

Report For The Archaeological Overview Assessment and Preliminary Field Reconnaissance of the Proposed South Sewer Project Royston to Cape Lazo Outflow Segment

Prepared For:

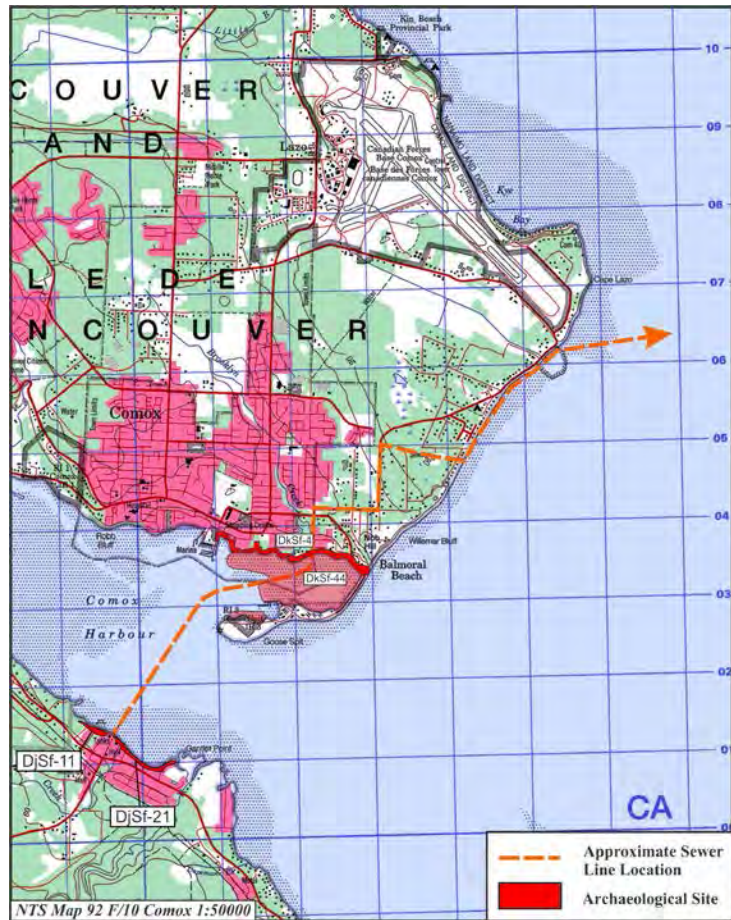
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Management Summary

This report summarizes the results and recommendations of an archaeological overview assessment (AOA) and preliminary field reconnaissance (PFR) conducted by Baseline Archaeological Services Ltd. (Baseline) of the portion of the proposed South Sewer Project (SSP), located between Royston and the Cape Lazo outfall.

The proposed south sewer project (SSP) phase 1 includes a waste water treatment facility (WTF), collection and conveyance system for the Union Bay and Royston Areas, and an outfall to Cape Lazo. For the purposes of this report, the focus will be on the portion of the SSP outfall pipeline from Royston Road to the outfall at Cape Lazo. The wastewater will be treated within the CVRD south region, and the effluent will then be pumped across the estuary/ Comox Harbour, through a 14 inch pipeline from the base of Royston Road. The effluent pipeline will run next to the planned Comox Pump Station #2 to be built at the base of Croteau Road. Once past the pump station, the smaller effluent pipeline from the SSP will follow the sewer main (a much larger pipe) across the Comox Peninsula to the Comox Valley Water Pollution Control Centre (CVWPCC). Both the sewer main and effluent pipeline will travel inland along Croteau Road, generally following Lazo and Brent Roads to the CVWPCC. From the CVWPCC a single combined effluent pipeline would cross Curtis Road and run along the intertidal area to the Cape Lazo outflow in the vicinity of Point Holmes before heading out to the sea.

The AOA included background research of the development area to determine which archaeological sites were potentially in conflict with the project. The PFR involved pedestrian and vehicular traverses of the development and related archaeological sites. The PFR was conducted by Chris Engisch (Baseline) and Ron Mitchell (Komox First Nation) in September and November 2015.

