



Archaeological Overview Assessment

Proposed Dredging near Balfour Ferry
Terminal, West Arm of Kootenay Lake

April 20, 2018

Prepared for:

Ministry of Transportation and Infrastructure

Prepared by:

Stantec Consulting Ltd.

Sign-off Sheet

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Management Summary

At the request of the Ministry of Transportation and Infrastructure (MOTI), Stantec Consulting Ltd. (Stantec) conducted an archaeological overview assessment (AOA) of eight proposed dredging locations and two corresponding offshore disposal areas situated within the West Arm of Kootenay Lake near the Balfour Ferry Terminal (the Project). The goal of the Project is to improve safety within the existing navigation channel for the Kootenay Lake ferry vessels which operate in the area.

A review of the provincially maintained Consultative Areas Database (CAD) found that the project sites are within the asserted traditional territories of First Nations and affiliated organizations of the Ktunaxa, Secwepemc, and Syilx/Okanagan Nations.

There are currently no finalized developments plans, as the Project is in the planning phase.

The eight proposed dredging locations and two associated offshore dredged material disposal areas are assessed as having low archaeological potential. No protected sites are in conflict with the Project as currently proposed. Information on historical water levels, lake bed constituents, sediment deposition rates, and channel water speed all indicated that a fully submerged or buried archaeological resources within the Project area is unlikely. Available ethnographic information does not indicate the use of channel spanning fishing weirs at this location.

No further archaeological work is recommended for the proposed dredging locations and associated offshore disposal areas, which were determined to have low archaeological potential, provided development plans do not encroach within 10 m of the current low water mark. If development plans should change to include impacts in terrestrial areas or within 10 m of the current low water mark, it is recommended that the design plans be assessed by a qualified archaeologist.

If archaeological resources are encountered during development construction personnel should follow MOTI's existing Chance Find Protocol.



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ARCHAEOLOGICAL OVERVIEW ASSESSMENT

Introduction
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1.0 INTRODUCTION

At the request of the Ministry of Transportation and Infrastructure (MOTI), Stantec Consulting Ltd. (Stantec) conducted an archaeological overview assessment (AOA) of eight proposed dredging locations and two associated offshore dredged material disposal areas situated within the West Arm of Kootenay Lake near the Balfour Ferry Terminal (Figures 1 and 2). An AOA is a desktop review of relevant archaeological, historical, ethnographic, and biophysical data, the results of which are used to identify potential conflicts between the projects and archaeological resources.

The objectives of the AOA were to:

- Determine the location, nature, and distribution of recorded archaeological resources within or near the Project
- Assess potential impacts to recorded archaeological sites
- Identify and assess the potential or sensitivity for unrecorded archaeological sites within the project area
- Determine the appropriate methods and scope of work for subsequent archaeological studies, if needed

