completely isolating, fish salvaging, and dewatering the area prior to instream works, as required. The isolation can be accomplished by a number of means with the ultimate procedure proposed by the contractor and accepted by MoTI (some examples include: using a caisson, ocean sediment curtain, bubble curtain or a low water conditions were the channel bottom is exposed). No work will occur under flowing conditions besides setting up isolation. A fish salvage will be completed while attempting to dewater, as per conditions of a valid Scientific Fish Collection Permit and License. An environmental monitor working under the guidance of a Qualified Environmental Professional (QEP) with experience in aquatic environments will be onsite daily throughout works in or near the slough. Work will be timed and planned appropriately (i.e., not during rain events, if possible), the stream flow will be managed accordingly duration of the construction activities and fish passage through and around the site will not be restricted.

All other mitigations outlined in the DFO LoA and the associated contractors accepted Construction Environmental Management Plan with site-specific work procedures for the project will be followed.

2.7. RATIONAL FOR WORKING OUTSIDE THE WINDOW

We feel that work can proceed outside of the LoA stated work window because the slough is hydraulically lower during the winter months based on data from the Government of Canada and DFO Area 29.

2.8. DATES FOR WHEN THE VARIANCE IS REQUIRED

August 1 to February 28

2.9. MONITORING AND REPORTING

An environmental monitor working under the guidance of a QEP with experience working in aquatic environments will be onsite daily throughout works in or near the stream while works take place outside the fish window. The advice of the QEP on construction timing and mitigation measures, as well as the timing of work and the presence of the QEP, will be documented in writing and submitted as part of the post construction reporting for the project.

3. Conclusion

Based on the additional information presented in this letter, we feel that extending the work window stated in the DFO LoA will not cause additional environmental impacts to the aquatic environment. This will facilitate an efficient construction schedule, getting rid of the requirement to mobilize/demobilize on numerous occasions and the associated reoccurring temporary disturbances.

We trust that the information provided in this Technical Memo satisfies your requirements. If you have any further questions, please do not hesitate to contact the undersigned.

Regards,

McELHANNEY LTD.

Prepared by:

A handwritten signature in blue ink, appearing to read "Patty Burt".

Patty Burt, RP Bio, AQP

Environmental Lead

pburt@mcelhanney.com

APPENDIX A – DFO FILE: 22-HPAC-01175



Fisheries and Oceans
Canada

Pacific Region
Ecosystem Management Branch
200 – 401 Burrard Street
Vancouver, BC
V6C 3S4

Pêches et Océans
Canada

Région du Pacifique
Direction de la gestion des écosystèmes
Pièce 200 – 401 rue Burrard
Vancouver (C.-B.)
V6C 3S4

May 15, 2023

Your file *Votre référence*

Our file *Notre référence*
22-HPAC-01175

Krista Englund
A/Regional Manager of Environmental Services
Ministry of Transportation and Infrastructure
310-1500 Woolridge Street
Coquitlam, BC V3K 0B8

Via email: Krista.Englund@gov.gc.ca

Dear Krista Englund:

**Subject: Dewdney Bridge Replacement Project, Nicomen Slough, Dewdney, BC—
Implementation of Measures to Avoid and Mitigate the Potential for Prohibited
Effects to Fish and Fish Habitat**

On August 16, 2022, the Ministry of Transportation and Infrastructure (MOTI) submitted a proposal to the Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) for proposed works, undertakings or activities (WUAs) associated with the Dewdney Bridge Replacement Project (the Project), in Nicomen Slough, Dewdney, British Columbia. On March 28, 2023, the Program notified the MOTI that it had concluded its review of the Project, and that installation of the temporary work access platform (the Platform) composed of riprap fill was likely to result in the harmful alteration, disruption or destruction of fish habitat (i.e., a *Fisheries Act* authorization was needed for this WUA to proceed). On April 3, 2023, the Program received a revised proposal from MOTI to redesign the Platform from a riprap fill to a pile-supported structure, and on April 25, 2023 the Program issued a Letter of Advice (LOA) to MOTI specific to installation of the pile-supported Platform.