The AOA identified four archaeological sites in potential conflict with the proposed development.

Royston: Shell midden site **DjSf-21** is located at the base of Royston Road, with **DjSf-11** being located immediately to the northwest (*Figure 1 & 2*). It is likely the finalized location of the effluent line will be within the boundary of one of these sites.

Comox Harbour: Fish weir site **DkSf-44** (Goose Spit Fish Trap Site) is located within the intertidal area below Croteau Road (*Figure 1 & 3*). The proposed development will take place within the boundary of the site, but the finalized location may or may not impact actual archaeological features within the site.

Comox: Shell midden site **DkSf-4** is located within the backshore of Comox Harbour and in the development area of the effluent line and pump station (*Figure 1 & 3*).

Recommendations for the development of this project would include obtaining a Section 12, Site Alteration Permit (SAP) from the BC Archaeology Branch. The permit would include conditions for further archaeological work relating to the impact of archaeological material during the construction process, dependent on the condition and volume and type of material being impacted.

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Introduction

Alexandra Hitchcock of the Comox Valley Regional District (CVRD) South Sewer Project (SSP) contacted Baseline Archaeological Services Ltd. (Baseline) and requested that an AOA and PFR be undertaken for the portion of the project linking Royston to the Cape Lazo outflow. This was requested to determine which archaeological sites were in conflict with the proposed development and what type of further archaeological work and permitting would be required for the project.

The work reported herein consists of an AOA and PFR as defined in the *British Columbia Archaeological Impact Assessment Guidelines* (1998). This report is concerned with identifying any known archaeological sites in conflict with the development area, and making management recommendations on how to proceed in the event of conflict between existing archaeological materials and proposed ground altering activities. It is also concerned with determining the potential for any unrecorded archaeological material. This report does not address any First Nations interest in the land. The study was conducted without prejudice to First Nations treaty negotiations, aboriginal rights, or title.

Archaeological sites are defined as locations which contain physical evidence of past human activity, such as artifacts or features. A list of expected site types that would likely be identified on the subject properties is provided later in the report under Expected Site Type. Archaeological remains which predate, or are likely to predate 1846 are automatically protected from any form of alteration, excavation, damage or desecration in British Columbia under the *Heritage Conservation Act (HCA)*. Other sites protected under the *HCA* include aboriginal rock art sites with historical or archaeological value, burial places and historical shipwrecks.

The proposed south sewer project (SSP) phase 1 includes a wastewater treatment facility (WTF), collection and conveyance system for the Union Bay and Royston areas, and an outfall to Cape Lazo. For the purposes of this report, the focus will be on the portion of the SSP outfall pipeline from Royston Road to the outfall at Cape Lazo. The wastewater will be treated within the CVRD south region, and the effluent will then be pumped across the estuary/Comox Harbour, through a 14 inch pipeline from the base of Royston Road. The effluent pipeline will run next to the planned Comox Pump Station #2 to be built at the base of Croteau Road. Once past the pump station, the smaller effluent pipeline from the SSP will follow the sewer main (a much larger pipe) across the Comox Peninsula to the Comox Valley Water Pollution Control Centre (CVWPCC). Both the sewer main and effluent pipeline will travel inland along Croteau Road, generally following Lazo and Brent Roads to the CVWPCC. From the CVWPCC a single combined effluent pipeline would cross Curtis Road and run along the intertidal area to the Cape Lazo outflow in the vicinity of Point Holmes before heading out to the sea.