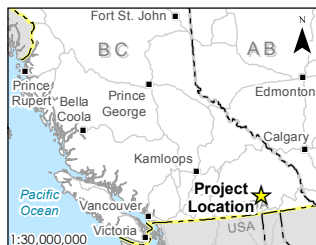
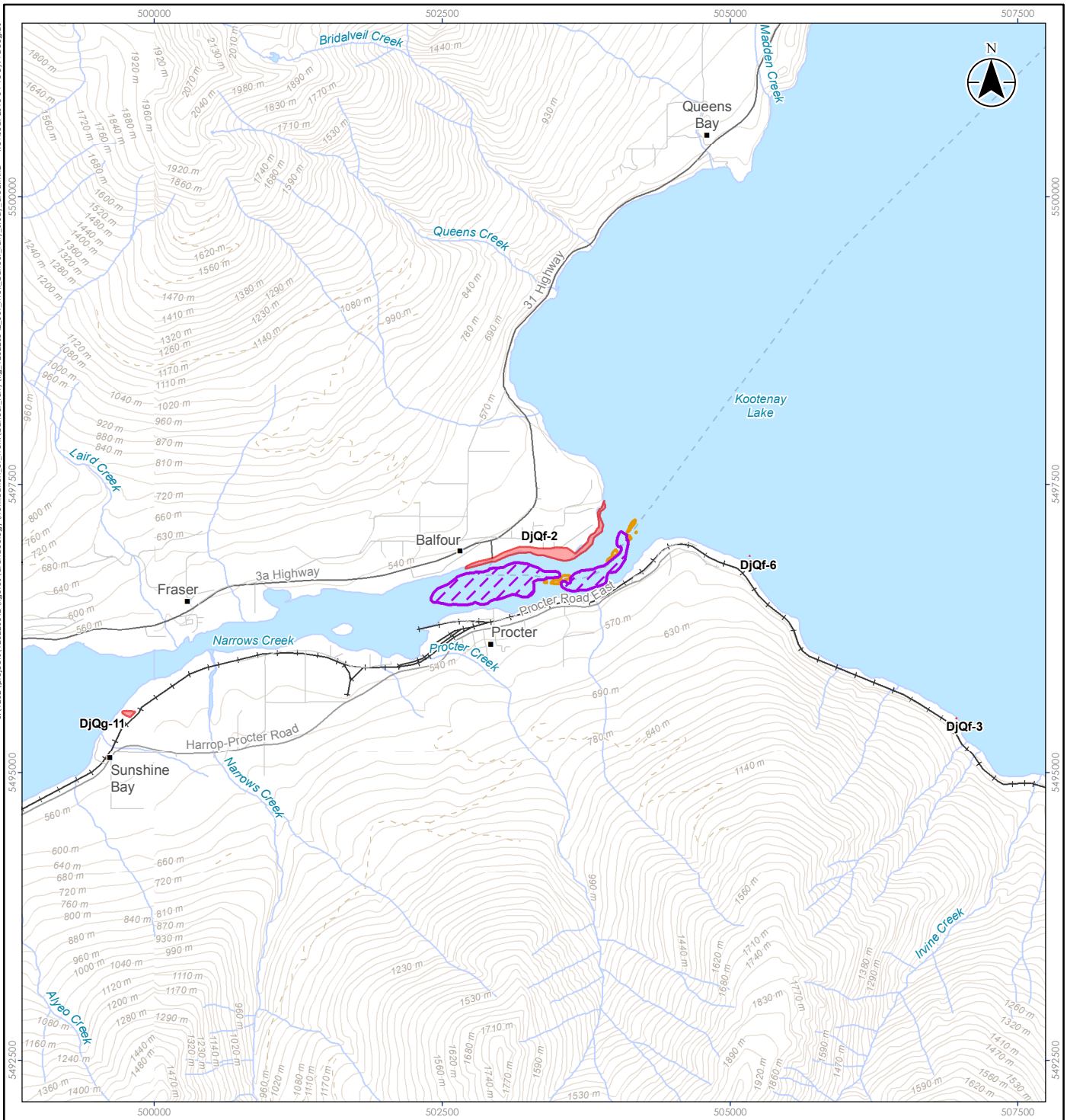
2.0 PROJECT DESCRIPTION

The MOTI is proposing to dredge eight areas within the West Arm of Kootenay Lake near the Balfour Ferry Terminal and to redeposit the dredged materials offshore into deeper sections of the channel nearby. The goal of the Project is to improve safety within the existing navigation channel for the Kootenay Lake ferry vessels which operate in the area by establishing a minimum channel depth of 4.7 m within the eight areas of localized high points by means of dredging (Advisian 2017). Assuming a navigable channel width of 68 m, an estimated 8,600 m³ of material is expected to require dredging, which includes an allowance for a 300 mm overdredge (Advisian 2017). Present recommendations are the use either a pontoon-based backhoe or grab dredger for completion of the dredging work, with dredged materials being redeposited in offshore depressions within the West Arm channel (Advisian 2017). The backhoe dredger would consist of an excavator operating from a floating pontoon either self-propelled or propelled by tugs, anchored in place during dredging activities by support piles. Similarly, a grab dredger consists of a track mounted crane with a clamshell bucket operating from a floating pontoon.

A review of the provincially maintained Consultative Areas Database found that the project area is within the asserted traditional territories of First Nations and affiliated organizations of the Ktunaxa, Secwepemc, and Syilx/Okanogan Nations.

