

FRASER RIVER, BC – PROPELLER WASH & CLAMSHELL MAINTENANCE DREDGING 2019

Location

1. **Kanaka Landing Small Craft Harbour** is located on the north side of the Fraser River at the foot of McKay Street in Maple Ridge, BC. UTM coordinates: 10U 530790m E 5448592m N. The estimated material to be dredged is 9,000 m³.
2. **McMillan Island Small Craft Harbour** is located at the end of Glover Road on the north side of McMillan Island, adjacent to the former Albion Ferry wharf in Langley, BC. UTM coordinates: 10U 531559m E 5447558m N. The estimated material to be dredged is 2,000 m³.
3. **Mclvor's Landing Small Craft Harbour** is located on the south side of the Fraser River, approximately 4 km upstream of the Fort Langley Ferry dock at the foot of 252nd Street, Langley, BC. UTM coordinates: 10U 534615m E 5445688m N. The estimated material to be dredged is 2,000m³.
4. **Whonnock Small Craft Harbour** is located on the north side of the Fraser River, at the south foot of 272nd Street, between Maple Ridge and Mission, BC. UTM coordinates: 10U 538241m E 5446744m N. The estimated material to be dredged is 500 m³.
5. **Mission Small Craft Harbour** is located along Harbour Avenue at the foot of Mershon Street in Mission, BC. UTM coordinates: 10U 551107m E 5442092m N. The estimated material to be dredged is 3,500 m³.

Scope of Work

- Except as otherwise specified, the work described in this section shall include all plant, labour and materials necessary for the completion of the project, entitled "Fraser River, BC – Propeller Wash and Clamshell Maintenance Dredging 2019."
- The work may include, but not be limited to, mobilization, demobilization, propeller wash dredging, clamshell dredging, and clean-up of the five Small Craft Harbour sites listed above.
- The work shall not be deemed complete until all items are performed to the satisfaction of the Site Inspector.

Definitions

Throughout this specification, where the words "Owner," "Site Inspector," "Contractor," or "Work" appear, these shall be defined as follows:

- A. Owner: Small Craft Harbours (SCH).
- B. Site Inspector: A representative of SCH chosen to inspect the work performed by the Contractor.
- C. Contractor: The party accepted by the Owner with whom a formal contract is entered to complete the work of this project.
- D. Work: The whole of the works, materials, matters and things to be done, furnished and performed by the Contractor under this Contract

Work Schedule

The Contractor must submit a proposed work schedule to the Owner within five days of award.

Drawings

Drawings are provided as an attachment to clarify the scope of work prior to or during construction.

Site Work

All work shall meet or exceed all requirements set in these plans and specifications.

Terms of Payment

- The quantities stated in the Schedule of Quantities and Prices are given for the purpose of providing a basis for a comparison. Payment will be made only on the authorized quantities listed in this Contract or authorized by the Owner in a signed amendment. No guarantee is given that actual quantities will conform to the quantities shown. The work may be terminated or extended at the discretion of the Owner.
- Payment under this Contract will be made after final inspection and acceptance of the completed work. Payment will be made based upon the prices listed in Schedule of Quantities and Prices.
- At the completion of the work, the Contractor will submit an invoice for all the work satisfactorily completed and for all materials purchased and it will be reviewed by the Owner prior to processing for payment.
- Lump Sum Payment: Payments will be made on the basis of percentage of lump sum work completed as determined by the Owner.
- Unit Prices: Payments will be made based on quantities and prices provided. Additional work at same basis.
- Lost Time: No measurement will be made of the time spent in repairing or maintaining equipment or for lost time expended due to the acts, omissions, or inadequacies of the Contractor's personnel or equipment.

Description of Items**Mobilization (Mob), Demobilization (Demob), and Cleanup**Mob, Demob, and Cleanup for 5 sites.