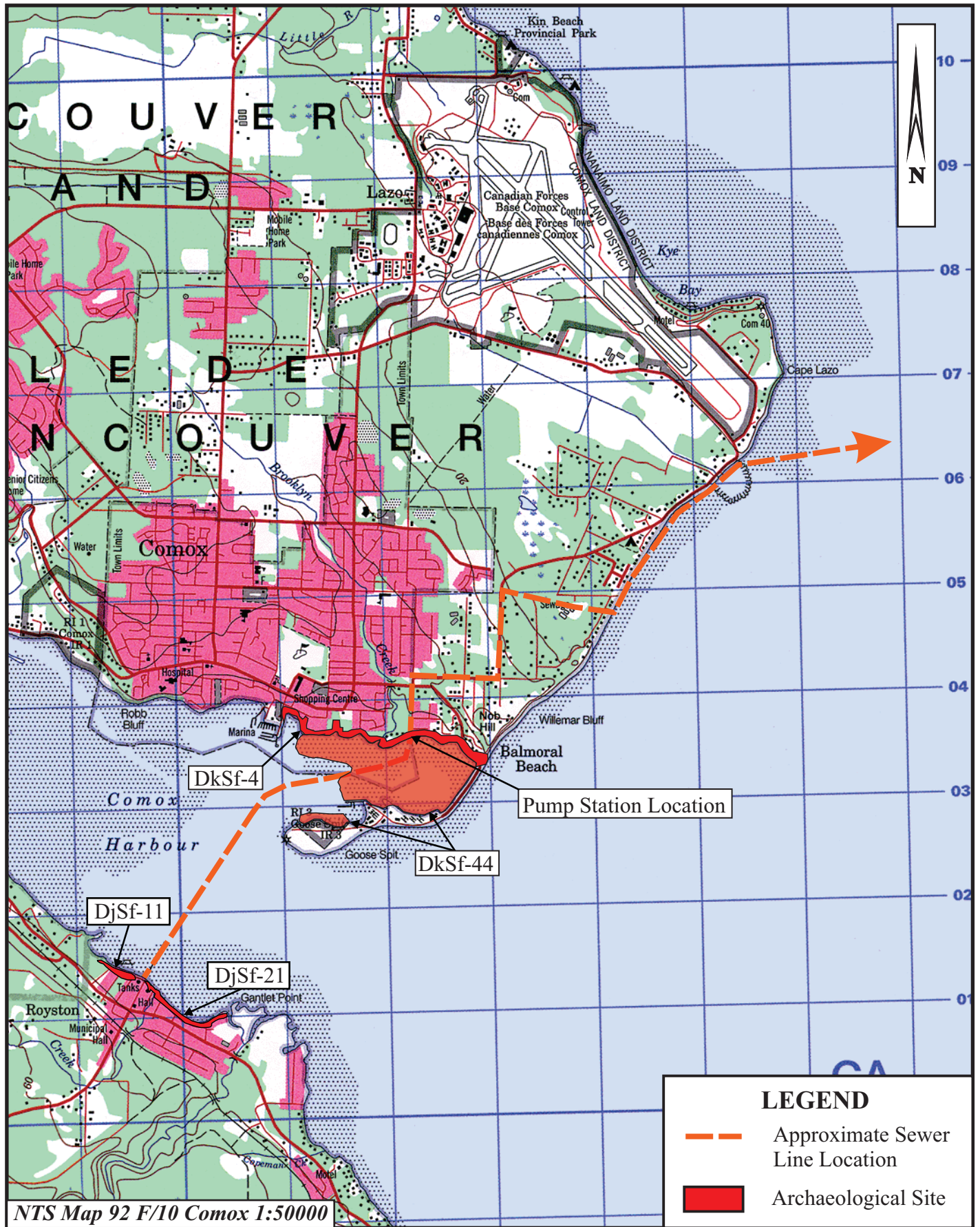


Figure 1. Location of Archaeological Sites and Development Area

Project Area

The study area commences in Royston, crosses Comox Harbour and proceeds to the CVWPCC before entering the intertidal area past Curtis Road and to Cape Lazo (*Figure 1*). The study area is located along existing roads and within tidal and intertidal areas. The overall area has been significantly altered by historic as well as more recent municipal, commercial, industrial and residential development.

The project area is situated within the Eastern Variant of the very dry Maritime subsection of the Coastal Western Hemlock zone (CWHxm1), as defined by the Ministry of Forests Research Branch (1992).

Archaeological Background of the Study Area

Prior to the PFR, an overview assessment was conducted for the study area. This included a review of the Remote Access to Archaeological Data (RAAD) website, which indicated the proposed project is in direct conflict with three previously recorded archaeological sites. At Royston, the project will likely conflict with one of the two archaeological sites in the immediate area. The following is a brief description and summary of previous information on each site.