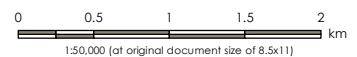


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Notes
1. Coordinate System: NAD 1983 UTM Zone 11N
2. Data Sources: DataBC, Government of British Columbia;
Natural Resources Canada

- Unincorporated Area
- Highway
- Road
- Local Street
- - - Ferry Route
- - - Forest Tenure Road
- + Railway
- Topographic Contour
- Watercourse
- Waterbody
- Proposed Dredged Material Disposal Area
- Proposed Dredging Area
- Previously Recorded Archaeological Site Boundary



Project Location: Southern Interior Region
BCGS mapsheet: 82 F/056
NTS mapsheet: 82 F/10
Project Number: 123220842.201
Prepared by: VDOUGLAS on 20180322
Discipline Review by: RBUKMAR on 20180322
GIS Review by: RCOATTA on 20180323
Client/Project:

Ministry of Transportation and Infrastructure
Balfour Ferry Terminal Proposed Dredging
HCA Permit: non-permit

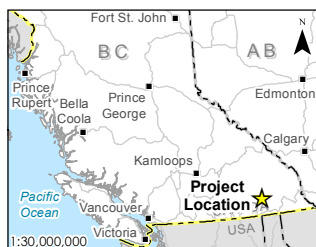
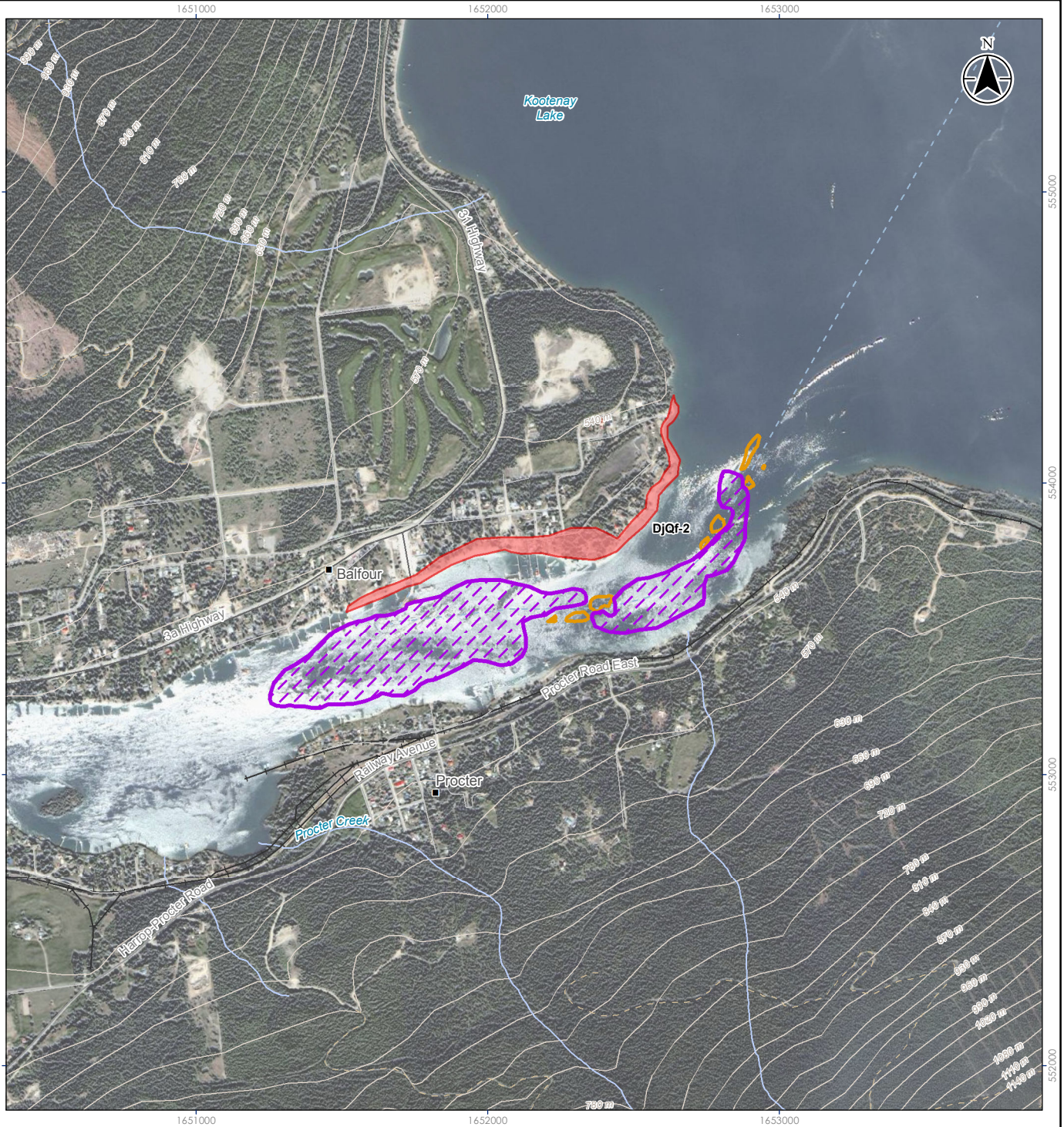
Figure No.