The per site cost for this item shall include the supply of materials, equipment, tools, services, labour and all things necessary to complete the following:

- | | |
|----|---|
| .1 | Mobilization of crew and equipment to a project site. |
| .2 | Demobilize from site. |
| .3 | Site cleanup. |

Mclvor's Landing Site

Propeller wash and clamshell dredging of Mclvor's Landing Site

1. Provide and operate tug boat and crew as described in this document, and clean up after the work is complete.
2. Provide and operate barge, clamshell bucket, and crew as described in this document, and clean up after the work is complete
3. Relocate within harbour as directed by owner's representative.
4. Propeller wash and clamshell dredge as directed and referenced in this document.
5. Coordination between tugboat operator and clamshell operator when the barge is needed for perching, or tugboat assistance is required to move the barge.
6. Only active dredging and movement is included.
7. This may include night work subject to tides.

Mission Harbour Site

Propeller wash and clamshell dredging of Mission Harbour Site

1. Provide and operate tug boat and crew as described in this document, and clean up after the work is complete.
2. Provide and operate barge, clamshell bucket, and crew as described in this document, and clean up after the work is complete
3. Relocate within harbour as directed by owner's representative.
4. Propeller wash and clamshell dredge as directed and referenced in this document.
5. Coordination between tugboat operator and clamshell operator when the barge is needed for perching, or tugboat assistance is required to move the barge.
6. Only active dredging and movement is included.
7. This may include night work subject to tides.

Whonnock Harbour Site

Propeller wash and clamshell dredging of Whonnock Harbour Site

1. Provide and operate tug boat and crew as described in this document, and clean up after the work is complete.
2. Provide and operate barge, clamshell bucket, and crew as described in this document, and clean up after the work is complete
3. Relocate within harbour as directed by owner's representative.
4. Propeller wash and clamshell dredge as directed and referenced in this document.
5. Coordination between tugboat operator and clamshell operator when the barge is needed for perching, or tugboat assistance is required to move the barge.
6. Only active dredging and movement is included.
7. This may include night work subject to tides.

McMillan Island Site

Propeller wash and clamshell dredging of McMillan Harbour Site

1. Provide and operate tug boat and crew as described in this document, and clean up after the work is complete.
2. Provide and operate barge, clamshell bucket, and crew as described in this document, and clean up after the work is complete
 - i. Relocate within harbour as directed by owner's representative.
 - ii. Propeller wash and clamshell dredge as directed and referenced in this document.

- iii. Coordination between tugboat operator and clamshell operator when the barge is needed for perching, or tugboat assistance is required to move the barge.
- iv. Only active dredging and movement is included.
- v. This may include night work subject to tides.

Kanaka Landing Site

Propeller wash and clamshell dredging of Kanaka Site

1. Provide and operate tug boat and crew as described in this document, and clean up after the work is complete.
2. Provide and operate barge, clamshell bucket, and crew as described in this document and clean up after the work is complete
3. Relocate within harbour as directed by owner's representative.
4. Propeller wash and clamshell dredge as directed and referenced in this document.
5. Coordination between tugboat operator and clamshell operator when the barge is needed for perching, or tugboat assistance is required to move the barge.
6. Only active dredging and movement is included.
7. This may include night work subject to tides.

Co-operation with Owner's Representative and Others:

The site shall be left in a safe condition at the end of each working day.

The Contractor shall confirm dredging requirements in writing with the Owner's Representative at each site at least **5 days** in advance of mobilization so that the Owner's Representative can arrange for dredge areas to be clear of boats, net sheds, and all other obstructions on their dredge dates. Confirmation is to proceed as follows:

The Contractor shall:

- a. Meet with the Owner's Representative prior to work commencement to:
- b. Review each Harbour's operating methods and procedures.
- c. Review the Required Mitigation Measures (Appendix I) for the project and discuss methods to mitigate environmental impacts.
- d. Co-operate with the Owner's Representative and provide assistance during inspection of work as requested.
- e. Upon request of the Owner's Representative, furnish use of such boats, equipment, labour and materials necessary to inspect and supervise work in a timely manner.

Environmental & Regulatory:

The Contractor shall insure that operations comply with all applicable environmental regulations, standards and best management practices. A copy of the Required Mitigation Measures (Appendix I) shall be maintained on board during operations.