Royston:

DjSf-11: The archaeological site consists of shell midden, human remains, and faunal remains, as well as various artifacts and features. Located along the shoreline in Royston, the site extends from south of the 'Royston Wrecks', to between Warren Avenue and Royston Road, along Marine Drive (*Figure 2*). **DjSf-11**, originally recorded in 1963, has been subject to numerous archaeological studies and site visits since its initial recording. Several site visits have indicated much of the site has been previously altered by historic activities, as well as residential development. Portions of the site are believed to remain undisturbed, but the majority of the area within the site has not been tested.

OR

DjSf-21: The archaeological site consists of an extensive shell midden deposit. It runs parallel to the shoreline and Marine Drive for approximately 1 km (*Figure 2*). Previous archaeological studies of the site indicate that it has been heavily disturbed by residential developments. It was also noted that much of the site has been overlain with fill material and rip rap, in order to accommodate parking lots and road ways near the shoreline. The site inventory form notes that remedial excavations in 2001 and 2010 were undertaken, which resulted in the removal of surface materials down to bedrock; the site boundary was amended to exclude the removed portion of the site.

Comox Harbour:

DkSf-44: The archaeological site encompasses much of the intertidal area enclosed by Goose Spit. The site is delineated by the shoreline and primarily intertidal area as opposed to the specific archaeological features which are present within the site. The site was divided into two separate polygons to remove a subtidal area at the HMCS Quadra dock. The features include the remains of wooden weir stakes which were used to create numerous fish trap complexes within the area (*Figure 3*).

Comox:

DkSf-4: The archaeological site is located along the shoreline running from the Comox Marina to Goose Spit (*Figure 3*). The site is a shell midden from which artifacts, faunal remains and human remains have been recovered. At the base of Croteau Road, the site is recorded as being approximately 40 m in width.

The development area was subject to an AIA in 1993 (Permit 1993-0038) when the property between Croteau Road and Mack Laing Nature Park was being considered for a housing development (Brolly, 1993) and prior to its establishment as MacDonald Wood Park. The assessment noted the historic disturbances through the area but found a significant portion of the site remains intact, with the largest deposits being in closer proximity to Brooklyn Creek and becoming smaller to the east at Croteau Road. The intact deposits are primarily located on the edge of a raised beach terrace, with the midden deposits at the base of Croteau Road being assessed as having a low significance.

Expected Site Types

An archaeological site is defined as a location containing physical evidence of past human activity in the form of artifacts or features. For the purposes of the AOA, the potential site type categories can include, but are not limited to one or more of the following which are taken from Arcas (1998) and Golder (1999):

- **Artifact scatters:** stone artifacts (consisting of the actual tools themselves as well as the detritus from their manufacture), butchered and/or worked mammal bones. These artifacts can be located through both surface and subsurface investigations.
- **Rock art:** comprised two general types, pictographs (rock paintings), and petroglyphs (rock carvings/etchings). These are generally encountered on large rock outcroppings or large boulders. Quite often they are recorded near bodies of water.
- **Burials and associated evidence:** the material and/or features associated with mortuary practice, including human remains, and burial pits, mounds, cairns, boxes and trees, as well as grave goods and grave markers. Burial locations are commonly at village sites, but also throughout their territories for individuals who died away from village sites.

- **Shell middens:** deposits of discarded shellfish remains, fire-altered rocks, charcoal, and faunal remains (butchered mammal, bird, and fish bones) representing the locations of village sites or resource harvesting camps.
- **Habitation sites:** areas used as seasonal or permanent village sites characterized by features such as house depressions, platforms, caves and rock shelters, hearths and shell midden deposits.
- **Intertidal sites:** marine foreshore locations characterized either by artifact scatters on a beach, features constructed for beaching canoes (canoe runs), or harvesting fish (fish traps and/or fish weirs). Canoe runs are only found on shingle or rocky shores; intertidal artifact scatters are usually found on shingle beaches; stone fish traps are usually associated with shingle beaches or creek mouths, and wooden fish weirs are usually found in streams supporting runs of sea-run salmonids.