1

Title

Balfour Ferry Terminal Proposed Dredging and Disposal Areas Study Area Overview

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Notes
 1. Coordinate System: NAD 1983 BC Environment Albers
 2. Data Sources: DataBC, Government of British Columbia; Natural Resources Canada; ESRI World Imagery

- Unincorporated Area
- Highway
- Road
- Local Street
- - - Ferry Route
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Figure No.

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**Balfour Ferry Terminal Proposed Dredging and Disposal Areas
 Midrange Location**

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Heritage Legislation
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3.0 HERITAGE LEGISLATION

In British Columbia, heritage resources are managed in accordance with the legal requirements and conditions set forth in the provincial *Heritage Conservation Act* (HCA). The HCA extends automatic legal protection to archaeological sites if they pre-date AD 1846 or are of unknown age but may pre-date AD 1846. Burial sites and aboriginal rock art sites are automatically protected, regardless of age. Shipwrecks and airplane wrecks are protected by the HCA two years after abandonment. Though not automatically protected under the HCA, post-AD 1846 Aboriginal heritage sites may be protected under the HCA under agreement with Aboriginal groups. Historical sites that postdate AD 1846 are generally not protected by the HCA, except where designated as a provincial heritage site under section 9 of the Act.

The Archaeology Branch of the British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development (MFLNRORD) has authority over the archaeological assessment and review processes. Under the HCA, the Archaeology Branch is responsible for deciding whether permits can be issued to allow development to take place within protected site areas and has established standards, policies, and guidelines to regulate the archaeological assessment process. This study follows current Archaeology Branch guidelines for an AOA (Archaeology Branch 2009).

4.0 METHODS

4.1 BACKGROUND INFORMATION REVIEW

Stantec reviewed relevant literature concerning the biophysical, ethnographic, and archaeological setting of the project area to assess the archaeological potential of the project areas.

The following key sources of information were reviewed:

- Available maps and imagery (e.g., Google Earth, Data BC)
- Archaeological site forms for DjQf-2 and DjQf-6 contained in the provincial heritage register—accessed using the Remote Access to Archaeological Data (RAAD) application maintained by the Archaeology Branch
- Underwater Archaeology Society of British Columbia—Reports on historical shipwreck locations
- Relevant ethnographic and biophysical sources

In addition to the information sources listed above, Stantec contacted the following First Nations and affiliated organizations of the Ktunaxa, Secwepemc, and Syilx/Okanogan Nations with the asserted traditional territories overlapping the project area. These First Nations and affiliated organizations were contacted to provide notification regarding the AOA and to request any additional information the nations or organizations wished to provide that might contribute to the assessment of archaeological potential. At the time of report preparation, no additional information had been provided.



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The First Nations contacted for this study were:

- Ktunaxa Nation
 - Akisqnuk First Nation
 - Ktunaxa Nation Council
 - Lower Kootenay Band
 - St. Mary's Indian Band
 - Tobacco Plains Indian Band
- Secwepemc First Nations
 - Shushwap Indian Band
- Syilx/Okanagan Nations
 - Lower Similkameen Indian Band
 - Okanagan Indian Band
 - Okanagan Nation Alliance
 - Penticton Indian Band
 - Upper Nicola Indian Band

5.0 RESULTS

Information regarding the general setting of the Project, including general environment, ethnographic details, and archaeology is summarized below in Sections 5.1 and 5.2.

5.1 BIOPHYSICAL

The Project is situated with the entrance channel to the West Arm of Kootenay Lake in the southeastern interior of British Columbia. Kootenay Lake divides the Selkirk Mountain Ranges to the west and the Purcell Mountain Ranges to the east. The West Arm of the lake extends west then southwest through the Selkirk range, drained by the Kootenay River which in turn feeds into the Columbia River. The area is characterized by steep, rugged slopes and relatively narrow valleys which often contain long, narrow lakes such as Kootenay Lake (Parish et al. 1996). Kootenay Lake was formed through a combination of fluvial erosion, beginning in the late Cretaceous, and glacial processes during the Pleistocene.