This tender document does not relieve the Contractor of the responsibility of complying with any applicable municipal, provincial, or federal laws or regulations.

WorkSafeBC Coverage:

The Contractor is to be in good standing with WorkSafeBC.

SPECIFICATIONS

General:

Scope of Work:

Dredge at the discretion of the Site Inspector with the **intent** of achieving –2.5 m Chart Datum for Whonnock, Mclvors, Kanaka and Mission Harbours. Dredging at McMillan Island will be done with the **intent** to achieve -3.5 m Chart Datum.

Plant and Materials:

1. All plant and temporary materials required to perform the work to be provided by the Contractor. Units with plant include all operators and support to operate.
2. Contractor propeller wash dredging equipment must include the supply and operation of:
 - a. A tug less than 10 meters in length
 - b. A minimum of 300 hp
 - c. A Kort nozzle
3. Contractor clamshell dredging equipment must include supply and operation of spud barge and clamshell bucket with minimum 6 meters reach.
4. Upon request, the Contractor must provide use of equipment for the Site Inspector or Owners Representative to sound areas inaccessible from the floats or wharves prior to, and after dredging, to verify that grade depth has been attained.

Site Information:

The Contractor shall:

1. Take necessary steps to become fully familiar with site and soil conditions, bathymetry, potential inclement weather and river conditions in each area.
2. Notify the Site Inspector of any existing damage, obstructions, or problems noticed prior to commencement.
3. Immediately notify the Site Inspector and/or Owner of any damage occurrence, obstructions, areas of hardpan, debris, or problems encountered during the work.
4. Notify the Owner after completion of the work.

Surveys of Work:

The Site Inspector will perform a lead line sounding survey before, during, and after propeller wash dredging to monitor and accept work.

Dredging Procedures

The Contractor shall:

1. Dredge side slopes to 3 horizontal to 1 vertical (3H:1V).
2. Regularly steer the nozzle or stern from side to side throughout the dredging operation to provide a level plane and prevent trenching.
3. Remove shoaling that occurs as result of work.
4. Upon encountering an obstruction, immediately notify the Owner or Site Inspector of

location. Bypass and continue work.

5. Work with the Owner and Site Inspector to avoid any damages or losses.
6. Make all provisions necessary to ensure minimum interference with vessel traffic in the areas. The Owner or Site Inspector will entertain no claims for delays or loss of production resulting from this provision.
7. Conduct propeller wash dredging such that the plume is directed away from the shore or any intertidal vegetation.
8. The clamshell dredge must place the dredged material as close as possible to the riverbed. Dredged material is not to be dumped or deposited from above the river surface or within the upper portion of the river water column.
9. Dredge only during ebb tide conditions, which are most efficient in carrying sediment offshore, and away from intertidal vegetation.
10. Perch the bow of the propeller wash tug along the shoreline only at locations *where no vegetation exists*. Propeller wash tugs, which dredge at locations where vegetation exists on the shoreline should use perching structures (timber or steel dolphins) to secure the tug during propeller wash operations. Perching structures are located at each of the 5 harbour sites. Additionally, dolphins that secure floats and shear boomsticks are to be used to provide stability for perching propeller wash tugs.
 - a. Tethering the tug to piles and/or temporary anchors when dredging should also be considered.
11. Propeller wash dredging will be accepted upon ensuring the dredge area has been dredged down to -2.5m CD for Whonnock, Mclvors, Kanaka and Mission and -3.5 for McMillan Island unless otherwise directed by the Site Inspector.
12. Any water-based equipment or machinery moored or used during the construction or operation of the project must not ground on the intertidal foreshore or sub-tidal riverbed of the Fraser River.
13. The Owner and Contractor must ensure that all of the mitigation measures outlined in Appendix I of this Tender Package are followed.