Archaeological sites are the result of certain discrete human activities occurring at a specific location on the physical landscape. Evidence for more than one type of cultural activity can take place at a single location. In mapping and recording archaeological sites, archaeologists use site boundaries to indicate the known extent of physical remains at a particular location. These boundaries are necessary to delineate the physical remains of archaeological sites to ensure their protection from proposed development activities. While boundaries are placed around archaeological sites for management purposes, it should be recognized that traditional Aboriginal use of the landscape associated with these sites may extend beyond archaeological site boundaries. Traditional use activities that leave no physical archaeological evidence, such as berry gathering, medicinal plant collecting, and spiritual practices, are more appropriately addressed through a Traditional Use Study and are not considered in this report.

Methodology

During pedestrian traverses, the surface, as well as natural subsurface exposures were visually inspected for cultural material such as, but not limited to: intertidal cultural features, artifacts, shellfish remains, butchered animal bones, charcoal, fire cracked rock, and other indications of past evidence of human activity. Eroding bank exposures were also inspected for archaeological material from the intertidal area. The survey was extended to areas outside of the recorded boundaries of the archaeological sites, where potential for unrecorded archaeological remains existed.

Results / Coverage

Archaeological material was not observed in the vicinity of the Royston development during the PFR, but shell midden was noted well removed from the project footprint. A high tide at this time precluded the opportunity to revisit **DkSf-44**. The PFR resulted in the confirmation of archaeological material at **DkSf-4** through visible surface exposures. The remainder of the project area was negative for archaeological resources and was deemed to have a low archaeological potential.

Royston:

DjSf-11: Recent work on **DjSf-11** by Baseline (Permit 2015-019) has indicated that much of the site consists of heavily disturbed archaeological material. The PFR survey covered areas of the site adjacent to the shoreline; the majority of the remainder of the site is located under paved road, on private property, or under heavily vegetated areas. No archaeological exposures were identified in the vicinity of the project area (*Figure 2, Photo 1*).

DjSf-21: The survey encompassed the majority of the shoreline portion of the site. Only sterile material was observed in the vicinity of the project (*Figure 2, Photo 2*). The majority of the site is located under and adjacent to a paved road and residential properties. The observed positive exposure is well removed from the development area.