On May 3, 2023, the MOTI sent an email to the Program requesting the Program indicate whether the MOTI will receive further advice specific to the entire scope of WUAs included in MOTI's original August 16, 2022 proposal (i.e., advice related to the proposed WUAs other than the Platform). In response to the MOTI's email, DFO is re-issuing the LOA (i.e., this LOA replaces one issued on April 25, 2023) so that it includes the entire scope of the Project, which the Program understands to include the following WUAs:

- Install 16 steel pipe piles as part of constructing a new 5-span bridge (four instream piers) located immediately upstream of the existing Dewdney Bridge.

- Excavate the east and west banks of Nicomen Slough and re-apply riprap.
- Decommission and remove the existing creosote pile-supported Dewdney Bridge.
- Recontour the banks to bring the existing abutments back into alignment with the shoreline.
- Install a temporary work access platform instream to facilitate construction of the proposed works (pile-supported structure).
- Clear riparian vegetation to accommodate the proposed works.

We understand the following aquatic species listed under the *Species at Risk Act* may use the area in the vicinity of where your proposal is to be located:

- White Sturgeon (Lower Fraser River Population), listed as Special Concern.
- Bull Trout (South Coast Population), listed as Special Concern.

Our review considered the following information:

- Request for Review Form and supporting documentation sent via email from Patty Burt, McElhanney Ltd. to DFO on August 16, 2022;
- Design Drawings (file name: 596 H7 Dewdney Bridge Dwgs 90 percent Diagrams) sent via email from Patty Burt, McElhanney Ltd. to Clint Carl, FFHPP Biologist, on January 16, 2023;
- Online Virtual Meeting with Patty Burt, McElhanney Ltd.; Krista Englund, Ministry of Infrastructure and Services; Clint Carl, FFHPP Biologist; and Sandra Warren FFHPP, Senior Biologist on February 02, 2023;
- Report titled Regulatory Submission: Dewdney Bridge Replacement Project (dated August 5, 2022) by McElhanney Ltd. and sent via email from Patty Burt, McElhanney Ltd. to Clint Carl, FFHPP Biologist, on February 02, 2023;
- Email titled Re: Outstanding Questions Dewdney Bridge Project from Patty Burt, McElhanney Ltd. to Clint Carl, FFHPP Biologist, on February 16, 2023; and
- Online Virtual Meeting with Patty Burt, McElhanney Ltd.; Krista Englund, Ministry of Infrastructure and Services; and Clint Carl, FFHPP Biologist on March 07, 2023.
- Request for Review Form and supporting documentation sent via email from Patty Burt, McElhanney Ltd. to DFO on April 03, 2023.

Your proposal has been reviewed to determine whether it is likely to result in:

- the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the *Fisheries Act*; and
- effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*.

The aforementioned outcomes are prohibited unless authorized under their respective legislation and regulations.

To avoid and mitigate the potential for prohibited effects to fish and fish habitat (as listed above), we recommend implementing the measures listed below:

- All in-water construction activities should be carried out during low water and low current conditions, and during the Reduced Risk Instream Work Window for the Lower Mainland Region of August 1 to September 1.
- A Qualified Environmental Professional (QEP) should be present during all works, undertakings or activities with written authority to modify or stop any construction activity for the protection of fish and fish habitat.
- Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation.
- Efforts should be made to limit the duration of in-water works, undertakings and activities so that it does not diminish the ability of fish to carry out one or more of their life processes (spawning, rearing, feeding, migrating).
- Develop and implement a Sediment and Erosion Control Plan to avoid sedimentation of the waterbody during all phases of the work, undertaking or activity (e.g., install a sediment turbidity curtain [anchored to shore] during bank-related excavation and riprap replacement works).
- Contingency measures for controlling sediment and erosion (e.g., additional silt fencing) should be located on site and easily accessible, if needed.
- The existing creosote-treated piles and any piles installed in relation to the temporary work access platform should be removed slowly via vibratory extraction or direct pull methods in low water and low flow conditions. If piles cannot be removed via vibratory or direct pull methods, piles should be cut below the mudline.
- Upon removal from the substrate, pulled piles should be moved immediately from the water and placed into a containment basin to capture any adhering sediment and avoid sediment-laden water from re-entering the water. The pile should not be shaken, hosed-off, left hanging to drip or any other action intended to clean or remove adhering material from the pile.
- Debris from bridge demolition works should not be allowed to enter Nicomen Slough.
- Isolate the work area from flowing water if needed to prevent adverse effects to fish and fish habitat. Fish salvage should occur prior to conducting works, undertakings, or activities within any isolated work areas. Salvaged fish should be released outside of the work area.
- Follow Fisheries and Oceans Canada's *Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater* (<https://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecran-eng.html>) for any screens fitted onto pumps placed instream.
- Install piles using a vibratory hammer to the extent possible.
- The use of a soft start procedure where the energy is gradually increased over a 10 minute period is recommended for pile installation. The soft start procedure is also recommended anytime there is a break in pile driving of 30 minutes or more. The soft start procedure is designed to enable any fish that may be in the area time to leave the area prior to the generation of peak pressure and noise levels for pile installation.
- If impact pile driving is necessary:

- install an effective sound attenuation device (e.g., bubble curtain around the full wetted length of the pile) and verify that it is functioning effectively prior to and during pile driving to reduce peak sound pressure level to below 207 dB re: 1µPa at 10 m from the pile to avoid death of fish.
- conduct hydroacoustic monitoring continuously to verify that underwater peak sound pressure levels do not exceed the 207 dB re: 1µPa beyond 10 m from the pile to prevent injury to fish.
- if hydroacoustic monitoring indicates sound levels in excess of the abovementioned thresholds, pile driving should cease and only resume after additional mitigation measures (e.g., additional bubble curtain, modification of exclusion zones, etc.) are implemented to effectively reduce sound levels below the above-mentioned thresholds.
- Limit clearing of riparian vegetation to the extent possible.
- Clearing limits should be clearly delineated and visually marked (e.g., flagging tape) prior to the start of construction activities.
- Replant disturbed riparian areas as appropriate, with native non-invasive species of vegetation (e.g., hydroseed / plant stakes along the banks up and downstream of the existing bridge).
- Construction equipment should access the work area using existing trails or roads and be operated from outside the channel.
- Materials placed instream should be clean and free of silt or debris, and ARD-free.
- The temporary work access platform should be decommissioned and removed as soon as it is no longer needed to construct the new Dewdney bridge or remove the existing Dewdney bridge.
- An appropriate spill prevention, containment, and clean up contingency plan for hydrocarbons (e.g., fuel, oil, hydraulic fluid, etc.) and other substances deleterious to aquatic should be put in place prior to work commencing, and appropriate spill containment and cleanup supplies should be kept available onsite. Onsite personnel should also be trained in spill prevention, containment, and cleanup procedures.

Provided that you incorporate these measures into your plans, the Program is of the view that your proposal is not likely to result in the contravention of the above mentioned prohibitions and requirements.

Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. Consult our website (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>) or consult with a qualified environmental consultant to determine if further review may be necessary. It remains your responsibility to remain in compliance with the *Fisheries Act*, the *Species at Risk Act* and the *Aquatic Invasive Species Regulations*.

It is also your Duty to Notify DFO if you have caused, or are about to cause, the death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat.

Such notifications should be directed to the DFO-Pacific Observe, Record and Report phone line at 1-800-465-4336 or by email at DFO.ORR-ONS.MPO@dfo-mpo.gc.ca.

Please notify the Program by email at Clint.Carl@dfo-mpo.gc.ca at least 10 days before starting your project, ensuring your file number and appropriate on-site contact information is included. We recommend that a copy of this letter be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your proposal.

Please note that the advice provided in this letter will remain valid for a period of 1 year from the date of issuance. If you plan to execute your proposal after the expiry of this letter, we recommend that you contact the Program to ensure that the advice remains up-to-date and accurate. Furthermore, the validity of the advice is also subject to there being no change in the relevant aquatic environment, including any legal protection orders or designations, during the 1 year period.

If you have any questions with the content of this letter, please contact Clint Carl at our Vancouver office at 236-335-6803 or by email at Clint.Carl@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,



Sandra Warren
Senior Biologist
Fish and Fish Habitat Protection Program

c.c.: Patty Burt, McElhanney Ltd.

Pburt@mcelhanney.com