APPENDIX I – ENVIRONMENTAL REQUIRED MITIGATION MEASURES

Mitigation Measures

The following mitigation measures, conditions, and dredging practices will be followed during the 2019 maintenance dredging program:

1. All dredging works will strictly adhere to the attached DFO document entitled “Propeller Wash Dredging in the Upper Fraser River (Kanaka Creek to Mission)” dated October 31, 2002.
2. If clamshell dredging is used to side cast the dredged material, the clamshell dredge must place the dredged material as close as possible to the riverbed. Dredged material is not to be released from above the water surface or within the upper portion of the water column.
3. No grounding of barges will be allowed to occur on the intertidal foreshore or subtidal riverbed of the Fraser River. The only exception to this condition is when the use of vertical spuds or anchors are employed to hold a spud barge in place.
4. Biodegradable hydraulic fluid shall be used in equipment (cranes and excavators) conducting removal works;
5. A spill kit containing absorbent pads (i.e. petroleum) or equivalent material (i.e. peat moss), absorbent booms for skimming and absorption, drum liner bags or plastic pails (20 L) appropriate for the type and volume of product that could be spilled will be kept on the clamshell dredge barge at all times. The spill kit will be supplied by the Contractor and the appropriateness (type of materials and quantity) of the spill response supplies will be determined by the inspector/ monitor prior to the start of dredging.
6. All machinery shall be free of excess oil and grease and shall be in good mechanical order so that no leaks occur. Equipment will be inspected by the monitor/ inspector and the Contractor prior to the start of work and daily by the Contractor to ensure that it is leak free inspections will include looking for leaks, cracked hoses and fittings.
7. Works will be carried out in a way that prevents any serious harm to fish or fish habitat. If the proposed works or subsequent activities result in any such impact, the DFO Triage & Planning Unit of the Fisheries Protection Program will immediately be notified. Work may be suspended or altered and compensatory or remedial works may need to be undertaken at the expense of the Contractor, and to the satisfaction of the DFO Fisheries Protection Program, to ensure that the project does not result in serious harm to fish.
8. The Contractor shall be in compliance with Section 36 of the *Fisheries Act* at all times. Section 36 specifically prohibits the deposit of a deleterious substance into fish bearing waters.
9. The DFO Conservation & Protection Field Supervisor for Fraser Valley East in Mission, BC. (Ph. 604-814-1055 / Fax: 604-814- 1064) shall be notified (only available 8am and 4pm Monday, Wednesday or Friday) prior to the commencement of dredging works at the Mission DFO Small Craft Harbours facility. The DFO C&P Field Supervisor for Fraser Valley West in Langley, B.C. (Ph. 604-607- 4150 / Fax: 604- 607- 4199) shall be notified prior to commencement of dredging works at the Whonnock, McIvor’s Landing, McMillan Island, and Kanaka Landing DFO Small Craft Harbours facilities.
10. Upon completion of the Propeller Wash Maintenance Dredging Project 2019, a report will be created that summarizes the dredging activities undertaken at each of the SCH facilities in the upper Fraser River (Kanaka Creek to Mission inclusive). Information in the report will include dredge dates, approximate dredge volumes, hours spent dredging, as well as any problems encountered, observations made or mitigation measures that may be of interest to the DFO Fisheries Protection Program. This report shall be kept on file by SCH to be made available upon request.

PROPELLER WASH DREDGING IN THE UPPER FRASER RIVER (KANAKA CREEK TO MISSION)

1. Dredge only during ebb tide conditions, which are most efficient in carrying sediments off-shore.
2. Dredge during the late fall (November/December) when significant numbers of migratory fish are not present.
3. Dredge when river levels are below the lower limit of vegetation, even at high tide.
4. To prevent physical damage to vegetation along the shoreline, vessels shall not ground on vegetated foreshore. Note that it may be necessary for "perching" structures to be installed.
5. Prop wash must be directed away from shore to direct sediments away from foreshore areas, particularly vegetated areas.
6. Prop wash dredging is to be conducted under the direction of a full-time inspector or monitor to ensure conformance to mitigation requirements and controlled dredging procedures.
7. There shall be no prop wash dredging conducted in backwater channels, sloughs or other important and sensitive fish habitat areas.