Photo 1: Negative exposure, DjSf-11



Photo 2: Negative exposure, DjSf-21

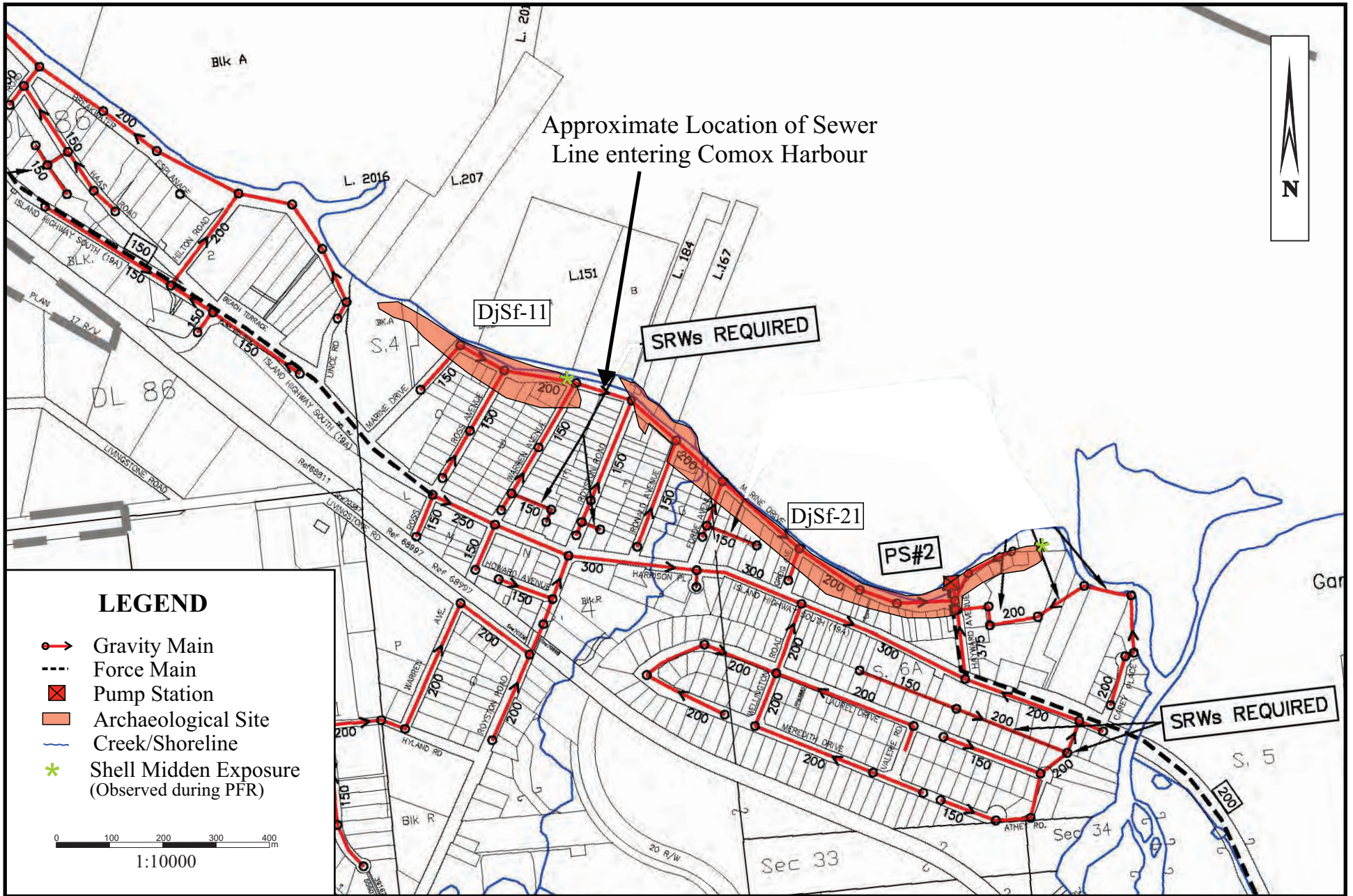


Figure 2. Location of Royston Sites

Comox Harbour:

DkSf-44: Due to the high tide at the time of the survey, the site could not be revisited, however Baseline personnel have visited the site during low tides previously. The fish trap complexes have been well documented and mapped by Total Station (*Figure 3, Photo 3*).



Photo 3: Wier stakes within DkSf-44

Comox:

DkSf-4: Shell midden deposits from **DkSf-4** were noted near the base of Croteau Road. The area is generally low in elevation and swampy in nature with considerable previous disturbances and this portion of the site had been previously assessed as having a low significance (Brolly, 1993:9). A manhole, sewer system, Croteau Road and a boardwalk are all present within the site boundary (*Figure 3*).

No midden deposits were noted on the raised beach terrace however at the time of the field visit the ground was generally not visible due to the leaf and litter mat.

Croteau – Lazo:

The field visit include vehicular and pedestrian traverses of Croteau, Lazo, Brent and Curtis Roads.

The field visit was initiated at Curtis Road where the existing outflow is located below a beach access road (*Photo 4*). Additionally, the beach access at the end of Brent Road was subject to pedestrian survey as well as a portion of the beachfront. Ample exposures along these access roads and beach cut banks yielded sterile sand deposits.

The gated portion of Brent Road was pedestrian traversed, from the CVWPCC to Curtis Road. A recently installed gas line within the road edge also provided ample exposures of sterile sand deposits.

Brent and Lazo Road area were considered to have a low potential for archaeological remains due to their inland locations.

The majority of Croteau Road was also considered to have a low potential for archaeological remains. At the time of the field visit, excavations around an existing manhole was occurring at the junction of Croteau and Midden Road. The excavation revealed sterile silts and clay.