The Project is located within the Interior Cedar–Hemlock biogeoclimatic zone in the Very Dry Warm (ICHxw) and Dry Warm (ICHdw1) sub-zones (Ketcheson et al. 1991). The ICH zone has a continental, cool to warm temperate climate. The winters are cool and summers warm and dry with a three to five month growing season. Precipitation is significantly less than in the CWH zone, but the late snow-melt and short growing season minimize summer soil water deficit and create hydrological conditions comparable to the CWH zone. The ICH zone is the wettest of the interior montane (IDF, MS, PP) and boreal montane zones (BWBS, SBS, SBPS) zones but drier than the interior subalpine boreal (ESSF, SWB) zones. Western hemlock and western redcedar, the two most common species, dominate old-growth stands in ICH most subzones.

A comprehensive list of plant, avian, and mammalian species that are commonly found in this zone is provided in Ketcheson et al. (1991). Fish species present in Kootenay Lake include rainbow trout, bull trout (also known as Dolly Varden), brook trout, burbot, mountain whitefish, white sturgeon, largemouth bass, yellow perch, and kokanee. Details of traditionally utilized plant-based resources found within the region traditionally utilized by Aboriginal



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peoples, such as the use of the bark from the white pine tree in construction of the region's signature "sturgeon-nosed" canoes, is provided in Parish et al. (1996).

Historical data on West Arm water levels began to be recorded in 1932 (Advisian 2017). Due to the construction of the Mica Dam, Duncan Dam, Keenleyside Dam, and Libby dam in Canada and the United States as part of the existing Columbia River Treaty, recorded water level maximums have dropped following the completion of the dams in the late 1960s and early 1970s (Advisian 2017). However, recorded water level minimums have not significantly varied since completion of the dams (Advisian 2017).

Based on seasonal water levels recorded at Queens Bay, located approximately 3 km north of the entrance to the West Arm, water levels peak during freshet around June (Advisian 2017). Following freshet, water levels steadily drop from August to December. Between January and April, the low winter flows feeding into Kootenay Lake increase to the gradual drop in water levels, with the lowest water levels usually occurring in March and April just prior to freshet (Advisian 2017).

Investigations undertaken by Advisian (2017) concluded that the lake bed within section of the West Arm near the Balfour Ferry Terminal is comprised primarily of glacially deposited sediments consisting of coarse grained sandy till and glaciofluvial sands and gravels. Water speeds measured within the channel were 2–3 knots (about 3.7 km to 5.6 km per hour). Based on the water speed, the observed lake bed constituents, and negligible change in minimum water depths since 1932, it is believed this portion of the lake is not a depositional environment for sediments.

5.2 CULTURAL

5.2.1 Ethnographic Information

The Project is within the asserted traditional territories of several First Nations belonging to the Ktunaxa, Secwepemc, and Syilx/Okanogan Nations. Below is a summary of Ktunaxa, Secwepemc, and Syilx/Okanogan land use patterns derived from ethnographic data. Emphasis has been placed on material culture, seasonal rounds, and traditional subsistence strategies as they relate to activities that are most likely to have left physical evidence of past human use within the project footprint.

5.2.1.1 Ktunaxa Ethnography

The Ktunaxa traditional territory is defined primarily by the course of the Kootenay River, Kootenay Lake, and surrounding tributaries and associated territories within both Canada and the United States. The Ktunaxa are culturally distinct from their neighbors, being less reliant than their neighbors farther east on the Plains on bison, and less dependent than their neighbors farther west on the Interior Plateau on salmon (Heitzmann 2009). The Ktunaxa are Kutenai (or Kutenai) speakers, the Kutenai language being divided into the Upper Kutenai and Lower Kutenai dialects. The Upper Kutenai traditionally occupied the sections of the Kootenay River upriver from approximately Kootenai Falls (located near Troy, Montana) to the river's headwaters, and into portions of the upper Columbia River valley. Ethnographically, the Upper Kutenai were more influenced by Plains Culture, their greater reliance on horse for transportation and geographical setting affording a higher degree of mobility than the Lower Kutenai (Turney-High 1941). The Lower Kutenai traditionally occupied the lower sections of the Kootenay River, with territory stretching downriver from Kootenai Falls to the river's headwaters, including Kootenay Lake and its associated tributaries and portions of the upper Columbia River valley. The Lower Kutenai relied more heavily on non-migratory food sources



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and were more sedentary than the Upper Ktunaxa (Turney-High 1941), and more commonly utilized canoes rather than horses for transportation (Smith 1984). For the purposes of this report, the ethnographic information presented here focuses primarily on the Lower Ktunaxa and their traditional lifeways as it relates to the archaeological potential of the Project and surrounding area. For more detailed ethnographies, see Brunton (1998) and Bouchard and Kennedy (2005).