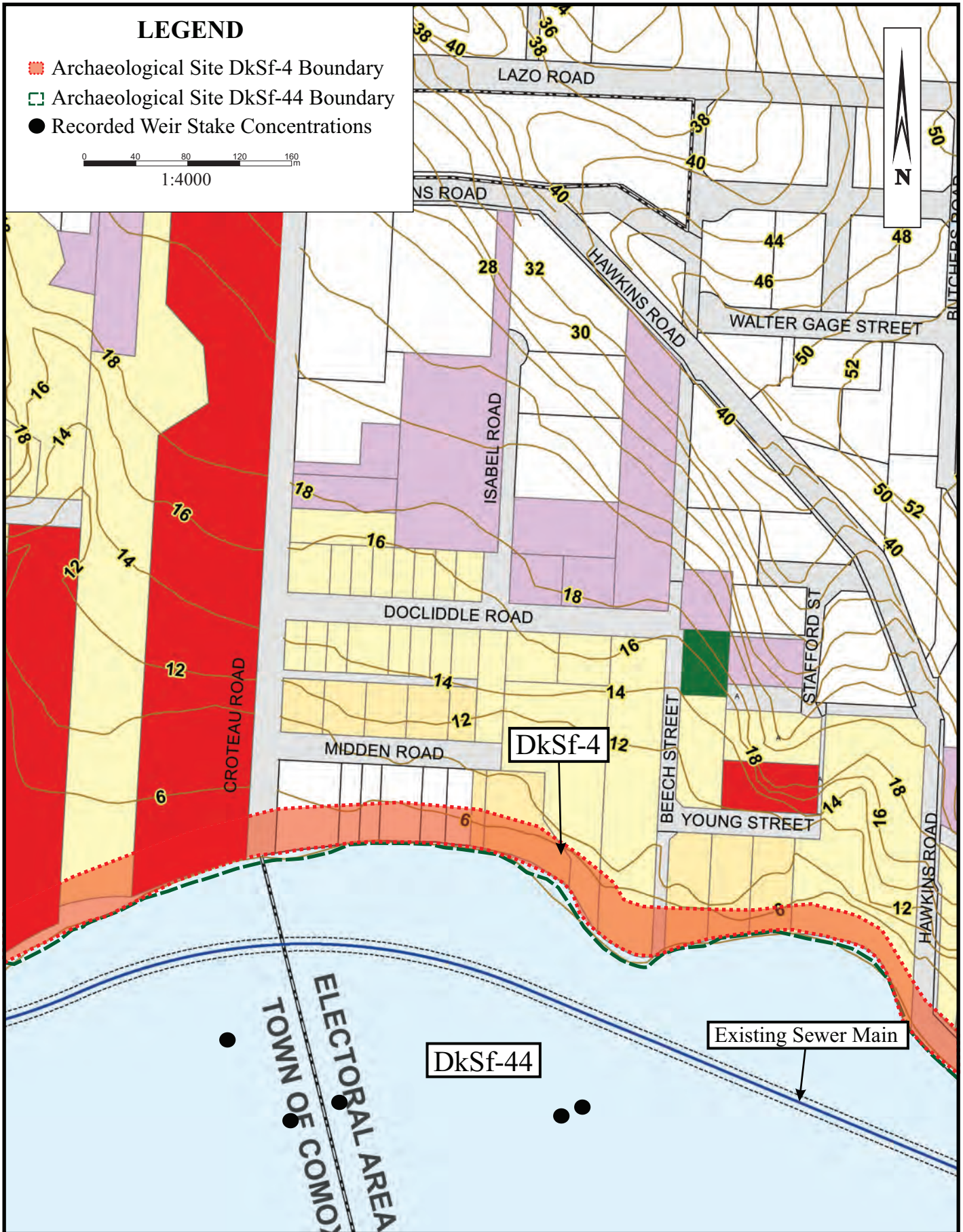


Figure 3. Location of Comox and Comox Harbour Sites



Photo 4. Outflow pipe location off Curtis Road

Impact Assessment

Upon completion of the AOA and PFR, it was determined that three archaeological sites identified by the AOA are in conflict with the proposed development and will be subject to impacts. Site specific impacts are as follows:

Royston:

DjSf-11 or DjSf-21: Impacts to the archaeological site include the trenching and the installation of effluent line from a proposed terrestrial pipe into the intertidal and tidal areas to cross Comox Harbour. These developments are likely to occur within sterile materials or previously disturbed shell midden. There is a limited potential for intact deposits being present within the development area footprint.

Comox Harbour:

DkSf-44: Impacts to the site would include trenching and the installation of effluent line within the archaeological site boundary. As the location has yet to be determined, it is unknown if fish weir stakes will be impacted.

Comox:

DkSf-4: Impacts will include trenching, the installation of effluent line and the construction of a pump station. The development will likely impact a combination of previously disturbed and potential intact archaeological deposits. The intact deposits would be potentially located on the upper beach terrace.

Croteau – Lazo:

No impacts to known archaeological sites are anticipated from the boundary of **DkSf-4** to the Cape Lazo outflow.

Recommendations

It is recommended that the project proceed under a Section 12, Site Alteration Permit (SAP) issued by the BC Archaeology Branch under the authority of the *HCA*.

Royston:

DjSf-21 or DjSf-11: The history of urbanization of the area has resulted in the identification of primarily previously disturbed archaeological remains or areas completely void of archaeological material. Based on the location of the development, it is recommended that the site be managed under a SAP with archaeological monitoring.

Comox Harbour:

DkSf-44: A SAP will be required for development within the archaeological site boundary. If weir stakes are to be impacted, a mitigative plan will be developed in consultation with the BC Archaeology Branch. This may involve the radiocarbon dating of impacted weir stakes and appropriate storage of the features.

Comox:

DkSf-4: The previous developments (CVWPCC sewer system and Croteau Road) within the vicinity of the proposed pump station, effluent line and sewer main have caused significant disturbances to portions of the archaeological material, with the potential for intact archaeological remains being present on the raised beach terrace. The proposed developments can be managed under a SAP with a condition of archaeological monitoring as well as a testing methodology in advance of the construction for potentially intact deposits.

Croteau/Midden Road Junction to the Cape Lazo outflow:

Based on the absence of previously recorded archaeological remains and the assessed low archaeological potential, no further archaeological work is recommended for this portion of the project.

Table 1. Summary of Recommendations

Location	Archaeological Sites	Recommendation
Royston	DjSf-11 DjSf-21	Section 12, Site Alteration / Monitoring
Comox Harbour	DkSf-44	Section 12, Site Alteration, mitigate weir stakes if impacted
Comox	DkSf-4	Section 12, Site Alteration / Monitoring / Possible testing in advance of alterations
Croteau/Midden Road junctions to Cape Lazo outflow	N/A	No further work

SAP Recommendations:

As per the concurrent archaeological studies/description section of the SAP Application (Section 4), mechanical operations within the archaeological site boundaries will be monitored by a qualified archaeologist. In the event that potentially intact remains are encountered, a subsurface testing program can be employed to determine the nature, composition and integrity of the deposits. Where the deposits are determined to be minimal or previously disturbed, mechanical operations may resume. Generally, mechanical excavation of archaeological material is conducted in 5-10 cm increments, with back dirt being screened or raked depending on the content of the material.

Where significant intact archaeological deposits are encountered, a mitigative program of systematic data recovery (SDR) may be employed. This would involve the excavation of 1x1 m units in controlled levels. The amount of SDR would depend on the site content with all archaeological features being hand excavated. In general, a minimum of 1 m of

hand excavations are required for every 10 m² of midden being impacted. When mechanical excavations within intact archaeological sites continue, they will be limited to scraping deposits in <5 cm increments to allow for the identification of archaeological features, including human burials.

General Recommendations:

Developers and operators should be aware of the potential of undiscovered archaeological remains in any surveyed or unsurveyed areas which are protected under the *Heritage Conservation Act*. If previously unrecorded archaeological remains are identified, all development activities in the vicinity of archaeological remains must be halted as not to threaten these remains and to immediately notify the BC Archaeology Branch (Ministry of Forests, Lands, and Natural Resource Operations).

Reference List

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