The seasonal rounds of the Ktunaxa were divided between winter and summer activities. For the Ktunaxa, winter was marked by the coming of heavy snows and freezing of the rivers during which time the Ktunaxa would occupy their winter villages, utilizing snowshoes to access areas along the rivers and lakes for hunting and fishing (Brunton 1998). Winter lodges were constructed of several layers of closely set poles with half-rounded poles set in the gaps (Brunton 1998), or with the same sewn mat covers used for summer lodges as described below (Bouchard and Kennedy 2005). Uncertainty exists ethnographically as to whether or not the Lower Ktunaxa historically utilized semi subterranean pit houses as per elsewhere on the Plateau (Bouchard and Kennedy 2005). The melting of the ice and snow, accompanied by seasonal flooding, marked the beginning of summer for the Ktunaxa (Brunton 1998). Fishing would intensify during this time with individual families, or small groups of families, moving from their winter village to temporary fishing camps from early spring until May (Brunton 1998). These temporary summer camps would be comprised of conical or long lodges constructed from set wooden poles covered by bark, spruce boughs, or fir boughs, or by mats made from tule stems woven together by Indian hemp (*Apocynum cannabinum*) (Brunton 1998; Bouchard and Kennedy 2005; Schaeffer 1935; Smith 1984).

Fish were the chief staple for the Lower Ktunaxa (Bouchard and Kennedy 2005), despite salmon not being able to ascend the cascades between Kootenay Lake and the confluence of the Kootenay and Columbia Rivers (Johnson 1969). The lack of salmon in the area is supported by the ethnographic account that "[w]hen the Lower Kutenai [Ktunaxa] were on good terms with the Lakes [Syilx] people, they travelled beyond the West Arm of Kootenay Lake to fish and purchase salmon from the sngaytskstx [Syilx]" (Sinixt Nation 2016). As salmon was not readily available to the Ktunaxa within their core traditional territory, salmon was not ethnographically considered to be a major component of the Lower Ktunaxa's diet (Kennedy and Bouchard 2005).

The Lower Ktunaxa were nevertheless systematic fishers, utilizing a variety of methods to secure non-anadromous fish such as sturgeon, suckers, whitefish, kokanee, and trout (Bouchard and Kennedy 2005; Brunton 1998). The Lower Ktunaxa predominantly employed a system of wicker weirs and basket traps during their most economically important fisheries, often placing weirs across sluggish sloughs outlets (Bouchard and Kennedy 2005; Turney-High 1941). As described by Turney-High (1941):

Openings were left in this heavy matting to receive the traps. These were the same conical traps described for the Upper Kutenai. Their position was different among the Lower bands though, as they were set near the bank where the water was shallow instead of out in the middle of the stream. A slough with a wide outlet had two traps near each bank.

Artifacts recovered from DjQf-2, such as stone canoe anchors and net weights, support this notion of this area being utilized traditionally for fishing.



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5.2.1.2 Secwepemc Ethnography

The Secwepemc are members of the Interior Salish subgroup of the Salish language family, whose speakers occupy much of southern interior and coastal British Columbia. Given that the Project and surrounding area are not situated within Secwepemc core traditional territory, an ethnographic writeup will not be provided in this report. For ethnographic accounts based on primary sources see Boas (1891), Curtis (1911), Dawson (1891), Ray (1939), and Teit (1909, 1930). For more recent syntheses regarding Secwepemc land use patterns and subsistence practices see Alexander (1996, 1997) and Ignace (1998).

5.2.1.3 Syilx/Okanagan Ethnography

The Syilx/Okanagan traditional territory is situated within the southern portion of the Province of British Columbia and the northeastern portion of Washington State. The core territory of the Syilx/Okanagan in the 18th century was recognized to extend along the Columbia River between Revelstoke, British Columbia, and Northport, Washington, and included the Arrow Lakes, Slocan Lake, and surrounding areas (Bouchard and Kennedy 2005). The Syilx/Okanagan are *nsyilxcən* speakers, which is part of the Salish language family (Syilx/Okanagan Nation Alliance 2017). The “Lakes” division of the Syilx/Okanagan, contemporarily referred to as the Syilx (used in this report) or the Sinixt, traditionally occupied the east and northeast portions of Syilx/Okanagan territory as noted above. Per Bouchard and Kennedy (2005), the Syilx’s original term for themselves in *nsyilxcən* is *sngaytskstx*, which translates as “Dolly Varden people”, the Dolly Varden (also known as bull trout) being a noted fish throughout the Arrow Lakes region. For the purposes of this report, the ethnographic information presented here will focus primarily on the Syilx and their traditional lifeways as relates to the archaeological potential of the Project and surrounding area. For more detailed ethnographies, see Kennedy and Bouchard 1998 and Bouchard and Kennedy 2005.

Traditionally, Syilx/Okanagan villages were situated in the valley bottoms and along major waterways with upland areas visited periodically for hunting and gathering of plant-based resources such as root vegetables and berries (Kennedy and Bouchard 1998). One early account of Syilx winter villages describes them as consisting of one to six lodges, with each lodge containing two or more families (Work 1829). The summer camps used by the Syilx were smaller, consisting of an individual family or families from one or two lodges travelling and harvesting resources together during the non-winter months (Kennedy and Bouchard 1998). The Syilx were known to utilize semi subterranean pithouses, typically occupied by one to two families, as winter dwellings, as well as square topped lodges covered with a layer of poles, brush, and large sheets of cedar bark (Kennedy and Bouchard 1998). Tule mat lodges, both conical and oblong in style, were also built, and the Syilx were also known to have utilized tule mat covered lean-tos (Kennedy and Bouchard 1998).

Traditionally, chinook, coho, and sockeye salmon were caught during the months of July and August (Kennedy and Bouchard 1998); however, salmon was not able ascend the cascades between Kootenay Lake and the confluence of the Kootenay and Columbia Rivers (Johnson 1969). As such, Kettle Falls on the Columbia River (Washington State) and the mouth of the Slocan River (British Columbia) were the most ethnographically important chinook and coho salmon fisheries to the Syilx.

Freshwater fish, such as kokanee, suckerfish, whitefish, ling, lamprey, sturgeon, steelhead trout, Dolly Varden (or bull) trout, rainbow trout, and cutthroat trout, were also caught by the Syilx for food. Fishing methods included the use of wood weirs or stone fences placed across narrow sections of water, basket traps, spears (used from canoes or while standing in shallow water), and harpoons, as well as dip nets, set nets, gill nets, and seines made from Indian



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hemp weighted down by stone weights (Sinixt Nation 2016). Traditionally, chinook, coho, and sockeye salmon were caught during the months of July and August (Kennedy and Bouchard 1998), however salmon was not able to ascend the cascades between Kootenay Lake and the confluence of the Kootenay and Columbia Rivers (Johnson 1969). As such, Kettle Falls on the Columbia River (Washington State) and the mouth of the Slocan River (British Columbia) were the most ethnographically important chinook and coho salmon fisheries to the Syilx.

5.2.1.4 *Ktca'ukut*

The traditional place name of *Ktca'ukut* was recorded by Ray (1936) for the Syilx village site on the north side of the entrance of the West Arm of Kootenay Lake (Sinixt Nation 2016). This place name likely corresponds to previously recorded archaeological site DjQf-2, a precontact village site situated in the same locale. Harlan Smith (1930) also noted that Procter, located on the West Arm's south shore across the channel from Balfour and DjQf-2, was an area still actively used around the 1930s, however Smith refers to the area as being used by the Ktunaxa, not the Syilx (Bouchard and Kennedy 2005). While Kootenay Lake was reportedly of "marginal importance" to the Syilx (Bouchard and Kennedy 2005), the area was still utilized traditionally for a variety of purposes by the Syilx (Sinixt Nation 2016), albeit not as frequently or intensely as their Ktunaxa neighbors. Ray's (1936) note that the village of *Ktca'ukut* was "used as a temporary base during May and June" (Sinixt Nation 2016) indicating that the area was utilized into the historic period as a temporary fishing camp during the spring and early summer months. Artifacts recovered from DjQf-2, such as stone canoe anchors and net weights, support this notion. Anecdotal accounts from local residents in the Balfour area also suggests that at least one pit house may have been associated with the site at one time.

5.2.2 Archaeology

A search of the RAAD application indicates that previously recorded archaeological site DjQf-2, recorded as a precontact village site, is located within 50 m of the proposed project area. The DjQf-2 is located along the north shore of the West Arm of Kootenay Lake within the community of Balfour (Figure 2). The site stretches approximately 1.5 km from west of the existing Balfour Ferry Terminal, east to the mouth of the West Arm, and then north along Kootenay Lake from the mouth of the West Arm. The site extent has not yet been established, however current evidence indicates the site includes the existing foreshore and at least some of the properties adjacent. The site was first officially documented in 1972 by the Archaeological Sites Advisory Board (ASAB) who observed both lithic artifacts and hearth features eroding out of the beach from west of the Balfour Ferry Terminal to the mouth of the West Arm. Local residents also reported to the ASAB that they encountered lithic artifacts, such as perforated canoe anchors, during ground disturbance activities in the area. The ASAB recommended that further archaeological investigations should be conducted at DjQf-2; however, to date no investigations have taken place. In 2011, artifacts collected from the beach by a local property owner around 2004-2005 were reported to the Archaeology Branch. These artifacts reportedly consisted of fishing net weights, hammer heads, anchors, projectile points, and flakes. Anecdotal accounts from local residents also suggests that at least one pit house may be located farther north along the beach beyond the site's current boundaries.

No archaeological investigations are known to have occurred along the southside of the West Arm within the community of Procter. In addition, no current archaeological predictive model encompasses the proposed development area.



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5.2.2.1 Shipwrecks

In addition to DjQf-2, RAAD indicates that one historical shipwreck, DjQf-6, is approximately 1 km east of the project area in the main portion of Kootenay Lake. As reported by the Underwater Archaeological Society of BC (UASBC), the site consists of six railway boxcars, associated wheel trucks and loaded coke, as well as chainstays and fittings from Barge No. 15 (Pollack and Holms 2000). Five of the boxcars are located close together in 8-13 m of water, scattered near shore over a steeply descending wall. Another boxcar is 290 m northwest of the main site, approximately 460 m east of the entrance of the West Arm in 12 m of water. It is believed that this car was on the barge when it was refloated, and either fell off during the tow to harbor or was pushed off to stabilize the barge while it was being towed. The location of a sixth boxcar lost near shore when the barge sank has yet to be determined.

According to research conducted by the (UASBC), on April 9, 1901, the sternwheeler tug *Valhalla* was towing CPR Barge No. 15 from Kootenay Landing to Proctor with a load of 15 railcars loaded with coke and coal (Pollack and Holms 2000). Partway through the voyage, while in calm conditions, the strain of the tow increased unexpectedly and the barge suddenly lurched, one of the outside lines of five cars falling into the lake. Now damaged, the barge began to take on water, lurching to the other side causing the loss of three more cars over the side and the remaining seven cars to derail. The *Valhalla* managed to push the sinking barge ashore just south of the entrance to the West Arm, at which point the barge sank by the head, dropping six of the last seven remaining derailed railway cars into the lake. Days after the incident the barge was successfully raised, and half a dozen railcar wheel assemblies were also recovered. None of the railway cars themselves were recovered, the remains of six of the final seven railway cars and associated debris are documented as DjQf-6. During the incident, a man who was not a member of the crew was rescued from the sinking barge. The man admitted to being a stowaway who had jumped the train in Fernie along with two other men. The other two men were never found and presumed drowned during the loss of the first railcars in deeper water (Pollack and Holms 2000).

5.2.3 Archaeological Potential Assessment

The eight proposed dredging locations and two associated offshore dredged material disposal areas are assessed as having low archaeological potential. While precontact village DjQf-2 is located within 50 m of the Project, current archaeological evidence is limited to the foreshore and adjacent properties and does not extend into the active West Arm channel itself. Information on historical water levels, lake bed constituents, sediment deposition rates, and channel water speed all indicated that a fully submerged or buried component of DjQf-2 within the project area is unlikely. Available ethnographic information does not indicate the use of channel spanning fishing weirs at this location.

In addition, no recorded wrecks are located within the project area.



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6.0 RECOMMENDATIONS

No further archaeological work is recommended for the proposed dredging locations and associated offshore dredged material disposal areas, which are identified as having low archaeological potential, provided the proposed development areas are not expanded to within 10 m of the current low water mark, or include unassessed foreshore or terrestrial components. If development plans should change to include impacts in terrestrial areas or within 10 m of the current low water mark, it is recommended that the design plans be assessed by a qualified archaeologist.

If archaeological resources are encountered during development, it is recommended that construction personnel follow MOTI's existing Chance Find Protocol.

7.0 CONCLUSION

The recommendations provided in this report apply only to physical archaeological evidence of past human activity (i.e., to resources that are automatically protected under the HCA), and do not encompass other heritage concerns that Aboriginal groups or other stakeholders may have.

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